HACCP
Food Safety
Quality Assurance Manual

Adapted with permission from the City of Ottawa –
Public Health & Long Term Care Branch

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General Definitions

Clean:
Free from litter or clutter, loose dirt, or food particles.

Controlled Operating Procedures:
Procedures which will result in error-free food production.

Food Contact Surfaces:
Surfaces of equipment and utensils that raw or cooked food come in contact with during preparation.

Hazard Analysis and Critical Control Points:
HACCP reduces the chances of foodborne illness by eliminating errors in food handling procedures. The result is growth reduction of bacteria. HACCP is a method of determining both the cause of errors and how to avoid them. It includes knowing the following:

- growth conditions of hazardous micro-organisms and the application of safe food production
- facility and equipment design required for safe food operations
- kitchen processing procedures and the specification of controlled operating procedures necessary for safe and quality food handling

Non-Food Contact Surface:
All exposed surfaces other than food contact and food splash surfaces.

Refrigerator:
A cold storage unit which maintains hazardous food at 4°C (40°F) or less.

Sanitize:
Reducing to a safe level the number of micro-organism on a surface.

Temperature:
Critical temperatures are >60°C (140°F) or <4°C (40°F) to inactivate or reduce bacterial growth.

Food:
Food or drink fit for human consumption.

Potable Water:

Management Procedures

Hiring Policy
First Aid Policy
Emergency Measures Procedures
Food Safety Procedures

Hiring Policy

Hiring procedures should include the following:

- Job description
- Specific duties
- Responsibilities
- Required qualifications
- Education experience
- Language(s)
- Knowledge of food safety
- Abilities to implement food safety procedures
- Schedules

First Aid Policy

Provide a complete first aid kit and ensure that staff know what to do if an accident or injury occurs.

Contact your local office of the Canadian Red Cross Society or St. John's Ambulance for information on first aid courses available in your area.

Emergency Measures Procedures

Examples of Emergency Situations:

- Fire
- Flood
- Power failure
- Infectious disease outbreak
- Sewage back-up
- Food poisoning or serious allergic reaction
- Explosion
- Staff sickness/absent

Procedures:

To be prepared by the managers and/or supervisors. It is important to have procedures for employees to follow in the event of an emergency situation. Ensure staff know where to find these written procedures and what to do if there is an emergency situation.

Food Safety Procedures

The manager is responsible for knowing and enforcing all the procedures in the QA manual.

1. Setting the example
Provide an example of professionalism and high quality standards for employees.

2. Coaching and skill development.
Observe activities and food handling procedures in all areas. Measure temperatures and times and take corrective action if necessary.

3. QA Inspections
Conduct weekly inspection using the environmental checklist.

4. Quality Management Team
Develop a QMT to review problems and develop effective procedures.

5. Food safety training program
Maintain an effective yearly training program with regular training sessions to teach and reinforce food safety. Ensure all employees undergo thorough training.

6. Maintaining equipment
Provide and maintain adequate sanitation, food preparation and storage equipment to allow employees to do a quality job.

7. Reporting illness
Report any indications of foodborne illness to the Health Unit.

Employee Procedures

Employee Procedures

1. Handwashing

- wet hands with warm water
- use liquid soap
- lather, using friction for 15 seconds
- rinse in a downward motion
- dry hands with paper towels
- turn tap off with paper towel

2. Fingernails

Keep fingernails neatly trimmed for easier cleaning. Do not use fingernail polish.

3. Jewellery

Remove all unnecessary jewellery while preparing food.

4. Cleanliness

The employer will ensure the availability of clean outer garments and headgear.

All supervisors and employees who handle or come in contact with food or any utensil used in the preparation, processing or service of food will:

- not use tobacco while so engaged
- be clean
- wear clean outer garments
- wear headgear that confines the hair
- not prepare food when sick, for example when suffering from diarrhoea, and/or vomiting

5. Foot Wear

Proper and safe footwear should be worn.

6. Cuts and Abrasions

Properly treat and cover cuts, burns and rashes.

Sanitation Procedures

Sanitation Procedures

1. Equipment

Equipment used in the preparation of food must be:

- of sound and tight construction
- kept in good repair
- of such form and material that can be easily cleaned and sanitized

Equipment and utensils which come into direct contact with food must be:

- corrosion-resistant and non-toxic
- free from cracks, crevices and open seams

Food premises will provide:

- an adequate supply of potable water
- hot and cold running water under pressure in food processing areas and dishwashing areas
- a separate handwashing basin in a location convenient for employees in each processing area together with supplies of hot and cold water, soap in a dispenser and clean single-service towels
- refrigerated space adequate for the safe storage of perishable and hazardous food
- garbage containers of durable, leak proof and non-absorbent material with tight fitting or self-closing lids
- containers large enough to store all garbage and waste in a sanitary manner
- racks, shelves, or pallets for the storage of food and no rack or shelf shall be placed less than 15 cm (6 inches) above the floor
- tongs, spoons and scoops of corrosion-resistant and non-toxic material to avoid direct hand contact with food

2. Sanitation

a) Garbage Storage

- clean and sanitize garbage receptacles after each use
- place garbage in a separate room, compartment or bin which is insect, rodent and odour proof, for daily collection
- remove garbage and wastes at least twice weekly or as often as is necessary to

b) General Maintenance

- clean a food premises in such a manner that the food is not contaminated
- do not use chipped or cracked cups, glasses, dishes or utensils
- store single-service containers and single-service articles in a sanitary manner
- containers, caps, covers and wrapping materials used are non-toxic and will prevent contamination or adulteration of the food or milk
- keep every room free from materials and equipment not used in food preparation
- wash and sanitize the surface of equipment and facilities other than utensils that come in contact with food
- the floors, walls and ceilings of every room are to be clean and in good repair
- launder multi-service napkins and serviettes before each use and used for no other purpose

3. Toxic and Poisonous Substances

- kept in a compartment separate from food to prevent contamination of any working surface or utensil
- kept in a container that bears a label on which the contents of the container are clearly identified, follow WHIMS procedures
- used only in such a manner and under such conditions that the substances do not contaminate food or endanger the health of any person

4. Cleaning and Sanitizing

- clean and sanitize multi-service eating utensils after each use
- clean and sanitize utensils or equipment other than multi-service articles as often as is necessary
- equipment and facilities for the cleaning and sanitizing of utensils will consist of either:
  - mechanical equipment
  - manual equipment consisting of:
    - three sinks of corrosion-resistant material large enough for thorough cleaning and sanitizing of utensils, and
    - draining racks of material that is corrosion-resistant

Utensils shall be:

- pre-rinsed or pre-scraped to remove gross food particles and solids
- washed in a detergent solution, that is capable of removing grease
- sanitized

Where manual equipment is used, utensils shall be:

- washed in the first sink in a detergent solution
- rinsed in the second sink in clean water at a temperature not lower then 43°C (110°F)
- sanitized in the third sink

NOTE: Consult your Public Health Inspector for information regarding sanitizers.

5. Mechanical Dishwashing

Temperatures:

Wash: between 60°C (140°F) and 71°C (160°F)
Sanitizing Rinse: 82°C (180°F) for at least 10 seconds or use an approved chemical solution

- be sure the unit is working properly
- sort, scrape and pre-rinse dishes and utensils
- wash, follow the manufacturer's instructions
- rinse, maintain the proper temperature
- allow the dishes and utensils to air dry

Food Safety Procedures

Policy:

That the food preparation will be error free to prevent any food related illnesses.

Critical Control Points

A. Food Production

1. Cooling & Cold Holding
Cool hot foods as quickly as possible by:

- cooling in an ice bath
- food broken down into small portions & refrigerated at 4°C (40°F) or less
- blast chilling or freezing

Control
Label the food as to the date, time and temperature it was placed into the refrigerator or freezer. Foods must cool from 60°C (140°F) to 20°C (68°F) or less in 2 hours and from 20°C (68°F) to 4°C (40°F) or less in four hours.

2. Preparing Food Ahead of Planned Service
Try not to prepare foods ahead of time. Cooking should be done for the day's service.

Control

a. Proper preparation of hazardous foods
b. Proper cooling/freezing/or reheating
c. Hot Holding at 60°C or more for no longer than 2 hours. Dispose of any foods leftover from the hot holding.

3. Infected Persons
Food service personnel must wash their hands when required. Food service personnel must not cough or sneeze over food. Wear water tight coverings; i.e. gloves over infections, cuts or burns.

4. Reheating/Use of Leftovers
Hot Combination Dishes

- Combined cooked or precooked ingredients must reach an internal temperature of 74°C (165°F) for at least 15 seconds in less than 2 hours.

- Pans of casserole or stew must be heated to 74°C (165°F) for at least 15 seconds

5. Preparation Surfaces and Equipment
Sanitize all preparation surfaces and equipment to reduce bacteria to a safe level.

6. Contaminated Raw Ingredients/Food From Unsafe Sources
Raw meats, poultry and eggs may contain harmful bacteria. Eggs must be graded, milk must be pasteurized and meat and poultry must be federally or provincially inspected.

B. Delivery and Storage

1. Incoming Products

- inspect incoming food products for frozen or cold temperature and record
- check the expiry dates and the best before dates and record
- inspect for damaged cases or boxes and for pinholes, bulging, or rusting canned products or signs of pest infestation
- store refrigerated and frozen items immediately

2. Stock Rotation

- date and store all incoming food so the older food will be used first

3. Storage Procedures

- store all labels to the front
- freezers must operate at -18°C (0°F)
- refrigerators must operate at 4°C (40°F)
- ensure good air flow around all products

C. Temperature Guides for Cooking/Holding/Cooling

The following internal temperatures must be reached for at least 15 seconds according to the Ontario Food Premises Regulation

Poultry, whole	82°C	180°F
Poultry, pieces or ground	74°C	165°F
Food mixtures containing poultry, egg, meat, fish or another hazardous food	74°C	165°F
Ground meats (not poultry)	71°C	160°F

The following are recommended temperatures for beef, veal and lamb roasts and steaks

Well done	77°C	170°F
Medium	71°C	160°F
Rare	60°C	140°F

Holding:
Foods must be maintained at:

- 4°C (40°F) or lower
- 60°C (140°F) or higher
- hold hot foods for 2 hours or less, then the food is to be discarded

Cooling:
Cool hot foods as quickly as possible:

- use an ice bath
- divide food into smaller portions
- place food in shallow pans
- use a blast chiller

D. Recipe Classifications:

Recipe Class	Examples
Multiportion, thick item (>2" thick)	beef roasts, ham, turkey breasts
Single portion, thin item, (<2" thick)	chops, hamburger, hot dogs, steak, fish, eggs
Sauces, soup, beverages	hollandaise, beef gravy, BBQ sauce, salad dressing, fruit sauce
Fruits, vegetables, starches	cabbage, rice, potatoes, lettuce, mushrooms, apples
Breads, pastries	bread, rolls, cakes, pancakes, pie shells
Hot combination dish (any mixture of: meat, fish, poultry, starch, fruit, vegetable, bread, pastry, or sauce)	stew, casseroles, pie, poultry ala king, meatloaf, hot sandwich, pizza, spaghetti and meatballs
Cold combination dish (any mixture of: meat, fish, poultry, protein, starch, fruit, vegetable, bread, pastry, or sauce)	chicken salad, chef salad, ham and macaroni salad, cold sandwiches, hors d'oeuvres, filled pastries

In order to complete the Food Preparation HACCP Evaluation it is helpful to do a recipe classification. Most recipes fall into one of the above categories. Using classifications instead of each recipe reduces the workload.

Food Preparation HACCP Evaluation

Establishment _____

Recipe Manager _____

Recipe Name _____

Food Ingredients

_____

_____

_____

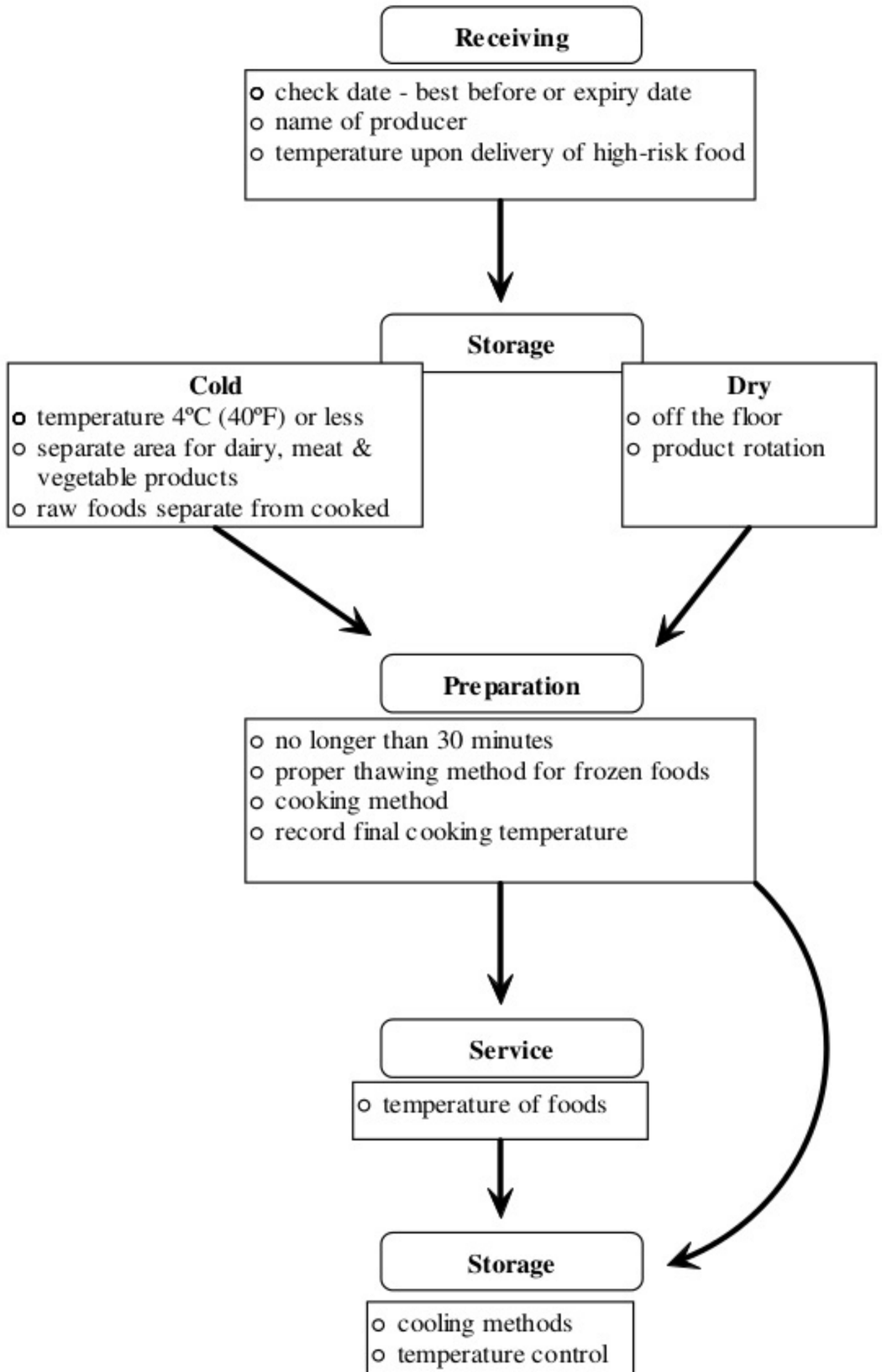
_____

_____

Preparation Procedures	Temp. Before Cooking	Temp. During Cooking	Temp. After Cooking	Cooling Time

Flow Chart

Product flow-charting is a method to determine the Critical Control Points.



Flow Charting of High Risk Foods

Thawing
Method: Time:

Food Preparation Methods

	Equipment	Temp	Time	Storage
Debonning				
Cutting				
Mixing				
Grinding				
Breading				
Slicing				
Puree				

Cooking

Method: Time: Temp:

Service

Cooling	Storage	Reheating
Method: Time:	Method: Time:	Method: Time:

HACCP Summary

Problems	Solutions
Purchasing: • serve raw foods free from bacteria • cooked foods must be free of dangerous bacteria	• purchase from the safest possible source • foods from approved sources will have an inspection marking on them
Harmful ingredients: • foreign objects • chemicals	• employees must protect food from contamination by foreign objects and chemicals
Cross-contamination by: • hands • equipment	• proper handwashing procedure • proper cleaning and sanitizing
Food production: • food left out at room temperature	• no food left out longer than 30 minutes • work in small batches
Hot food services: • evaporative surface cooling is a problem	• cook food to the proper center temperature for a sufficient time to reduce the pathogenic population by almost 100%
Control Hot/Cold holding, Transport, & Service. • salad bars • buffets	cold temperatures of 4°C (40°F) or less hot temperatures of 60°C (140°F)or more
Controlling cooling: • spores germinate during cooling and fast reheating	• cool foods as quickly as possible • never cool a product thicker than 2” • ice baths will reduce the temperature faster
Control leftovers or prepared food	• reheat to original cooking temperature for at least 15 seconds

Quality Assurance Forms

Environmental Checklist
Daily Temperature Form
Food Complaint Forms
Inventory Form

Environmental Check List

Objective: To assess staff performance, food storage and service against a set standard in order to identify substandard practices.

Personnel	**Criteria**	**Yes**	**No**
1	Head and facial hair covered with hair net or other adequate restraint.		
2	Uniforms and aprons are tidy and clean		
3	Employees are free from diseases that may be spread through food		
4	Employees wash hands frequently at conveniently located hand sinks. The hand sinks are equipped with liquid soap & individual hand towels.		
5	Employees wear minimal amount of jewellery (wedding rings and watch).		
6	Employees are aware of proper hand washing techniques and the procedure is posted.		
Receiving Area		**Yes**	**No**
1	Receiving area is clean and free from food debris, boxes, cans, refuse, rodents and insects		
2	Outside doors are kept closed		
3	Inventory form completed immediately upon receipt.		
4	Food supplies are moved to proper storage area within the time allotted. (10 minutes)		
5	Shelves are placed to permit floor cleaning 15 cm (6 inches) off the floor.		
6	Walls, floors, and shelves are clean.		
7	All food is stored off the floor.		
8	Storage area is dry and well ventilated.		
9	Shelves are placed away from walls to permit ventilation and easy cleaning.		
10	Open bulk food supplies are stored in labelled plastic or metal containers with tight fitting lids.		
11	Non-food supplies are stored separately.		
Refrigerator/Freezer Storage		**Yes**	**No**
1	Walls, floors and shelves are free of spills and debris		

8	All frozen meat, poultry and fish is thawed in the refrigerator, under cold running water or in a microwave oven.		
Food Preparation Area		**Yes**	**No**
1	Food preparation equipment cleaned and sanitized after each use.		
2	Food preparation surfaces cleaned and sanitized after each use.		
3	Dishwasher meets health requirements.		
4	Manual dishwashing procedure being carried out properly.		
5	Food contact surfaces and utensils cleaned and sanitized after use.		
6	Floors, walls and ceilings are clean and in good repair.		
7	Storage for dishes, utensils and food preparation equipment is kept clean.		
Cleaning Schedule		**Yes**	**No**
1	Stoves cleaned daily.		
2	Ovens cleaned weekly.		
3	Fridges cleaned weekly.		
4	Freezer cleaned every 3 months.		
5	Exhaust hood cleaned at least every 3 months.		
6	Dishwasher cleaned weekly.		
7	All other equipment cleaned after used.		

Daily Food Temperatures

Date Time	Dairy Cold	Meat Cold	Fridge	Freezer	Cooking Temps	Comments

Initial Report of a Food Complaint Involving Illness

This form must be completed as accurately as possible by the supervisor.

1. Name, address, telephone number of the person reporting the incident.

_____

_____

2. Number of known or suspect cases:

Case	Name	Age	Staff or Client	Address & Phone Number
1				
2				
3				
4				
5				

3. Name & addresses of physicians or hospitals who have seen or admitted patients:

_____

_____

4. Suspect Meal:

What food and drinks did each person consume?

_____

_____

5. Onset of symptoms:

Case	Date	Time
1		
2		
3		
4		
5		

6. Type of symptoms:

Symptoms	Case 1	Case 2	Case 3	Case 4	Case 5
Nausea					
Vomiting					
Cramps (abdominal)					
Loose stool					
Watery Diarrhoea					
Dehydration					
Fever					
Chills					
Muscle Aches					
Perspiration					
Dizziness					

7. Duration & severity of symptoms:

Case Number:

1. _____

2. _____

3. _____

4. _____

5. _____

8. Other information and action taken.

Inventory Form
High Risk Foods

Product name	Date received	Expiry/Best before date	Temperature	Time of permanent storage

The above form is to be completed when the food products are received.

Appendix

Food Poisoning

Food poisoning usually results from eating foods contaminated with harmful bacteria. The bacteria or poisons (toxins) infect our digestive tract, which can result in illness. Bacteria, also known as germs, are tiny organisms that can be seen only by a microscope.

- Bacteria cannot move readily except in watery fluids. They depend on rodents, insects, dust particles, droplets of moisture (coughs or sneezes), hands and pieces of clothing to carry them from one place to another.

Most bacteria are harmless and many are even helpful. Some, however, are potentially dangerous organisms responsible for much suffering and the occasional death. Ninety-five percent of all food-borne illnesses are caused by only a few such bacteria.

- These bacteria are commonly found in the nose of healthy human beings, in faeces, in soil, in the digestive tract of animals and on raw vegetables and meats.

Bacteria are living organisms. They take in food, give off wastes, grow and multiply.

- Bacteria thrive in warm, moist foods.

- Bacteria can double their number every 15 minutes when the temperature is between 35-45°C.

- Bacteria can multiply rapidly in non-acid and low-acid foods such as eggs, milk and meat.

There are many bacteria which cause food poisoning, some of the common types of food poisoning are:

Salmonella

These bacteria are most often associated with poultry, for example chicken, turkey, and eggs. *Salmonella* is also associated with untreated water and domestic animals.

Clostridium botulinum

Clostridium botulism bacteria produce a poison or toxin that causes botulism. These bacteria are found in improperly canned foods. Home canned products and dented or damaged cans are a greater risk.

Staphylococcus aureus

Staphylococcus aureus bacteria can be found at the site of infected cuts, boils and in nasal secretions.

Symptoms of food poisoning are often described as "flu-like". Typical symptoms are:

- nausea
- vomiting
- diarrhoea
- fever
- chills
- abdominal cramps
- loss of appetite
- headache

High Risk Foods

High risk foods are those in which food-poisoning bacteria such as *Salmonella* grow rapidly. Keep foods hot (above 60°C/140°F) or cold (below 4°C/40°F) to prevent the growth of bacteria in these products.

- Raw and cooked meat, poultry and poultry salad
- Raw and cooked fish and fish salad
- Eggs
- Custards, puddings and whipped cream
- Milk and milk products
- Shellfish
- Creamy dressing
- Processed meat (bologna, hot dogs, ham, etc.)
- Gravy
- Meat sandwich spreads
- Canned meats (once opened, and combination dinners)