



INDIAN
INSTITUTE OF
PUBLIC HEALTH
HYDERABAD

fssai



FACILITATOR GUIDE FOR ESSENTIALS OF FOOD HYGIENE – I

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

LEVEL I - FOOD HANDLERS

FACILITATOR GUIDE FOR ESSENTIALS OF FOOD HYGIENE - I

Project Lead:

Prof Mala Rao, Formerly Director, Indian Institute of Public Health, Hyderabad (2008- March, 2011) and Chairperson, Curriculum Development Committee August 2010 - March 2011

Prof. G.V.S Murthy, Director, Indian Institute of Public Health, Hyderabad (April, 2011 - Present) and Chairperson, Curriculum Development Committee March 2011- present

Review and Editorial Team:

Dr. M. Sitamma, Additional Professor, Indian Institute of Public Health, Hyderabad

Dr. Anitha Thippaiah, Associate Professor, Indian Institute of Public Health, Hyderabad

Ms. Smitha C. Amin, Research Assistant, Indian Institute of Public Health, Hyderabad

Dr. Komal P. Allagh, Research Associate, Indian Institute of Public Health, Hyderabad

Dr. Christopher Suter, Director of Qualifications/Director of Certification, The Royal Society for Public Health, UK

Mrs. Sara Shackleton, Chartered Environmental Health Practitioner, The Royal Society for Public Health, UK

Indian Institute of Public Health

Plot no - 1, Amar Co-op Society,
ANV Arcade, Madhapur,
Kavuri Hills, Hyderabad - 500033
Phone: +91 40 49006000
Fax: +91 40 49006060

CONTENTS

Introduction	1
Planning and Procedures	2
Schedule Overview	4
Welcome, Registration & Introduction	5
Section 1: Food Poisoning and Its Causes	7
Section 2: Hygiene Control	12
Section 3: Personal Hygiene	14
Section 4: Waste Disposal and Pest Control	16
Section 5: Temperature Control	18
Section 6: Cleaning and Disinfection	21
Assessments	23
Conclusion	26
Appendix	27

INTRODUCTION

This guide has been developed for use along with the training book “Essentials of Food Hygiene - I”. It meets the requirements of the Food Safety & Standards Authority of India (FSSAI) “Level 1” training for Food Handlers, which is a very basic training in food hygiene.

“Level 1” training is intended to provide front-line food handlers information on keeping food safe. It is designed to help the food and catering industries provide basic training to a safe level for those who perform tasks like clearing tables, maintaining stores, cleaning work surfaces and utensils, serving/waiting and other such similar duties. It is also relevant to anybody who handles food at home, people who are learning about food, new employees with minimal or no prior food safety knowledge, and food handlers who do not work in high risk sections of the plant/factory/store.

This facilitator guide is part of an integrated training package including the book titled “Essentials of Food Hygiene – I” and several posters. There are 6 sections in this guide which match corresponding sections of the book. Participants are not expected to have any previous knowledge of the subject, but must complete all sections of the programme to complete the level 1 training.

Posters for each section are provided at the end, and these can be used as training aids. Training can be led through discussion of the posters and the guide clearly shows which poster is under consideration during each section. To accommodate different teaching styles, there are suggestions for points at which facilitators could display the poster during discussion periods. Facilitators must keep up to date with current developments to enhance their presentation. Also included in this guide are specimen assessments. This can be used for revision purposes.

The central theme is to promote a participative approach to learning. Facilitators should draw on the knowledge and often considerable experience of participants. They should remind participants of the need to apply food safety principles in their workplace.

Knowledge is the key, but application of knowledge is vital.

PLANNING AND PROCEDURES

This programme is divided into six sections. It is designed to be flexible and can be delivered in 4.5 hours. There is sufficient material in the guide to extend the time if a longer programme would be more appropriate. However, it could also be shortened depending on the target group of participants and their competence levels. Facilitators can select from the given content to suit the group training needs.

Practice exercises are included in this guide. They should be used as opportunities to identify participants who may require extra help.

Preparing for the training programme

The preparation time required for teaching this programme may range from at least a day for an experienced trainer to several days for a beginner. A facilitator should consider the following points while preparing for the training programme.

1. Trainee profile

Information about the participants will be helpful so that the training can be organized well.

- The group composition will affect its dynamics, e.g. the proportion of men to women, young to old, novices to experienced participants etc.
- Existing skills and capabilities should be assessed, especially language and literacy levels as the training is carried out through discussions and demonstrations using posters.
- Work experience and job responsibilities of the participants should be considered in order to make full use of their knowledge and skills.

Ideally, people learn best in small groups of 10-20. Larger groups may require more trainers.

2. Facilitator profile

Facilitators can be qualified personnel as identified by the FSSAI. They can be teachers in schools and colleges, in-house trainers in food business operations, retail organizations, managers within the food industry or independent trainers.

3. Venue of the training

It is important to check the venue of the training programme. The training venue should comply with all necessary safety standards and sufficient space should be available for all participants and for any demonstrations. The following are basic requirements that should be available at the venue:

- A medium sized kitchen or kitchen area with easy access to another room suitable for food preparation;
- A large sink suitable for food preparation and washing up, dish cloths, scrubs, sponge, soap, detergent;

- A separate sink for hand washing - this could be situated in a nearby toilet – with hot/cold running water, soap, sanitizer and clean towels;
- Stainless steel or plastic laminate type of work surfaces or tables for food preparation which are in a reasonable condition, i.e. not chipped, cracked or badly scored, buckets, mops, disinfectant, cleaning cloths, brooms etc.;
- Cooking equipment – utensils, bowls and pans;
- A refrigerator with freezer, thermometer to measure/demonstrate temperatures; and
- Garbage/Waste containers, washable protective clothing.

This is not a comprehensive list, and is just a guide which cannot cover every need or eventuality and sessions may need to be adjusted slightly to suit different situations or participants.

The following points should also be kept in mind while checking the venue:

- Is it accessible for all those who wish to come?
- Is there enough space, also for group work?
- Are there enough chairs?
- Is there a blackboard or a flipchart?
- Are the walls suitable to fix papers/posters?
- Are there young women participating with small children? If yes, is there a room which can accommodate them?
- Should somebody be organized who would help to look after the children?
- Does food, water, coffee/tea have to be organized? If yes, this may have to be done before the training.

SCHEDULE OVERVIEW

Duration: 4.5 Hours

CONTENT	TIME
Welcome, Registration and Introduction	30 minutes
Section 1: Food Poisoning and its Causes	30 minutes
Section 2: Hygiene Control	20 minutes
Section 3: Personal Hygiene	30 minutes
Section 4: Waste Disposal and Pest Control	30 minutes
Section 5: Temperature Control	30 minutes
Section 6: Cleaning and Disinfection	40 minutes
Assessment and Evaluation	20 minutes
Conclusion and Certification	15 minutes

WELCOME, REGISTRATION & INTRODUCTION

Time: 30 minutes

A registration table can be set up at the arrival location. If necessary, participants should sign registration forms which are provided at the table. A sample registration form is included in the Appendix.

Objectives:

- To introduce the programme and its structure, facilitators and participants to one another.
- To demonstrate an understanding of the need for food hygiene and food safety and the importance of reducing risks.
- To understand prior knowledge of food safety among participants.

Programme

It is important to begin the programme with a warm welcome and brief introduction. Welcome all participants and introduce yourself, the programme and all the people involved in it. Tell participants that there are five sections in the course and the names of each of them, the objectives of the program and what is expected of them. It may also be necessary to ensure that everyone is familiar with issues such as programme schedule and timings, refreshments, location of toilets, and any other logistic arrangements.

Ask participants to give their name, place of employment and to briefly state their reasons for attending the programme. If you can identify the type of employment that the participants have, then appropriate examples should be chosen to illustrate points that are made throughout the programme. Participants should be encouraged to think of ways of applying the information from the programme both at home and at work.

ICEBREAKER ACTIVITY

This is an optional introductory exercise that can be used if time permits.

Activity 1:

Participants will come up with ideas which facilitators can use to build on the participants' knowledge. They can work in small groups and compile a short list of food safety issues that have hit the headlines in the last few years. Facilitator then asks for feedback from the groups and discussion takes place of the items. This can be an opportunity to introduce topics that will be covered during the programme, such as bacteria, contamination, and food poisoning. Topics which may be discussed by participants are:

- physical contamination - examples such as a cockroach found in cooked rice, staple pins found in dal,
- pest infestation of food premises;
- references to television programmes;

- fungus in soft drink bottles;
- consumption of decomposed meat, rancid biscuits, and
- cooking in tin vessels.

Activity 2:

Facilitators may wish to collect press cuttings to illustrate current issues or request participants to bring such information along with them to the first session. This exercise can be concluded by pointing out that all the examples raised by the group are relevant to the need for good standards in food hygiene to ensure that food is fit for human consumption. These examples are usually caused by human error and/or because food handlers fail to observe basic hygiene rules. A further link can be made to the undoubted relevance of the topics in the rest of the programme.

The icebreaker activity allows the trainer to identify topics that may need additional emphasis or, in many cases, those that require less classroom time during the programme.

Section 1: FOOD POISONING AND ITS CAUSES

Time: 30 minutes

Learning objectives:

By the end of this section, participants should be able to:

- Explain relevant terminology including: food safety, food hygiene, food poisoning, 'at risk' groups, allergic reactions.
- Describe the nature and growth of bacteria and how they cause illness.
- State the principal causes and symptoms of food poisoning.
- Demonstrate an awareness of the sources of bacteria.

Methodology:

- Lecture and discussion using posters 1, 2, 3, 4 and 5.
- Group discussion.

This part relates to section 1 of the book "Essentials of Food Hygiene – I". It explains the hazards to the population of eating food that has become contaminated, often by low standards of hygiene and poor practices.

WHAT IS FOOD SAFETY and FOOD HYGIENE?

Discussion Question 1

Ask participants to identify key ideas that are important to food safety and hygiene such as cleanliness, keeping raw and cooked food apart, controlling pests, preventing food poisoning etc.

The main priority on this programme is to consider ways of preventing food poisoning by giving participants the information they need to be safe food handlers.

Introduce the meanings of the terms food safety and food hygiene:

"Food Safety includes all the measures that are taken to ensure that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use."

"Food hygiene is the action taken to ensure that food is handled, stored, prepared and served in such a way, and under such conditions, as to prevent as far as possible - the contamination of food."

FOOD POISONING

Discussion Question 2

Ask if any participants (or their family and friends) have had food poisoning and ask them to describe how soon the symptoms started after eating contaminated food (usually 1-36 hours), how it made them feel and how long the symptoms persisted. A clear picture will emerge about the symptoms of food poisoning.



Poster 1: Symptoms of food poisoning
Display poster 1 and talk through it.

Ask questions to develop discussions around issues like:

- Who is most at risk from food poisoning and why they are more vulnerable? (Answer: Infants, pregnant women, elderly and people with weak immune systems are more vulnerable and are known as ‘at risk’ groups).
- Have those who suffered food poisoning reported it to the doctor?
- What should a food handler do if he/she suffers from symptoms of food poisoning? (Answer: Inform the supervisor who may require the food handler to be excluded from working with food until free from vomiting and diarrhoea for 48 hours).

Discussion Question 3

Ask participants why they think there has been an increase in the cases of food poisoning more recently. Interesting discussion should ensue. Some contributory factors include:

- greater availability of ready-to-eat foods;
- more eating out – ask how many of them have recently bought a take-away meal, for example?
- less care in storage/preparation of food; and
- more pesticides used.

Accurate statistics of the total number of cases of foodborne illnesses are not available. There are a number of reasons for this, including the fact that many people do not contact a doctor when ill. Also, not all cases are notified by doctors and are therefore not recorded. Many people with symptoms do not have laboratory investigations to make a definite diagnosis and not all cases of vomiting and diarrhoea are caused by contaminated food.



Poster 2:Physical, Chemical and Biological Contaminants
Display poster 2 and talk through it.

Work through the poster and comment on each point. Discuss how food can be contaminated by biological (microbiological), physical and chemical hazards.

The following are some examples of these hazards:

Physical: Undesirable substances in food such as fragments of glass, hair, pieces of metal and stones.

Chemical: Chemical poisons like insecticides, some poisonous mushrooms.

Biological: Bacteria and their toxins.

Discussion Question 4

Ask if participants or anyone they know, are allergic to certain foods. What symptoms do they suffer from? Explain that allergic reactions are not food poisoning, but can give rise to symptoms similar to food poisoning. Allergic reactions are not caused by the food being contaminated.

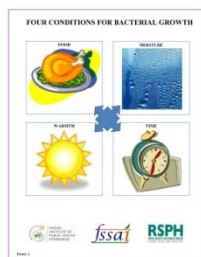
In order to understand why food handlers should follow certain procedures, participants will have the opportunity to learn where bacteria are found, how they grow and how they can be passed to food.

BACTERIA

"Bacteria are tiny living organisms often known as 'germs'. They are so small that it is impossible to see them without a microscope. Bacteria are usually round or rod-shaped."

Cover the following points:

- Bacteria are living cells found everywhere;
- Most bacteria are harmless and many are helpful;
- Some cause disease;
- Some cause food spoilage;
- Some can produce toxins in food.



Poster 3: Four conditions for bacterial growth

Display poster 3 and talk through it.

Bacteria are *living* organisms and in order to live and grow must have the following **FOUR CONDITIONS**: Food, moisture, warmth and time.

Food (Nutrition)

Certain foods which have high protein content are particularly rich in nutrients and contain moisture and therefore provide excellent conditions for bacterial growth if kept in warm conditions, for example (milk, eggs, meat, sea food and their products).

Foods which do not normally support bacterial growth include foods containing sugar, salt, acid or chemical preservatives. Ask participants for examples (jams and pickles).

Bacteria cannot easily grow on dried foods - facilitators can use this as a link to the next condition for growth.

Moisture

Bacteria need moisture to grow, and this can be found in many foods. Give examples of few food items (example: meat, dairy products, eggs, fish, vegetables etc.).

Warmth

Bacteria that cause food poisoning will grow at temperatures between 5°C and 63° C; they grow most quickly at a temperature of around 37°C, which is the normal temperature of the human body.

Temperature Control

This topic is especially important in preventing food related illnesses: inadequate temperature control is a contributing factor in about 80% of outbreaks of food related illnesses. Thus facilitators must ensure that all participants fully understand the implications of this aspect of the subject.



Poster 4: Temperature Danger Zone

Display poster 4 and talk through it.

Discussion Question 5

Ask participants how they can prevent bacterial growth by keeping prepared food out of this temperature range?

Some examples include keeping time to a minimum between:

- Taking food from the fridge and cooking;
- Taking food from the fridge and serving;
- Cooking food and serving; and
- Cooking food and refrigeration.

Many participants may have difficulty grasping what the different temperature figures really mean - try asking a question like “what is the temperature today?” Give examples such as room temperature, body temperature etc. It is essential to explain that temperature of foods is most important with foods like cooked meat, sea food; eggs; milk, cooked rice as nutrient (protein) and moisture are present in the food.

Other points to mention briefly are:

- killing bacteria by heat (through cooking);
- pasteurisation;
- toxins; and

- the effect of cold conditions on bacteria (i.e. chilling and freezing).

Time

Explain how bacteria grow and note multiplication rates. Include the following information:

- When provided with conditions for growth the bacterial cells multiply by splitting in two - this can happen within only 20 minutes.
- One cell can multiply into 7,000 million bacteria in 24 hours!
- Remember - food poisoning usually occurs when large numbers of bacteria are present in the food, but some food-related diseases can occur even after only low doses of bacteria have been consumed.
- The nature of food poisoning bacteria means that they cannot be detected in food: they do not affect the smell, taste, appearance or texture – i.e. food which is contaminated with food poisoning bacteria looks, smells and tastes normal. Ask how participants could tell if food was contaminated with large numbers of disease causing bacteria – and make the point that you cannot rely on your senses to detect them in food.

SOURCES OF BACTERIA



Poster 5: Ways in which bacteria enter food
Display poster 5 and talk through it.

The sources of bacteria covered in this unit are:

- Raw food;
- Water/ ice;
- People;
- Places (e.g. utensils, equipment and surfaces);
- Other sources like pests, pets, waste and rubbish.

Discuss each of these sources.

Briefly reinforce the main points in this section.

Section 2: HYGIENE CONTROL

Time: 20 minutes

Learning objectives:

By the end of this section, participants should be able to:

- Describe hygiene control and identify risk to the consumer.
- Give examples of action which should be taken to prevent the contamination of food by micro-organisms.

Methodology:

- Discussion with poster 6 and 7.
- Group discussion.

WHAT IS HYGIENE CONTROL

Discussion question 6

Ask participants what they understand by *hygiene control* and compare with a description such as: "Hygiene control is the adoption of practices which will reduce the risk of clean food becoming contaminated. The aim of hygiene control is to *prevent the spread* of bacteria."

Inform participants that this section sets out the good practices they must adopt to avoid food becoming contaminated.

Food handlers have a responsibility to prevent contamination. This occurs through the transfer of food poisoning bacteria from a contaminated source to an uncontaminated (clean) food.

Give examples of how contamination occurs and ask participants how it could be prevented in each example. Participants can also give suggestions of procedures and good practices from their own workplace.



Poster 6: Contamination

Display poster 6 and talk through it.

Discuss how clean food can be contaminated in the following ways, giving appropriate examples:

- Food-to-food,
- Equipment-to-food,

- Food handler-to-food,
- Water-to-food,
- Other ways (pests and waste food).

Ensure that participants understand that food poisoning bacteria do not travel to food by themselves, they are transferred by vehicles of contamination: especially hands, as well as utensils or cloths.

Food handlers should regard raw meat, raw poultry and seafood as infected with food poisoning bacteria. Facilitators could remind participants that many outbreaks of food poisoning have occurred when good practice has not been rigorously observed. The brick wall on the poster makes the point!

The following good practices/ways of reducing risks of contamination should be discussed:

- separate equipment and utensils for preparation;
- colour coding;
- importance of adequate cleaning;
- wiping cloths;
- safe storage in the refrigerator (separate units where possible); and
- methods of keeping prepared food safe until service.

COLOUR CODING SYSTEM	
COLOUR	Intensities, changing hands, cloths to be used only for
RED	Raw meat and poultry
BLUE	Fish
YELLOW	Cooked meats
GREEN	Vegetables
BROWN	China and brass
WHITE	General purpose/bakery



Poster 7: Colour coding system

Display poster 7 and talk through it.

Briefly reinforce the main points in this section.

Section 3: PERSONAL HYGIENE

Time: 30 minutes

Learning objectives:

By the end of this section participants should be able to:

- Explain the reasons for high standards of personal hygiene.
- Demonstrate proper hand washing techniques and their importance.

Methodology:

- Demonstration (hand washing)
- Presentation and discussion with posters 8 and 9.

Tell participants that this section is about personal responsibility to maintain high standards of personal hygiene.

Hand Hygiene

The human body has many bacteria on the outside and inside. The most common method of spreading those bacteria is through the hands. Consequently hand hygiene is an important part of personal hygiene.

It is important for the food handler to **always wash hands thoroughly** using hot water and soap (preferably liquid soap). All parts of the hands and wrists must be washed under running water. It is just as important to dry hands thoroughly. Note thus, that the requirements for washing hands are:

- wash basin (wherever possible);
- hot and cold running water;
- soap; and
- means of drying hands.



Poster 8: Steps involved in hand washing.

Display poster 8 and talk through it.

Demonstration: the facilitator can demonstrate the six steps of hand washing, and then ask a few participants to demonstrate them.

Discussion question 7

When must hands be washed?



Poster 9: When to wash hands

Display poster 9 and talk through it.

Ask participants to give examples of when hands must be washed. The discussion should also include points such as:

- someone touching their face
- someone coughing (and/or blowing nose)
- handling rubbish or closing dustbin
- smoking when on a break

This poster raises some points for discussion about when hands must be washed.

Emphasize on other good practice relating to face and head, such as:

- avoid coughing or sneezing in a food room
- avoid touching face and head particularly mouth, nose and ears
- keep hair covered with a net or hat
- wash hair regularly
- wear clean and protective clothing
- cover wounds and cuts with band-aid
- NEVER comb hair in a food area or while wearing protective clothing
- Report illnesses to supervisor.

Remind participants that hand hygiene is vital even if they are wearing gloves and that the gloves themselves can become contaminated.

Reinforce the main points in this section.

Section 4: WASTE DISPOSAL AND PEST CONTROL

Time: 30 minutes

Learning objectives:

By the end of this section, participants should be able to:

- Understand the importance of appropriate waste disposal and pest control procedures.

Methodology

- Demonstration on segregation of waste.
- Presentation with poster 10.
- Discussions on own experiences.

Tell participants that this section explains waste disposal, pest control and procedures of keeping utensils and the workplace clean.

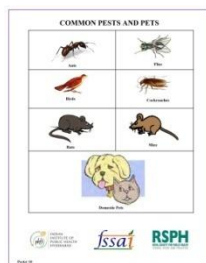
Waste disposal

Demonstration: How to segregate waste.

Participants can be asked about waste segregation practices in their own workplaces and good practices that are followed. The trainer/any participant can demonstrate how to:

- Separate non-biodegradable waste such as plastic cans and covers from biodegradable waste before putting them into bins.
- Separate liquid and solid wastes.
- Cover dustbins, clean them regularly, sanitize (collect them at the assigned public garbage collection point).

Pest Control



Poster 10: Pests and Food

Display poster 10 and talk through it.

Participants should know how they can help to control pests in their work premises.

Discussion Question 8

Ask participants to talk about the pests that are commonly found in places where food is prepared or stored and in the surrounding environment. Review characteristics and habits of each pest shown on the poster and discuss how to deal with the problems created by them.

Prevent access

Discussion Question 9

How to prevent pests from entering kitchen premises?

- Keep doors and windows closed as far as possible;
- Use fly screens on windows; and
- Inspect the delivery bags, boxes, cartons for signs of pest. Find the routes by which pests gain access.

Denying Pests Favourable Conditions

Discussion Question 10

How can we deny pests favourable conditions for growth?

Compare participants' ideas with the following suggested practices.

- Clean as you go
- Cover food that needs to stand out
- Keep utensils and equipment clean
- Store food properly
- Do not leave food out overnight
- Remove rubbish regularly
- Check all storage areas regularly

Signs of pests

Discussion Question 11

What are the signs of pests being present?

The following signs should be looked for in a food premises: Droppings, greasy trails at the base of walls and around equipment, marks on food or small mounds of food debris, nibbled wrappings, holes in cardboard containers, pest carcasses, unusual smells and noises, damage to woodwork (mice and rats nibble).

Discussion Question 12

What is the 3-point strategy for pest control?

- Prevent access
- Deny pests favourable conditions
- Report signs of pests

Briefly reinforce the main points in this section.

Section 5: TEMPERATURE CONTROL

Time: 20 minutes

Learning objectives:

By the end of this section, participants should be able to:

- Recognize the correct temperatures for cooking and storing food.
- Describe suitable methods for storage of perishable foods.

Methodology:

- Presentation and discussion using poster 11.

Ensure that participants are familiar with temperatures on the Celsius scale and that they understand important temperatures in relation to food safety.



Poster 11: Temperature Control

Display poster 11 and use as a starting point for a discussion.

Discussion Question 13

What are the safe methods of storing perishable foods?

1. Cooking food: Food must be cooked thoroughly as bacteria are killed by heat.

Ask students to think of reasons why food is not always thoroughly cooked?

Answers often given by students include: staff being under pressure, faulty equipment, and insufficient thawing.

Discuss their ideas as appropriate and emphasise the following points:

To ensure thorough cooking, meat must be:

- cooked for long enough at a high enough temperature (core temperature of above 70°C for 2 minutes);
- properly thawed;
- divided into smaller amounts if necessary to ensure heat penetration (maximum joint size approximately 5 kilos).

2. Keeping hot foods hot and cold foods cold:

Hot food should be maintained at least at 63°C before food is consumed. Many foods that are eaten cold have sufficient nutrients and moisture to enable bacteria to grow quickly. Fresh milk, butter, cheese, frozen vegetables and meat are examples.

3. Keeping prepared food out of temperature danger zone:

Reinforce the importance of keeping food out of the Temperature Danger Zone.

The rules for achieving this are quite simple:

- keep hot food hot
- keep cold food cold
- keep prepared food out of the Temperature Danger Zone

Discussion Question 14

How must you proceed once food has been thoroughly cooked?

Freshly-cooked food should be:

- served immediately (note that leaving cooked meat to stand for 10 minutes before serving does not present a significant risk in terms of food safety) or
- kept hot above 63°C until it is served ('hot holding') or
- chilled as quickly as possible and refrigerated.

4. Reheating:

Re-heated cooked foods - notably milk products, poultry and meat - are implicated in many cases of food poisoning. Food handlers often make the mistake of thinking that because food has already been cooked it is free of bacteria and that a 'warming up' will be sufficient.

Discussion Question 15: How is food reheated?

Discuss the guidelines for re-heating.

Note: Avoid re-heating where possible, but accepted good practice is to reheat dishes to a core temperature of at least 70°C for 2 minutes or an absolute minimum of 75°C if no time is measured.

5. Refrigeration:

Reinforce the point that placing food in a refrigerator does not kill the bacteria that the food carries but the low temperature means that *warmth* - one of the requirements for bacterial growth - is not present. The bacteria simply become dormant. If the food is removed from the refrigerator into room temperature the bacteria will begin to grow again. Foods should be refrigerated for only short periods of time, the duration varying from food to food.

Discussion Question 16

Give examples of food which should always be refrigerated?

Give examples of refrigerated storage periods, including the importance of following date-marks on foods.

Discuss guidelines for using refrigerators. Participants may come up with their own suggestions.

6. Freezing:

Discussion Question 17

How will you store food in the freezer?

Suggested answers should include:

- All food should be wrapped, labelled and dated;
- Food should be stored neatly within the freezer and not overloaded;
- Old stock should be used before new - maximum storage periods should be known.

Freezing denies bacteria the warmth they need to grow. The coldness also turns any moisture in the food into ice - water in a form that bacteria cannot use. The length of time food can be stored in a frozen state depends on the type of food and the rating of the freezing unit. Although frozen food may not become contaminated it may deteriorate in flavour and character if stored too long.

7. Thawing:

Discussion Question 18

Why should meat always be thawed before cooking?

Suggested response: unless complete thawing occurs the temperature at the core of the food may not reach a high enough level during the cooking process to kill any bacteria that are present.

Frozen foods must be properly thawed before cooking begins. Unless complete thawing occurs, the temperature at the core of the food may not reach a high enough level during the cooking process to kill bacteria. Thawing can cause problems in that when the outer surface of food warms up, bacteria can begin to grow although the centre of the food remains frozen.

8. Dry food storage:

Points to mention include:

- cool, dry, clean, ventilated stores
- checking of deliveries
- stock rotation and date-marking
- suitable storage containers and shelving
- food should be stored off the floor

Briefly reinforce the main points in this section.

Section 6: CLEANING AND DISINFECTION

Time: 40 minutes

Learning objectives:

By the end of this section participants should be able to:

- Have an appreciation of cleaning procedures for premises, equipment and utensils.

Methodology:

- Discussion with poster 12.
- Demonstration

The participants should understand that apart from keeping ourselves clean, it is equally important to consider ways of keeping the work environment clean.

Cleaning the workplace

Discussion Question 19

Ask participants if they know the term clean-as-you-go and ask for examples of such tasks which they are responsible for at work.

Discussion Question 20

Ask if anyone is aware of a cleaning schedule at work, what tasks are included and whose responsibility they are.

Cleaning of the work-place can be divided into two broad categories:

'clean-as-you-go' and *'scheduled cleaning'*

Clean-as-you-go applies to cleaning that must be done very quickly after the soiling occurs. The aim is to prevent contamination, or injury to staff, or simply to keep working areas clean and tidy.

Examples of this type of cleaning are:

- washing and sanitizing a chopping board, knife, spoon, etc. immediately after use'; and
- cleaning up a floor spillage just after it has happened.

Scheduled cleaning refers to cleaning tasks carried out at regular intervals. Food businesses often have a timetable which specifies all the details for each item to be cleaned. Examples of scheduled cleaning duties are:

- cleaning the kitchen floor (DAILY)
- cleaning shelves in the dry store (WEEKLY)



Poster 12: Cleaning and disinfection chemicals
Display poster 12 and talk through it.

Discussion Question 20

Describe the function of each chemical?

Stress the importance of adopting a thorough overall approach to cleanliness and the value of the old-fashioned hot water and elbow grease.

Remind participants that these chemicals can be dangerous and recommend they always follow the manufacturer's instructions.

Discussion: discuss some of the following points:

- dish-washing (by hand or machine)
- cleaning work-surfaces
- cleaning other surfaces
- cleaning equipment
- cleaning floors, walls & ceilings
- dusting and sweeping
- scrubbers, mops and cloths
- waste bins

Demonstration:

The facilitator demonstrates how to:




- Clear the Counter.
- Wash the utensils with warm water and detergent.
- Mop the floor with water and disinfectant.
- Wipe the place with a dry cloth.

Briefly reinforce the main points in this section.

ASSESSMENTS

The facilitator could use one or more of the assessment types given below depending on the available time as well as level of food handlers. Participants can be asked to note their responses on the given assessment sheet. In case of participants who are not able to write responses, oral answers can be noted by the facilitator.

Sample Assessment 1: (Time: 15minutes)

Essentials of Food Hygiene -I		
Name:	Date:	
Total marks:10		
Instruction: What are the signs of the following ‘visitors’ having paid you a visit? How would you prevent them from returning?		
SIGNS	PESTS	SOLUTIONS
	Mice 	
	Cockroaches 	
	Birds 	

Answer Sheet for Assessment 1

SIGNS	PESTS	SOLUTIONS
<ul style="list-style-type: none"> • Droppings • Damage to foodstuff and property • Live or dead bodies sighted 	Mice	<ul style="list-style-type: none"> • Prevent access • Clean environment • No waste food • Traps, poisons used by specialist pest control contractors
<ul style="list-style-type: none"> • Nocturnal, so sighted after dark unless a very severe infestation • Unpleasant smell • Faecal pellets 	Cockroaches	<ul style="list-style-type: none"> • Prevent access • Clean environment • No waste food • Traps, insecticides used by specialist pest control contractors
<ul style="list-style-type: none"> • Torn milk packets • Droppings • Sightings 	Birds	<ul style="list-style-type: none"> • change delivery arrangements • Building design (e.g. no ledges, mist nets) • No waste food

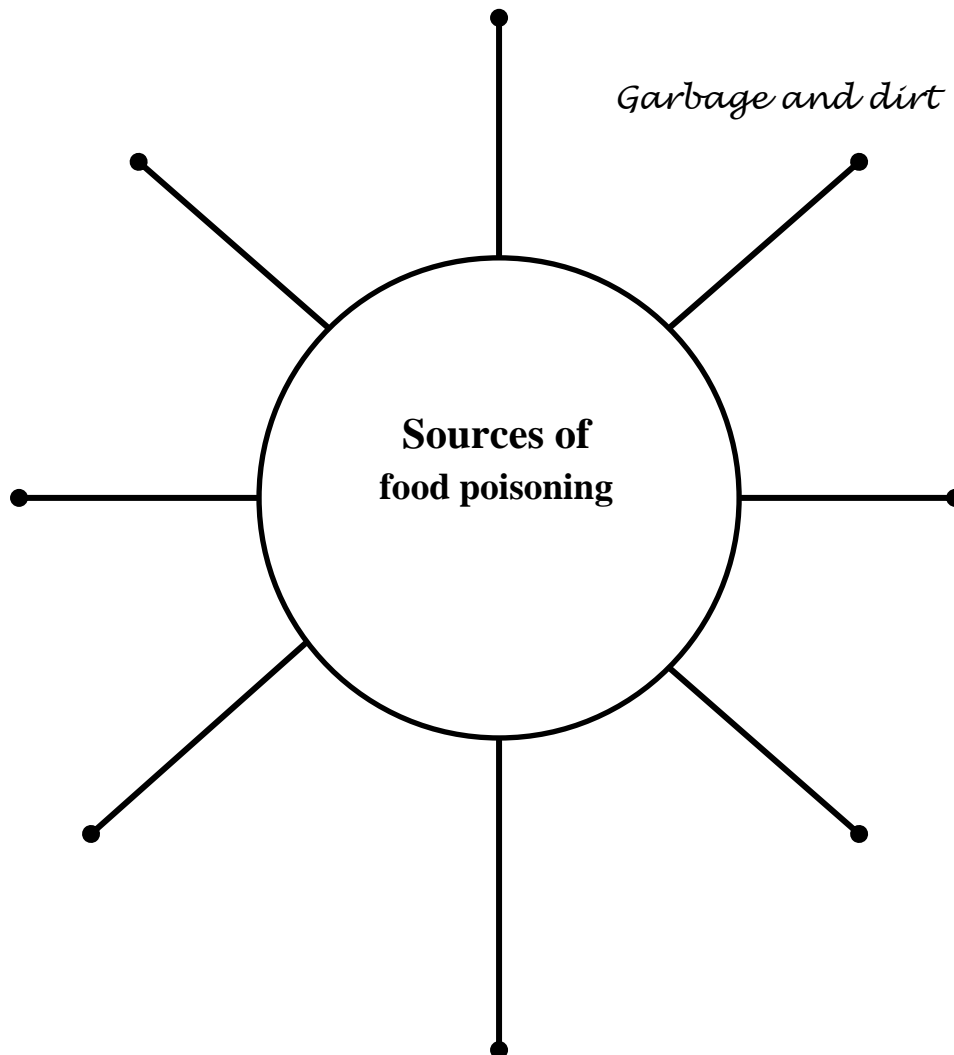
Sample Assessment 2: (Time: 15 minutes)

Name:

Date:

Total Marks: 10

Instruction: Complete the diagram to show the main sources of food poisoning bacteria.



Answer Sheet for assessment 2

A standard response might include the following sources of bacteria:
Contaminated water, pets, pests, garbage and dirt, raw meat, salad, unpasteurized milk, open cut/wound on the hand of food handler.

CONCLUSION

Time: 10 minutes

Objective:

- To have an over view of the course, conclusions/ corrective actions if necessary.

Conclude the course with an evaluation/ assessment/ test and distribution of certificates.

APPENDIX

This Certificate of completion
is hereby given to: _____

For successfully completing the
Essentials of Food Hygiene – I
Training Programme

Organized under:

Food Safety and Standards Authority of India



INDIAN
INSTITUTE OF
PUBLIC HEALTH
HYDERABAD



RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

COMMON SYMPTOMS OF FOOD POISONING



Diarrhoea



Vomiting



Fever and Dizziness



Stomach pain

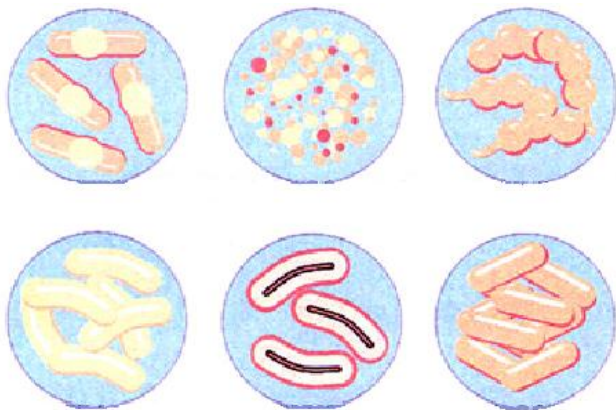
CONTAMINATION OF FOOD – HAZARDS TO CONSUMERS



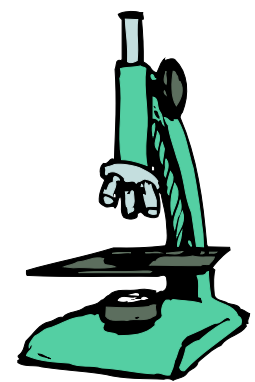
PHYSICAL



CHEMICAL



Food poisoning bacteria as seen through a microscope



Microscope

BIOLOGICAL



FOUR CONDITIONS FOR BACTERIAL GROWTH

FOOD



MOISTURE



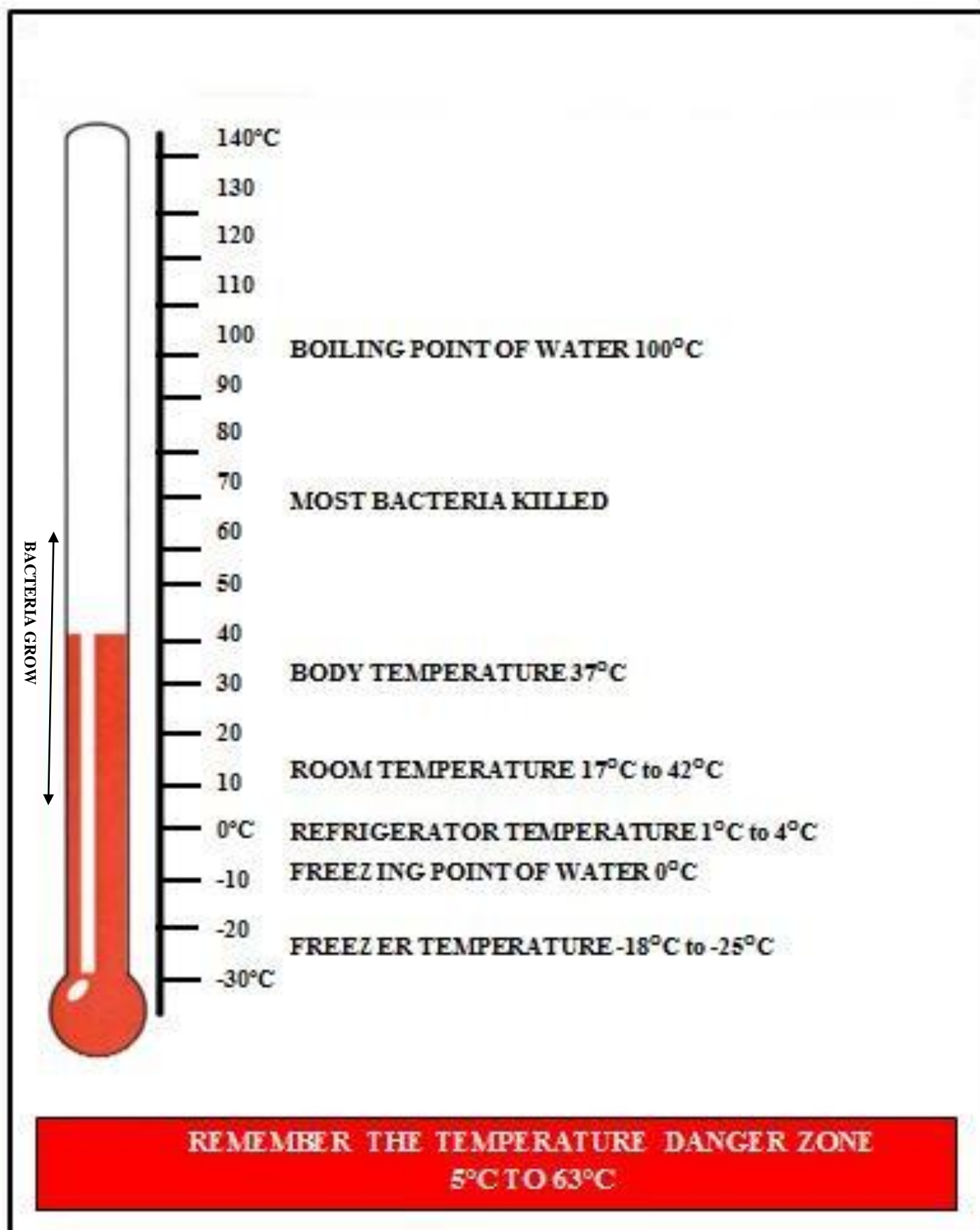
WARMTH



TIME



TEMPERATURES AND BACTERIAL GROWTH



SOURCES OF FOOD POISONING BACTERIA



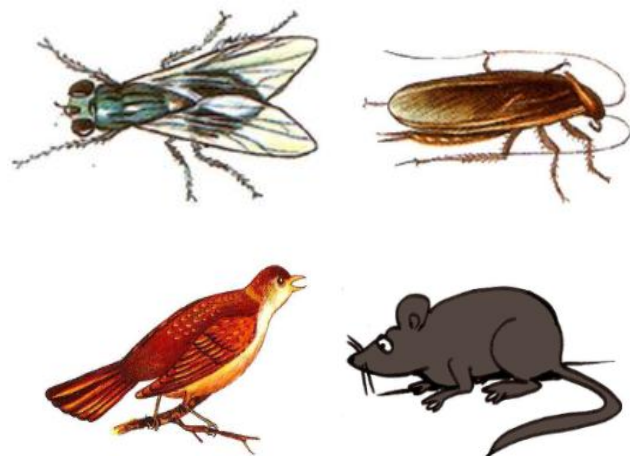
Raw foods



Water/Ice



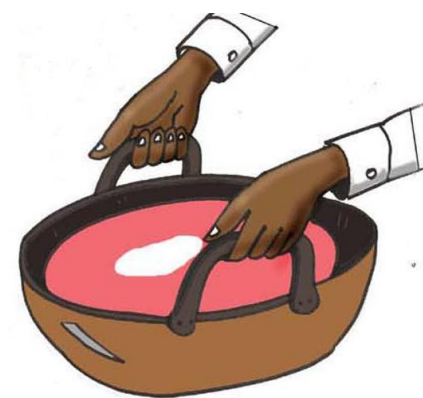
Human handlers



Pests and pets



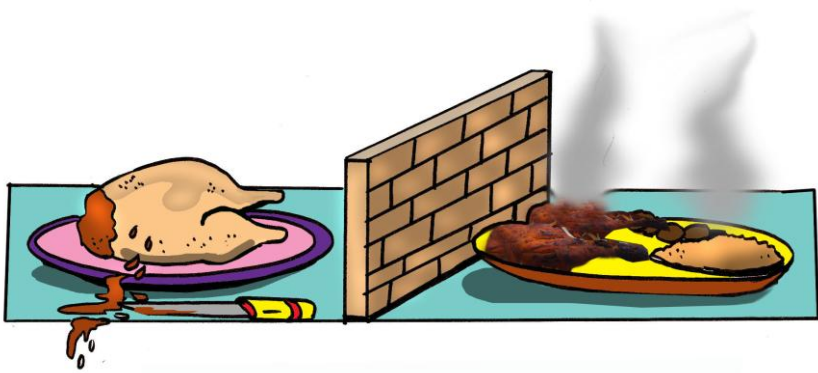
Waste foods and rubbish



Utensils, equipment and work surfaces



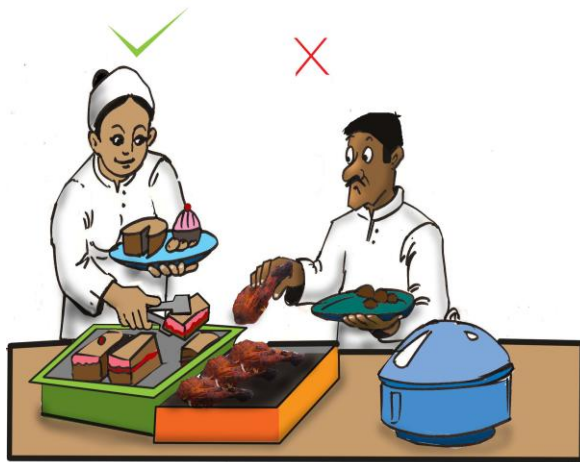
CONTAMINATION



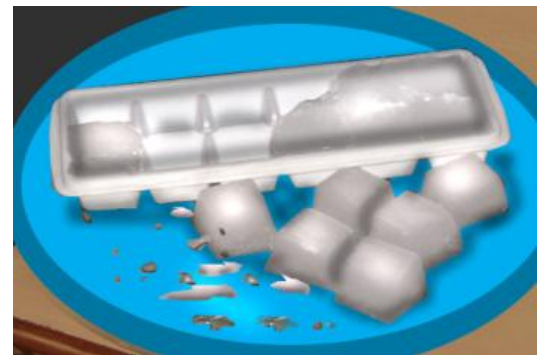
Food-to-Food



Equipment-to-Food



Food Handler-to-Food



Water/ Ice









Other ways

COLOUR CODING SYSTEM

COLOUR	Knives, chopping boards, cloths to be used only for
RED	Raw meat and poultry
BLUE	Fish
YELLOW	Cooked meats
GREEN	Vegetables
ORANGE	Salad and fruit
WHITE	General purpose/ bakery



STEPS INVOLVED IN HAND WASHING

<p>1. Use warm water and soap</p>		<p>2. Make a lather</p>	
<p>3. Rub back of hands and fingers</p>		<p>4. Rub in between fingers, around thumbs and fingertips</p>	
<p>5. Rinse with clean water</p>		<p>6. Dry hands thoroughly on a disposable towel, turn off the tap with towel</p>	



INDIAN
INSTITUTE OF
PUBLIC HEALTH
HYDERABAD

fssai

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

WHEN TO WASH HANDS

BEFORE:



Before touching ready-to-eat foods

AFTER:

	After using toilet		After Eating
	After handling raw food		After touching a cut or changing a dressing
	After handling garbage		After cleaning

COMMON PESTS AND PETS



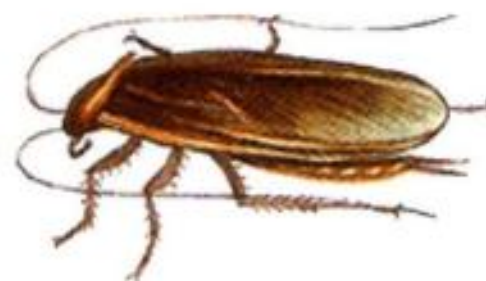
Ants



Flies



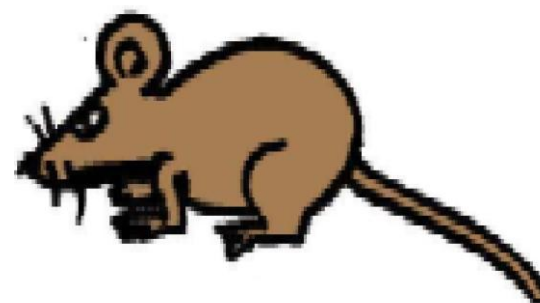
Birds



Cockroaches



Rats



Mice



Domestic Pets



TEMPERATURE CONTROL



Refrigerator



Cooked Food

TEMPERATURE RECORD SHEET

Refrigerator No. _____

Temperature range 1°C - 4°C

Date	Time	°C	Comments	Signature

Temperature Record Sheet



CLEANING AND DISINFECTION CHEMICALS



INDIAN
INSTITUTE OF
PUBLIC HEALTH
HYDERABAD



RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

