

Control of Food Hazards



This booklet aims to assist food businesses to prepare for the new EU food hygiene legislation that will apply on 1 January 2006. This legislation will make it a legal requirement for all food businesses (except primary producers) to put in place, implement and maintain a permanent procedure or procedures based on Hazard Analysis and Critical Control Points (HACCP) principles.

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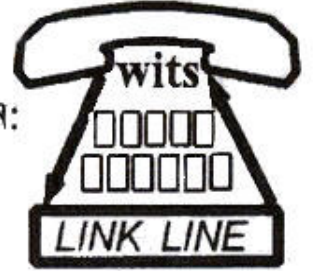
ਜੇਕਰ ਤੁਹਾਨੂੰ ਆਪਣੀ ਜ਼ਬਾਨ 'ਚ ਅਨੁਵਾਦ ਚਾਹੀਦਾ ਹੈ, ਤਾਂ ਕ੍ਰਿਪਾ ਕਰਕੇ ਸੰਪਰਕ ਕਰੋ:

જો તમને પોતાની ભાષામાં ભાષાંતર જોઈએ છે, તો મહેરબાની કરીને સંપર્ક સાધો:

Se necessitar de uma tradução, contacte por favor:

যদি আপনার নিজের ভাষায় অনুবাদ চান তাহলে অনুগ্রহ করে যোগাযোগ করুন:

اگر آپ کو ترجمہ اپنی زبان میں چاہئے تو برائے مہربانی رابطہ کریں۔



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The control of food safety hazards through “hazard analysis”

Hazard analysis is the process of identifying everything that could go wrong, in terms of food safety, and then ensures that it is prevented from happening. Your hazard analysis needs to be specific to your food business. It is not difficult or complicated. You merely trace the path of all food through the kitchen, analysing the hazards, and put in the necessary controls. It is a legal requirement. If properly done, it will have the following practical benefits:

- Reduces the likelihood of food poisoning or food complaints
- Identifies any steps where food safety could/should be improved
- Introduces the opportunity of a better way of doing things
- Provides information and instruction for all staff, so that procedures are consistent even if the manager is absent
- Improves the legal defence of “due diligence” should a complaint be made
- Demonstrates compliance with the law.

Due diligence

When someone is charged with an offence under the Food Safety Act 1990 or associated regulations, it is a defence to prove that “all reasonable precautions” and “all due diligence” have been exercised by the person concerned or by a person under their control. This means that they have followed industry advice which is explained in the *Industry Guide to Good Hygiene Practice* series of booklets. See the back page for further details.

There is no explicit requirement to keep any documentation, but written policies and records of routine checks may be very important in establishing this defence. This is particularly true for the monitoring of critical control points*. (See *Controls for microbiological hazards* page 3).

Written records will also be helpful in demonstrating compliance with the Food Safety (General Food Hygiene) Regulations 1995.

A hazard analysis record sheet is provided in the form of a simple table on pages 8 and 9 of this booklet and examples of a temperature record sheet and cleaning schedule are also provided on pages 14 and 15 for you to copy and use.

**These are controls which are essential for food safety.*

The six key elements of hazard analysis

1 *Identify the various steps in the operation*

You may find that drawing a flow chart will help here, see page 5 for an example. Use this example to draw the flow chart for your own steps of production. You need to think through the main steps in the production of food e.g. storage, preparation, cooking.

2 *Hazard identification (Cross contamination, foreign bodies, etc)*

There are three main types of hazard; microbiological, physical and chemical. See page 6 for the common food poisoning microbiological organisms.

Microbiological organisms are organisms which may not be seen with the naked eye and include bacteria, yeasts and moulds. All food will be naturally covered with micro organisms, most of which are not harmful if eaten, although they may cause the food to go off or spoil. A smaller number of microbiological organisms are disease causing. The nature of commercial food production means that you have to regard ALL food coming into your kitchen as being contaminated with disease causing microbiological organisms.

Most food poisoning bacteria in red meat are found on the outer surfaces, this is because contamination occurs during slaughter or subsequent handling. Searing the outer surfaces of joints of meat and steaks should considerably reduce the presence of food poisoning bacteria.

However, food poisoning bacteria may also be in the centre of certain meats. For example, on the inside cavity of poultry, as a result of contamination during slaughter; in any minced meat products, where the contaminated outer surface is mixed with the interior of meat joints; or in the centre of rolled meat joints, where the contaminated outer surface is rolled into the middle. It is therefore important to thoroughly cook the middle as well as the outer surface.

Food such as salad vegetables, which will not be subjected to cooking, and dishes which have already been cooked can also be contaminated with food poisoning bacteria which may be present in the kitchen; therefore great caution has to be taken to prevent cross contamination.

Physical contamination can occur from packaging such as glass, wire, paper, pieces of machinery, dead insects, stones and hair.

Chemical contamination can occur from such substances as fly sprays, rodent bait, cleaning fluids and chemicals in unmarked bottles.

3 **Controls for microbiological hazards**

Hazards should be removed or reduced through appropriate controls. Whilst all controls are important, **critical control points** (CCPs) are controls which are essential for food safety and are the 'last chance to get it right'. CCPs will vary according to the food being prepared, but commonly encountered ones are: **storage temperature** which will be a CCP for cold 'high risk' foods (food which supports the growth of bacteria), e.g. fresh cream desserts and cold cooked meats.

Other controls include:

- Buying good quality products from reputable suppliers
- Ensuring that perishable products are delivered under cold/frozen conditions
- Cold storage at a maximum temperature of 8°C (better at 2-4°C)
- Thorough cooking (to a minimum temperature of 75 °C at the centre)
- Hot holding at a minimum temperature of 63 °C
- Preventing cross contamination of harmful bacteria from raw food to food which has been cooked or will not be cooked, e.g. cooked meats and salads
- Rapid cooking to prevent the formation of bacterial spores (some bacteria form a tough outer covering to survive adverse conditions. This is known as a spore.)
- Rapid cooling of cooked food to prevent the germination of bacterial spores and the formation of toxins
- Thaw food in refrigerator, maximum 8°C
- Proper cleaning and disinfection procedures of equipment/surfaces/wiping cloths that may come into close contact with food
- Good personal hygiene
- Well trained staff.

4 *Monitoring*

e.g. visual checks on **use by dates**, checking for mice droppings etc.

Temperature monitoring methods should be kept as simple as possible. You need at least two different thermometers: an air temperature thermometer for checking the refrigerators and freezers, and a probe thermometer for checking the temperature of food. It is critical that this equipment is thoroughly disinfected before use.

Other types of thermometer include an infrared device which can be pointed directly at food to check the surface temperature without penetrating the food, and a 'between-pack' probe for frozen foods.

5 *Record keeping*

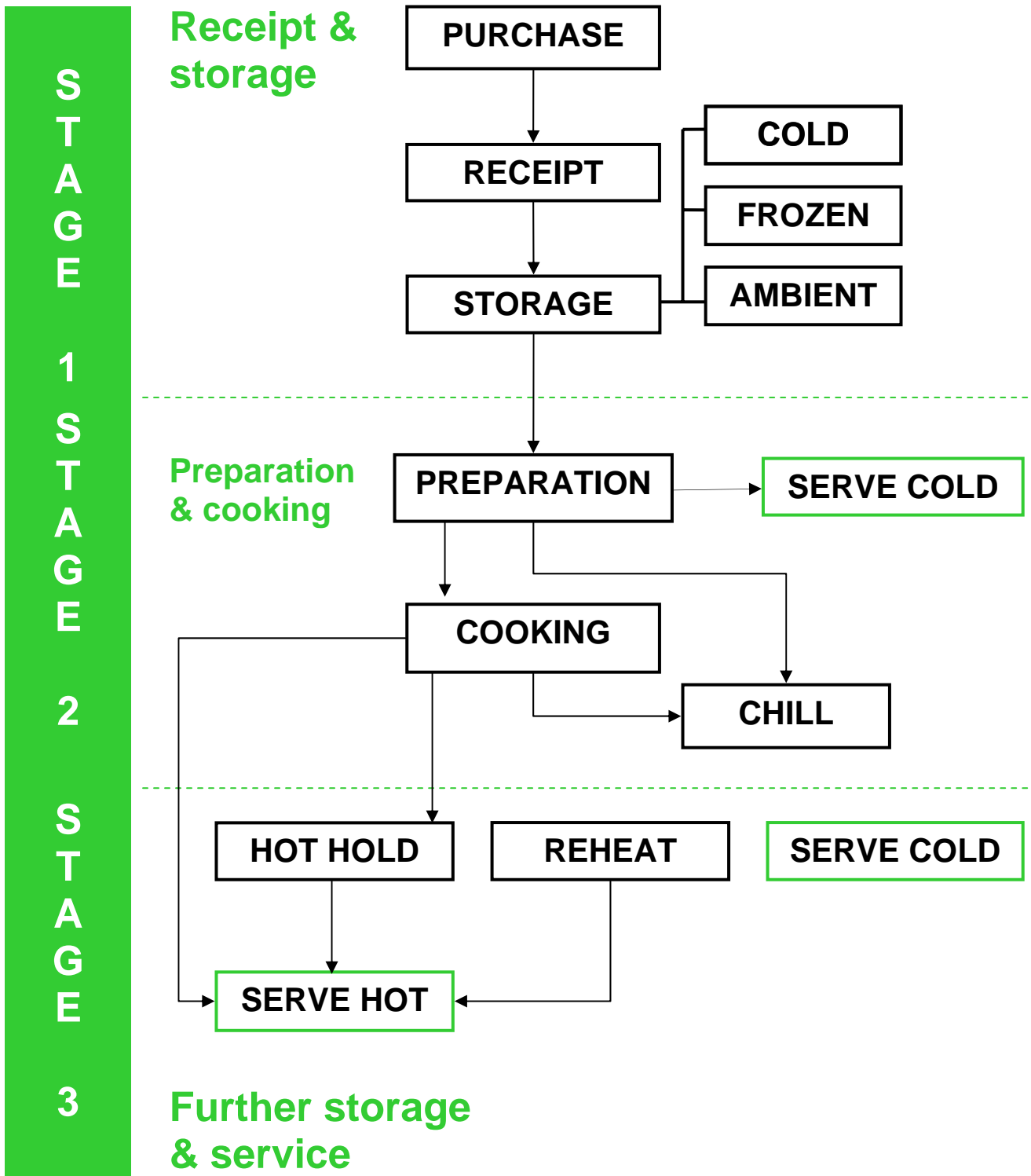
e.g. recording the temperature on delivery of high-risk foods, cleaning schedules, cooked food temperature charts, daily cleaning checklists and training records. Examples of a temperature monitoring log sheet and a cleaning schedule are given at the end of this booklet, and can be copied. Show staff how to complete the forms, and tell them what to do if things go wrong. Weekly verification checks should be carried out by the person in charge or other nominated person.

Due diligence is the only defence a food business has in law against allegations of poor food hygiene and safety. Businesses which document their systems and keep written records are in a stronger position to challenge such allegations and defend themselves.

6 *Regular review*

i.e. when any significant change is made to staff, menu or procedures, systems should be reassessed to ensure that the control measures are still effective.

Steps of a catering operation



Causes and controls of food poisoning

Bacillus cereus

Symptoms: vomiting, some diarrhoea, abdominal pain

Source	Method of contamination	Control
Vegetables, cereals, rice, soil and dried products.	Long, moist storage of warm cooked products – especially rice and meat stews. This allows spores to germinate and bacteria to grow.	Avoid pre-cooking of food. Cook and cool dishes quickly and store in the refrigerator. Reheat foods only once.

Campylobacter

Symptoms: severe abdominal pain, diarrhoea and blood in faeces

Source	Method of contamination	Control
Poultry, meat, raw milk, untreated water, birds and dogs.	Careless handling of meat, especially raw poultry.	Frequent hand washing. Use separate surfaces and equipment for raw and cooked foods. Use pasteurised milk.

Clostridium perfringens

Symptoms: severe abdominal pain and diarrhoea

Source	Method of contamination	Control
Soil, human and animal excreta, raw meat and poultry, dried foods.	Spores, survive heat and drying out, are activated by warm temperatures to germinate and bacteria to grow.	Do not pre-cook food. Cook foods quickly. Heat bulk liquid thoroughly, i.e. stocks, soups, sauces etc. Reheat food thoroughly.

E.coli 0157 (ONLY 10 BACTERIA CAUSE SYMPTOMS)

Symptoms: kidney failure and internal bleeding

Source	Method of contamination	Control
Human and animal gut, soil and water.	Poor personal hygiene. Contamination via hands, utensils, etc. Gut contamination of meat during slaughter.	Good personal hygiene. Thorough cooking of burgers, sausages, kebabs, etc.

Causes and controls of food poisoning

Listeria

Symptoms: Meningitis, Septicaemia, mild flu, miscarriage in pregnant women

Source	Method of contamination	Control
Humans, soil, animals, insects and waters.	Environmental contamination, e.g. dust, insects, animals.	Avoid long storage of ready to eat, cooked and chilled foods. Thorough re-heating of food to 75°C once only. Avoid paté and soft cheese.

Salmonella

Symptoms: Abdominal pain, diarrhoea, vomiting and fever

Source	Method of contamination	Control
Humans, raw meat, poultry, eggs, unwashed vegetables.	Cross-contamination from raw to cooked foods. Contamination via hands, utensils, etc. Poor personal hygiene.	Frequent hand washing. Sanitising surfaces and equipment that comes into contact with food, thorough defrosting. Do not use raw egg. Separate surfaces for raw and cooked foods.

Staphylococcus aureus

Symptoms: abdominal pain, vomiting, prostration and "sub"-normal temperatures

Source	Method of contamination	Control
Normal healthy skin and hands (15% of adults), nose or throat (40% of adults), or in boils and septic cuts.	Contaminated hands directly onto cooked foods.	Frequent hand washing. Exclusion of staff with infected wounds on arms and hands and heavy colds. Avoid touching cooked foods. Refrigerate cooked meats and ready to eat foods.

Hazard analysis record sheet

Steps	Hazards – What can go wrong
Purchase/delivery	
Storage	
Thawing	
Preparation	
Cooking/re-heating	
Cooling	
Cold Storage	
Hot holding, slicing, plating up and service	

Hazard analysis record sheet

Controls and targets What can I do about it?	Monitoring How can I check?
Purchase/receipt	
Storage	
Thawing	
Preparation	
Cooking/re-heating	
Cooling	
Hot holding	
Slicing, plating up and service	

Hazard analysis checklist

Critical controls for cooked foods, raw meat and poultry, dairy foods

Step	Hazard	Controls/Targets	Monitor	Action
Delivery	Microbiological contamination and growth	Chilled: Max. 5°C	Probe and record at each delivery between pack temperature	Reject above 8°C
		Frozen: Max. -18°C		Reject above -18°C
	Shelf life	Check dates	Reject if out of date	
	Physical / chemical contamination	Good condition. Intact packaging.	Visual check	Reject if serious
Storage	Microbiological contamination and growth	Chilled: store at max. 5°C	Probe and record at least once daily	Above 8°C check thermostat. Call engineer if persistent. Check condition of food.
		Frozen: store at max. -18°C	Between pack temperature	As above, but critical temperature is max. -18°C

Hazard analysis checklist

Critical controls for cooked foods, raw meat and poultry, dairy foods

Step	Hazard	Controls/Targets	Monitor	Action
Thawing	Physical contamination	Cover Open foods	Check on thawing out	Visual check, cover foods, instruct staff
	Microbiological contamination	Thoroughly defrost in a refrigerator. Cover open foods.	Visual check	Visual check, cover foods, instruct staff. If needed complete defrost in microwave oven.
Preparation	Microbiological contamination	Sanitising surfaces and equipment coming into contact with food. Other cleaning. Maintenance of structure.	Use sanitiser*. Check cleanliness. Use cleaning schedule/daily checklist. Condition of structure	Visual check. Check stocks of sanitiser/disinfectants. Supervision of cleaning
		Check dates. Date own produced food	Visual check. Introduce own dating system	Discard if out of date
		Prevent cross contamination. Separate surfaces, equipment etc	Colour coded boards, cloths. Visual check	Remove from service until sanitised. Provide new equipment
		Proper repair of items to allow proper cleaning/disinfection	Visual check	Replace damaged items

**A sanitiser is a combined detergent and disinfectant*

Hazard analysis checklist

Critical controls for cooked foods, raw meat and poultry, dairy foods

Step	Hazard	Controls/Targets	Monitor	Action
Preparation continued		Strict staff hygiene standards	Visual check	Stop work and remedy
		Limit time between chiller and cooking	Supervise. Determine max. time limit	Discard if food is left out longer than time limit
Cooking	Microbiological	Cook to 75°C at thickest part	Probe food at thickest part. Probe and record each cooking session	Continue cooking until target is achieved. Portion* to achieve target temperature
Hot display	Microbiological	Hold at 63°C or hotter	Probe and record each period of hot holding	Use within 2 hours if less than 63°C
	Physical/chemical contamination	Cover food	Visual check	Discard if food contamination occurs
Cooling	Microbiological	Cool within 90 minutes and refrigerate	Check time	*Portion food or decant into shallow dishes to disperse heat. Increase air flow. Use of cold water/ice.
	Physical/chemical contamination	Cover food but allow for clean air flow	Check air flow	Visual check <i>*Divide into portions</i>

Hazard analysis checklist

Critical controls for cooked foods, raw meat and poultry, dairy foods

Step	Hazard	Controls/Targets	Monitor	Action
Cold Storage	Microbiological	Store at max of 8°C. Use within 24 hours. Date/time mark of production.	Probe chilled storage. Record temperatures. Visual check date marks.	Discard if temperatures are too high or out of date.
	Physical/chemical contamination	Cover/sneeze guards	Visual checks	Discard food if contamination occurs

Temperature records								
Week commencing					Address			
ITEM	MON	TUE	WED	THU	FRI	SAT	SUN	COMMENTS
Delivery chilled/ frozen foods								
Fridge/display 1								
Fridge/display 2								
Fridge/display 3								
Fridge/display 4								
Freezer 1								
Freezer 2								
Cooking temp								
Hot hold temp								
Temperatures in centigrade. Target temperatures are maximum 8°C for chillers/fridges, maximum -18°C for freezers, minimum 63°C for holding temperature and minimum 75°C (at the centre) for cooked foods.							Checked (weekly)	

Cleaning schedule

Area/Item of equipment	Frequency	Responsibility	Cleaning Materials	Personal protective equipment	Method of Cleaning

Where to get more help

Official control

Enforcement Officers can advise you about the requirements of food safety law and help you with advice on identifying and controlling food hazards. They may want to discuss procedures and operating practices in some details and can give advice on how to improve them. However, in the end, it is still your responsibility to ensure that any activity critical to food safety is under adequate control. The enforcement officers' role is to help and advise you on the safe production, distribution and sale of food. In some cases it may be necessary to take action to help avoid any risks to customers.

Where can I get further information?

Trade associations and Industry Guides to good hygiene practice may provide general advice on hazard analysis for food businesses within an industry sector. You can use this information to help identify typical hazards and practical control measures for your business, but you should ensure that it is appropriate to your own business.

Industry guides are published by the Chadwick House Group Ltd. You can order them online at www.shop.cieh.net or by calling 020 7827 5882. The range includes the following titles:

- The Catering Guide
- The Retail Guide
- The Market and Fairs Guide
- The Wholesale Guide
- The Baking Guide
- The Fresh Produce Guide
- The Butchers' Guide
- The Vending Guide
- The Flour Milling Guide

Food Standards Agency publications can also be of help. These include the following titles:

- Guide to food hygiene
- Food handlers: fitness to work
- Food law inspections and your business
- Starting up – your first steps to running a catering business.

Visit the Agency's site for caterers at www.food.gov.uk/cleanup. The main website www.food.gov.uk also contains lots of useful information about food. You can also contact them on telephone number 0845 606 0667.

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