

# Food and Waterborne Outbreaks in Albania, 2005-2014

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**Abstract:** *The aim of the study was to give an overview of the food and waterborne outbreaks and their etiology. Over the past decade there has been a growing recognition of the involvement of the home in several public health and hygiene issues. Perhaps the best understood of these issues is the role of the home in the transmission and acquisition of foodborne disease. The incidence of foodborne disease is increasing globally. Although foodborne disease data collection systems often miss the mass of home-based outbreaks of sporadic infection, it is now accepted that many cases of foodborne illness occur as a result of improper food handling and preparation by consumers in their own kitchens. Some of the most compelling evidence has come from the international data on Salmonella species and Campylobacter species infections.*

**Keywords:** outbreak, foodborne, salmonella, shigella, investigation

## 1. Introduction

Foodborne illness is a major public health problem and a common cause of illness and death worldwide (1). Over the past decade there has been a growing recognition of the involvement of the home in several public health and hygiene issues (2). Perhaps the best understood of these issues is the role of the home in the transmission and acquisition of foodborne disease. The incidence of foodborne disease is increasing globally (3-5). Although foodborne disease data collection systems often miss the mass of home-based outbreaks of sporadic infection, it is now accepted that many cases of foodborne illness occur as a result of improper food handling and preparation by consumers in their own kitchens. Foodborne illnesses are infections or irritations of the gastrointestinal tract caused by food or beverages that contain harmful bacteria, parasites, viruses, or chemicals (6-8). Common symptoms of foodborne illnesses include vomiting, diarrhea, abdominal pain, fever, and chills. Most foodborne illnesses are acute, meaning they happen suddenly and last a short time, and most people recover on their own without treatment. Rarely, foodborne illnesses may lead to more serious complications. Each year, an estimated 48 million people in the United States experience a foodborne illness. Foodborne illnesses cause about 3,000 deaths in the United States annually (3, 9). The majority of foodborne illnesses are caused by harmful bacteria and viruses. Some parasites and chemicals also cause foodborne illnesses. Not all bacteria are harmful to humans. Some harmful bacteria may already be present in foods when they are purchased. Raw foods including meat, poultry, fish and shellfish, eggs, unpasteurized milk and dairy products, and fresh produce often contain bacteria that cause foodborne illnesses. Bacteria can contaminate food—making it harmful to eat—at any time during growth, harvesting or slaughter, processing, storage, and shipping (10-14). Foods may also be contaminated with bacteria during food preparation in a restaurant or home kitchen. If food preparers do not thoroughly wash their hands, kitchen utensils, cutting boards, and other kitchen surfaces that come into contact with raw foods, cross-contamination—the spread of bacteria from contaminated food to uncontaminated food—may occur. Viruses are present in the

stool or vomit of people who are infected. People who are infected with a virus may contaminate food and drinks, especially if they do not wash their hands thoroughly after using the bathroom. Common sources of foodborne viruses include food prepared by a person infected with a virus, shellfish from contaminated water, produce irrigated with contaminated water. Parasites are tiny organisms that live inside another organism. Harmful chemicals that cause illness may contaminate foods such as fish or shellfish, which may feed on algae that produce toxins, leading to high concentrations of toxins in their bodies (15-16). Certain types of wild mushrooms, unwashed fruits and vegetables contain high concentrations of pesticides. Anyone can get a foodborne illness. However, some people are more likely to develop foodborne illnesses than others, including infants and children, pregnant women and their fetuses, older adults, people with weak immune systems. These groups also have a greater risk of developing severe symptoms or complications of foodborne illnesses. Symptoms of foodborne illnesses depend on the cause. Common symptoms of many foodborne illnesses include vomiting, diarrhea or bloody diarrhea, abdominal pain, fever, chills. Symptoms can range from mild to serious and can last from a few hours to several days.

## 2. Material and Methods

Surveillance of food borne diseases is included in Major system based Surveillance system which consists of monthly reporting of infectious diseases, in Syndromic surveillance system-ALERT which consists of weekly compulsory reporting of infectious syndromes. Also, field investigations for outbreak control and prevention along with laboratory surveillance

studies are other components of surveillance of food and waterborne diseases. Laboratories at Institute of Public Health offer expertise during outbreak investigation for isolation and identification of bacterial and viral pathogens. They are also national reference centers for a more specific examination of specimens sent from directorates of public health all over the country. The aim of the study was to give

an overview of the food and waterborne outbreaks and their etiology.

### 3. Results and Discussion

Figure 1 shows the trend over time of food and waterborne diseases during the period 2005-2014. The definition of outbreak is: two or more cases of the same illness among persons that have consumed the same food. Twenty seven epidemic outbreaks have occurred over the period 2005-2014, of which 21 (78%) had a bacterial etiology whereas 6 (22%) had a viral one. The etiology of outbreak is shown in fig.2.54% of outbreaks have occurred during summer months July-August. Salmonella and Shigella were the etiologic cause in 77.8% of the outbreaks and predominate during the hot season (fig. 3). Outbreaks have occurred in different parts of the country without any distinct spatio-temporal distribution pattern. The main vehicle of transmission were the tap-water, sweets, and meat (fig 4). Similar findings have been reported from other studies (1-3).

### 4. Conclusion

Foodborne illnesses can be prevented by properly storing, cooking, cleaning, and handling foods. Raw and cooked perishable foods—foods that can spoil—should be refrigerated or frozen promptly. Foods should be cooked long enough and at a high enough temperature to kill the harmful bacteria that cause illnesses. Fruits and vegetables should be washed under running water just before eating, cutting, or cooking. A produce brush can be used under running water to clean fruits and vegetables with firm skin. Raw meat, poultry, seafood, and their juices should be kept away from other foods. People should wash their hands for at least 20 seconds with warm, soapy water before and after handling raw meat, poultry, fish, shellfish, produce, or eggs. People should also wash their hands after using the bathroom, changing diapers, or touching animals. Diarrheal diseases can be prevented following a multisectorial approach such as continuing monitoring of environmental health risk factors and assurance of food safety and supplying the potable water with proper hygieno-sanitary parameters. Sanitary inspection of foods and conditions in which they are processed and promoted in markets (17-19). Sanitary management of urban waste and sewage as well as promotion of health education on personal and community hygiene

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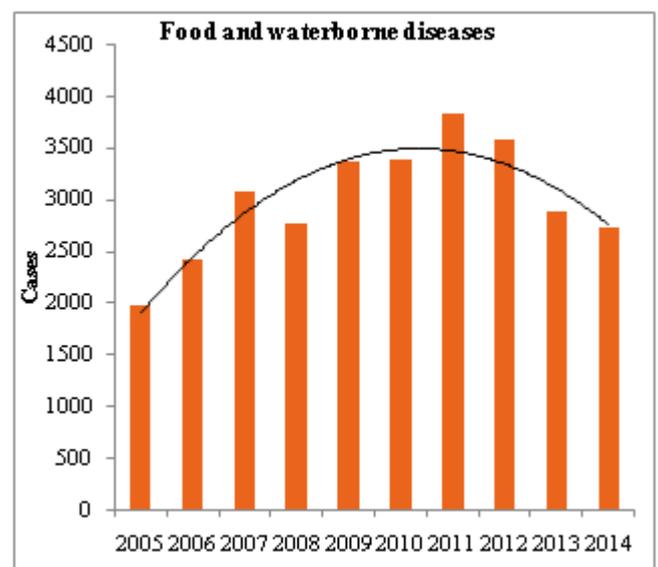


Figure 1: Trend over time of foodborne diseases

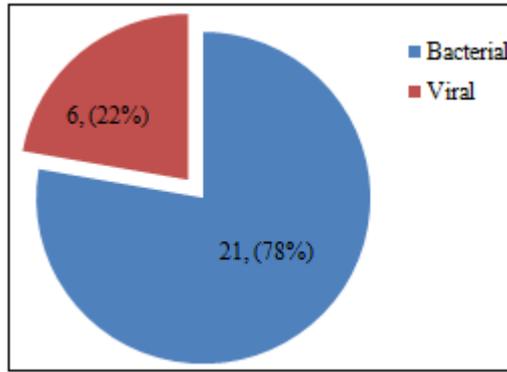


Figure 2: The etiology of outbreaks

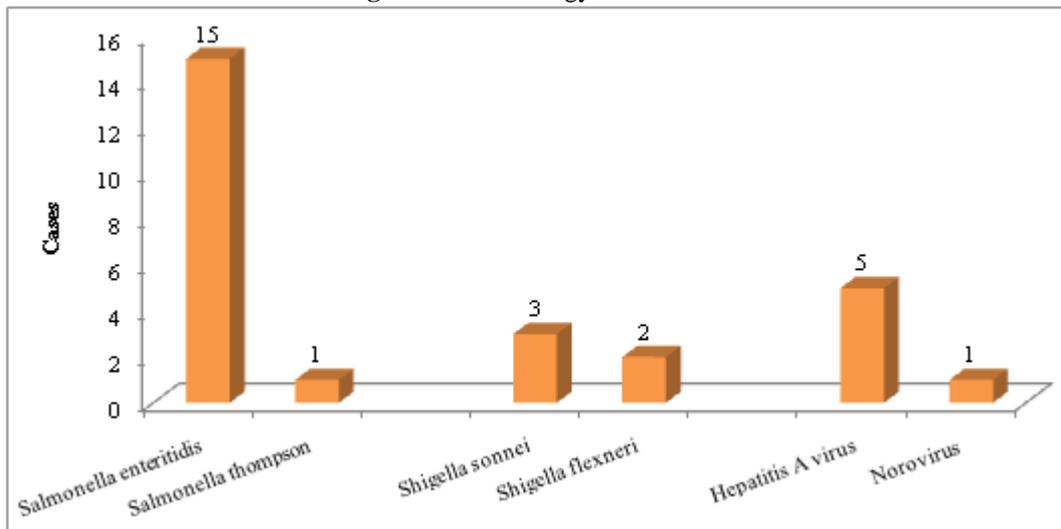


Figure 3: Pathogens involved in outbreaks

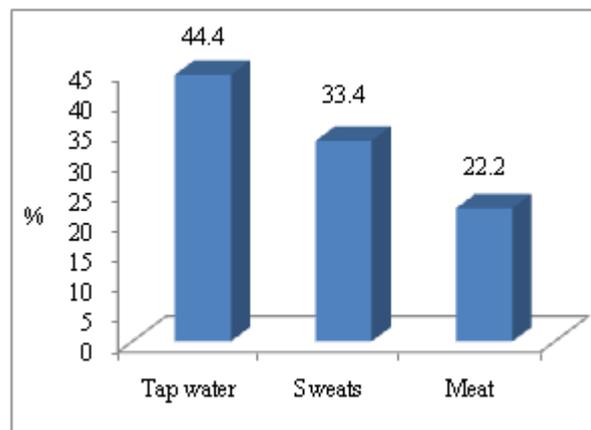


Figure 4: Vehicle of transmission