

# Kitchen Services

Kitchen serves as one of most important support services department in the hospital as it helps in stimulation of rapid recovery of patients by providing food to the patients as per the specific patient requirements. However, kitchen establishments are identified as places that may lead to outbreaks of food-borne infections

- Quality and quantity of food are key factors for patient recovery. Ensuring safe food is an important service delivery in healthcare. Hospital patients may be more susceptible to food-borne infection, and suffer more serious consequences than healthy people. Thus, high standards of food hygiene should be maintained throughout the service delivery. The need for adequate food hygiene facilities

is of paramount importance in kitchen services. Assuring safe food requires management and control of microbiological, chemical, and physical hazards

- For maintenance of proper hygiene and infection-free environment in the kitchen services department of the hospital the following minimum interventions need to be carried out while planning or executing the kitchen or dietary services in the healthcare settings.

## LOCATION OF THE KITCHEN DEPARTMENT

- The kitchen department needs to be located away from the patient care areas, if feasible, in a separate building
- It is preferable if kitchen department is located on the ground floor of the hospital where there is easy accessibility for receiving of raw materials and distribution of food through food trolleys
- Location should ensure that any noise or cooking odours emanating from the department do not cause any inconvenience to the other departments
- The location should involve the shortest possible time in delivering food to the wards.

## GENERAL LAYOUT AND REQUIREMENTS

- The kitchen area should be physically separate from patient care areas and located away from biomedical waste collection/disposal area
- The kitchen complex should contain, at the minimum, the following physically separate areas:
  - o Raw supply receiving and checking area
  - o Separate room for storage of raw material, vegetables with appropriate numbers of refrigerators, racks, etc.
  - o The kitchen itself should have defined areas for processing of raw food (washing, cutting vegetables etc)' cooking area (where the food is actually cooked), holding area for cooked food and dispensing counter/area
  - o Separate area to temporarily hold waste from the kitchen
  - o Separate area to store cleaning equipment e.g. mops, buckets and cleaning chemicals. This should not be connected to the storage area in any manner (open door/ window)
  - o A dedicated toilet for use by kitchen staff
- Adequate supply of treated water should be ensured at all times. If bore well/well water is used, there should be a provision for disinfection using chlorine or boiling before use

- Windows should be fitted with mesh screens to prevent entry of insects, lizards etc.
- All food grain storage should be done on raised pallets/stands with a minimum clearance of 8-12 inches from the floor. Pallets should ideally be made of metal as wooden ones are not easy to clean. All refrigerators, freezers and other floor-based equipment should have the same clearance above the floor
- Storage pallets, refrigerators should have clearance from all sides to enable inspection and cleaning
- The storage room should not have high temperature. An AC should be installed if possible. An exhaust fan should be installed if an AC is not available. The windows should be kept closed at all times. A thermometer to measure room temperature should be available in the room and a daily log of the same should be maintained
- The storage room should have smooth internal surfaces without cracks and crevices in the walls or floor
- Separation of cooked and raw food should be maintained at all locations. Holding/storage areas for the two should be separate from each other
- Hand wash basins should be available in the food preparation area. These should be separate from the basin used to wash raw food
- Alcohol hand rub should be available in the food preparation area
- Adequate ventilation should be provided. Exhaust fans should be available in the cooking area to exhaust the hot air generated by stoves
- Weighing/measuring apparatus for raw and clean/cooked foods should be separate e.g., different jugs should be used to measure raw milk and heated milk.

#### GENERAL CLEANING OF ENVIRONMENT

- Separate mops, buckets and cleaning chemical supplies should be used for the kitchen
- All floors in the kitchen complex should be cleaned at least twice a day using soap and water. Cleaning should begin with the food storage room and proceed to preparation and cooking area. The waste storage area and the cleaning equipment storage area should be cleaned last (clean to dirty sequence should be followed)
- Additional cleaning should be done as and when required e.g., spills should be cleaned immediately. If the floor appears dirty, it should be cleaned immediately
- Food storage pallets should be cleaned by wiping with soap and water at least weekly
- Equipment such as tables and food preparation and holding counters should be wiped with chlorine solution containing 500 ppm of chlorine (1% dilution of hypochlorite) at least twice a day or before and after food preparation whichever is suitable. The solution should remain wet on the surfaces for at least one minute
- Weighing machines used to weigh raw material should be cleaned once a day and whenever soiled, by wiping/washing with soap and water
- Cooking stoves should be wiped clean with soap water before and after use. They should always appear clean. Cooking gas cylinders attached to the gas stove should also be wiped with soap and water once a day.
- Change the mop heads/mop and brushes when they become frayed or at least every two weeks, whichever is earlier. Clean with soap and water before next use.

#### Cleaning of items used to handle food

- Equipment that comes in contact with food - cutting boards, knives, mixing utensils, cooking utensils, serving plates and bowls, glasses, etc should be washed with soap and hot water (if available) and then immersed in chlorine solution containing at least 250 ppm chlorine (0.5% dilution of hypochlorite) for at least one minute. Do not use hot water to prepare chlorine solutions. After immersion, rinse with plain water immediately and allow to dry naturally before use
- Cleaning of these equipments should be done before the first use of the day. During the day, these equipments

should be washed with soap water after use and whenever they appear soiled/dirty

- When not in use, store these items in a closed cupboard or container e.g., all knives, spoons will be cleaned at the end of the day, dried and stored in a closed plastic box until next morning ; utensils will be stored in closed cupboards or covered with a plastic sheet.

#### **Hygiene and medical examination of food handlers**

- All persons handling food will undergo periodic medical examination and laboratory testing at the following times:
  - o Initially before joining the job
  - o Subsequent medical examination should be done as under:
    - Complete physical exam - once a year
    - Stool examination for ova, cysts and parasites - every three months
    - Stool culture for salmonella - every three months.
    - Routine complete blood counts (CBC) - every three months
  - Other investigations such as chest x-ray, widal test, stool culture for cholera etc should be done as and when required based on the findings of routine testing or reported symptoms
  - Testing frequency of relevant tests should be increased during an outbreak of diarrheal disease
  - All food handlers should be vaccinated against Hepatitis B, salmonella, and cholera.
  - The following hygiene rules should be followed by all kitchen workers:
    - o Fresh washed clothes are worn every day
    - o Hair is kept short or tied in a bun in case of females. Loose hair should not be allowed in the kitchen under any circumstances. Male employees should preferably be clean shaven. If beards are grown they should be properly maintained
    - o Netted cap covering all head hair will be worn by all kitchen workers on duty
    - o Nails will be kept short and clean
    - o Hand jewellery will not be worn while on duty
    - o Apron should be worn when handling food
    - o Hand washing should be done on joining duty after completing a task (e.g. vegetable cutting, cooking the food, etc) and whenever the hands are visibly dirty/soiled. Hands should also be washed after using the washrooms, after eating food and before leaving duty
    - o Hands should be disinfected using an alcohol hand rub before handling raw food, before beginning cooking, before dispensing cooked food, after washing utensils, before leaving duty
  - Any illness should be promptly reported and the worker should undergo appropriate examination and take the recommended treatment without delay

#### **Receipt and storage of raw food**

- Raw food supplies should be checked for contamination in the receiving area before taking them to the storage area
- Gross dirt should be removed by washing foods such as potatoes and fruits before storage

- Boxes should be wiped with soap and water to remove external dirt before being taken to the storage area. Excessive water should not be applied
- Only clean food supplies should be taken to the storage area
- Grains should be stored in dosed containers on raised pallets. Containers should be washed and dried before they are refilled with grains. Grains requiring aerated storage may be stored in clean jute bags with the mouth securely tied
- Vegetables and fruits should be stored in the refrigerator at 2-4°C temperature
- Excessive stocking of perishable items such as breads eggs should be avoided
- *The storage room should be maintained dry and clean at all times*
- Cooked food should never be stored in the storage room
- Monitor for pests on a daily basis and report immediately; if seen.

#### **Cleaning and disinfection of vegetables before use**

- Wash vegetables and fruits in running plain water of drinking quality
- Remove damaged/bruised areas of leafy vegetables. Do not cut open fruits, potatoes before disinfection
- Immerse in chlorine solution containing 200 ppm chlorine (can be prepared by making a 0.5% dilution of hypochlorite solution or using chlorine tablets/powders as recommended by manufacturer). Immerse for one minute for proper disinfection
- Immediately after this rinse with plain water to remove all residual chlorine
- Drip dry or wipe dry as suitable and transfer to food preparation area immediately. Cleaned food should not be left in the washing area,

#### **Processing of raw food for cooking**

- Preliminary preparation of *the* food should be done in a designated area of the kitchen
- Wash and disinfect hands before handling the food
- Make sure cutting boards, knives and other containers and the counter tops are clean
- Use separate knives and cutting boards for vegetables and fruits
- Take up the prepared raw food for cooking/serving as soon as possible. Avoid storing and using later as much as possible.

#### **Food preparation**

- Wash hands with soap and water before beginning cooking
- Ensure all utensils and other equipment are clean before beginning
- Use a clean container/measuring apparatus to measure out food portions
- Use correct temperatures for cooking the food
- Cook eggs until the yolk and white are firm
- Cooked and raw food should be kept separate use different counters for each
- Food should not be consumed in preparation area.

#### **Storage and dispensing of prepared food**

- Prepared food should be kept covered and served as soon as possible
- Wear clean plastic gloves when dispensing food
- Plates, glasses, ladles, cups etc used to handle cooked food should be clean. Inspect visually before using.

## REFRIGERATORS

- Monitor the temperature of all refrigerators by placing a thermometer inside them and record the readings at least once daily. The temperature should be maintained between 2-4°C. Electronic sensors may be used, if available
- Place refrigerators away from heat sources and keep clearance at the back of the unit to allow hot air to escape
- The following cleaning procedure should be used to clean all refrigerators:
  - o Switch off the unit and remove all food items, ensuring that these are covered in the appropriate manner and are kept safe during the cleaning process
  - o Remove all shelves and scrub clean with soap and water
  - o Clean the fridge walls and base in that order with soap and water
  - o Remove all condensation from drip/chiller trays (if applicable) and wipe down all inner walls with a clean cloth
  - o Replace all shelves and switch on the unit.

### Waste disposal

- Kitchen waste should be segregated into dry and wet at the point of generation.
- Wet waste should be collected in waterproof bags. This waste can be used for composting.
- Waste bags should be tied and disposed off each evening or when three fourths full, whichever is earlier.
- Kitchen waste should not be mixed with biomedical waste.

### Pest control

- The entire kitchen area should be sprayed with pesticides every three months and whenever large numbers of pests are detected
- Rodent traps should be placed in various areas and checked daily
- Pest infestation should be looked for daily and reported immediately when detected.



Figure : Food distribution through covered trolley