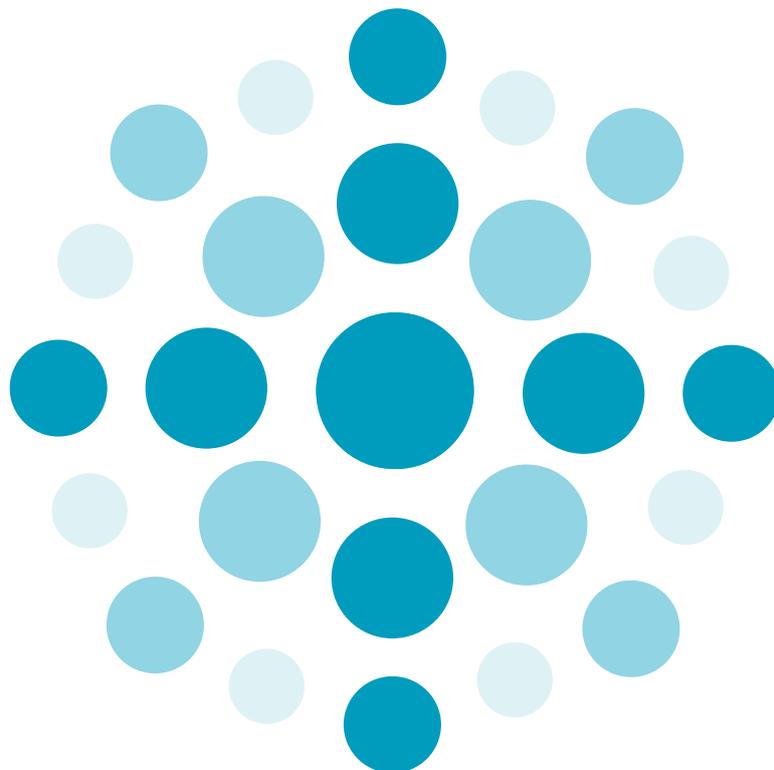


Reducing the risk of vulnerable groups contracting listeriosis

Guidance for healthcare and
social care organisations



Summary

Intended audience This guidance is for all types of healthcare and social care organisations that provide food for patients/residents vulnerable to listeriosis (see section 1.1).

Which UK nations does this guidance cover? This guidance applies to Scotland.
In England, Wales and Northern Ireland this guidance is promoted by Food Standards Agency and available from their website at: www.food.gov.uk

Basis and purpose of guidance The purpose of this document is to provide guidance for healthcare/social care organisations in order to help them reduce the risk of vulnerable people within their care contracting listeriosis.
Following the steps provided in this guidance will also help reduce risks from other foodborne pathogens.

Legal status This guidance has been produced to provide advice on the legal requirements of food safety and hygiene legislation (relevant legislation is detailed in section 5) and includes examples of good practice.
All examples of good practice are clearly identified throughout the document by good practice boxes.
You are not required by law to follow good practice. The guidance notes on legal requirements cannot cover every situation and you may need to consider the relevant legislation itself to see how it applies in your circumstances. If you do follow the guidance notes they will help you to comply with the law.

Key terms	Chilled ready-to-eat foods	Listeriosis
	Cold chain	Shelf life
	<i>Listeria monocytogenes</i>	Vulnerable groups

Review date January 2018

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Section 1: Introduction

This guidance has been developed by Food Standards Agency (FSA) with input from Food Standards Scotland (FSS) and a wide range of stakeholders to help healthcare and social care organisations reduce the risk of vulnerable groups contracting listeriosis through consumption of chilled ready-to-eat (RTE) food.

The FSA and FSS is grateful to those stakeholders who contributed to the development of this guidance, which is intended to complement good practice in the food industry.

Listeria monocytogenes is the bacterium which causes listeriosis. Although relatively rare, listeriosis can be very serious for vulnerable groups (see section 1.3) and has a high hospitalisation and fatality rate compared to infections with other bacterial pathogens. *L. monocytogenes* is a hazard that must be considered and controlled in any healthcare/social care organisation that provides food for vulnerable groups.

Key principles for reducing the risk from *Listeria* in foods are:

- Preventing foods from becoming contaminated with *L. monocytogenes*
- Controlling and limiting the opportunities for growth of *L. monocytogenes*, through strict controls (appropriate shelf life and effective cold chain management)
- Thorough cooking of food to kill *L. monocytogenes*

This guidance is specific to *L. monocytogenes* control and is designed to determine what steps can be put in place to reduce the risk of *L. monocytogenes* in foodstuffs, and makes the assumption that appropriate measures for effective general food hygiene and food safety management controls are in place. These are an essential foundation for specific controls for *L. monocytogenes* and all food businesses must comply with Regulation (EC) 852/2004 on the hygiene of foodstuffs.

It is a legal requirement for healthcare and social care organisations that provide food to put in place procedures based on Hazard Analysis and Critical Control Points (HACCP) to identify and control food safety hazards. As stated in Regulation (EC) 178/2002, Article 14, 4(c), they are also required to consider food safety in regard to the particular health sensitivities of a specific category of consumers.

Local authority (LA) Environmental Health departments/Food Safety Teams (for the purpose of this guidance abbreviated as LA) can provide help and advice on the controls required.

The following foods are outside the scope of this guidance:

- Food designed to be cooked and served hot
- Frozen food designed to be cooked/reheated from frozen and served hot
- Food provided to newborns
- Food for special medical purposes¹.

1.1 WHO IS THIS GUIDANCE FOR?

This guidance is for all types of healthcare and social care organisations that provide food for vulnerable groups (see section 1.3) by any system of catering.

For example:

- NHS Trusts
- Private hospitals
- Nursing homes
- Residential care homes
- Hospices
- Assisted living developments for the elderly
- Day centres for the elderly
- Day procedure units
- Antenatal clinics and centres
- Community meal provision.

This list is intended as a guide and is not exhaustive.

Healthcare/social care organisations can vary significantly in size and nature, from a simple catering operation within a small care home to complex operations within a large general hospital. This guidance will be relevant for managers and staff that hold responsibility for and/or are involved in food preparation, distribution and service, across all food pathways (see section 1.5). It is important that those with senior management responsibility understand the importance of implementing *L. monocytogenes* controls and provide sufficient resources to manage *L. monocytogenes* effectively.

Dependent on the size and structure of the organisation, *L. monocytogenes* control may include personnel from several departments. For example:

- Caterers
- Care/Nursing home managers
- Procurement managers/Buyers
- Dietitians
- Nurses
- Retail managers
- Domestic services
- Infection prevention and control
- Ward managers
- Porters
- Facilities and estates departments
- Patient services
- Housekeepers
- Risk managers.

1. http://ec.europa.eu/food/safety/labelling_nutrition/special_groups_food/medical/index_en.htm

This guidance will also be useful for:

- Environmental health practitioners
- Procurement partners
- Contract caterers
- On-site retailers (commercial and charitable organisations)
- Suppliers of chilled RTE foods to healthcare/social care organisations (includes manufacturers and distributors).

1.2 WHAT IS LISTERIOSIS?

Listeriosis is a disease caused by the bacterium *Listeria monocytogenes*. Although relatively rare, listeriosis can be very serious for vulnerable groups and has a high hospitalisation and fatality rate compared to infections with other bacterial pathogens.

People with non-invasive listeriosis generally experience mild flu-like symptoms. People with weakened immune systems are particularly susceptible to listeriosis. Invasive listeriosis is very serious and can result in conditions such as bacteraemia, septicaemia, meningitis and, in pregnant women, miscarriage and stillbirth.

Listeria monocytogenes is a bacterium of concern because:

Widespread in the environment

- *L. monocytogenes* can be found in vegetation, raw foods, soil, water and animal faeces.
- *L. monocytogenes* can live in food processing environments.

Biofilms

- *L. monocytogenes* bacteria are able to attach to surfaces and adhere together within a slime-like substance to form biofilms, which are not usually visible. Once biofilms are established they are difficult to remove and can be resistant to cleaning and disinfection. During preparation food that comes into contact with a biofilm can become contaminated.

Growth

- Unlike most other pathogenic bacteria, *L. monocytogenes* has the potential to grow, albeit slowly, at low temperatures, which includes refrigerator temperatures.
- *L. monocytogenes* has the ability to grow in low oxygen environments.

Survival and tolerance

- *L. monocytogenes* can survive freezing and is salt tolerant.

1.3 VULNERABLE GROUPS

With reference to this guidance vulnerable groups refer to those individuals whose immune system is weakened in some way and may be more susceptible to developing infection from *L. monocytogenes* (listeriosis) and likely to suffer more severe symptoms.

This includes but is not limited to: cancer patients, patients undergoing immunosuppressive or cytotoxic treatment, unborn and newly delivered infants, pregnant women, people with diabetes, alcoholics (including those with alcoholic liver disease) and a variety of other conditions². Immune system capacity decreases progressively in the elderly, so elderly individuals are also included in this group. Rarely, infection can occur in patients without any known risk factors.

1.4 FOODS OF PARTICULAR RISK TO VULNERABLE GROUPS

L. monocytogenes is frequently present in raw foods of both plant and animal origin, outbreaks or sporadic cases of listeriosis are generally associated with chilled RTE foods, and often involve post-process contamination of cooked foods. These foods will not be subject to further thorough heat treatment and are generally able to support the growth of *L. monocytogenes*.

A variety of specific foods have been linked in outbreaks and sporadic cases of listeriosis. Where low levels of *L. monocytogenes* are found in chilled RTE foods this usually presents a low risk to vulnerable groups, provided time and temperature storage conditions are maintained at appropriate levels prior to the food being eaten.

The lists below, which are not exhaustive, include examples of the types of foods associated with listeriosis outbreaks, sporadic cases of listeriosis or RTE foods sampled for *L. monocytogenes* in microbiological surveys³.

TYPES OF FOODS ASSOCIATED WITH LISTERIOSIS OUTBREAKS

Fish <ul style="list-style-type: none">• Smoked fish• Cooked shellfish• Pâté	Meat <ul style="list-style-type: none">• Cooked meats/poultry• Pâté• Cured meats	Pasteurised/ unpasteurised cheeses <ul style="list-style-type: none">• Soft blue veined cheeses• Mould-ripened soft cheeses	Prepared foods <ul style="list-style-type: none">• Pre-packed sandwiches• Prepared salads• Some cut fruits, including melon
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2. <http://www.food.gov.uk/sites/default/files/multimedia/pdfs/committee/acmsflisteria.pdf>

3. EU trends and sources report 2014: <http://www.efsa.europa.eu/en/efsajournal/pub/4329>

There is the potential for chilled RTE foods to present an increased risk to vulnerable groups and effective controls for *L. monocytogenes* must be applied and appropriately managed. The risks associated with these types of foods are well recognised and it is possible to control the risks effectively by application of hygiene controls at healthcare and social care organisations and the food business operators (FBOs) that supply them.

Although this guidance deals with listeriosis risks related to chilled RTE foods, certain frozen foods once defrosted, for example, ice cream, may present a risk as *L. monocytogenes* can survive freezing. It is important that manufacturer's instructions for storage and use are followed and appropriate controls are in place (see sections 2 and 3).

Nutritional considerations

It is important that nutritional needs of the patient/resident are balanced with that of the risk of listeriosis. With appropriate food safety controls and monitoring in place there should be no need to limit or restrict menu choice for vulnerable individuals.⁴

4. NHS inform provides advice for expectant mothers on avoiding certain types of foods at: <http://www.nhsinform.co.uk/common-health-questions/w/why-should-i-avoid-some-foods-during-pregnancy/>

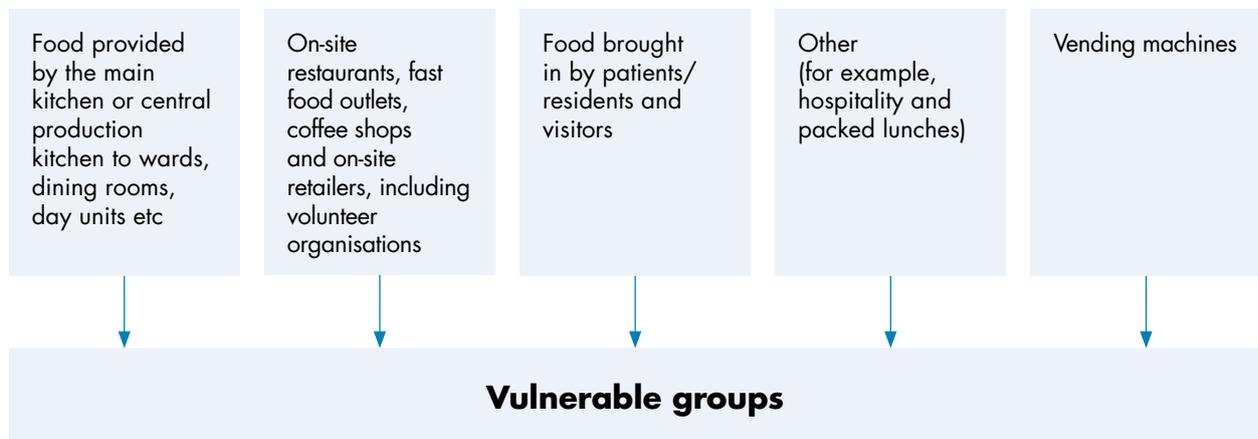
1.5 FOOD PATHWAYS

Healthcare and social care organisations are legally obliged to make sure the food they provide is safe, but there are often many different routes/pathways by which vulnerable groups may obtain food and drink.

Healthcare/social care organisations should take into consideration all of the different food pathways by which chilled RTE foods may reach vulnerable groups within their organisation (see section 4 on Management controls).

Examples of food pathways by which food may be provided to vulnerable groups within healthcare/social care organisations are shown below:

EXAMPLES OF FOOD PATHWAYS



Section 2: Control of contamination

The effective management of cross-contamination is an essential food safety control for *L. monocytogenes*.

It is important to prevent *L. monocytogenes* contamination of chilled RTE foods intended for vulnerable groups as subsequent growth may lead to levels harmful to health. Food must be protected from contamination from delivery of the goods into the organisation through to service of the food to the patient/resident.

Key sources of *L. monocytogenes* contamination are:

- Dirt and soil including dirty premises, equipment and cleaning equipment
- Food handlers
- Raw foods
- Food preparation equipment and utensils
- Water
- Condensate from air cooling units
- Drains and drainage gulleys
- Areas prone to pooling water.

Effective controls for personal hygiene, cleaning and disinfection and cross-contamination controls are outlined in this section.

2.1 PERSONAL HYGIENE

Healthcare/social care organisations must have effective procedures in place for personal hygiene, as this will provide a foundation for *L. monocytogenes* controls.

The law requires food businesses to exclude anyone from work if they have an infection that can be passed on through food and there is any likelihood of them contaminating food directly or indirectly. Further information is available on fitness to work and exclusion in FSA guidance – Food handlers: fitness to work⁵.

GOOD PRACTICE – Personal hygiene

Implement a personal hygiene policy to ensure staff follow effective personal hygiene practices, such as:

- Handwashing controls
- Staff wearing clean, and where appropriate, protective clothing
- Food handlers preparing RTE foods should not travel to their place of work in their protective clothing
- Procedures for laundering work/protective clothing, either by the provision of in-house arrangements or providing appropriate instruction for those laundering their own work clothing
- Minimise handling of chilled RTE foods prior to service

2.2 CLEANING AND DISINFECTION

Good construction and maintenance of premises, as well as effective cleaning and disinfection procedures need to be in place to minimise the risk and remove potential sources of *L. monocytogenes* contamination.

GOOD PRACTICE – Cleaning and disinfection

- Where possible disinfect food contact equipment by heat or by an adequate dishwasher cycle, following the manufacturer's instructions
- Use separate cleaning equipment for raw and RTE preparation areas to limit spread of contamination
- Undertake cleaning and disinfection procedures when food is not being prepared

5. <http://www.foodstandards.gov.scot/food-handlers-fitness-work-best-practice-advice-food-businesses>

Effective cleaning and disinfection is important for all food pathogens but points to be aware of in relation to *L. monocytogenes* are:

- Regular two-stage cleaning and disinfection (stage 1: general cleaning using a detergent and stage 2: disinfectant)⁶ is important to ensure food contact surfaces are cleaned appropriately and to avoid the formation and build-up of biofilms. Biofilms are not usually visible and, if not removed, biofilms can persist on food contact surfaces and equipment for several years. If food comes into contact with a biofilm during food preparation, it can become contaminated.
- Chemicals known to be effective in destroying *L. monocytogenes* should be used. Chemicals must always be used in accordance with the manufacturer's instructions regarding dilution, contact times and rinsing. Disinfectants will not be effective if used on dirty surfaces, or if applied at the incorrect dilution or for the insufficient contact time or the incorrect temperature. A professional chemical supplier will be able to provide advice on suitable chemicals and correct usage.
- It is important to maintain and repair damaged equipment appropriately to enable effective cleaning to take place, as these areas can create harbourage sites for *L. monocytogenes* where biofilms can form.
- Keep moisture levels in food areas to a minimum. Repair damaged and poor floor drainage in kitchens, damaged flooring and areas where water can pool can be a reservoir for *L. monocytogenes* biofilms.
- When using power machinery, such as jet washers and spray-on floor cleaning solutions, spray from cleaning can spread *L. monocytogenes* from floors and drains onto food contact equipment and food. Care must be taken to ensure food contact equipment is not contaminated following this type of cleaning, or steps taken to clean and disinfect food contact equipment before food preparation commences.
- Air handling systems should be well designed and cleaned regularly when food is not being prepared.
- Avoid accumulation of condensation in refrigerators and blast chillers, as this can create favourable conditions for biofilms, which may be distributed via dripping or moist air blown through the units.

6. Procedures for two-stage cleaning are detailed at: <http://www.food.gov.uk/ecoliguide>

2.3 CROSS-CONTAMINATION

As raw foods can be contaminated with *L. monocytogenes*, healthcare/social care organisations should take appropriate steps to control cross-contamination from raw food directly or indirectly onto RTE foods.

Environmental sources of *L. monocytogenes*, such as soil, mean that raw fruit and salad vegetables may potentially be contaminated with *L. monocytogenes*.

Unless supplied as RTE, fruit and vegetables will need to undergo adequate washing (wash thoroughly by rubbing vigorously in clean running water) and/or processing (peeling or cooking) prior to consumption.

GOOD PRACTICE – Washing fruit

- Wash external surfaces before cutting fruits to minimise the risk of *L. monocytogenes* on the external surface from being transferred to the flesh of the fruit, for example, melon

GOOD PRACTICE – Kitchen access

- Implement a policy to control who has access to kitchens/pantries and under what circumstances. The policy should include staff, visitors and contractors, be as restrictive as practicable and should limit access when food is being prepared and/or served
- Provide appropriate guidance and/or supervision on safe handling practices in settings where residents cook their own food as part of a rehabilitation/occupational programme

Section 3: Control of growth

It is important to minimise growth of *L. monocytogenes* present in chilled RTE foods to prevent *L. monocytogenes* reaching levels likely to be harmful to the health of vulnerable groups.

The growth of *L. monocytogenes* can be controlled by applying effective time and temperature control. This includes appropriate controls on the storage time and temperature from supply and delivery of foods/ingredients to the healthcare/social care organisation through to consumption by patients/residents.

When providing chilled RTE food to vulnerable groups, healthcare/social care organisations should:

- Set an appropriate shelf life, where foods are made on site
- Follow manufacturer's instructions for use-by dates and storage
- Maintain the cold chain
- Minimise the time that food spends out of the cold chain (during preparation, delivery, service etc).

Practical advice on how each of these can be achieved is provided within this section.

GOOD PRACTICE – Cold chain

- Maintain the cold chain at 5°C or less
-

3.1 SHELF LIFE

L. monocytogenes can grow in refrigerated storage. Putting in place controls to minimise the shelf life will limit the opportunity for *L. monocytogenes* to grow to harmful levels.

Healthcare/social care organisations must:

- Have a HACCP-based food safety management system (FSMS) in place to ensure food is stored and used appropriately.
- Use foods within their use-by date and follow manufacturer's instructions.
- Where products are made on site ensure the shelf life of the finished product, for example, sandwiches, does not exceed that of any of the ingredients.

It is against the law to use or supply food past the manufacturers use-by date.

GOOD PRACTICE – Shelf life controls

- Order/purchase as close to the date of consumption as practicable
- Take care not to over order foods
- Carefully check use-by dates upon delivery/purchase
- Organise working practices so that chilled RTE food prepared on site is used on day of production wherever possible
- A maximum chilled shelf life of day of production plus two days should be applied, unless evidence of shelf life studies is provided to prove otherwise
- Bought in pre-packed sandwiches, whether provided by the organisation or by visitor/patient, should be consumed as soon as possible
- Ensure stock is rotated, for example, using a 'first in, first out' principle

3.2 COLD CHAIN

The management of appropriate chill temperatures is an essential food safety control for *L. monocytogenes*.

Regulation (EC) 852/2004 lays out general temperature control requirements in Annex II, Chapter IX, 5. These require that foods likely to support growth of micro-organisms are not kept at temperatures that might result in risk to health and that time outside of the cold chain is kept to an absolute minimum.

In Scotland⁷, there are no specified chill temperature requirements or tolerance temperature periods for the chilling of food. However, *L. monocytogenes* can grow rapidly in warm environments and, given the increased risk to vulnerable consumers, good practice should be applied, as detailed below.

⁷ This differs from England, Wales and NI where there is a requirement for chilled foods that are likely to support the growth of pathogens to be held at a temperature of 8°C or below, and an exemption for certain foods to remain out of temperature control for one period of up to four hours for display and service purposes.

Maintain cold chain

- Healthcare/social care organisations must maintain the cold chain of chilled RTE food at relevant temperatures.
- Some manufacturers may set a storage temperature lower than 5°C and these instructions must be followed.

Minimise time food spends out of cold chain

- It is recognised that there may be unavoidable breaks in the cold chain during preparation and food service, but to minimise growth of *L. monocytogenes*, time that RTE chilled food is out of chill storage should be kept as short as possible.
- Deliveries of chilled RTE food should be placed in refrigerated storage promptly.

GOOD PRACTICE – Cold chain

- It is good practice for healthcare/social care organisations to maintain their cold chain of chilled RTE food at 5°C or below from delivery through to service
- Use chilled display cabinets where RTE foods, requiring chill control, are presented for sale at retail in restaurants, shops, cafes etc
- Pre-chill equipment used for keeping foods cold, such as display cabinets, chilled trolleys etc
- Minimise holding times that chilled RTE foods are kept at ambient
 - Set maximum times that food can spend out of the cold chain, as part of the HACCP-based FSMS (see section 4.1), and monitor this to check times are not exceeded
 - Make sure that chilled RTE foods are not stored next to or on top of ward trolleys, designed to keep foods hot

Practices and facilities for the preparation of chilled RTE foods should be organised so that the time chilled RTE foods spend at room temperature is kept as short as possible, and that food temperatures remain as low as practicable.

GOOD PRACTICE – Time/temperature control during food preparation

- Prepare food in small batches
- Pre-chill ingredients such as canned tuna, mayonnaise and bread
- Pre-chill crockery, for example chill plates prior to plating salads/sandwiches
- Provide sufficient refrigerators close to preparation areas so that foods can be removed, used and put back promptly
- Cold holding wells provided close to preparation areas will enable fillings to remain chilled during preparation
- Only remove from refrigeration the amount of ingredients for foods such as salads and sandwiches, being prepared at that time
- Refrigerate chilled RTE foods immediately following preparation
- Where chilled preparation rooms are in operation it is good practice to apply time controls, as chilled preparation rooms generally operate above 5°C

Equipment specifications

As *L. monocytogenes* can grow at low temperatures, and the rate of growth of *L. monocytogenes* can increase significantly above 5°C (and can double at 8°C compared to 5°C⁸), it is important that all equipment designed to keep foods cold or frozen is fit for purpose and can maintain adequate temperatures.

If domestic equipment is used, for example, in ward kitchens, kitchenettes or pantries, the healthcare/social care organisation must ensure that this equipment can maintain adequate temperatures for safe food storage and withstand continuous use.

⁸. *L. monocytogenes* growth modelling ComBase.cc pH 6.6 Aw 0.985 Doubling time: at 8°C 8.8 hours, at 5°C 15.9 hours.

Distribution to service points

During transfer/transportation of chilled RTE foods within a healthcare/social care organisation, for example from the main kitchen to ward or dining areas, it is good practice for the cold chain to be maintained.

Specialised cold-holding equipment (for example insulated containers, eutectic plates, chilled trolleys etc) can be used to transfer/transport chilled RTE foods from the main kitchen to the point of service if the chill temperature is likely to be compromised. This will be dependent on the distance the food needs to travel and the nature of the food service.

GOOD PRACTICE – Time/temperature control during distribution to service points

- Maintain the cold chain at 5°C or below
- Where possible containers and equipment used for transportation of food should be pre-chilled to below 5°C
- Remove chilled RTE food from refrigerated storage and place into transportation equipment promptly, and as close to the transportation time as possible
- Transport chilled RTE food as soon as possible after loading into equipment
- Hold chilled RTE foods transported to the service point in chilled equipment at 5°C or less or transfer to appropriate refrigeration at ward/pantry

Service to patients/residents

Organise the service of chilled RTE foods to patients/residents, for example in wards, wings and dining areas, so that the time food spends at room temperature is minimised.

Effective inter-disciplinary working practices between departments are important as 'non-catering' staff, for example, nurses, care staff, housekeepers etc are often those with responsibility for time/temperature controls at the point of service to the patient/resident.

GOOD PRACTICE – Time/temperature control during food service to the patient/resident

- Keep chilled RTE foods in chilled storage until they are ready to be served
- Ensure chilled RTE foods are eaten as soon as possible after serving
- Keep service times as short as possible
- Chilled RTE foods should not be left at room temperature if the patient/resident is not available or ready at mealtime (label the food with patients/residents name and place in refrigeration)
- Dispose of chilled RTE food held out of chilled storage during service at the end of mealtimes
- Patients/residents should be discouraged from storing chilled RTE food at their bedside/in bedside cabinets for consumption at a later time
- Protected mealtimes are recommended to avoid interruptions during mealtimes and to allow staff to concentrate on food service
- Where ice cream is served ensure this is kept frozen and is not defrosted before service. Ice cream that has defrosted must be thrown away. Do not re-use or re-freeze
- When using oral supplements (sip-feeds) make sure the manufacturer's instructions are followed for use and storage, once opened

GOOD PRACTICE – 'Go home' packs/packed meals

If foods are provided for vulnerable individuals, within a 'go-home' pack or packed meal for patients going off-site, assess the risks and consider:

- Replacing certain RTE foods with low risk alternatives that do not need to be kept chilled
- If chilled RTE foods, such as sandwiches, are used provide appropriate advice on consuming these foods within a specific time frame
- Use cool bags, chill packs etc to keep chilled foods cold

Temperature monitoring

Effective monitoring procedures for chilled RTE foods should be carried out to ensure appropriate chill temperatures are being maintained.

Clear responsibilities for temperature monitoring and corrective actions should be allocated to all food handlers, particularly where responsibilities may be split between the healthcare/social care organisation and a contractor. Effective monitoring must be carried out at all times, including weekends, evenings and holiday periods, such as bank holidays.

GOOD PRACTICE – Temperature monitoring

- Have procedures in place to ensure appropriate temperature monitoring of refrigeration units located on wards/kitchenettes/pantries
- Data loggers can be useful for more complex operations to validate the cold chain

Corrective actions

Clear procedures are required when temperatures are found to be above critical limits and corrective actions must be carried out. The healthcare/social care organisation is responsible for deciding what corrective actions are appropriate.

It is important that all staff, including temporary staff, and supervisors, have clear instruction on corrective action procedures.

Temperature/time controls for other processes

Effective temperature/time control and monitoring during other stages of the food operations is also required to control *L. monocytogenes*.

These should be reflected in the FSMS, for example:

- Thawing under chilled conditions – to control growth of any *L. monocytogenes* that may be present.
- Do not re-freeze thawed food, including ice cream.
- Thorough cooking/reheating/regeneration at 75°C for at least 30 seconds, or equivalent, – to destroy *L. monocytogenes* present in food.
- Hot holding at 63°C or above – to control growth of any surviving bacteria or *L. monocytogenes* introduced post cooking.
- Rapid cooling/blast chilling – to control growth of any surviving bacteria or *L. monocytogenes* introduced post cooking.

Section 4: Management controls

Healthcare and social care organisations serving food are legally required to manage food safety using a documented Food Safety Management System (FSMS) based on HACCP principles.

In addition to establishing controls, critical limits, monitoring procedures and corrective actions in relation to *L. monocytogenes*, the FSMS should include key procedures for the control of *L. monocytogenes* including:

- Procurement/purchase
- Training, instruction and supervision
- Management of on-site retailers and caterers, where applicable
- Food brought in by patients/visitors
- Microbiological testing, where applicable.

Advice on the content of these policies is provided in this section.

4.1 FOOD SAFETY MANAGEMENT SYSTEMS

Healthcare/social care organisations should ensure that their FSMS covers all food pathways by which chilled RTE foods can reach vulnerable groups. The FSMS needs to be appropriate to the size and nature of the organisation. Some organisations may be using an alternative FSMS, for example, 'Cooksafe'⁹ but should also take this guidance into consideration.

GOOD PRACTICE – Food Safety Management System

- The roles and responsibilities for all levels of staff and management (including directors, managers and supervisors) in relation to this guidance should be clearly identified and documented. For example, responsibilities of non-catering staff and for ward kitchens and food service should be defined
- Commitment to food safety is important. The FSMS should name a person with overall responsibility for food safety across the organisation. Endorsement at Board level is beneficial
- Amendments/updates made to the FSMS should be communicated to all relevant personnel within the organisation
- The FSMS should be a working document, reflective of the healthcare/social care organisation and operations and reviewed regularly

Inter-disciplinary working

In the majority of healthcare/social care organisations, several food pathways exist (see section 1.5), meaning that the control of *L. monocytogenes* is not always confined to the main catering operation, and can include a number of different departments.

Effective inter-disciplinary working, good communication and a consistent approach by all departments involved will be necessary to provide safe food.

Record keeping

FSMS records should be kept for an appropriate length of time.¹⁰

The time between consuming food contaminated by *L. monocytogenes* and the onset of symptoms (ie the incubation time) is variable and can be prolonged – up to 90 days. This means it is sometimes difficult to pinpoint exactly what food caused illness in the case of an incident.

Where healthcare/social care organisations have meal ordering systems in place these records can be useful in assisting investigation of potential cases of illness.

9. <http://www.foodstandards.gov.scot/cooksafe>

10. Advice can be sought from the LA.

Review

It is important that regular reviews of the FSMS are carried out, particularly when something changes. This guidance should prompt a review of the FSMS, and relevant parts of the guidance integrated.

Validation and verification

All measures to control *L. monocytogenes* across all food pathways must be validated to prove they are effective. The continued effectiveness of these measures should then be regularly verified at a pre-determined and documented frequency.

GOOD PRACTICE – Verification

Verification methods will depend on the size and nature of the operation and can include:

- Day-to-day supervision
- Internal and external audits
- Complaint/incident monitoring
- Patient/resident/customer feedback
- Temperature monitoring
- Microbiological testing (see section 4.7)

4.2 PROCUREMENT/PURCHASE

It is important for healthcare and social care organisations to have a clear policy in place for procurement/purchase of chilled RTE foods to minimise the risk of buying food products or ingredients that are potentially contaminated with *L. monocytogenes*.

The policy should include minimum food safety criteria that suppliers need to meet in order to supply the healthcare/social care organisation.

General

Those responsible for purchase of chilled RTE foods intended for vulnerable groups in healthcare/social care organisations must consider food safety during procurement/purchase to ensure that chilled RTE foods procured for vulnerable groups are safe to eat.

GOOD PRACTICE – Procurement

- Use suppliers that have been appropriately assessed and where the healthcare/social care organisation has confidence in their suppliers' ability to provide safe food
- Use new suppliers only when food safety has been assessed and found to be satisfactory (see Annex 1)
- Put a contingency plan in place so that alternative suppliers, who have been adequately assessed for food safety, can be used at short notice
- Supplier assessments for chilled RTE foods need to adequately address each stage in the supply chain, and may need to be extended more than one step back. The links in the distribution chain should be considered, for example if food is manufactured by one company and distributed by another, both companies should be assessed to ensure appropriate systems and measures are in place to manage food safety
- Assurances for appropriate assessment of suppliers for food safety should extend to food purchased by all on-site retailers and contract caterers (see section 4.4)

Traceability

It is a legal requirement for healthcare/social care organisations to keep a record of where they sourced food from, and to whom they supplied it to (one step back, one step forward).

For products of animal origin, there are additional requirements to record information including an accurate description of the food, the quantity, the batch number and the date of dispatch. This information should be kept in a way that is easy to check back to see where a food product originated from.

Methods of supplier assessment

The method by which healthcare/social care organisations purchase food varies considerably and usually depends on the size and nature of the operation. For example, purchasing may be undertaken via a purchasing organisation, an in-house purchasing department, or direct from suppliers.

Purchases are sometimes sourced directly from supermarkets or smaller retailers, particularly for those organisations with small numbers of patients/residents or where specialist foods, for example, 'free from' foods, are required.

All organisations should have nominated suppliers who have been assessed for food safety and found to be satisfactory.

The method of assessment will vary depending on the methods used to procure/purchase food and the size and nature of the healthcare/social care organisation, with consideration including:

- The nature and number of vulnerable patients/residents
- The nature of the food purchased

A reference guide for methods to assess the food safety of suppliers is provided in Annex 1.

GOOD PRACTICE – Supplier assessment

- Depending on the supplier, check the food safety of suppliers by undertaking unannounced visits every 6-12 months
- Consider using suppliers that hold third party certification, where the businesses supplying food will be subject to independent food hygiene audits

GOOD PRACTICE – Complaint management

- A procedure should be in place to ensure that complaints relating to suppliers are recorded and reported to the supplier and that a satisfactory investigation is undertaken. Food safety complaints may include, for example, temperatures out of target at delivery, delivery of food outside shelf life, foreign bodies etc
- If sites are part of a larger organisation or group that purchase from the same supplier ensure that food safety complaints are coordinated and appropriately investigated, reported and recorded
- Monitor trends to enable weaknesses in relation to a supplier to be detected and action taken
- It is important to take into account issues that may originate at the healthcare/social care premises as well as those at the supplier

Specifications

Some healthcare/social care and purchasing organisations use documented product specifications to clearly describe the quality and food safety standards expected for products and ingredients obtained from suppliers.

Incoming products should be monitored to ensure specifications are met and suppliers should be required to demonstrate compliance with specifications, for example, provide copies of microbiological testing results. If product supplied is out of specification corrective action should be taken.

Microbiological testing may also be used to evaluate supplier performance in meeting specifications (see section 4.6 and Annex 2).

GOOD PRACTICE – Specifications

Include minimum standards for:

- Shelf life
- Temperature control – including during transportation and for delivery of product
- Microbiological criteria in relation to *L. monocytogenes*

4.3 TRAINING

- Regulation (EC) 852/2004 on the hygiene of foodstuffs requires that food handlers are trained and/or instructed and supervised appropriate to their work activities and responsibilities. This includes any specific control, monitoring and corrective action measures to either eliminate or reduce the risk of *L. monocytogenes*.
- An appropriate level of training/instruction for the control of *L. monocytogenes* should be provided to all staff involved with *L. monocytogenes* control to vulnerable groups across all food pathways. This will include temporary staff (such as casuals, agency, voluntary staff and students). It is useful to ensure that staff, such as maintenance who work on air handling units and condensers, are also made aware of risks.
- It is important to consider 'non-catering' staff, for example, nurses, care staff, housekeepers etc as they can often have a critical role to play in the control of *L. monocytogenes*. They are often those with responsibility for time/temperature controls at the point of service to the patient/resident.

GOOD PRACTICE – Training/instruction

- Competent food handlers are an integral part of an organisation's food safety culture. If those handling food understand the potential harm caused by *L. monocytogenes* and how hazards may arise in relation to their work activity they are more likely to follow safe procedures
- Supervisory and management staff, including those responsible for meal service, may require a higher level of food safety training than those under their supervision
- The training should specifically cover the procedures put in place by the organisation to control *L. monocytogenes*
- Posters and leaflets can serve as useful reminders

4.4 MANAGEMENT OF ON-SITE RETAILERS AND CATERERS

Many larger healthcare/social care organisations have food outlets on site (for example retailers, vendors, caterers etc). These may be commercial or charitable organisations. Such outlets may sell chilled RTE foods such as pre-packed sandwiches, which may be bought by or given to vulnerable patients/residents by their visitors.

The healthcare/social care organisation should have procedures in place to help ensure that on-site retailers and caterers have suitable controls in place to reduce the risk of *L. monocytogenes*.

GOOD PRACTICE – Agreements

It is good practice for contracts/lease agreements with on-site retailers and contract caterers to include food safety requirements in relation to *L. monocytogenes*, such as:

- Appropriate procurement procedures in place for chilled RTE foods (see section 4.2)
- A comprehensive documented FSMS based on HACCP principles
- The need for appropriate training/instruction and supervision of staff

Monitoring

The healthcare/social care organisations should have procedures in place for monitoring standards of the on-site retailers/caterers to ensure suitable controls are in place.

GOOD PRACTICE – Monitoring

- Audits by a competent person
- Copies of LA inspection reports provided to a nominated person within the healthcare/social care organisation
- Serious or recurring food safety related complaints notified to the healthcare/social care organisation (see section 4.2)
- Copies of sampling results including *L. monocytogenes* analysis, where applicable
- Review of ongoing complaints

4.5 FOOD BROUGHT IN BY PATIENTS/VISITORS

Patients/residents and their visitors may wish to bring in food for patients/residents from home or other places. Organisations should have a policy in place to manage this appropriately and provide advice on bringing in food for vulnerable patients/residents, as there could be a risk that these foods may have been prepared, handled, transported and/or stored inappropriately, which could present an increased risk for certain vulnerable groups.

The policy should be documented and the information made available to vulnerable patients/residents and their visitors, explaining the risks attached to bringing in RTE foods that require refrigeration.

If personal food is stored, clear procedures should be established in relation to date labelling of food.

There should be clear authority and responsibility given to staff that should regularly check stored foods and dispose of foods that are past the use-by date or unlabelled foods.

GOOD PRACTICE – Personal and gift food

It is advised that chilled RTE food brought in by patients/visitors is labelled with:

- Patient/resident's name
- Date (and time) placed in refrigerated storage

Where gift and donated foods are accepted these should be limited. For example:

- Foods with a best before date, not requiring refrigeration

Personal refrigerators

Within some healthcare/social care organisations, patients/residents are provided with refrigerators solely for their own personal use, for example, at their bedside or within kitchenettes.

GOOD PRACTICE – Personal refrigerators

Healthcare/social care organisations should take reasonable steps to ensure that food stored does not present a health risk. For example:

- Provide food safety information to residents/visitors
- Carry out temperature and date checks, with corrective action where necessary in consultation with the patient/resident

4.6 MICROBIOLOGICAL TESTING

A robust FSMS based on HACCP principles should result in safe food. The safety of food cannot be guaranteed by carrying out microbiological testing and the focus should be on effective controls being in place. However microbiological testing and swabbing the environment is a useful tool to validate and verify that the FSMS is effective to control *L. monocytogenes*.

MICROBIOLOGICAL TESTING TOOLS

Food samples

- Food sampling can help verify that food being purchased/produced is meeting required specification/microbiological standards.
- Validate the FSMS is effective in controlling *L. monocytogenes*.

Environmental swabs

- Environmental swabs can help to verify that cleaning and disinfection procedures are effective.

Environmental swabs can be sent to a laboratory to specifically test for *Listeria*. Rapid methods, such as protein swabs and rapid testing kits, can also be useful to verify general cleaning and disinfection regimes.

An organisation should take into consideration a number of factors when deciding whether microbiological testing is appropriate:

- Size of organisation – number of sites or beds
- Vulnerable groups – nature and number of vulnerable patients/residents
- Extent and nature of food prepared and purchased
- Sampling and testing carried out by suppliers.

It is not expected that sampling and microbiological testing will be appropriate for all settings, for example an individual care home or smaller organisations. Medium and larger organisations providing food for vulnerable groups may wish to consider whether microbiological sampling and testing could provide additional assurances that the necessary controls are in place and being applied effectively.

If an organisation decides it is appropriate to undertake sampling, the sampling plan should be proportionate to the risk, size and nature of the organisation and undertaken using a risk based approach. Advice for sampling plans is provided in Annex 2.

Co-ordination of sampling programmes

Where sampling is undertaken to check the microbiological standard of supplied products, for example, sandwiches, in order to avoid duplication or omission, a co-ordinated approach to sampling is recommended, for example, where several sites or healthcare/social care organisations are supplied with the same product from a common supplier.

Section 5: Legislation

Legislation relevant to this guidance is:

General Food Law – Regulation (EC) 178/2002 – Article 14

Sets down that food shall not be placed on the market if it is unsafe. Food is deemed to be unsafe if it is considered to be:

- injurious to health
- unfit for human consumption

The article indicates what factors need to be taken into account when determining whether food is injurious to health or unfit and sets out that 'regard will be made to the particular health sensitivities of a specific category of consumers where food is intended for that category of consumers'.

HACCP – Regulation (EC) No 852/2004 on the hygiene of foodstuffs – Article 5

FBOs shall put in place, implement and maintain a permanent procedure or procedures based on HACCP principles. HACCP principles consist of the following:

- a) Identifying any hazards that must be prevented, eliminated or reduced to acceptable levels.
- b) Identifying the critical control points (CCP) at the steps at which control is essential to prevent or eliminate hazards or reduce it to acceptable levels.
- c) Establishing critical limits at CCPs which separate acceptability from unacceptability for the prevention, elimination or reduction of identifiable hazards.
- d) Implementing effective monitoring procedures at CCP.
- e) Establishing corrective actions when a CCP is out of control.
- f) Establishing verification procedures.
- g) Establishing documents and records commensurate with the nature and size of the food business.

The system must be reviewed if the product, process or any step is modified.

Training – Regulation (EC) No 852/2004 Annex II Chapter XII

FBOs are to ensure:

- Food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity.
- Those responsible for the development and maintenance of HACCP procedures have received adequate training in the application of HACCP principles.

The Food Hygiene (Scotland) Regulations 2006

Sets down national temperature control requirements.

Regulation (EC) no. 2073/2005 (as amended) on microbiological criteria for foodstuffs

Sets down microbiological criteria for *Listeria monocytogenes* and rules for sampling and testing regimes as a tool to validate and verify food safety management procedures.

1.1. RTE foods intended for infants/special medical purposes
(out of the scope of this guidance)

1.2. RTE foods able to support the growth of *L. monocytogenes*

- (a) Should not exceed 100cfu/g – products placed on the market during their shelf life
- (b) Absence in 25g – before the food has left the immediate control of the FBO

1.3. RTE foods unable to support the growth of *L. monocytogenes*

Should not exceed 100cfu/g – products placed on the market during their shelf life

Guidance on microbiological criteria is available at:

<http://www.foodstandards.gov.scot/sites/default/files/ecregguidmicrobiolcriteria.pdf>

Section 6: Glossary of definitions

The following definitions are specific to this guidance:

- **Bacteraemia** – the presence of bacteria in the bloodstream/organs.
- **Best before date** – a quality indication used by the manufacturer to indicate that the food will be, assuming correct storage has been maintained, at its best before a certain date.
- **Biofilm** – a layer of microorganisms adhered to a surface, together with a slimy matrix of protective substances secreted by the bacteria.
- **Carrier** – a person who harbours and may transmit harmful micro-organisms without showing signs of illness.
- **cfu** – colony forming units.
- **Cold chain** – continuous maintenance of low temperatures.
- **Competent person** – a person with sufficient training, experience and knowledge.
- **Contact time** – the period of time that the disinfectant needs to be left on the surface to work effectively.
- **Control** – a measure to eliminate or reduce a hazard to a safe level.
- **Contamination** – the presence or introduction of a biological, physical or chemical hazard in a food or food environment.
- **Corrective action** – action to be taken when the result of monitoring at a CCP indicates a loss of control.
- **Critical control point (CCP)** – a step in the process at which control can be applied and is essential to eliminate or prevent a food safety hazard or reduce it to an acceptable level.
- **Critical limit** – a criterion that separates acceptability from unacceptability for the prevention, elimination or reduction of identified hazards such as *L. monocytogenes*.
- **Cross-contamination** – the transfer of hazards, for example bacteria, directly from raw food to RTE food, or indirectly from equipment, personnel and food handling environment.
- **Detergents** – products used for general cleaning to dissolve grease and remove dirt, debris etc Detergents do not have disinfectant properties (If used on their own they are not able to destroy *L. monocytogenes*).
- **Dilution rate** – quantity of water to use with a concentrating chemical before it can be used. Always follow the manufacturer's instructions.
- **Disinfectants** – products capable of reducing the levels of specific pathogens when applied to visibly clean surfaces at the specified dilutions and for the recommended contact time.
- **Foodborne disease** – illness caused by micro-organisms which use food as a vehicle to move onto humans.
- **Food handler** – a person that handles or prepares food and/or drink whether unwrapped or packaged.
- **Food safety management system** – a system that helps food business operators look at how they handle food and introduces procedures to make sure the food produced is safe to eat.

- **Hazard Analysis and Critical Control Point (HACCP)** – a system that identifies, evaluates and controls hazards which are significant for food safety.
- **Hazard** – a biological, chemical or physical agent in food with the potential to cause harm to the consumer's health.
- **Immunocompromised** – a weakened immune system caused by certain diseases or treatments.
- **Immunosuppressive or cytotoxic treatment** – the inhibition of the immune response, usually deliberately by administering drugs to prevent rejection of transplanted organs, but sometimes resulting from disease.
- **Incubation time** – the period between infection/ingestion and the first symptoms of illness.
- **ISO** – International Standards Organisation.
- **Meningitis** – a serious, sometimes fatal illness in which a viral or bacterial infection inflames the meninges, causing symptoms such as severe headaches, vomiting, stiff neck, and high fever.
- **Monitoring** – a pre-arranged programme of checks of critical and/or legal limits to check whether control measures are failing and which determine the need to take corrective actions.
- **Pathogen** – A microorganism that may cause illness.
- **Raw foods** – raw meat and any raw food including fruit and vegetables and any ingredient that are potential sources of *L. monocytogenes*.
- **Ready-to-eat foods (RTE)** – food intended by the producer or manufacturer for direct human consumption without the need for cooking or processing effective to eliminate or reduce microorganisms of concern to an acceptable level.
- **Sanitisers** – products that combine a disinfectant and a detergent in a single product. For effective disinfection they must be used twice: first to clean and then again to disinfect.
- **Septicaemia** – a disease caused by toxic microorganisms in the bloodstream.
- **Shelf life** – the period during which a product maintains its microbiological safety and organoleptic qualities under specific storage conditions.
- **Supervision** – the process of overseeing the performing of tasks and procedures to ensure that they are carried out effectively and that the required standards are met.
- **Suppliers** – organisations that provide food to healthcare/social care organisations, which includes manufacturers, distributors, importers, wholesale and/or retailers.
- **Use-by date** – the required form of date mark for those foods which are highly perishable from a microbiological point of view and which are in consequence likely after a relatively short period to present a risk of food poisoning, and so relates to the safety of the food.
- **Validation** – collecting and evaluating scientific and technical information to determine whether the HACCP plan, when properly implemented, will effectively control the identified food hazards.
- **Verification** – checking or confirming that the HACCP-based procedures are achieving the intended effect, ie food safety hazards are under control. Provides confirmation that the business is doing what it planned to do.
- **Vulnerable groups** – patients/residents who are immunocompromised in some way.

REVISION HISTORY

Revision number	Revision date

Annex 1: Methods of supplier assessment – Quick reference guide

It may be useful for healthcare/social care organisations to review available guidance when undertaking supplier assessments.

Method of assessment	Organisation type	Assessment criteria
Independent third party certification	Medium and large organisations for example national and regional purchasing organisations, care groups, contract caterers and on-site retailers to healthcare/social care organisations.	<ul style="list-style-type: none"> • Independent third party certification means food suppliers are audited/assessed and certificated for food safety by an independent auditing body. • The audit/assessment should be carried out against a recognised audit standard, which should include <i>L. monocytogenes</i> specific requirements. • Third party assessment/audits should be carried out by suitably qualified and experienced food safety auditors. • Preferably the third party organisations and/or audit standard should be UKAS accredited. • A system should be in place to ensure that certification is valid for the products supplied and maintained up to date. • Suppliers that fail their third party assessment or whose certification lapses should not be used until the supplier has been re-assessed and found to be satisfactory.

Method of assessment	Organisation type	Assessment criteria
Requests for information/documentation	Small and medium size organisations where a third party audit programme is not in place.	<ul style="list-style-type: none"> • Check copies of relevant documentation from suppliers, for example: <ul style="list-style-type: none"> – Copy of LA inspection reports – Copy of documentation for approval under Regulation 853/2004, where applicable – Food safety management system/HACCP plan – Copy of food safety certification (where appropriate), such as BRC, SALSA etc – Food Hygiene Rating, where applicable – Sampling plan and sampling results, where applicable. • Documentation should be assessed by competent personnel to ensure the content is satisfactory. • If the findings of the information/documentation request are unsatisfactory or if documentation is not supplied, the supplier should not be used until a satisfactory response is provided. • Documentation should be kept up-to-date and reassessed at least annually.
Questionnaire	Small and medium size organisations where a third party audit programme is not in place.	<ul style="list-style-type: none"> • A food safety questionnaire may be used to assess whether adequate food safety systems are in place. • The response provided by the questionnaire should be assessed by a competent person. • Questionnaires may be followed up by visits to the supplier premises by the procurement/healthcare/social care organisation. • It is advisable that the food safety questionnaire includes specific questions on arrangements to control <i>L. monocytogenes</i>. • If the response provided by the questionnaire is unsatisfactory or if the questionnaire is not completed, the supplier should not be used until a satisfactory response is provided. • Questionnaires should be completed on a regular basis.

Method of assessment	Organisation type	Assessment criteria
Site visits	Small and medium size organisations where a third party audit programme is not in place.	<ul style="list-style-type: none"> • Site visits are often referred to as second party audits. • Site visits should be undertaken by a competent person in terms of experience and knowledge, preferably with qualifications in food safety to a minimum of Level 4 Award in Food Safety. • The results of the visit should be documented. • If standards during the site visit are found to be unsatisfactory, the supplier should not be used until satisfactory standards are demonstrated during a re-visit.
Risk assessment (Supermarkets or smaller retailers)	Small organisations only.	<p>Local purchases from supermarkets/smaller retailers for chilled RTE foods should be minimised, particularly where a third party audit programme or nominated supplier list is in place.</p> <p>Where local purchases are made:</p> <ul style="list-style-type: none"> • Purchase should be limited to reputable retailers that are likely to have robust procedures in place. • Check Food Hygiene Rating at: http://www.foodstandards.gov.scot/fhis • During purchase/delivery, basic checks should be carried out for: <ul style="list-style-type: none"> – Dates codes – buy product as close as possible to date of production – Temperature of chilled cabinet (for example if a display is provided) – Cleanliness. <p>Appropriate time/temperature controls need to be in place for the transfer of chilled RTE foods. Transport foods promptly, for example, home delivery in a chilled vehicle or by use of cold packs/containers.</p>

Annex 2: Advice for sampling plans

At what frequency should sampling be undertaken?

Healthcare/social care organisations should decide sampling and testing frequencies as part of their FSMS/HACCP procedures. Frequency will depend on:

- Size of organisation
- Nature and number of vulnerable patients/residents
- Nature and extent of food production
- The results of previous sampling

What food should be sampled/what areas swabbed?

Foods targeted for sampling should focus on:

- Food destined for the most vulnerable patients/residents
- Foods that may present particular risks (see section 1.4)
- Food sampled should be representative ie characteristic of the batch from which it is sampled
- Food at different stages including point of service

Surfaces targeted for swabbing should focus on:

- Surfaces used in the preparation of chilled RTE foods, such as work surfaces, sinks etc
- Food contact equipment used for preparation of chilled RTE foods, such as chopping boards, knife blades etc

How should food be sampled/surfaces be swabbed?

- Food samples and environmental swabs for laboratory examination should be taken using a sampling technique so that the sample or swab is not contaminated by the sampling process, for example by hands or dirty sampling equipment
- Swabs should not be taken of surfaces directly following cleaning, unless this is to determine the effectiveness of cleaning
- Sterile sampling containers should be used
- The samples/swabs should be stored at a temperature and for a time that will not lead to further growth

What laboratory and tests should be used?

Healthcare/social care organisations must have confidence that the laboratory they select to undertake the examination of food for *L. monocytogenes*/*Listeria* spp. is competent and has the appropriate expertise in selecting and applying appropriate analytical methods. Using an accredited laboratory can provide the appropriate assurances.

Microbiological Criteria Regulations (2073/2005) provide reference methods for *L. monocytogenes*:

Analytical reference method EN/ISO 11290-1 for detection **Analytical reference method EN/ISO 11290-2 for enumeration**

Methods other than the analytical reference methods can be used provided alternative methods deliver equivalent results and the methods are validated appropriately.

Performance of analytical methods can be variable and some are more sensitive than others. It is important to check with the laboratory to ensure the correct testing methods are used, so that results are robust and meaningful.

What corrective action should be taken if results are unacceptable?

Results should be reviewed promptly. If targets are exceeded corrective action must be taken without delay.

The purpose of corrective action is to:

- Determine the causes of the unsatisfactory results
- Determine what actions are required to prevent a recurrence
- Put in place interim measures to ensure food safety

Corrective actions should ideally be predetermined within the FSMS.

Actions will depend on the levels, extent and nature of the food contaminated, and may include for example:

- Contact suppliers
- Withdraw/recall batch (if possible)
- Contact LA
- Contact third party auditors, where appropriate
- Review and where necessary improve:
 - Cold chain
 - Shelf life
 - Cleaning and disinfection
 - Personal hygiene
 - Cross-contamination
- Modifications to FSMS/HACCP
- Conduct additional sampling, where appropriate

Corrective actions should be recorded.

Trends in test results should be analysed as they may reveal unacceptable developments and enable the healthcare/social care organisation to take corrective actions.

Additional information

There is a wide range of practical advice and guidance documents relating to sampling that have been produced by some industry sectors.

EU guidelines on sampling the food processing area and equipment for the detection of *Listeria monocytogenes* can be accessed at:

http://ec.europa.eu/food/safety/docs/biosafety_fh_mc_guidelines_on_sampling.pdf

Additional advice can be sought from the LA, food examiner and/or Official Control laboratory.

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