

# OUTBREAK AND NOTIFICATION OF FOOD POISONING: THE NEED FOR INFORMATION IN NIGERIAN EDUCATIONAL SYSTEM

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## **Abstract**

This work is aimed at enlightening the general public about the outbreaks and notification of food poisoning and the need for information in Nigeria educational system. The paper highlights the different sectors that need to be educated and informed i.e. the private, public, hospital, government sector and institutions of learning. The paper also explained various precautions in food poisoning.

## **Introduction**

Food poisoning is frequently used to describe a disturbance of the gastrointestinal track with diarrhea nausea and vomiting with or without fever, resulting from the consumption of contaminated food. The food contaminant may either be of chemical or biological origin. The chemicals that cause food poisoning range from such heavy metals as antimony and other substances such as methyl alcohol, spirits, etc. Biological causes are plants such as mushroom, are occasional causes of food poisoning

According to Agbonlahon, D.E et al, (1996), the time interval between eating the food and onset of symptoms (incubation period) can be as short as 1 hour, to or even longer depending on the organism (agent) responsible and also the number of organisms or ingested. Toxins are poisonous substances produced by certain bacteria as they grow in the intestine. The age and condition of the individual consumer are factors of importance with regards to the time of incubation, Betty, C.H et al (1993), posited that the symptoms and their severity sharp attack of vomiting within 1 hour or less of eating food may be due to bacterial toxins from containers by acid foods and alkaloids or even pesticides and herbicides..

Food poisoning occurs, because many employed in all aspect of the food industry i.e. food processing, food preparation, animal husbandry, water supply etc are, uninformed or economically unable to carry out safe practices; Bates, (1987), Explained that Those involved in any capacity with foodstuffs for human or animal consumption should be concerned with the prevention of food poisoning and other food-borne diseases. Even the engineers who design plant and equipment and the architects responsible for planning kitchens, manufacturing establishments' abattoirs, markets and farmers should be aware of their part in controlling the spread of infection.

Researches have shown (Montville et al, 2004) that People needing education and training include government officials so that they may know the basic facts for prevention; food hygienists including physicians and other medical personnel i.e. veterinarians and sanitarians, food microbiologists, manager in charge of food processing personnel and the plant workers, food service managers and workers, transportation officers and workers, field personnel, farmers and all those engaged in animal husbandry, i. e abattoir workers, fishermen and those who harvest shellfish and also to the general public.

Various studies (Fung, 2002) indicates that Medical, Veterinary and agricultural government officials need to also keep pace with the changing phases of food technology and food science. The growing world population and consequent necessity for more food, result to the difficulties in

ensuring food hygiene. New preservatives and additive and the behaviour of certain pathogenic organisms influence the microbiological content of food; Fung, D.Y.C et al, (2002).

Information should be given on the various causes of food poisoning, the bacterial, viral, fungal and parasitic agents, their sources and means of spread, and the main control factors. Man and animal require protection against the oral intake of pathogenic organism and their toxins. With the importation of food for man and animals from many countries, the hazards increase and careful laboratory vigilance is necessary to assess significance of contamination. Salmonella for instance, may be scattered throughout batches of feed for animals to be distributed all over the country; Robinson et al (2000).

Hui et al, (2001), state that Intestinal pathogens such as *salmonella campylobacter* and *Escherichia coli* enter abattoirs and food processing plants or live animals and birds and they are transferred to carcasses and cuts of meat and poultry. Fish and shellfish may harbour *vibro parahaemolyticus*, and other viral particles. Cereals such as rice and flour are usually contaminated with *Bacillus cereus*, while meat and poultry are contaminated with *clostridium perfringens*. *Listerial monoctogenesis* widespread in the environment and may be found in a wide range of raw and cooked products. All these contaminated foods will reach kitchens of food service establishments, institutions and homes. The chances of cross-contamination from raw to cooked food are likely by means of hands, surfaces, kitchen tools and other equipment. Clear teaching is necessary to cut down the risk. Faults in processing such as canning, fermentation and curing are contributing factors.

Betty, C.H et al (1993) argued that major hazards arise through lack of attention to correct time and temperature exposures for cooking and storage. Storage of cooked food at ambient temperature for long period of time will encourage massive multiplication of bacteria in the food resulting in spoilage or food poisoning if the bacteria are pathogenic.

### **Outbreak and Notification of Food Poisoning**

The outbreaks most commonly notified are those which occur in locations where food is prepared for large number of people, such as the hospitals, schools, factories, hostels nurseries and children's homes; (Betty, C.H 1993). Faults in the daily preparations of food for the same groups of people and leading to illness cannot fail to be observed.

HuiY.H, et al, (2001) describes that meat and poultry in their various farms are the food most commonly implicated and they are responsible for about 50-70 %of the notified general and family outbreaks each year. Organism of the *salmonella* group have been regarded as the predominant causal agent but notification of other incidents where the causal agent is thought to be campylobacter jejuni continues to increase and the number of individual cases reported now surpasses that due to *salmonella*, although the number of incidents where a known food is incriminated is still small. The main vehicles of infections for *campylobacter's* are untreated milk and undercooked poultry. *Clostridium perfringens* outbreaks are the next most common.

Researches have also shown (Robinson, R.K, 2000) that an appreciable reduction in the incidence of *salmonella* food poisoning could be achieved by reducing the animal sources. To control *staphylococcal* food poisoning, there must be strict attention to techniques used for manipulation and storage of cooked food such as meat, poultry, prepared sweets, cream products etc. Food poisoning caused by *C.perfringens* could be prevented with more care in rapid cooling and cold storage of bulk of meat and poultry. In all instances conscientious cold storage of cooked food and environmental design for cleanliness are important. Widespread and persistent instruction is necessary to correct faults and avoid hazards leading to food contamination; Robinson, R.K et al, (2000).

The sectors that need to be informed and educated

1. The Private sector.
2. The Public sector.
3. Institutions of Learning.
4. Hospitals
5. The government sector.

### **Private Sector**

This sector includes restaurants, Hotels, Food handlers in retail shops, meat and fish producers and transportation system.

Managers and staff of these various processing food products such as meat, poultry, daily products, cereals, fresh or frozen or canned or dehydrated vegetables need to be aware of the condition for the basic ingredients as well as that of the finished products. Managers must be trained in the principles of food hygiene so that they can in turn train and supervise the workers responsible for processing preparation, storage and service of food. Those who maintain the cleanliness of the environment in which foods are prepared should also be trained. Fung, D.Y.C (2002)

### **Hospitals**

Catering personnel in hospitals have a particularly responsible position because they are feeding the sick people whose immunity may be low. Whereas healthy people are usually able to withstand small numbers of intestinal pathogens in food but, those who are ill especially the elderly and young children will succumb readily to infection and intoxication.

Each regional hospital board has an officer responsible for training schemes. Courses are arranged for hospital officers either at their own centers or technical colleges; (Robinson et al, 2000). The teaching of hygiene in the hospitals should be encouraged by the department or the ministry of health to ensure safe delivery of food. Also health service catering manual should be published annually by the catering and Dietetic department to enhance the delivery of quality food. Betty et al (1993).

### **Institutions of Learning**

University, polytechnic and independent colleges train students in domestic science including food hygiene and special courses up to degree level are available for students wanting responsible work in the catering industry as well as in hospital. Correspondence courses are also available in colleges of further education and institutional management Association, whose annual examination include questions on food hygiene and nutrition.

Managers, supervisors and other key personnel from commercial eating establishments, retail shops, small cafes, snacks bars and operator of potable food vans can be invited to participate in lecture demonstrations in school kitchens and other institutions with brief talk given at weekly or shorter interval. Films, slides, charts and pictorial descriptions are available and short note can be provided to help disseminate the information. Teaching in large catering establishments and multiple department stores may be allowed within the shop or store. In establishments where it is difficult for staff to be spared, talks can be given to small groups at their work stations. Local environmental officers can advise and assist with training in food hygiene; Hui, Y.H et al, (2001).

### **The Public**

Television, radio, newspapers, magazines, leaflets and books help to educate and disseminate information to home-makers, consumers associations and individuals who prepare food for parties and other social occasions.

Exhibitions accessible to the public can be set up in strategic places such as town halls, mothers and baby clinics and health centre; Betty, C.H et al. (1993).

### **Children**

Schools have a responsibility to teach children on how to keep personal hygiene. Training involving food hygiene should be included in the school curriculum of domestic science and home management (home economics). Elementary bacteriology, its application to the contamination of food from variety of sources and its prevention can be conveniently taught and demonstrated practically during cookery lessons. Supplementary education can be supplied to schools by the local environmental health department; Montrille et al 2004.

Some session of the food industry, for example the National dairy council has produce educational packages including games and quizzes to assist with food hygiene education in schools.

Public demonstration of food hygiene should be made available, so that school children can be taken round the exhibit and given an explanatory running commentary. Competitions could be held between schools to design posters showing aspects of food hygiene and winning entry be displayed at an exhibition and featured in the local press

### **Provision of Information**

Information on food hygiene is available from many sources, but much of the responsibility for disseminating facts is assumed nationally by Environmental Health Officer (EHO), consultants in communicable disease control (CCDC), Health education officers and other public health officers including the hospitals, the infection control nurses etc. Betty, C.H et al (1993).

### **Prevention of Food Poisoning**

To prevent food poisoning, there should be improvement of water supplies which should be regular and adequate and also, the introduction and maintenance of high standards of sanitation through the provision of toilet facilities in public places like market, lorry parks and in the homes. In addition, refrigeration will slow down any bacterial activities, while drying will prevent spoilage until the food is exposed to moisture. Salt and sugar are good preservatives and, of course, heat treatment in the form of autoclaved canned food is most effective. Personal hygiene of people especially the food handlers is very essential. People should wash their hands after visiting the toilet and they should refrain from eating uncooked or partially cooked foods and unpasteurised milk and milk products. Care should also be taken in eating made-up dishes such as sandwiches prepared with hands.

### **Conclusion and Recommendation**

- There is need for every individual to be informed and educated about organisms in food substances, the mode of transmitting these organisms from raw to cooked food, from utensils, cloth and other kitchen tools or from persons or from food handler to cooked food. Individuals should also be enlightened by the health workers about the various food suitable for bacterial growth, condition favourable for warm storage over a period of two or more hours, surfaces contaminated by raw foods etc.
- Information on food hygiene should be made available by the health workers to every individual.

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- Government should support the health officers in organizing conferences and workshop where lectures will be given on the essential facts about food hygiene and practical should be carried out or demonstrated to show the value of food cooked in the kitchen.
- To live a healthy life is the responsibility of the individual to eat healthy food, but stay healthy.

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