



Food safety

Food safety training

Participant's booklet

Food Safety Training Participant Guide

Foreword

This booklet is designed to accompany the Food Safety & Hygiene Matters training program conducted by Council. It has been developed to serve as a useful reminder and quick reference guide for those working in the food industry following attendance at the training program.

Table of Contents

Section Page

1. Introduction	2
2. Glossary of terms.....	3
3. Food legislation.....	4
4. Environmental health officers (EHOs)	4
5. Current food poisoning statistics in Australia.....	4
6. Hazards that can contaminate food.....	5
7. Bacterial food poisoning	5
8. Potentially hazardous foods	6
9. Causes of food poisoning	6
10. Prevention of food poisoning	7
11. Food handling controls	9
12. A pro-active approach to food handling.....	10
13. Conclusion	11

Introduction

Current statistics identify increasing numbers of reported food poisoning cases in Australia. A large majority of these cases stem from incorrect food handling and hygiene procedures within the food industry.

Many employees within the food industry lack formal qualifications and may not have received any food safety and food hygiene training.

Under the Food Safety Standards, a food business must ensure that persons undertaking or supervising food handling operations have the necessary skills and knowledge in food safety and food hygiene matters relevant to their work activities.

Scheduled and complaint-based inspections of food premises conducted by Council environmental health officers have identified differing levels of food safety compliance throughout the food industry.

The objectives of this training program are to assist food businesses to achieve the requirements of the Food Safety Standards, provide food handlers with the necessary skills and knowledge in food safety and hygiene matters, and raise the overall levels of food safety compliance within the food industry.

1. Glossary of terms

Bacteria – single-celled living micro-organisms.

Contamination – the presence of food poisoning micro-organisms or other harmful substances in food.

Cross-contamination – the transfer of bacteria from a contaminated source to an uncontaminated food.

Danger zone – the temperature range (5°C to 60°C) most suitable for bacterial growth.

Environmental health officer (formerly known as a health inspector) – a person authorised or appointed under the *Food Act 2006* for the purposes of enforcement of the Act or other legislation.

Food business – any business, enterprise or activity that involves the handling of food intended for sale or the sale of food.

Food contact surface – any surface that touches food and therefore creates a contamination risk. Examples include chopping boards, benches, equipment and utensils.

Food handler – a person who directly engages in the handling of food or who handles surfaces likely to come into contact with food for a food business.

Food hazard – a biological, physical or chemical agent that has the potential to cause an adverse health effect in humans.

Food poisoning – an illness brought on by the consumption of food contaminated with harmful micro-organisms or other harmful substances.

Food poisoning bacteria (pathogenic bacteria) – these are the types of bacteria that cause illness and are responsible for most cases of food poisoning.

Off-site catering – a food business that serves potentially hazardous food at a place other than the principal place of business for the food business.

On-site catering – a food business that, for its primary activity, prepares and serves potentially hazardous food on the premises of a predetermined type, for a predetermined number of persons, at a predetermined time for a predetermined cost.

Potentially hazardous foods – food types that support the growth of bacteria such as meat, poultry, eggs, dairy foods, seafood, gravies and cooked rice.

Sanitise – the use of heat and/or chemicals to reduce bacteria to a safe level.

2. Food legislation

Food Act 2006 – ensures that food for sale is safe and suitable for human consumption; prevents misleading conduct relating to the sale of food; and applies the Food Safety Standards Code. Found at: www.legislation.qld.gov.au **Food Safety Standards** (Chapter 3 of the Food Standards Code) – specific requirements for food business operators, food handlers, food premises and equipment to ensure that food does not become unsafe or unsuitable. Found at: www.foodstandards.gov.au

3. Environmental health officers (EHOs)

Formerly known as health inspectors, an EHO is a person authorised to conduct inspections of food premises to ensure compliance with food legislation.

An EHO also:

- assesses food business licence applications
- investigates food-related complaints
- enforces food legislation
- consults with food businesses
- provides food safety education and training for food handlers.

4. Current food poisoning statistics in Australia

It is estimated that there are:

- 11,345 foodborne illness cases per day
- 4.1 million foodborne illness cases per year
- 31,920 food poisoning-related hospital admissions per year
- 786 deaths from food poisoning per year
- \$1.2 billion per year in associated costs.

60-80% of all cases come from commercial food premises.

It is also estimated that between 500,000 and 1 million cases of food poisoning occur in Queensland per year. Of these

cases, only 7,293 were actually reported to health authorities in 2009. As can be seen, the official statistics of food poisoning cases are unlikely to show the true extent of the problem because so many cases go unreported.

5. Hazards that can contaminate food

There are three main types of hazards that have the potential to contaminate food. They are:

- Microbiological – bacteria, moulds and viruses
- Chemical – bleach, caustic soda, detergents, pesticides, etc.
- Physical – (foreign objects) – metal, glass, wood, plastic, hair, etc.

Control of these food hazards is essential to minimise the risks of contamination and associated food poisoning.

6. Bacterial food poisoning

Bacteria are invisible life forms that live on and in our bodies and throughout the natural world. Bacteria are tiny living creatures often known as “germs”. Bacterial food poisoning is responsible for the majority of food poisoning cases in Australia. Of the many different types of bacteria only a small number are responsible for food poisoning and these are known as pathogenic or harmful bacteria.

To survive, bacteria require four main conditions to be present:

- Water
- Food
- Temperature (warmth)
- Time.

Given these conditions, bacteria will multiply by dividing in two every 10-20 minutes. If given sufficient time, a few bacteria will multiply to such an extent that there are enough present to cause food poisoning.

Recipe for disaster:

Food + Contamination + Temperature + Time = Food Poisoning

How does bacteria enter food premises?

Food poisoning bacteria come from five main sources:

- Food handlers – on the hands, ears and nose, and in hair and the throat; also in cuts, pimples and boils.
- Raw foods – in meat, poultry, shellfish and vegetables.
- Pests and animals – in and on rats, mice, flies, cockroaches, dogs and cats
- Air and dust - millions of microscopic particles of food and other debris carry food poisoning bacteria which can settle on uncovered food.
- Food waste – bacteria from food waste can contaminate food if the waste is not cleaned up and disposed of correctly.

It is important to note that water can also carry food poisoning bacteria and therefore it is a requirement of the Food Safety Standards that all food premises use water that is suitable for human consumption (potable) for all food-related activities conducted on the premises.

7. Potentially hazardous foods

Potentially hazardous foods support the growth of bacteria. Potentially hazardous foods need to be kept at temperatures either below 5°C or above 60°C to prevent the growth of any food poisoning bacteria that may be present in the food. Examples of potentially hazardous foods include meat, poultry, seafood, eggs, dairy foods, gravies and cooked rice.

8. Causes of food poisoning

Food at incorrect temperatures – Under ideal conditions, bacteria multiply rapidly between 5°C and 60°C (the danger zone). Below 5°C, bacteria multiply more slowly – at freezing temperatures, bacteria stop multiplying and become dormant. Freezing food does not kill the bacteria that may be on it. Most bacteria are killed at temperatures above 60°C.

Poor temperature control of food frequently leads to food poisoning. The problems are usually caused by:

- preparing food too far ahead of sale or service and keeping it at room temperatures
- leaving food at room temperature instead of refrigerating it
- cooling food too slowly
- re-heating food inadequately
- under-cooking meat and poultry
- thawing frozen food insufficiently
- holding hot food at temperatures below 60°C.

Cross-contamination – cross-contamination occurs when food becomes contaminated with bacteria from another source. Bacteria can be transported by hands, utensils, food contact surfaces, equipment, tea towels and cleaning cloths, raw food, pests and animals. Common examples of where cross-contamination can occur include:

- handling food with unclean hands
- using knives, utensils and equipment that are not clean and preparing food on unclean food contact surfaces (eg chopping boards, benches)
- blood dripping from raw foods onto foods stored below
- storing raw food with cooked foods
- storing uncovered food
- using dirty tea towels and cleaning cloths.

Poor personal hygiene – examples of poor personal hygiene include:

- unclean hands and clothing
- uncovered cuts and wounds
- long dirty fingernails
- excessive jewellery on hands and wrists

- coughing and sneezing over food
- handling food while suffering from an illness such as fever, flu, virus, cold, skin infection, diarrhoea or vomiting.

Unclean food premises – dirty kitchens and unclean food storage areas increase the risk of cross-contamination from pests and particles of food, grease and dirt.

Poor pest control – common pests found in food premises include:

- rats and mice
- flies
- cockroaches.

These pests can carry food poisoning bacteria and may also cause physical contamination of food with their droppings, eggs, fur and dead bodies.

9. Prevention of food poisoning

Temperature control – minimise the time that potentially hazardous foods spend in the danger zone (5°C and 60°C).

Always remember to:

- keep cold food cold at 5°C or colder
- keep hot food hot at 60°C or hotter.

The Food Safety Standards require all food businesses to obtain and use a probe thermometer, accurate to +/- 1°C to monitor the temperature of potentially hazardous foods.

Avoid cross-contamination

- Keep all foods covered until use.
- Use correct personal hygiene.
- Keep raw and cooked food and old and new food separate at all times.
- Use separate equipment and utensils when preparing raw meats, poultry and seafood.
- Clean and sanitise all equipment, utensils and food contact surfaces.
- Store all chemicals separate to food.

Personal hygiene – when handling food it is important to:

- have clean hands and clothing
- minimise jewellery on hands and wrists
- tie back or cover hair
- have clean and short fingernails
- avoid unnecessary contact with food
- cover all cuts and sores with a waterproof and brightly coloured dressing

- not eat over food or food contact surfaces
- not handle food when you are ill
- avoid touching your face, hair and other parts of your body
- not cough or sneeze over food or food contact surfaces
- not taste food with your fingers or “double-dip” with a spoon
- change gloves frequently.

Remember – It is management’s responsibility to make sure that hygiene standards are being met; it is your job as a food handler to meet these standards.

Cleaning – essential for the safe operation of any food business. Cleaning must be continuous and ongoing.

Thoroughly clean and sanitise all food contact surfaces, equipment and utensils with hot water and detergent and a chemical sanitiser.

Remember - most detergents do not kill bacteria but hot water and chemical sanitisers do! To ensure that cleaning of your food premises is conducted regularly it is recommended that a cleaning schedule be implemented.

Pest control – four basic rules:

- Keep pests out – Seal all gaps and holes and install fly screens on all windows and doors.
- Starve pests out – Keep food premises clean to prevent pest attraction.
- Throw pests out – Conduct regular pest inspections or services.
- Report pest activity – Notify your supervisor of any pest sightings or evidence of activity.

Waste management

- Place waste in plastic lined bins and remove waste bins as required.
- Empty and clean waste bins regularly.
- Ensure that all external bins are covered and keep waste areas clean to protect from pests and birds.

Food safety supervisors – All licensed food businesses must have an approved food safety supervisor. A food safety supervisor is a person who is responsible for day-to-day food safety and has relevant expertise or experience in food safety matters. The food safety supervisor is required to be reasonably contactable by Council when the business is operating.

Food safety programs – Some food businesses are required to have a food safety program. A food safety program is a documented system that identifies, monitors and controls food hazards to prevent contaminated food from reaching consumers. The following high risk food businesses may be required to have a food safety program:

- Food business involving off-site catering.

- Food business that conducts on-site catering as the primary activity.
- Food business that conducts on-site catering at part of the premises.
- Food business that is carried on by a private hospital.
- Food business that prepares or serves food for vulnerable persons, e.g. child care centres, meals on wheels and nursing homes.

When should you wash your hands?

- Before commencing or resuming work
- After using the toilet
- After smoking
- After handling rubbish
- After using a handkerchief or tissue
- After touching your hair or face
- Before and after handling raw foods
- Before handling cooked foods
- After any cleaning tasks.

Hand washing facilities – A separate hand washbasin is required exclusively for the purpose of washing hands. By washing hands in the food preparation and dishwashing sinks, cross-contamination of food and utensils could occur.

The hand washbasin is to remain accessible and clean at all times. The hand wash facility must be provided with warm potable water, soap, disposable towels and a waste bin for used towels.

Wearing gloves – cross-contamination can still occur even when you are wearing gloves. If you wear gloves when handling food, follow these procedures:

- Change gloves regularly – as often as you would need to wash your hands
- Change gloves if they become ripped or torn
- Change gloves before and after handling raw foods
- Always wear a glove over any bandaged cut or wound to the hand.

Using your probe thermometer

- Must be accurate to +/-1°C.
- Use your probe thermometer to check the internal temperature of potentially hazardous foods.
- Clean and sanitise the thermometer using an alcohol wipe before and after use and between different food types.
- Insert the probe thermometer into the centre of the item to obtain an accurate reading of the internal temperature.
- Calibrate your thermometer in iced water to ensure it is accurate (it should read 0°C).
- The thermometer must be accessible to all food handlers on the premises.

Cleaning schedules – a cleaning schedule should describe:

- what is to be cleaned?
- who is responsible?
- when is it to be cleaned (the frequency)?
- how is it to be cleaned (cleaning instructions)?

Cleaning and sanitising without a dishwasher – dishwashers provide an effective way to clean and sanitise items used in the preparation of food. Rinse cycles usually run at temperatures above 80°C. When washing food equipment and utensils without a dishwasher, follow these procedures:

- Wear rubber gloves to protect your hands from the hot water and chemicals.
- Remove food particles by scraping or soaking if required.
- Wash using hot water and detergent – change the water if it becomes cool or greasy.
- Rinse in very hot water (above 80°C) and leave to soak for 30 seconds.
- Either drip-dry or use a clean tea towel to reduce the risk of cross-contamination.

10. Food handling controls

As food travels through a food business from receipt to service, food handlers must use correct handling procedures to control the hazards that the food is exposed to along the way. Food handling controls are required at the following stages:

Supply – purchase food from suppliers that have a good reputation.

Receival

- Check temperatures of all potentially hazardous foods on delivery.
- Check for deteriorated or damaged packaging.
- Check use-by/best before dates.
- Store at the correct temperature ASAP.

Storage

- Store at the correct temperature: 0°C to 5°C for fresh, below -18°C for frozen and above 60°C for hot food.
- Ensure that all foods are covered during storage.
- Separate food types, eg use separate sections for fruit and vegetables, meat, seafood, dairy etc.
- Separate raw from cooked foods, and old from new foods.
- Store raw foods such as meat, poultry and seafood in containers on the bottom shelf of the cool room or fridge.
- Rotate stock (first in, first out).

Preparation

- Follow correct personal hygiene procedures.
- Limit the time food is in the temperature danger zone (5°C to 60°C).
- Ensure that all work surfaces, utensils and equipment are cleaned thoroughly.
- Avoid cross-contamination.
- Don't prepare food too far in advance.

Cooking

- Ensure that cooking utensils and equipment are thoroughly clean.
- Ensure that the correct internal temperatures are achieved by using your probe thermometer.

Cooling

- Cool food rapidly to 5°C within 6 hours (limit the time in the danger zone).

Cool food in small batches in shallow containers.

- Ensure that hot food is well-ventilated during cooling to allow the circulation of cold air around the item.
- Conduct temperature checks with your probe thermometer.
- Cover only when cooled thoroughly.

Reheating

- Reheat food rapidly to 60°C or above (limit the time in the danger zone).
- Ensure correct internal temperatures are achieved by using your probe thermometer.
- Never reheat food in a bain marie or hot box.

Thawing

- Thaw foods in the cool room or fridge on a drip tray or in a container.
- Thaw only small food items in the microwave, then cook and serve immediately.
- Always ensure thorough defrosting.
- Never thaw food at room temperature.
- Never thaw food in water.
- Never re-freeze thawed food.

Displaying – protect food from contamination and keep potentially hazardous foods under temperature control.

Hot holding (bain maries, pie warmers and hot boxes)

- Pre-heat hot holding equipment before adding the hot food.
- Ensure food is above 60°C before putting in the bain marie, pie warmer or hot box.

- Ensure that the temperature of the food is maintained above 60°C during hot holding.
- Conduct regular temperature checks with your probe thermometer.

Packaging – protect food from contamination and keep potentially hazardous foods under temperature control.

Transporting – protect food from contamination and keep potentially hazardous foods under temperature control.

Food service

- Follow correct personal hygiene procedures.
- Ensure that all plates and utensils are thoroughly clean and not chipped, cracked or broken.

Food Disposal

- Label food for disposal and keep separate.
- Destroy food for disposal or return to supplier.

Food recall – a food business involved in wholesale supply, manufacture or importation of food must have a documented system in place to ensure the recall of any unsafe food.

11. A pro-active approach to food handling

The following pro-active measures can be adopted by food handlers to minimise the risk of food poisoning:

- Report or prevent any suspected breaches of food safety
- Report all evidence or sightings of pest activity
- Conduct regular temperature checks of potentially hazardous foods with your probe thermometer
- Implement a cleaning schedule
- Obtain and read a copy of the Food Safety Standards
- Encourage other food handlers to attend food safety training programs like this one
- Be aware food hazards are everywhere so don't give them any opportunity to contaminate food.

Always remember – prevention is better than cure.

12. Conclusion

It is essential that food handlers have an understanding of the process that enables food poisoning to occur and the correct food handling procedures to ensure that all food produced is safe to eat.

For this reason, food safety training programs, such as this one conducted by Council, are vital in the fight to decrease the incidence of food-related illness in our community.

Happy and safe food handling!