Epidemiological Surveillance of Foodborne Disease in the Caribbean

The Caribbean Epidemiology Center (CAREC) is responsible for assisting countries in developing national surveillance systems. Since the first meeting of national epidemiologists in May 1975, there has been an agreement that foodborne disease or "food poisoning" should be reported, and that reporting within 24 hours is essential if follow-up investigations are to be meaningful. All countries, therefore, report foodborne disease to their national surveillance system and to CAREC as a standard procedure.

The Ministers Responsible for Health in the Caribbean met in Grenada in July 1980 and recommended that countries develop food safety policies (which include establishing continuing education programs in food safety), prepare guidelines in cooperation with PAHO, and formulate a regional policy that could be incorporated in the food and nutrition strategy.

It must be pointed out that reported foodborne disease is only the very tip of the iceberg; special emphasis should be given to suspected foodborne disease as well. As part of the development of primary health care, the community must be adequately educated in food safety, including where to make reports and seek advice from the public sector. Hotel/guest house managers and managers of government and private institutions such as youth camps, schools, and hospitals should be motivated to report immediately any outbreaks of disease to the health authorities.

CAREC has developed, in cooperation with national epidemiologists, forms to use when investigating foodborne disease and, specifically, the problem of fish poisoning. These forms are printed at CAREC and are supplied to member countries as part of its service.

CAREC has provided training to health personnel (including some veterinary public health assistants) in the investigation of outbreaks and in the utilization of equipment for such investigations. On request, it supplies on-site epidemiologists and laboratory personnel to work with the national team and/or undertake laboratory testing at the Center.

The capacity to investigate epidemics has improved considerably, but underreporting of foodborne disease still weakens and constrains that capacity. Nevertheless, more outbreaks are being detected than in previous years and the Caribbean experience is being used to identify priority problems.

The most common causes of foodborne disease in the Caribbean are bacterial contamination by Staphylococci, Salmonella, and Clostridium perfringens. However, several outbreaks with registered fatalities have occurred due to contamination from chemical pesticides such as parathion and trithion, and food poisoning by ciguatera, clupeoid, and fruits (ackee).

Outbreaks of bacterial foodborne disease are attributable to food handling defects which include failures in storing high-risk foods outside the danger temperature zone at which bacilli multiply (140°F/60°C to 45°F/7°C) and poor personal hygiene practices in food handlers.

The general trend in the Caribbean has been toward an increased use of restaurants, superimposed in some countries by the rapid growth of facilities catering primarily to tourists. The result is an expansion of food service operations in terms of quantity, diversity, and complexity, for which existing resources are inadequate. This accelerated expansion and the new equipment and procedures introduced by the food trade highlight the need for new approaches to food establishment inspection such as:

- using standardized inspection forms and a point system;
- equipping inspectors with the appropriate training and tools needed to do the required work;
- ensuring that the emphasis of food establishment inspection is on monitoring correct cooking and cold and hot food storage, and encouraging self-inspection by management as a supporting activity (but not a substitute) for Government inspection;
- organizing coordinated trade and consumer food safety education programs which encourage management to train its employees and to educate food handlers to be their own "medical examiners" by knowing those conditions which make them unfit to handle food, and
- developing laboratory resources to support food inspection and epidemic investigation.

Apart from slaughterhouses in which veterinary and health personnel have an immediate joint interest, there has been a significant and continuing growth of canneries and other processing plants. This growth raises the question of whether trade has exceeded its resources to provide adequate monitoring. In order to maintain food quality and safety, sufficiently trained
and equipped inspectors and laboratory support both in the private and public sector are needed.

The dynamic nature of the food trade and the increasing national awareness of actual and potential problems, uncovered as countries improve their surveillance systems, serve to highlight the need for comprehensive food safety legislation. Such legislation should be capable of rapid modification to meet new trade activities, or newly recognized hazards in existing operations.

(Source: Caribbean Epidemiological Center, Epidemiology Unit, Health Programs Development, PAHO.)

Infectious and Chronic Disease Epidemiology: Separate and Unequal?

Definitions

As applied to disease or illness, the word “chronic” means slow progression and long duration. It is the opposite of “acute,” a term which implies a swift onset and short course. Despite the simplicity of definition, no one has satisfactorily classified all diseases on the basis of duration. Indeed, most diseases on any list are sometimes acute and sometimes chronic. A cerebrovascular accident may be immediately fatal or produce sequelae which persist for months or years. Heart disease, usually classified as chronic, is acute for those myocardial infarct victims who die before reaching the hospital. The tendency to consider infection as synonymous with acute is equally misleading. Many infections or their sequelae are chronic: sinusitis, cystitis, syphilis, tuberculosis, paralytic poliomyelitis, congenital rubella, and rheumatic heart disease, to name a few.

Acuteness or chronicity are often not permanent attributes of a disease. An acute disease may be redefined when scientific advances permit identification of the preclinical phase. A chronic condition may be transformed into an acute illness when early treatment aborts sequelae. In the Baltimore study of chronic diseases (1), one in 10 “substantial conditions” would have had complete recovery with appropriate care.

Latency

A long interval between exposure to the putative risk factor(s) and disease onset is believed to characterize most chronic illnesses. But many infections appear after latent periods as long as those proposed for chronic diseases. Thus, infection with a tubercle bacillus acquired in childhood is often first manifest in late adult life. Herpes zoster represents reactivation of childhood chickenpox in many, if not all, cases. A large proportion of infections in the compromised host undoubtedly reflects activation of dormant infection. Indeed, the incubation period for the majority of infections afflicting adults today is either delayed or poorly defined.

Transmissibility

Many infectious diseases are propagated from person to person. However, this is by no means true of all infectious agents: blood poisoning caused by preformed toxins, Legionnaires’ disease, and coccidioidomycosis are not transmitted from person to person. Some chronic diseases of as yet unknown etiology may turn out to be transmissible. Clusters of leukemia and lymphoma suggest a transmissible agent as do the recent studies of residents of households in which victims of multiple sclerosis reside (2). It would be premature to divide epidemiologists into those who deal with transmissible or nontransmissible conditions. If leukemia, cervical cancer, multiple sclerosis, arthritis, and diabetes prove to be caused by a transmissible agent—as many now suspect—persons now classified as chronic disease experts may find themselves to be infectious disease epidemiologists.

Etiology

At the turn of the century, infectious disease was the major area of research in medicine. The discoveries of specific agents which produced specific diseases were straightforward and satisfying, and led to one of the