

REPORTING OF FOODBORNE DISEASES¹

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During the past few decades, there has been a very material change in the eating habits of the population of this country. The number of persons who eat one or more meals each day in public eating establishments has been growing steadily, because more and more people are living in homes that are remote from their work. People travel more, and larger numbers of women have been employed in offices and industries, both of which contribute to the change in eating habits.

The magnitude of the industry needed to cater to these eating habits can be shown by a few statistics. First, it may be mentioned that the food service industry is said to rank fourth among all of the industries of the nation, which means an investment of many billion dollars in buildings and equipment. More than 16 billion dollars are spent annually on meals consumed outside the home. There are about 200,000 public eating places, such as restaurants, cafeterias, lunch counters, and similar types of establishments. Meals are also served in more than 26,000 industrial restaurants, in 15,000 hotels, many thousands of hospitals, schools, and college dining halls, and on trains and airplanes. More than 40,000 drug stores sell food and soft drinks. Boarding houses, institutions, churches, and others too numerous to mention should also be added to the above list.

Nearly 90,000 food manufacturers or processors whose products enter interstate commerce supply the needs of the food service industry. The 14,000 milk pasteurizing plants and an equal number of processors of milk products also should be included in the category of food suppliers.

In 1951, the National Office of Vital Statistics assumed the responsibility for the collection and publication of reports of food and waterborne disease outbreaks as a part of its overall program of obtaining current information on all unusual occurrences of diseases. Instead of requesting reports at the end of each year, State health authorities were asked to report outbreaks as soon as investigations were completed. It was suggested that provisional informa-

tion should be sent before all investigative procedures were completed when certain types of outbreaks occurred, for example botulism or an outbreak involving milk or food processing. Each report was summarized in the "Morbidity and Mortality Weekly Report" under the heading of "Epidemiological Reports." When preparing annual summaries, we also departed from the procedure used by the Milk and Food Branch of the Public Health Service, who previously had collected the reports, in that details of individual outbreaks were omitted, because they already had been published in our weekly report. A narrative type of annual summary with tables has been published in *Public Health Reports* each year, beginning with 1951. This has proved to be quite satisfactory, because this Journal is distributed to State and local authorities and to a large number of agencies and individuals in and out of government. Further indications of its acceptance are to be found in the large number of requests for reprints of this annual report, which have come from persons in other countries as well as in the United States.

There is a wide variation in the number and content of reports of foodborne outbreaks received from the States. A few furnish a large proportion of those submitted each year, others send a moderate number, and some seldom or never send reports. Some States need a good deal of prodding to supply information on an outbreak that we may learn about from items appearing in newspapers. The reporting of outbreaks occurring in many large cities is even more disappointing. Some never report such occurrences, and a few supply only minor details about outbreaks. It seems preposterous to assume that foodborne disease outbreaks never occur or are so infrequent in many of the large urban centers.

Undoubtedly, there are a number of reasons why some States and many cities report poorly or not at all. First, there may be a lack of understanding of the need for investigation and reporting of food and waterborne diseases. Perhaps, some health authorities feel there are so many other problems of greater importance that need their attention and are not interested in promoting investigations of disease outbreaks.

Another reason may be the lack of trained person-

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nel who can carry out reasonably adequate epidemiological investigations or who can plan programs of investigation and reporting. In some States, the responsibility for these activities is with agencies other than the health department. In some instances it appears that a close liaison has not been established for exchange of information between agencies, which seems to have an adverse effect on reporting.

In our opinion, a very common defect in the program for collection of information on disease outbreaks is a poor liaison between State and local health authorities and especially between State and municipal authorities. This poor type of liaison may be the fault of one or both. Perhaps the State has not developed a program for investigation and reporting and does not ask for reports. On the other hand, the local health officer may resist any or many requests for information, because he thinks that it is an infringement on his authority to carry out his program. A few States have found that frequent consultation with local health officers on all phases of their programs is an excellent mechanism for establishing better relationships, a better understanding of the needs for reporting, and more or less incidentally stimulating more thorough investigation of foodborne diseases.

In some instances, it appears that health officers are reluctant to report some outbreaks that occur in schools, hospitals, and other institutions or in certain groups of people, because they are fearful of unfavorable or unjustified publicity. Our answer to this objection is that we never publish names of institutions, schools, or eating establishments. Furthermore, we avoid using any information that would identify an institution or group, such as its location in a certain county or city. We would not think it unreasonable if the health officer requests that the report not be summarized in our weekly report. However, we would expect to include it in our annual summary, which would preclude the possibility of identifying a particular outbreak. We also adhere to the policy of not divulging names and locations, except for official purposes.

Now, I would like to turn to a discussion of the needs for information of foodborne diseases, particularly at Federal level.

First, the officials in the Milk and Food Branch use the reports to assist them in promoting more effective milk and food sanitation programs in State and local jurisdictions. The information made available is also used as background material in the development of ordinances and codes designed to improve sanitation of food manufacturing and handling. This past year we provided two States with a considerable amount of data on epidemics that were

associated with the eating of sandwiches. This was used in support of legislation dealing with the sanitary control of these articles of food.

The material collected is often used for training purposes. Multiple copies of our annual summary have been supplied several times for use in training programs conducted by different agencies for personnel concerned with food sanitation. Instructors in several medical schools receive one or more copies of our weekly report, which they use in the teaching of microbiology or preventive medicine. One instructor in a school of public health informed me that he used certain of the items which appear under the heading of "Epidemiological Reports" to illustrate what might happen in any community.

I would like to remind you that more complete reporting of foodborne diseases is needed for detection of biological warfare. Some of the microbial agents which cause food infections or intoxications could be used in this type of attack. Biologic warfare cannot be discounted as a possibility as long as international tensions exist. However, we are aware of the fact that it would probably be quite difficult to detect a real attack with BW agents.

There is a great need at all levels of government and food industry to know more about the actual volume of foodborne diseases, the relative importance of various etiological agents which cause such illnesses, and the various types of food that are most commonly involved. More complete information would be of great assistance to local, State, and Federal agencies in planning more effective programs for the prevention of foodborne disease.

It appears to be a reasonable assumption that more complete reporting of foodborne disease will not be accomplished until more local or municipal health officers and personnel responsible for food sanitation programs recognize the need for more than a cursory type of investigation and the bare minimum represented by a report of the occurrence of an outbreak. However, the stimulus for bringing about such an improvement in attitude will have to come principally from State and local health authorities. Physicians, hospitals, persons in charge of institutions, camps, and schools, operators of food handling establishments, and the public must be made aware of their responsibilities for prompt notification to the health department or other agency having jurisdiction. It should be emphasized to these persons or groups that notification of illness that presumably is foodborne is not primarily for the purpose of punishing violators of codes or ordinances, but is a prelude to an investigation that will benefit and protect the operator of the food establishment and for the protection of the public.

The States not only have the authority for making reporting a requirement, but they also have the responsibility for investigating or prescribing the procedures for investigation. Reporting of outbreaks in Federal installations such as Army, Navy, and Air Force, Federal prisons, etc., is sometimes made to State authorities, but investigation is usually the sole responsibility of Federal officials. Investigations of outbreaks occurring on interstate or common carriers (planes, railroads, steamships) is the responsibility of the Public Health Service. The Federal Food and Drug Administration has jurisdiction in dealing with certain aspects of foodborne outbreaks associated with commercially processed foods that enter interstate commerce.

I do not regard it as my function to describe how investigations of foodborne diseases should be conducted or to recommend a specific type of form for recording the various findings of an investigation. I would like to say, however, that forms used or distributed by some States to local areas do seem to promote greater uniformity and tend to stimulate the investigator to obtain more complete information. The International Association of Milk and Food Sanitarians has prepared a booklet entitled "Procedure for the Investigation of Foodborne Disease Outbreaks," which not only contains recommended procedures but also suggests forms that could be used with advantage by anyone investigating foodborne diseases. The booklet probably would be especially helpful to investigators who have had no training or experience in epidemiology.

There are certain items for which we would like information in order to make our weekly and annual summaries more useful. These are: time and place of occurrence of the epidemic; type of population involved (school, institution, social group, family, public, etc.); estimated number of persons with possible exposure to the disease; number of those who were ill; number of deaths, if any; the kind of food that was found to be the vehicle or probable vehicle of infection; how the food was contaminated; the average incubation period and the range of time from onset of the first to the last case; results of laboratory tests on food samples; evidence of infection among persons who prepared the contaminated food; results of laboratory examination of specimens from food handlers when appropriate; and, finally, a narrative description of the epidemic. The narrative

should contain a list of symptoms of those made ill; laboratory examinations of specimens from those made ill; food handling practices; and any deviations from recommended practices (lack of refrigeration, storage at room temperature, etc.). It is recognized that information on each of the above items cannot be obtained in every investigation because of varying circumstances, some of which will be beyond the control of the investigator. For instance, the outbreak may be reported so late that it is possible to obtain information on only a few items. While this list of items may seem to be long, they usually can be recorded on one side of an 8"x11" sheet of paper. I would like to repeat that a form for recording them in an orderly fashion is recommended, principally because it promotes more uniformity in the content of the reports of investigations and stimulates the investigator to obtain certain information. However, some very excellent reports have been received which are entirely narrative in type, but most of them have been written by experienced epidemiologists or other investigators.

In my opinion the most important item when notifying State or Federal agencies is not the number of persons who became ill after eating a specified food. The most essential items are: (a) the food that was found to be the vehicle or probable vehicle of infection; (b) the organism or toxic substance that caused the illness; (c) the probable way the food was contaminated; and (d) the factors (poor food handling practices) that contributed to multiplication of microorganisms in the food. In other words, the qualitative type of information is much more important than the quantitative.

Our policy has always been to insist that reports prepared by local authorities be sent to us by or through State health officers. There have been very few exceptions in this procedure. This insures that the State authorities are aware of any unusual occurrences in their jurisdictions and can take appropriate actions when necessary.

I think this discussion can be summarized briefly by saying that reporting of foodborne diseases is very incomplete with respect to number of outbreaks that occur and in content of many reports. More qualitative as well as quantitative information is needed for planning more effective programs for the prevention of these diseases.