

An Approach to Metropolitanism

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UNIQUE and staggering problems confront the public health engineer looking at a modern metropolis. Some stem from rapid population growth, others from the maze of local governments. They are unique because the engineer has the technical knowledge necessary to solve them but not the means of applying his ability. They are staggering by the sheer force of the number of people affected.

The large metropolitan areas are a fact of life today that is not likely to be wished away. Every indication points to the continued concentration of people, production, and services in and around the large cities. The large "metros" will grow even larger until, for example, there may be one continuous built-up area extending from Portland, Maine, to Richmond, Va., and another stretching across the entire industrial belt of the Midwest. Even today a traveler sees few open areas in these regions.

Everyone has his own method of showing this growth. The fact that, in this decade, 85 percent of the country's population growth has taken place in the "metros" with the suburbs growing six times as fast as the central city, is the point we emphasize.

To fully appreciate the health officials' dilemma, it is necessary to understand the setting. Housing developments cut across borderlines of traditional governments and flow out into unincorporated areas to produce a governmental maze that almost defies description, let alone solution. In 1957, an average of 90 local gov-

ernmental units existed in each "metro." Since 1952, 170 new municipalities and 519 new special district governments have been created within the 174 largest "metros."

No universal governmental pattern applicable to all areas has been developed and none appears likely. Curiously enough this is the only point on which there seems to be universal agreement among political, governmental, and administrative specialists. There seems to be no characteristic difference in organization or situation between the successful and unsuccessful. Special districts are often endorsed by groups interested in only one governmental function. Political scientists, however, criticize them as creating another level of local government, a pattern already complex with the relationship of citizens to government uncertain and often irritating. Annexation, incorporation, federalization, functional transfer, all have been tried. All have had successes and failures. A study by the Government Affairs Foundation indicates that each metropolitan area faces similar problems, but a wide variety of solutions are suggested.

Where does this leave the sanitary engineer? What does he face while the politicians battle over forms of government? In one case, he must deal with a 5-year old subdivision of \$30,000 homes where 60 percent of the septic tanks are failing. In another area, he is faced with a citizenry that will fight a proposed sewer system in order to maintain local autonomy. Air pollution may refuse to hover over the community that produces it. He may supervise a water system that will be inadequate next year or a subdivision with individual wells and septic tanks on small lots. Or present landfill capacity is being depleted while homes are being built over possible future disposal sites. These

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problems and more like them are familiar to any local environmental health official.

What can the health officials do? Is the problem too complex to solve? The solution is not yet known but we have a good approach through community planning. Planning is a well-established process, seeking to promote a better environment. By working with planners, health officials can make substantial progress.

There are no "pat" answers to urban sprawl. There are, however, certain steps which tend to help. These follow the standard pattern of scientific approach, find the facts, evaluate the facts, determine needs, and seek solutions. They help by virtue of promoting orderly community growth. It cannot be said that they will insure satisfactory results, but there is a great deal of evidence that without them there is much less chance of success. Working to promote this procedure by development of comprehensive sound plans for community action appears to be the most promising approach.

But the use of this process by local officials is not as easy as it sounds. It has been demonstrated repeatedly that health officials know more than they are able to apply. The solution to environmental health lies in a context of sociological and political factors. As always in the political scene, human motivation, politics, governmental structures, group dynamics, and leadership play dominant roles. The most carefully engineered and logical solutions often fail when subjected to the political process.

The philosophy that must be used is the essence of the planning process, the collection and analysis of facts and the projection of these facts into the future. Progress is made by having the health facts available as guides for shaping legislative decisions. Even a good plan often fails, but a poor plan or no plan at all isn't even a good try.

The best technique to accomplish this progress is well known to city planners. It is, simply, the development of comprehensive, sound plans for use in guiding community action. Such plans will seldom be carried out without changes and even reverses, but given enough support and considered as a goal, they very likely will be approached ultimately. The at-

tainment of sharply defined objectives, even though modified during the process of achievement, promise greater chance of success than the chaos and confusion inherent in promoting ill-defined, nebulous goals. To one accustomed to expecting clear-cut decisions and actions, this interplay of human failure to accept a professionally sound plan is discouraging. Yet, it is a fact, and one which must be recognized.

Health and Planning

Environmental health is strategic to the work of a city planner for one basic reason, the need to make the community a healthy (healthful) place in which to raise a family and make a living. Health precedes all other needs, such as transportation, schools, and industrial activity. And a public health official should remember his importance in planning a community's growth.

In actual fact, health reasons have had a limited although very beneficial effect on community planning. In studies of 11 "metros" conducted by the General Engineering Branch of the Public Health Service, outstanding environmental health programs were observed, and community planning was an impressive factor in achieving these positive results. Seven of the 11 counties studied had either local or county planning agencies. The cooperation between them and the health departments ranged from nonexistence to a day-to-day working relationship between professional staffs. A definite relationship was observed between the degree of cooperation of health and planning officials and the level of environmental health services. Four counties with superior cooperation had, in general, better health services than three where little cooperation was found. Personal participation by the health official in planning was essential to their effective development and application.

It is more significant that counties giving consideration to environmental health factors in planning were in a superior position in overcoming or preventing future problems. The four counties making no plans were in no position to cope satisfactorily with the health aspects of population growth.

The 1958 National Health Forum had as its

Discussion

I heartily endorse close working relations between health agencies and professional planning groups at the city, the metropolitan, the State, and the regional areas.

However, further consideration should be given to using the drainage area as a basis for managing water supply and waste disposal. The gravitational flow of water never respects political boundaries. Moreover, the direction of flow cannot be altered with as little expense as a political boundary.

In the introduction, the authors led the reader into a concept of large "metros" of a corridor character cutting across wide geographic areas. But in the body of the paper, the actual practical relations with planners imply a city of more or less narrow metropolitan approach.

More consideration to State or regional planning might make it possible to develop a drainage basin system through close working relations with water resource commissions and conservation departments.

The authors have not only stimulated thought but have indicated avenues of approach. It is indeed encouraging to see the health agencies take the initiative in working at all levels of community planning. It is only through such effort that we shall provide modern urban technological society with an environment in which people can thrive and not merely survive.—C. J. VELZ, *chairman, department of environmental health, the University of Michigan School of Public Health, Ann Arbor.*

theme "Urban Sprawl and Health." Its purpose as stated in the preface to the final report on the conference was to "emphasize the need for, and demonstrate a pattern of, understanding and cooperation between planning and health toward the goal of healthier people in healthier cities, suburbs, and related areas."

Community Planning

What exactly is this community planning we are promoting? It is not a mysterious process understood only by experts, nor a substitute for the democratic process. It is not detailed design; it is simply a guide for future com-

munity development. All the factors affecting growth and community aspirations are considered. These facts are collected, analyzed, and used as a guide for making legislative decisions that in turn shape the future environment. Planning is less a policymaking function than a professional task. A local council pays good money for professional advice. Although the council may not follow their suggestions, the planners' influence is usually felt. Even if a plan is not fully adopted, the planning process is important in both molding and influencing community thought. And often the mere existence of a planning body causes the community to think more seriously about its future.

Usually, the local legislative body is responsible for appointing a planning board or commission. Very often such a planning board is completely independent of the executive branch of the local government, but in some places the board is a part of a department within the executive branch. There is little evidence to indicate that any one form of administrative arrangement is better than another. In a larger community, usually the board employs its own staff; in smaller cities, it often relies on a private consultant. Most staffs or consultants are highly technical people, while boards or commissions are composed of laymen.

The planners use four major tools to guide the growth of a community: master plans, capital budget, zoning, and subdivision regulations. In the fields of master planning, zoning, and capital budgeting, the planners act only as advisers to the council, with some communities requiring the council to refer certain matters to the planners for recommendations. Very rarely is the council required, however, to follow their advice. But in subdivision regulations, the planning board or commission may have limited legislative power. For example, in a typical case an extraordinary majority of the council would be required to override the planning board's recommendations, but only a simple majority could endorse them.

Master plan. The most important planning tool in setting forth all the facts influencing the community's development and serving as a guide for future growth is the so-called master plan. Presented on a map of future

land use, this master plan encompasses the total problem; transportation, communications, schools, recreation, utilities, appearance, industry, economic base, sewers, water, residential and commercial areas, and many other considerations are all a part. In addition, it attempts to find the interrelationships among all these. In most cases, the plan has no legal status, since it is rarely enacted into law. Frequently the local council votes an informal approval, however.

Health should be considered carefully in developing a master plan. The consideration given to the importance of health needs in the planning stage may determine the actions of the local legislative body when it weighs needs of the whole community in the future environment.

Capital budget. A capital budget is developed from an analysis of the community's financial resources and prospects. A priority schedule of site acquisitions and expenditures for large-scale physical improvements, such as buildings, streets, and utilities, is presented as the counterpart or complement of the master plan. Such a capital budget is not enacted as an ordinance or law by the council but is used as a guide in preparing the annual budget to apportion the financial burden over a period of several years.

Sewage treatment plants, landfill sites, and similar environmental health facilities must compete for funds with other community requirements. A capital budget is an excellent way to get a higher priority for health facilities if health officials make the facts known to the planners. The facts are usually convincing. The dividends from the majority of investments in environmental health are much greater than an equal investment in other facilities.

A good capital budget, like a good master plan, is characterized by its projection into the future, its flexibility, and the interrelationship of its parts; it is subject to continual study and revision.

Zoning: The third major tool of planners is zoning. Facts prepared by the planners for an immediate single legislative decision are often given in detail for council consideration. A zoning map will be included, together with the regulations for various zones.

Advances for Public Works Planning

The Community Facilities Administration of the Housing and Home Finance Agency reports that since the beginning of its program of advances for public works planning through March 31, 1960, 2,341 applications totaling requests for \$74.9 million have been received. The agency approved 1,346 for \$31.3 million. Of the applications received, 53 percent have been for sewer and water projects, about 2 percent for hospitals and other health facilities, and the remaining 45 percent for educational facilities, public buildings, streets, bridges, and other miscellaneous public facilities.

The program of advances for public works planning was established by the Housing Act of 1954 and its amendments in 1955. Under this legislation, funds may be advanced to States, municipalities, and other public agencies to help finance the cost of the planning of needed public works. These advances are repaid, without interest, when construction is started or when contracts are awarded.

The purpose of the program is to encourage municipalities and other public agencies to maintain at all times a current and adequate reserve of planned public works which can readily be placed under construction, and help attain maximum economy and efficiency in the planning and construction of public works.

Zoning utilizes the police power of the local government to regulate land use, and, therefore, is actually enacted into law by the council. Among other things, a zoning ordinance delineates residential, commercial, and industrial zones; establishes lot sizes; regulates building height and setback; and establishes performance standards. These requirements govern the population density which in turn affects sewer sizing, the quantity of solid wastes, and the water consumption of an area.

A good zoning ordinance is an extension of the master plan, but need not necessarily follow it in every respect. Zoning has certain short-term aspects relative to land use, while the master plan is a long-term land use projection.

Subdivision regulations. Subdivision regulations are the laws governing the division of

land parcels for sale as separate lots. In contrast to zoning which is based on the police power, subdivision regulations are enforced by the power to withhold the privilege of public record. If a plot is not recorded, it can be sold only by metes and bounds, that is the length and bearing of the boundary lines. It is difficult to sell land in this manner because of the lack of adequate control to enforce the regulations. Often a community will make it even more difficult to use metes and bounds by making it illegal to refer to an unrecorded plot. It is much easier to sell land by block and lot numbers. In return for this privilege of public record, the community requires conformance with certain standards. These standards may cover the layout, grading and surfacing of streets, length of blocks, area and location of open water supply, connection to public sewers, storm drainage, or conformity to adjacent plots.

Subdivision regulations can be used to control the installation of on-lot sewage disposal systems and on-lot water supplies. These are health factors which can be taken into consideration if a health department reviews the plots before they are recorded. To be most effective, the law should require that health department approval of such on-lot installations be mandatory rather than simply advisory.

Health Department Action

Master plans, capital budgets, zoning, and subdivision regulations, the four tools of planning, are the main phases of the community planning process, and each has a direct effect on environmental health. The question then arises, how can the health official become a part of this planning process? Since community planning is principally the work of professionals, the best method is to work with the planners.

A planner, like a health official, is a specialist. His motivation, or dedication if you will, is much the same as that of environmental health officials. He wants a comfortable income, but his rewards are found just as much in accomplishments from his work as from monetary return. Like the health official, he is working for a better environment.

Observations in the 11-county survey revealed that an effective health official made it a point to get to know the local professional planners in his community, to learn what they do, how they think, and what they are trying to accomplish. He took pains to find out how much influence the planners have and whom they influence. It surprised many an "old hand" in the community to find out how effective planners could be.

To ascertain what the planners were doing, the health officer studied the planners' maps and charts and read their publications. He attended their board meetings to see what things are considered and how much they have to do with health. Conversely, he let the planners know what environmental health officials do, the problems they face, and the goals they seek.

A great deal of benefit came from exploring common problems and approaches. Both the health official and the planner were working toward the same ends and against the same obstructions. Each realized that he could and should help the other. The planner needed the facts that only the health official could supply.

The most important factor observed was the value of maintaining a close working relationship between the professional personnel of the two disciplines. The small day-to-day contacts and exchanges of information produce big results in the long run.

In essence an effective health official convinces the planners that public health engineers are not just technicians but are full-fledged professionals with the vision and imagination to see into the future.

Summary

Over the years, health activities have progressed from a concern with disease alone to a broader concern with health and now are expanding to include planning for future health services as well. Although little used at present, community planning has been a very useful tool for the environmental health official in carrying out this expanded concept of public health. Tomorrow's environmental health problems can often be prevented by health department participation in the community planning process today.

Federal Publications

Treating Cancer. *PHS Publication No. 690; 1960; 16 pages; 15 cents.*

Modern uses of medically approved treatments in saving a growing proportion of cancer patients are described in terms understandable to the layman.

The purposes of cancer surgery and the improvements and research in this field are discussed. A section on radiation defines X-ray and radioisotopes and tells how radiation is used to treat cancer. Hormones, cell poisons, metabolic antagonists, and antibiotics are covered in the section on chemotherapy.

Seven books and pamphlets and 14 articles are listed in the recommended reading.

Dietary Aspects of Cardiovascular Diseases. Selected references. *PHS Publication No. 755; 1960; 24 pages.*

Designed for public and voluntary health workers, this annotated list of research papers, pamphlets, books, and teaching aids covers the dietary aspects of cardiovascular diseases.

The material is organized into five major areas: general information; calorie restriction—obesity and weight control; sodium restriction—congestive heart failure and hypertension; fat control—atherosclerosis and coronary artery disease; and food composition tables.

A flip chart format (8½ inches by 11 inches) is used to separate and identify each of the major categories.

Directory of Local Health Units. *PHS Publication No. 118; revised 1960; 80 pages; 30 cents.*

Local health units of each State are listed alphabetically according to classification of the unit. Included are the name of the health officer or administrative head and the city in which the headquarters is located.

The appendix contains tables showing the number of units and counties covered; the number of units without medical, nursing, or

sanitation personnel; and the units with a vacancy in the position of health officer or administrative head.

Health Statistics From the U.S. National Health Survey. Types of injuries, incidence, and associated disability, United States, July 1958–June 1959. *PHS Publication No. 584-B16; 1960; 36 pages; 30 cents.*

Estimates of the number of injuries and days of disability, by class of accident, sex and age of the victim, and type of injury are presented. Injuries are classified as fractures and dislocations, sprains and strains, head injuries, lacerations and abrasions, contusions, burns, poisonings, effects of weather and exposure, and complications of therapeutic procedures.

Included are 15 detailed tables, a population table, the questionnaire on which the statistics were collected, and appendixes containing definitions and technical notes on methods.

Health Statistics From the U.S. National Health Survey. Peptic ulcers reported in interviews, United States, July 1957–June 1959. *PHS Publication No. 584-B17; 1960; 26 pages; 25 cents.*

Detailed tables, text tables, and charts give estimates on prevalence of peptic ulcers, according to medical attention status and by age and sex of the patient.

Associated disability is shown by days of restricted activity, days of confinement to bed, and days lost from work.

Appendixes contain technical notes on methods, definitions, and the questionnaire on which the data were collected.

Health Statistics From the U.S. National Health Survey. The Hawaii health survey, description and selected results, Oahu, Hawaii, October 1958–September 1959. *PHS Publication No. 584-C3; 1960; 54 pages; 40 cents.*

The design, content, and preliminary findings of the health interview

survey conducted cooperatively by the Hawaii State Department of Health, the Oahu Health Council, and the National Health Survey are presented.

Twenty tables and numerous charts show selected survey results. Appendixes contain notes on sampling errors, definitions, a list of the contributors to the project, and a reproduction of the questionnaire on which the data were collected.

Strike Back at Arthritis. *PHS Publication No. 747; 1960; 45 pages; 40 cents.*

Therapeutic procedures that can be carried out in the home by the patient and his family are described.

Designed to aid physicians in prescribing treatment for arthritis patients and instructing them in proper care, the manual gives step-by-step instructions for 15 exercises which will preserve or improve the range of motion of the involved joints. Each exercise appears in duplicate on facing pages. The page labeled "ACTIVE" shows how the patient can do the exercise by himself. The page labeled "ASSISTED" shows how someone can help the patient do the same exercise.

Other sections deal with the importance of good posture, the use of heat, splinting, canes and crutches, and self-help devices.

This section carries announcements of new publications prepared by the Public Health Service and of selected publications prepared with Federal support.

Unless otherwise indicated, publications for which prices are quoted are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Orders should be accompanied by cash, check, or money order and should fully identify the publication. Public Health Service publications which do not carry price quotations, as well as single sample copies of those for which prices are shown, can be obtained without charge from the Public Inquiries Branch, Office of Information, Public Health Service, Washington 25, D.C.

The Public Health Service does not supply publications other than its own.
