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NHS HOSPITAL FOOD REVIEW

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Executive summary

This report and package of evidence has been put together to support the NHS Hospital Food Review Panel's consideration of food safety as part of the "root and branch" review of the food provided in NHS facilities for patients, visitors and staff, including the Panel's recommendations to the Secretary of State.

This report presents key findings from detailed reviews of outbreaks of foodborne illness in hospitals and the Food Standards Agency's advice on actions that will provide enhanced food safety assurance drawing on our experience of these outbreaks and the lessons learned. Our firm position is that food safety is a fundamental priority that underpins all considerations surrounding the provision of food in hospital settings.

The evidence from 16 outbreaks of foodborne illness in hospitals has shown that several NHS Hospital Trusts involved have not always recognised their legal obligations as food business operators leading to food safety failures. The increased vulnerability of hospital patients means shortcomings in hygiene practices, failure to consistently follow food safety advice and over reliance on accreditation schemes have contributed to a number of these outbreaks.

A range of guidance documents have been produced by the Food Standards Agency and others to help food businesses meet their legal obligations and ensure food is safe. This includes guidance on mitigating *Listeria* risks from foods to ensure food is safe for patients to eat in hospital settings.

The risk profile shows that *Listeria monocytogenes* in sandwiches and salads was the most common factor in outbreaks of foodborne illness acquired in hospitals. It also indicates that premises with high Food Hygiene Ratings scores are less likely to be associated with cases of foodborne illness and highlights the potential risks associated with food products produced on and off site.

Behavioural insights can help NHS Hospital Trusts target the behaviours and practices needed to meet their food safety obligations with effective food safety management systems including appropriate training and monitoring, strict adherence to temperature controls and a culture prioritising food safety. Further work is needed to narrow down the riskiest behaviours which can result in foodborne infection in hospital settings and to translate the analysis into behaviourally informed strategies.

In light of the most recent listeriosis outbreak in hospitals in 2019, the Food Standards Agency has commissioned an independent assessment of its guidance on reducing *Listeria* risks to ensure it remains fit for purpose and a survey of users in healthcare settings to examine the barriers to implementing and following the guidance.

In summary, ensuring NHS Hospital Trusts fully understand their responsibilities as a food business and their role in the chain is essential to ensure the food that they supply is safe to eat. The FSA's evidence report includes advice on how this can be achieved.

Food Standards Agency

January 2020

Section 1: Introduction

1.1 The Food Standards Agency

The Food Standards Agency (FSA) is an independent, non-ministerial government department responsible for protecting public health and consumers' wider interests in relation to food in England, Wales and Northern Ireland. The FSA was established in April 2000, operating under the Foods Standards Act 1999 and led by a Board appointed to act in the public interest. The Act sets out the FSA's role - to develop policies relating to matters connected with food safety or other interests of consumers in relation to food and to provide advice, information or assistance in respect of such matters.

1.2 NHS Hospital Food Review

The FSA has produced a package of evidence and information to support the NHS Hospital Food Review Panel's consideration of food safety as a fundamental part of the "root and branch" review of the food provided in NHS facilities for patients, visitors and staff. The evidence and supporting information provide an insight into the principal food safety risks in hospital settings, lessons learnt from previous food safety incidents and approaches to mitigate the risk of foodborne diseases.

The Terms of reference of the review which explicitly reference food safety are:

- Assurance that food provided in the NHS is safe, recognising the unique risks of NHS patients;
- Systems that monitor food safety and quality transparently, that NHS Boards are held to account on;
- Funding needed to improve and then maintain food safety and quality, both immediately and in the long term.

Food safety underpins all considerations surrounding the provision of food in hospital settings, including in the development of proposals for the procurement of sustainable, locally sourced foods.

Whilst all outbreaks of foodborne disease are a cause for concern, those food products and causative agents that have proven to be recurring issues should be dealt with as a priority, therefore, the evidence within this report principally focuses on the risks posed by *Listeria monocytogenes (L. monocytogenes)*.

Section 2: Background

2.1 NHS trusts & food law

For the purposes of food law, hospital trusts are classed as Food Business Operators (FBOs) and are required to comply with relevant food law [Annex I].NHS Trusts must ensure food safety controls are implemented in relation to the production and provision of food at all stages of the food chain, including service to the final consumer. This includes establishing effective mechanisms to ensure food received from suppliers is safe and meets the agreed specifications.

Food business registration, local authority enforcement and the Food Hygiene Rating Scheme

As food business operators, NHS Trusts must register with their local authority (LA). LAs are responsible for monitoring compliance with and enforcement of food law. They undertake regular food hygiene inspections and other interventions to ensure compliance of businesses with food law. The frequency of intervention is dependent upon the level of risk. In 2010, the Food Standards Agency introduced the Food Hygiene Rating Scheme (FHRS) which provides transparency on the results of inspections. The rating reflects the hygiene standards found at the time of inspection.

Food safety requirements

Where an NHS Trust considers or has reason to believe that food received from suppliers or produced within their estate is not in compliance with the food safety requirements, it is required to take immediate action and immediately notify the competent authority. The LA in turn is obliged to notify the FSA if a serious localised incident has occurred or if there may be a wider problem. The FSA may lead on coordination of the incident in these circumstances.

General food safety requirements are set out in directly applicable EU legislation and place a duty on FBOs to ensure that the food they supply is safe to eat. In determining whether food is injurious to health, NHS trusts must pay regard to the particular health sensitivities of a specific category of consumers where the food is intended for that category of consumers e.g. those with food allergies or those who are more vulnerable to foodborne disease.

Food safety management systems

EU hygiene regulations set standards for the hygienic preparation of food, personal hygiene and structure/cleanliness. The regulations require FBOs to implement food safety management systems based on HACCP principles. A food safety management system requires an FBO to identify all the food safety hazards present - physical, biological and chemical including allergens. FBOs must implement controls and monitoring to ensure those hazards critical to food safety are managed.

The management system should cover all steps from delivery of raw materials, through to manufacture/central catering up until the delivery of food to the final consumer on the ward. Microbiological criteria are set for certain pathogens or toxins in specific food categories, such as *Listeria monocytogenes* in ready to eat foods, *Salmonella* in various meat, dairy, egg, fishery, fruit and vegetable products and histamine in fishery products from particular species of fish [See Annex V].

Food hygiene training

The hygiene regulations also require that food handlers are trained and/or supervised and instructed in food hygiene to a level appropriate to their work activities and responsibilities. Where ward staff prepare, handle or serve food, NHS Trusts must ensure they are also trained and/or supervised and instructed in food hygiene. Ward staff, such as nurses are often those with responsibility for time/temperature and shelf life controls at the point of service to the patient.

Guidance for businesses

In order to assist food businesses (including hospital trusts) to comply with the requirements of food law, the FSA produces guidance on issues such as managing *E. coli* cross-contamination risks, the control of *Listeria monocytogenes*, product traceability and the withdrawal/recall of unsafe food. Industry bodies also produce sector specific guidance to facilitate compliance and encourage good practice. A comprehensive list of FSA, EU and industry guidance can be found in Annex II.

2.2 Listeria monocytogenes – A strategic priority

The FSA has long recognised the risks associated with *Listeria* and has consistently provided advice and guidance to consumers, businesses and local authorities on how those risks can be controlled. Reduction of illness associated with *L. monocytogenes* has been a strategic priority for the FSA since 2009. *L. monocytogenes* has featured as a primary pathogen of concern, in both the FSA's 2010-2015 Foodborne Disease Control strategy and 2015-2020 Strategic Plan with activities co-ordinated and delivered through the *Listeria* Risk Management Programme (FSA, 2011).

In 2016, the FSA developed guidance with input from 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 (FSA, 2016). Key principles for reducing *Listeria* risks in RTE foods entail preventing foods from becoming contaminated with *Listeria* and limiting the growth of *Listeria* through strict controls, including appropriate shelf-life and effective cold chain management [See Annex V].

The *Listeria* guidance notes the increased vulnerability of patients in healthcare settings, though with the exception of pregnant women, it does not suggest restricting foods that might contain *Listeria* (such as chilled ready to eat foods, e.g. cooked meats, fish, salads) but advises that risks can be mitigated by good practice and following the guidance. In the case of pregnant women, users of the *Listeria* Guidance are referred to the NHS website which provides advice for expectant mothers on avoiding certain types of foods (NHS, 2017).

An EFSA opinion found that 'most listeriosis cases are due to consumption of RTE foods with levels markedly above 100 cfu/g'. EFSA found it was difficult to distinguish between absence and 100 cfu/g and concluded that it was not the limit itself that was the important factor, but the controls put in place to achieve compliance. The next section explores the association between poor food hygiene practices/controls and their links with outbreaks of listeriosis.

2.3 Listeriosis outbreaks - lessons learnt

In 2014, the FSA commissioned research to look at previous outbreaks of listeriosis in hospital settings in order to identify key lessons (FSA, 2014); the report generated from the research was one of the key pieces of evidence which informed the development of the FSA *Listeria* guidance (FSA, 2016). Information was gathered to summarise the foods implicated, potential food safety weaknesses that may have caused the outbreaks, procedures put in place following the outbreaks and lessons learned.

The report identified nine outbreaks of listeriosis within the UK thought to be linked to NHS Trust hospitals between 2003 and 2012. Pre-packed sandwiches were a suspect food in the majority of outbreaks, with cooked meats and salads also cited as the possible source in one outbreak. One outbreak affected pregnant women and others affected the over 60s and/or patients with concurrent debilitating illnesses.

Food safety at ward level was repeatedly found to be a contributory factor (Table 1), as were weak procurement requirements with regards to food safety. Key failings included, cold chain integrity issues e.g. unclear procedures for checking fridge/chilled trolley temperatures at ward level; inadequate cleaning /disinfection of food contact surfaces and inadequate shelf-life controls. In one of the outbreaks, there were concerns about the shelf life of sandwiches produced on site, in addition to possible issues with sandwiches being left at ambient temperature for long periods of time at ward level if a patient was away being examined.

Responsibility for food safety at ward level was repeatedly found to be a grey area, as was the lack of clear food safety management procedures (HACCP) and a breakdown of training and/or supervision. One trust reported that their biggest challenge with food safety was securing the commitment of ward and medical staff to follow procedures.

Table 1 – Summarises the potential main areas of weakness with food safety identified from previous outbreaks (FSA, 2014)

Outbreak	Main catering	Ward level	Retailers	Procurement
1	✓	✓	✓	✓
2		✓		
3	✓	✓		
4				✓
5	✓			
6*				
7		✓		
8	✓	✓		✓
9*				

*Information unknown

Weak food safety considerations during procurement were also a significant factor with several of the hospital outbreaks. At least two outbreaks involved patients who consumed food from on-site retailers, indicating that this is an important area to control.

Listeria outbreak (May - June 2019)

The recent *Listeria* outbreak (May-June 2019) associated with pre-packed sandwiches supplied to hospitals highlighted shortcomings in hygiene practices throughout the supply chain and that the *Listeria* guidance (FSA, 2016) was not being consistently implemented. Some of the failings identified (listed below) demonstrate that NHS Trusts do not always understand their role and obligations as food businesses or have in place effective systems to meet the requirements of food law and do not always implement best practice guidance. Responsibility for food safety is often externalised with an over reliance on accreditation schemes to 'deliver' food safety.

Food hygiene failings identified

- One NHS Trust was not registered with their Local Authority;
- Central catering responsibility for food can stop once the food is delivered to the ward;
- Relationships between central catering and ward/departments who are serving food to patients are often non-existent;
- Chill-chain controls were lacking in several areas and not always understood or not viewed as being of importance. For example, temperature monitoring and recording for high-risk foods was not being consistently undertaken, with instances where no-one took control or responsibility for ensuring these checks were carried out. At one hospital, the caterer experienced a technical malfunction of their recording system for central chill control, yet it was not addressed, and temperatures were not recorded.
- Food hygiene training is often overlooked for 'non-catering' staff, such as nurses and was not in place at one of the hospitals associated with the outbreak;
- The food history of patients is very difficult to ascertain and often inaccurate. Patient feeding is often only recorded during standard mealtimes and is dependent on hospital systems.

Purchasing specifications for sandwiches in hospitals

- In the outbreak the specification set by one contract caterer was a 3-day shelf-life for sandwiches, but the sandwiches were supplied with a 4-day shelf life. The microbiological specification for *L. monocytogenes* was absence, but it is not clear how this was verified.

Section 3: Food safety risk profile and behavioural science interventions

3.1 Food safety risk profile

Work was recently undertaken to develop a food safety risk profile which sought to establish the relative food safety risks in hospital settings (Annex III). Vulnerable populations have been identified, and their size and potential exposure have been estimated. Based on outbreak data in hospitals, the microbiological scope of this profile was established as *Listeria monocytogenes* contamination of sandwiches and salads. Key findings are presented below, for the full report, refer to Annex III:

Key findings

- *Listeria monocytogenes* in sandwiches and salads was the most common factor in outbreaks of foodborne illness acquired in hospitals;
- Food produced on-site (hospitals) using fresh ingredients may present more theoretical risk factors than food sourced prepacked from external suppliers, however, it is not possible to determine which production method is higher risk;
- Food establishments which receive a higher (better) food hygiene rating during inspections by EHOs are less likely to be the source of foodborne disease outbreaks. Caring premises had higher food hygiene rating scores on average than other food establishments;

Section 3.2 explores the role behavioural interventions may play in improving food hygiene compliance.

3.2 Behavioural science and compliance

The FSA has also undertaken work to explore the role of behavioural science in improving food hygiene compliance [Annex IV]; this includes a short review of key literature, an initial short examination of the relevant behaviours, and recommendations for next steps has been provided.

The literature highlights behavioural interventions which have improved food hygiene compliance, such as FHRS display and handwashing, and successful behavioural interventions in the NHS which have improved healthcare compliance, such as prescribing best practice.

The literature shows knowledge alone is not enough to change behaviour. This is equally true of hand hygiene behaviour, as food safety education and training have improved knowledge but have been less successful in improving food hygiene compliance. Other important influences on food safety behaviours include: environmental context and resources; social influences; attitudes and risk perceptions; behavioural intentions; beliefs and capabilities; reinforcement; and professional role and identity. Sociodemographic characteristics of food handlers also influence food safety behaviours.

Behavioural insights can help NHS Hospital Trusts target the behaviours and practices needed to meet their food safety obligations with effective food safety management systems including appropriate training and monitoring, strict adherence to temperature controls and a culture prioritising food safety.

Further work is needed to narrow down the riskiest behaviours which can result in foodborne infection in hospital settings and to translate the analysis into behaviourally informed strategies. Meanwhile, the FSA will examine the barriers to implementing and following the *Listeria* guidance in healthcare settings.

Section 4: Conclusions

Failure to comply with food law and follow best practice advice can have serious consequences for both individuals and businesses, with hospitals being particularly vulnerable to food safety risks in general. As food business operators, NHS Trusts have a responsibility to ensure compliance with food law, including the implementation of food safety management systems based on HACCP principles (Section 2.1).

4.1 Key findings of this evidence package

Detailed reviews of outbreaks of foodborne illness in hospitals as outlined in section 2.3, have shown that NHS Hospital Trusts do not always recognise their legal obligations as food business operators, including the requirement to register with their local authority. This lack of awareness/understanding can lead to failures to recognise the vital importance of food safety in such settings. There is often an over reliance within the NHS on accreditation schemes to 'deliver' food safety.

Observations during outbreak investigations at NHS Hospital Trusts have identified some critical failures in food hygiene practices, such as in relation to temperature monitoring, maintenance of the cold chain and shelf life controls; this is of particular concern, as these controls are critical to managing the risk posed by *L. monocytogenes* and other pathogenic bacteria. Furthermore, the evidence shows that *L. monocytogenes* in sandwiches and salads was the most common factor in outbreaks of foodborne illness acquired in hospitals between 2004 and 2019. These findings are consistent with research previously commissioned by the FSA (2014). Implementation of the FSA guidance (2016) would help address these failures and reduce the risk of vulnerable groups contracting listeriosis through the consumption of chilled ready-to-eat (RTE) food.

Responsibility for food safety at ward level has repeatedly been found to be poorly defined, as has the lack of clear food safety management procedures (HACCP). Ward staff who handle, prepare or serve food to patients have not always been trained and/or supervised in food hygiene matters even though they often have an important role to play in relation to time/temperature control of food (Section 2.3).

Whilst it was not possible to determine whether foods produced on-site (hospitals) using fresh ingredients are higher risk than foods sourced prepacked from external suppliers, foods produced on-site may present more theoretical risk factors (Section 3.1).

In section 3.1, evidence was presented that food establishments which are more compliant with food law and therefore receive a higher food hygiene rating are less likely to be the source of foodborne disease outbreaks; whilst it is not possible to identify hospitals specifically, caring premises as a whole have a higher food hygiene rating on average than other food business establishments.

4.2 Conclusion

NHS Trusts recognising their role as food business operators and overseeing a shift towards a positive food safety culture within the NHS, would help ensure increased confidence in the safety of food provision in hospitals. NHS Trusts can enhance their capacity to provide safe food by:

1 Recognising and implementing the legal obligations attached to their role as food business operators, including the requirement to register with their local authority;
2 Ensuring implementation of food safety management systems based on HACCP principles, taking account of the inherent risks throughout the food chain, from procurement/delivery to final consumption;
3 Adopting good practice as outlined in publicly available guidance, including the FSA *Listeria* guidance (2016). The *Listeria* guidance provides advice on managing food safety risks and the increased vulnerability of patients in healthcare settings. It provides good practice that will mitigate the food safety risks but does not advise restricting foods that might contain *Listeria* (such as chilled ready to eat foods, e.g. cooked meats, fish, salads), with the exception of pregnant women. Users of the guidance are referred to the NHS website which provides advice for expectant mothers on avoiding certain types of foods during pregnancy;
4 Understanding and consistently meeting requirements for reporting of cases of foodborne illness and food safety incidents, including those associated with food allergens to the relevant local authority and the keeping of appropriate records. Where it is known or suspected that food supplied does not meet food safety requirements, taking immediate action to protect public health and, once an incident has been dealt with, reviewing food safety management systems, ensuring that the appropriate corrective actions are put in place and lessons are learnt;
5 Ensuring that food handlers receive training, supervision and instruction in food hygiene and allergen management commensurate with their responsibilities including guidance on “fitness to work” to avoid transmission of foodborne pathogens. It is important that ‘non-catering staff’ also receive appropriate training when they are in a position to manage some aspects of food hygiene and safety, particularly time/temperature controls at the point of service to the patient eg monitoring how long food is left unconsumed to ensure sandwiches are not left in a warm ward for too long before consumption.

References

EFSA Panel on Biological Hazards. (2017) 'Listeria monocytogenes contamination of ready-to-eat foods and the risk for human health in the EU – Scientific Opinion', *EFSA Journal.* https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2018.5134

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Food Standards Agency. (2014). *Reducing the risk of vulnerable groups contracting listeriosis - Report on previous outbreaks of listeriosis and lessons learned - report 3.* Available at: https://www.food.gov.uk/sites/default/files/media/document/fs101057report3listeriosisoutbreaks_1.pdf (Accessed: 13 November 2019).

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Annex I

Summary of key pieces of food law

Legislation	Description
Regulation (EC) 852/2004 on the hygiene on foodstuffs	Food businesses are required to implement a food safety management system based on HACCP principles; it requires food handlers to undertake food hygiene training to a level commensurate with their duties and sets standards for structural and hygiene compliance, including maintenance of the cold chain. These regulations are implemented in England courtesy of the Food Safety & Hygiene (England) Regulations 2013, which stipulate temperature requirements for high-risk foods.
Regulation 178/2002 (The General Food Law Regulation)	Prohibits food businesses from placing food on the market which is 'unsafe'; food is deemed to be unsafe if it is injurious to health or unfit for human consumption. Lays down obligations for food businesses to notify competent authority (LA's) if 'unsafe' food has been or may have been placed on the market. The Regulations also require food businesses have systems in place for traceability.
Regulation (EC) 2073/2005 on microbiological criteria for foods	Lays down food safety criteria for relevant foodborne bacteria, their toxins and metabolites. The criteria state that in ready to eat (RTE) foods able to support the growth of Listeria monocytogenes, the levels of the bacteria in the food should not exceed 100 cfu/g.

Annex II

FSA and EU Guidance

Name of document	Description and web-link
Safer Food Better Business:	Food safety management procedures and food hygiene regulations for small businesses. https://www.food.gov.uk/business-guidance/safer-food-better-business
Safer Food, Better Business, supplement for residential care homes:	Food safety management pack for small residential care homes that prepare and cook food for the residents in their care. https://www.food.gov.uk/business-guidance/safer-food-better-business-supplement-for-residential-care-homes
E. coli cross-contamination guidance	This guide helps businesses comply with food hygiene legislation and gives advice on good practice. It focuses on E. coli but the steps taken to avoid cross-contamination will also help control other harmful bacteria. https://www.food.gov.uk/business-guidance/e-coli-cross-contamination-guidance
Reducing the Risk of Vulnerable groups Contracting Listeriosis – Guidance for Healthcare and Social Care Organisations	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. https://www.food.gov.uk/sites/default/files/media/document/listeria-guidance-june2016-rev.pdf

Name of document	Description and web-link
FSA Guidance - Providing food at community and charity events	Food supplied, sold or provided at charity or community events, such as street parties, school fetes or fundraisers, must comply with food law and be safe to eat. The guidance includes advice on registration, certificates and allergen information. https://www.food.gov.uk/safety-hygiene/providing-food-at-community-and-charity-events
EU guidelines on food donation	These guidelines seek to facilitate compliance of providers and recipients of surplus food with relevant requirements laid down in the EU regulatory framework (e.g. food safety, food hygiene, traceability). https://ec.europa.eu/food/sites/food/files/safety/docs/fw_eu-actions_food-donation_eu-guidelines_en.pdf
FSA Guidance on the application of EU food hygiene law to community and charity food provision	https://www.food.gov.uk/sites/default/files/media/document/hall-provision-guidance.pdf
Food Law Code of Practice	The Food Law Code of Practice is statutory guidance which gives instructions that Competent Authorities must consider when enforcing food law. Competent authorities need to follow and implement the relevant sections of the Code that apply. Competent Authorities that do not have regard to relevant provisions of this Code could find their decisions or actions successfully challenged, and evidence gathered during a criminal investigation being ruled inadmissible by a court. https://signin.riams.org/connect/revision/zmi2z/Environmental-Health/Food-Law-Code-of-Practice-England
Food Law Practice Guidance	The Guidance is issued by the Food Standards Agency (FSA) to assist Competent Authorities with the discharge of their

Name of document	Description and web-link
	statutory duty to enforce relevant food law. It is non-statutory, complements the statutory code of practice, and provides general advice on approach to enforcement of the law where its intention might be unclear. https://signin.riams.org/connect/revision/twx0a/Environmental-Health/foodlawpracticeguidance2017
Guidance on food traceability, withdrawals and recalls within the UK food industry:	The purpose of this guidance is to assist FBOs to comply with food law and to provide guidance on roles, responsibilities and actions to take during food safety withdrawals and recalls. https://www.food.gov.uk/sites/default/files/media/document/10850-fsa-guidance-on-food-recalls_accessible-master-ln.pdf
Food allergen labelling and information – Technical guidance	To support food businesses (including institutional caterers, such as workplace canteens, schools and hospitals, and carers), especially small and medium sized enterprises, in following allergen requirements on labelling and providing information. https://www.food.gov.uk/document/food-allergen-labelling-and-information-technical-guidance

Guidance published by industry

Name of document	Description and web-link
Industry Guide to Good Hygiene Practice Catering Guide (British Hospitality Association)	This guide provides advice to caterers on how to comply with their legal obligations under Regulation (EC) No. 852/2004 on the hygiene of foodstuffs and with UK Food Hygiene Regulations to ensure the safety of food served to their customers. This is a good example of an industry guide to good hygiene practice. https://www.bha.org.uk/book/#/reader

Name of document	Description and web-link
Other Industry Guides	There's a link to other UK food industry guides to good hygiene practice on the FSA website, although a number of these are not freely available: https://www.food.gov.uk/business-guidance/industry-guides-to-good-food-hygiene

WRAP Guidance documents

Title	Description and web link
Surplus Food Redistribution	http://www.wrap.org.uk/content/surplus-food-redistribution-wrap-work
Redistribution Summary	This summary document covers date labelling and storage instruction requirements for surplus food, in order for it to be safely redistributed. http://www.wrap.org.uk/sites/files/wrap/redistribution-summary_0.pdf
Redistribution Checklist	This checklist highlights the essential labelling-related requirements for safely and legally redistributing surplus food, and the additional requirements when freezing food to be redistributed. http://www.wrap.org.uk/sites/files/wrap/redistribution-checklist_0.pdf
Date Labelling Guidance	Key information on how to apply food date labels, storage and freezing advice to ensure food is safe to eat, reduce consumer food waste and remove barriers to redistribution. http://www.wrap.org.uk/food-date-labelling

Outbreak reports

Title	Description and link
The report of the Outbreak Control Team of the investigation of an outbreak of listeriosis in the Belfast Health and Social Care Trust during May to November 2008	https://www.publichealth.hscni.net/sites/default/files/ListeriaReport.pdf
An Outbreak of Listeria monocytogenes in Northern Ireland in 2012: Report of the Outbreak Control Team	https://www.publichealth.hscni.net/sites/default/files/Final%20E%20coli%20OB%20Report_0.pdf

Annex III

Food Safety Risk Profile - Report (Provided as separate attachment)

Annex IV

Behavioural Science Report (Provided as separate attachment)

Annex V

Additional Background Information

Listeria is widespread in the environment and can contaminate a wide range of foods. It is of most concern in chilled ready to eat foods that do not require further cooking or reheating, including:

- cooked sliced meats
- cured meats
- smoked fish
- cooked shellfish
- blue veined and mould-ripened soft cheeses
- pates
- pre-prepared sandwiches and salads

Key principles for reducing Listeria risks in ready to eat foods are:

- Preventing foods from becoming contaminated with Listeria.
- Controlling and limiting the growth of Listeria through strict controls (appropriate shelf life and effective cold chain).

Listeria proliferation at low temperatures

Listeria has the potential to grow in foods under any refrigeration conditions if other factors such as pH and water availability in the food permit growth and it is held under these conditions for long enough. As a general rule, the lower the temperature the slower the growth rate and the longer the time before growth starts to occur. *L. monocytogenes* can survive freezing.

The FSA listeriosis guidance[1] advises that ready to eat foods for vulnerable groups are stored, where possible, below 5ºC. This is because the rate of growth of *L. monocytogenes* can increase significantly above 5ºC (and can double at 8ºC compared to 5ºC[2])

Storage at temperatures below 5ºC is good practice. Keeping chilled food at 8ºC is the legal maximum.

FSA listeriosis guidance states that if domestic refrigeration is used, for example at ward level, the equipment must be able to maintain temperatures for safe food storage.

Vulnerable members of the public, pregnant women and immunocompromised patients

Pregnant women are advised to avoid certain types of foods[3], including some uncooked soft cheeses and pâtés. Patients who are severely immunocompromised are more susceptible to Listeria infection.

Permitted levels of Listeria

Food law requires all those involved in food production and food service, to have appropriate controls in place to ensure food is safe to eat. This includes where food is supplied to or prepared in hospitals.

Regulation (EC) No 2073/2005[4] sets permitted levels of *L. monocytogenes* in ready to eat foods that support and do not support the growth of Listeria. For products placed on the market during their shelf life, this is < 100 cfu/g.

An EFSA opinion[5] found that 'most listeriosis cases are due to consumption of RTE foods with levels markedly above 100 cfu/g'. EFSA found it was difficult to distinguish

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[1] Food Standards Agency listeria advice for healthcare organisations

[2] *L. monocytogenes* growth modelling ComBase.cc pH 6.6 Aw 0.985 Doubling time: at 8ºC 8.8 hours, at 5ºC 15.9 hours

[3] NHS website page on listeriosis

[4] Regulation (EC) No 2073/2005

[5] *Listeria monocytogenes* contamination of ready-to-eat foods and the risk for human health in the EU, published December 2017

between absence and 100 cfu/g with regard to the level of protection and concluded that it was not the limit itself that was the important factor, but the controls put in place to achieve compliance.

Guidance to hospitals and care settings is given in the comprehensive 2016 FSA guidance on listeria. The FSA advice suggests a number of stricter good practice controls for ready to eat foods such as, limiting the shelf-life, keeping chilled foods at 5°C or below and reducing the time that ready to eat foods are out of chill control.

The responsibility for taking account of the Listeria guidance and compliance with the legal requirements rests with those food business operators preparing and supplying the food to the final consumer.

Inspection of premises

All businesses making, serving or supplying food are required by law to be registered with their local authority; this includes hospitals and other types of health care settings. Local authorities carry out regular inspections of food businesses with the frequency based on risk. Food businesses are given a hygiene rating following a food hygiene inspection which takes account of hygiene and structural compliance, in addition to confidence in management. The food hygiene rating reflects the standards of food hygiene found on the date of the inspection by the local authority and is not a guide to food quality. Businesses are given stickers showing their rating for display at their premises – those in England are encouraged to display these while those in Wales and Northern Ireland are required by law to do so.

Use-by dates and temperature control

In a healthcare/social care setting, organisations may buy-in sandwiches and other ready to eat foods from suppliers; or they may have on-site catering operations making ready to eat foods. For vulnerable groups in healthcare settings, the FSA advises a maximum chilled shelf life for ready-to-eat foods in both cases.

Where foods are bought from suppliers, the advice is to follow manufacturer's instructions for use-by dates and storage. A particular problem with cold cooked meats is that once opened the shelf life is generally greatly reduced – this is often not known/understood in catering settings. This is a knock on problem if cold meat at the end of shelf life is then put into a sandwich which is given a three day shelf life. Where products are produced by on-site catering operations, the advice is to apply a maximum chilled shelf life of date of production plus two days. The shelf life may be extended only if there is enough evidence through shelf life studies.

Where there are unavoidable breaks in the cold chain healthcare organisations are advised to follow good practice timed controls. Regulations permit the cold chain to be broken for a maximum of 4 hours to accommodate practicalities in handling, display and service of food. However, *L. monocytogenes* can grow rapidly in warm

environments and, given the increased risk to vulnerable consumers, it is good practice to apply tighter controls.