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URBAN HEALTH SERVICES

**Fifth Report
of the Expert Committee on
Public Health Administration**

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WORLD HEALTH ORGANIZATION

GENEVA

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EXPERT COMMITTEE ON PUBLIC HEALTH ADMINISTRATION

Geneva, 15-22 October 1962

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URBAN HEALTH SERVICES

Fifth Report of the Expert Committee on Public Health Administration

The WHO Expert Committee on Public Health Administration met in Geneva from 15 to 22 October 1962 to discuss urban health services.

The meeting was opened by Dr P. Dorolle, Deputy Director-General, on behalf of the Director-General.

Professor L. Gulick was elected Chairman, Professor A. M. Markov, Vice-Chairman, and Professor L. M. Bhattacharji, Rapporteur.

The Committee was called upon to follow up and extend the work done by the previous Expert Committees on Public Health Administration. The first report of the Committee¹ dealt with public health administration in a general way, to outline some broad principles; the second and third reports² discussed more specific health provisions and their organization at the local level in rural areas, and measures for further development of local health services. The fourth report considered the over-all problems of planning for public health services.³ The present Committee discussed the problems, functions and organization of urban health services.

It was pointed out that urbanization has strongly positive aspects—provided that urban growth proceeds at a reasonable pace and that it becomes part of a scientifically controlled situation. This is, however, not the case in most countries—developed or underdeveloped—and the consequences of explosive growth of cities threaten to become one of the major problems of our age.

Overcrowding and its attendant problems of spread of communicable diseases, malnutrition and mental stresses, as well as pollution of water, soil and air, are all factors which have far-reaching health consequences. Public health authorities are more often than not aware of such situations and their inherent danger to the population under their care, but often lack the means and the support to tackle these problems in a more efficient way. The Committee was asked to examine these various problems and the remedial measures which could be taken, with particular consideration

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1952, 55.

² *Wld Hlth Org. techn. Rep. Ser.*, 1954, 83; 1960, 194.

³ *Wld Hlth Org. techn. Rep. Ser.*, 1961, 215.

of the responsibilities of the health authorities in this context, emphasizing the positive contribution which the health profession could make towards better urban living.

As indicated throughout the report, the Committee has given due weight to the fact that the assignment of responsibility for health programmes and services in urban and metropolitan areas has found different solutions in the world depending on a variety of historical, political, economic and cultural considerations.

In practice, the Committee has used in its report the terms "urban health service" and "urban health authority" without in any way wishing to prejudge the validity of the various arrangements already existing in different countries and often even in the same country.

The Committee felt, however, that whatever the administrative pattern, there are a certain number of common elements of responsibility and action to which it wishes to draw the attention of the political and technical authorities concerned.

INTRODUCTION

Urbanization escapes precise and concise definition, particularly when its health implications are under consideration. Various attempts have been made to arrive at such a definition, and the Committee accepted that given by the United Nations Expert Group on Metropolitan Planning and Development in Stockholm in September 1961.¹

In considering the three main aspects of urbanization—geographic, administrative and demographic—the Committee was of the opinion that consideration of health problems should not necessarily be confined within the geographical limits of a town or city. Problems of water supply and sewage disposal, for example, may involve extension of urban influences to areas beyond its physical boundaries. Similarly, the need for health services often extends beyond the administrative limits of the municipalities. The demographic aspect of urbanization, however, appears to be the overriding factor in considering problems of urbanization.

Urbanization, understood as the process whereby an increasing proportion of a country's population lives in urban localities, is a natural process which has characterized the last century over the whole world. One of the main, but not the only, causes of this process has been the increasing industrialization of urban areas with the attendant immigration, both permanent and temporary, of people from rural areas for economic and social reasons. Thus a large number of the problems generally associated with urbanization are not caused so much by city life *per se* as by the

¹ United Nations Expert Group on Metropolitan Planning (1961) *Report...* (Unpublished mimeographed document: Conf. Doc. No. 32) New York.

transfer to the urban area of adverse conditions pre-existing in rural areas, and by the speed at which the phenomenon proceeds in relation to available resources and services.

Since the process of urbanization is a continuing and universal one, there is need for both remedial measures to deal with the already existing problems and anticipation and preparation to meet the needs of future developments. It is becoming increasingly apparent that the solution to most, if not all, of these problems is dependent upon having a properly co-ordinated approach to city planning. By tradition the planning of cities has been an architectural function, but it needs to be regarded more and more as a co-operative effort which takes into account not only the physical and economic aspects but also the social and environmental factors. The Committee was unanimously of the opinion that there are most important public health and environmental sanitation aspects of urban life which have not so far been accorded due prominence in planned urban development. The need exists more acutely where no formal planning has been undertaken. It is accordingly the intention of this Committee to endeavour to furnish broad guiding principles to assist health authorities in the recognition of the extent of their responsibilities in this matter, and in the taking of practical measures to solve some of the more pressing problems.

HEALTH PROBLEMS OF URBANIZATION

Whether envisaged in its demographic context or as part of the general development process, urbanization is not only irreversible in practice but is also necessary to the political, economic, social and cultural development of the country. The urban environment offers a concentration of factors favourable to advances in these fields which can greatly contribute to the development of human personality, provided the essentials of healthy living have already been achieved.

Standards of living are often much higher in towns than in rural areas. Access to education, health, training and other facilities is generally much easier, even though the needs for, and patterns of, expenditure are also very different and all requirements of the ordinary citizen not often adequately satisfied. If, therefore, the negative aspects of urbanization are generally stressed, it is because they lead to conditions calling for action. They should, in fact, be viewed in conjunction with their positive counterparts, bearing in mind that both vary greatly from country to country and from one population group to another within the same urban area.

Urbanization brings in its train a series of consequences prejudicial to the health of the individual and of the community. Lack of adequate housing, water supply and sewage, increased risk of communicable diseases and inadequacy of preventive and curative medical care are often the results

of rapid increases in the urban population, swollen by numbers of migrants, either in families or singly, most of them having slender material possessions, limited education and experience, and skills of little or no relevance in the urban setting. Their hygiene may be offensive to their fellows, and their dietary habits difficult to maintain in a market economy. The rural housewife brings with her traditional and often restricted dietary customs, cooking methods and purchasing habits. She and her family may be accustomed to living on the rural staple food which is grown at home or easily and cheaply purchased. Unrestricted purchasing of the most easily prepared and perhaps most attractive-looking comestibles may lead to extravagant outlay of resources on the least nourishing and protective foods. Disruption of the family's food habits may easily follow, with resulting malnutrition and personal distress, unless the family can be educated in urban habits of cooking and feeding. The physical and mental stresses which may affect these people, due to the necessity to adapt quickly to a strange way of life, and which may lead finally to anti-social behaviour such as delinquency and adult crime, alcoholism, promiscuity and mental illnesses, have been described by many authorities on the subject.

Not the least of the stresses to be suffered by the urban population is noise from the various sources peculiar to urban life—vehicles, industrial activity, railways, etc.—both by night and day, not only creating discomfort but also perhaps causing fatigue, neurosis, and even deafness. Apart from the effects on the inhabitants generally, the location of hospitals in the centre of the older cities makes them especially vulnerable to noise, with consequent ill effects on their patients.

The concentration of population is a prime area of epidemic influence, and a variety of specific diseases such as tuberculosis, upper respiratory infections and venereal diseases are also more frequently encountered in urban than in rural areas. The lack of either natural or acquired resistance, coupled with poor environmental, economic and nutritional conditions, often creates special health problems among rural migrants to towns. Migration and other forms of large-scale movement of population as part of the process of urbanization are also dangerous factors in the epidemic spread of diseases such as smallpox, typhoid and cholera. Conversely, the reflux from urban to rural areas often carries urban infections with it to the villages.

The increased demand for utility services both for individual and industrial use leads to accumulation of waste products in water and air and on the ground. The concentration of multiple sources of pollution often reaches levels which may affect health, and the concentration of population increases the chance of exposure to these hazards.

Inadequate supply and distribution, and poor quality of water for drinking and domestic use, multiply the chances of exposure to gastrointestinal infections.

Storage of water for domestic use in uncovered storage tanks, and accumulation of surface water and sullage due to inadequate drainage, will, where climatic conditions are favourable, provide conditions conducive to the dissemination of filariasis, malaria and other mosquito-borne diseases.¹ Lack of sanitary facilities, leading to fouling of ground and accumulation of garbage, causes pollution of the soil and spread of infestations such as ascariasis and ancylostomiasis.

The concentration of different types of industries in and around cities and towns not only creates a greater demand on already overtaxed water and drainage, housing and transport resources, but also creates its own problems of waste disposal and air, water and soil pollution.

Development and expansion of modern means of transport, with the increasing numbers of vehicles and pedestrians on inadequate and antiquated road systems, cause the increase in road accidents which is a prominent feature of urban development. These accidents have become the principal cause of death in a number of countries in certain age-groups.²⁻⁴

Air pollution caused by industry, exhaust fumes of road vehicles and domestic appliances, together with the vertical growth of modern buildings and the replacement of trees by bricks and mortar, has created conditions which in certain cases have led to lethal consequences—as in London and Los Angeles. Indiscriminate building and the continued reduction of greenery in and around cities have had permanent repercussions on the microclimate of cities, with often unfavourable changes in temperature and in hygrometry.

Even in affluent societies where the essentials of life—food, warmth, clothes, housing, clean water and adequate sewerage—are available, there is increasing evidence that there may be special forms of urban pathology, and that an altered disease pattern may include increased prevalence of such conditions as ischaemic heart disease, cancer and hepatitis. Life in urban areas becomes more and more emotionally saturated, positively and negatively, with the resulting deleterious effects on health—even, perhaps, on the incidence of some of the diseases mentioned above.

The Committee realized that, although in cities, generally speaking, the level of public health is higher than in the rural areas, there are a number of existing or newly emerging problems which need the active intervention of health authorities the world over.

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1962, 233.

² Swaroop, S., Albrecht, R. M. & Grab, B. (1956) *Bull. Wld Hlth Org.*, 15, 123.

³ *Epidem. vital Statist. Rep.*, 1962, 15, 1-88.

⁴ Norman, L. G. (1962) *Road traffic accidents: epidemiology, control and prevention* (*Wld Hlth Org. publ. Hlth Pap.* No. 12), Geneva.

URBAN HEALTH SERVICES

The concept of modern public health envisages the provision of a wide range of services which may be supplied either directly by the health authorities or by other agencies. Thus, there is no fixed pattern on which to base the health services of a country or area ; they are influenced by general and everchanging local, state and national attitudes, and are required to function under local laws and statutes and to a greater or lesser degree by national legislation.

Evolving from the time of Edwin Chadwick in England and Lemuel Shattuck in the United States of America during the 19th century, public health today aims at not only the prevention of sickness and the reduction of mortality but also the promotion and preservation of health and the prolongation of life.

Public health today is the science and art of preventing disease, prolonging life, and promoting health, both physical and mental, through organized community efforts for the sanitation of the environment, control of communicable diseases, education of the individual in personal hygiene, organization of medical services for the early diagnosis and preventive treatment of disease, and the development of a social machinery to ensure to every individual a standard of life adequate for the maintenance of health, so organizing these benefits as to enable every citizen to realize his birthright of health and longevity.¹

Health promotion is a joint and interrelated enterprise. Any activity that is undertaken for promotion of health of the individual benefits the community. Similarly any activity that is undertaken on a community basis for health protection of all people ultimately benefits the individual and the family.²

Health promotion and preservation, therefore, is considered as sound national investment which requires a properly co-ordinated, coherent and economic approach. Public health measures are essentially economic measures where human capital is regarded as a fundamental economic asset.

Planning

Since urbanization is a social and economic evolutionary process of a nation, it should be considered in the context of a national development plan. From the public health standpoint the planning of an urban health

¹ This paragraph is based upon an early definition by C.-E. A. Winslow.

² This paragraph is based upon a concept of Smillie, W. G. (1952) *Preventive medicine and public health*, 2nd ed., New York.

service should constitute part of the national health planning, which in turn is part of the over-all national social and economic development plan, for no public health programme can be planned *in vacuo*.

The ultimate beneficiary from the public health services is the individual in the family in a neighbourhood. Thus, while there is a need for the over-all centralization of planning there is also a need for decentralizing planning and execution of programmes in major cities to encourage initiative and participation at all levels.¹

The planning of public health services has been reported upon in detail in the fourth report of the Committee² and most of its conclusions were found to apply also to health planning in urban areas.

The Committee, however, felt that the special conditions prevailing in such areas raised problems which needed further detailed consideration.

In a number of countries planning for urban areas has preceded any other form of planning. Such planning has been essentially the responsibility of architects and town planners, and mainly limited to the urban area or its immediate surroundings.

Modern urbanization trends and the recent advances in technology, as well as the development of economic or over-all national plans, have created the necessity for a comprehensive team approach in urban planning. Urban planning needs to be related to national and regional plans when they exist.

The United Nations Expert Group on Metropolitan Planning in its report³ has called special attention to the need for the establishment of regional plans, particularly in relation to the problems and needs of rapidly urbanizing areas.

Such regional plans should define all the economic aspects and trends of economic development of a given region ; the steps for their realization ; the principles governing distribution of population, industries, services, land uses and housing developments.

Plans for urban areas are established within the broad principles set down by national or regional plans, and define in detail the use of land, its equipment, the types of buildings, the distribution of services, etc.

Urban planning is not a static but a dynamic process, and plans should be established on a long-term basis. There is need, however, for continued revision and adaptation to the evolution which inevitably takes place in the urban environment from year to year.

¹ Domke, H. R. (1962) Public health in the metropolitan setting. *Publ. Hlth Rep. (Wash.)*, 77, 383.

² *Wld Hlth Org. techn. Rep. Ser.*, 1961, 215.

³ United Nations Expert Group on Metropolitan Planning (1961) *Report...* (Unpublished mimeographed document : Conf. Doc. No. 32), New York.

Planning is an absolute necessity in countries with limited financial and personnel resources, particularly in view of the need to establish a logical sequence of priorities for the development of services.

While there are advantages in delegating responsibility for planning to local authorities in order to avoid the errors of over-centralization, there is also a need for co-ordination of the various local plans and for close co-operation between the staff responsible for their implementation at all levels. This problem (as noted elsewhere in the report) is particularly important in urban fringe areas. Vertical co-ordination between various levels of administration needs to be developed concurrently with horizontal co-ordination between the various types of services. Town or metropolitan planning is not mere civic design or town beautification, but has to deal with much larger problems of individual and collective welfare. Thus it is not the responsibility of architects and planners alone, but must be the result of collaboration between many differing disciplines. Engineers, economists, administrators, public health experts, sociologists and others have their part to play, but the role of the health authorities is one of capital importance in view of their responsibilities for the preservation and improvement of the health of the population.

While stressing the need for adequate inter-disciplinary planning, the Committee emphasized that efforts in this direction should not constitute a deterrent to continued action by the health services to deal with existing problems and to plan for possible emergencies. An example of the positive role which can be played by the health authorities can be found in countries with a centrally planned economy where the health administration participates fully in the establishment and implementation of urban development plans and is given full responsibility for the control of all urban activities which may influence health conditions of urban populations.

Zoning is an essential element of urban planning, particularly with regard to the development of industrial and residential areas, the location of community services, and the creation of parks, green areas and free spaces which are essential to the healthy development of towns.

The location of industries offers particular problems of nuisance, through noise, fumes and pollution of water and soil which need to be taken into account.

The Committee was aware that it is not commonly recognized that public health services have a positive contribution to make in the planning of land uses with particular regard to supply, disposal and pollution problems, and the development of well-distributed health services for the creation of a healthy and congenial environment.

Such contribution is possible only if the closest association of the health staff is secured before the zoning process is undertaken.

Integration of health services into the over-all urban plan needs to be given attention, whatever the level of planning or the degree of urbanization.

While there is often an advantage in centralizing special types of services such as research institutions, public health laboratories and emergency services, there is also a definite need for the adequate distribution of preventive and curative institutions and centres, so as to ensure the availability of services to the population when and where it most needs them.

Planning must be based on facts. There is a need for sound research and statistical background which will not only permit an assessment of the existing situation, but also furnish some indication of future trends.

It was apparent to the Committee that in order to assess existing needs accurately and to plan realistically for the future, priority should be given, at the national and at the local level, to technical studies and surveys which would produce the factual information on which present needs should be assessed and future planning and evaluations based.

The Committee was of the opinion that the subjects listed below were *inter alia* worthy of consideration in this connexion :

- (1) the availability of water resources to meet the immediate and future needs of metropolitan areas ;
- (2) studies to determine the reception capacity of pollution of existing water bodies ;
- (3) investigation into the possibility of local production of materials and equipment needed in sanitation works ;
- (4) further studies of air conditions in urban areas to detect trends, and the need for public health programmes of air pollution and control ;
- (5) the effects on human beings of increasing low-frequency noise in urban areas ;
- (6) the influence of water and sewer connexions on the incidence of water-borne diseases, including cholera and typhoid ;
- (7) the relation of water charges, use of water and family income ;
- (8) the criteria for the fixing of priorities in capital investment for environmental sanitation and public health works.

Other studies which could be developed are :

- (1) evaluation of available birth and mortality statistics ;
- (2) collection of morbidity data ;
- (3) assessment of the prevalence of certain major endemo-epidemic diseases ;
- (4) study of epidemics, e.g., influenza, poliomyelitis and other virus infections ;
- (5) assessment of the availability and utilization of preventive and curative services—public and private ;

(6) study of incidence of road accidents and the efficiency of emergency health assistance services ;

(7) investigation of the possibility of using new techniques under local conditions ;

(8) study of existing programmes of health education and their acceptance by the public, with a view to evolving suitable techniques for mass communication.

In planning for health services the following broad principles should be observed :

(1) they should be comprehensive in nature, integrating curative, preventive and promotive action ;

(2) they must be universally available and financially accessible to the population ;

(3) there should be a continued evaluation and adaptation of the services ;

(4) public participation must be encouraged.

In formulating the patterns of the services and in deciding priorities, consideration needs to be given to :

(1) the demographic character and rate of growth of the population and its distribution in the urban and peri-urban areas ;

(2) the social and economic development of the people, and the lack of early adaptation on the part of the migrants to established local conditions ;

(3) the need for future extension and expansion of services, as the population grows and the city expands territorially, and as industries and settlements develop ;

(4) the need for co-ordinated and joint action not only by neighbouring civic authorities but also by interservice departments and divisions and governmental and non-governmental agencies ;

(5) the changing patterns of disease with the economic and social progress of the people ;

(6) the adequacy and availability of men, materials and money ;

(7) the local needs, and particularly the needs of special groups and areas ;

(8) the degree of support from political and higher administrative sources and from the public ;

(9) the evolution of the functions which the local health organization may be required to discharge.

Most of these studies and activities described above can best be carried out if permanent statistical machinery is established to collect and elaborate fundamental information on a continuing basis.

The Committee was of the opinion that such investigations should lead to the establishment of basic norms for the various branches of health services at the national or at the city level. Such norms would vary according to the local conditions, depending on availability of staff, financial resources and land, and a number of additional considerations. They would define in quantitative terms the services to be provided by the health administration in the environmental sanitation and health fields. Thus it would be possible to indicate *inter alia* the minimum amount of water which should be supplied per head, the relation between services such as health centres, hospital beds, preventive services and population density. Detailed building norms could be established for certain types of services such as health centres, general hospitals and pharmacies, while broad guiding principles would be sufficient in most cases to regulate the construction and work of other institutions such as specialized hospitals, homes for the aged, and research and training establishments.

In all countries facing a need for rapid development of basic curative and preventive services, considerable financial and operational advantages will accrue from architectural standardization of certain types of buildings, e.g. health centres and curative establishments. Such norms must be developed in close co-operation between architects, the public health authorities and representatives of the staff who will ultimately work in these buildings.

Building and siting norms must be fully co-ordinated with the urbanization plan so as to ensure proper integration of the health services in urban expansion and development.

Norms may be indicative or statutory. They need to be revised periodically in the light of experience and technical progress. In certain countries special institutions have been made responsible for their elaboration and revision.

The existence of specific siting norms for the health services may prove of great advantage in securing proper administrative action for the reservation of public land and financial allocations.

ENVIRONMENTAL SANITATION

Since many of the health problems of urbanization are the direct results of overcrowding, poor housing and unsanitary living and environmental conditions, a programme for the development of proper housing, water supply and sanitation should receive high priority in the planning of services for an urban community.

The Committee emphasized that good environmental sanitation constitutes the foundation on which urban health must be based. Insufficient attention or consideration given to environmental conditions, either in new developments or in the day-to-day administration and maintenance of existing services, inevitably affects public health adversely.

The Committee therefore wishes to draw attention to the advantages inherent in creating a special division within the health department to deal with matters of environmental sanitation, and recommends the establishment of such a division staffed with competent and suitably qualified personnel, such as health inspectors, sanitary engineers and sanitarians.¹ Where such divisions do not exist, the supervisory functions of the environmental sanitation division should be included in the general functions of the health department under the general direction of the medical officer of health.

The functions of the environmental sanitation division should be promotive, advisory and regulatory. Desirable and attainable environmental health goals should be set and promoted. The division should elaborate minimum standards for maintaining good environmental sanitation conditions, and should take steps to ensure compliance with such standards. The division should participate in all stages of urban and regional planning to ensure that proper consideration is given to the environmental sanitation consequences of such planning.

The services of this division need not be restricted within the boundaries of the urban area. As indicated elsewhere, the consequences of poor environmental conditions in fringe areas and shanty towns are not restricted to such areas; they are sooner or later introduced into the central areas, thereby reducing the effectiveness of the environmental sanitation provisions in that area itself. It follows that the urban areas cannot derive the full benefit from such services unless the basic services (discussed on pages 15-18) are available in the fringe areas as well. The Committee wishes to draw attention to the advantages to be gained from the incorporation of the basic environmental sanitation facilities of such areas into the long-term planning of the urban areas—namely, by the close co-ordination of plans established for contiguous areas. In this connexion, the Committee is fully aware of the financial, administrative and other difficulties involved.

It is universally recognized that water is essential for urban development. There are, in addition, two other basic environmental sanitation needs: the first group includes drainage, sewerage, sewage and night-soil disposal; the other includes refuse collection and disposal. These three, then, constitute the basic essentials in environmental sanitation. Not only should

¹ The Committee has adopted the terms "sanitary engineer" and "sanitarian" fully mindful of the fact that different professional arrangements exist in different countries.

these essentials be provided in every urban area, but also every attempt should be made to extend them to the fringe areas and shanty towns.

There are a number of other important matters which come within the purview of the environmental sanitation division of an urban health department, but their inclusion in the activities of the division will, however, depend upon such factors as size, population density, extent of industrial activities, climate, type of community, and culture, prevailing in the area.

The role of an environmental sanitation division in regard to the three basic essentials can be summarized as follows :

Water supply

The provision of water for domestic and industrial purposes is often the function of a special body, governmental or private. The Committee, recognizing the importance of an ample supply of wholesome water for the proper maintenance of health, considers that the following activities should be the responsibility of an environmental sanitation division in regard to water :

- (1) the promotion of activities to ensure an adequate supply of wholesome water to the public ;
- (2) the formulation of chemical and bacteriological standards of potability ;
- (3) approval of new and existing water schemes ;
- (4) the sanitary control of the production of public water supplies ;
- (5) the sanitary control of the quality of public water supplies ;
- (6) the operation or control of public water laboratories.

Drainage, sewerage, sewage and night-soil disposal

The Committee considers that proper drainage, sewerage, sewage disposal and night-soil disposal constitute an important means of interrupting transmission of enteric and a number of other water-borne diseases. These services may or may not be operated by the health department itself, but their sanitary control should be the function of the health department. Such control measures may include the following :

- (1) the formulation of standards for sewage and night-soil disposal ;
- (2) regulation to ensure compliance with standards ;
- (3) sanitary control and approval of new and existing sewage treatment and disposal systems ;
- (4) sanitary control of the maintenance of sewerage and sewage treatment plants ;

- (5) sanitary control of collection and disposal of night soil ;
- (6) sanitary control of drainage, and regulation to avoid the creation of swamps or stagnant waters detrimental to health.

Refuse collection and disposal

The proper execution and control of this service produces not only acceptable aesthetic effects, but also prevents fly-breeding and discourages rodent infestation. The service itself can be provided by a municipal or a private organization, but sanitary control must be the function of the public health department. Such control may embody: (a) the formulation of regulations to ensure adequate and proper collection and disposal ; and (b) supervision of the adequacy of operations and of compliance with the regulations.

The Committee wishes to draw attention to the need to make adequate preparation for preventing or combating the harmful effects of industrialization in urban areas ; in this connexion the trends of urbanization will necessitate the setting-up of a proper organization and standards for the control of air pollution, noise, stream and river pollution, and the disposal of offensive and dangerous trade wastes.

The environmental sanitation division should be concerned with the public health aspects of the following projects :¹

- (1) water supply ;
- (2) drainage, sewerage, sewage and night-soil disposal ;
- (3) refuse collection and disposal ;
- (4) housing ;
- (5) town and country planning ;
- (6) arthropod vector and rodent control ;
- (7) sanitation of markets, abattoirs, food processing industries and eating-places ;
- (8) food, meat and milk inspection ;
- (9) air pollution control ;
- (10) noise control ;
- (11) protection against the pollution of streams, rivers, public bathing- and swimming-places ;
- (12) control of radiation hazards to health ;
- (13) sanitation of public institutions, recreational places and camps ;
- (14) control of offensive trades and wastes.

¹ Revised list based upon that in the fourth report of the Committee (see *Wld Hlth Org. techn. Rep. Ser.*, 1961, 215, 27).

The Committee wishes further to emphasize the role of the urban health authority in the fields of housing and food hygiene.

In its first report the Expert Committee on Public Health Aspects of Housing¹ identified "housing as a complex process involving phases of public health, planning, architecture and engineering, economics and finance, cultural and social traditions, government and behavioural sciences, so intertwined with one another that it is difficult to isolate a single element for study, analysis and discussion" (page 7). The same report further pointed out that "housing is a part of the total environment and, being a part, it is to some extent responsible for the status of man's health and well-being" (page 11). The urban health authority, therefore, has a definite and important role in housing, which role can be summarized as follows:²

- (1) the evaluation of sanitary quality of the residential environment and its housing conditions ;
- (2) the initiation of a programme for removing or remedying the hazardous conditions ;
- (3) measurement of effectiveness of remedial measures ;
- (4) health education of the public to encourage healthful habits of living ;
- (5) advice to governmental agencies on their responsibilities in creating and maintaining hygienic conditions in the residential environment ;
- (6) assistance to the physical and social planners in the development of plans for new or improved housing ;
- (7) introduction of measures to obtain compliance with performance standards based on human requirements and public health needs in the construction and reconstruction of buildings ;
- (8) the establishment of machinery for ensuring that housing is adequately, safely and hygienically maintained, and is occupied in accordance with the legal requirements of the area.

The fourth report of the Expert Committee on Environmental Sanitation³ stressed the effects of bacterial and chemical contamination of food on public health. The Urban Health Authority has an important role to play in this respect. Details of the organization required for fulfilling this role will vary from country to country depending on the stage of development. In general, however, the following items of control were stressed in that report and are endorsed by this Committee :

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1961, 225.

² Based on the recommendations made in the report of the Expert Committee on the Public Health Aspects of Housing referred to above.

³ *Wld Hlth Org. techn. Rep. Ser.*, 1956, 104.

- (1) primary consideration must be given to establishing simple and effective programmes for the sanitary supervision at all stages of foods most commonly found to have carried disease, such as milk and milk products, meat and meat products, poultry and eggs, and fish, including shellfish ;
- (2) clean food handling ;
- (3) the detection and prevention of improper use of chemicals, additives and colouring materials in food establishments ;
- (4) control of vermin and rodents in establishments where food is produced, stored and served ;
- (5) health education of the public and of the food industry ;
- (6) establishment of effective legislation to secure proper observance of hygienic practices ;
- (7) co-operation with other agencies which deal with food, e.g., nutrition workers, food industries, agriculture.

ORGANIZATION OF CURATIVE AND PREVENTIVE SERVICES

The fourth report of the Committee gives a comprehensive list of services that directly or indirectly come within the scope of health programmes.¹ This Committee has not attempted to carry out a comprehensive review of the curative and preventive services of urban areas but has limited its discussion to certain special items more characteristic of urban conditions.

The urban situation creates special conditions and problems in the organization of medical services. Most of the large hospitals and a majority of the specialized services are usually located in the larger urban areas, creating special problems of co-ordination while offering the best available services in each country.

The presence of universities and other establishments of higher scientific and medical education is also a factor in strengthening public health services and developing health consciousness in the population.

It is obvious that not every city can, at present, have all necessities for satisfying fully the health requirements of its inhabitants. While these are being provided gradually, there is a simultaneous growth of the city with an increase in its population and the development of industry and trade which, in turn, create new demands on the public health and community services.

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1961, 215.

Urbanization also leads to the occurrence of special medical problems. Increased traffic leads to a rising number of accidents, and population increase brings about a rising number of emergency cases requiring immediate medical assistance. This has led to the organization of special emergency services in certain larger cities, whereas in other towns adaptation of the existing basic services has proved sufficient. In some cities, however, there is still a serious problem of organization of the emergency services which requires further study and improvement.

To extend the network for emergency assistance special transport units can be set up, with ambulances equipped with radio communications and other technical devices in addition to the normal basic medical equipment, and a focal point for the centralization of all emergency calls can be established. There is a trend towards providing ambulances with special equipment to enable certain medical procedures and operations to be undertaken in the ambulance itself.

The concentration of curative services in urban areas and the greater hazards of urban life also increase the need for special types of medical assistance such as blood transfusion services, storage of blood, and manufacture of gamma globulin and dry plasma. Such programmes need considerable help from the public either directly or in co-operation with voluntary organizations and community groups. The participation of such organizations can also be very helpful in combating endemic and epidemic diseases and in furthering the dissemination of health knowledge and education among the population.

Control of communicable disease

As mentioned on page 6, the concentration of population in urban areas favours the spread of infectious and communicable diseases. Thus, their control constitutes a major responsibility and sphere of function of an urban health authority, in both the developed and developing countries, and should be accorded high priority in the list of services to be provided for the population.

An effective immunization programme is necessary. The work must be planned systematically to include all vulnerable age-groups in the population, and special care must be taken to include in the programme the inhabitants of fringe and peri-urban areas. In addition, particular attention must be paid to migrants and other special groups. Immunization must be co-ordinated with the maternal and child health, school health, and industrial health services, and may be carried out in collaboration with local medical practitioners and voluntary organizations.

An effective communicable-disease-control service should include arrangements for efficient reporting and epidemiological intelligence and surveillance work backed by the facilities of a properly organized public

health laboratory. Under certain circumstances it also becomes necessary to have adequate institutional isolation and treatment facilities to deal with epidemics such as smallpox and cholera.

With the growing appreciation of the value of domiciliary medical care in the control of tuberculosis, leprosy and other conditions such as venereal disease, and in view of the paucity in many areas of institutional or hospital facilities, there is a need for properly organized clinics and domiciliary services. Wherever they exist, the services rendered by voluntary associations and organizations should be enlisted and co-ordinated in the over-all programme, particularly in respect of rehabilitation, after-care and social assistance to the patients and their families.

Care of mothers and children

Malnutrition, poor housing, overcrowded living conditions and unsanitary surroundings exert their harmful effects, particularly on the health of mothers and children, who constitute highly vulnerable groups among the urban populations. In many of the developing countries inadequate facilities are available for maternal and child care. Special services should be organized through health centres or clinics, where provision can be made for registration, education, ante-natal and post-natal care of expectant mothers, and for infant care. Often the lack of facilities and accommodation at home creates greater need for institutional confinement. This, coupled with the rise in the population, taxes the resources of the maternity and general hospitals in cities in a number of countries to the utmost and has, at times, resulted in gross overcrowding and poor standards of care. A proper appraisal is called for of the needs of the community and judicious planning of the distribution of hospital and maternity beds, integrated with a well-co-ordinated domiciliary midwifery service to provide maximum coverage for the area.

Care should also be taken to include within the scope of these services the needs of pre-school-children. To meet the needs of this special group the maternal and child health services must be linked with paediatric units or hospitals, nurseries, playgrounds, recreational and educational facilities; co-operation with the existing social welfare services should be close.

School-age children in most developing countries comprise nearly a quarter of the total population of a city or urban area. Services for the health care and welfare of the schoolchild must therefore be given high priority in all urban health programmes. Modern cities, with their overcrowded school classes and often unplanned buildings, lack of open space, parks, playgrounds and recreational facilities, the frequent obligation of living in hostels or boarding accommodation, the congestion and noise,

coupled with the lack, due to high prices, of milk, vegetables and other essential foods, give rise to great risks and hazards to the health of school-children. This is the period of life when individuals begin to seek for companionship in groups, and when susceptibility to disease, accidents and disabilities is high. It is also an age when body and mind are most receptive and malleable. The health care and education of this group is a sound investment for nation-building and future citizenship.

Nutrition

Undernourishment and malnutrition, with their train of deficiency diseases, are serious problems in most urban areas in the developing countries. Poor diets and inadequate nutrition are not always dependent upon the production and availability of the right types of food, but often follow inadequate knowledge, and special beliefs of people about diet and foods. Most of the nutritional problems existing today could be largely prevented if, together with effective health education programmes, adequate supplies of the right foodstuffs were available at a price within the reach of the average lower-income group of the population, accompanied by satisfactory handling, storage and distribution arrangements.

As already indicated, properly organized and functioning maternal and child health services can greatly contribute to improving the nutrition of mothers, infants and young children—the most vulnerable groups—in the urban environment. Such action not only can reduce morbidity and mortality but also promotes a state of physical and mental well-being favourable to sound growth and development of the population.

Mental health

Although there is little factual evidence indicating a higher incidence of mental disorders among city dwellers as compared with those in rural areas, work carried out in different countries seems to indicate that this may prevail among migrants and other special groups in an urban society.¹

Mental disorders often follow the stress and strain associated with loss of family contact, a sense of loneliness or isolation and neglect in the individual. Physical disorders are also predisposing factors.

Mental health services in an urban area should have a comprehensive approach, based on the family, involving collaboration between the public health services, the medical profession, police, judiciary and educational authorities, social welfare and voluntary organizations.

¹ Lemkau, P. V. (1955) The epidemiological study of mental illness and mental health. *Amer. J. Psychiat.*, **111**, 801-809.

Health education

Health education is not mere instruction in health matters but includes also those activities which are likely to influence favourably individual knowledge, health attitudes and sound habits and practices. The Committee felt that there is a need for a properly staffed health education unit in the health department of the larger municipalities to carry out health education and to disseminate information among the people. Such a unit would also have responsibility regarding hygiene and health education of schoolchildren and would take part in teachers' training programmes. The officer in charge of the section should be full-time and advise the medical officer of health on the health educational aspects of the city health programme. He would be responsible himself for developing health education programmes, investigating problems and for training various categories of professional and technical staff.

Health statistics

Demographic and health statistics form the basis of all health research, planning and programme administration. In most of the developing countries, the administration is handicapped by the lack or inadequacy of such statistical data. The Committee was of the opinion that the establishment of adequate machinery for the collection and compilation of demographic and health statistics is essential to the development of satisfactory urban health services.

LEGISLATION, ADMINISTRATION AND FINANCE**Legislation**

In order that urban health services may function in an efficient and satisfactory manner, it is necessary that the proper legal backing is available. It is not possible to administer services which are financed by public fund, and which may on occasion be concerned with coercion of the individual, the public or one section of it, without the necessary laws, ordinances, and regulations made and agreed by the appropriate governing body. Legislation also must lay down minimum standards to be adopted for use by the health services, if satisfactory levels of housing conditions, sanitary and water purification standards, etc., are to be attained and maintained. These standards will naturally vary from one country to another, according to the various factors which obtain.

The public must be protected against the sale of unsafe food, and from environmental conditions liable to be prejudicial to health.

Generally speaking, the qualifications to be held by the various officers of the public health service are prescribed by statute in order to ensure that officers of sufficient knowledge and experience hold appointments. It is the Committee's opinion that adequate health services will only be obtained when these officers and their staff have the full backing of legislation and are given publicly the necessary support and confidence of the higher political and administrative authorities and so are in a position to carry out their duties efficiently and without fear of loss of office.

Administration

Few aspects of urban health services are so important as administration, that is, getting the work done from day to day and month to month. Without effective administration the whole effort may become fruitless.

In the Committee's view, the administration of public health services in the modern State involves six major factors :

(1) The adoption of a clear national or State commitment to protect all the people against the hazards of disease, especially communicable disease, to prevent needless suffering, and to help the people to live and enjoy healthful lives. This requires specific constitutional or statutory action by the highest executive and legislative authority of the government. The commitment of the government to health by fundamental law is a right of the people in every land.

(2) The creation of suitable administrative cadres within the central government and within each of the major urban areas, or such local governmental institutions as are provided for other purposes, in the country in question. This also requires formal legislation, or orders, which will create the machinery of government, both central and local, define the responsibilities and the commensurate powers of the respective officers, make provision for the issuance of public health rules and regulations which have the effect of law binding the conduct of both the public and of officials generally, and provide for the financial support of the health services.

(3) The appointment of trained manpower to carry on the necessary public health duties, enforce the required regulations, educate the people, keep a close eye on developing health problems and be at all times ready to deal with emergencies in the health field. This requires not only recruitment of qualified staff of all grades, but also the training of such personnel, especially where they are in short supply.

(4) Definite financial provision for the support of the health programme. This will involve appropriations in the annual budget as well as the allotment of funds in the capital budget for health centres, hospitals, clinics,

training and research institutions, etc., and for public health works of all kinds when they are the responsibility of the health authorities.

(5) The direct participation of senior public health executives in the preparation of national economic plans, annual and capital budgets, and from the very beginning, in the formulation of all large development schemes, such as new towns, large housing projects and industrial ventures. Similarly, at the local or regional levels of government, local public health authorities should be required to take part in developing all such programmes and projects as will affect housing, water, sanitation, zoning, execution of major public works, recreation and open spaces.

This will require specific legislation to impose these duties on the responsible public health officials, and to entitle them to serve on the appropriate boards and committees of the central and local bodies which are, by law, entrusted with the planning function and with the making of the decisions as to the location of new capital investment projects of the government.

(6) The provision of a continually developing series of direct contacts between the public health administrators and staffs and the public generally. There are three major purposes to be served by such close contact between the public health administration and the people. One is the education of the people in health and hygiene so that they may progressively understand their own health needs and develop continually better habits of personal and community living, and bring up the next generation to expect and live by higher standards. A second objective is to arouse intelligent co-operation on the part of the public and of those at whom the regulations are aimed. Understanding and co-operation not only make administration less costly (for the government), but greatly increase the effectiveness of the various programmes. The third objective is to bring public health administration directly into line with the changing needs and desires of the people for whose benefit the programmes are established. Close contacts and free exchange of ideas not only benefit the public but are also essential for the officials. A major reason for the assignment of real responsibilities and authority to local health administrations and to local governments, to local offices and centres, is to encourage such close collaboration between professionals and public at every step.

As already indicated, the Committee was fully aware of the fact that the machinery for urban health administration will differ from country to country and from time to time. Even highly advanced countries with well-developed structures of health administration may need to analyse their structures and procedures to make certain that they are using each of the principles listed above to the best advantage, especially in connexion with the developing health requirements of their rapidly growing urban concentrations.

In the newer nations, and in new and old countries which are experiencing rapid urbanization and industrialization for the first time, special attention must be given to each of the six administrative standards noted above. In most of these countries, trained personnel are in short supply. The Committee was of the opinion that in such cases it is necessary to concentrate such manpower in the central government and in a very few major urban areas, and to develop autonomous local health administrations at a later time.

In such countries also, public health officials and public health knowledge must be firmly woven into the planning process to prevent costly and dangerous errors in the location of major industries and the development of new towns and other large investment schemes.

An administrative problem of peculiar complexity arises in the fringes of rapidly expanding cities. In some cases, the suburbs are made up of upper-income groups who have sought the "open country" even though they commute daily to their work in the city. In other cases, the fringe development is dominated by factories and other economic activities which are excluded from the city, or need large unbroken plots of ground for their plant. In still other situations, the fringes are dominated by very-low-income groups, including recent immigrants from the rural areas, who cannot find room or housing which they can afford in the central city, especially while they are looking for work, much of which is marginal and intermittent at best.

While the problems of policy and administration presented by these three types of fringe development are difficult enough in themselves, they are greatly complicated by the fact that the suburbs generally lie beyond the jurisdiction of the officials and technical authorities of the central city area and fall in territory which, in many cases, has never had, and does not now have, services and controls comparable to those of the urban area. As a result, the fringe areas may develop without restraint or design of any kind, with competition for scarce water resources, with the careless handling of wastes and sewage, with housing intermingled with noxious industries, and squatter shanties on every available piece of no-man's-land, without water, sewerage, drainage or fire and police protection. Even in the wealthiest suburbs, driven wells and private septic tanks may proceed to destroy each other, as soon as density passes a critical point, defined by geographic factors which the individual by himself is powerless to assess, but which a technician can measure and predict with a high degree of accuracy. The governmental authorities with jurisdiction over the fringe areas often do not have such staff at their command, and generally overlook the need for vigorous controls, in part because they are short of funds with which to finance such activities, or otherwise unprepared to take action. Even in well-developed countries, the control of urban fringe areas often presents an administrative problem, even where the

services of the rural area concerned are relatively efficient and well maintained.

The combination of these factors in the fringes of the exploding urban areas thus creates administrative and governmental problems of the deepest significance for the healthful and orderly development of the great cities. In the section on planning the Committee has emphasized the need for research bearing directly on the public health problems of rapid urbanization and industrialization. Certain of these studies will deal with problems of administration, finance and operation as well. These studies will also require the provision of administrative structures to which are assigned the responsibility for research and the provision of financial support for the work.

Financing metropolitan public health and sanitation services

Funds devoted to health programmes are generally considered as funds for "consumption". To the extent, however, that health services stimulate an expansion of the human output in the manner of fixed productive capital, outlay on these services should be regarded by the planning authorities as on a par with investment. The application of modern techniques in this field is not necessarily cheap, and sufficient capital investment is needed. It is an investment which not only pays dividends from the economic standpoint, but also provides the necessary requirements of a modern human society basic to any national development. Investment for the development of public health services in the economically less-developed countries is an important policy decision to be made by the government. It is the responsibility of public health administrators, and particularly of those concerned with planning, to convince their governments of the need for adequate funds for health services and to assure them of the value of health work in relation to national development programmes.

As indicated above, the cost of the actual needs and the calendar of investments for future expansion must be regarded as one of the main items of national, regional and urban planning and, taking into consideration the size of investments needed for the construction of the public health infrastructure, particularly water supply and sewerage systems, there is a definite need for representation of the public health services at the various levels of policy and decision-making committees dealing with economic, social, financial and co-ordination problems.

Early definition of a programme of orderly development for a town will enable the administrative authorities to organize the financing of the necessary public works which must be executed according to an established time-table, so as to avoid the difficulties encountered today in nearly all urban centres throughout the world due to a time-lag in the solution of the basic problems of housing, water supply and sewerage, which, at the present

time, is difficult to overcome owing to the size and cost of the undertakings. The Committee therefore feels it necessary to call the attention of the responsible health authorities and, through them, the attention of national and local administrations, to the need for the establishment of long-term financial plans for the proper development of urban and peri-urban programmes in the fields of health and environmental sanitation.

Such development plans may be implemented directly by the central government and financed as one of its activities within the regular budget or by means of loans from local credit institutions or from external sources. In other cases they may be carried out by municipal action through their own resources or by obtaining partial technical and financial help from the State or central government. In this latter case it might be possible that external capital will be needed.

In connexion with this "mixed finance" for long-term programmes in sanitation, serious problems may arise if the amount of hard currency needed to import material and equipment and, later, to pay interest and amortization of the loan is not considered as part of national financial planning.

The Committee feels that in view of the basic importance of securing adequate and safe water supplies and of the increasing costs involved, water services should be organized, wherever possible, as self-liquidating undertakings raising the revenues by the sale of water, direct appropriation or a combination of both. Such revenues should cover, as far as possible, all operating and maintenance expenses and should make due allowance for depreciation, interest and amortization on the initial capital expenditure.¹

In order to ensure the complete financing of plans with respect to local and foreign currency, when this latter is needed, it is necessary to take the proper action in order to include these plans as a component of the total national plan of development and investment, and earmark sufficient foreign currency for the public health and sanitation plans as an item requiring a high degree of priority.

By doing this it should be possible to remove the principal obstacle to the development of basic sanitation in many of the underdeveloped areas of the world.

CONCLUSIONS

Summary of major findings

Urbanization is now proceeding in all countries of the world under the powerful impact of economic and technological forces, stimulated by active human demand and a new easy mobility. We recognize that urba-

¹ Wagner, E. G. & Lanoix, J. N. (1959) *Water supply for rural areas and small communities* (World Health Organization : Monograph Series No. 42), Geneva.

nization runs hand-in-hand not only with industrialization and its increases in productivity and national income, but also with a substantial increase in living standards and increased opportunity for enjoyment, individual ambition, and freedom. As a result, the Committee is certain that the explosive growth of towns and cities has not run its course, but will continue for the foreseeable future. Thus, the problems of the new urbanization, faced alike in the developed countries and even more spectacularly in the newer and less developed countries, are now at their beginning, not at their end. If anything, the tempo of development will be speeded up during the immediate future. It is thus important not only to understand what is happening to mankind, but to take action in advance in each country so that the difficulties and dangers of rapid mass urbanization can be controlled, and the benefits and advantages which mankind seeks through urbanization may be fully and economically realized.

At the head of the list of possible disasters and human suffering in urban development which can be avoided by action now is a low level of public health. There is no natural law which condemns man in urban areas to live in squalor, disease, danger, noise, bad air, and indecent crowding.

The Committee rejects the inevitability and continuation of adverse urban development, and states categorically that present technical knowledge and administrative experience, fully applied, is now adequate to meet the developing situation in the urban areas as far as health, hygiene, sanitation and housing are concerned.

Not all the difficulties of urban expansion can be cured by a solution of the health problems. Such matters as employment, transportation, education and other related social and economic problems are also involved. But few of these can be effectively managed unless the environment is wholesome and the people are endowed with health and vigour. Thus modern health services and effective sanitation are indispensable. They are, moreover, a basic human right.

The Committee is aware that the serious lack of financial resources and trained manpower which obtains in many of the developing countries is a considerable obstacle to the solution of urbanization problems. This notwithstanding, it feels fully justified in insisting that the matters of health and sanitation must never be ignored, given a low priority, or left to decision by those who have neither competence nor concern for the health of the people. Action to improve public health progress has frequently served as a model for other improvements and even for new administrative patterns of metropolitan government.¹

Many of the health problems of expanding cities cannot be dealt with effectively within the geographic limits of the city itself. To the extent that

¹ Domke, E. R. (1962) Public health in the metropolitan setting. *Publ. Hlth Rep. (Wash.)*, 77, 383.

these problems are related to rural migration, the health and sanitary habits and conditions of the rural populations have a direct impact on the urban situation, and modern health programmes in the rural areas are needed as a protection of the expanding cities, as well as for the benefit of the rural population itself.

In those countries where migration to the city is now stimulated by poor conditions and lack of opportunities in the rural and small town areas, a national programme designed to upgrade rural and village life may serve also to dissuade an undesirable and premature mass shift of unemployed and unprepared population to the already overcrowded cities.

A further urban problem, which falls outside the central cities, is found in the expanding fringe areas of these cities. Whether these suburbs be wealthy settlements, factory developments, or shanty towns, they tend to develop beyond the reach of central city controls and inspections, and too often beyond the influence of any controls whatsoever. Even where controls are developed by the appropriate rural or suburban authorities, the division of responsibility as between the central city and its fringes can cause difficulties. In some countries, in the suburbs the foundations of future slums are thus being inadvertently laid.

The Committee therefore concludes that the major problems of the expanding urban centres, especially the broad questions of environmental sanitation, of mass migration, and of the fringe relations with the cities, are not local problems as such, but are regional and national in character. There can be no solution of these problems without the direct participation of the central or provincial authorities.

Rapid urbanization and the concentration of large aggregations of human beings in larger and larger metropolitan complexes is a worldwide phenomenon; there is every reason to expect this tendency to continue for the foreseeable future. This pattern of human settlement greatly accentuates the major problems of public health; these problems, though of local primary concern, cannot be dealt with in all their aspects effectively by local authorities. Urban health problems are therefore a national responsibility of high priority. Furthermore, the problems of health and sanitation and unwholesome housing, which are an increasing urban scourge, are man-made and are the direct result of neglect, ignorance and weak administration. What is required is a determination to take action and the implementation of the well-tested steps which this decision will involve.

The following recommendations are presented to show the way.

Summary of recommendations

In the body of this report the Committee presents no less than 200 specific recommendations and suggestions designed to indicate how national governments, and urban or other local authorities may deal with the increas-

ing problems attendant upon the rapid development of urban concentrations. The major part of these recommendations is directed to the public health officials, sanitary engineers,¹ and planners, national and local, who are currently most directly involved in coping with urbanization problems.

Major recommendations are summarized below, and reference should be made to prior sections of this report for amplification and for fuller elaboration of the analysis upon which the recommendations are presented.

Matters of national policy

(1) The Committee recommends that the national or provincial government, or both, take formal action—if this has not already been done—to proclaim that the health, sanitation and housing problems of the expanding urban areas are overriding national and regional responsibilities as well as local responsibilities, and indicate in outline how these joint duties will be divided and financially supported.

(2) The Committee recommends that national long-range plans take special cognizance of the needs of the major urban areas, especially for water, sanitation and housing requirements.

(3) The Committee recommends that national plans and agreements for apportioning international exchange include specific provision for the water supply, sanitation and housing requirements of the appropriate national and regional plans of the urban areas.

Matters of planning

(4) The Committee recommends that public health, including sanitary engineering, be recognized as an indispensable participant in the planning process throughout the structure of all public authorities.

Professional competence in health, hygiene and sanitation are essential in the process of making national, regional and town plans. The final decisions must be arrived at by weighing the claims of many interests, with the full application of the best thinking of budget and fiscal experts, economists, engineers, lawyers and administrators, educators, social scientists and social workers, agriculturalists, transport experts, and other technologists and scientists. Health and sanitation must be a major partner in any planning process, and in the decisions which follow from such plans.

(5) The Committee concurs with the recommendation made by the United Nations Expert Committee on Metropolitan Planning² that machi-

¹ See footnote ¹ on page 14.

² United Nations Expert Group on Metropolitan Planning (1961) *Report...* (Unpublished mimeographed document: Conf. Doc. No. 32), New York.

nery be created by the central administration to develop for each metropolitan area a comprehensive and co-operative regional urban plan, and that this agency be suitably equipped with administrative powers, professional staff, and financial support. Such a regional plan would not take the place either of national planning, where it exists, or of local town planning, but would stand between the two, applying to the developing urban region its localized share of the national plan, and summarizing for the region in broad terms such town plans as may be locally adopted. Properly developed, a regional plan would not only make an important contribution to the national plan and to decisions controlling the location of major new industries, but would also define certain major perimeters for town planning, especially in dealing with those planning and administrative decisions which reach across the boundaries of the organized local governments.

(6) The Committee recommends that the national, regional and urban public health authorities establish specific planning units. These units would not only prepare long- and short-range policies, plans and programmes, but would be the normal liaison channel for participation in the planning agencies of the respective governments, for gathering and classifying the needed statistical and performance data, and for extending technical assistance to the operating agencies, and to subordinate echelons, as to planning problems.

(7) All supervisory personnel in public health, sanitation and housing now require special competence in the techniques and standards needed in the planning process. Accordingly, the Committee recommends that such personnel be afforded systematic opportunities for advanced orientation and training in planning, and other technical aspects of their work. Similarly, training courses in public health and allied branches should include education in the science and art of co-operative public planning and programme development.

These recommendations apply particularly to medical and engineering staff and other personnel whose duties require close collaboration with those agencies of central and local government which plan and design public works, construct major works (or let and supervise construction contracts), and assume responsibility for their daily operation and maintenance.

Matters of environmental sanitation

(8) The Committee recommends that sharply increased emphasis be directed to the long-range problems of environmental sanitation in and around rapidly developing urban and industrial areas.

This policy is required equally in the older urban and in the newer urbanizing centres to correct the costly mistakes of the past and to protect the welfare and the productive economy of the future. While the avoidance

of suffering is a powerful motive in urging this policy, evidence also shows that a healthy and energetic people is a national economic asset of prime importance, and that such a population cannot be taken for granted under modern urban and industrial conditions. An effective labour force and population can be guaranteed only by the development and enforcement of now known standards of health, nutrition and sanitation.

(9) The Committee recommends the immediate development of nation-wide and regional surveys and plans for water resources and drainage systems.

Such surveys and plans are essential long before specific shortages emerge, so that errors will not be made in the encouragement of urban growth, the location of new towns, the construction of national transportation networks, regional planning, the location of major new industries, whether by the government or by private initiative, and the development of urbanized or new agricultural settlements. Such studies will include consideration of the allocation of water, and of the capacity of surface and underground watercourses to absorb the wastes and contaminants which new urban and industrial developments may impose upon them.

Co-ordination

(10) The Committee recommends that public health and sanitation programmes and policies, especially those affecting the urban areas, be more efficiently co-ordinated with the parallel physical, economic and social programmes which affect the people living in and around the expanding urban areas.

The Committee has dealt above with the planning aspects, because these have been seriously misunderstood and neglected in the past, and represent a new assignment for public health authorities. The need for co-ordination exists equally, however, in the operational aspects. These require much closer working relations with other agencies of central and of local government, or other autonomous bodies. In all its activities, the public health establishment must be co-ordinated vertically between the central and the local authorities, and horizontally as between the parallel physical, medical and social programme institutions.

(11) To give an institutional basis for such greater co-ordination the Committee recommends the establishment of formal co-ordinating Committees and joint task forces, where appropriate, in which the expert personnel of the health services shall work directly with their professional colleagues in the other services.

(12) The Committee urges, however, that the responsibility to take positive action shall not be diluted by amorphous consultative arrangements which may serve more as a screen for delays and avoidance of respon-

sibility. Under the plan it recommends, the duty and the authority to act will be clear, subject only to the duty to confer with the appropriate experts, and these experts will operate not only in defined and limited fields, but under a specified time-table as well.

Standards

(13) The Committee recommends that national health authorities, where necessary, proceed to develop, restate and promulgate basic standards of public health, environmental sanitation, and the health aspects of housing and nutrition.

Such standards, even though they be subject to further revision on the basis of research and operational experience, are considered as essential for proper administrative practice and especially for health planning.

Public participation in public health programmes

(14) The Committee recommends the active participation of the public in public health programmes, especially in the rapidly expanding urban areas.

This is to be accomplished through many already tried methods, and through new and imaginative devices. Such participation will not only educate the people and the officials as to what the people really need and want, but will develop an understanding of rules and regulations, and induce responsible acceptance of restraints on the part of those who are regulated.

Staffing of services

(15) The Committee recognizes that in many situations the implementation of urban public health plans and programmes has suffered by reason of a lack of suitably qualified and experienced staff. The Committee therefore considers that the staff responsible for planning and implementing such programmes should enjoy the advantages of a career service, either as part of the national health service, or offering similar conditions and possibilities of advancement, security of tenure and continuity of service. Opportunities for further training should also be available.

The status of such staff should compare with that of other members of their professions and they should at all times be afforded the necessary authority and support to enable them to carry out their duties in an efficient manner.

They should be in a position to communicate directly with the appropriate technical services at the national or intermediate level on technical matters pertaining to their duties.

Research

(16) The Committee recommends intensification of research especially as to planning, administration and the community co-operation aspects of public health programmes in rapidly expanding urban and industrial areas.

While asserting that present knowledge and administrative standards and skills are adequate as a basis for planning and management of health programmes in the developing urban areas, the Committee recognizes that there are important areas in which new knowledge will be required, especially to deal with those newer problems of health, housing, sanitation, nutrition and urban behaviour which are now emerging. Some of these new problems have been identified in the foregoing sections of this report.

(17) Longitudinal studies should be undertaken for purposes of problem measurement and programme evaluation, and for ensuring the maximum productivity and distribution of the health services with the minimum wastage of personnel, time, materials and installations.

(18) The probable emergence of a changed pattern of urban pathology has been noted elsewhere. The state of mental health of both established city dwellers and migrants is a matter which is receiving more and more consideration all over the world, and the Committee is of the opinion that further research is needed into the effect of urbanization on the causation of disease and the promotion of health—with special reference to the mental aspects of the problem.

The Committee had before it the suggestions made in the report "Planning of Public Health Services"¹ and was in agreement with them, but wished particularly to emphasize the importance of pilot studies on planning of the public health services with a view to refining planning techniques and the provision of operational research throughout the health field. The advisability of international collaboration in these matters was stressed.

The Committee calls particular attention to the type of research needed for the establishment of scientific and operative norms in order to provide a sound basis for the planning, development and evaluation of public health programmes.

(19) The Committee has noted with appreciation the activities already undertaken by WHO in the field of urbanization in co-operation with the United Nations and other specialized agencies under the concerted action programme.

It welcomes the support given by the United Nations Special Fund to water supply programmes at city level, and urges WHO to undertake further efforts to increase the number of programmes receiving such assistance.

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1961, 215.

World Health Organization activities

(20) The Committee feels justified in suggesting to the Organization that it brings to the attention of governments the importance of taking active steps to strengthen and expand health and sanitation programmes for urban and peri-urban areas as an essential step to the improvement of human, economic and social conditions of entire nations.

The Committee furthermore recommends that the Organization give consideration to the possibility of expanding its activities in the following areas :

(a) training of health staff responsible for health and sanitation programmes in urban areas, through :

(i) the organization of specialized and interdisciplinary regional seminars and training centres ;

(ii) exchange visits ;

(iii) assignment of fellowships ;

(b) assistance to national or local health authorities in the assessment of local conditions and in the planning of comprehensive urban health and sanitation programmes through the assignment of specialized staff individually or as a team ;

or alternatively, special teams composed of one public health administrator and one sanitary engineer, to whom additional expert service could be added on an *ad hoc* basis, might be established at central or regional level to assist governments or local urban services in carrying out assessment studies and to prepare for health planning and programme execution ;

(c) study of the possibility of organizing model demonstration projects on a pilot basis in selected communities, with a view to preparing practical guidelines for urbanization health programmes to be developed under different geographic and administrative conditions ;

(d) the undertaking and publication of a study of selected urban programmes, giving particular attention to planning and to the correlation of public health and sanitary engineering activities ;

(e) the support and initiation of research in the field of public health along the lines suggested in the fourth report of the Expert Committee on Public Health Administration,¹ and those indicated in the present report ;

(f) enhanced emphasis on studies on statistical methodology and on the application of statistical practice, due consideration being given to the special requirements of urban and metropolitan health administrations.

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1961, 215.

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