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Research on the modernisation of the risk intervention rating systems for UK food establishments FS517009

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Executive summary

Executive summary

In August 2014, the Food Standards Agency (FSA) commissioned Ipsos MORI to undertake research to inform its work to modernise the food hygiene and food standards risk intervention rating systems for UK food establishments.

Methodology

The research study comprised six different stages:

1. Scoping workshop
2. Rapid literature review
3. Depth interviews with international food regulators and UK non-food regulators
4. Stakeholder workshops including academic, representatives from the UK food industry, and LA officers
5. Online bulletin boards with stakeholders
6. Case study visits to local authorities

This staged approach allowed for data to be gathered in answer to the research questions set out by the FSA (see section 1.3.1). No one stage could address all questions, and therefore the research programme as a whole was designed to provide insights across these areas.

Understanding risk rating approaches in other countries

Risk factors

EU member states are obliged by Article 3 of Regulation (EC) no. 882/2004 to ensure that official controls are carried out regularly and with a frequency related to risk. EU member states risk rate establishments using factors which are related to the requirements of food hygiene legislation and/or factors which have been identified as causes in outbreaks of food borne disease. The factors are grouped in to the following way:

- The process, material, substance, activity, operation
- The past compliance of the food establishment
- Own checks i.e. management and control of hazards
- The current compliance of the food establishment

All Member States for which risk factors could be identified include these factors in the risk rating, since they are required by EU legislation.

Refining the scheme to include the additional risk factors and emphasising the factors of significance could help address the root causes of food hygiene failings, depending on the way this is implemented. The ability of any risk rating scheme to be predictive is limited, but the desk research suggests that using factors such as number of complaints, the outbreak profile (control of cross contamination & temperature) and training could

allow a more accurate categorisation of establishments and therefore better targeting of control authority resources.

Overall, the rapid literature review of food regulators outside of the UK revealed their risk rating systems contain factors which are broadly similar to those in the FSA's intervention rating schemes. This was also the conclusion as we looked more closely at nine international food regulators.ⁱ

Common themes across risk rating systems used in other countries

There were some similarities with the approaches used by local authorities in the UK to influence food hygiene compliance, however there were also some notable differences. Four regulators - all North American, New Zealand, and Australiaⁱⁱ – use a rating scheme. In all cases displaying the rating so that it's visible to consumers has been made mandatory. Currently mandatory display of ratings at food business premises happens in Wales and Northern Ireland and voluntary schemes operate in England and Scotland.

Another difference was a more stringent position on staff training. In the UK, training is one component of the CIM risk factor, whereas USA regulators require each food establishment to have a certified food handler. The FDA food codeⁱⁱⁱ states that epidemiological evidence has shown that improper temperature control to be a common cause for foodborne outbreak / illness. A number of regulators (Sacramento County, USA, Australia) recognising the importance of supervision in the context of food safety, also requires a certified food manager to always be present during trading hours.

In contrast to the UK, most international regulators have a licensing system in place. The ability to revoke licenses and prevent a business from trading was seen as the most powerful tool to address undesirable practices. Alongside this mechanism, regulators reported a range of measures as useful drivers of compliance, including more punitive sanctions such as increased fines and cost recovery for regulatory work. For example, Sweden operates a model that charges for each hour the regulator spends with a business in order to ensure regulatory obligations are met.

Alongside enforcement, many incentivise food safety through a series of initiatives including reduced business rates, promoting a business, awarding a certificate and prize money to the food business that achieves the highest safe food rating each year.

Intervention frequency

The desk research identified there is considerable variation of inspection frequencies used by countries examined in this research. For example, the highest frequency in the Czech Republic corresponds to the lowest frequency in Cyprus (both once per year). Bulgaria reports the highest frequency as once per month, the lowest bi-annual.

Although published research does not provide a definitive optimum inspection frequency for food service establishments, an inspection frequency of between 2 and 6 times per year could be supported by published research. This frequency is higher than the current UK risk rating scheme which indicates the highest risk

establishments should be inspected twice per year for food hygiene^{iv}, while other, lower risk establishments should be inspected less frequently. It should be emphasised that the research is not entirely conclusive as it is 'in-practice' research which is difficult to control and interpret.^v

Interviews with international food regulators also revealed there were more notable differences on intervention frequency and how this is determined, with evidence of considerable variation based on the information collected during the study. None of the interviewees claimed a basis for their intervention frequency in the scientific evidence.^{vi}

Stakeholders (LA officers, industry representatives, academics) felt that a routine intervention of some kind is vitally important: it satisfies compliance with EU food safety legislation^{vii}; helps to ensure standards are maintained, and helps prioritisation and allocation of resources. However, a number of authorities said they were unable to comply with aspects of the intervention rating schemes as well as the requirement of intervention frequencies for some businesses. Ultimately, they thought that the intervention frequencies combined with other regulatory work delivers an adequate level of public protection, even if inspections in themselves do not guarantee that outbreaks will be prevented.

Stakeholder views of the FSA hygiene intervention rating scheme

Overall, the scheme was thought to have worked well since its introduction; as a way to prioritise food law compliance interventions, safeguard consumers, and target local authority resources, with most stakeholders (LA officers, industry representatives and academics) concluding they could see no reason for substantive changes.

The consensus was that 'reputation regulation' achieved through mandatory display of FHRS, officers better communicating their requirements and reasoning, the ability to enforce appropriately, and in particular the introduction of licensing were all more important. Ultimately, most stakeholders thought tinkering with the scheme would not radically change the outcomes achieved now. That said, numerous specific improvements were suggested.

Suggested changes to the hygiene scheme

Food hygiene scheme: Parts 1A, 1B, 1C

Part 1 of the scheme requires an assessment of the potential hazard in a food establishment, split into three separate risk factors: Part 1A: type of food and method of handling; Part 1B: method of processing; and Part 1C: consumers at risk. Part 1 also instructs officers to consider an additional numerical score if an establishment is involved in the production or service of food intended for consumption by vulnerable consumers.^{viii}

Overall the arrangements of Part A and B of the hygiene scheme were seen as fit for purpose. They were generally thought to cover the right issues: the level of risk associated with the product, and what happens to it (i.e. method of processing). Although the importance of Part C was recognised, with many suggesting it had been included as a result of the impact of foodborne outbreaks in care homes, its inclusion was deemed

unnecessary by some officers because they believed there was a low likelihood of noncompliance or a foodborne outbreak occurring.

Food hygiene scheme: Part 2

Part 2: Level of (current) compliance was seen as a crucial factor in carrying out risk assessment. It was also seen as sensible to separate hygiene and structure although officers did question whether it should be weighted towards hygiene due to the fact it is regarded as the most likely cause of an outbreak / food hygiene incident.

The most common identified cause of an outbreak was cross-contamination and / or ineffective temperature control, which the visits to local authorities highlighted is usually caused by a failure in one, or a number, of hygiene practices. As such, some supported the determinants (e.g. food handling behaviours) of the hygiene factor becoming risk factors in their own right.

Food hygiene scheme: Part 3

Part 3, confidence in management (CIM), was seen by many as the most important in terms of consumer protection. However, the assessment and scoring of CIM was thought to have a number of shortcomings. Consideration of sub-factors (likelihood of future compliance, historical compliance and food safety management system) makes scoring difficult, particularly when applied to new establishments (as there is no track record), smaller business (as they are less likely to have access to technical knowledge and therefore there is disagreement about what constitutes a food safety management system) and improving businesses (how far back should track record count against an establishments with increased compliance). These challenges help to explain why officers stated there is inconsistent risk scoring and why businesses which produce and /or sell high risk food but have implemented effective controls and have a track record of sustained compliance continue to be visited at regular intervals.

Recognising sustained compliance by incorporating a subtractive scoring in the CIM calculation

In order to overcome the concerns in relation to demonstrating sustained compliance, there was a suggestion for a negative score. In practice, it would pull down the overall hygiene score, thereby reducing the intervention frequency. This suggestion was supported across stakeholder types. However, some repeated the point that this was unnecessary as compliance is reflected in the current CIM arrangements.

Industry representatives suggested that to further distinguish between compliant businesses, the negative score could be graduated to account for aspects of Earned Recognition, and fulfilment of different criteria. For example, better than satisfactory results following a third party inspection, and observed compliance by officers.

Suggested risk factors in relation to root causes of food outbreaks and food safety incidents

When stakeholders described outbreaks and their probable causes it was clear that cross contamination was the most common issue, with failures in all of the following identified (often more than one for an outbreak):

- hygiene practices e.g. effective handwashing
- effective washing and disinfection e.g. surface and contact points like door handles
- preparation e.g. contaminated chopping boards and utensils
- materials / equipment e.g. anti-bacteria handwash / sanitiser, hot water, wash basin.
- temperature control e.g. cooking, display and storage and re-heating (described as temperature abuse)
- separation of foods e.g. raw and cooked
- pest control e.g. evidence of contract with pest control company, and document visit by company

The causes of outbreaks and incidents were thought to be currently reflected in Part 2 and 3 of the hygiene scheme. Some officers felt that a redesigned scheme that assigns them more weight, or makes them risk factors in their own right may help to produce a more risk-based score.

Stakeholder views of the FSA food standards intervention rating scheme

There were conflicting views about the intervention rating scheme. On the one hand, it was seen as a useful reference document for setting out considerations that an officer should take into account when undertaking an establishment inspection. The scheme was also seen to provide leverage with local politicians to help secure additional resource. However, other officers described the methodology as sound but thought it created an amount of work they were not resourced for. As a result, they ended up using their own judgment to decide which establishments to visit and how often.

A number of limitations were identified with regard to the rating scheme. First, it did not reflect the diversity of food establishments which increasingly food standards officers encounter such as pop-ups, internet sellers, and food brokers. Second, officers felt that intelligence rather than the scheme itself was more effective at identifying food safety and in particular food fraud and food substitution.

Suggested changes to the food standards intervention rating scheme

Most food standards officers tended to offer their views of the scheme in relation to changes that would help them deliver the visits they thought were important, while at the same time ensuring there is sufficient resource to be able to carry out other valued food standards work.

Suggested changes to descriptors of risk factors:

- Having more flexibility in the intervention rating scheme, including revoking the 28-day inspection target for newly registered businesses, creating a new (and fourth) risk rating band, and extending the fixed intervention frequencies.
- Modernise outdated terms used in the risk factor descriptors e.g. "subject to statutory compositional standards".
- Better define ambiguous terms e.g. local; however, others appreciated it could be challenging to be more specific due to the diversity of food businesses.
- Provide clarification of descriptors e.g. whether or not "high risk, high value" should be interpreted as potential for fraudulent activity.

- Inclusion of descriptors to reflect the growing diversity of food establishments, including home caterers and internet sellers. It is also important to better reflect how they operate; for instance, product labels might be fine but not the claims on the site.
- Acknowledging the view that food inspections are best carried out at the point where the food is produced and therefore clarification needed on the delivery of official controls when the registered office is within the LA remit.
- More recognition of whether product is ambient (i.e. stable) or fresh, which some said the latter was more indicative of inherent food standards risk.

There was more strength of opinion for two risk factors. Firstly, there was consensus that Consumers at Risk should be retained given the impact of non-compliance on this population group. The second of these factors was Confidence in Management. It was also felt increased weighting would help to differentiate between businesses.

Suggested measures to assist food standards regulatory work

There was a clear view that measures such as licensing (i.e. the ability to revoke a license), charging for time spent in a food businesses and “on the spot” fixed notice penalties would make a greater contribution to dealing with food standards issues, thus increasing compliance across the food standards sector.

There were also calls for a more robust registration process that enables them to more easily identify who the FBO is (e.g. collecting the date of birth of the FBO); felt to be particularly helpful in a situation where it is difficult to trace the FBO either because they are online or run a fulfilment house.

Stakeholder views on whether there is a place for food establishment inspections in food standards work

Officers reported huge variation in terms of how official controls are delivered. Most food standards officers we spoke to spontaneously described how they are undertaking fewer food standards inspections so that they can divert resource to other activities which they consider to be more important. Their priorities often included intelligence led approaches, initiative work e.g. focussing on particular types of product and / or establishment like ‘take-aways’, and sampling.

Is there a place for sector-based approaches?

Overall, there was support for sector based food standards work, specifically when it comes to ad hoc work such as sampling undertaken in response to intelligence. There were numerous examples of officers using sector based approaches, with one LA using such an approach to deliver against a number of its public protection duties including public health, safeguarding vulnerable groups, as well as verification of food law compliance. On balance, most participants felt that sector approaches risked overcomplicating the status quo, and re-iterated their preference for intelligence led work while deploying resource to undertake as many inspections as possible.

Conclusions

This research has revealed that the hygiene intervention rating schemes is broadly fit for purpose. Research participants felt that it does help local authorities to prioritise their resources on establishments where the risk is likely to be greatest. However, it was evident that decisions around the type and frequency of intervention are not just made on the basis of the risk assessment included in section 5.6 of the Code, but also practical considerations such as resource constraint.

Discussions with local authorities on the root causes of food outbreaks and food safety incidents, as well as the most common causes of enforcement action revealed that the FSA hygiene intervention rating scheme does contain factors which reflect the causes. However, the research points to the fact that certain root causes could be made risk factors in their own right in order to achieve a risk rating which is more closely aligned to the likelihood of a food poisoning outbreak / food safety incident. For example, the USA Center for Disease Control and Prevention has stated risk factors for effectiveness of food handling practice by a food handler.

There is an increasing recognition that food related regulatory work will need to become more risk-based, proportionate and consistent in response to local authority constraints, and the complexities and diversity of the 21st century food sector. Changes to the hygiene scheme will not be sufficient to solve these issues, but they will have a role. Officers are required to consider the likelihood of non-compliance while carrying out their regulatory work but perhaps better recognition should be given to those businesses who can demonstrate sustained compliance and are able to effectively control food safety hazards. There is the potential for this to be evidenced through third party assurance schemes however other regulators (e.g. Care Quality Commission) are yet to solve the issue of how to overcome the differences between what it inspects compared to regulators which also operate in the health and social care sector. Earned Recognition initiatives are used to prioritise businesses with good risk management in a number of EU member states and third countries. The FSA may wish to carry out further research to examine the impacts of potential changes to the hygiene scheme to better recognise sustained compliance and well-managed establishments.

There seems to be a need to modify the food standards scheme so that it properly reflects the latest food standards issues e.g. food authenticity. Suggestions included updating the risk factor descriptors so they are written in a way that reflects the latest evidence around food standards breaches although others felt that there was a greater need for more resource dedicated to intelligence led activities.

This research has provided an evidence base which the FSA can draw on to inform its on-going work to modernise the hygiene and standards intervention rating schemes. However, the potential changes described were often contentious and published evidence typically limited. As such, the potential changes will need further work to better understand their impacts prior to any being introduced. We recommend piloting approaches to test the main changes suggested by the evidence gathered during this research. This will likely involve small-scale pilots in areas with different characteristics, and could be assessed using quasi-experimental methods. A table summarising the overall conclusions and considerations of this research can be found at chapter 6 of this report.

Glossary

Glossary

Competent Authority	A body or individual that has legally delegated capacity or power to perform a particular designated function. The Food Standards Agency is the UK's Central Competent Authority (CCA) for official controls on food safety.
Earned Recognition	Earned recognition is finding ways to reduce the administrative burden of regulation on compliant businesses that have a strong track record of reliability and adherence to legislative requirements.
Enforcement action	Action required that pertains to a breach in legislation, non-compliance or an endangerment to food safety that is enforced by the food safety officer of a food authority.
Food Standards Agency (FSA)	The agency was created in 2000 as a non-ministerial government department, governed by a board, and tasked with protecting consumers in relation to food.
Hazard	A biological, chemical or physical agent in, or condition of, food with the potential to cause harm to the consumer's health.
Hazard Analysis and Critical Control Point (HACCP)	HACCP is an internationally recognised way of managing food safety and protecting consumers. All FBOs except farmers and growers are required by EU food hygiene legislation, to implement and maintain hygiene procedures based on HACCP principles, including identifying any hazards that need to be eliminated and implementing appropriate controls.
Registration of food business establishments	Food business operators must register food establishment(s) under their control with the appropriate Competent Authority and this should be at least 28 days before the business starts trading or the food operations commence
Official controls	Official controls are any form of control performed for the verification of compliance with food law.
Primary Authority	Primary Authority began in April 2009. It enables businesses to form a statutory partnership with one local authority or fire and rescue authority, which then provides robust and reliable advice for other local regulators to follow when carrying out inspections or addressing non-compliance. Agreements can cover broad or specific areas of environmental health, fire safety, licensing and trading standards legislation. The aim is to ensure that local regulation is consistent at a national level and sufficiently flexible to address local circumstances.
Risk rating scheme	A food inspection programme that prioritises controls based on risks posed by the food or the food business operator practices.

Introduction

1 Introduction

In August 2014, the Food Standards Agency (FSA) commissioned Ipsos MORI to undertake research on the modernisation of the risk intervention rating systems for UK food establishments.

1.1 Background

The current risk intervention rating schemes are laid down in Section 5.6 of the Food Law Code of Practice (Code of Practice for England and Northern Ireland), or Annex 5 of the Code for Wales^{ix}. The schemes were developed in the early nineties to provide a structured way for local authorities to prioritise official interventions at food business establishments. These are based on a method of assessing food businesses against a range of risk factors, with separate weightings that are totalled to determine an overall risk rating. This numerical rating is assigned a risk category which attracts a predetermined frequency of intervention. The Code of Practice contains two separate risk assessment systems to determine the frequency of official control visits relating to food hygiene and to food standards. There are no documents relating to how the existing schemes were originally conceived however it is thought that both schemes were informed by the professional opinions of food regulators.

1.2 Aims

One of the main focuses of the FSA's on-going work to review the Code of Practice is to modernise both intervention rating schemes. This research sought to produce new insight to inform the review process that aims:

- to achieve a better prioritisation for intervention of those establishments that present the greatest risk to public health or consumer protection.
- to support delivery of the FSA's Compliance and Enforcement strategy^x
- to provide the evidence base for a potential further increase in earned recognition, and the reliance that can be placed upon it.
- to reflect the increasingly complex changing nature of the food industry and the changes in the socio-economic circumstances facing local authorities
- to deliver the FSA strategic aims^{xi} e.g. enforcement is risk-based, proportionate and effective

1.3 Methodology

The research study comprised of six different stages:

1. Scoping workshop
2. Desk research
3. Depth interviews with regulators
4. Expert workshops
5. Online bulletin boards
6. Case study visits to local authorities

This staged approach allowed for data to be gathered in answer to the research questions set out by the FSA (see 1.3.1). No one stage could address all questions, and therefore the research programme as a whole was designed to provide insights across the questions.

1.3.1 The FSA's research questions:

1. Whether the risk factors used in the current hygiene rating schemes are appropriate or whether there are additional factors that should be considered.
2. Whether the risk factors used in the current standards rating schemes are appropriate or whether there are additional factors that should be considered.
3. Whether existing published information supports the inclusion or exclusion of any given factor.
4. Whether these factors properly reflect the findings of the bodies who investigate the root cause of food poisoning outbreaks or food safety incidents, sporadic cases of gastro enteric infection, or failure of food safety management systems resulting in the service of a Hygiene Emergency Prohibition Notice (HEPN).
5. Whether these factors properly reflect the findings of the bodies who investigate the root cause of product recalls, the service of food detention notices or legislative breaches resulting in prosecutions for food standards offences such as case of food fraud.
6. What relative importance should be applied to the existing or potential future individual factors used in the system, and whether any of these factors are interdependent?
7. Whether a frequency of intervention is appropriate to protect consumers.
8. Whether the existing additive model is still the most effective method of assessing the risk of a food business establishment or whether data exists to support an alternative model that is practical for application in the field.
9. What impact would changing the current system have on other dependent initiatives such as the Food Hygiene Rating Scheme
10. How an establishment based model can work in conjunction with an investigative, intelligence lead food law enforcement approach.
11. Assessment of the intervention prioritisation schemes of other similar UK regulators and food authorities in other EU member states or 3rd countries.

Table 1.1: How each data collection stage maps to the research objectives

Objective number	Stage 1. Scoping workshop	Stage 2. Desk research	Stage 3. In-depth interviews with regulators	Stage 4. Expert workshops	Stage 5. Online bulletin boards	Stage 6. Case studies with LAs
1	x	x	x	x	x	x
2	x	x	x	x	x	x
3		x				
4		x				x
5		x				x
6		x				x
7	x	x	x	x	x	x
8	x				x	
9	x			x	x	
10	x	x	x	x	x	x
11		x	x			x

This report details the findings of the study overall, referencing the different research objectives as appropriate.

Scoping workshop

Ipsos MORI and the University of Birmingham ran a scoping workshop with 18 participants, comprising members of relevant FSA policy teams and individuals seconded to the FSA including two local authority officers and one academic. The workshop covered the strengths and weaknesses of the current schemes; potential changes to the schemes, including addition / exclusion of factors in the context of supporting FSA's work on the Code of Practice; feedback on the research programme; and suggested regulators and stakeholders to include in the research. These conversations helped to inform the development of the research materials and later stages of the research.

Desk research^{xii}

The desk research mainly focused on the food control sector in EU member states^{xiii} and third countries^{xiv}. Its primary objective was to describe the approach to regulation of the food sector and identify learning to inform FSA's review of the Code of Practice. A secondary objective was to produce a list of international food regulators and UK non-food regulators / organisations that undertake risk analysis to involve in subsequent depth interviews. The ones suggested by desk research and the justification for inclusion are summarised in table 1.2

Table 1.2: International food and UK non-food regulators identified in desk research as meriting further research

Country	Justification for inclusion in depth interview stage
Austria	Uses the national control plan and sampling to monitor food standards risk, which is integrated into the risk assessment
Australia	Recent review of the risk rating system
Belgium	Recent reviews of controls, including risk rating Uses a modifier to vary the normal inspection frequency according to premises compliance and management Includes resources available for delivery of controls in the determination of intervention frequency
Canada	Recent review of the risk rating system
Denmark	Includes microbiological and chemical parameters in risk rating Uses a modifier to determine variance in inspection frequency
Finland	Uses a modifier to determine variance in inspection frequency Cost recovery related to frequency
Germany	Uses national sampling plan to address food standards Appears to have a very high hygiene inspection frequency
Iceland	Uses a modifier to determine variance in inspection frequency
Netherlands	Recent review of risk rating scheme Complex delivery of controls including use semi-autonomous public bodies and Earned Recognition
Norway	Recent review of risk rating scheme
Poland	Recent review of risk rating scheme
Romania	Recent changes to intervention frequency
South Africa	Recent review of risk rating scheme
Sweden	Recent review of risk rating scheme
USA	Use of risk factors not included in FSA's risk rating system e.g.

UK Non-food regulators	Justification for inclusion in depth interview stage
Care Quality Commission	Recently completed a review of risk rating system.
Health and Safety Executive	Recently completed a review of risk rating system.

Depth interviews with food and non-food regulators

Depth interviews with food and non-food regulators were undertaken following the desk research. The purpose of these conversations was to gather further information on the approaches to risk assessment, and to

ensure latest thinking on the inclusion of risk factors and weighting of individual risk factors, could be incorporated in the overall evidence base. Of the seventeen EU member state food regulators identified in desk research and conversations with FSA's commissioning team as meriting further research, we were able to interview five organisations – these were a mix of EU member states and third countries^{xv}: and two UK regulators: Care Quality Commission and the Health and Safety Executive. Interview leads were provided by the FSA and invites were sent out and appointments managed by Ipsos MORI. Despite repeated attempts we were unable to arrange interviews with the remainder.

Expert workshops

In spring 2015, Ipsos MORI conducted nine workshops with stakeholders in seven locations across England, Wales and Northern Ireland. Approximately 8-10 people attended each workshop. Six of the workshops were with local authority officers^{xvi}. LAs located in the vicinity of each workshop location were sent an Ipsos MORI FSA co-authored letter which explained the purpose of the study, the voluntary nature of participation and how their input would be used. There was a separate workshop for representatives of the food industry; attendees were mostly large retailers although a body representing small food businesses also took part. In terms of the individuals themselves, they had responsibilities in food safety, policy and regulation. We also ran a workshop with social science academics who specialise in risk and food safety governance. Invitations were sent to the local authority, food industry and academic lists provided by FSA and participants were encouraged to opt in.

Each workshop lasted around three hours and was structured around topics approved by FSA such as strengths and weaknesses of the current hygiene and standards intervention rating schemes, appropriateness of risk factors and intervention frequencies, and improvements to both intervention rating schemes included in the Code of Practice.

Online community

All those involved in the expert workshops, as well as other invitees who could not participate, were invited by Ipsos MORI to join in an online discussion. Invites were emailed to potential participants 1-2 weeks before it began, with reminders sent out the day before it went live and during the two weeks it ran. This provided experts from different locations an opportunity to engage each other and carry on the discussions. To encourage engagement, the key issues identified in preceding stages were grouped into themes which participants were asked to reflect and comment on.

These issues were signed off by the FSA and covered:

- Achieving risk based intervention schemes
- Modernising the food standards intervention rating scheme
- Reflecting the diversity of the food sector
- Recognising sustained compliance
- Re-designing confidence in management
- Greater use of sector intelligence
- Ensuring that the food hygiene and food standards rating schemes are applied consistently

- Root causes of food outbreaks and incidents

These topics were used to start forum conversations and a member of the Ipsos MORI project team inputted to encourage discussions, and used probes so that the resultant conversations were focussed on areas of interest to the FSA. The online community ran for three weeks at the end of May 2015 and 23 food safety specialists took part. The contributions were mostly from local authority officers (including some lead officers) although one third country food safety official and a representative from the food industry also contributed.

Research Visits to local authorities

In summer 2015, Ipsos MORI completed visits to ten local authorities in England and Wales. There was a good coverage of different types of local authority, including unitary, district and metropolitan, as well as regional spread. Around fifty authorities were sent a letter inviting them to participate in the research and ten were recruited on the basis of the aforementioned quotas. The visits involved speaking with a number of officers as well as the lead officer. The purpose of these visits was to establish whether officers thought the root causes of food safety incidents and outbreaks were appropriately reflected in the existing risk rating intervention systems. The visits also collected views about the pros and cons of the current schemes and suggested improvements.

Additional work conducted in 2016

In 2016, Ipsos MORI conducted additional work that could feed into the FSA's review. FSA asked us to look at the lessons which could be learned from risk rating systems used by six international regulators.^{xvii} Each participant took part in an interview lasting 45-60 minutes. The interviewer used a topic guide, approved by FSA, covering the design of their risk rating systems. The findings from these interviews were enhanced with online information where it was available.

Table 1.3: International food regulators involved in further research carried out in 2016

Jurisdiction	Justification for inclusion
Canada	Identified by FSA as being of interest
Latvia	Risk Rating under development
Luxembourg	Recent review of risk rating scheme
New Zealand	Of interest due to its use of earned recognition
USA (City of Berkeley)	Indication that they are reviewing their system – working on a project to use the FDA Voluntary National Retail Food Regulatory Program Standards to improve local food safety program by focusing on controlling risk factors that lead to foodborne illness
USA (Sacramento County)	Some of the relevant research into frequency of inspection has been carried out in the USA. Recent changes in American food legislation (Food Safety Modernization Act 2011) and the sharing of food controls between federal and state agencies were also considered to have the possibility for learning points

In order to enhance what had been reported about food standards during the workshops with officers, we also spoke with ten food standards specialists from across England and Wales. These interviews were conducted over the phone, lasting around one hour and explored areas of interest to the FSA including the food standards rating scheme, and different models for food standards work such as intelligence-led. The research materials for this extra work were signed off by FSA and can be found in the appendix of this report.

1.4 Interpreting the findings

The views expressed are those of the local authority officers^{xviii}, industry representatives, and academics alone. Moreover, as with any qualitative research, Ipsos MORI is unable to make inferences about whether the views of those sampled are representative of those of the wider population of similar audiences; this is due to the relatively small sample size and the large self-selection^{xix} element in this research. Rather, the qualitative findings provide in depth insights into the views of participants to understand the appropriateness of and improvements for the hygiene and standards risk intervention rating schemes. Equally, desk research of risk rating systems used by international regulators (European and third countries) cannot be deemed to be a systematic review of these countries, rather a rapid evidence review.^{xx} The desk research focussed on a number of countries identified as interest by the FSA, and case studies of a limited number of specific countries were compiled through subsequent telephone interviews and further review of relevant literature.

The remainder of this report is structured as follows:

Chapter 2: Overview of food risk rating approaches. This chapter describes the findings of a rapid evidence review looking at different risk rating approaches used by international food regulators. It seeks to draw out learning in relation to the risk factors, and intervention frequency for both food hygiene and standards.

Chapter 3: Findings from international food regulators and UK non-food regulators. This chapter presents findings from international food regulators and UK non-food regulators of interest to the FSA. It discusses features of their risk rating systems and in so far as possible presents the evidence on which these systems are based.

Chapter 4: Views of the FSA's risk intervention rating system for hygiene. This chapter outlines reported views of and suggested improvements for the modernisation of this system, to better reflect the root causes of food hygiene breaches.

Chapter 5: Views of the FSA food standards intervention rating system. This chapter outlines reported views of and suggested improvements for the modernisation of this system in the context of the evolving nature of food standards regulatory work.

Chapter 6: Conclusion and considerations. This chapter sets out the study's conclusions and considerations to inform FSA's work on the modernisation of both its risk intervention rating schemes.

Overview of food risk rating approaches

2 Overview of food risk rating approaches

This section brings together evidence from desk research exploring the risk rating systems used by food regulators in EU member states and third countries and UK non-food regulators.^{xxi} This allows us to consider:

- The limitations of risk factors to predict foodborne illness and outbreaks
- Coverage of risk rating factors in risk rating systems used by EU member states and third countries
- Intervention frequencies

All eleven of FSA's research objectives are explored in this section.

2.1 Evidence of association between risk factors and foodborne illness and outbreaks

The purpose of risk rating food establishments is to ensure that proactive regulatory work reflects the risk to public health. The factors used by most countries to risk rate establishments are those factors (e.g. temperature control, and cross-contamination) which, upon investigation, have been associated in the past with instances of foodborne illness and food hygiene incidents. In the UK, these factors also form part of the risk assessment, but the hygiene scheme also contains five inherent risks^{xxii} (i.e. the consequence of a food hygiene incident) though not all of the five factors have equal impact in scoring.

However, establishing a relationship between risk rating factors and the risk of foodborne illness and food hygiene incidents in an establishment is problematic. Although there is general consensus that certain factors, behaviours or breaches may produce unsafe food, it is very difficult to establish a robust evidence base which can be used in a predictive and consistent manner to identify at-risk businesses and then to use this information to target resources. For a discussion on the relationship between risk factors included in the current hygiene intervention rating scheme and the root causes of food outbreaks and food hygiene incidents see Chapter 5.

Most of the relevant research has been carried out in the USA. Some studies were able to show a connection between risk factors in the form of poor hygiene practices and food borne illness (Irwin, *et al.*, 1989, Patel, *et al.*, 2010, Petran, *et al.*, 2012 a) . However, there are difficulties with interpretation because of variance in the methodologies used. Another problem with such research is the comparative rarity of food-borne outbreaks, the under-reporting of food poisoning cases, and difficulty establishing the root cause.

Two published studies have assessed directly whether any connection could be established between foodborne illness and establishment risk rating. The first of these, published in 2002, was carried out in Scotland (Mullen, *et al.*, 2002) and considered the Inspection Rating Scheme described in the UK Code of Practice. This scheme was not appreciably different in construction from the current food hygiene intervention rating scheme used in England, although some details have been updated.

The researchers concluded that the risk rating scheme could not be used in a predictive manner to identify businesses likely to cause food poisoning. However, there are a number of limitations to the study. For example, the case restaurants were not proven by investigation to have been involved in these outbreaks but self-reported by consumers. The conclusion, that the risk rating scheme in use was not sufficiently sensitive to pick up the variation between case restaurants and controls, may indeed be valid but there is potential bias in the study which limit the strength of conclusions.

Petran *et al* (2012b) tried to develop a predictive model that would use breaches or inspection scores to predict a high risk of food borne illness. They tested the model in Minnesota by comparing the results of establishment inspections which were carried out by inspectors following a foodborne illness with the results of the previous inspections, not associated with outbreaks. They could not identify any difference in the overall scores but were able to identify breaches associated with outbreaks of *C. perfringens*, Norovirus and *Salmonella*. For *C. perfringens* and *Salmonella*, these included poor time and temperature control. The predictive value of the model was limited but the associations of the breaches and outbreaks were valid. In other words, establishments exhibiting certain types of breach have a higher risk of being associated with outbreaks of particular types of food poisoning. This finding supports the results of the early study carried out by Irwin *et al* in 1989.

These studies all demonstrate how difficult it can be to draw accurate and consistent conclusions from in practice studies, particularly when the methodology varies. However, taking the studies overall, some trends may be identified which can inform a risk rating scheme.

A common thread in many of the reports was the association of poor temperature control and poor control of cross contamination with outbreaks (Irwin *et al*, 1989, Buchholz *et al* 2002, Jones *et al*, 2004, Hedberg *et al*, 2006, Patvel *et al* 2010, Petran *et al* 2012(a), Petran *et al* 2012(b)). Although these issues form part of the compliance factor for the existing food hygiene intervention rating scheme used by the FSA, their consistent appearance associated with outbreaks may warrant consideration of whether they should be specific factors with a separate weighting.

There is some published research which considers the relationship between a variety of indicators, in this instance risk factors, and food safety. Mullen *et al* (2002) suggests that “lagging factors” e.g. foodborne outbreak surveillance data are very important, but they are not enough. On the basis of evidence from this own research, he suggests that an even greater focus is needed on process and behaviours as these are key in achieving food safety. These “leading indicators” can include both quantitative and qualitative assessments of knowledge and attitudes, observation of behaviours and practices, and the presence and implementation of appropriate HACCP plans.

Chapter 5 discusses the findings from research visits to local authorities conducted by Ipsos MORI and set outs the root causes of foodborne illness and enforcement action and their relationship to the existing hygiene intervention rating system.

2.2 Developing food risk assessments

Developing a risk assessment typically follows a series of steps which set the parameters and method. An expert panel is usually appointed to carry out the assessment and will agree a relevant model indicating the risk pathways and weightings. The final risk categories result from combining the contributions – either summative or multiplied. It is possible that information about this process has been recorded and documented for the countries that have developed food intervention risk rating schemes, but if so, it was not available to the public. If it has been recorded, it is likely to be contained in internal committee reports or as minutes of meetings. The searches carried out for this report did not identify any such documents however subsequent follow-up interviews with a number of regulators enabled us to establish the details of their risk rating schemes.

Where countries are in the process of or have recently reviewed their schemes, this information could possibly be accessed by personal contact with the control authority. It was recommended that these countries be included in consultations with regulators. The countries in the process of or have recently reviewed their intervention rating schemes are:

- Belgium
- Latvia
- Luxembourg
- The Netherlands
- Poland
- Sweden

Of the six countries listed here, we spoke to a representative from the Latvia, Luxembourg, and Sweden food authority. These interviews constituted part of additional work we carried out in 2016, the findings are provided in the following chapter.

One publication was identified which does describe the development of a risk based food inspection programme for San Bernadino county, California. Hoag et al (2007) describe the risk factors that were considered and the methodology used, although only limited detail with regard to the decision-making is included. The allocation of risk category took into account the inspection score but the allocation of inspection frequency was decided based on the food inspection experience of the panel. This suggests that the choice of inspection frequency in this case was based on custom and practice rather than data or evidence.

2.3 Coverage of risk rating factors in risk rating systems used by food regulators in EU member states and third countries

EU member states are obliged by Article 3 of Regulation (EC) no. 882/2004 to ensure that official controls are carried out regularly and with a frequency related to risk. Food establishment inspections are an important Official Control. Many competent authorities in EU member states and third countries use a semi quantitative risk assessment to determine the frequency that inspections will be delivered in the food establishments under their jurisdiction. Typically, these specify the number of inspections which must be carried out within a specified timescale, although Swedish authorities specify the number of hours of inspections which must be allocated.

EU member states risk rate establishments using factors which are related to the requirements of food hygiene legislation and/or factors which have been identified as causes in outbreaks of food borne disease. The factors are grouped in to the following way:

- The process, material, substance, activity, operation
- The past compliance of the food establishment
- Own checks i.e. management and control of hazards
- The current compliance of the food establishment

All Member States for which risk factors could be identified include these factors in the risk rating, since they are required by EU legislation.

The risk factors used in all countries considered in this research are very common and are consistent with the UK intervention rating scheme. The main variation between countries was in how the factors were described. For example, Belgium lists the existence of a validated own-checking system, Cyprus refers to HACCP^{xxiii} implementation and own checks, Slovakia mentions the Food Business Operator own checks, Norway lists the credibility of own checks. These all effectively assess the same factor, as required by Regulation (EC) No 882/2004. In the UK this factor forms part of the confidence in management score.

Additional risk factors in EU member states

A search was made for additional factors which could be used to enhance or refine the UK risk rating. Very few additional factors could be identified. Most already form part of the UK risk rating scheme, either as a contributor to the assessment of hazard, the management or the compliance sections. Across all EU countries, the only additional factor identified was the establishment water source. As the majority of food establishments in the UK use treated mains water, this is unlikely to be an important factor. For this reason, it is not suggested that water source be included in any revised risk rating system as a specific factor.

Additional risk factors in third countries

The rapid literature review identified that only San Bernadino used additional factors that are not included in the UK system: square footage of the facility, previous inspection scores, complexity of the menu, preparation of food for multiday use, egg-pooling practice, type of ownership, ethnicity of cuisine, and foodborne-illness complaints (Buchholz, Run, Kool, Fielding, & Mascola, 2002). Another combination of risk factors that can be used for risk assessment involves types of food served, preparation steps required for these foods, volume of food, population served, and previous compliance history (Collins, 1995; Sonoma County, 2001), most of which are already included in the current FSA scheme.

Hoag *et al* (2007) report on a proposed risk rating scheme that was developed for San Bernadino County in California. It is not clear from the San Bernadino County websites whether these factors are actually used for risk rating establishments. It is possible that the Hoag *et al* (2007) recommendations were not implemented.

Type of ownership (e.g. franchisee or company owner)

No published evidence to justify using type of ownership as a risk rating factor was uncovered by the review. Instead Hoag *et al* (2007) seem to have selected this factor based on custom and practice, as their researchers and risk rating team were made up of experienced inspectors. As there is no evidence to indicate the value of type of ownership as a risk rating factor or whether or not it was implemented it is not suggested that it be included in any revised risk rating system as a specific factor. It has been identified following the submission of the first draft of this report that there is some recent evidence published on a link between type of ownership (franchisee owned or company owned) and levels of non-compliance in the fast food business in the US. The paper is on labour legislation but the authors link to food hygiene legislation in the conclusion making reference to the work of Ghinger Jin. Ji and Weil 2015 ILR.

Ethnicity of the cuisine

The Hoag *et al* study identified that ethnicity of the cuisine could be used as a risk rating factor. There is some evidence to support the use of ethnicity as a risk factor. An evaluation of foodborne disease outbreaks associated with restaurants in England and Wales in the period 1992-2009 reports an association with ethnicity of the cuisine. The study analysed 677 outbreaks and found Chinese food was implicated in 25.8%, Indian food in 15.5% and Italian food in 10.2%. British cuisine accounted for 13% (Gormley, *et al.*, 2012). According to the data provided by Fedrest.com, there are approximately 11,000 Chinese and 9,400 Indian restaurants in Britain, representing 2.6% and 2.2% of the total catering outlets (FedRest, not dated). Italian restaurants represent 1.1%, so all three types of cuisine would appear to be disproportionately represented in the outbreak data. However, caution with interpretation is needed as this is evidence that take-aways and sole traders also have higher non-compliance, and the three types will have large overlaps – meaning it may not be clear which is the main cause.

Using ethnicity of the cuisine as a risk rating factor may be problematic. This is because although evidence exists to link it with lower compliance and higher risk of food outbreaks, the wider societal issues associated with the factor would need further consideration and sensitive handling. Another important consideration is how ethnicity might be identified. Should it be the ethnicity of the cuisine or of the Food Business Operator? In some establishments they may be the same but in others they will differ.

Egg pooling

Pooled eggs are raw unpasteurized eggs that have been cracked and combined together. The pool of eggs is then used to produce several products rather than individual eggs being used for separate products. For example, an establishment cooking omelettes to order may break a number of eggs into a container and beat them. As each omelette order is received, a portion of the pooled eggs is removed and cooked. This is in contrast to, for example, breaking two eggs for each order.

There is inconclusive evidence about the effects of egg pooling (Hoag *et al* (2007)) so the potential impact cannot be evaluated. However, it is not permitted for commercial use in a number of US states as it is believed to increase the risk of the spread of Salmonella. In the UK, FSA has issued guidance about egg pooling. This highlights that measures (e.g. good food hygiene practices) already prescribed in the existing hygiene scheme

can reduce the likelihood of egg pooling leading to cross contamination, provided it is adhered to. Ultimately, this factor is probably not worthy of further consideration for two reasons. First, the current scheme requires an officer to add an additional score if there is a risk of food being contaminated with a number of pathogens, including *Salmonella* sp. Second, and this is further discussed in Chapter 5, because discussions around food outbreaks and food safety incidents and their root causes were reported to be reflected in the current scheme.

Components of existing risk factors which may enhance the current intervention rating systems

Published information on risk ratings in EU and third countries suggests that the risk factors considered in the existing UK hygiene rating scheme already reflect the relevant issues. However, there are components of risk factors, which if given greater emphasis, could prioritise food establishments in a different way.

Some countries highlight these components as being such significant risk factors that they warrant an individual risk factor in their own right.

- consumer complaints and food safety alerts (e.g. RASFF)
- accredited food safety training of all staff and management
- cross contamination and temperature control (often the root causes of an instance of foodborne illness / food safety incident)
- participation in an accreditation scheme

These considerations are mostly covered in the existing hygiene scheme, either as factors in their own right or as part of prescribed guidance which officers must consider when assigning score for Part 2 (Compliance) and Part 3 (confidence in management). While an officer must also consider food safety awareness, accredited food safety training is neither specified nor required.^{xxiv} A Food safety alert is not formally contained in the existing scheme; however, workshops with local authorities revealed they are typically shared between international, national and local food authorities.

Complaints

Hoag *et al* (2007) identify the existence of substantiated complaints relating to foodborne illness against the establishments as important. Realmuto *et al* (2013) in their assessment of restaurant inspection in Louisiana, report that establishments with complaints were significantly more likely to have critical breaches at the time of inspection than establishments against which no complaint had been recorded. Buchholz, et al., (2002) used customer complaints of foodborne illness which resulted in an investigation to categorise restaurants in Los Angeles County into case (complaint) and non case (complaint) restaurants. The inspection score in a non case restaurant was slightly lower than in the case restaurants but this difference was significant.. Perhaps more importantly, the case restaurants were significantly more likely to have breaches in the food protection category of temperature control.^{xxv} These studies suggest the existence of complaints may be an important individual risk rating factor. However, there is evidence from socio-legal research that complaints are sensitive pieces of information for inspectors and they can generate their distortions. Indeed, anecdotal evidence gathered during this research identified a number of shortcomings with the use of complaints as a reliable factor for identifying poor compliance due to under- and mis-reporting.

The UK risk rating scheme lists the complaint history of an establishment as being one of the factors that should influence an officer's judgement when making an assessment of management (part 3, confidence in management), but it is not specifically rated or weighted as a factor on its own.

As Realmuto *et al* (2013) and Buchholz, *et al.*, (2002) both suggest that complaints may be a useful predictor of critical breaches (noncompliance) it may be valid to consider whether complaints should be considered as a specific category with its own weighting in any future risk rating scheme. These researchers used the existence of complaints as an indicator but the factor could be refined to use nature, type or number of complaints to rank establishments.

Training

Another aspect specified by some member states as a separate risk factor was food safety training.^{xxvi} This is mentioned in the FSA Code of Practice as forming part of the assessment of the compliance or management control component. Research carried out both in the UK and North America considered the link between this kind of training and the compliance and hygiene in food establishments. It does suggest that training could be sufficiently important to warrant its weighting as a separate risk factor. This factor is further considered in Chapter 5, factors reported to contribute to food outbreaks and food safety incidents.

Petran, *et al.*, (2012 a) considered the inspection scores of restaurants in Minnesota associated with outbreaks of foodborne illness between 2005 and 2010. They compared the inspection scores from those restaurants with the scores of restaurants which had not been associated with any outbreak. The control restaurants had significantly fewer breaches than the outbreak group and were significantly more likely to have a manager with an accredited food safety certification than the outbreak restaurants. Work carried out in the UK (Kirby & Gardiner, 1997) also identified a significant difference in hygiene between food establishments whose operators had formal food hygiene training and those with none.

Although having a training certificate does not ensure hygienic practice in a given food establishment (Pennington, 2009), establishments where staff have no formal training can be shown, as a group, to be consistently less compliant than those with training, especially when the training targets the establishment owner/manager.

Control of cross contamination and temperature

Cross contamination is an aspect that most inspectors using the UK risk rating scheme would consider as part of the compliance (Part 2) and confidence in management (Part 3) scores. It is highlighted as a separate issue in the existing UK intervention system as the 'additional score' category of confidence in management (Part 3) when it can be given for particular circumstances of significant risk. These are specified in the Food Law Code of Practice.

Improper temperature control of food during storage, cooking, cooling, reheating and display is consistently implicated in the literature as a factor in the outbreak of food borne illness, especially for spore forming

organisms such as *C. perfringens* but also for *Salmonella* and other enteric pathogens (Petran, *et al.*, 2012b). Published research suggests that cross contamination and temperature control are aspects of such importance that they should be specifically and individually rated in all establishments because together they can provide an 'outbreak profile' which may be able to highlight establishments particularly at risk for causing food borne illness (Petran, *et al.*, 2012 a).

Participation in a certification scheme

The Czech Republic lists participation in an accreditation scheme as a risk rating factor. It is possible that other countries also use this specific factor but have not mentioned it in the literature. Countries such as Belgium, Denmark, the Netherlands and Sweden mention reduced frequencies for accredited schemes.

In the existing UK risk rating scheme, participation in a certification scheme would likely make a positive contribution to the Food Business Operator's confidence in management score because the inspector may consider such participation to demonstrate good management. It could also contribute indirectly to the compliance score (Part 2) as participation in most certification schemes also encourages compliance with Regulation (EC) 852/2004.

Summary

There is a difference of approach between having broad categories which cover the issues above, and including each issue as a specific risk factor. However, refining the scheme to include the additional risk factors and emphasising the factors of significance could help address these issues, depending on the way it was implemented. The ability of any risk rating scheme to be predictive is limited, but the desk research suggests that using factors such as number of complaints, the outbreak profile (control of cross contamination & temperature) and training could allow a more accurate categorisation of establishments and therefore better targeting of control authority resources. The following chapter looks more in-depth at a number of regulators that we were able to engage and recruit to take part in a telephone interview.

2.4 Intervention frequency

Under Regulation (EC) No 882/2004 Competent Authorities are required to undertake official controls regularly and with an appropriate frequency based on risk. The purpose of risk rating establishments is to identify the level of risk to health associated with each establishment and to ensure that the delivery of controls reflects this.

The frequency with which controls are delivered has important resource implications for the Competent Authority. The challenge for the Competent Authority is to ensure a sufficiently high frequency to protect public health without using disproportionate resource to do so.

Regulation (EC) No 882/2004 sets the obligation on all member states to deliver controls on a risk basis but does not specify any intervention frequency. As a consequence, there is large variation in the frequency with which controls are delivered across the EU. A summary of inspection frequencies for EU member states and third countries is contained in the desk research report. For third countries this regulation clearly does not

apply and each country varies in the inspection frequency selected unless they export into the EU. Federal countries such as Canada and USA typically do not have consistency across the country with regard to intervention frequency as the responsibility is shared between several authorities.

Justification of inspection frequency

Countries rate establishments in one of two ways. The first is to categorise according to establishment type (usually processing and handling) which dictates the inspection frequency. This normally results in set frequency, such as in, Ontario (Newbold, McKeary, Hart, & Hall, 2008) where, for example, high risk food service establishments are inspected three times per year, medium risk twice per year and low risk once per year. The frequency does not relate to compliance. High risk establishments are defined as those serving perishable food which can support the growth of pathogens, and/or involve multiple preparation steps, and/or provide food for vulnerable groups. Medium risk are those handling perishable foods but with minimal preparation steps and serving the general public.

An alternative method of categorising is to assign a risk category which starts with the type, size and customer base of the establishments but also takes into account factors such as compliance and management, such as that used already in the UK and required by Regulation (EC) No 882/2004.

Some countries favour a combination approach, used, for example, in Iceland, where the establishments are initially categorised according to type (product and process, size and consumer target) but the set frequency in each category can be modified using a multiplier which relates to compliance and/or other management issues. In Iceland, the product, processing and size of the business is assessed together with the customer base to assign a category (1-8).^{xxvii} Each category has a standard inspection frequency. This inspection frequency is then adjusted by a multiplier according to compliance – a highly compliant business will be an 'A' establishments and the inspection frequency multiplied by 0.5 to reduce the frequency. Poor establishments will be rated a 'C' and the basic frequency of inspection will be increased by multiplying by 1.5.

An alternative is to specify the number of hours an inspector should allocate to the delivery of controls. In Sweden the National Food Agency provides risk classification guidelines which the municipalities can use for risk rating establishments in which they deliver controls. The 2010 guidance indicated the number of hours an establishment should be allocated according to the risk. This ranged from one hour per annum to 128 hours per annum. While it was possible to access the inspection frequencies for many countries, none published any background information on the decision making process within the Competent Authority which informed the final frequency.

Range of intervention frequencies

There is considerable variation of inspection frequencies used by countries examined in the desk research (see table 2.1 below). For example, the highest frequency in the Czech Republic corresponds to the lowest frequency in Cyprus (both once per year). Bulgaria reports the highest frequency as once per month, the lowest bi-annual. Some countries did not report the actual inspection frequency in their country profiles or on any accessible websites, which explains the variation of information presented in the table.

Table 2.1: Overview of inspection frequencies in EU countries and third countries identified in desk research

	Country	Frequency
1.	Austria	Risk scale from 1-9, nine being the highest risk. A category 9 premises is inspected once per year
2.	Belgium	Frequency not published in accessible documents
3.	Bulgaria	Product of animal origin: high risk: 1 per week; low risk once per month Product not of animal origin: high risk: once per month, low risk twice per year
4.	Cyprus	high risk: 3 inspections per annum low risk: 1 per annum
5.	Czech Republic	High Risk: once per year
6.	Denmark	Five categories. In the highest risk premises 5 interventions are carried out per year, in the lowest, interventions are carried out 'as and when'.
7.	Finland	A fixed frequency based on type & volume of production, facilities and hygiene. Frequency not published in accessible documents
8.	France	Annual to once every five years according to risk rating.
9.	Germany	Risk rating according to the type of food, activity and size of premises. Frequencies vary from monthly for an industrial producer of highly perishable food to once per year for a distributor of raw vegetables.
10.	Ireland	The frequency of inspections is risk based according to the nature of the business, type of product, volume and compliance history. Frequency ranges from twice per year (max) to once every three years.
11.	Luxembourg	Approved premises inspected 3 times per annum Registered premises are inspected annually
12.	Malta	Frequency not published in accessible documents
13.	Netherlands	Frequency not published in accessible documents
14.	Poland	Frequency not published in accessible documents
15.	Romania **	High risk: once per month Low risk: 3 times per year

16.	Slovenia	Frequency not published in accessible documents
17.	Sweden	High risk: 128 hours per year, lowest one hour annually. Scheme under review
18.	UK	Five categories: highest category A (minimum intervention at least every six months) to category E (minimum intervention at least every 3 years, or alternate intervention strategy)
19.	***Australia	High risk has a minimum of once every year and a max of once every 3 months. Low risk is a minimum of one inspection every 24 months and a max of once per year.
20.	****Canada	Canadian Food Inspection Agency criteria for federal establishments distinguish between in depth inspections and directed (follow up). Premises must have one of each per year. Example of municipal frequency (Hamilton, Ontario) three times per year for high risk, twice per year for medium and annually for low risk.
21.	Iceland	Frequency not published in accessible documents
22.	New Zealand	Different arrangements according to the Territory. Frequency 1-12 times per annum.
23.	Switzerland	Categorisation of 1-5 giving a range of frequencies from annual inspections to once per 8 years.
24.	USA	FDA Recommends four times per year for food service but this varies across the country.

Frequency using a sector based approach and compliance modifier

The UK intervention rating scheme is a universal system which can be applied to all types of food establishments which are subject to LA oversight. Some of the countries examined for this report use a sector based approach to risk rating. In a sector based approach the inspection frequency for the sector is set, usually by the Competent Authority, according to the intrinsic hazard (including the process and packaging), size and consumer base. This fixes the basic inspection frequency for establishments within the sector, for example restaurants or meat products manufacturers. The inspector then modifies the frequency for an individual establishment within that sector according to the compliance and other factors such as implementation of own checks (or HACCP), third party audit, complaints, and so on.

Countries which use this system include Iceland, Belgium, Denmark, Finland and Sweden. This model represents a fundamentally different approach from that used by the UK to risk assess food establishments.^{xxviii} Should the Food Standards Agency wish to implement this model, existing schemes could be used as a basis and altered to suit the UK food industry.

This model enables the following:

- Premises can be risk rated within the sector, reflecting specific sector wide hazards
- Variation in frequency can reflect compliance and also Earned Recognition or any other innovative approaches which the Competent Authority may wish to develop
- Resources can still be targeted
- More specific risk factors could be accommodated in the modifier

A sector specific approach with a modifier for compliance would also help target resources using a more refined approach to identifying the non-compliant businesses. The results could still inform the FHRS, although some alteration and re-training of officers and information for FBOs would be required. However, implementing this model in the UK would require a complete restructuring of the existing risk rating system.

Indeed, the risk rating schemes used in many EU member states and third countries are based on the concept of routine inspections. The variance is merely in how frequently an establishment is visited. An investigative, intelligence based enforcement approach could move away from the idea of programmed inspections at regular frequencies and focus instead on targeting areas where evidence suggests a risk. A risk assessment could be developed for such a model but might need to be based on something other than individual establishments, possibly sector or process based. As is the norm with semi quantitative risk assessment, the majority of countries using a risk rating scheme add or multiply the scores to provide the establishments category. Basing the scheme on some other factor, such as sector or process, might make this approach unnecessary. Published evidence to support the value of either approach is lacking but discussions with control authorities such as Canada or New Zealand which have used a sector based approach for manufacturing would be informative (NZFSA 2006).^{xxix}

Optimum inspection frequency

The purpose of risk rating establishments is to improve or protect public health or to enhance compliance in the establishments, then determining the optimum inspection frequency will continue to be important, especially in the context of pressure on resources.

Studies attempting to establish an optimum inspection frequency – or trying to determine any link between inspection frequency and compliance or hygiene – are limited and do not provide consistent or easy to interpret results. All research was carried out in food service (catering) establishments.

Although published research does not provide a definitive optimum inspection frequency for food service establishments, the following appears to be supported:

- Two inspections per year demonstrated improved compliance compared to none or less than one per annum (Addiss *et al* 1989; Realmuto, *et al.*, 2013)
- Four or five inspections per year result in fewer critical infractions than three or fewer inspections (Newbold *et al* 2008)
- Four inspections demonstrate better compliance than only one (Bader *et al* 1978)

- Inspecting seven or more times does not seem to improve compliance compared with six inspections per year (Corber *et al* 1984).

This summary suggests that for food service establishments an inspection frequency of between 2 and 6 times per year could be supported by published research. This frequency is higher than the current UK risk rating scheme which indicates the highest risk non- approved establishments should be inspected twice per year^{xxx}, while other, lower risk establishments should be inspected less frequently. It should be emphasised that the research is not entirely conclusive as it is 'in-practice' research which is difficult to control and interpret.^{xxxi}

Earned recognition

Earned recognition features in several risk rating schemes in EU member states and third countries (see appended desk research report). Some are linked with the publication of results, for example Denmark's Find Smiley. The acquisition of 'elite status' in Denmark affects the inspection frequency in an establishment and also the acquisition of the Smiley which is an indication of good standards in the last four inspections.^{xxxii}

2.5 Food standards

Very few countries refer explicitly to food standards factors when describing how they determine the frequency of establishments inspection. Of the countries studied for the desk research, three (in addition to the UK) make direct reference to factors which could be considered food standards. These are:

- i. Denmark: refers to chemical as well as microbiological factors in their risk rating (anonymous, not dated)
- ii. Slovenia: (Country profile, 2011) includes food quality and labelling
- iii. Iceland: includes labelling and packaging in the factors used to define categories (EFTA, 2014)

The majority of countries focus only on establishment hygiene in their reported risk rating schemes. The control of food standards is typically carried out using national annual sampling or monitoring plans (e.g. this is the case in Austria).

Denmark also uses an intelligence approach to the delivery of food controls, although here it is implemented during routine inspections, rather than instead of them. An ad hoc / initiative based approach may be appropriate to consider for the risk based delivery of food standards controls in the UK, rather than relying on programmed inspection within a risk rating scheme. Initiatives could be decided nationally and be intelligence based, for example reflecting novel processes, hazards (HSE has recently introduced such an approach and this is presented in the next chapter), complaints, food alerts e.g. RASFF notifications or the outcome of horizon scanning.

As in the UK and EU member states, third countries have historically paid closer attention to food hygiene over food standards mainly because it is seen to have more significant consequences for public health if things go wrong. The horse meat scandal^{xxxiii} has changed this to the extent that people are seeing that food fraud might

have food safety implications. For instance, with the undeclared presence of horsemeat there was no traceability which resulted in concern over bute.^{xxxiv}.

It was therefore suggested by one third country, that reconfiguring a food standards rating scheme should use input from expert advisors such as scientists with food safety specialism to assess commodities at risk of substitution and then ranking them in terms of the likelihood of this happening.

A number of EU member states reported there are already a lot of problems with labelling (e.g. mis-information/lack of information) and they anticipate this issue will worsen as more consumers increasingly demand foods sourced from outside of the EU. In one interview, Sweden's food authority suggested that it will be necessary to spend longer in businesses in order to carry out a proper assessment of food standards related risks. It was felt this approach may help to uncover cases of food fraud, which are seen as difficult to incorporate into a system, but it may mean that initially some businesses see food standards verification as being more burdensome, at least until they are able to prove compliance. The following chapter looks at how the Swedish authority has combined food hygiene and food standards into a single risk rating system.

**Follow up interviews with
international and UK regulators**

3 Findings from international and UK regulators

This chapter contains findings from interviews with eleven international food regulators^{xxxv} identified by the FSA commissioning team and desk research as meriting investigation. Participants held positions ranging from middle to senior management within an environmental health team/division and stated having knowledge of the food hygiene risk rating system in their respective jurisdictions. Food standards was outside of the remit of all nine organisations however we were still able to elicit some limited detail about the potential for combining food hygiene and good standards inspection in one jurisdiction (Sweden), which may merit further investigation. It also describes the risk rating regimes of two UK regulators – Health and safety Executive and Care Quality Commission – which the FSA felt could inform their risk rating considerations.

The findings from the interviews were supplemented with published information in so far as was possible. However, the limited availability of online resources meant that specific information about some jurisdictions is less detailed than others. As such, the examples should be seen as offering a preliminary look, and highlighting those examples where further research may be worthwhile.

3.1 Comparison with FSA's food hygiene intervention rating scheme

The key take-away points from the interviews are presented below.

3.1.1 Risk factors

As in the UK, most food regulators we spoke to developed their risk rating systems, in part, based on the professional judgement and intuition of practitioners and other stakeholders working in the food environment. Overall, the rapid literature review of food regulators outside of the UK revealed their risk rating systems contain factors which are broadly similar to those in the FSA's intervention rating schemes. This was also the case when we looked more closely at the nine international food regulators, with coverage of the following:

- the nature of operations,
- population served (e.g. whether vulnerable groups consumed the food^{xxxvi}),
- compliance with food hygiene legislation
- the control and management of known food risks – which included some or all of the following factors: staff competencies and training, temperature control, cleaning / sanitising; separation of raw and ready to eat (RTE) food; storage; personal and hand hygiene.

There were a couple of notable exceptions. Toronto also includes a risk factor called **"complexity and extent of food handling"**, which their analysis found to be a common factor in various food establishments as the highest risk factor for food related illness/ foodborne outbreak.^{xxxvii} Its purpose is to capture the inherent risk associated with handling of food, which differs from the FSA's 'type of food and method of handling' and 'specific method of processing' factor. The rationale for this is based on scientific evidence that indicates effective personal and

hand hygiene is a vital control measure for food safety incidents. Furthermore, it was considered more effective to capture risk by including the extent to which food is prepared (i.e. preparation steps) rather than the presence of hazardous food itself. Indeed, almost every almost every food establishment serves some degree of hazardous food.

Glen Eira, Australia introduced a similar system in 2012, putting more emphasis on checks of processes while still retaining the previously carried out compliance and document checks. Its risk assessment has 12 process checks, each with a pre-determined control. For example, the control requirement for the process of cooking is: cooking temperate >75C; temperature record; sanitised utensils/ equipment; food protected, food handling practices. In addition, there are a number of specific controls for specialised food processes such as modified atmosphere packaging^{xxxviii}, vitamised foods^{xxxix}, and a range of ethnic cuisine like kebab, Chinese, and Sushi. Consideration of the likelihood and consequence of a failure to control these processes enables an EHO to generate the intervention frequency (see table 3.1 below).

The risk rating system in New Zealand contains similar risk factor as Australia. Based on the opinion of foods safety experts a list of verification topics was compiled to help verification officers know what to check when verifying a food establishment. What is focused on will depend on the nature of the individual business, and not all topics are included in every verification. However, there are some things that must be verified every time:

- the top 5 food safety topics identified for the sector – while there is variation both between and within a sector, especially among different types of manufacturer, the most common topics are: staff competencies and training; temperature control; cleaning / sanitising; separation; storage; personal and hand hygiene.
- at least one topic from each verification criterion (see appended case study for more detail). Each verification criteria verified is assigned an overall rating: performing, conforming, non-conforming, non-complying.
- Verifiers are required to cover enough topics to give them confidence that food produced will be safe and suitable.

In the USA, a number of municipal and state food regulators, including Sacramento County and, City of Berkeley, have in their risk assessment the five risk factors related to behaviours and preparation practices that contribute to investigated and confirmed foodborne illness outbreaks. Identified by epidemiological outbreak by the Center for Disease Control and Prevention (CDC)^{xl}, they are ranked below in terms of the most common causes of foodborne outbreaks in various food establishments.

- Improper holding temperatures: holding food at an unsafe temperature that may cause a foodborne illness.^{xli}
- Inadequate cooking: not heating food to temperatures that kill bacteria which may cause a foodborne illness.
- Contaminated equipment: not using unclean utensils or equipment in the preparation of food. Food contact surfaces must be washed, rinsed and sanitised after each use.
- Food from unsafe sources: food must come from an approved and reputable supplier.

- Poor personal hygiene: this includes employees not washing their hands before beginning work or after using the toilet.

The factors outlined above are a different framework but essentially measure the same components of the risk factors contained in Part 2: Compliance and Part 3: Confidence in Management of the FSA food hygiene intervention rating scheme. Toronto excludes suspected foodborne illness identified by a consumer complaint. Only laboratory-confirmed or epidemiologically-linked food-borne illness or outbreak, attributed to improper food handling practices at the food establishment, are captured in the risk categorisation. This reduces subjectivity and inconsistency in applying the approach.

The FDA Food Code addresses controls for the stated five risk factors and further establishes 5 key public health interventions to protect consumer health. Specifically, these interventions are: demonstration of food handler knowledge, employee health controls, controlling hands as a vehicle of contamination, time and temperature parameters for controlling pathogens, and the consumer advisory.

With the exception of one case (Luxembourg) we were unable to elicit information about the relative weighting of risk factors. This is because this information hasn't been published or the person we spoke to did not know how the risk factors were weighted against each other. Nevertheless, the following example may help FSA considerations about the risk hygiene scheme.

Luxembourg: overview of relative of risk factors

The Ministry use a checklist to undertake food safety inspection, which itself is based on risk criteria, linked to specific elements of EU food law legislation (EU 852/2004). Each risk criteria is weighted on the basis of the environment in which food is produced / prepared and the extent to which such risks are controlled, which are based on experience rather than anything more sophisticated / specific evidence. These are summarised below:

Risk criteria	Weighting
The extent to which the environment (e.g. layout and design) supports effective hygiene practices receive e.g. layout	3
The premises are clean and in good condition	9
There is adequate ventilation	3
There is adequate lighting	1
The toilets are clean	9
Washbasins must have hold and cold water and there is paper hand towels available	9
Adequate and clean staff changing rooms	1
Walls and ceilings must be in good condition and clean	3
Windows and doors must be in good condition and clean	6
Surfaces and equipment in contact with foodstuffs must be clean and in good condition	9
The food washing equipment must be clean	3
Thawing and chilling should be in accordance with EU 852/2004	3

Food stuffs must be cooked to appropriate temperature as required under 852/2004	9
There must not be an accumulation of waste within the premises	9
Presence of an establishment cleaning plan	3
Presence of pest control	9
High level of personal hygiene / clothing must be clean / no jewellery worn	9
The absence of infections, disease	9
Compliance with smoking ban	3
No animals within the premises	9
Implementation of HACCP / good practice hygiene practices	9
Staff must have training in food hygiene	9
Ascending traceability must be guaranteed	9
Allergen information is provided to customers	6
The premise is registered with competent authority	3

3.1.2 Intervention frequency

There were more notable differences on **intervention frequency** and how this is determined, with huge variation based on the information we were able to collect. For example, in Toronto, high risk businesses in the retail and catering sector should be inspected at least quarterly, whereas for an equivalent establishment in New Zealand the intervention frequency is a minimum of every two years. For low risk businesses, the frequency ranges from every 12 months in Toronto, to only when a problem occurs e.g. a verifiable consumer complaint in New Zealand. Such decisions were very practical, based on established practice and were usually taken in the context of what could be delivered with available resource. None of the interviewees claimed a basis for their intervention frequency in the scientific evidence.^{xiii} The table below contains the intervention frequencies for the jurisdictions that took part in follow-up interviews.

Table 3.1: Intervention frequencies for the jurisdictions that took part in follow-up interviews

Jurisdiction	Intervention frequency		
	Low risk	Medium risk	High risk
Ontario, Toronto, Canada	Not less than every 12 months	Not less than every 6 months	Not less than every 4 months
City of Berkeley, California	N/A	N/A	3-4 inspections per year
Sacramento, California	3 times a year for all facilities that prepare food		
Latvia	N/A	N/A	N/A
Luxembourg	90% of risk criteria met: 3years	75% of risk criteria 1-2 years depending on nature of business	50-75% of risk criteria met: every 3 months
New Zealand	Only at registration then only if problem occurs	At least every 3 years	At least every 2 years

That said, the process of **assigning businesses to a specific risk category** (which in turn determines the intervention frequency) was based on a more analytical appreciation of foodborne / illness data. In Toronto, a business is considered high risk if it has been implicated or confirmed as a source of foodborne illness / outbreaks. In the same jurisdiction, a food establishment that provides off-site / function catering is classified high risk because analysis has shown the nature^{xliii} of such activities have a relatively high risk of being implicated in food-borne illness. Linked with this, volume has been excluded from their risk rating system. Although it is considered an important determinant in risk, there was limited supporting evidence to provide a specific number of meals as an indicator of increased risk. Instead, this factor has been captured under settings that produce large volumes of food in a short time for a defined group of people (i.e. off-site / function catering).

In Glen Eira Australia, the combination of likelihood (the possibility of something going wrong) and consequence (the effect, result or outcome if something does go wrong) results in a risk rating. This is a similar approach to the system used in the UK although there are differences in the way these are judged (see table 3.1 below). Likelihood has three criteria: certain e.g. proven physical, chemical, microbiological contamination; likely e.g. exposure to contamination; unlikely e.g. food protected from contamination. Consequence also has three criteria: serious (e.g. contamination present); major (e.g. contamination present); minor (e.g. potential for contamination). The table below illustrates how a risk rating is generated on the basis of an EHO's determination of the likelihood and consequence of the risk.

Table 3.2: generating an overall risk rating, Glen Eira City Council, Australia.

		Consequence		
		Minor	Major	Serious
Likelihood	Certain	Medium	High	High
	Likely	Medium	High	High
	Unlikely	Low	Low	Low

Those rated high risk are visited again within 3 days; medium risk are inspected within 3 months; and low risk are seen once a year.

Sweden is the only regulator which uses a system that allocates a pre-determined number of hours to spend in each businesses, rather than an intervention frequency. Each local authority is given the autonomy to choose how these hours are allocated on the basis that their knowledge of the business landscape means they are better placed to decide this. However, the Central Competent Authority expects that if a business is to be visited for a total of 24 hours in a three-year period then some of this time should be used in each year so that a business is inspected on a regular basis i.e. not all 24 hours is used in year 1.

3.2 Common themes across the systems

There were some similarities with the approaches used by local authorities in the UK to influence food hygiene compliance, however there were also some notable differences. Four regulators – those in the USA, Canada, New Zealand, and Australia^{xliv} – use a **rating scheme**. The Australian regulator suggested that because the rating scheme includes an assessment of whether or not issues identified in the previous assessment have been rectified that this pushes even the highest rated business to continually improve. In all cases displaying the rating so that its visible to consumers has been made mandatory. All regulators claimed that analysis across the respective business communities has shown significant improvements in food hygiene compliance following the scheme's introduction.

Another difference was a more stringent position on **staff training**. In the UK, training is one component of the CIM risk factor, whereas both USA regulators require each food establishment to have a **certified food handler**. They believe that food handlers are more likely to adhere to food safe practices if they know what they are and are familiar with the underpinning rationale. Furthermore, the FDA food code^{xlv} states that epidemiological evidence has shown that improper temperature control to be a common cause for foodborne outbreak / illness. One regulator (Sacramento County) recognising the **importance of supervision** in the context of food safety, also requires a certified food manager to always be present during trading hours. Similarly, in Glen Eire City Council, Australia, food businesses can only achieve the highest rating (equivalent to a five food hygiene rating) if the business has "a nominated food safety supervisor, who has met the required food safety training and food safety competency standards requirements".

Most international regulators have a **licensing system** in place. The ability to revoke licenses and prevent a business from trading was seen as the most powerful tool to address undesirable practices. Alongside this mechanism, regulators reported a range of measures as useful drivers of compliance, **including more punitive sanctions such as increased fines and cost recovery for regulatory work**. For example, Sweden operates a model that charges for each hour the regulator spends with a business in order to ensure regulatory obligations are met. Introduced in 2007, it was necessary for local authorities to cover the costs of their regulatory work due to a reduction in the grant from central government. The risk assessment generates a numerical score which is used to calculate the number of hours that an inspector will likely need to dedicate to that business. In New Zealand, businesses pay costs of registering and each verification check. These costs depend on the level of risk involved in each food establishment for example high risk businesses (registration fee of \$401.06 for establishment that need a custom food plan (i.e. manufacturers) and \$133.69 for establishment that need a national programme level 1 (see appended case study for more detail). New Zealand legislative provisions for the recognition of their party assurance schemes; this could be an area of further investigation for the FSA as the person we interviewed did not know how this was factored into any risk assessment work.

Alongside enforcement, many incentivise food safety through a series of initiatives. In Glen Eira, Australia, businesses that meet the criteria for a five-star business are given reduced business rates and are offered the opportunity to promote their business in the Council's online Safe Food Guide. The Council also awards a

certificate and prize money to the food business that achieves the highest safe food rating each year. While this regulator suggested that such initiatives have contributed to c.70 per cent of businesses achieving the highest 5-star rating, they have had to bring in additional resources to deliver them effectively.

3.2.1 Food Standards

As discussed in the introduction, the contacts that we spoke to in the food regulators worked only in the area of food hygiene and therefore the detail we have on food standards is limited. That said, in one cases (Sweden), we were able to extract information that could inform FSA considerations on food standards.

Combining food hygiene and food standards into a single risk assessment

In 2007 the CA in Sweden decided that it ought to have a risk rating system that could accommodate new EU legislation on labelling, which came into force on December 2013^{xlvi}. This meant in practice adding a third risk module (information), essentially food labelling, to the existing two risk modules:

1. Risk factors related to the establishment: type of activity and food e.g. production size^{xlvii}; scope of activity e.g. volume^{xlviii}; vulnerable consumer groups^{xlix}
2. Experience from previous official controls; this helps to determine whether the normal number of hours for an official control at a facility should be reduced or extended,

The activities in the establishment, together with the scope of activity, and whether food is produced to vulnerable consumer groups each generate a risk score. The sum of these risk scores then forms the basis for assigning a risk class from 1 to 8. The risk class will then form a basis for the determination of the control time. Additional control time is given for the control/inspection for food standards i.e. factors such as traceability and labelling.

The overall control time i.e. the amount of hours an inspector spends in a food establishment is calculated by adding the time generated from the risk module and the additional control time from the information module i.e. food standards. The sum is then multiplied by the time factor generated from the experience module i.e. experience from previous official controls.

The first time an establishment is rated, the risk module is used to place it in a risk class and the additional control time is assigned according to the information module. The establishment is initially placed in experience class B. When experience has been gained on how well the food business operator complies with food legislation requirements, the experience module will be used and it may be necessary to adjust the experience class and control time.

3.2.2 Learning from interviews with UK organisations who work in risk assessment

Here we present two useful case studies that emerged from interviews with organisations who work in risk assessment. Again, these two examples should be considered a preliminary look and may need further investigation should they be of interest to the FSA.

Health and Safety Executive (HSE)

HSE is the national regulator for health and safety although responsibility for regulatory delivery is split between HSE and LAs. Until 2014, the HSE operated a planned programme of inspections that was similar to the approach currently taken in LAs.

Following a number of government commissioned reviews of health and safety regulation, it concluded that people in the workplace ought to be protected while reducing the burden of unnecessary health and safety rules and regulations on businesses.

There are now restrictions around the use of proactive inspections, with their use limited to a business which is involved in a list of ten pre-determined hazards / activities / high risk sectors. For example, in the case of legionella disease, the hazard is legionella infection, the activity is lack of suitable legionella control measures, and the relevant 'sector' is premises with cooling towers/evaporative condensers. In addition, there are businesses considered high risk e.g. agriculture sector but proactive inspection is not required if the business has signed up to a voluntary pledge to fulfil their regulatory obligations. There is a third category that includes businesses where a proactive inspection is not justified in relation to the level of risk. Exceptions to this approach might be where local priorities require action or where there is an incident or complaint. HSE believes that utilising this approach means it is possible to add to the list novel / emerging risk / national priorities without it being too difficult.

In instances where an inspection is done it is based around four risk factors: confidence in management, safety compliance, health compliance; and welfare compliance gap. These are summarised below:

- Confidence in Management, a business can be assigned a number between 1 (best practice) and 6 (management avoid the task and/or connive in cutting corners), each one is accompanied by a descriptor which is designed to help an inspector assign the rating.
- Safety risks: the potential of an item of work equipment, procedure or method of work to cause an undesirable injury of any nature. Again, a business can be assigned a number between 1 and 6, determined by the degree of compliance.
- Health risks: the potential of a substance, chemical, force (e.g. noise), event (e.g. commercial robbery) or method of work to cause harm or ill health. Aspects related to both physical health and mental health (e.g. stress) are covered by this criteria. Again, a business can be assigned a number between 1 and 6, determined by the degree of compliance.
- Welfare: for this criteria an inspector makes a judgement of the overall level of compliance regarding welfare standards in the workplace. In this instance, a business can be assigned a number between 1, compliant, which has a descriptor of "good, clean, suitable and sufficient provision of welfare facilities. Would be content to use them yourself", and 4, major noncompliance, which has a

descriptor of “welfare facilities not present or so poor as to be unfit for use. No toilet or washing facilities”.

Overview of relationship between HSE risk rating and interventions

Risk description	Category	Rating score	Intervention types
Highest risk	A	Score of 5 or 6 on any risk factor	Suitable for proactive inspections until risks are adequately managed such that the premise can be re-categorised; Accident/complaint investigation
	B1	Score of 4 on any risk factor	Not suitable for proactive inspection but all other interventions to be considered. Accident/complaint investigation
	B2	Score of 3 on any risk factor	Not suitable for proactive inspection; consider the use of other interventions only where necessary based on national and local information. Accident/complaint investigation
Lowest risk	C	No score greater than 2	Use non-inspection intervention methods\techniques Accident/complaint investigation

HSE estimates that the use of this system combined with the use of the Primary Authority Scheme has resulted in a third fewer inspections being carried out.

In addition, the HSE has also looked at a number of other issues related to its risk assessment work, namely:

- Better use of intelligence - HSE has developed an IT system called COIN, an information repository, which it hopes will be easier than existing systems to enter information into e.g. inspection findings, latest intelligence on sector / individual businesses, and crucially easier to extract information which better enables inspectors to decide if an intervention is necessary – the aspiration is that this will further reduce the number of inspections.
- Fee for intervention – if HSE finds noncompliance it applies a charge for the amount of time they need to spend in a business until the defect is rectified. Fee for intervention isn't a panacea though, as the system itself creates its own challenges e.g. administration and management of the scheme.

- Earned recognition – at the time of research, it was said that this hadn't been factored into the new system, however it was felt that certain businesses would now benefit from fewer inspections as a result of better targeting of inspections.

Care Quality Commission (CQC)

In 2013, CQC implemented a new risk rating system that was designed to deal with weaknesses in the previous system, namely:

- Being too focussed on compliance. While CQC still recognised this is still important it was not necessarily seen as providing a holistic picture of the patient experience.
- Inspection was often focussed on one aspect of clinical services, which did not take account of the fact that services are joined up and users tend not to interact with services in isolation.
- Not driving improvement – it didn't recognise "high end" providers.
- Not providing the end user with simple, relevant information about provider performance.

In its place, CQC has designed a system that ties in with a number of their initial aims, namely:

- Focussed on the areas that matter to the end user and to those who responded to the risk rating consultation – these areas ended up being the five lines of enquiry: safe / effective / responsible / well led / caring.
- Having a system that was understandable to the general public; under the previous regime the general public would need to trawl through inspection reports in order to understand how an organisation was performing, which assumes they would know where to access these reports and be motivated to read them.
- The system facilitates greater flexibility as inspectors can respond their lines of enquiry to issues identified before and during an inspection.

Five lines of enquiry

The emphasis on each line of enquiry is determined by the findings from the previous inspection as well as other intelligence sources such as complaints. For example, if safety is given priority it's because this is known or has been reported to be a potential area of weakness. If an organisation is considered acceptable in terms of safety then more focus is given to how well led it is i.e. leadership. CQC believes that the five lines of enquiry provide a more nuanced picture of an organisation and does this in a way that can be easily understood by the public. Ultimately it gives the public a better idea of performance of health and social care services.

Challenges of the new system	Opportunities of the new system
<p>Sustainability – the new system requires more inspectors and CQC has had difficulties recruiting the numbers needed with the appropriate skill-set.</p>	<p>Earned recognition has been incorporated in to the new system. If deemed to be satisfactory then a provider won't be subject to inspection, although there will be on-going monitoring e.g. use of complaint data and other metrics to ascertain performance against the five lines of enquiry.</p>
<p>Is it burdensome – previously regulation was under-enforced so there have been concerns among providers that the new system has become more burdensome, particularly as more is being asked of providers both in terms of demonstrating compliance e.g. information sought, number of observations and time spent on site.</p>	<p>How to incorporate third party assurance in their work – CQC work with other regulators like Monitor and other inspectorates; at the time of this research CQC had been exploring how it could use their accreditations in order to reduce administrative burden. CQC was not able to answer this question as it was felt that such inspections focus on different things. That said, accreditation is taken into consideration; although it's not a risk factor per se it is seen as a positive sign under the leadership line of enquiry.</p>

Views of FSA's risk intervention rating scheme for hygiene

4 Views of FSA's risk intervention rating scheme for hygiene

Food establishments in the UK under LA responsibility are subjected to the risk intervention rating schemes. The risk assessment includes the hazard presented by the establishment, and considers the type of food and process, as well as size and the consumer target group.

The level of compliance and management competence, including the effectiveness of food safety management systems also contribute to the rating. The final score determines an inspection frequency which varies according to both the intrinsic hazard and the compliance/management of the establishments.

The following FSA research objectives are explored in this section:

1. Whether the risk factors used in the current hygiene rating schemes are appropriate or whether there are additional factors that should be considered.
2. Whether existing published information supports the inclusion or exclusion of any given factor.
3. Whether these factors properly reflect the findings of the bodies who investigate the root cause of food poisoning outbreaks or food safety incidents, sporadic cases of gastro enteric infection, or failure of food safety management systems resulting in the service of a Hygiene Emergency Prohibition Notice (HEPN).
4. What relative importance should be applied to the existing or potential future individual factors used in the system, and whether any of these factors are interdependent?
5. Whether a frequency of intervention is appropriate to protect consumers

The evidence in this chapter is derived from interviews and conversations with LA food safety officers, food industry representatives and academics.

4.1 Overall views of the hygiene scheme

Participants were asked about the scheme in terms of its design, content, and the extent to which its risk factors reflected the root causes of foodborne outbreaks and food hygiene incidents. Overall, the scheme was thought to have worked well since its introduction; as a way to prioritise food law compliance interventions, safeguard consumers, and target local authority resources, with most concluding they could see no reason for substantive changes.

“The food hygiene scoring system has stood the test of time of 25 years. With its tweaks it’s been relatively good. I’ve been impressed that it’s stood the test of time”.

Environmental Health Officer

The scheme was felt to reflect the risk factors which are found across establishments which sell or produce food for consumption. If FSA required a sophisticated risk assessment tool, then stakeholders (both LA officers and food industry representatives) argued it would need to redesign the existing scheme using input of risk assessors, risk communicators, and scientists with a food safety specialism. This was deemed unnecessary due to the perceived cost, time and resource implications.

“In most businesses the issues are of medium complexity and are often inter-dependent and I therefore doubt that breaking risk factors down to facilitate a tick-box approach is helpful. There is nothing much wrong with the current arrangements”.

Environmental Health Officer

The consensus was that ‘reputation regulation’ achieved through mandatory display of FHRS, officers better communicating their requirements and reasoning, the ability to enforce appropriately, and in particular the introduction of licensing were all more important. Ultimately, most stakeholders (LA officers, industry representatives and academics) thought tinkering with the scheme would not radically change the outcomes achieved now.

“The current scheme assesses food safety practices, confidence in food safety management, structural suitability and cleaning. These seem reasonable indicators to me, which I say having used the current scheme for a very long period of time. Given that we are not looking for a sophisticated tool, I would say the current scheme does properly reflect the root causes of outbreaks and incidents”.

Environmental Health Officer

That said, numerous improvements were suggested, these are fully discussed below in section 5.2 These varied from fairly minor changes, like clarifying ambiguous descriptors and improving supplementary guidance, through to more significant amendments, including components of risk factors becoming risk factors in their own right, excluding certain risk factors, or weighting factors differently to make it more risk-based instead of hazard based.

While industry stakeholders acknowledged some of the changes suggested by academics and officers, their main focus was on reducing the regulatory burden. They wanted greater emphasis in the rating on sustained compliance through Earned Recognition approaches and risk control as opposed to focusing on the inherent risks. For instance, as discussed below it was suggested that sustained compliance would be recognised by subtracting a numerical score that was high enough so that an establishment would be assigned a lower risk rating such as B instead of A. By contrast, officers were cautious about such changes, raising a number of

concerns about these initiatives. Ultimately, they felt sustained compliance was adequately recognised through the CIM score and flexibilities built into the Code of Practice.

“The current scheme gives LAs flexibility in their intervention programme to be able to alternate between inspection, partial inspection and audit and other official controls on alternate inspection cycles in their C rated establishments, whilst maintaining the safeguard that non-broadly compliant establishments must be subject to an inspection, partial inspection or audit during an 18-month period”.

Environmental Health Officer

4.2 Suggested changes to the hygiene scheme

For each risk factor, the details of the main changes suggested by stakeholders are presented below, along with the rationale given. These are mostly drawn from discussions with officers who use the scheme in their day-to-day work, with any views from academics and industry also highlighted.

4.2.1 Food hygiene scheme: Parts 1A, 1B, 1C

Part 1 of the scheme requires an assessment of the potential hazard in a food establishment, split into three separate risk factors:

- Part 1A: type of food and method of handling
- Part 1B: method of processing
- Part 1C: consumers at risk

Part 1 also instructs officers to consider an additional numerical score if an establishment is involved in the production or service of food intended for consumption by vulnerable consumers.¹

Overall the arrangements of Part A and B of the hygiene scheme were seen as fit for purpose. They were generally thought to cover the right issues: the level of risk associated with the product, and what happens to it (i.e. method of processing).

- There were a few calls from officers for Part A and Part B of the hygiene intervention rating scheme to be combined. It was felt that amending them would simplify and streamline the risk rating system, making it more user-friendly. There was, however, an acknowledgement that Part 1A would need to be made more detailed, perhaps splitting scores out into 10, 20, 30, 40, in order for this to work. Overall most thought it was better to keep the two factors separate as it helps to ensure that the scheme reflects the different operations within food establishments.
- Minor amendments were also suggested by some; mainly these were in relation to specific descriptors in the scheme and supplementary guidance, as officers thought these would make risk scoring clearer and simpler. These detailed suggestions are appended to this report.

Although the importance of Part C: consumers at risk was recognised, with many suggesting it had been included as a result of the impact of foodborne outbreaks in care homes, its inclusion was deemed unnecessary by some LA officers. They said that if the establishment (e.g. care home, hospital etc) was considered not to have adequate control/ management of food hazards then other risk factors (e.g. CIM) would be assigned a score to reflect this.

It was felt that the scoring can nudge too many of these establishments into a higher intervention frequency, which some LA officers felt was not proportionate to the likelihood of something going wrong despite recognising that a foodborne outbreak could have serious implications for a vulnerable consumer.

The final criticism of this risk factor was that if any of the businesses are considered to pose a risk to vulnerable consumers then officers will take the most appropriate action: enforcement. For most of the same reasons the additional score of 20 where a significant risk of a foodborne outbreak is detected was seen to be unnecessary. If this is detected then the intervention frequency assigned would be 6 months, but more critically immediate enforcement action would be taken. While some felt discarding these risk factors could release some much needed resource to focus on other establishments, others felt they should remain as they reminded officers to be vigilant. Some however were neutral about whether or not they are retained or discarded. Because they didn't think removing them would make much difference to their workload.

4.2.2 Food hygiene scheme: Part 2

Part 2: Level of (current) compliance was seen as a crucial factor in carrying out risk assessment. It was also seen as sensible to separate hygiene and structure although they did question whether it should be weighted towards hygiene due to the fact it is regarded as the most likely cause of an outbreak / food hygiene incident.

While recognising the importance of the environment in which food is manufactured and / or prepared, others too would like to see it assigned less emphasis but for a different reason. They argued this would result in a lower intervention frequency for "less risky" businesses (e.g. due to structural problems 'wet pubs' can be assigned a C risk rating despite not serving cooked food). As such, they thought this would release much needed resource for business that required closer attention.

All stakeholders criticised the descriptors for being vague and too brief and this made it difficult to distinguish between scores, particularly 10/15 and 20/25 (e.g. 'total' and 'major' non-compliance). All would like to see appropriate sections of the FHRS Brand Standards incorporated.

As noted, in section 5.3 below, the most common identified cause of an outbreak was cross-contamination and / or ineffective temperature control, which the visits to local authorities highlighted is usually caused by a failure in one, or a number, of hygiene practices. As such, some supported the determinants (e.g. food handling behaviours) of the hygiene factor becoming risk factors in their own right. Despite seeing the reason why this was suggested, others were not convinced as they did not believe this would affect the overall risk rating of an establishment.

4.2.3 Food hygiene scheme: Part 3

Part 3, confidence in management (CIM), was seen by many as the most important in terms of consumer protection. Good management and controls can minimise risks posed by high risk products, and poor management can make even the most straightforward processes high-risk.

However, the assessment and scoring of CIM was thought to have a number of shortcomings. Consideration of sub-factors (likelihood of future compliance, historical compliance and food safety management system) makes scoring difficult, particularly when applied to new establishments (as there is no track record), smaller business (as they are less likely to have access to technical knowledge and therefore there is disagreement about what constitutes a food safety management system) and improving businesses (how far back should track record count against an establishments with increased compliance). These challenges help to explain why officers stated there is inconsistent risk scoring and why businesses which produce and /or sell high risk food but have implemented effective controls and have a track record of sustained compliance continue to be visited at regular intervals.

Structure of CIM

Some suggested removing CIM and placing control procedures under compliance (Part 2), with a few advocating the Food Standards Scotland risk rating model which scores compliance using a binary pass or fail. Others rejected this proposal, suggesting that recognising the regulator-regulated relationship is important, particularly the FBO attitude as it is seen as proxy for ownership of and responsibility for food safety.

These were also some who thought it would be helpful to divide CIM into different components, such as likelihood of future compliance, historical compliance, and assessment of documentation. However, most saw this to be presentational as this would not necessarily solve the issues around rating inconsistency and cautious scoring.

Descriptors and guidance

Many officers thought that the risk rating descriptions were too brief, unclear (e.g. "awareness of food law" and "basic awareness of law") or open to too much interpretation. For instance, there is no specified time period for assessing history of compliance, and terms such as industry codes / best practice / major and total non-compliance should have examples.

Linked with this, supporting guidance should be clearer and where necessary more detailed (and complement descriptor changes) to avoid risk averse scoring, inconsistent scoring, and double scoring of Part 2 and Part 3. Most considered the Brand Standard guidance to be helpful, particularly the descriptors in relation to 3. Many wanted the scheme augmented to include them. However, some felt there needed to be a balance between professional discretion and prescriptive guidance. For example, good hygiene prerequisites can satisfy the need for a food safety management and therefore guidance should not try and cover the plethora of food safety management systems.

Allocation of resources and Earned Recognition

LA officers, academics and representatives from the food industry were concerned about too much resource being deployed on businesses which have effective controls and strong management of risk in place. Similarly, some, especially, those representing the food industry, felt too much resource was used on high risk businesses that have a proven record of sustained compliance (NB there was no single definition of sustained compliance, however a period of 12 months was seen as appropriate).

Discussion around improvements to the CIM score also looked at how it could incorporate Earned Recognition, with two approaches being discussed: third party assurance schemes and Primary Authority.

Overall stakeholders accepted that at least in theory Earned Recognition should be among the factors to be considered in determining the frequency of food safety inspections. This is because they appreciate that it offers a way to divert resource from certain “high risk” businesses, provided they can demonstrate sustained compliance, towards businesses with weak risk management and / or controls in place.

However, there were a number of concerns in relation to Earned Recognition approaches, the criteria an officer would use to assess these approaches, and the implications they may have for public health and / or businesses which may not have the resource to achieve Earned Recognition.

“This big push towards co-regulation – that’s really going to show up more problems in the future because the smaller businesses are less able. They don’t have the expertise...it’s the language barrier, the length of time business has been around; these are the issues and problems affecting small food operators”.

Environmental Health Officer

While recognising these concerns as genuine, some officers suggested that trying to address these concerns misses the point, because to them Earned Recognition is currently recognised through the historical compliance element of the CIM score.

Third party assurance schemes

The existing guidance for score 5 for the CIM factor instructs an officer to factor affiliation with assurance schemes into their overall assessment. However, the role that third party assurance schemes should have in the risk rating system is contentious, and there was no clear consistency on how this is applied by officers.

Industry stakeholders pointed out that in addition to local authority inspections, many larger businesses are audited and inspected by a third party auditor / inspector at least once, but in most cases, multiple times each year, of which some are unannounced. They felt that such accreditation demonstrates a commitment to high quality standards and that the high frequency and type of LA interventions, particularly full inspections, are unnecessary and burdensome. Industry representatives argued that results from third party audits could be better used by officers to target their interventions (e.g. partial inspections) and / or increase the intervention frequency.

For this to happen, however, they acknowledged the FSA will probably require further reassurance that these schemes fulfil current food law requirements. Industry stakeholders appreciated there was a perception that such schemes assign too much emphasis on checking documentation and that the quality of delivery can be variable. Some were willing, therefore, to accept that only businesses aligned to credible assurance schemes and able to prove sustained high levels of compliance would be assigned a lower CIM score.

“Perhaps food businesses in general could be offered an option of being audited by accredited bodies rather than their local authority of the FSA. This is virtually the case now with most food manufacturers who are often audited over 30 times a year by their customers and BRC by people who know and fully understand their business sector. This would leave more time and opportunity for more inspections by officers on the businesses that present most immediate risk to the public”.

Food industry representative

Officers were often cautious about placing too much emphasis on these schemes. They explained that the standards upheld can vary significantly between schemes and that these standards do not always match up with those required by the FSA. That said, some officers were willing to accept a lower CIM score provided the results of such audits fulfil food law requirements (which they would want to verify during an intervention); and the auditing visits are unannounced. Others questioned whether it was feasible for such schemes to be incorporated into the risk rating system, explaining some food businesses are likely to be unwilling to share poor audit results due to concerns of reputational damage and / or being assigned a lower FHRS.

The Primary Authority (PA) Relationship^{li}

The Department for Business, Energy and Industrial Strategy Regulatory Delivery team (offers businesses the opportunity to form a legally recognised partnership with one local authority (i.e. the Primary Authority^{lii}), which then provides robust and reliable advice for other councils to take into account when carrying out inspections or dealing with non-compliance. Large businesses are the most common signatories to the scheme.

- Officers are instructed to consider Primary Authority relationship in score 5 of CIM. In practice this means that those businesses with use of technical advice from a Primary Authority may receive a lower score than those who do not have access and / or use technical advice, typically smaller businesses.
- Views towards the PA scheme can be grouped by stakeholder type. Industry were concerned that some officers' intervention selection is not guided by Primary Authority because they have not “fully bought into it”. Officers appear to be reluctant to give it the necessary level of importance because they think the schemes do not necessarily guarantee a high standard of local management. Another concern was a fall in standards in between visits and the potential implications for consumer protection. The quote below illustrates the view that most officers had during relatively brief discussions about the Primary Authority scheme.

“We have PA partnerships and would not wish to impose that every establishment covered is hunky-dory in the food hygiene department. Local implementation is key and this can vary despite the work put in at corporate level”.

Environmental Health Officer

Recognising sustained compliance by incorporating a subtractive scoring in the CIM calculation

In order to overcome the concerns in relation to demonstrating sustained compliance, there was a suggestion for a negative score or ‘boost’. The suggestion was this would be assigned to consistently compliant food businesses. In practice, it would pull down the overall hygiene score, thereby reducing the intervention frequency. On the following visit, if there is a reduction in standards, the negative boost would be removed, and the intervention frequency increased. This suggestion was supported across stakeholder types. However, some repeated the point that this was unnecessary as compliance is reflected in the current CIM arrangements.

Industry suggested that to further distinguish between compliant businesses, the negative score could be graduated to account for aspects of Earned Recognition, and fulfilment of different criteria. For example, better than satisfactory results following a third party inspection, and observed compliance by officers. There was a concern about the reputational impact for local authorities following a publicised food incident and / or outbreak in a business with a reduced intervention frequency which an officer had approved.

The absence of a 15 score in the CIM factor

Another concern for many officers was the absence of a ‘15 score’ in the CIM factor, which only allows them to assign a 10 or 20 score. The CIM scoring is important as it contributes to the setting of the intervention frequency and is used to calculate the FHRS. Officers explained that a 20 score will typically lead to a 1 for the FHRS and a 10 score typically leads to a 4 for the FHRS. Due to the fact that CIM compliance fluctuates between a 10 and 20 score in a high number of businesses, the absence of 15 was seen to cause a number of challenges for officers, namely:

- As noted above some officers said they found it difficult to carry out the CIM assessment due to the fact they must consider past and future compliance. Many felt the CIM risk scoring has implications for consumer protection: assigning a score of 10 to a business which has a varying record of compliance will result in an 18-month intervention frequency as opposed to 12 months. They were concerned this would increase consumers risk exposure for an extra six months. To mitigate this, some described putting too much emphasis on historical compliance, and therefore using it as a way to stick with 12-month frequency because they feel 18 months is too long.
- The 20 score is generally assigned due to an absence of a food safety management system, which results in a low FHRS (e.g. 1 for the FHRS) irrespective of a businesses’ overall standards. Some would like to see an updated descriptor which recognises the different approaches food businesses have in relation to food safety management systems e.g. a “full-blown” HACCP or alternatively a diary. If the 15 score cannot be introduced, then many would like an amended descriptor for the 10 score.^{liii} This would allow an officer more scope to use professional judgement, which it was thought would result in fewer

businesses being assigned a 1 FHRS. Suggested wording is provided in the box below based on an officer's feedback through the online community.

Figure 1: Suggested descriptor for score of 10 of Confidence in Management risk factor

NB capitalised words are suggested.

Satisfactory record of compliance AND/OR CONFIDENCE OF FUTURE COMPLIANCE.

Access to relevant technical-(DELETE TECHNICAL) advice source and/or guides to good practice or assurance scheme.

Understanding of significant hazards and control measures in place. Making satisfactory progress towards documented food safety management procedures commensurate with type of business OR NO REQUIREMENT TO DOCUMENT PROCEDURES.

- If a business has improved its hygiene practices but not to the extent it can be assigned a 10 score, it was felt a 20 score will not recognise those improvements. It was argued by some officers that this can be counterproductive in terms of motivating the business to maintain and / or further improve standards. Introducing the 15 score thought allow an officer to effectively assign a 2 score for the FHRS, thus recognising the business owner's efforts to improve.

There were only a few officers who were convinced about the reasoning for not having a 15 score. Concerns around the absence of the 15 score could perhaps be allayed if the FSA communicated that the issues being considered are so significant they have had to be up-weighted.

"The idea is that a score of 10 indicates satisfactory. But the next score 'poor appreciation' and 'significantly varying record of compliance' is deemed to be too important to score 15. If the understanding of relevant safe procedures and the overseeing of necessary checks is less than satisfactory the business needs enforcement attention much more frequently".

Environmental Health Officer

There were some officers who supported keeping the 10 vs. 20 scoring distinction, because they felt it could help raise standards in businesses with historical non-compliance. They explained that communicating the CIM scoring in a way an FBO understands how to improve can motivate improvements. Motivation is of course a complex area, influenced by a number of factors, including willingness and ability to comply. However, in this line of thinking achieving a better FHRS rating was seen as a key driver of behaviour change. It was felt this 10 v 20 distinction could become even more significant if displaying FHRS becomes mandatory in England. Many food establishments fluctuate between these two scores and there are a high number of requests for follow-up verification visits when it comes to improved record keeping. Ultimately, CIM is in itself confusing because it mixes past and future compliance, whereas its broad role is to essentially be a measure of the likelihood of future compliance. That ambiguity is probably one reason why officers want a compromising 15.

4.3 Risk factors in relation to root causes of food outbreaks and food safety incidents and indicators of compliance

4.3.1 Understanding and preventing outbreaks

A key line of enquiry was to understand whether the food safety risk is properly reflected in Section 5.6 of the Food Law Code of Practice for England and Northern Ireland, or Annex 5 of the Code for Wales. To investigate this, discussions with local authorities explored the root causes of food outbreaks and food safety (hygiene and standards) incidents. The selection criteria were dependent on an outbreak taking place and / or an incident resulting in formal enforcement action such as an HEPN. It is not always possible to definitively establish the cause despite carrying out a thorough investigation. However, in describing outbreaks and their probable causes it was clear that cross contamination was the most common issue, with failures in all of the following identified (often more than one for an outbreak):

- hygiene practices e.g. effective handwashing
- effective washing and disinfection e.g. surface and contact points like door handles
- preparation e.g. contaminated chopping boards and utensils
- materials / equipment e.g. anti-bacteria handwash / sanitiser, hot water, wash basin.
- temperature control e.g. cooking, display and storage and re-heating (described as temperature abuse)
- separation of foods e.g. raw and cooked
- pest control e.g. evidence of contract with pest control company, and document visit by company

The causes of outbreaks and incidents were thought to be currently reflected in Part 2 and 3 of the hygiene scheme. The issues outlined above, therefore, should influence an officer's assessment. Some officers felt that a redesigned scheme that assigns them more weight, or makes them risk factors in their own right may help to produce a more risk-based score. However, without a mechanism to test such changes it is not possible to conclude whether or not this would result in better consumer protection.

Additional factors not identified as causes of outbreaks but considered important indicators in relation to compliance

Discussions of the root cause of outbreaks and food incidents revealed a number of additional contributing factors, although none of these were reported as root causes.

- **No accredited food safety qualification** – this was not seen to be a root cause. Even so, in a number of outbreak cases a lack of basic food safety training was seen as a contributing factor – food safety awareness can reduce the likelihood of cross contamination. It was reported that sometimes certificates positioned on the wall in a food establishment are either very dated and / or assigned to people who no longer work there. The intervention scheme in section 5.6 of the Code lists hygiene and food safety knowledge as a factor that will influence an officer's judgement of CIM, however, it was suggested that

specified requirements – minimum level 2 in food safety – would be easier to assess and communicate where non-compliance is identified.

- Linked to the issue above, an **absence of suitability qualified supervisor / manager** was commonly associated with outbreaks. Many officers described a lack of knowledge as contributing to poor practices, with some having to demonstrate basic food safety requirements during visits to food establishments
- **A lack of understanding about when staff should return to work.** One investigation found the cause was an unwell food handler. The food business owner and staff member were unaware that Norovirus could still be transmitted up to 48 hours after the symptoms had passed. Therefore, it was suggested that the Fitness to Work guidance^{liv} document could be one way of assessing understanding, although this was seen as unfair as it was considered not to be widely known.
- **FBO attitude** – while there is no formal definition of a desired FBO attitude it was seen as a proxy for ownership of food safety.^{lv} Officers described it as the extent to which an FBO engages with them, takes on board advice and support. They also mentioned FBO honesty when asked to describe in-house food safety behaviours. Some officers thought attitude was an indicator of practice and should be assigned more weighting; however, others disagreed, saying subjective measures result in further inconsistency.
- **Characteristics of business** – it was generally accepted that food safety incidents and food outbreaks can happen in any kind of business. However, in describing the features of businesses where most resource is deployed, two issues may be worthy of consideration as risk factors:
 - Lack of resource – those businesses with low profit margins are generally unable to invest in the business in terms of structure, staff training etc. However, others questioned whether an appropriate assessment criteria could be developed.
 - Ethnic cuisine – a lot of resource is spent in these businesses, with officers explaining this is usually due to a high risk of cross contamination caused by poor handling practices. They felt it could be worthy of further consideration provided there was a distinction between restaurants producing “food from scratch” and “freezer to fryer” restaurants. Others however felt that a “one size fits all” approach is disproportionate to risk and therefore undesirable.

4.3.2 Factors considered important for preventing poor hygiene more generally

The view across audiences was section 5.6 of the Code of Practice cannot predict food outbreaks and food safety (hygiene and standards) incidents and is not thought of this in this way. As noted in section 5.1, it was viewed as reflective of the common causes of foodborne illness and food hygiene breaches, but also helpful for the purpose of allocating local authority resource.

Local authorities were asked what key challenges they face in preventing poor standards. This enabled us to identify a number of factors which officers thought could assist them.

1) Better guidance on enforcement approach to businesses selling undercooked food

The sale and consumption of rare or undercooked food is a trend that has been steadily increasing in the UK.^{lvi} Microbiological analysis has identified that these trends can increase the potential of unsafe food being sold to

consumers, with proven cases of *Campylobacter*, *E-coli* and *Salmonella*.^{lvii} In response to enquiries from local authorities for further guidance on the enforcement approach to businesses selling such food, FSA is carrying out risk assessment work to come to a position on the sale of rare burgers.^{lviii} While officers were supportive of this, discussion about outbreaks revealed they want guidance on other undercooked foods. In one instance, *Campylobacter* outbreak was caused by a consumer eating contaminated “lightly cooked duck”. It was thought the intervention frequency could be adjusted to reflect undercooking, but there is appetite for guidance covering foods such as pate and undercooked liver, but also better guidance about enforcement actions to take after such cases.

2) Introduction of licensing

Officers strongly supported a licensing requirement mapped on to food law compliance before a business is allowed to trade. It was thought this would strengthen consumer protection because of the commonly held view among officers that unregistered businesses tend to be problematic in terms of compliance. While many acknowledged the benefits of a licensing scheme, they thought one could have undesirable effects, including delaying a compliant business from opening due to an inability to fit in an initial inspection within an officer’s existing workload, as well as adding further pressure on declining LA resource. As such they thought the optimum approach was to retain the current registration scheme while strengthening sanctions for non-compliance.

3) New enforcement tools

Allowing officers to enforce using penalty fines and extending the use of Remedial Action Notices (RANs)^{lix} in England to all food establishments which do not require approval status to operate was suggested by many officers. This was based on a belief they would help to raise standards, particularly in non-compliant businesses. It was thought their use would deliver a “short, sharp shock” that would encourage better standards while reducing the administrative burden associated with enforcement approaches such as HEPN.

4.4 Intervention frequency

When stakeholders were asked for their views of the intervention frequency, LA officers initial responses were grounded in a belief that a routine intervention of some kind is vitally important. While industry thought this too, they didn’t necessarily think inspection had to be carried out by local authorities. The key reasons for supporting intervention frequencies are summarised below:

- Satisfies compliance with EU food safety legislation^{lx}
- Routine visits help to ensure standards are maintained and without them they thought there would be lower levels of compliance generally.
- Helps prioritisation and allocation of resources – however, officers and stakeholders thought that certain businesses are seen too frequently (e.g. businesses that would impact a large number of people if there was a food incident) and vice versa. For example, a number were critical of the weighting emphasis applied on the “compliance sub factor: structure” as a fairly low risk establishment (e.g. wet sales pub) can be assigned a C rating rather than a D.

Before describing stakeholders' views of the intervention frequency, it is worth highlighting that the intervention frequency which is derived from the scheme is just one of a number of factors influencing authorities' decisions about frequency and type of intervention. Figure 2 below summarises some LA participant's' feedback on the additional considerations which might influence the nature of LA officer's contact with food establishments.

Figure 2: Section 5.6 of the Code of Practice is one of a number of competing factors which influence an officer's choice of intervention type and frequency

- For scores of 0,1 & 2 (FHRS) –
 - establishments are visited in line with Code of Practice,
 - continual engagement due to **likelihood of future non-compliance** so intervention frequency is often higher than what is required by the set minimum intervention frequencies in Section 5.6 of the Code
- For score of 3 –
 - **risk rating score and long term (5 years) compliance** used to determine intervention frequency.
 - weighting is assigned to **intelligence** e.g. complaints and compliance history
- For scores of 4 & 5 –
 - **newly registered establishments will have scheduled inspection** otherwise a verification visit is carried out
 - less weight given to certain risk category A & Bs e.g. B rated care homes / schools that have **good compliance** and use **intelligence** e.g. Care Quality Commission for care homes and partnership with children's services (for schools)
 - less weight given to those with **Primary Authority status and / or participating in third party assurance schemes**.
- Low risk "Es"
 - visit some e.g. "corner shops" but only when it fits in with another workstream
 - others (e.g. pharmacies) are not seen – even though this is known **not to be in line with the Code of Practice**
- **Special consideration to establishments with higher risks**, including butchers, approved establishments, manufacturers.
- For compliant businesses an alternate intervention is carried out in line with **Code of Practice flexibilities**
- Those that are **low risk and highly compliant** don't get visited
- **Complaints** will trigger an intervention

This research revealed that similar prioritisation strategies are common to many local authorities. The factors driving their decisions were felt to be risk-based, but also shaped by working within reduced budgets and a stated increased workload caused by FHRS follow-up visits.^{lxi}

As a consequence, a number of authorities said they were unable to comply with aspects of the intervention rating schemes as well as the requirement of intervention frequencies for some businesses. For example, some authorities ensure they fulfil the intervention frequencies for A, B, and (high risk) C rated establishments; while trying to achieve as many of the lower risk inspections as possible.

Arrangements that local authorities put in place for these lower risk establishments also varied: subcontracting to consultants, using newly qualified officers and implementing Alternative Enforcement Strategies.^{lxii} Again, however, it was explained such arrangements are usually not completed in line with the intervention frequency prescribed by the Code of Practice.

In contrast, there were some authorities that reported having the required level of resource to complete their intervention programme, although a number of them were concerned that further budget reductions would prevent them from continuing to do so. These tended to be second tier local authorities in rural areas, which reported having fewer businesses and a lower level of business churn and as a result fewer inspections.

LA officer concerns about the intervention frequency

On the whole, officers would like to carry out the full programme of planned inspections in line with the Code of Practice. However, there were a number of concerns about the intervention frequencies prescribed by Section 5.6 of the Code.

- In considering “high-risk / non-compliers” many officers would like to increase the frequency than are prescribed currently. When asked how this could happen with declining resource, a number of suggestions were put forward:
 - most suggested this could happen with better recognition (i.e. weighting) of certain risk factors (e.g. causes of outbreaks), an embedded HACCP plan (i.e. effective risk controls and risk management), and/or the exclusion or down-weighting of other factors e.g. consumers at risk
 - some said resources could be diverted from businesses with proven sustained compliance
 - due to concerns about the potential implications of existing Earned Recognition approaches (e.g. larger businesses seen less often) most would not like to see it assigned more weighting even though they were aware this would make more resources available
- While acknowledging D rated establishments are not priority, officers explained they can still have inherently risky activities where effective controls may not be in place, and therefore were concerned more budgets cuts will reduce their ability to visit them.
- Many were concerned about the longest 24-month intervention frequency. Officers estimated that business churn, particularly in the catering sector, can be as high as 20%. If there is new ownership in between interventions, they felt that consumers are potentially being exposed to risky activities by an unrated establishment.

Despite these concerns, officers generally thought the prescribed intervention frequencies broadly ensured the right level of resource was deployed where it is needed most. Ultimately they thought that the intervention frequencies combined with other regulatory work delivers an adequate level of public protection, even if inspections in themselves do not guarantee that outbreaks will be prevented.

Concerns about the 28-day initial inspection target

The Code of Practice prescribes a 28-day initial inspection target for all food establishments after registration. This requirement was not seen to be risk-based because it includes businesses selling low risk foods e.g. pharmacists. Officers also saw this being a drain on resources, particularly in urban areas with significant business churn. As a consequence, many would like to see this requirement removed and permission given to

use alternative approaches such as desktop risk assessment.^{lxiii} Officers acknowledged the concern of others that risk rating requires the presence of an officer in a food establishment. However, those who supported using alternatives believed that if an officer is able to establish type of business and nature of operations, a risk-based intervention frequency can be appropriately assigned.

Views of FSA's risk intervention rating scheme for standards

5 Views of FSA's risk intervention rating scheme for standards

The food standards risk assessment includes the potential risk of a food on consumers, as well as the vulnerability of consumers, and considers the type of activities which the food establishments do, as well as the range and complexity of food standards law that applies to the business.

Like the hygiene rating, the standards one also considers the level of compliance and management competence, including the effectiveness of food quality systems also contribute to the rating. The final score determines an inspection frequency which varies according to both the intrinsic hazard and the compliance/management of the establishments.

The following FSA research objectives are explored in this section:

1. Whether the risk factors used in the current standards rating schemes are appropriate or whether there are additional factors that should be considered.
2. Whether these factors properly reflect the findings of the bodies who investigate the root cause of product recalls, the service of food detention notices or legislative breach's resulting in prosecutions for food standards offences such as case of food fraud.
3. What relative importance should be applied to the existing or potential future individual factors used in the system, and whether any of these factors are interdependent.
4. How an establishment based model can work in conjunction with an investigative, intelligence lead food law enforcement approach.

The evidence discussed in this chapter is based on 10 conversations with food standards specialists from across England and Wales.

5.1 The environment in which food standards work is undertaken

A number of broader contextual factors were seen as important in understanding how food standards work is currently carried out. Overall, there was consensus that historically food hygiene work has received greater recognition than food standards work. This is because food hygiene breaches are generally seen in the context of having an immediate effect on consumers. LA officers suggested that the E-coli outbreak in South Wales in 2005 has helped maintain this viewpoint.

“When it comes to misleading information vs more or less immediate illness then the standards bit gets left behind.”

Food standards officer

The increasing recognition of food standards work

However, they also pointed out that the horsemeat scandal has led to more attention on supply chains, food fraud and product information. The changing nature of food standards breaches was felt to be another reason why it has gained greater attention. Historically food fraud was centred on high value goods whereas the new norm was said to be that any food product, even low value ones, are subject to food standards breaches. This means that a food safety risk can occur in almost any product which is sold and / or consumed.

The growth of online food sales and distribution (e.g. brokers and fulfilment houses) has meant that enforcement approaches which are the norm in food hygiene work (e.g. establishment based work) are increasingly not appropriate in the context of food standards enforcement. It was felt that even now when consumers are better informed about food standards issues they do not complain because they don't realise when they have been misled.

Challenges for food standards officers

There was concern that the increased profile and scale of food standards breaches was not reflected in funding at the local level. While it was acknowledged that local politicians have had to make difficult choices, many felt that because food standards work is not seen as a priority by politicians because the public are not focused on these issues. As such, there was a consistent perception that food standards has seen deeper cuts than other LA services, including food hygiene work.

Furthermore, there was a clear view that the existing intervention rating scheme does not take account of constrained resources, with the implication being that LAs have to make a difficult choice in terms of whether to conduct fewer establishment inspections or have to cut back on other types of intervention such as project based work or compositional sampling. Reduced resource means that LAs often do both.

5.2 Key considerations in choosing intervention type and frequency in food standards work

In practice this entails targeting resource on establishments that have been assigned an A risk rating. Interventions for other establishments are based on a number of factors including:

- Products where there is incentive for fraud e.g. meat and fish –detections show increasingly relatively low value products are subject to food fraud, mis-labelling.
- Manufacturing businesses. Although such businesses are usually compliant, where there is noncompliance the effect is significant.
- Online sellers / importers / food brokers where there is a higher relative risk of food fraud.

- Potential for use of non-approved and / or illegal substances in ingredients e.g. compound ingredients (e.g. Sudan colouring) used in seasoning or methanol / anti-freeze in alcohol. Or particular food trends e.g. health food and food supplements
- Potential for food substitution e.g. goat substituted with lamb / almond substitution / ham substituted with turkey and nitrates / species of fish
- Potential for inaccurate / absence of labelling / information - sometimes wilful, other times food businesses unaware of legislative requirements e.g. food labelling, some can't keep track of increasingly amount of information needed on labels nowadays.
- Establishments that label products on-site e.g. butchers and bakeries.

These issues are not usually seen in isolation, but rather the type of intervention is based on what the intelligence says as well as an assessment of the effect of non-compliance on marketplace in terms of competition, consumers, and environment.

“What is the nature of the business / what are they doing. Which then should lead to how do I intervene to ensure those business compliant and what’s the likely impact on the marketplace”.

Food Standards Officer

In discussions with food standards officers we identified a range of skills and experience which they felt were needed to become an effective Food Standards Officer. Many of these were considered by Food Standards Officers to be different to those needed to be an effective Food Hygiene Officer, namely:

- Having an in-depth understanding of food standards regulations and being able to place any breach in the context of the severity of how they impact the consumer, competition and environment.
- Having the right mindset:
 - in terms of jurisdictions: given significance of food fraud etc there is an increasing need to think outside of the “corner shop mentality”.
 - in terms of inspections: do I trust them enough not to come back sooner than the intervention frequency suggests?
- Thinking like a “criminal” – where is the incentive for food standards breaches
- Seeing links / patterns between pieces of intelligence – it can be time consuming and resource intensive to piece together different pieces of information to become a compelling package of evidence. Officers felt that this requires expertise, which they thought was not necessarily recognised by LAs and FSA.
- Choosing the intervention based on the issue – because food standards breaches are so varied, ranging from negligible to significant it was felt that, in most cases, intelligence should inform the intervention, but that this does not always happen currently.

Another implication participants described was that there are fewer food standards specialists. Officers argued that this makes it even more difficult to achieve FSA inspection targets for food standards. Although they

recognise that, at least, in theory EHOs are undertaking more food standards work, it was evident in discussions that EHOs don't feel they are equipped to do so.

"EHOs don't want to do it because it's too complicated and therefore don't do it very well. There are hundreds of regulations in food standards work whereas food hygiene work has fewer than ten".

Food standards officer

5.3 Is there a place for an intelligence led approach to food standard work?

Gathering and utilising evidence and intelligence were seen as vitally important to food standards work, as food standards breaches were seen as very difficult to detect even for officers who specialise in this area. A number of reasons were identified that explains the importance of intelligence.

"If there's no intelligence, then food standards breaches can be very hard to detect; consumers don't know they're being misled; premises based inspection aren't necessarily going to reveal the issue; and LA budgets for sampling have in general shrunk."

Food standards officer

The significance of intelligence and information in food standards work

First, it was felt that businesses that willingly breach food standards regulations usually take steps to conceal their activities. During an inspection this can entail an FBO diverting the attention of an officer onto issues which they think an officer will be interested in e.g. a novel manufacturing process, to more evasive actions such as moving online, registering the business beyond the remit of the local and / or national competent authority or not registering at all. Because breaches are difficult to detect it was felt that a significant number fall outside of Official Controls and this remains the case until intelligence identifies the problem.

Second, there are relatively few consumer complaints about food standards. Participants argued that consumers usually do not realise when the product they are sold is not what it says it is. However, there was some anecdotal evidence to suggest this is changing as consumers become more informed about food standards following the horse meat scandal.

Third, for some breaches (e.g. non-visible issues) product testing is considered the only way to detect them, but the evidence suggest testing is much less common due to reduced resource in LAs.

Most standards officers said that establishment inspections combined with intelligence led work – ranging from sector specific initiatives through to the targeting of individual businesses – was an approach they considered to work, and one that they would continue to carry out. That said, there was no consensus on how much establishment work should be done.

“Cannot do intelligence led if chasing inspections targets”.

Food Standards Officer

Information and intelligence sourced used by food standards officers

Food standards officers said they gathered and received intelligence in numerous ways. Many LAs described close links with local organisations whose remit is public protection and safeguarding consumers’ interests including fire, police and environmental health teams, as well as referrals based on consumer issues from organisations like Citizens Advice. At the national level officers identified links with HMRC and customs and excise (e.g. not declaring alcohol duty).

These links were generally viewed as helpful, even where the intelligence fell outside of the strict remit of food standards work. In these cases, it was still valued as they felt criminal activity would shift to the food sector. When it does lie within the remit of food standards work, officers said they would choose how and when to respond based on the risk of public harm – for instance alcohol substituted with methanol will be acted on more quickly than ham substituted with turkey.

In general, local and regional networks (e.g. regional food standards groups) were seen to generate a lot of useful intelligence. However, there is considerable variation in the quality and flow of information dependent on the individuals leading and involved in these network, such channels were in general seen to be better than national bodies such as the Food Crime Unit. The latter was thought to have the potential to make a significant contribution to LA work in tackling food fraud, but some felt this had not yet been realised for reasons they were not clear on. Others felt it was too early to judge whether this will be the case given its relative infancy.

That said, RASSF alerts, FSA food safety alerts (both food standards and food hygiene) were considered to be useful. There were mixed views about the information flows between port health and inland authorities. Some officers were satisfied with the amount of information received, while others suggested that reduced resource had led to PHAs focussing on their core priorities i.e. carrying out mandated food checks, meaning that there is less information being received.

Reported challenges with the collation and sharing of information

A number of shortcomings were also identified relating to the access and sharing of information, which officers felt hindered the effectiveness of an intelligence based approach to food standards work. While the need for multiple data repositories was accepted due to the number of agencies involved in food and trading standards work, it was felt there was the potential for potentially valuable intelligence not to be seen unless trading standards office chose to upload this information twice; first to the MEMEX system – the police intelligence database – then second to FSA (e.g. the 5 x 5 x 5 form) and / or Food Crime Unit database.

Ideally, trading standards officers believed that this information should automatically be shared between the two systems on the basis that criminals involved in a non-food related trading standards issues have the potential to become involved in the food sector at some point.

Related to the flow of information was the belief that relevant agencies receive more information than is given to officers on the ground. There was strong appetite for food fraud information so that LAs could better understand the scale of the problems and therefore target resource more effectively, while also reducing the cost of collating and analysing this information.

Ultimately, participants wanted national level agencies do more to ensure that intelligence is cascaded to those on the ground. Otherwise officers are not likely to see the importance of sharing information upwards. It was felt that for intelligence to be valued then officers need to get feedback on the information they provide.

5.4 Is there a place for food establishment inspections in food standards work?

Most food standards officers we spoke to spontaneously described how they are undertaking fewer food standards inspections so that they can divert resource to other activities which they consider to be more important. Their priorities often included intelligence led approaches, initiative work and sampling. IN this context, they were asked whether or not there is place for food establishment inspections in food standards work.^{lxiv}

Views of food standards inspections in food establishments

There was a tension in views around whether there should be a programme of regular inspections for food standards work. For some, they have a number of benefits: enabling officers to assess compliance in individual establishments sends a signal to businesses that they will be checked, which in turn, they felt helps “sharpens the minds of FBOs.” Indeed, some felt strongly that there is no substitute for regular face-to-face visits as they provide an opportunity to find out information about issues in a sector which they may otherwise not have known about. Others felt it was important to retain inspections in line with intervention rating scheme as it enables officer to better appreciate the complexity of the environment in which they and FBOs operate in, meaning they are better able to identify breaches.

Some made a strong case for not having premise-based inspections in line with the intervention rating scheme. This was based on the belief that unlike food hygiene breaches, wilful food standards breaches are typically difficult even for an experienced food standards officer to detect during a premise inspection, in particular because an FBO with something to hide will try and divert attention away from the issues. Moreover, for some premise visits were considered to divert finite resources away from project / initiative work, which it was argued is usually a more effective intervention for detecting food standards breaches, particularly in situations where there is no establishment as such e.g. online sellers and food brokers / fulfilment houses.

Similarly, there was also no consensus on whether establishment visits are useful for gathering intelligence. Some officers argued that being able to gather intelligence about individual business practices is as a useful indicator of activity within a sector. Others argued that unless there is a piece of intelligence which helps to focus an officer’s checks the issues are difficult to detect. This latter view argued that the nature of the intelligence should inform when and how an officer intervenes.

Those who felt that establishment visits are of limited value argued that LAs should have greater flexibility in deciding the circumstances when visits are conducted, informed by intelligence rather than the requirements of intervention rating scheme. They also pointed to the fact that establishments assigned an A risk rating are usually compliant, and were concerned that the scheme was too inflexible in the context of reduced resource.

“There is a place of assessment but with finite resources need to do something that is worthwhile and I think that is project work”.

Food standards officer

Huge variation in in terms of how official controls are delivered.

Consequently, participants reported huge variation in terms of how official controls are delivered. It was not uncommon for an LA to have reduced by one-third the number of food standards inspections they undertake. They pointed out that if they complied with the intervention rating scheme then they would have to stop all other food standard work.

Some LAs are conducting inspection of all establishment assigned an A risk rating to gather intelligence to inform what other ad hoc visits they carry out. These may involve a full or partial inspection or another type of intervention such as sampling. A small number of LAs explained they had taken the decision not to do any of their planned inspection programme, and instead all inspections were ad hoc in response to an assessment of intelligence received. They recognised this approach was only as ever as good as the intelligence they received and discussed the need for improvements in how this is gathered and shared. In particular, they wanted more from the Food Fraud Unit as the impression is they hold a lot of potentially useful information, which could be better shared with officers “on the ground”.

Others supported the use of inspections but not in the way which is required by the intervention rating scheme; these officers advocated an approach that generates a list of establishment types and key hazards which should trigger a proactive inspection. This is then complemented by other interventions depending on the nature of intelligence received. The idea for this was taken from the inspection approach used in health and safety regulatory work. It was felt this would focus on businesses with significant inherent risks while offering the flexibility to be intelligence-led.

However, there seemed to be no consensus on the type of businesses or food issues which would trigger a proactive inspection. For some it was small businesses such as independent butchers, bakeries, catering establishments which don't have access to technical knowledge of food standards regulation, with a few officers explaining that their own research suggests that the risk of non-compliance is disproportionately higher than larger businesses.

Others suggested that business size was not indicative of non-compliance and instead re-iterated the point that food standards work should be led by an assessment of the issues outlined in 5.1, which they suggested should be the criteria for intervention selection.

While the research was small scale and therefore not generalisable, only one LA we spoke to said they were able to comply with the food standards intervention rating scheme when it comes to food standards, broadly in line with the established intervention frequencies.

“We still have an inspection programme but I think that’s increasingly rare these days”.

Food Standards Officer

5.5 Is there a place for sector-based approaches?

Sector-based approaches were interpreted in different ways by officers. For some it was ad hoc project work in response to a specific piece of intelligence e.g. sampling gyms in the local area for counterfeit health supplements. For others it was interpreted as replacing the current programme of inspection with a sector based approach to inspection.

Overall, there was support for sector based food standards work, specifically when it comes to ad hoc work such as sampling undertaken in response to intelligence. There were numerous examples of officers using sector based approaches, with one LA using such an approach to deliver against a number of its public protection duties including public health, safeguarding vulnerable groups, as well as verification of food law compliance. In this instance, the LA targeted food consumed in care home / children and adult care social care homes in the local area. Officers said this was carried out to assess the incidence of different issues: compositional testing, misleading claims, and market distortion due to undercutting on price.

There was no consensus on whether there is place for a sector based approach in food standards work. A number of officers suggested it was too broad brush and that this would lead to a disproportionate regulatory regime for compliant businesses. However, others explained that intrinsic risk is usually associated with products which tend to be closely aligned to specific sectors rather than individual businesses.

“We visit all our food manufacturers, importer, packers, and inspect 50% of upper medium risk of the database; and 20% of the lower medium establishments”.

Food Standards Officer

On balance, most participants felt that sector approaches risked overcomplicating the status quo, and reiterated their preference for intelligence led work while deploying resource to undertake as many inspections as possible.

5.6 Is there a place for an intervention frequency?

Those who supported retaining inspection frequencies tended to be from LAs who were better able to meet the requirements set out in the intervention rating scheme. These officers reflected on the fact they have

sufficient resource to be able to conduct inspections to high risk establishments every six months, and felt there was value in continuing to do so. They cautioned against revoking intervention frequencies on the basis that in the absence of a mechanism to prioritise resource LAs would conduct even fewer inspections than they do currently.

Even among officers who wanted to retain inspection frequencies there was some frustration about having a fixed intervention frequency on the basis that it does not necessarily reflect the likelihood of future non-compliance. Indeed, a number of officers explained that after a visit they would manipulate the intervention frequency based on whether or not the officer wants to re-visit sooner or later than the frequency suggests.

“I use the NTSB scheme and pretty much follow the intervention frequencies, but will make assumptions about the risk of a business e.g. wet pubs and set the frequency based on my professional judgement of what I see”.

Food Standards Officer

Most officers welcomed the fact they can bring forward an inspection if they feel it is warranted, however some would also like that flexibility to work the other way. In practice, it was suggested this would entail setting an intervention frequency based on how long an officer is satisfied to leave before revisiting that business. For example, officers suggested that certain establishments could be visited every 3-4 years instead of the 2-year intervention frequency which is currently required. A few suggested that this would involve creating a new risk rating band. For such officers it was felt A, B, C, risk rating bands are too limited and suggested creating another band as well as longer timescales for existing risk rating bands: A= 12 months; B= 18 months; C= 24; D = 5 years / alternative enforcement strategy.

Others were sceptical whether it would be possible to retain in future the intervention frequency for all types of establishments due to the reducing resources LAs have at their disposal. Indeed, a few saw the intervention frequency as irrelevant in the context of their ability to carry out food standards work, with a number of LAs suggesting they struggled to achieve the “FSA target” even when they were fully resourced.

5.7 Views of the food standard intervention rating scheme

There were in general conflicting views about the intervention rating scheme. On the one hand, it was seen as a useful reference document for setting out considerations that an officer should take into account when undertaking an establishment inspection. One officer suggested that the scheme itself could be discarded but the risk factors retained as an aide memoire for officers. This officer was sceptical about the need for standardisation and harmonisation in risk assessment but suggested this approach might be an acceptable solution given that few LAs are able to comply with the intervention rating scheme.

Why do we want consistency across the board, the argument must be how long do I want to leave them: 1, 2, 5 years?

Food Standards Officer

The scheme was also seen to provide leverage with local politicians to help secure additional resource. However, other officers described the methodology as sound but thought it created an amount of work they were not resourced for. As a result, they ended up using their own judgment to decide which establishments to visit and how often. A few officers argued that these decisions were still risk based because they ensure that the database of establishments reflects the nature of establishments in the local area.

“The bottom line is nobody can get anywhere near it. All we can do is what we can resource; decisions are risk based as we spend quite a lot of time ensuring that database to ensure premises are properly coded and nature of business are logged”.

Food Standards Officer

Suggested limitation of the food standards scheme

In addition, a number of limitations were identified with regard to the rating scheme. First, it did not reflect the diversity of food establishments which increasingly food standards officers encounter such as pop-ups, internet sellers, and food brokers.

“The scheme is broadly on the right track; can be some problems applying to certain businesses which aren’t reflected in the scheme”.

Food Standards Officer

Second, officers felt that intelligence rather than the scheme itself was more effective at identifying food safety and in particular food fraud and food substitution. They described three types of businesses: (1) good knowledge of the regulations and compliant; (2) lacks knowledge of the regulations but broadly compliant; and (3) at least some knowledge of the regulations but non-compliant. It was felt that this third group of businesses knew how to break the law. They were seen as being very good at masking such issues so they are not easily detected through the intervention rating scheme.

“Might have all the best systems in the world, but staff and / or management who undertake fraudulent behaviour won’t be detected through the intervention rating scheme”.

Food Standards Officer

Another officer suggested that the scheme was appropriate when issues can be detected by official controls. However, real world situations were seen as highlighting the limitations of the scheme for certain types of food standards issues. One example cited was a pub that was considered low risk because it was well managed, had good quality systems in place, and was scrutinised by third party auditors. Following the visit however a piece of intelligence suggested that staff members were being instructed by the FBO to “top up” the bottle of Rioja with Tinto.

“Risk assessment is not the be all and end all. For me what’s more important is do I trust this person to comply in six months’ time. If I don’t then it will be high risk”.

Food Standards Officer

5.8 Suggested changes to the intervention rating scheme

Most food standards officers saw limited value in discussing the details of the food standards intervention rating scheme, because most said they did not have the resource needed to comply with its requirements. As such, they felt that changes to risk factors/ and or descriptions was not the main challenge they had to address in their work.

Why are we talking about descriptions?

Food Standards Officer

Instead, they tended to offer their views of the scheme in relation to changes that would help them deliver the visits they thought were important, while at the same time ensuring there is sufficient resource to be able to carry out other valued food standards work.

Where suggestions were offered these were centred on having more flexibility in the intervention rating scheme, including revoking the 28-day inspection target for newly registered businesses, creating a new (and fourth) risk rating band, and extending the fixed intervention frequencies.

Suggested changes to descriptors of risk factors:

- Modernise outdated terms used in the risk factor descriptors e.g. “subject to statutory compositional standards”
- Better define ambiguous terms e.g. local; however, others appreciated it could be challenging to be more specific due to the diversity of food businesses.
- Provide clarification of descriptors e.g. whether or not “high risk, high value” should be interpreted as potential for fraudulent activity
- Inclusion of descriptors to reflect the growing diversity of food establishments, including home caterers and internet sellers. It is also important to better reflect how they operate; for instance, product labels might be fine but not the claims on the site.
- Acknowledging the view that food inspections are best carried out at the point where the food is produced and therefore clarification needed on the delivery of official controls when the registered office is within the LA remit.
- More recognition of whether product is ambient (i.e. stable) or fresh, which some said the latter was more indicative of inherent food standards risk.

There was more strength of opinion for two risk factors. Firstly, there was consensus that consumers at risk should be retained given the impact of non-compliance on this population group. The second of these factors

was Confidence in Management. Of all the factors, it was this one which officers felt needed increased weighting. It was felt that inspectors' views of how well the business is run should have a larger influence on the overall score, to reflect the fact that officers felt certain businesses require less regular verification checks. That said, some suggested it would need a significant weighting to offset other factors such as consumers at risk, while ensuring that well run manufacturers become B risk rated establishments. It was also felt increased weighting would help to differentiate between businesses. Currently most come out as B, B, B, A, A, i.e. 10, 10, 10, 5, 10, and officers felt the food standards reality does not reflect this homogeneity.

“Unlike the food hygiene situation there is not so much scope for outlets within various categories to vary much. Most restaurants and cafes will have very similar ratings, as will shops, as will manufacturers depending upon their size and sector. So a rough and ready intervention frequency for food standards coupled with intelligence led project work subject to official protocols and co-ordination seems to be what is needed”.

Food Standard Officer

A number of issues were identified with regard to the descriptors of the CIM factor.

- Interpretations of the descriptor were described as often being very literal. For instance, if an officer wants to assign a score of 20 but there has not been at least one justifiable complaint, this can lead to confusion on scoring.
- Some felt that using complaints was not appropriate; in their views what is more important is judgement of what compliance is likely to be like in future. Others felt that further explanation around the role of complaints would be helpful for scoring. This included suggestions that a complaint could be justified but the impact negligible.
- Score 30 was criticised for conflating too many issues, for instance it as suggested that a small business with little or no technical knowledge can still have an appreciation of hazards or quality control.

Suggested measures to assist food standards regulatory work

There was a clear view that measures such as licensing (i.e. the ability to revoke a license), charging for time spent in a food businesses and “on the spot” fixed notice penalties would make a greater contribution to dealing with food standards issues, thus increasing compliance across the food standards sector.

However, some officers were sceptical that licensing would be introduced as they felt this this conflicted with, in their view, the Government’s agenda to reduce regulatory oversight. They, therefore, want a more robust registration process that enables them to more easily identify who the FBO is (e.g. collecting the date of birth of the FBO); felt to be particularly helpful in a situation where it is difficult to trace the FBO either because they are online or run a fulfilment house.

Participants also discussed approaches aimed to help officers to better identify and monitor food standards related risks which occur online. They described having developed relationships with some of major online

purchasing sites including e-bay, gumtree. Where this kind of relationship is absent for (e.g. on Facebook) then LAs said they monitor the site for potential food standards breaches by checking product marketing claims.

Views of the competency based framework and CPF for food standards officers

Finally, food standards officers were concerned about the competency based framework written into the 2015 code of practice. Specifically, that having a single competency based scheme that covers both hygiene and standards work meant their competence could be questioned in issues which are not within their remit, like HACCP. Some were very worried this could result in a legal case against a business being dropped if the defence team could demonstrate an officer did not fulfil all elements of the competency checklist.

Another worry cited by participants was the increased number of hours for CPD which is also included in the latest version of the Code of Practice. While CPD was valued, there was concern (particularly among those whose food standards work is only a small proportion of their more general trading standards role) that this would divert their time away from regulatory work when resources are already stretched. Others said it was not clear if the 20 hours had to be carried out in a calendar year or a rolling year; and they also want clarity on implications if they fail to meet this requirement.

“If I don’t do this amount of CPD does that mean suddenly I’m no longer competent”.

Food Standards Officer

Conclusions and considerations

6 Conclusions and considerations

This research has revealed that the hygiene intervention rating schemes is broadly fit for purpose. Research participants (LA officers, industry representatives and academics) felt that it does help local authorities to prioritise their resources on establishments where the risk is likely to be greatest. However, it was evident that decisions around the type and frequency of intervention are not just made on the basis of the risk assessment included in section 5.6 of the Code, but also practical considerations such as resource constraint.

Discussions with local authorities on the root causes of food outbreaks and food safety incidents, as well as the most common causes of enforcement action revealed that the FSA hygiene intervention rating scheme does contain factors which reflect the causes. However, the research points to the fact that certain root causes could be made risk factors in their own right in order to achieve a risk rating which is more closely aligned to the likelihood of a food poisoning outbreak / food safety incident. For example, the USA Center for Disease Control and Prevention has stated risk factors for effectiveness of food handling practice by a food handler. There is an increasing recognition that food related regulatory work will need to become more risk-based, proportionate and consistent in response to local authority constraints, and the complexities and diversity of the 21st century food sector.

Changes to the hygiene scheme will not be sufficient to solve these issues, but they will have a role. Officers are required to consider the likelihood of non-compliance while carrying out their regulatory work but perhaps better recognition should be given to those businesses who can demonstrate sustained compliance and are able to effectively control food safety hazards. There is the potential for this to be evidenced through third party assurance schemes however as discussed other regulators (e.g. Care Quality Commission) are yet to solve the issue of how to overcome the differences between what it inspects compared to regulators which also operate in the health and social care sector.

There seems to be a need to modify the food standards scheme so that it properly reflects the latest food standards issues e.g. food authenticity. Suggestions included updating the risk factor descriptors so they are written in a way that reflects the latest evidence around food standards breaches although others felt that there was a greater need for more resource dedicated to intelligence led activities.

The conclusions and considerations presented over page are intended to inform the FSA's work with regard to the future of food hygiene and standards intervention rating schemes used in the UK.

Table 6.1: Study conclusions and consideration for next steps

Overall conclusions from qualitative and desk research	Considerations for next steps
The food hygiene intervention rating scheme	
<p>Desk research and discussion with stakeholders (LA officers, foods industry representatives, and academics) shows that the scheme does broadly reflect the relevant food hygiene risks. It is also appropriate for allowing local authorities to fulfil the Framework Agreement^{lxv} they have with the FSA.</p>	<p>Better identification of businesses which pose the greatest risk to consumers could be achieved by reconfiguring the hygiene scheme, in particular, Part 3 CIM score, so the causes of foodborne illness and / or enforcement action are given increased emphasis for example making them a risk factor in their own right.</p>
<p>There are a number of other factors considered important indicators of compliance, including accredited food safety qualification, an absence of a suitability qualified supervisor / manager, FBO ownership of food safety, characteristics of business. This research identified such factors through anecdotal evidence (e.g. views of EHOs), but also in risk rating systems used in the US, which are based on the CDC's analysis of the root causes of foodborne illnesses.</p>	<p>Specific factors covering these issues could be included in any updated hygiene intervention rating scheme, but piloting would be needed to inform decisions about the relative weighting for each.</p>
<p>Earned Recognition initiatives are used to prioritise businesses with good risk management in a number of EU member states and third countries. In England, Wales, and Northern Ireland, Earned Recognition schemes such as the Red Tractor Assurance one covers primary production, dairy and feed sectors however further roll-out was contentious, with officers generally against further emphasis on third party assurance schemes, while industry stakeholders are generally much more supportive of this approach.</p>	<p>The FSA may wish to carry out further research to examine the impacts of potential changes to the hygiene scheme to better recognise sustained compliance and well-managed establishments. The main potential changes identified through this research are: removing Part 1 C: consumers at risk; removing CIM factor additional 20 score; and including a subtractive score in the CIM factor for sustained compliance.</p>
<p>There was appetite for having more detailed and prescribed descriptors within the scheme, while still allowing scope for professional judgement. For example, some officers suggested a specified time period for assessing history of compliance, while there was also support for splitting CIM into three components: historical compliance, likelihood of future compliance, and food safety management system. This would reduce the level of inconsistent scoring and help officers better communicate their requirements.</p>	<p>Local authorities generally suggested that FSA should consider incorporating the relevant aspects of the Brand Standard into the hygiene scheme. This would be included as supplementary guidance rather than in the details of descriptors within the rating scheme itself.</p>

The food standards intervention rating scheme	
There is strong recognition of an increased focus on food standards caused by the effects of globalisation, the horse meat scandal, evolving consumer preferences, and changes to legislative requirements governing food labelling. However, LA officers we spoke to felt limited in their ability to identify adulterated, contaminated, and substituted food. As such, food hygiene is likely to remain a relative priority at a local level in the longer term.	The FSA should consider taking a more explicit role in leading on developing an updated approach to food standards nationally. This will involve more clearly setting out the role of local authorities in an increasingly complex food environment, recognising the limited resources and expertise they have to monitor food standards and detect certain types of regulatory breaches.
Increasingly LAs see the food standards intervention scheme as not fit for purpose. It is argued that compliance diverts reduced resources away from intelligence led work, and the risk assessment methodology often creates a homogenous group of establishments, which does not reflect reality. As a result, LAs are increasingly undertaking fewer inspections in accordance with the scheme.	The FSA may wish to consider introducing a number of changes including extending the intervention frequencies, and increasing the weighting of the CIM factors in order to better differentiate between businesses.
Intervention frequency	
The rapid literature review (full report available in the separately published appendix.) found no causal link between intervention frequency and an increase in compliance. However, there is evidence to support better standards through a frequency higher than every 6 months (see p.21 of this report for brief discussion on the optimum intervention frequency). In practice, a number of authorities already visit their "high-risk / non-compliers" more often than twice a year, due to planned inspections, follow-up visits to verify remedial action has been carried out, and / or to satisfy a request for an FHRS re-rating.	As noted above, more recognition of sustained compliance and good risk management will deliver extra time spent on the worst businesses while allowing officers to carry out more of their planned inspections to lower rated establishments.
Officers described having to adopt prioritisation strategies for their resources. This means that for lower risk establishments prescribed intervention frequencies often do not happen in accordance with Section 5.6 of the Code of Practice. Although this further confirms shortcomings with the current system, it also confirms that establishments with the greatest risks are being prioritised.	FSA should consider the relative importance of the 28-day target vs. ongoing inspections of existing businesses, as local authorities are finding delivering both a challenge, particularly in the context of FHRS re-visits. It should also consider whether alternative risk rating approaches are possible for some new businesses without an officer being required to carry out a visit.

<p>Discussions with local authorities and representatives of the UK food industry highlighted that some business assigned an A or B risk rating and are potentially high risk due the nature of their operations are possibly seen too frequently, despite the fact they have strong risk controls in place.</p>	<p>A sector specific approach with a modifier for compliance would help target resources using a more refined approach to identifying non-compliant businesses. The results could still inform the FHRS although some alteration would be required. However, implementing this model in the UK would entail a complete restructuring of the existing risk rating system, re-training officers, and updating of IT systems, which will have resources implications for FSA and local authorities.</p>
<p>Next steps</p>	
<p>Next steps</p> <p>This research has provided an evidence base which the FSA can draw on to inform its on-going work to modernise the hygiene and standards intervention rating schemes. However, the potential changes described were often contentious and published evidence typically limited. As such, the potential changes will need further work to better understand their impacts prior to any being introduced.</p>	<p>We recommend designing pilot approaches to test the main changes suggested by the evidence gathered during this research. This will likely involve small-scale pilots in areas with different characteristics, and could be assessed using quasi-experimental methods. It will also be important to consider the time, resource, and practical barriers and enablers.</p>

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About Ipsos MORI's Social Research Institute

The Social Research Institute works closely with national governments, local public services and the not-for-profit sector. Its c.200 research staff focus on public service and policy issues. Each has expertise in a particular part of the public sector, ensuring we have a detailed understanding of specific sectors and policy challenges. This, combined with our methodological and communications expertise, helps ensure that our research makes a difference for decision makers and communities.

7 End notes

ⁱ Australia (Glen Eira City), 2. Canada (Ontario, Toronto); 3. Latvia, 4. Luxembourg, 5. New Zealand, 6. Norway, 7. Sweden 8.USA (the City of Berkeley, California), 9. USA, (Sacramento, California).

ⁱⁱ Glen Eira City Council in Australia has a rating scheme which had a stringent set of criteria: have an overall risk rating of low; have a food safety compliance score between 90 and 100 per cent; operate in accordance with a food safety programme established for the business; have a nominated food safety supervisor, who has met the required food safety training and food safety competency standards requirements; pass the Council's food safety questionnaire; not receive any unsatisfactory food sampling results in the current and previous registration period; not receive any justified complaints in the current and previous registration period; have no serious food safety risks identified during the inspection; and have no unaddressed items from the previous year's inspection.

ⁱⁱⁱ <https://www.fda.gov/downloads/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/UCM374510.pdf>

^{iv} Category A represents the highest risk and is inspected at this frequency if it remains a Cat A although this can be even higher if enforcement re-visits are included.

^v There is an absence of comparative research, which would provide key information around the impact of having lower intervention frequencies.

^{vi} Such issues were less pertinent where the regulator was able to charge for each verification check, as opposed to only the re-inspection.

^{vii} Article 3 of Regulation (EC) no 882/2004

^{viii} Vulnerable risk groups are those that include people likely to be more susceptible to the effects of poor food hygiene such as those who are under 5 or over 65, people who are sick or immuno-compromised.

^{ix} <http://www.food.gov.uk/enforcement/enforcework/foodlawcop/>

^x <http://www.food.gov.uk/enforcement/enforcework/compliance/>

^{xi} [https://www.food.gov.uk/sites/default/files/FSA%20strategy%20document%202015-2020 April%202015 interactive%20\(2\).pdf](https://www.food.gov.uk/sites/default/files/FSA%20strategy%20document%202015-2020%20April%202015%20interactive%20(2).pdf)

^{xii} This was a relatively small component of the research when seen in the context of the amount of qualitative work which followed. There was neither the resource nor the time available to undertake a systematic evidence review of food regulation outside of the UK, rather the desk research should be seen as a preliminary look at different risk rating systems. The desk research, including details of the methodological approach is found in the appendix of this report.

^{xiii} Croatia was excluded because it has not yet published a country profile.

^{xiv} A third country is the term used by the European Commission to define any country of the world that is not one of the 28 EU (European Union) member States and EEA-EFTA (European Economic Area - European Free Trade Association) states (Iceland, Liechtenstein, Norway).

^{xv} Australia (Glen Eira City), 2. Canada (Ontario, Toronto); 3. Latvia, 4. Luxembourg, 5. New Zealand, 6. Norway, 7. Sweden 8.USA (the City of Berkeley, California), 9. USA, (Sacramento, California).

^{xvi} Approximately half of all attendees were lead officers, with most of the others a mix of senior environmental health officers and environmental health officers. At some workshops there was also food standards officers and trading standards officers.

^{xvii} These were City of Berkeley, California, USA; City of Sacramento, USA; City of Toronto, Ontario, Canada; Latvia; Luxembourg; New Zealand.

^{xviii} This audience includes officers who work in the area of environmental health, food standards and trading standards.

^{xix} There may be a degree of self-selection bias in our sampling and recruitment approach. The decision to participate in the study may reflect some inherent bias in the characteristics or traits of the participants.

^{xx} Rapid Evidence review is a process that is faster and less rigorous than a full systematic review but more rigorous than ad hoc searching, it uses targeted literature searches to produce a report in a few days or a few weeks.

^{xxi} A separate reports contains all the findings from the desk research stage; it also contains information about how the research was carried out, what sources were used and what conclusions are derived from this task.

^{xxii} There are eight risk factors overall including: type of food and method of handling; method of processing; consumers at risk; level of current compliance in terms of hygiene and safety; confidence in management and control procedures;

^{xxiii} HACCP is a system which a Food Business Operator (FBO) (excluding farmers and growers) is required to have in place to implement and maintain hygiene procedures by identifying food safety hazards and ensuring they are controlled for.

^{xxiv} This is currently not an EU requirement

^{xxv} The food protection category included temperature controls, cross contamination and food storage matters.

^{xxvi} Accredited food safety training is not a legal requirement within Regulation (EC) No. 852/2004.

^{xxvii} The actual frequency for any category was not given in the country profile

^{xxviii} This approach is how the National Trading Standards Board systems works for standards and is very similar to the approach used to risk assess primary producers.

^{xxix} NZFSA (2006) Food Sector Ranking and Prioritisation Models

http://www.foodsafety.govt.nz/elibrary/industry/Food_Sector-Sets_Nzfsa.pdf

^{xxx} Category A represents the highest risk and is inspected at this frequency if it remains a Cat A although this can be even higher if enforcement re-visits are included?

^{xxxi} There is an absence of comparative research, which would provide key information around the impact of having lower intervention frequencies.

^{xxxii} Danish Risk rating

http://www.foedevarestyrelsen.dk/english/Inspection/Inspection_of_food_establishments/Pages/default.aspx

^{xxxiii} <http://webarchive.nationalarchives.gov.uk/20150624093026/http://www.food.gov.uk/enforcement/monitoring/horse-meat/horse-meat-consumer-advice>

^{xxxiv} Bute (phenylbutazone) can cause a potentially fatal blood disorder in humans called aplastic anaemia, in which the bone marrow fails to produce enough blood cells. Because it is not possible to say what triggers the disorder, it is not possible to identify a safe level of residue in meat.

^{xxxv} 1. Australia Glen Eira City), 2. Canada (Ontario, Toronto); 3. Latvia; 4. Luxembourg, 5. New Zealand, 6. Norway, 7. Sweden 8.USA (the City of Berkeley, California), 9. USA, (Sacramento, California,

^{xxxvi} Defined as the elderly, young children and those who are immunosuppressed.

xxxvii The CDC identified these factors following analysis of investigated food illness and outbreak data collated across the US.

xxxviii Modified atmosphere packaging (MAP) is a way of extending the shelf life of fresh food products. The technology substitutes the atmospheric air inside a package with a protective gas mix. The gas in the package helps ensure that the product will stay fresh for as long as possible. A wide variety of products are gas flushed such as fresh and processed meat, cheese, milk powder, fresh pasta, fruit and veg, ready meals, fresh poultry and fish and seafood.

xxxix A vitamised diet is a diet in which all food is smooth and has an even consistency.

xl See reference in the FDA's Food Code

<https://www.fda.gov/downloads/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/UCM374510.pdf>

xli

<http://www.fda.gov/downloads/Food/FoodSafety/RetailFoodProtection/FoodborneIllnessandRiskFactorReduction/RetailFoodRiskFactorStudies/UCM224682.pdf>

xlii Such issues were less pertinent where the regulator was able to charge for each verification check, as opposed to only the re-inspection.

xliii Where foods are prepared/cooked in the facility kitchen and then delivered to a function off site for further processing, including hot and cold holding, are shown to be at higher risk of being implicated in food-borne illness.

xliv Glen Eira City Council in Australis has a rating scheme which had a stringent set of criteria: have an overall risk rating of low; have a food safety compliance score between 90 and 100 per cent; operate in accordance with a food safety programme established for the business; have a nominated food safety supervisor, who has met the required food safety training and food safety competency standards requirements; pass the Council's food safety questionnaire; not receive any unsatisfactory food sampling results in the current and previous registration period; not receive any justified complaints in the current and previous registration period; have no serious food safety risks identified during the inspection; and have no unaddressed items from the previous year's inspection.

xlv <https://www.fda.gov/downloads/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/UCM374510.pdf>

xlvi The long lead time was necessary to first have a consultation on the implications of adding a third risk module then once its inclusion was agreed time was needed to train inspectors how the model should be used and how it should be combined with the other risk modules. Additional time was required to update the different IT systems across each local authority to ensure their programmes could accommodate the change. The risk module finally went live in 2010.

xlvii Establishment operations are assessed against the following criteria: If the process includes a critical step for inactivation of microorganisms; if the product is ready-to-eat; if there is a risk of contamination by microorganisms (cross-contamination or other contamination); if the conditions support the growth of microorganisms; if there is a risk of mixing up ingredients and adding ingredients that may pose a health hazard.

xlviii For example, the number of servings/portions, or number of consumers per day

xliv Establishments producing food mainly for consumption by persons belonging to vulnerable groups of consumers, generate extra risk score points. Vulnerable consumer groups are: Children below the age of five;

people with impaired immune systems (such as hospital patients, elderly people living in nursing homes, pregnant women); People with food-related allergies and/or food intolerance

ⁱ Vulnerable risk groups are those that include people likely to be more susceptible to the effects of poor food hygiene such as those who are under 5 or over 65, people who are sick or immuno-compromised.

ⁱⁱ In Scotland and Northern Ireland, Primary Authority does not apply to food safety.

ⁱⁱⁱ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/597008/pa-overview.pdf

ⁱⁱⁱⁱ FSA did some work a year or so ago showing what the impact would be of moving to a 15. FSA took a model around the different LA liaison groups and when LAs saw the impact the change would have on the number of inspections for their LA i.e. they would go up, most no longer wanted the change. This research suggests that information about this model and its implications may not have been cascaded as widely as it could have been.

^{lv} <http://www.food.gov.uk/sites/default/files/multimedia/pdfs/publication/fitnesstoworkguide09v3.pdf>

^{lv} It is important to note that officers are already asked to consider and make a judgement about FBO attitude when calculating the CIM score.

^{lvi} <https://www.food.gov.uk/sites/default/files/fsa-150105v2.pdf>

^{lvii} Ibid.

^{lviii} Since data collection was completed the FSA has issued guidance for FBOs and LAs officers on the safe production of less than thoroughly cooked beef burgers: the guidance is available at the following link:

<https://www.food.gov.uk/business-industry/guidancenotes/meatregsguid/less-than-thoroughly-cooked-beef-burgers>

^{lix} In 2012, amendments to the domestic hygiene legislation in Scotland, Wales and Northern Ireland extended the scope of RANs into premises that are registered under Regulation 852/2004: premises that do not require approval. This means that enforcing bodies (mainly local authorities, FSA and the Northern Irish Department of Agriculture and Rural Development (DARD)) everywhere except England can serve RANs in any food premises that are either registered (i.e. not approved) under Regulation 852/2004 or approved under Regulation 853/2004, for failure to comply with requirements of food hygiene regulations.

<http://webarchive.nationalarchives.gov.uk/20150624093026/http://www.food.gov.uk/news-updates/news/2012/5055/ran>

^{lx} Article 3 of Regulation (EC) no 882/2004

^{lxi} Food Business Operators have a number of rights under FHRS, of which one is the right to request a re-rating following corrective action taken.

^{lxii} According to the FSA, "low-risk" establishments should be subject to an alternative enforcement strategy or intervention, at least once during any five-year period.

^{lxiii} An approach whereby newly opened establishments are assigned a risk rating following a telephone conversation between an officer and an FBO

^{lxiv} By this we meant as part of a programme of inspections in accordance with the intervention rating scheme, rather than ad hoc visits which may have been triggered by intelligence.

^{lxv} The Framework Agreement sets out what the Food Standards Agency expects from local authorities in their delivery of official controls on feed and food law. The Agreement sets out the planning and delivery requirements of feed and food official controls, based on the existing statutory Codes of Practice. Further information on this can be found here: <https://www.food.gov.uk/enforcement/enforcework/frameagree>

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