



Technical

Discussions



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TECHNICAL, ADMINISTRATIVE, LEGAL, AND FINANCIAL
ASPECTS OF GARBAGE AND REFUSE DISPOSAL

REPORT OF THE RAPPORTEUR

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of the
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of the
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REPORT OF THE TECHNICAL DISCUSSIONS ON THE TOPIC
"TECHNICAL, ADMINISTRATIVE, LEGAL, AND FINANCIAL
ASPECTS OF GARBAGE AND REFUSE DISPOSAL"

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The special sessions for the Technical Discussions on the topic "Technical, Administrative, Legal, and Financial Aspects of Garbage and Refuse Disposal" were held on 19 August 1960, under the chairmanship of Dr. Gustavo Fricke Schencke, with Eng. Juan L. Radelat acting as Rapporteur.

The sessions were conducted in accordance with the prepared program, which appears in Annex I of this report.

Introduction

Refuse is defined as household, commercial, and industrial wastes of a solid nature. These materials may be both organic and inorganic and consist of such diverse items as kitchen and food wastes, solid slaughterhouse wastes, street sweepings, solid residues of combustion, tree leaves and branches, bottles, cans, metal objects of all sizes, construction and demolition debris, dead animals, etc. Normally, paramount public health concern, is with the putrescible material contained in refuse, although it is recognized that containers and objects which can create insect-breeding areas and rodent harborages are also problems.

It is necessary to emphasize that, in speaking of refuse disposal, storage at the source, collection, handling, final disposal, and municipal cleaning are involved, and improper execution of any one of these functions leads to the development of problems which concern the public health.

At the present time, the importance of refuse disposal is not generally recognized by governments. Although there are certain examples in the countries of Middle and South America of excellent, well-operated organizations carrying out the work of refuse disposal at a high level of competence, these examples are, unfortunately, too limited and point to the need for greater attention on the part of all governments.

Public Health Implications

Further evidence was presented, from studies carried out in Venezuela and Texas, that flies are of importance in the transmission of enteric disease, and that where fly control activities have been accomplished a measurable reduction in infant morbidity and mortality from infant diarrheas has been achieved. The Venezuela studies again demonstrated that by good refuse collection and disposal practices, flies can be controlled, and that, because of the long-range ineffectiveness of insecticides, good refuse handling practices and municipal cleanliness are the major, best approach to fly control.

The clean home, the clean city, and the clean countryside are not only matters of pride for the people but are of importance for their well-being and mental outlook. Ministries of Health have a responsibility in providing leadership and guidance at all levels of government for the provision of good refuse disposal practices. This is not to say that health agencies should necessarily engage in the actual operation and management of refuse disposal services. The engineering division of Ministries of Health should consider refuse disposal, along with water supply and sewage disposal, as an area in which they must function, providing the needed stimulation, supervision, regulation, and control nationally, to assure the continual improvement of refuse disposal practices.

Administrative and Legal Aspects

It was stressed that the governmental level at which refuse services are to be administered will depend on the local circumstances and the plans best suited to each country and each area of that country. In most countries the city has legal responsibility for street cleaning and refuse collection and disposal. It was agreed, however, that generally this service is not being performed at the level of competence required for the safeguarding of the public health, owing principally to a lack of trained staff and to interference from political sources.

Operations under these conditions often result in cities practicing methods of disposal ill-suited for their needs. Local legislative bodies have in some instances promulgated regulations which are contrary to advice of their own experts. It was believed that, generally, this service has been accorded "second class" status, which results in a poor service and a waste of funds and manpower.

It was recognized that, at whatever level and by whatever agency the services are provided, health officials have a responsibility for supervision from the public health standpoint. Regulation is a Public Health Department function, but regulation must be realistic and must recognize enforcement limitations. An important aid to enforcement of regulations is a public desire for cleanliness. This desire should be

advanced by good public information methods such as the radio advice program in Colombia on good rural refuse disposal practices and by stimulating civic pride such as demonstrated by the flower planting program in Mexico City.

Financial Considerations

Recognition was given to the rather substantial cost of providing good refuse collection and disposal services. It is common practice in most existing services to receive funds directly from the general municipal budget. Sources of revenue now include general property taxes, special service charges including refuse service charges, contributions from higher echelons of government, and other funds. The view was expressed that existing money allotted to the refuse service could be more profitably used through better organization and management and greater emphasis on competent directing staff. The most urgent problem appeared to be the better utilization of existing funds.

Because the major cost of operating a refuse service lies in street cleaning, collection and transportation of refuse to find disposal points, with a very minor portion related to the cost of operating the disposal facility, major attention should be directed to the possibility of savings through more strategic location of final disposal facilities. The savings thus realized would in many instances cover the additional costs of operating a completely satisfactory disposal facility. It must be emphasized that revenue which might be derived from a particular disposal method may be more than offset through higher collection and transportation costs.

It was believed that, before deciding on the adoption of any process for refuse disposal, the economic aspects must be given careful engineering study, so as to render an unbiased judgment on the methods under consideration. Great waste of public funds has occurred through the installation of improperly studied processes or poorly designed disposal units.

Caution was urged in attempting to compare costs from one community to another.

Technical Aspects

1. Storage of Refuse

Metal cans with tight-fitting covers were considered the single most acceptable form of container for putrescible refuse at homes and commercial establishments.

2. Frequency of Collection

Climatic, economic, and local conditions will affect frequency of collection from households. Daily collection is costly and unnecessary when good storage facilities are available.

Commercial and industrial establishments require special service, with varying frequency, depending upon the amount and character of refuse produced.

3. Final Disposal

The major methods for disposal of municipal refuse now employed are sanitary landfill, incineration, composting, and open dumps. Methods of limited use now employed include on-site refuse burners, hog feeding, and grinding with disposal to sewers. After considering advantages and disadvantages of each method general agreement was reached that open dumps are unacceptable from a public health standpoint and that hog feeding is difficult to operate without the development of public health problems. Sanitary landfill was recognized as the most suitable method for most small communities.

It was acknowledged that in the larger municipalities there is no best method for all refuse disposal conditions, each having its place. Special interest was exhibited in the possibilities of utilizing commercial grinding units for receiving the putrescible wastes of markets and commercial food establishments.

In order to locate disposal facilities strategically so as to reduce truck-haul expenditures, it is considered essential to bear in mind the experiences presented showing that both salvage and composting operations have frequently resulted in flies and odors. Possibilities for industrialization and revenue often make composting seem attractive but the community must recognize the public health problems which may at times result from the adoption of this method.

4. General

The tasks of refuse collection and disposal and street cleaning, together with all of the miscellaneous activities which are usually assigned to such organizations in large communities, involve the utilization of substantial numbers of buildings, garages, large quantities of mobile equipment of diverse types, and disposal plants and facilities of special design.

It was agreed that specialized and competent engineering services are required, not only in connection with the selection and design of such facilities, but to assure their operation and maintenance in accordance with accepted practice. With proper planning and adequate staffing of such agencies, costly mistakes can often be avoided and long-range solutions to many difficult mechanical and civil engineering problems arrived at. Carefully selected consulting engineers are needed for the solution of special problems.

The Role of Ministries of Health

Ministries of Health are in a particularly advantageous position to provide leadership in the field of refuse disposal. At appropriate levels of government health officials can do much to support and

strengthen the operating agency by working closely with it. Health officials always have responsibility for providing public health supervision over refuse services.

Among those areas where leadership and assistance can be provided, the following may be mentioned:

- (a) Assistance in the improvement and development of sound programs at the operating level.
- (b) Encouraging and supporting the staffing of the operating agencies with competent personnel, adequately trained and properly utilized.
- (c) Proposing and assisting, whenever possible, in the in-service and academic training of staff working in the operating agency.
- (d) Stimulating the development of refuse services which have sufficient autonomy to function in an efficient manner with a minimum of political interference.

It is recognized that with the number of responsibilities resident in the Ministries of Health and of concern to health officers at all levels, there is an understandable reluctance to move more actively into the field of refuse disposal, while the problem of water supply and sewage disposal remain unsolved. Even though actual operations of refuse services is not contemplated, more adequate staffing of engineering divisions of health ministries at all levels is essential if the recommendations of this report are to be carried out.

The Role of the Organization

It is the role of the Organization to assist governments upon request, in all possible ways, to strengthen services concerned with public health. Since refuse disposal practices have a direct bearing on the health of people, it is apparent that this activity is one in which the Organization has an interest and in which assistance can be provided.

Working within established procedures, the Organization could provide advisory services on all phases of the refuse problem. It can provide leadership and act as a catalyst in the development of greater interest in the proper approaches to refuse collection and disposal programs. It can provide assistance through the dissemination of current literature in Spanish, Portuguese, French, and English and in facilitating the interchange of ideas among countries.

Fellowships, seminars, travel grants, and short courses can be arranged for, when requested by governments through the established budgetary procedures.

Where governments decide to engage consultants directly to advise on specific problems related to refuse disposal, assistance can be given in the selection of competent personnel.

Conclusion

Services for refuse collection and disposal may be operated and administered in a variety of ways, but active citizen participation is always essential. Health ministries should lend every possible assistance to the improvement of these services, without necessarily being responsible for their operation. The clean home, the clean city, the reduction of disease--these are the objectives toward which the successful implementation of these services is directed.

Annex I

LIBRARY
PAN AMERICAN SANITARY BUREAU
WASHINGTON, D. C.

TECHNICAL, ADMINISTRATIVE, LEGAL, AND
FINANCIAL ASPECTS OF GARBAGE AND REFUSE DISPOSAL

9:00 a.m. - Opening of the discussion and explanation of procedure. All present speak for themselves and not for their Governments, and no minutes will be kept. - Dr. Gustavo Fricke Schencke.

Presentation by Eng. William Xanten and Eng. Abraham Michaels, consultants engaged by PAHO to visit certain countries of the Americas and to prepare a report to serve as a basis for these discussions. Eng. Xanten is Superintendent of the Division of Sanitation for the city of Washington, D. C. Eng. Michaels is Chief of the Department of Sanitation of the city of Philadelphia. Both are leading authorities in the United States of America on the subject of garbage and refuse disposal.

Dr. Francisco Monterrosa Gavidia, Representative of El Salvador, will summarize a paper prepared by Eng. Alfonso Valdivieso, Director of the Division of Sanitation, Ministry of Health, El Salvador, on "Composting of Refuse."

Eng. Nicolás Quinto, Sanitary Engineer Attached to the Special Studies Section, Division of Malariology, Ministry of Health and Welfare of Venezuela, will present a paper on the organization and operation of disposal services and on fly control studies in Venezuela.

Eng. Juan Luis Radelat, Sanitary Engineer, Adviser, Ministry of Health, Cuba, will present some information on Cuban refuse disposal practices.

Additional presentation by Eng. Xanten, who will present a summary statement, with recommendations based on the observations made during the consultants' visits and the points brought out in the other papers of the morning.

3:00 p.m. - General discussion based upon written questions submitted by the participants.

5:30 p.m. Closing comments by the Moderator.