**Chapter 14:Role of Food Handlers in Food Safety**

Food borne illnesses (FBI) are an important public health problem in our country. Food safety is a critical issue in our country with reports of outbreaks of FBI every year resulting in substantial costs to individuals, health care system and the country. There are many hurdles on the road to food safety. Food contamination can occur at any stage from production to consumption i.e from ‘Farm to Fork’ (Refer to chapters in section of food safety from farm to fork). Food handlers are a important link in the chain from kitchen to fork.

Food handler is any person who handles either **food or surfaces** that are likely to be in contact with food such as cutlery, plates and bowls. They work at a place where food is cooked and served i.e our kitchens, *dhabhas,* canteens, messes, restaurants, juice bars, street food vendors, snack bar, take away joints etc. Even the housemaids working as help in the kitchen for chopping vegetables, kneading flour etc are food handlers. They are involved in preparation of raw material, cooking, packing, storing , displaying and serving of food. Examples of food handlers are waiter staff/ service staff, chefs, head cooks, dishwashers, receiving and food storeroom staff, bartenders, host/hostesses that handle food, street vendors who sell food items and housemaids.

Food handlers on one hand can provide us with tasteful and safe food whereas on other hand they can also be source of contamination and compromise food safety. They are an important source for the transfer of microorganisms to the food. They can transmit pathogens passively from a contaminated source. For example, bacteria may be transferred from raw poultry to food such as cold cooked meat that is to be eaten without further heating. Many a times food handlers are themselves the sources of organisms either during the course of gastrointestinal illness or during and after convalescence, when they no longer have symptoms. During the acute stages of gastroenteritis, the patients excrete large numbers of organisms. If food handlers have such a disease and they continue to work in kitchen, disease may spread. Food handlers who are asymptomatic may present a real hazard. They can transfer pathogens from their body/ body secretions/ fluids while working in kitchen.

Good hygiene, both personal and in cooking is the basis for preventing the transmission of pathogens from food handling personnel to consumer. If a food handler doesn’t observe food safety precautions pathogenic organisms present in or on his body can be transferred to food during handling. They multiply to an infective dose in contact with food. Such food can be a potential source of food poisoning to the person consuming it.

Apart from this a food handler may commit common food handling mistakes which include inadequate cooking, heating, or re-heating of foods, cooling food inappropriately etc. Many studies have documented that there is a wide gap between knowledge about various food safety practices and their practical implication by these workers. Reasons are many. These involve time constraints, poor motivation levels, low wages, poor working conditions with high temperature and humidity levels, long working hours, ill-treatment by FBOs, lack of respect in the profession, poor supervision by the FBOs, unavailability of items as water and soap for hand washing, inadequate toilet facilities, non-conduct of medical examination of handlers, lack of training etc.

A food handler has certain set of responsibilities while working in kitchen for ensuring the safety of food. These are ensuring and observing

1. Hand washing practices
2. Good personal hygiene
3. Clean work attire
4. Management of illnesses
5. Following food hygiene practices during work
6. Regular training

Hand washing: Unclean hands of food handlers are often the culprit in transmission of microorganisms to the food. The hand hygiene of a food handler at work place is of utmost importance. Hence, it is the duty of the FBO to ensure availability of soap and clean water for washing hands all times. It is a common practice of food handlers to use the kitchen sink for washing hands. This practice is not advisable. A separate sink exclusively for hand washing with clean water source is required to maintain hygiene. In food manufacturing units with HACCP and ISO certifications sanitizers are also provided near the sink. This liquid is rubbed on hands after washing. It ensures cleanliness of hands. However, use of sanitizer without washing hands should not be done. Such units also have a checklist where a food handlers has to log entry of washing hands. This ensures an appropriate frequency of washing hands. It also acts as a tool for check by the supervisor.

It is often seen that small EEs like dhabhas, small restaurants don’t have appropriate hand washing facility for customers and food handlers . Most often kitchen sink is used for this purpose. It is not uncommon for food handlers to wash hands without using soap. The food handlers just rinse their hands with plain water and then dry them by wiping with their dirty clothes or apron. This gives only a false sense of security to them. They may or may not inform the FBO regarding non availability of soap. The onus for supplying soap lies with the FBO. These FBOs economize on soap use since their main motive is business and profit. They hardly supervise washing of hands by food handlers. They don’t punish or warn them frequently to ensure compliance of good hand washing practices.

The other groups of food handlers are the street vendors who do not have any provision of washing hands. Usually they just wipe hands with the mop they are using to clean the food contact surface. These days some of them have starting using gloves to attract customers. They feel as if wearing disposable gloves is a symbol of hygiene and cleanliness. It has been well said that little knowledge is a dangerous thing. Similarly these food handlers do not use the gloves in the correct way due to lack of awareness and cost cutting. They tend to reuse these gloves. Rather they keep gloves ‘on’ for hours together. They keep touching dirty surfaces of their cart, utensils etc. with gloves on. A dirty glove is as bad as or even worse than an unclean hand.

Unclean hands can transmit germs from the hands to the food. Hands can get contaminated after handling raw, food for example, after touching raw potatoes, carrot, onions, meat etc, coughing, sneezing, visiting toilets, eating , drinking, smoking, handling money, using mobile phone, touching hair, scratching body, handling dustbin, and soiled equipments and utensils. Hands must be washed properly with soap and water after these activities. Hand washing is a must before commencement of work in the kitchen.

The correct steps of hand washing are given in figure 1. These steps are:

1. Wet the hands with running water
2. Apply soap
3. Rub hands for 20 seconds (wash all surfaces thoroughly, including forearms, wrists, palms, back of hands, fingers and under finger nails).
4. Rinse hands thoroughly
5. Dry hands with a clean paper towel/drier



Figure 1: Steps of hand washing

Good personal hygiene and work attire

Personal hygiene and cleanliness is essential for food preparation, not only in eating establishments but also in the domestic setting also, to avoid food borne illness. It is the moral and professional responsibility of a food handler to maintain high standards of personal hygiene and cleanliness to protect the consumer from becoming ill following the consumption of their products.It includes the following practices:-

Hair: Hair has also been known to cross-contaminate food. Bacteria cling to the hair and scalp, living off dandruff, dust and perspiration are collected in the hair. The hair of a food handler should be short and clean. Long hair is not only difficult to maintain but also their possibility of falling into food while cooking/ handling increases many fold. Hence, food handlers should preferably keep their hair short. Some people's hair grows a little faster and some grows a little slower. Hair of a food handler should preferably be short and should be trimmed every 4 to 8 weeks to keep them in shape.

In the course of handling food, hair should be covered with a clean cap or hair net. Long hair should be tied back. It should be ensured that combing of hair is not done in food handling areas. Using a cap prevents food handlers from directly touching hair and scalp with fingers to move it out of their face and passing bacteria from the hair onto food. Hair can be partly covered by staff who are serving or handling food that is protected eg., a person employed in a takeaway front counter, working in soft drink dispenser counter, ice cream shop etc. Irrespective of the style, design, cost, material of cap all hair must be properly tucked inside the cap. No hair should come out of the cap. Also, a torn cap should not be worn.

Face and neck: A food handler should not wear ear rings or any necklace at the time of work. The reason behind this is that if the jewelry parts are loose then they can fall into the food and contaminate it.

Beards, if any, must be trimmed and tidy. The use of beard nets is strongly recommended for bearded food handlers working in all food preparation establishments. This will prevent also prevent loose hair or broken hair fragments from falling onto food and food preparation areas.

Clothes: The clothes of a food handler should be neat and clean. They should not be dirty. Clothing must be sufficient to cover the entire body including arms if necessary to block body hair from getting into the food. Also, it is suggested that there should be no outer pockets on the shirts. In case there is any it should be empty. Items like pen/pencils/ mobiles/ medicine/ paper etc. if kept into the outer pocket can fall into food while working. This may compromise food safety.

Apron: The next characteristic identifying feature of a food handler is the apron. It should be changed at least once during the day. Preferably it should be done in the middle of an eight-hour shift. Apart from this cooks should change aprons whenever these get soiled. Whenever a food handler changes workstations from raw food preparation activities to ready-to-eat food preparation activities, the apron should be changed.

Food handlers should not wear aprons outside food preparation areas like while going to washroom etc. This procedure minimizes possible contamination of aprons by airborne pathogens, dirt, dust, and possible soiling by washroom fixtures and other unsanitary articles. So, they should remove apron before going to toilet. It is advisable not to have pockets in apron above the waist. Buttons should preferably be avoided on the clothing as they may come off and fall on the food.

Hands and wrists: Wearing jewelry or other cosmetic enhancing items during food handling activities is discouraged. These include, but are not limited to rings, nail polish, wrist watches, bracelets, clip-on earrings, false nails, false eye lashes etc. Jewelry can hide microorganisms that cause food borne illness and make it hard to wash hands. Jewelry can also fall into food. In cases where rings are difficult to remove, clean gloves should be worn by the food handler while handling food.

Nail cutting: Long nails are a strict no no for food handlers. Nails of a food handler should be short and clean. Long nails accumulate dirt and bacteria, which can enter food while handling. One must fix a day in the week for trimming nails. Blades should not be used to pare nails as these can cause injury.

 Foot wear: These must be clean and free of dirt and accumulated food particles on both the top and bottom.Street wear should preferably be avoided inside the kitchen Accumulation of food particles and dirt on footwear may allow microorganisms to multiply. This may consequently affect the general sanitary conditions of the kitchen premises

Dressing on wounds: A food handler is exposed to various kinds of injuries through use of sharp knives, grater, and other items while preparing food. There are frequent incidents of cuts, abrasions, burns while handling food. It is imperative that cuts and wounds should not be left open. These should be covered with a dressing to prevent contamination of food. The dressing/ bandage should be coloured. This is because in case it falls into the food it can be easily identified. A food handler may work if the cut has been bandaged and a disposable glove is worn.

Management during illnesses

A food handler who is suffering from infectious disease may transmit infection from his body to the food and make it unsafe. Persons consuming such infected food may fall ill and suffer from food borne illnesses. A food handler must report to his senior about his illness in case he is suffering from diarrhea, vomiting, fever, cough, skin lesions (including boils/cuts), eye or nose discharge.

Such a person should not be engaged in handling of food. In case it is unavoidable then all measures must be taken to prevent food from being contaminated as a result of the disease. For example, an infected sore must be completely covered by bandage and clothing, or by a waterproof covering if it is on an area of bare skin. In case of cold a disposable tissue or a handkerchief must be used to handle the secretions. Various restrictions for food handlers during illnesses are given in table 1 (source: training manual , FSSAI).

Table 1: Restrictions for food handlers during illnesses

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| --- | --- | --- |
| Disease | Work status | Duration of workRestriction/comments |
| Abscess, boils, etc | Relieve from direct contact and food handling | Until drainage stops and lesion has healed or employee has negative culture |
| AIDS or ARC (AIDS related complex  | May work (as per CDC guidelines)No open lesions, upper respiratory diseases or communicable diseases | Employee will be counseled and educated |
| **Diarrhea** |
| Acute stage (etiology known) | Relieve from direct food handling | Until symptoms resolve and infection with Salmonella, Shigella or Campylobacter is ruled out  |
| Campylobacter | Relieve from direct food handling | Until symptoms resolve or after appropriate antibiotic therapy for 48 hrs |
| Salmonella | Relieve from direct food handling | Until stool is free of the infecting organism in two consecutive cultures not less than 24 hours apart |
| Shigella | Relieve from direct food handling | Until stool is free of the infecting organism in two consecutive cultures not less than 24 hours apart |
| Hepatitis A | Relieve from direct food handling | Until seven days after onset of jaundice. Must bring note from physician on return. |
| Staphylococcus aureus | Relieve from direct food handling | Until lesions have resolved and the employee has negative culture |

Good hygienic practices at work

Food handlers need to know how the work they do can affect the safety of the food they handle. Following good hygiene practices should be observed by a food handler to ensure food safety.

* Wash and dry your hands whenever you think they are contaminated.
* Don’t sit on food preparation shelf.
* Don’t leave your personal belongings on the food preparation shelf/ cooking area.
* Cover exposed sores with a waterproof dressing or disposable gloves.
* Wear clean outer clothing. Change aprons or other clothing if they are soiled.
* When sneezing or coughing inside food preparation area is unavoidable, food handlers should turn away from food and cover their noses and mouths with tissue paper or handkerchiefs. Hands should then be thoroughly cleaned at once.
* Never blow into a bag to open it to put in food.
* Never blow on food for any reason.
* Do not spit, smoke or use tobacco in areas where food is handled.
* Only eat when you are outside the food preparation area.
* Don’t touch ready-to-eat food with bare hands.
* Don’t taste food with fingers.
* Don’t reuse a sampling spoon without washing.
* While cooking in kitchen don’t touch hair or other parts of bodies such as noses, eyes or ears.

Food handlers must tell their senior if they know or think they may have made any food unsafe or unsuitable to eat. For example, jewellery or a Band-Aid worn by a food handler may have fallen into food, or glass may have broken into or near exposed food.

Training: *Please Refer to Chapter on Training of Food Handlers.*

**Food safety requirements for food handlers under Food Safety and Standards Regulations, (FSSR 2011)**

According to FSSR 2011 any food handler believed to be suffering from or to be a carrier of a disease or illness likely to be transmitted through food shall not be allowed to enter into food handling area. A food handler can transmit Staphylococcal, Salmonella, Shigella, E coli, Entameoba histolytica, Campylobacter, Hepatitis A, influenza, threadworm, and giardia infection. A system should be developed in all EEs whereby any affected person shall immediately report illness or symptoms o illness to the management or FBO and medical examination is carried out apart from periodic checkups, if clinically or epidemiologically indicate. All arrangements should be made to get food handlers examined at least once in a year to ensure that they are free from any infectious, contagious or communicable diseases. A record of these illness signed by a qualified doctor should be maintained for inspection purposes (format of medical examination certificate is given as annexure ‘A’). In case of a food manufacturing unit the staff shall be inoculate against enteric group of diseases and a record kept for inspection. In case of an epidemic, all workers are vaccinated irrespective of the scheduled vaccination. At the time of recruitment also recent history of illness along with a medical checkup must be done.

In nutshell food handlers are an important cause of FBI. They have a definite role in prevention of FBI. Their food handling practices can affect the well being of many people. They are a crucial link in food safety.

 Annexure ‘A’