



Technical Discussions



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REPORT OF THE RAPPORTEUR OF THE TECHNICAL DISCUSSIONS
ON THE TOPIC

"Ideas for the Formulation of a Plan for the Control of Gastro-Intestinal
Diseases, Including Environmental Sanitation Measures, Epidemiology, Health
Education, and Early Diagnosis and Treatment"

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The special technical discussions dealt with the theme: "Ideas for the Formulation of a Plan for the Control of Gastro-Intestinal Diseases Including Environmental Sanitation Measures, Epidemiology, Health Education and Early Diagnosis and Treatment," were held on 19 September 1963.

The theme was first presented by the principal authors of the three working documents: (1) Dr. John E. Gordon: "An Epidemiological Basis for the Control of Diarrheal Diseases," (2) Eng. Nicolás Nyerges V.: "Environmental Sanitation Measures," (3) Dr. Nelson K. Ordway: "Diarrheal Disease and the Health Care Services in Latin America."

After each author had summarized the contents of the working document for which he had been primarily responsible, four other expert members of the panel, commented upon the presentations and the central theme: (1) Dr. Melvin H. Goodwin: Epidemiological Aspects; (2) Ing. Donald J. Schliessmann Sanitation Aspects; (3) Dr. Albert V. Hardy: Patient Care Aspects; (4) and Dr. Viola Mae Young: Etiologic Aspects.

The Chairman in summarizing the principal points made by the previous speakers pointed out that the nature of a concern about diarrheal disease was in itself an index of development. On the one hand, cholera was no longer a concern to Latin America, though very much the focus of discussion in some other regions of the world. On the other hand, the spread of salmonella through pre-packaged foods, a major concern to highly industrialized areas, had less relationship to the present problems in Latin America.

The meeting was then opened to comments and questions from the floor. A vigorous discussion followed with very full active participation by both delegates and panel members.

The discussions from the floor included a description of a simplified practical method of operating a bacteriological laboratory and of the results obtained.

There was very general agreement with the ideas and proposals made in the working documents with the minor exceptions noted below. However, the significance of active community participation and understanding of the control measures undertaken in any of the several fields ran as a key issue throughout the discussions. Health education and community development were understood to be linked to the provision of facilities and services and as absolutely essential. The use of auxiliary and even lay personnel is of demonstrated value in implementing many control measures, but to be effective, must be linked with a continuing system of professional direction and supervision. With these important points in mind as applicable to virtually all areas, the discussions can best be summarized by grouping them under the three main aspects of the theme identified earlier.

1. Epidemiological Factors and Their Implications for Control Programs

The diarrheal diseases are best thought of as a group of diseases to which diverse etiological agents contribute, as is the case with the "common colds."

It was pointed out that in areas of high endemicity neither the finding of a known pathogen in the stools nor a rise in its serologic titre of a patient with disease is necessarily proof of etiology. The role of many possible pathogens especially viral agents is still quite unclear and the symbiotic pathogenic effect of viral-bacterial interaction is unexplored. A balance between organisms, environment and host must exist and it may be as important or more important to understand the host and his environment as to understand the organisms in order to understand the disease picture.

It was emphasized repeatedly in the discussions that the epidemiological characteristics of diarrheal diseases as a group can be clearly described, that an epidemiologic entity can be defined and that control measures can be designed accordingly. These characteristics differ from place to place being dependant upon host factors (such as age and nutrition) levels of living, sanitation and medical care and patterns of behavior. Understanding these conditioning factors as they operate in a community (and therefore the epidemiological basis for control measures) calls for epidemiological field work at the local level rather than sophisticated laboratory studies. On this basis an epidemiological approach to controlling the problems can be developed for different areas and communities particularly the type of approach which will involve the communities in helping and educating themselves.

Thus, for example, the epidemiological characteristics of the disease as it occurs in the Guatemalan highlands indicates that the clinical index case in a family as well as high attack and mortality rates focus on the infant and young child, that contact spread predominates, that epidemics occur over prolonged periods of time at intervals suggesting the significance of a new crop of susceptibles (as with measles epidemics) and that the many relationships with nutrition also highlight the importance of host factors in conditioning the behavior of the disease. These relationships with feeding patterns and nutritional status are sharp enough to characterize an epidemiological entity, "weanling diarrhea," which was recognized as an important entity in many other areas of Latin America. Relationships to environmental sanitation are also evident in Guatemala though less outstanding because effective sanitation measures had not been undertaken in the area studied. Thus, there is need for a continuing epidemiological intelligence system whereby all types of diarrhea are reported and the reporting is not limited to diarrhea caused by specific organisms. At the crudest level this might consist of reporting and analysis of deaths from diarrheal disease which in itself can identify early the village epidemic waves.

Control measures must include attention to child care, nutrition, and illness care as well as to sanitation of the environment. Furthermore, the data indicate that none of these measures will be effective unless a type of health education which will motivate people to change practices and utilize medical services promptly is carried out concurrently.

2. Environmental Sanitation Measures and Their Implications for Control Programs

It was agreed that the proven effectiveness of sanitation programs in reducing diarrheal disease morbidity was beyond doubt, as was the primary importance in sanitation programs of providing an adequate supply of potable water delivered in accessible form. Second in order of priorities follows excreta and waste disposal. Other programs such as fly and insect control, housing and food sanitation depend upon and derive from the existence and effectiveness of these first two control measures although there may be some geographical areas where these require special attention. The major focus of discussion therefore was upon these first two priorities.

It was agreed that supplies adequate to cover per capita needs for personal and domestic hygienic practices as well as drinking and cooking were essential. Water quality is important as it related to potability and bacteriology. Financing problems, especially those posed by rural areas, make it essential to provide for costs recoverable from the community to be served. This in turn requires an approach which will involve the community from the very onset of the program, a factor most important to program planning but one which can enhance the community education which must always accompany water programs.

The problem of what constitutes "accessible water" was discussed at length. There is no doubt but what a system of water piped into every home in a community is the most desirable system and the sanitation measure most effective in reducing morbidity from diarrheal disease. Furthermore, it provides the basis for more effective excreta disposal and housing improvement. Under certain circumstances it may be essential to the recovery of capital by providing a personal benefit that motivates repayment.

The major problem to implementation if such a concept is the increase in cost which it poses and this is an especially prominent feature of village water system development programs. A number of discussants emphasized the positive value of accessible public taps and public bathing, laundry and even excreta disposal facilities in the experience of their own countries and pointed out that these had been developed with full and enthusiastic community support and participation. Furthermore, such systems are not inconsistent with the later provision of home outlets if the planning and construction are tailored accordingly. In view of the financial difficulties encountered, they considered this measure as an effective and practical intermediate step.

It was clear from the discussion that differences in the definition of what constitutes "accessible water" stem from different experiences with different types of communities and community responses and that each country will have to adapt its own program for provision of water to its own conditions, needs and resources. The existence of varying points of view highlights the need for research and the importance of a sound epidemiological and social basis for program planning and execution, with the word epidemiology defined in the broadest sense so as to include the study of community and host behavior. Both health education and related community organization measures and the nature of the water supply system to be developed (activities inseparably linked) can then be designed accordingly.

The problems of excreta and waste disposal hinge upon a choice and use of techniques and methods which effectively remove fecal matter from the human environment. The problem is sometimes complicated by industrial wastes which destroy national resources and/or provide insect breeding grounds. The disposal of excreta, water-borne wastes and sewage effluents exists as a major public health problem in all parts of the Hemisphere although manifested in different ways. Ideal solutions to all these problems are known, but the necessity of large scale capital financing interferes with their achievement. Thus, domiciliary flush toilets are the ideal means of human fecal disposal and obviously depend upon water piped into each home. Yet, even where such conditions prevail, differences of opinion were expressed concerning the practicability (not the inherent desirability) of applying the ideal. The sewage disposal problems raised and the high additional costs were cited as difficulties.

It was agreed that latrines which effectively remove feces from the human environment have an important place in excreta disposal programs. However, the key point is effective removal since it has been shown that latrines may actually increase the hazard of environmental contamination when they are poorly planned, constructed and maintained. This again highlights the importance of preparatory and coincident community education and participation in program.

It was agreed that latrines have a clear place in programs for isolated homes with no access to a community water supply. It was further agreed that provision of community water supplies should be coupled with an excreta disposal program in communities where neither exist or are imperfect. The difference of opinion concerning the place of latrine construction in communities where water outlets in homes exist or are planned, like the difference of opinion expressed in the case of domiciliary outlets themselves reflect differences in experience, population groups and resources and re-emphasize the need for research and for an epidemiologic and social basis to program planning and execution.

3. The Relationship of Health Care Services to Control Programs

It was agreed that in view of the relatively long-range effects of efforts to improve the sanitation, nutrition and level of living of the population, the undeniable effectiveness of medical care measures in preventing deaths from diarrheal disease was of the utmost and immediate importance to program development and planning.

The major factor leading to death from diarrheal disease is dehydration and simple inexpensive measures to prevent dehydration when applied early have been found to reduce the incidence of dehydration and the mortality rate from diarrhea quite significantly. Education of the community and the utilization of sweetened water mixed with small amounts of electrolytes and administered according to precise instructions are the specific measures available. Examples of several successful programs of this nature were described in which electrolytes provided in simple packaged form or in tablets were widely distributed. These measures need for more widespread acceptance and can serve as the focus of action at all levels of a health care service and even as the focus of a direct approach to a community to which no health care services are available.

More serious cases when they occur will need institutional care but here also methods of treatment exist which if applied will save many more lives. Attention to the quality of care and to the pediatric training and supervision of medical and paramedical personnel become important. The dexterity required to carry out intravenous therapy (prescribed by trained physicians after diagnosis) can be easily acquired by auxiliary personnel. Emergency coverage and careful continued patient care supervision by the same physician also become important but in spite of the difficulties these pose, much can be done to improve the existing situation without increasing costs.

This focus on patient care inevitably directs attention to the victim of diarrheal disease, the infant and pre-school child. The importance of host factors in diarrheal disease, demonstrated epidemiologically, must be translated into patient care. This means that repair of nutritional deficits must follow repair of water and electrolyte deficits in therapy. The latter is far longer process and requires a coordinated, preferably intergrated structure of health care services. Realistic education becomes of vital importance as does the desirability of applying preventive advice concerning infant feeding. The primary role of rehydration in immediate treatment was recognized by all.

A suggestion that foodstuffs might be fortified by antibiotics was viewed with caution if not alarm by the group, because of the inherently dangerous effects of altering host organism ecology.

The role of antibiotics and sulfonamides in treatment received considerable attention. There appeared to be concensus that the utility of sulfonamides was doubtful. Some discussants and panelists felt that antibiotics served no useful purpose. Other opinions were expressed to the effect that antibiotics were of use in special cases, especially of the pulminating variety where etiology and drug sensitivity could be established. There was concensus to the effect that the importance of antibiotics has been overemphasized and that they are costly. Decisions again must be made on the basis of knowledge of local conditions and resources. The value of specific drug therapy in amebic dysentery, which in some areas contributes importantly to diarrheal disease in young children, was recognized however.

SUMMARY

1. Measures of proven effectiveness exist which can reduce morbidity and mortality from diarrheal diseases, particularly as they affect young children. These measures are not as widely applied as they might be.
2. Simple field epidemiologic methods of study can help give direction and emphasis to the control measures applied.
3. In the application of control measures there is need to collect systematically information which will clarify the precise effect of the specific measures applied so that future program planning and execution can be undertaken in the most economical and effective manner possible.
4. The central theme of planning and executing control efforts should be the principle that people can do for themselves if they only know what to do and if what to do is made possible.