Evaluating FSA Guidance on Cross-Contamination of *E. coli* O157

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Contents

Abbreviations

BS   British Standards
EO   Enforcement Officer
FB   Food business
FHDP   Food Hygiene Delivery Programme
FHRS   Food Hygiene Rating Scheme
FSA   Food Standards Agency
HACCP   Hazard Analysis and Critical Control Point
HEPN   Hygiene Emergency Prohibition Notice
HIN   Hygiene Improvement Notice
LA   Local Authority
RTE   Ready to eat
SFBB   Safer Food, Better Business

Glossary

Enforcement Officer   An officer who is authorised by a local authority to act on their behalf in relation to the enforcement of food safety legislation.

CookSafe   A food safety management system that has been developed by the FSA to help businesses comply with food hygiene regulations.

FHRS   The FHRS helps consumers choose where to eat out or shop for food by giving them information about the hygiene standards in restaurants, cafés, takeaways, hotels and food shops. The scheme also encourages businesses to improve hygiene standards. The overarching aim is to reduce the incidence of foodborne illness. A similar scheme, the Food Hygiene Information Scheme, operates in Scotland.

HACCP   Hazard Analysis and Critical Control Point. An internationally recognised food safety management system that identifies, evaluates, and controls hazards that are significant for food safety. European food law requires every food business (except primary producers e.g. a farmer or fisherman) to implement a food safety management system based on HACCP principles.

Hygiene Emergency Prohibition Notice   Hygiene Emergency Prohibition Notices enable authorised officers to impose an immediate appropriate prohibition on a food business, including closure, where there is imminent risk of injury to health. They are confirmed through a court by means of a Hygiene Emergency Prohibition Order.

Hygiene Improvement Notice   Hygiene Improvement Notices enable authorised officers to issue notices requiring specified corrective action to be undertaken by food businesses, but allow at least 14 days for them to do so. If they do not do this they are guilty of an offence.

Safe Catering   A food safety management system that has been developed by the FSA to help businesses comply with food hygiene regulations.

Safer food, better business (SFBB)   A food safety management system that has been developed by the FSA to help businesses comply with food hygiene regulations.

Executive Summary

1. Introduction
Food safety and protecting the public against food borne illness remain a key priority for public health policy in the UK. The Food Standards Agency (FSA) is an independent government department responsible for food safety and hygiene across the UK. It works with businesses to help them produce safe food, and with local authorities to enforce food safety regulations. In 2005 an outbreak of *E. coli* O157 in Wales led to a public inquiry which culminated in the establishment, in 2010, of the Food Hygiene Delivery Programme (FHDP). The FHDP is the means by which the Agency aims to minimise the potential for a further outbreak of this kind to occur in the UK and, more generally, to contribute to a reduction in the number of cases of foodborne disease. One strand of FHDP has focused on developing guidance to help food businesses and local authorities control the risk of cross-contamination by *E. coli* O157. Local Authority Enforcement Officers have been involved in disseminating this guidance.

2. Aims and objectives
The new guidance on the control of cross-contamination of E. coli O157 was introduced in February 2011. The key measures the guidance sought to address were:
- Separation of equipment and staff involved in handling raw food from staff that handle ready-to-eat food (RTE)
- Cleaning and disinfection
- Personal hygiene and handling practices
- Management of controls (documenting procedures, record keeping, training and supervision)

In 2012 the Policy Studies Institute was commissioned to evaluate the dissemination of the guidance and assess: the extent of awareness of the guidance; change in awareness of risks; views on how comprehensible the guidance is; challenges associated with implementation; the scale and range of changes introduced; the costs incurred by food businesses following changes to practices or equipment; issues associated with inspections and legal processes.

3. Methodology
In order to meet the aims of the study, three phases of data collection were conducted using a combination of quantitative and qualitative techniques: Research was conducted across the UK:
- Scoping interviews with 7 industry representatives and 15 Enforcement Officers (EOs)
- Surveys of 150 Enforcement Officers and 2051 food businesses

- Follow-up interviews with 17 EOs, 24 food businesses and 11 large food chains

4. Findings

4.1 Dissemination and awareness of guidance

Guidance implementation is ongoing with a rolling programme of inspection visits underway. High risk businesses were prioritised all countries across the UK with detailed dissemination, inspections and active support more recently being extended to non priority businesses. As a result of this staggered dissemination process, by March 2012 half the surveyed EOs reported that either all or the majority of food businesses have fully implemented the guidance.

Reflecting the staggered approach to implementation, there remains scope to expand awareness of the guidance in general. A little over half the food businesses sampled were aware of the new guidance[1], although 80 per cent of butchers were aware, in keeping with the common practice of prioritising these businesses. Levels of awareness were lowest in Wales (49 per cent), among delis (47 per cent) and caterers[2] (49 per cent) and in businesses where English was not the first language of the owner/manager (43 per cent). Levels of awareness were highest among butchers (80 per cent), among businesses in Scotland (63 per cent) and among larger businesses with ten or more staff (61 per cent).

Among businesses aware of the guidance in general, the majority (85 per cent) were also aware of at least one of the guidance documents – primarily the LA Factsheets (57 per cent). Despite widespread awareness and receipt of the documentation, many food businesses had not read them in full. These findings may explain, in part, some confusion and uncertainties raised by food businesses in how best to implement the guidance.

The most common methods used by EOs for disseminating the Guidance documents were to post materials and then provide more detailed clarification and support during routine face to face inspection visits. As the process of rolling

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[1] The level of awareness of the *E.coli* guidance is not dissimilar from awareness of other guidance in the years following initial introduction. For example, with reference to FSA allergens guidance, two years after the guidance was issued just over a half of the food manufacturers (53%) were aware of either the full guidance or the leaflet. 48% were aware of the full guidance, while 22% were aware of the leaflet (with some aware of both). Awareness was more widespread the larger the business. See: http://www.food.gov.uk/multimedia/pdfs/publication/allergenmanage0409.pdf)

[2] Within the food business survey, businesses were identified according to their standard industrial classification (SIC) sector (see technical appendix, annex 2); where caterers are defined as contract caterers. Examples include providing meals for airlines or catering for events.

inspections continues, more widespread awareness of the guidance and knowledge of the changes businesses may need to undertake can be expected.

4.2   Understanding guidance

Understanding of the guidance was not a problem among EOs - two thirds described the full guidance as easy or very easy to understand. The guidance therefore appears to be sufficiently well written and pitched at the right level for their purposes. A majority of EOs also found the documentation useful in helping businesses to clean and separate effectively.

Two thirds of food businesses (67 per cent) described the full guidance as 'easy' or 'very easy' to understand. The most readily understood was the DVD, with 90 per cent of all food businesses acknowledging it was easy, followed by the LA Factsheets (79 per cent). A further indication of how easy food businesses find the guidance to understand is whether, having read the documentation, they solicit further information, advice or clarification from an additional source. One fifth of food businesses (21 per cent) sought further advice in relation to the guidance with butchers among those most likely to do so (31 per cent).

Most surveyed food businesses suggested that no improvements were necessary to the documentation. On the whole, therefore, the documents would seem to be of sufficient detail, well written, not too complex and in a format that is well received. Some suggestions for improvement did arise, however, both from food businesses and EOs, and these are discussed below.

4.3   Scale and range of change

While implementation may not yet be complete, there is evidence of widespread change among food businesses in relation to: separation, complex equipment (most notably among butchers), cleaning, personal hygiene and staff training routines. Overall, a little under one third of businesses have introduced change. The incidence of change was highest among butchers, among businesses in Northern Ireland and in businesses where the owner/ manager did not speak English as a first language.

Nearly two fifths of food businesses have changed the way they train their staff as a consequence of the guidance. Around one in ten (9 per cent) businesses have also changed the products they buy and sell - the four most common changes were to: use vetted, nominated or recommended suppliers; avoid using certain ingredients and selling certain products; buy in pre-portioned or packed cooked meats; and buy in pre-packed cheeses. A further important development is that around half the food businesses agreed that their awareness of the risks of cross contamination has been enhanced by the guidance materials.

Among food businesses which have not introduced any changes, nearly one in ten plan to make changes at some point in the future, while the remainder have no intention of introducing change, primarily because they already meet guidance requirements in full.

4.4   Challenges, costs and benefits associated with implementation

Challenges

A range of barriers to the full implementation of change were highlighted by businesses, these included:

- Problems with cost of equipment or items such as disposable aprons
- Impact of changed product lines on profits
- Physical space limitations and separate preparation areas for raw and cooked foods
- Separate storage areas for raw and cooked in small areas
- Identifying approved disinfectants

According to EOs, small businesses in all sectors were most likely to have experienced problems whether due to cost, space, understanding the guidance or for other reasons. Butchers and caterers (i.e., restaurants, hotels, pubs and contract caterers) were also identified as businesses more likely to have experienced challenges compared with other sectors.

Costs

Businesses incurred a range of costs relating to time, training and finance:

- Time costs included one off familiarisation - less than two hours for most businesses.
- Time needed to implement change was more considerable and differed by business type. For around half the businesses (53 per cent) the time commitment was one day or less.
- Training time increased for many businesses. One fifth now spend more time training their staff, on average an additional three hours.
- Among businesses which had implemented changes, 34 per cent had incurred financial costs as a consequence. The average cost was £802. These figures are indicative however, as they are based on estimates provided by respondents.
- Changes in product lines were also associated with costs for some businesses. In order to implement guidance recommendations, some businesses stopped buying and selling raw meat, fruit, vegetables or salad *and* RTE products rather than introducing a range of other changes to their processes and practices.

Benefits

While many businesses have faced a range of challenges, including financial and time costs when implementing change, virtually all businesses also acknowledged benefits associated with change, including: reduced health risks, staff having a clearer idea of their responsibilities and good practice, systems running more smoothly, improved Food Hygiene Rating Scheme scores, customer satisfaction and peace of mind.

4.5 Inspections and legal processes

The guidance has led to a number of changes in the inspection process, in particular: around half of EOs now ensure that food businesses are aware of the new guidance, around one third of EOs have made changes to the level of detail of information provided to food businesses, around one fifth conduct longer visits (typically 20-30 minutes longer) and nearly one fifth of EOs have changed their approach during the visit and use new or different pro-formas, checklists or aide memoirs.

One issue raised by large business chain managers, however, was variation in local authority approaches to implementing the guidance. Interpretative differences among EOs were viewed as a problem and resulted in confusion across business sites. The issue of inconsistent interpretation by EOs was a concern as it hindered the standardised application of food safety procedures across all food business outlets.

Actions

EOs across all countries favoured an informal approach initially when a food safety risk is observed. A staged process of overseeing implementation that aims to achieve voluntary agreement is therefore common. An initial advisory visit was typically used to discuss the guidance, identify potential hazards and areas for change. For some food businesses this would have been the first time they were made aware of the new guidance. Then a follow-up visit would focus on the required changes, at this point an informal written warning or letter advising the business on actions required following the visit would be issued if necessary. An enforcement visit would then follow but an informal notification was usually sufficient to enact changes.

In addition to the informal actions taken, formal responses to inadequate controls have been considered by somewhat over half the EOs surveyed. Where a formal approach has been considered, this tends to arise in response to the context of the food business, outcomes from previous inspections and the seriousness of the observed risk. A key barrier to the use of formal actions in relation to the E. Coli

guidance, was perceived enforceability. The application of the new guidance in a court of law was identified as an issue - concerns about no statutory provision or legal support for enforcement of the new guidance were voiced among EOs in all countries, although there was evidence that formal action had been taken in relation to the Guidance.

5. Conclusions and Recommendations

Dissemination and implementation of the *E. coli* O157 guidance is well underway. Evidence suggests widespread changes have been implemented among food businesses, the guidance is well understood on the whole and where challenges have arisen, EOs have actively supported businesses and suggested a range of solutions. A partnership approach has been favoured.

There remains scope to increase awareness of the guidance further and to encourage food businesses to read/watch the guidance materials in greater detail. Movement in this direction will continue. EOs have generally prioritised high risk businesses, including butchers, and the process of rolling inspection visits will continue to improve levels of awareness and implementation of the guidance.

In order to optimise the impact of the guidance and provide further assistance to EOs and food businesses, a number of recommendations have emerged from the evaluation evidence in relation to:

- Increasing awareness of the guidance and associated documentation
- Improving the guidance and potential additional resources
- Enforcement: inconsistencies and enforceability

Increasing awareness of guidance and associated documentation

EOs might reconsider future dissemination approaches in light of the fact that (a) around two fifths of businesses are unaware of the guidance (b) 15 per cent of businesses aware of the guidance, were unaware of any documentation and (c) only around half the food businesses aware of any documentation had actually read the documents in full.

Improving documentation and support

Understanding of the guidance was not a problem among EOs - two thirds described the full guidance as easy or very easy to understand. A majority of EOs also found the documentation useful in helping businesses to put in place effective separation and cleaning practices. Most surveyed food businesses also suggested that no improvements were necessary to the documentation. Nevertheless, both food businesses and EOs suggested a range of changes, improvements or clarifications to the documentation, whether in terms of content, format or the need for additional resources. Recommendations on how further to improve the documentation included:

- Use of more practical examples within the guidance with reference to different work environments (cited by 23 per cent of surveyed EOs).
- Clearer language or better explanations of terminology (cited by 17 per cent of EOs).
- Keeping all materials concise (suggested by 28 per cent of food businesses in relation to the full guidance, and between 14 per cent and 17 per cent of food businesses in relation to the Factsheets and Q&A).
- Additional suggestions included the following, but these were raised by small minorities of surveyed EOs or food businesses: more visual guidance, eg. showing photos of correct and incorrect procedures using ticks and crosses; use of case studies; provision of a list of acceptable disinfectants.

Enforcement: inconsistencies and enforceability

In the qualitative research, inconsistencies between and within LAs on the interpretation and application of the guidance were commonly raised as a concern by representatives from trade organisations and large food businesses and the EOs themselves. A comprehensive programme of training for EOs is currently underway. This is likely to iron out UK wide differences of interpretation noted during the course of this study. This training should also address any uncertainties among EOs on the use of formal actions in relation to the *E.coli* O157 guidance.

1.   Introduction

1.1   Background

The Food Standards Agency (FSA) is an independent government department responsible for food safety and hygiene across the UK. It works with businesses to help them produce safe food, and with local authorities to enforce food safety regulations. Everything the FSA does reflects its vision of 'Safer food for the nation'. It aims to ensure that food produced or sold in the UK is safe to eat, consumers have the information they need to make informed choices about where and what they eat and that regulation and enforcement is risk-based and focused on improving public health.

Inquiries into E. coli O157 outbreaks in the UK

The Agency's remit came under scrutiny following the *E. coli* O157 outbreak in Wales in 2005. Following this outbreak, a public enquiry was chaired by Professor Sir Hugh Pennington and a report published in 2009[3]. The Report made 24 recommendations, which included a review of FSA guidance for enforcement officers and businesses.

Nearly a decade earlier in 1996 he had chaired an inquiry into an *E. coli* O157 outbreak in North Lanarkshire, Scotland. [4] Both the Scotland and Wales outbreaks were attributed to cross-contamination arising from poorly managed food handling practices in the commercial setting. They both resulted in the deaths of some affected individuals and in serious long-term health problems for others.

The Agency's Response

The Food Standards Agency response to the serious outbreaks of *E. coli* O157, has been the establishment of a programme of work to reduce the risk of such outbreaks occurring in the future, the Food Hygiene Delivery Programme (FHDP). The FHDP is the means by which the Agency aims to minimise the potential for a further outbreak of this kind to occur in the UK and, more generally, to contribute to a reduction in the number of cases of foodborne disease.

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[3] Pennington, H. (2009) *Public Inquiry into the September 2005 Outbreak of E. coli O157 in South Wales*.

[4] The Pennington Group (1997) *Report on the circumstances leading to the 1996 outbreak of infection with E.coli O157 in Central Scotland, the implications for food safety and the lessons to be learned*. Scottish Office.

One aspect of the FHDP was the development and dissemination of new guidance for industry and enforcement officers. The purpose of this guidance was to increase recognition of the threat that *E. coli* O157 poses to public health and the need for stringent measures during food production to control the cross-contamination risks.

The principles upon which the guidance was produced were subject to a formal public consultation in 2010. In February 2011 the Agency published the detailed guidance and an additional fact sheet summarising its content. The key measures the guidance sought to address were:

- separation of equipment and staff involved in handling raw food from staff that handle ready-to-eat food;
- cleaning and disinfection;
- personal hygiene and handling practices;
- management of controls (documenting procedures, record keeping, training and supervision).

In addition to the full guidance additional supporting materials have been produced by FSA, including: a four page factsheet which is a shorter, more concise version of the full guidance; a Q&A document to answer frequently asked questions (which is updated regularly); and a DVD highlighting key principles aimed at butchers. Training for Local Authorities has also been provided.

The Legislative framework and enforcement

There is a legal requirement on food businesses to manage food safety using Hazard Analysis and Critical Control Point (HACCP) principles, by ensuring that hazards are identified and that valid critical controls are established, implemented and verified. The Agency's guidance represents clarification on how businesses can comply with this legal requirement as it applies to cross-contamination.

The Food Standards Agency works closely with Local Authority food law enforcement officers to make sure that food law is applied throughout the food chain. It provides statutory guidance on a range of enforcement issues through the Food Law Code of Practice. The Code sets out the requirements on enforcement authorities, and helps ensure that food safety and legal requirements are maintained and monitored in a consistent manner. In instances of non-compliance or inadequate controls, except where circumstances indicate a significant risk, enforcement officers are advised to operate a graduated and educative approach, starting with advice and education and informal action, moving to more formal action where the informal action does not achieve the desired effect.

The FSA identified enforcement officers as key to disseminating the guidance to industry as part of the inspection process. A letter was sent to LAs when the guidance was launched, specifically referencing their role in disseminating the guidance and helping businesses to implement the measures outlined.

1.2   Aims and objectives

The primary aim of the study was to comprehensively evaluate the new *E. coli* O157 guidance and support materials.[5] Broad objectives include:

- assessing the extent of awareness of the guidance
- assessing change in awareness of risks
- views on how easy the guidance is to understand
- views on how effective dissemination approaches to date have been
- any challenges associated with implementing the guidance
- identification of the scale and range of changes made following introduction of the new guidance
- identification of costs incurred by food businesses following changes to practices or equipment

Research objectives included exploration of a range of issues from the perspectives of both food businesses and enforcement officers. These are differentiated below.

Food businesses specific issues:
- Awareness of the risks relating to *E.coli* O157 and cross-contamination and whether businesses consider there to have been any change in their awareness as a result of the guidance
- Awareness of the guidance and if so, how became aware e.g. Local Authority (LA) visit, trade organisation
- Ease of understanding of the full guidance and/or factsheet, Q&A or other LA/industry guidance developed using the full guidance as the source document
- Ease of understanding of the DVD and its usefulness in demonstrating key principles
- Practicality of the guidance, how easy or difficult has it been to implement
- The areas of the guidance which businesses are experiencing most difficulty in implementing
- Any suggestions to improve the understanding and implementation of the guidance.

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[5] Specifically, raw meat and any raw ingredients, including vegetables, that are potential sources of E. coli O157. Ready-to-eat foods will not be cooked or reheated before being eaten and include foods such as cooked meats, sandwiches, cheese, salads and desserts.

- What changes have businesses made as a result of the guidance
- What have been the costs of these changes (including time spent implementing)
- What are the perceived benefits of these changes

Enforcement officer specific issues:
- Ease of understanding of the full guidance and/or factsheet, Q&A
- Ease of understanding of the DVD
- How was the guidance communicated to businesses e.g. letter, during an inspection
- Practicality of the guidance, how easy or difficult has it been for businesses to implement it
- What types of businesses find it most difficult to implement the guidance and in which areas do they experience problems
- Any suggestions to improve the understanding, and businesses implementation of the guidance
- What changes have been made by enforcement officers as a result of the guidance.
- Has there been any change to the time spent by enforcement officers in addressing cross-contamination issues with businesses[6]
- Issues relating to the legal implication of implementation, such as the use of Hygiene Emergency Prohibition Notices (HEPNs)[7] [8]

As a process evaluation, the research did not set out to objectively measure impacts of the guidance. Findings are based instead on reported experiences and perceptions of enforcement officers (EOs) and food businesses (FBs).

In order to meet the objectives in full, a multiple methods approach, described in the next chapter, was used.

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[6] EO perceptions only, change has not been audited as part of the study

[7] Hygiene Emergency Prohibition Notices: these enable authorised officers to impose an immediate appropriate prohibition on a food business, including closure, where there is imminent risk of injury to health. They are confirmed through a court by means of a Hygiene Emergency Prohibition Order

[8] EO perceptions only

2 Methodology

In order to meet the aims and answer the research questions set out above, the study consisted of five phases, based on a multi-methods approach using both quantitative and qualitative techniques. The research methodology was iterative. Data gathered at earlier stages informed the contours of subsequent stages of the evaluation as follows:

     A. Qualitative scoping stage
          - eliciting the views and approach of LA safety team managers
          - eliciting the views and activities of industry representatives

     B. Telephone survey of food businesses (2051 achieved)

     C. Telephone survey of enforcement officers (150 achieved)

     D. A qualitative follow-up with food businesses

     E. A qualitative follow-up with enforcement officers

A mixed methods approach was used in order to optimise the breadth and depth of data generated by the study. The depth was provided by means of follow-up qualitative interviews with enforcement officers and businesses. Breadth of information and an indication of how widespread awareness of the guidance is was provided by the surveys of businesses and enforcement officers.

A   Initial scoping studies

In February 2011, the guidance was made available via the FSA website, through industry representatives and via enforcement officers. All LAs have been asked by the FSA to take action to help bring the guidance to attention of businesses. Various means may have been deployed to achieve widespread dissemination of the guidance and factsheet. In order to build understanding of the dissemination process as well as any issues related to the implementation of the cross-contamination guidance, scoping interviews initially took place with a sample of Local Authority safety team managers and industry representatives with a dissemination role i.e. trade associations. This stage of the research informed questions for the food business operator and enforcement officer surveys. This data collection took the form of semi-structured interviews via telephone with durations of approximately 20-30 minutes. Fieldwork took place during January and February 2012, approximately 12 months after the *E.coli* O157 cross-contamination guidance was released.

Fieldwork with LA Safety Team Managers

To better understand the dissemination process for the guidance, interviews with LA safety team managers were conducted initially. This scoping stage elucidated the following:

- Communication and coordination (central to local) – how the guidance and DVD for butchers was disseminated among local food safety teams and individual enforcement officers. What information/guidance was issued to local Food Safety Teams? When was this distributed?
- Implementation monitoring – how enforcement officers were instructed to monitor awareness and implementation of the guidance (and DVD for butchers) among local food businesses – any changes to inspection visits or coverage to date in routine visits?
- Variations by country or region
- Issues arising from the dissemination of the guidance
- Issues and feedback arising from implementation of the guidance among food businesses

A total of 15 interviews were conducted. The sample was comprised of 9 English local authorities (1 in each region) and 2 local authorities each in Wales, Scotland and Northern Ireland. The respondents were team leaders or managers within the local authority food safety team. The smallest team had only 2 members of staff (including the team leader) while the largest had 10 staff.

Fieldwork with food industry representatives

Organisations representing different food business sectors have had a role in promoting awareness and in disseminating the guidance. Perspectives from a sample of representatives from trade associations and industry organisations (e.g. butchers, catering, hotel and hospitality) provided useful information on the issues surrounding implementation of the guidance on the ground. Research questions focused on:

- The organisation's role in the FSA consultation on *E. coli* guidance
- Their role in promoting awareness of the guidance/DVD among members
- Views on the guidance materials
- Feedback on guidance implementation received from their membership

A total of seven interviews were conducted. All but one of the respondents were in a management position, serving as Chief Executive, Secretary or Policy/Technical Advisers. Larger organisations had their own dedicated staff with food science backgrounds to support their members.

B   Telephone survey of food businesses

Between February and March 2012, telephone interviews with 2051 food business owner and managers were conducted across the UK by IFF Research. In terms of sector, size and country, the final sample was broken down as follows (Table 1.1):

Table 1.1: Final Survey Sample Characteristics

	Achieved
Sector	
Food retail stores (non specialist) (1)	63
Bakers	124
Butchers	419
Hotels	200
Restaurants	540
Pubs and Bars	344
Catering (2)	208
Delis and other specialist food retail	153
	2051
Number of employees	
1-4	1520
5-9	477
10+	54
	2051
Country	
England	1482
N. Ireland	169
Scotland	232
Wales	168
	2051

Notes: (1): These include, for example, corner shops, but exclude the top five supermarkets
(2): These are contract caterers

The survey was used to (a) ascertain levels of awareness of the new guidance and (b) among those aware, to establish views of the guidance and any changes in behaviour or new systems implemented due to the guidance. Businesses were in scope if they prepared or sold raw meat and/or fruit or vegetables which had not already been washed and labelled as ready to eat *and* ready-to-eat foods handled unwrapped and/or prepared on site. For further details about the survey and how it was conducted please see technical appendix, annex 2.

Of the 2051 initial survey respondents, 1330 were aware of the guidance and went on the complete the full 15 minute survey which asked a wide range of questions relating to the guidance (see technical appendix, annex 3). The 721 businesses which were in scope but unaware of the guidance, were asked a few questions relating to cross-contamination practices (responses to which are presented in section 3.3) before closing the interview. The size, sector and country distribution of businesses which completed the full survey is presented below in Table 1.2.

Table 1.2: Survey Sample Characteristics of those aware of the guidance

	Weighted %	Unweighted %	Total
Sector			
Food retail stores (non specialist) (1)	13	3	44
Bakers	2	6	77
Butchers	9	25	339
Hotels	7	10	127
Restaurants	44	28	370
Pubs and Bars	18	16	210
Catering (2)	6	8	105
Delis and other specialist food retail	2	4	58
Number of employees			
1-4	33	36	484
5-9	29	32	420
10+	39	32	426
Country			
England	82	71	948
N. Ireland	3	9	122
Scotland	11	12	154
Wales	4	8	106
Total			**1330**

Notes: (1):These include, for example, corner shops, but exclude the top five supermarkets. (2): These are contract caterers

Prior to the full survey, 30 pilot interviews were conducted with businesses in order to fine-tune the flow and wording of the questionnaire. As a result of the findings from the pilot the subsector 'other food services' was excluded from the sample profile because the sites interviewed within this sector did not handle raw and ready-to-eat foods. A more detailed discussion of the survey, including weights applied to the data, is presented in technical appendix, annex 2.

C   Telephone survey of enforcement officers

Between February and March 2012, 20 minute telephone interviews with LA food safety team managers were conducted across the UK by IFF Research. The final sample was broken down as follows:

Table 1.3: Final sample achieved

	Achieved
England	110
N. Ireland	16
Scotland	14
Wales	10
Total	**150**

The survey was used to explore methods of dissemination, views and use of the guidance and feedback about the guidance received by Enforcement Officers (EOs) from food businesses. 10 pilot interviews were conducted to improve the flow and wording of the questionnaire and ensure the correct interview length. For further details about the survey and how it was conducted please see technical appendix, annex 2.

D/E   Qualitative follow-up stage

To enhance understanding of implementation, including challenges posed by the guidance and how they are being resolved, qualitative research was carried out with enforcement officers and food business managers who responded to the survey and gave consent to be re-contacted. Additional interviews were conducted with managers representing large food business chains in the UK that had not participated in the food business survey. A total of 52 semi-structured telephone interviews were conducted during May 2012. Interviews were digitally recorded (with permission) and transcribed verbatim. Transcripts were thematically coded and analysed.

Telephone interviews with large food business chain managers

In order to capture perspectives and experiences from some of the major food business chain operators telephone interviews were conducted with a member of management staff who had overview of the implementation of the guidance. Eleven interviews were conducted across nine business sectors: two respondents from large grocery and restaurant chains and one respondent from each of butchers, hotels, public houses, contract catering, delicatessen and small food retail chains.

Managers were asked to provide information about guidance implementation and issues arising, including:

- Awareness, communication and dissemination of the guidance
- Changes to business practices and any associated issues
- Views on the guidance
- Suggestions for improvement

Telephone interview follow-up with enforcement officers and food businesses

Follow-up with EO and food business survey respondents aimed to provide valuable context and explanatory evidence for some of the issues that emerged in the study. Survey respondents who indicated they would be willing to be re-contacted for research purposes *and* who gave permission to have their data linked to their contact details served as the EO and food business sample frames for this phase of the evaluation.

Seventeen telephone interviews were conducted with EOs: eight in England and three in each of Northern Ireland, Scotland and Wales. Enforcement officers were questioned on the following broad topic areas:

- The dissemination processes: targeting of dissemination to food businesses and confidence to enforce the guidance
- Feedback on specific content
- Enforcement processes
- Enforcement issues
- Suggestions for improvement

Twenty-four telephone interviews were conducted with food business operators. For sampling purposes, some of the food business sectors were combined and quotas were agreed in advance. The following interviews were achieved:

Food business achieved follow-up sample

Butchers	Hotels, restaurants, pubs & bars	Delis, bakers & specialist food retail	Contract catering & food retail (non specialist)
8	7	5	4

The sample of butchers was purposely drawn to include businesses from across the four countries. Larger (more than 10 staff) and smaller (1-10 staff) businesses were included across the four groups.

Food business operators were questioned on the following broad topic areas:

- Perceived usefulness of the guidance
- Feedback on specific content
- Reasons for changes to processes and products
- Suggestions for improvement

More detail on the qualitative methods is provided in the technical appendix, annex 2.

2.1   Statistical significance and reporting conventions

It should be noted that many findings, in particular in relation to country differences in EO responses, should be treated with caution due to small sample sizes. Very few EOs were interviewed in Wales, Scotland and Northern Ireland (10, 14 and 16 respectively). Consequently, apparent differences are not always statistically significant and should be interpreted therefore as indicative. In some tables, the numbers of different food business types sampled is also low. As a result, some tables contrast butchers with non butchers rather than fully disaggregating business type. A small sample size note of caution has been added to tables where appropriate throughout. A document including all tables with associated statistical significance tests is available.

Each table also indicates survey question number for easy reference to the questionnaire and source of the data - both as a footnote and in the title where necessary (with FB and EO indicating food business and enforcement officer surveys respectively). In each section, findings from the qualitative research (when relevant) are presented following discussion of the survey results. The qualitative research seeks to add depth to the survey figures, reporting on a range of views with examples and quotations from respondents. It is not intended to quantify or portray the prevalence of any one finding.

2.2   Caterers

Within the food business survey, businesses were identified according to their standard industrial classification (SIC) sector (see technical appendix, annex 2);

where caterers are defined as contract caterers. Examples include providing meals for airlines or catering for events.

The term 'caterers' is used somewhat differently by Enforcement Officers within the survey and qualitative stages of the study. In these instances, caterers include contract caterers but also restaurants, pubs and hotels i.e. those businesses which prepare food for immediate consumption rather than selling food to be taken home (such as from food retail stores and bakers).

2.3   Scoping study findings – Food industry representatives

Three sets of stakeholders took part in the evaluation and shared their views and experiences of the new guidance: trade industry representatives, food business operators that prepare both raw and ready-to-eat foods, and enforcement officers. Feedback and issues identified by food trade industry representatives and managers of food safety teams during the scoping study were explored more fully in the national surveys. However, as food trade industry stakeholders were not directly engaged in the later phases of the research, thematic findings for this group are summarised here. These comprise the perspectives of senior managers from meat trade industry organisations (UK wide and one from each of the four countries) and representatives from a training council, and a retail and hospitality association.

Views on the new guidance

There was no common view on the new guidance and some trade industry representatives were more positive than others. The representative from the hospitality industry held mainly critical views, stating that the guidance was not feasible or practical to apply within the industry, particularly for small food preparation areas. This respondent also viewed the guidance to be politically driven and a 'knee-jerk' reaction to the recent *E. coli* O157 outbreaks and the Pennington Inquiry. Another informant commented that the guidance unjustly targets butchers when cross-contamination is a risk within the wider food processing industry. Respondents identified the need to regulate risk of cross-contamination within the wider food production and distribution chain.

Among the meat industry representatives, positive views were expressed about how the new guidance generally reinforced existing standards in the meat industry on avoiding cross-contamination of pathogens. Most procedures were already followed under butcher licensing and the HACCP plan where the principles of separation are familiar. The guidance was described as 'normal practice' and 'obvious'.

There were some criticisms of the new guidance within the meat industry. Although supportive of the need for documentation on food safety procedures in relation to cross-contamination in general, there was the view that the FSA guidance on *E. coli* cross-contamination was unnecessarily prescriptive regarding additional complex equipment and British Standard chemicals, and impractical for small food businesses. An inconsistency was pointed out between the new FSA guidance prohibiting the dual use of vacuum packers and what is stated under EU regulations where dual use is permitted, provided the equipment is properly cleaned and disinfected between uses.

Issues raised by membership

Respondents mentioned a range of issues, arising from the new guidance. Reaction from their membership depended on the size of the food business, their capacity and level of support to interpret and apply the guidance, as one respondent stated,

> *'I think some [food businesses] are obviously more capable of handling it than others. In a membership as large as ours that's inevitable. Some just thought the whole thing was crazy, some struggled to deal with it.'*
>
> (Trade Industry Representative)

The representative from the hospitality industry stated that, compared to other FSA food safety initiatives, the new *E. coli* O157 guidance has created the most persistent issues for their membership.

In summary, issues raised by industry representatives during the scoping study related to i) the requirements for separation (including prohibiting the dual use of complex equipment), ii) specification of cleaning chemicals and disinfectants, iii) hygiene procedures, iv) changes to operations and products and v) added costs.

Separation
The requirement to separate raw and ready-to-eat foods in terms of preparation and storage and to avoid cross-contamination between equipment and utensils was most frequently problematic in the context of limited space. Physical separation was a major challenge in small food preparation areas. It was felt to be unclear if 'separation by time' would be permitted, where the proprietor prepares one type of food, cleans and sanitizes, then prepares another type of food.[9]

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[9] Many of the issues raised as requiring clarification are not covered by the scope of the guidance or discussed in the guidance and associated materials such as the Q&A, but as they have been raised by research respondents it is possible that the points referred to are ambiguous, not being picked up or are not understood.

As mentioned above, the prohibition of dual use vacuum packers had raised many queries within the industry. It was queried whether this practice had been fully substantiated and how the new guidance related to European regulations.

Cleaning and disinfecting
Respondents were uncertain about what commercially available chemicals for cleaning and disinfecting meet British Standards and if these are widely available. It was also noted that some food business operators do not understand the difference between a detergent, a disinfectant or a sanitizer.

Hygiene
Guidance on the cleaning of uniforms and reusable clothes was viewed to be ambiguous. The use of disposable aprons was seen as impractical and expensive.

Changes
Some butchers were reported to have made changes to their procedures and their product lines as a result of the new guidance. For example, some no longer cooked gammon on site and ordered in pre-sliced meat instead; some pre-sliced set portions of meat in advance (vacuum pack or place in a lidded container) rather than slicing when the customer was present.

Costs
Due to the new guidance, food businesses were incurring extra costs for staff training and the purchase of equipment, like colour coded tools and chopping boards. There were significant financial implications for butchers who opted to purchase expensive food processing equipment. Many butchers were struggling due to the economic recession and the requirements of the new guidance were causing additional strain on resources,

> *'At the present time butchers' shops are finding it very hard to survive with the price of beef, with the price of imports and the rest of it, and … very little time too, you know, takes a long time to organise anything outside of your own shop and trying to keep it going at the present time.'*
>
> (Trade Industry Representative)

Another common theme identified by trade industry representatives was perceived inconsistencies across enforcement authorities which added to the implementation issues. Furthermore, the timeline for full implementation and for future updates on the guidance was felt to be unclear.

These thematic issues were further explored in the *survey* and qualitative *follow-up* research, the findings for which are presented in the remainder of the report.

3   Dissemination of the guidance

In this chapter, the following dissemination issues are explored in section 3.1: the type of documentation disseminated by EOs to food businesses; the methods used for dissemination; and whether enforcement officers prioritised particular businesses.

The chapter continues, in section 3.2, by focussing on different aspects of awareness of the guidance among food businesses, looking at: awareness that new guidance has been issued; awareness of guidance materials; and familiarisation with the materials (whether they have been read). Leading on from levels of awareness, section 3.3 investigates: the extent to which enforcement officers believe food businesses have fully implemented changes consistent with guidance recommendations.

The chapter ends with section 3.4 which examines the dual use of equipment and food safety practices among food businesses which were not aware that new guidance had been issued and did not therefore participate in the full survey.

Chapter key findings

- Dissemination
    - Factsheets were the most widely disseminated materials according to EOs
    - According to both EOs and FBs, the most common method for dissemination was during a routine inspection visit
    - Butchers were prioritised for dissemination
- Awareness
    - A little over half the 2051 surveyed food businesses (56%) were aware new guidance had been issued – rising to 80% of butchers
    - Among the 1330 food businesses aware of the new guidance, 85 per cent were aware of at least one of the associated guidance documents
    - Consistent with EOs reported dissemination approach, FBs were most likely to be aware of LA and FSA Factsheets rather than the other materials
    - Although aware of the documents, many food businesses had not read them or had only read them partially
- Implementation
    - Half the surveyed EOs reported that either all or the majority of food businesses have fully implemented the guidance (although it is acknowledged that different EOs are likely to interpret "fully implemented" differently from each other).

3.1   Dissemination by enforcement officers

Among the various guidance materials that have been published by the FSA and LAs, the FSA Factsheet was the most commonly disseminated by EOs across all four countries (Table 3.1). Around three quarters of EOs (72 per cent) disseminated the Factsheet, this was followed by the full guidance, disseminated by a little over one quarter of all EOs (29 per cent), rising to 70 per cent of EOs in Wales (although this finding must be treated with caution as only 10 EOs were surveyed in Wales). Around one quarter of all EOs also distributed the Q&A document (27 per cent) and a locally produced LA Factsheet (23 per cent).

The DVD was disseminated by around half the EOs surveyed (56 per cent), with lower levels apparent in Scotland (21 per cent). Once again, a caveat accompanies the apparent difference as the base sample is low, at just 14 enforcement officers, findings should therefore be treated as indicative.

Table 3.1: Materials disseminated to food businesses (EO)

				Cell percentages	
	All	**England**	**N. Ireland**	**Scotland**	**Wales**
Factsheet	72	72	81	50	80
Full guidance	29	27	25	29	70
Q&A document	27	29	19	14	30
LA Factsheet	23	24	19	14	40
DVD	56	61	38	21	60
None	7	4	6	43	0
Base N	150	110	16	14	10

Note: multiple response option
Source: Enforcement officer survey. Q.B1
*some small base sample sizes

The most popular methods for disseminating the guidance materials were during a routine inspection visit or posting the materials, used by nearly two thirds of EOs (64 per cent and 62 per cent respectively) (Chart 3.1). Some differences by country are evident – in Northern Ireland and Wales, posting materials are notably more common than inspection visits as a method for dissemination. Scotland and Northern Ireland were also somewhat more likely than England and Wales to post a letter to food businesses informing them of the guidance and where to access it. EOs who disseminated materials during inspections visits always, with the exception of just two EOs, used other methods too.

Chart 3.1: How materials disseminated to food businesses (EO)

Horizontal bar chart with x-axis labeled "Percentages" ranging from 0 to 70.

Category	Percentage
At a training session	4
Sent leaflet	5
Emailed materials	7
Delivered personally	11
Sent letter	21
Posted materials	62
During inspection visit	64

Source: Enforcement officer survey. Q.B2
Base: 150
Note: Multiple response option

The same dissemination approach was not used for all businesses, however. Nearly half the EOs (48 per cent) indicated that they used different approaches for different types of food business. Chart 3.2 shows that Butchers were most often prioritised for dissemination purposes - by 90 per cent of EOs. Less frequently caterers, delis, food retail and small businesses with few staff[10] were prioritised (by 28 per cent, 11 per cent, 9 per cent and 13 per cent of EOs respectively). These businesses were prioritised as they were perceived as 'high risk' (by 80 per cent of EOs) and due to the equipment they use (by 20 per cent of EOs). In the *follow-up* research, EOs commonly indicated that butchers and other food businesses offering both raw and ready-to-eat products, prepared on their premises, were prioritised. There was a great deal of variation in how the new guidance was communicated, particularly to non-butcher food businesses. This ranged from posting information about the new guidance to all food businesses simultaneously (with weblinks or hard copy documents) to only making a food business aware of the new guidance during a routine inspection. Therefore, in some cases, non-butcher food businesses were being made aware of the new guidance on a rolling schedule of inspections, some of which had not taken place by the time of the research. For example, one EO from an English LA described a dissemination process where all butchers in the area were

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[10] EOs did not specify what they classified as few staff.

sent a letter introducing the new guidance along with the DVD. The guidance was discussed with food businesses during a routine inspection and the Factsheet was sent along with the inspection report to relevant food businesses that handle raw and ready-to-eat foods like caterers, sandwich shops and takeaways. These inspections were ongoing. In contrast, another EO reported that only butchers in the English LA area had received any documentation on the new guidance. Similarly, there was no uniform means for disseminating the guidance reported by EOs from Northern Ireland, Scotland and Wales.

Chart 3.2: Businesses prioritised for dissemination (EO)

Source: Enforcement officer survey. Q.B7
Base: 118 EOs who prioritise some businesses for dissemination
Note: multiple response option

3.2   Awareness of the guidance among food businesses

One measure of the effectiveness of dissemination approaches to date is the penetration of awareness within the food business community. Within this sub-section different degrees of 'awareness' are explored to establish:

a) levels of awareness among food businesses that new guidance has been issued
b) awareness of the guidance materials
c) familiarisation with the guidance materials (whether read at all, in part or in full)
d) how food businesses were introduced to the guidance

The sub-section ends with a discussion of guidance implementation which explores the extent to which enforcement officers believe food businesses have fully implemented changes consistent with the recommendations of the guidance.

a) Awareness among food businesses that new guidance has been issued

Within the population of food businesses that sell both raw and ready to eat (RTE) foods, a little over half (56 per cent)[11] were aware that new guidance relating to *E. coli* O157 cross- contamination has been issued (Chart 3.3).[12]

Rates of awareness do differ by country, with Wales exhibiting the lowest penetration rate at 49 per cent and Scotland the highest at 63 per cent. Larger businesses were a little more aware than smaller, 61 per cent of businesses with a workforce of ten or more are aware of the guidance compared with 51 per cent of businesses with 5-9 staff and 57 per cent of businesses with 1-4 staff.

Butchers were among the higher risk sectors and tended to be prioritised by enforcement officers at the dissemination stage, as a consequence their awareness levels are notably higher than average at 80 per cent. Sectors with the lowest levels of awareness include delis (47 per cent) and caterers (49 per cent).

Chains were a little more aware of the guidance (61 per cent) compared with single site establishments (54 per cent) and 'other' premises which include market stalls and mobile food outlets (55 per cent).

In businesses with an owner/manager for whom English was a first language, awareness was higher than if English was not their first language (58 per cent and 43 per cent respectively).

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[11] 56% awareness is a weighted percentage and is based on all interviews up until the point just before a change in screening was introduced at which point only businesses aware of the guidance were interviewed. See technical appendix, annex 2.
[12] The level of awareness of the *E.coli* guidance is not dissimilar from awareness of other guidance in the years following initial introduction. For example, with reference to FSA allergens guidance, two year after the guidance was issued just over a half of the food manufacturers (53%) were aware of either the full guidance or the leaflet. 48% were aware of the full guidance, while 22% were aware of the leaflet (with some aware of both). Awareness was more widespread the larger the business. See: http://www.food.gov.uk/multimedia/pdfs/publication/allergenmanage0409.pdf)

Chart 3.3: Awareness of guidance among food businesses (FB)

Category	Percentage
Delis and other specialist food retail	47
Catering	49
Pubs and Bars	52
Hotels	53
Restaurants	56
Bakers	57
Food retail stores	58
Butchers	80
1-4	57
5-9	51
10+	61
Wales	49
N. Ireland	55
England	56
Scotland	63
English not first language	43
English first language	58

Percentage

Source: Food business survey
Base: 2051. Q.A3

A multivariate model was also run as some of the findings associated with, for example, size and type may be highly correlated, therefore apparent differences according to size may be attributable to business type. Multivariate analysis is used to examine which factors are important once other characteristics are controlled. Table 3.2 (see technical appendix, annex 1) shows the results from a logistic regression of the characteristics associated with awareness of the new guidance. The table reports the odds ratio of being aware of the guidance relative to the odds for the indicated reference group. An odds ratio of 1 indicates that the odds of being aware are the same for the groups being compared. Findings indicate that any differences in awareness among all food business types are not statistically significant apart from butchers which are significantly more likely to be aware of the guidance compared with non butchers. Also businesses with an owner who speaks

English as a first language are more aware of the guidance than businesses where the owner does not speak English or speaks English as a second language. Differences by whether a chain and by country are not statistically significant.

Follow up findings – becoming aware of the guidance

Among the large food business chains interviewed at the *follow-up stage* of the study, some heard directly from the Agency – either by means of an email update, direct communication or had accessed the documents on the FSA website. Of those who had had no direct communications from the FSA, awareness was raised by an EO or through a colleague. Food business chains that outsourced their food safety training had been told about it by a trainer/consultant.

None of the large food chain participants had seen the DVD, and the respondent from the butchers chain believed that it would have been useful for them to have seen it. The few who had used the Q&A documents found the practical information and examples contained in it to be useful.

One respondent who was responsible for food safety within the business was surprised that they only found out about the guidance when initially contacted to participate in the research. It was suggested that the FSA should communicate directly with corporate headquarters instead of individual outlets or through EOs.

b) Awareness of the guidance materials

Awareness that new guidance has been issued is necessary but not sufficient to ensure widespread good practice. It is also necessary that businesses read and take on board the range of messages and examples of good practice as set out in the various guidance documents published by the FSA or LAs. Chart 3.4 highlights awareness of each of the documents and the proportion aware of any of the materials. Table 3.3 indicates levels of awareness of the various documents across the UK among those that are aware that new guidance has been issued. 15 per cent of the food businesses were not aware of any of the guidance materials. Two fifths of businesses across the UK were aware of the full FSA guidance (ranging from 41 per cent of businesses in England and Northern Ireland to 45 per cent of businesses in Scotland). Similar proportions were also aware of the shorter Factsheet. Awareness of the Q&A document was notably less widespread (21 per cent overall) as was awareness of the DVD for butchers (19 per cent). LA produced Factsheets were the most widely known with 57 per cent of businesses aware of them.
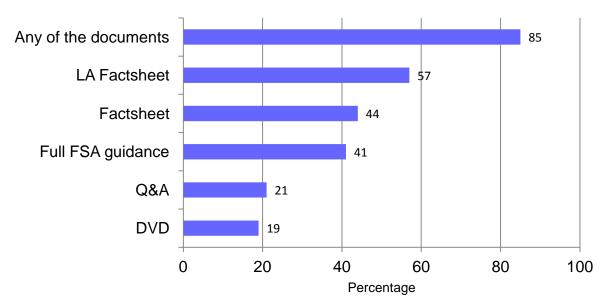
Chart 3.4: Awareness of guidance materials among food businesses (FB)

Base: 1330 - aware of the new *E. coli* guidance
Source: Food business survey. Q.A10
Note: multiple response option

With reference to type of business (Table 3.4), awareness of the full guidance was highest among pubs, bars and caterers (48 per cent and 47 per cent) and lowest among bakers (26 per cent) while the level of awareness among butchers was just a little below average at 37 per cent. There was little difference in levels of awareness of the full guidance by business size. The variance in awareness of other materials was not wide among businesses of distinct type and size, apart from in relation to the DVD which is not surprising, given that it has been designed for butchers. Overall, one fifth of businesses (19 per cent) were aware of the DVD, this figure rises to 52 per cent of butchers. There is also a relationship between awareness of the DVD and business size with awareness lowest among those with ten or more staff (9 per cent) and highest among those with fewer than five staff (29 per cent) – reflecting the fact that butchers were over-represented among the smallest businesses[13].

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[13] 36 per cent of all businesses sampled are small, with 1-4 employees. 54 per cent of sampled Butchers have 1-4 employees.

Table 3.3: Awareness of guidance materials (FB)

cell percentages

% aware of the guidance	Full Guidance	Factsheet	Q&A	DVD	LA Factsheet	Base N
England	41	44	20	19	55	948
N. Ireland	41	45	26	16	72	122
Scotland	45	40	19	16	63	154
Wales	44	42	37	30	58	106
All %	41	44	21	19	57	1330

Base: aware of the new *E.Coli* guidance

Source: Food business survey. Q.A10

Table 3.4: Awareness of guidance by food business type and size (FB)

cell percentages

% aware of the guidance	Full Guidance	Factsheet	Q&A	DVD	LA Factsheet	Base N
Food retail stores	37	44	17	19	60	44
Bakers	26	40	18	12	59	77
Butchers	37	49	19	52	70	339
Hotels	46	39	21	13	52	127
Restaurants	40	41	21	15	54	370
Pubs and Bars	48	47	24	15	56	210
Catering	47	46	29	16	60	105
Delis and other specialist food retail	40	48	24	20	60	58
1-4	42	43	25	29	63	484
5-9	43	50	20	21	54	420
10+	39	39	18	9	54	426
All %	41	44	21	19	57	1330

Source: Food business survey. Q.A10

Note: some small base sample sizes

c) Familiarisation with the guidance (whether read at all, in part or in full)

Being aware of the documents and reading their content are quite distinct as is clear from Table 3.5. Among those aware of each of the documents, one fifth had not read the full guidance (21 per cent), one in ten had not read the Factsheet (11 per cent), around one in seven had not read the Q&A or LA Factsheet (14-15 per cent) and one third of those aware of the DVD had not watched it.

Among those that had read or watched the various materials, more read it in full than just read it in part with one exception – the full FSA guidance - only one quarter of businesses read it in full while half (52 per cent) read part of it.

Table 3.5: Whether read/watched each of the documents (FB)

					cell percentages
	Read or watched in full	**Read in part**	**Not read**	**Not sure**	Base N
Full FSA guidance	27	52	21	1	546
Factsheet	54	32	11	3	593
Q&A	46	37	15	2	292
DVD	47	16	34	2	323
LA Factsheet	53	31	14	2	806

Base: aware of the *E. coli* guidance materials
Source: Food business survey. Q.A11

Follow up findings – reading the guidance

From the *follow-up research* it is worth noting that not everyone who was *aware* of the full guidance had actually received a copy – they may have received the FSA Factsheet or an LA leaflet instead. Furthermore, food businesses that were part of a chain may have received other documents or training that was issued by their head office.

The main reasons given by food businesses for not reading guidance documents they had been given were a lack of time and/or an assumption that the language used would be too technical and difficult to understand. With respect to the DVD, butchers who were aware but hadn't watched it emphasised a lack of time or a lack of facilities in the shop to watch it, meaning that they would have had to do so in their own time.

During the food business *follow-up* interviews some respondents said they had read only certain parts or glanced at guidance materials they were given. These food businesses explained that they knew that they already adhered to the guidance or felt the guidance was not relevant to their business (for example, if they didn't have complex equipment, or bought in all their meat ready prepared). One respondent said he didn't read any of the guidance documents because he relied on a food safety consultant to check the guidance thoroughly and advise him.

It was common for the large food business chains that participated in the qualitative *follow-up* research, to have established food safety procedures and processes which included information and strategies on minimising the risk of *E. coli* cross-contamination. Those with in-house specialists (such as microbiologists or specialist food advisors) did not use the guidance. Another food business had agreed their internal food safety documents with their Home Authority and considered the guidance to be redundant.

d) How food businesses were introduced to the guidance

Table 3.6 indicates how businesses initially became aware of the various materials. The most common sources of information were: from an enforcement officer during a face to face visit; by means of a letter from their LA; internally, from a Head Office; from an email or website link; or from a training course. Much smaller proportions of food businesses heard about the guidance from trade organisations, LA leaflets, other businesses, from an EO phone call or just in the post.

Table 3.6: How food businesses first heard about the guidance documents

cell percentages

	Full Guidance	Factsheet	Q&A	DVD	LA Factsheet
During an EO visit	20	20	21	20	20
Letter from the LA	17	24	19	23	36
Internally / from HO	16	14	16	6	11
Online / website/ email	12	8	10	5	4
From a training course	13	8	14	11	5
From a trade organisation meeting or newsletter	7	7	4	11	4
Leaflet from the LA	6	6	6	1	9
From another food business	5	4	3	2	2
Phone call from an EO	2	3	2	3	3
Post (unspecified)	3	1	..	2	3
From LA (unspecified)	2	5	4	6	4
From FSA (unspecified)	3	2	4	4	..
Don't know	7	7	9	8	7
Base N	412	519	235	215	689

Base: materials have been read or watched
Note: multiple response options
Source: Food business survey. Q. D1

The findings indicate that food industry trade organisations played a role in updating their membership on the new guidance to avoid risk of cross-contamination of *E. coli* O157. As reported by respondents during the qualitative research undertaken during the *scoping phase,* trade organisations had disseminated FSA documentation (either hard copy or electronic); among these the full guidance and Factsheet were the main materials distributed to members. To raise awareness, some organisations featured the new guidance in a membership circular in addition to or instead of circulating the FSA materials. The guidance was discussed at some membership meetings alongside other cross-contamination issues.

The findings relating to the full guidance presented in Table 3.6 are disaggregated by country in Table 3.6a to establish how businesses received information on the

guidance in different parts of the UK. The sample sizes are small outside England but the differences are indicative of a somewhat different approach to dissemination in Scotland and Wales compared with Northern Ireland and England and may therefore partially explain why there is some evidence of national differences in the extent of implementation (discussed in the next sub-section).

The most common source of information about the guidance in both England and Northern Ireland was during a face-to-face visit from an EO (21 per cent and 29 per cent respectively). In Wales the most common sources of information were: letters or leaflets from their LA (33 per cent) or from a trade organisation (27 per cent) but, similar to England, around one fifth (19 per cent) also received information during an EO visit. In Scotland, by contrast, the two most common sources of knowledge were: online, from a website or email (17 per cent); and from a trade organisation (13 per cent), with 11 per cent receiving information from an EO visit. Given that written materials are not always read or read in full, it is likely that face-to-face dissemination of information alongside written materials may have a greater impact on comprehension or subsequent behaviour.

Table 3.6a: How food businesses first heard about the full guidance document

			cell percentages	
	England	**N.Ireland**	**Scotland**	**Wales**
During a visit from an EO	21	29	11	19
Letter from the LA	18	19	3	33
Internally / from HO	17	10	12	4
From a training course	14	6	11	8
Online / website/ email	12	8	17	2
From a trade organisation	5	9	13	27
Leaflet from the LA	5	8	8	23
From another food business	5	3	3	4
From FSA (unspecified)	3	8	5	5
Post (unspecified)	3	0	3	0
From LA (unspecified)	2	9	3	0
Phone call from an EO	2	0	3	0
Don't know	6	11	12	8
Base N	289	36	53	34

Base: materials have been read or watched
Note: multiple response options
Source: Food business survey. Q. D1
 Note: some small base sample sizes

83 per cent of food businesses were 'satisfied' or 'very satisfied' with the way in which they received information about the guidance (55 per cent very satisfied, 28 per cent satisfied). Among those aware of the guidance, dissemination methods do not therefore appear to be an issue that require modification.

3.3   Extent of implementation

By the time of the research, approximately one year after the new guidance was issued, it would appear that implementation is still ongoing. It should be noted, however, that judgements on implementation progress were subject to EOs' interpretation and therefore these findings should be treated with caution.

Table 3.7 indicates the extent to which food businesses have fully implemented the guidance according to EOs. Only a small minority of just 12 per cent of EOs believed that all the food businesses they are responsible for have implemented the guidance in full while no EOs in Northern Ireland or Scotland indicated that all food businesses have fully implemented. However, over a third of EOs (38 per cent) reported that the majority of food businesses have fully implemented the guidance, although just 7 per cent of EOs in Scotland are of this opinion, with over half (57 per cent) suggesting, instead, that a minority have implemented in full. In Northern Ireland, one quarter of EOs interviewed suggested that no food businesses had implemented in full.

Table 3.7:   Extent of full implementation (EO)

Cell percentages

	All	England	N. Ireland	Scotland	Wales
All fully implemented	12	14	0	0	10
Majority fully implemented	38	42	31	7	40
Around half full implemented	22	24	19	7	20
Minority fully implemented	16	12	19	57	10
None have fully implemented	3	1	25	7	0
Don't know	10	8	6	21	20
Base N	150	110	16	14	10

Source: Enforcement officer survey. Q. D5

Note: some small base sample sizes

Overall, the findings suggest that there remains considerable scope for many food businesses to implement the guidance and, among those who have made some

modifications to equipment and practices, to make further changes in order to address areas of risk.

Follow-up research - implementation

As indicated in section 3.1, there was a great deal of variation found among EOs interviewed in the *follow-up research* on the approaches used to disseminate information and documents on the new guidance. EOs described strategies where food businesses were advised on the new guidance at face-to-face inspection and hard copies of materials were sent out after an inspection. EOs would then monitor for changes at a follow-up meeting. EOs that followed this staggered approach to raising awareness of the new guidance indicated that this communication was ongoing. Those who had posted guidance materials were monitoring for changes during their next round of inspection visits. These findings suggest that more time is needed for EOs to complete their schedule of awareness raising and monitoring changes following from the guidance.

As with the survey research, EOs who participated in the *follow-up* interviews were not explicitly asked about their understanding of 'full' and 'partial' implementation. Nevertheless, EOs were asked for examples to identify what types of businesses were or were not acting on the guidance and areas of the guidance (separation, no dual use of complex equipment, cleaning/disinfection, personal hygiene) where changes were or were not taking place. None of the respondents in the *follow-up* sample reported the guidance had been fully implemented across all food businesses. Instead, EOs identified risk areas and businesses where the guidance was more or less likely to be implemented.

Butchers had been prioritised and were commonly identified by EOs to have implemented changes following the new guidance. Related to this were reports that businesses (primarily butchers) had stopped using complex equipment such as vacuum packers for raw and RTE foods. Lower cost items such as separate colour coded utensils and cutting boards were also a more common area of change.

The findings were less definitive for other types of businesses and other areas of risk. EOs felt that each business needs to be assessed on a case-by-case basis; businesses were at varying degrees of implementation based on existing systems they were using before the guidance was introduced. As reported in Chapter 6, FBs faced challenges implementing the guidance. This is reflected in EOs' accounts on the progress of implementation. Due to extra resource requirements, smaller businesses were slower to implement changes. In a similar vein, due to language difficulties, small ethnic food businesses were slow to update their systems in line

with the guidance. Other examples where implementation of changes were ongoing included:

- Separate preparation and storage areas in businesses with limited space;

- Validating whether disinfectants met the BS standard;

- Consistently managing personal hygiene in a busy kitchen environment, e.g., staff moving between raw and RTE areas, rigorous handwashing;

Sustaining the changes could also be an issue for food businesses due to staff turnover.

Regarding survey differences in the extent of full implementation noted between the different countries, data from the EO *follow-up interviews* suggest this may be due to policies within the countries regarding enforcement of the new guidance. Some of the respondents indicated they were at an earlier stage of implementation and were awaiting further direction from management.

3.4 Cross-contamination practices among Food Businesses unaware of the new guidance

The food business survey sampled 2051 businesses, 1330 completed the full questionnaire, as discussed above in chapter 2. The remaining 721 food businesses stated that they were not aware of the new guidance relating to *E.Coli* O157 and were therefore unable to participate in the survey. Before terminating the interview they were however asked a few questions about their dual use of equipment and food safety practices[14]. This section presents those findings.

Of the food businesses unaware of the new guidance, 75 per cent had nevertheless received an inspection visit from their Local Authority since February 2011 and might therefore be expected to have had some awareness of the guidance. 52 per cent used equipment for both raw and RTE foods and Chart 3.5 shows the equipment most commonly used for these dual purposes. Utensils and chopping boards had dual use in 60 per cent of the food businesses. Lower percentages of businesses had dual use mixers (15 per cent) and slicers (13 per cent) while fewer than ten per cent used temperature probes, fridges, ovens, containers, scales or vacuum packers for dual purposes.

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[14] These questions were not asked of those who continued to the full interview
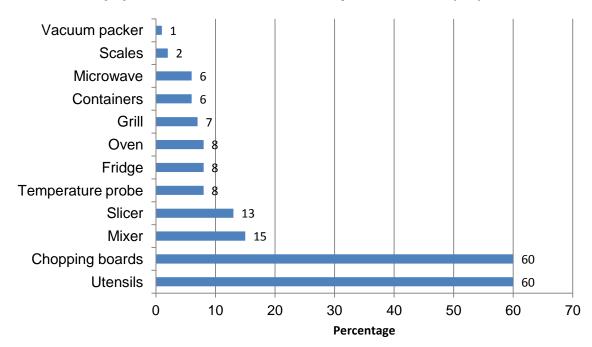
Chart 3.5: Equipment used for raw and ready-to-eat foods (FB)

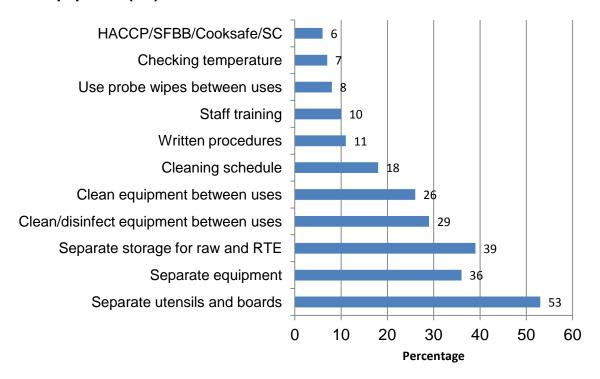| Equipment	Percentage
Vacuum packer	1
Scales	2
Microwave	6
Containers	6
Grill	7
Oven	8
Fridge	8
Temperature probe	8
Slicer	13
Mixer	15
Chopping boards	60
Utensils	60

Base: 357 - unaware of the new *E. coli* guidance and use equipment for raw and RTE foods
Source: Food business survey. Q.A5a
Note: multiple response option

Food businesses reported a fairly wide range of practices designed to prevent cross-contamination when using their dual use equipment (Chart 3.6). The most common practices included: separate utensils and boards (cited by 53 per cent of businesses); separate equipment (36 per cent); separate storage locations for raw and RTE food (39 per cent); cleaning or disinfection of equipment between uses (29 per cent); or a cleaning schedule (18 per cent). Around one in ten businesses also used a variety of other approaches to preventing cross-contamination including: written procedures; staff training; probe wipes between uses; temperature checks; or a food safety plan such as SFBB.

Chart 3.6: Controls in place to prevent cross-contamination when using dual use equipment (FB)

Control	Percentage
HACCP/SFBB/Cooksafe/SC	6
Checking temperature	7
Use probe wipes between uses	8
Staff training	10
Written procedures	11
Cleaning schedule	18
Clean equipment between uses	26
Clean/disinfect equipment between uses	29
Separate storage for raw and RTE	39
Separate equipment	36
Separate utensils and boards	53

Base: 357 - unaware of the guidance and use equipment for raw and RTE food
Note: spontaneous responses, multiple response option
Source: Food business survey, Q. A6

Businesses which used cleaning or disinfectant procedures to prevent cross-contamination were asked how they cleaned their equipment between uses. Findings are shown in Chart 3.7. A little over half (52 per cent) used a sanitiser, a little under half used separate detergents and disinfectants (47 per cent). Around one quarter (27 per cent) used a commercial dishwasher. Smaller proportions washed with water (14 per cent) or performed a two stage cleaning process (10 per cent).
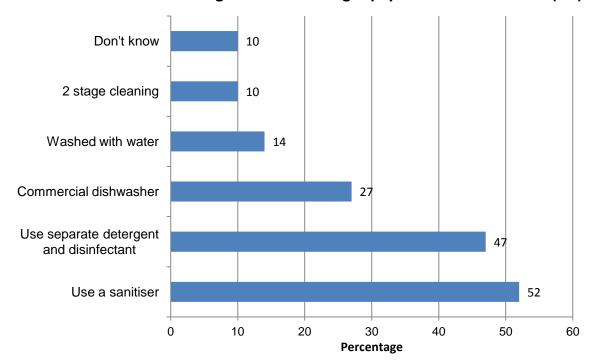
Chart 3.7: Method for cleaning and disinfecting equipment between uses (FB)

Base: 142
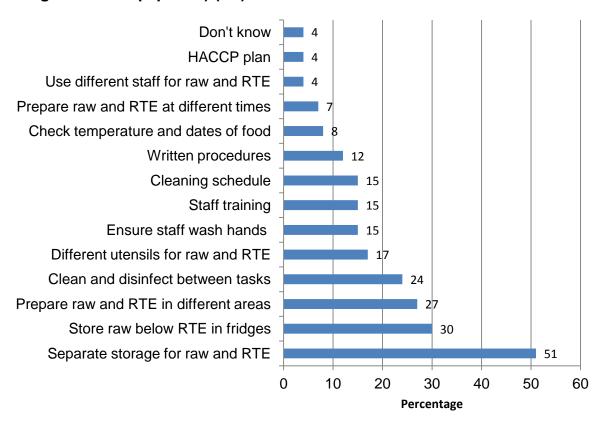Note: spontaneous responses, multiple response option
Source: Food business survey, Q. A7

Food controls used by businesses to prevent cross-contamination, other than when using dual use equipment, are presented in Chart 3.8. Half the businesses (51 per cent) used separate storage for raw and RTE foods while a little under one third (30 per cent) specifically located raw food below RTE food in their fridges. Around one quarter of businesses prepared raw and RTE food in different areas (27 per cent) and/or cleaned/disinfected between tasks (24 per cent). Somewhat under one fifth (17 per cent) used different utensils for raw and RTE food. A variety of other controls were used by 15 per cent or fewer businesses, including: hand-washing; staff training; cleaning schedules; written procedures, preparing raw and RTE at different times or using different staff.

Businesses which relied on ensuring their staff washed their hands before handling food were asked which hand drying methods were used. The vast majority (96 per cent) used paper towels and 9 per cent used air dryers.

Of the 538 businesses which had received an inspection visit since February 2011, 13 per cent had introduced controls since their last visit.

Chart 3.8: Controls in place to stop cross contamination (other than when using dual use equipment) (FB)

Control	Percentage
Don't know	4
HACCP plan	4
Use different staff for raw and RTE	4
Prepare raw and RTE at different times	7
Check temperature and dates of food	8
Written procedures	12
Cleaning schedule	15
Staff training	15
Ensure staff wash hands	15
Different utensils for raw and RTE	17
Clean and disinfect between tasks	24
Prepare raw and RTE in different areas	27
Store raw below RTE in fridges	30
Separate storage for raw and RTE	51

Base: unaware of the guidance and use equipment for raw and RTE food
Note: spontaneous responses, multiple response option
Source: Food business survey, Q. A8

4   Views of the Guidance

The focus of this chapter is upon the views of the guidance among food businesses and EOs – whether it is comprehensible and useful, how it might be improved and whether additional resources are perceived as necessary. An additional focus is on which aspects of the guidance are regarded as new ways of working for small businesses.

Chapter key findings

- Understanding the guidance
  - Around two thirds of surveyed EOs (63%) and FBs (67%) found the guidance very easy or easy to understand.

- Improving the guidance
  - The most common suggestions from surveyed EOs were to include more   practical examples (cited by 23%) or provision of clearer language or better explanations of terminology (17%).
  - The only suggestion raised by more than a handful of food businesses was to make materials more concise (suggested by 28% of food businesses in relation to the full guidance, and between 14% and 17% of food businesses   in relation to the Factsheets and Q&A).

- New ways of working
  - Two thirds (66%) of food businesses indicated that nothing in the guidance was new, in contrast to just one quarter (24%) of EOs.
  - 'No dual use of equipment' was perceived as new among 39% of surveyed EOs. Around one quarter also referred to each of the following as new: no dual use of chopping boards and utensils unless adequately disinfected; the need for disinfectants to meet BS standards; and having a designated clean area.
  - Very small percentages of between 1% and 4% of surveyed FBs described specific aspects of the guidance as new, perhaps reflecting the low proportions of FBs who had read the guidance documents in full.

- Utility of the guidance for EOs
  - The guidance is perceived as most useful to EOs in relation to cleaning and separation of raw and RTE – regarded as useful or very useful among 71% and 70% of EOs respectively.

➢ Half the EOs (53%) viewed the guidance as useful or very useful in ensuring effective handwashing.

• Additional resources which might be helpful to assist food businesses in understanding the guidance
    ➢ 38% of surveyed EOs could not think of any additional resources
    ➢ 71% of FBs did not see the need for additional resources
    ➢ 14% of EOs suggested that seminars for businesses would be a helpful addition to the range of support available to food businesses.
    ➢ A diverse range of other suggestions were raised but by small minorities of EOs or FBs

4.1 Understanding – enforcement officers

Enforcement officers were asked to rate the full guidance from 1-5 in terms of how easy it is to understand, where 1 represents 'very difficult' and 5 'very easy'. Findings are summarised in Chart 4.1, nearly two thirds of EOs (63 per cent) described it as easy or very easy to understand. A minority of less than one in ten (9 per cent) described the full guidance as difficult to understand.

Chart 4.1: How easy the full guidance is to understand for enforcement (EO)

Source: Enforcement officer survey. Q.C1
Base: 150

4.2 Understanding – food businesses

Compared with the 63 per cent of EOs, a slightly higher proportion of food businesses (67 per cent) also described the full guidance as 'easy' or 'very easy' to understand (Table 4.1). There were some differences by country, business type and business size, with the highest proportions finding the full guidance easy to understand found in Northern Ireland and England. Businesses with 1-4 or 10 plus staff were more likely to find the guidance easy than those in the middle with 5-9 staff.   Just 6 per cent of businesses described the full guidance as difficult to understand, either due to language problems or because it was described as too 'technical' or too long.

Compared with the full guidance, higher proportions of food businesses found each of the other guidance materials easy to comprehend (Table 4.1). Overall, the most readily understood was the DVD, with 90 per cent of all food businesses acknowledging it was easy, followed by the LA Factsheets (79 per cent). While Butchers were among those least likely to agree that the Factsheet and Q&A were easy to understand (71 per cent and 66 per cent respectively), they were more likely than average to agree the DVD and LA Factsheet were easy to grasp (94 per cent and 83 per cent respectively).

Table 4.1: How easy the guidance documents are to understand (FB)

cell percentages

	Full Guidance	Factsheet	Q&A	DVD	LA Factsheet
'Easy' or 'very easy'					
England	69	74	73	89	78
N. Ireland	71	64	90	91	84
Scotland	60	76	78	91	89
Wales	56	81	87	97	81
Butchers	49	71	66	94	83
Non Butchers	69	74	76	88	78
1-4	70	77	73	93	84
5-9	63	70	79	87	83
10+	69	75	75	89	70
All	67	74	75	90	79
Base N	412	519	235	215	689

Source: Food business survey. Q.C1

Breaking down the data presented in Table 4.1 further, the proportion of food businesses who found each document 'very easy' and 'easy' to understand were as follows: the full guidance (34 per cent very easy, 33 per cent easy); the Factsheet (40 per cent very easy, 34 per cent easy); the Q&A (33 per cent very easy, 42 per cent easy); the DVD (65 per cent very easy, 25 per cent easy); and the LA Factsheet (38 per cent very easy, 41 per cent easy).

A further indication of how easy food businesses find the guidance to understand is whether, having read the documentation, they solicit further information, advice or clarification from an additional source. Chart 4.2 indicates that one fifth of food businesses (21 per cent) sought further advice in relation to the guidance with butchers among those most likely to do so (31 per cent). Differences by country and business size were not evident. Chart 4.3 shows that EOs are most often approached for further clarification (by 52 per cent of food businesses), followed by senior colleagues (20 per cent) and, for one in ten, other businesses. Smaller minorities turn to industry representatives, trade organisations, the FSA and educational establishments for advice.

Chart 4.2:   Whether asked anybody for advice or clarification (FB)

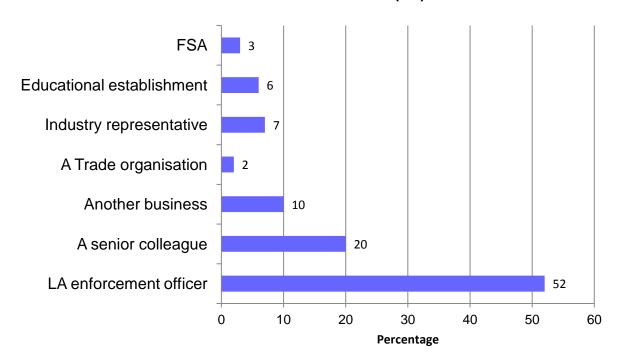Source: Food business survey.Q.D4
Base: 1330
Notes: some small bases

Chart 4.3: Source of further advice or clarification (FB)

Horizontal bar chart showing percentages:

- FSA: 3
- Educational establishment: 6
- Industry representative: 7
- A Trade organisation: 2
- Another business: 10
- A senior colleague: 20
- LA enforcement officer: 52

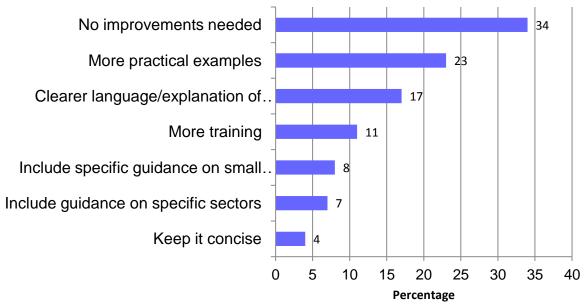X-axis: Percentage (0 to 60)

Source: Food business survey. Q.D5
Base: 297 food businesses which have sought clarification/advice

The minority of food businesses which found the materials difficult to understand were asked, during the survey, whether particular sections of the documentation were more challenging than others. All *surveyed* respondents rejected the idea that some sections were harder than others to understand. The *qualitative interviews* suggest that food businesses sought advice, usually from EOs, if there were specific instructions in the guidance that were impractical to implement in their business. They sought advice on alternative ways of ensuring the same control. One example was a butcher whose staff continually moved between serving raw and ready to eat meats; he sought advice on how to avoid cross-contamination from clothing. Another butcher sought advice on how to implement separation of raw and ready to eat foods when there was insufficient space for a separate fridge and separate changing area for staff. One respondent sought more basic advice on the principles of the guidance, i.e. what should be designated as raw and ready to eat and how separation should be implemented. Some proprietors who hired food safety consultants also sought general advice to check that the controls they were implementing were appropriate and in line with the guidance.

4.3   Scope for improvement – enforcement officer perspectives

Chart 4.4 sets out areas for improvement as suggested by *surveyed* EOs. One third stipulated that no further improvements to the guidance were necessary. Among those who suggested changes, the most common was to include more practical examples within the guidance (cited by 23 per cent of EOs). Nearly one fifth (17 per cent) suggested the guidance would benefit from clearer language or better explanations of terminology. Additional suggestions from smaller proportions of EOs included: specific guidance suitable for small businesses, inclusion of sector-specific guidance and, finally the need to keep the material concise.

Chart 4.4: Suggested improvements to promote understanding of the guidance (EO)

Suggested improvement	Percentage
No improvements needed	34
More practical examples	23
Clearer language/explanation of…	17
More training	11
Include specific guidance on small…	8
Include guidance on specific sectors	7
Keep it concise	4

Note: multiple response option Source. Enforcement officer survey. Q.C2
Base: 150

Follow up research – scope for improvement

In the qualitative *follow-up research* EOs suggested the documents be translated for food businesses with poor English language skills*,* requested languages included: Bengali, Cantonese, Mandarin, Turkish and Urdu. Very few food businesses in the *survey research*, however, indicated the need for translated materials (see Table 4.2 below). To aid understanding for food businesses, more visual guidance was requested, for example showing photos of correct and incorrect procedures as

indicated by ticks and crosses. The FSA Safer Food, Better Business pack[15] was cited as a good example of this.

As shown in Chart 4.4, around one in ten (11 per cent) thought the guidance would be improved if accompanied by more training of EOs. During the *follow-up research*, requests for FSA supplied training on the new guidance were spontaneously mentioned by EOs from all four countries. As one respondent stated,

> *'We've gone ahead and changed inspection forms and changed the way we inspect. Now the guidance has been out for a while it would be good to have some kind of regional event to see how other LAs have implemented the guidance …'*

(Enforcement Officer)

FSA delivered training was considered necessary to address inconsistencies across LAs regarding the interpretation and enforcement of the guidance as it was sometimes not clear what is good practice and what is a legal requirement. For example, an EO questioned if it is a legal requirement to have separate sinks or hands-free sinks within a business that cooks only pre-packaged raw meat. EOs noted that the promised FSA training had been delayed. Consequently, some food safety teams had proactively hired in separate training on the guidance, at their own expense, or were in the process of doing so.

Another suggestion raised during the qualitative *follow-up* research was the need to ensure linkages and consistencies among various FSA initiatives. EOs mentioned other food safety management documents that need to be updated or need to cite the new guidance, such as CookSafe, Safer food, better business. They also requested there be greater clarity about how the new *E. coli* guidance impacts on the implementation of the Food Hygiene Rating Scheme.

More clarity on the scope of food businesses to be included was also requested. One EO said their food safety team was unclear if the guidance included food businesses that received raw meat from a butcher in a sealed bag. Other identified grey areas that require greater clarity for enforcement include: separation of less complex equipment such as fridges/freezers, sinks, cash registers and weighing scales and the enforcement of separate work surfaces and commercial dishwashers. The lack of a definitive list of acceptable cleaning chemicals and disinfectants was also problematic from an enforcement perspective.

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[15] Safer food, better business, CookSafe and Safe Catering are food safety management systems that have been developed by the FSA to help businesses comply with food hygiene regulations

Finally, it was noted that the new guidance needs to evolve and be continuously reviewed and updated so that it incorporates novel foods and food preparation techniques. It was felt that updated issues of the Q&A and other guidance documents should be widely communicated.

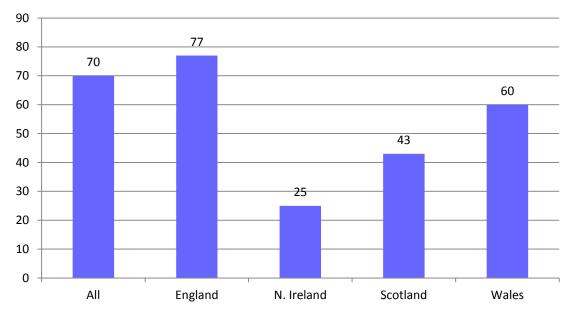**Enforcement officer time to read the guidance**

Despite the guidance being perceived as easy to understand on the whole, the length of time EOs took to become familiar with the contents of the guidance should not be underestimated. The majority of EOs (80 per cent) received the guidance by email and while nearly one fifth (17 per cent) said they were 'up to speed' with the guidance within half a day, other EOs took considerably longer than this. A further quarter (23 per cent) took 1-5 days to become acquainted with and understand the content, 15 per cent took 1-2 weeks, 8 per cent took between 2 weeks and one month while 13 per cent took over one month. These differences in duration may reflect the fact that some EOs included the time it took not only to read and understand the guidance but also to put it into practice in the field with visits to food businesses.

Enforcement officer confidence

If well written and readily comprehended, the guidance is an important tool for ensuring that EOs are confident in the field in terms of interpreting and applying the guidelines and conveying to food businesses the range and nature of changes they may need to make. Chart 4.5 shows levels of confidence among EOs with the proportion describing themselves as 'confident' or 'very confident' fairly high overall at 70 per cent (26 per cent very confident, 44 per cent confident).

In the qualitative research, some EOs also noted that the Food Hygiene Rating Scheme is helping to enforce food safety changes. For example, EOs noted that food businesses are motivated to make changes and are asking for revisits in order to improve their score. One EO described the FHRS as 'another string in our bow' to help with enforcement.

Chart 4.5: Percentage of Enforcement Officers 'confident' or 'very confident' when interpreting or applying the new guidelines

Source: Enforcement officer survey. Q.C6
Base: 150
Note: some small base sample sizes

Some differences according to country are evident, with high levels of confidence less widespread in Northern Ireland (25 per cent) and Scotland (43 per cent) compared with Wales (60 per cent) and England (77 per cent). As discussed in section 2.2, these differences can be partly explained by policies within the countries regarding enforcement of the new guidance. Respondents from Northern Ireland and Scotland who indicated they were at an earlier stage of implementation, awaiting further direction from management were likely to be less experienced with enforcing the guidance.

4.4 Scope for improvement – food business perspectives

The majority of *surveyed* food businesses found all guidance materials easy to understand, ranging from 67 per cent finding the full guidance easy to 90 per cent suggesting the DVD was 'easy' or 'very easy' to understand (Table 4.1). Food businesses were nevertheless asked how they might improve each of the materials they read or watched. Responses are shown in Table 4.2. Consistent with their perceptions of the guidance as easy to understand, the most common response in relation to each of the materials was that no improvements were necessary. On the whole, therefore, the documents would seem to be of sufficient detail, well written,

not too complex and in a format that is well received. The only suggestion raised by more than a handful of food businesses was the need to make some of the materials more concise, suggested by 28 per cent of food businesses in relation to the full guidance, and between 14 and 17 per cent of food businesses in relation to the Factsheet, the Q&A and the LA produced factsheet.

Table 4.2: How would food businesses improve the guidance documents

cell percentages

	Full Guidance	Factsheet	Q&A	DVD	LA Factsheet
No improvements necessary	54	73	77	83	67
Make it more concise	28	14	15	3	17
Provide more detail	5	2	3	4	3
Regularly updated information	3	1	0	..	2
Provide in different languages	2	2	1	3	2
Other	3	1	2	5	3
Don't know	4	6	1	1	6
Base N	412	519	235	215	689

Source: Food business survey. Q.C5

Follow up research – scope for improvement

Large food chain businesses, in follow up interviews, generally thought the guidance was easy to understand and it reinforced existing practices. These businesses reported that they reviewed their internal food safety procedure documents on an annual basis and provided training for staff, usually outlet managers who then cascaded learning to their on-site staff teams. One food chain had changed their procedures a few years earlier based on the FSA's Safer food, better business document. Respondents from the large food chains thought that the guidance could be a useful document for smaller food businesses which could not afford a food safety consultant or an in-house team of specialists. Generally the large food

businesses that took part in the *follow-up* research believed that they already had effective food safety systems in place and described a very 'light touch' approach to using the guidance within their operations. This included reviewing internal food safety management systems against the guidance as a safety cross-check; producing a short briefing document; updating internal food safety documents to reflect the guidance; and providing an update of the guidance on the organisation's intranet.

Respondents from both the trade organisations and the large business chains cited variation in local authority approaches to implementing the guidance as a concern. Interpretative differences among EOs were viewed as a problem and resulted in confusion across business sites. In one instance, instead of entering into a lengthy discussion, the decision was taken to remove a menu item from one food business site in one local authority because of the EO's approach to applying the guidance principles.

Most food businesses in the *follow-up interviews* did not make any specific suggestions to improve the guidance documents. Butchers in general and staff associated with some of the larger businesses mentioned they were already following procedures set out in the new guidance, that it reinforced their current HACCP procedures and food hygiene training. Guidance procedures were described as 'common sense' and 'straightforward' but necessary for documenting food safety requirements. Sites belonging to large food business chains received additional support from corporate headquarters, as a food business manager explained,

> *'Working for a big company … they're aware of changes to the law, especially food safety. We'll get a full brief from them. If that requires changes in ways of working, that'll be part of the manager's induction. We'll be trained accordingly to comply with the new law.'*
>
> (Food Business Manager)

Suggestions to improve the new guidance from food businesses in the *follow-up* research varied and no one issue predominated. These included: provide practical examples in different work environments; produce a one-page summary of key points; and provide financial assistance to help small businesses implement the required changes, for instance, to offset the costs of a food safety consultant to advise on new legislation. It was also noted that the enforcement officer plays an important role to help interpret the guidance for food businesses and ensure compliance.

More critical respondents from large chain businesses described the guidance as too *'prescriptive'*, at '*complete odds with general practice*' and showing a lack of appreciation of what happens in a kitchen especially during busy times. In some instances, the changes (such as separation of work spaces or staff) were perceived to be impossible to implement. It was thought the focus of the guidance should be on monitoring instead of the current emphasis on documentation.

There was also concern raised about the accessibility of the guidance documentation. Some respondents from large food chains felt the use of technical language[16] and the many sources of information (full guidance, Factsheet, DVD) as well as the business's own food safety documents could be confusing for site managers. A number of problems were raised on specific items in the guidance as follows:

- Further clarification was requested on the use of chlorine wash for fresh food and vegetables;
- The issue of dual use of mixers and mincing machines was unresolved;
- Guidance was needed on separating the preparation of raw and cooked food by time where it was not possible to have separate work spaces (that is, how long should staff wait after cleaning a work surface between preparation of raw and cooked products?);
- Clarity was needed on the required core temperature for rare roast beef[17];
- The dishwasher temperatures required by the guidance were perceived to be unattainable;

During the *scoping phase* research, some of the trade organisations reported they had engaged in the FSA consultation on the development of the new guidance. Feedback from these respondents included a preference for the consultation model followed for the introduction of new guidance on allergens where the FSA set up a working group comprised of industry representatives, local authorities and other enforcement authorities. This group served as a platform for discussing the different perspectives and suggesting ways forward. It was also felt that written and internet based consultation is not feasible for many butchers who are not accustomed to communicating in writing or do not have the time to respond. It was suggested that

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[16] This concern about the use of technical language in the guidance documentation was raised by some food safety managers from large food chains. This perspective contrasts with the survey findings which indicate that most food businesses found the guidance documents easy to comprehend (Table 4.1).

[17] Many of the issues raised as requiring clarification are not covered by the scope of the guidance or discussed in the guidance and associated materials such as the Q&A, but as they have been raised by research respondents it is possible that the points referred to are ambiguous, not being picked up or are not understood.

more face-to-face meetings with the FSA would be welcomed. Feedback from large food chains that had participated in the FSA consultation identified the consultation process as having too much emphasis on whether or not new guidance should be produced and not enough focus on the content of the guidance. In their view a more detailed or in-depth consultation process would have produced a more practical guidance document.

4.5   New ways of working

Much of the content of the new guidance would already have been regarded as good practice and featured in food safety management systems such as SFBB, including handwashing and cleaning and disinfection practices. The most widely used systems are indicated in Chart 4.6, and include: SFBB (used by 45 per cent of businesses), CookSafe (20 per cent) and Safe Catering (12 per cent). Eleven per cent of food businesses use in-house systems. One in ten businesses do not know which system they use and 9 per cent have no food system in place.
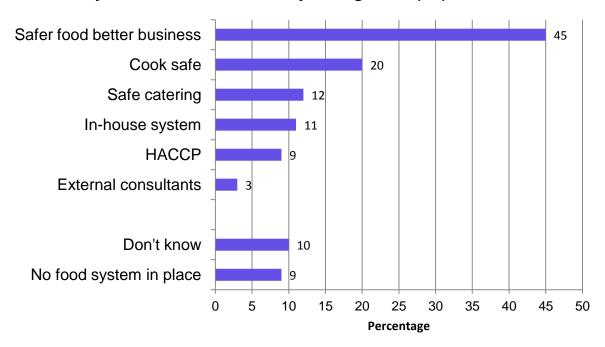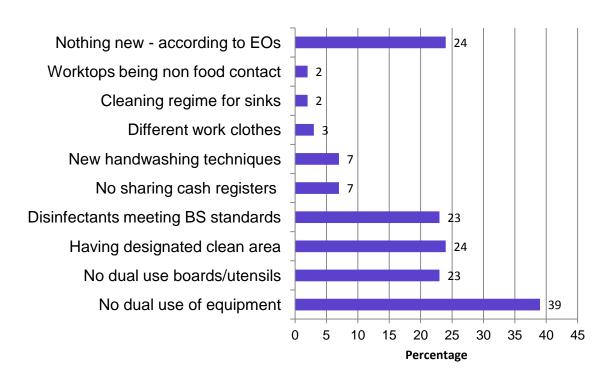
Chart 4.6: Systems used for food safety management (FB)

Source: Food business survey. Q.A9A
Base: 2051. Note: multiple response option

Both EOs and food businesses were asked which aspects of the new guidance they regarded as new, spontaneous rather than prompted responses were elicited.

Chart 4.7 sets out those areas perceived as new by EOs, foremost among them is 'no dual use of equipment', cited by 39 per cent of EOs. Around one quarter also referred to each of the following as new: no dual use of chopping boards and utensils unless adequately disinfected; the need for disinfectants to meet BS standards; and having a designated clean area. Small minorities, of fewer than one in ten, suggested the following were also new: no sharing cash registers; new handwashing techniques; new work clothes; sink and basin cleaning regimes; and non food contact worktops. One quarter of EOs, however, did not think anything in the guidance was new.

Chart 4.7: Which parts of the guidance are viewed as new ways of working for small businesses (EO)

Note: multiple response option. Base: 150
Source: Enforcement officer survey. Q.C3

Chart 4.8 sets out those areas perceived as new by food businesses. Notably smaller proportions of food businesses compared with enforcement officers described aspects of the guidance as new ways of working. Two thirds (66 per cent) of food businesses indicated that nothing in the guidance was new, in contrast to just one quarter of EOs. Very small percentages of between one and four per cent of food businesses described various aspects of the guidance as new including guidelines related to: storage, cleaning, no dual use of equipment, designated clean areas, gloves and alcohol gels. However, one in ten (11 per cent) food businesses replied 'don't know' to the question. Together with the low proportions reporting they

had read the documents in full (Table 3.5), the evidence suggests that substantial numbers of food businesses may not have been sufficiently aware of the details of the guidance to comment on new areas. In addition, the follow-up research suggests that food businesses tended to focus on content that was particularly pertinent to their business and skip over areas they felt were not relevant (refer to section 3.2).

Chart 4.8: Which parts of the guidance are viewed as new ways of working or new information (FB)

Note: multiple response option. Spontaneous responses. Base: 1128
Source: Food business survey. Q.B4

Large chain food businesses interviewed in the *follow-up* research indicated that the guidance contained little new information. A few food business chains focused only on specific sections of the guidance which were prioritised in particular sections of their business. For example, one chain focused on the separation of raw and cooked meat in the outlets where raw meat was handled and otherwise found the guidance to be of little use for their other outlets. One national food business chain was specifically concerned about dual use equipment at a small number of outlets, an issue which had been highlighted by an enforcement officer before the guidance was published. In another food chain business, the decision had been made for managers to prioritise hand washing and personal hygiene across all outlets.

Information in the guidance that was considered 'new' was about European Union machinery directives and the transfer of pens between staff.
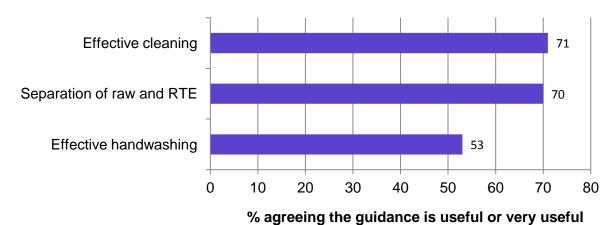
4.6 Utility of the guidance for enforcement officers

Enforcement officers were asked specifically how useful the guidance is in helping them to tackle the following cross-contamination issues: effective handwashing; effective cleaning; and separation of raw and ready to eat foods in businesses. Findings shown in Chart 4.9 indicate that the guidance is perceived as most useful in relation to cleaning and separation of raw and RTE – regarded as useful or very useful among 71 per cent and 70 per cent of EOs respectively. Only half the EOs (53 per cent) viewed the guidance as useful or very useful in relation to ensuring effective handwashing. This appears to be more of an issue with handwashing in practice as opposed to the written guidance, according to the *follow-up research*. EOs commented that handwashing habits are hard to enforce: washing often, with soap and in a dedicated hand basin as opposed to a kitchen sink. As one EO explained,

> *'On hand washing it's very difficult to assess … if you are to observe it then they will not necessarily do what they normally do. So, yes, I think it's difficult to know. We have the conversation, we talk about using paper towels to turn off the taps, that kind of thing. We get nods of approval and "yes we'll do that". Whether it's happening in real life, who knows?'*
>
> (Enforcement Officer)

Chart 4.9: How useful is the guidance in helping tackle cross-contamination issues (EO)

% agreeing the guidance is useful or very useful

Source: Enforcement officer survey. Q.C4
Base: 150

The FSA has developed guidance in several formats to help food businesses reduce the risk of cross-contamination by *E. coli* O157 and thus protect consumers from the

serious consequences of *E. coli* O157 food poisoning. In addition to the full, detailed, guidance document, other materials include a Q&A document which is updated on a regular basis, a DVD for butchers and a Factsheet which is a shorter, more concise version of the full Guidance. EOs were asked *in the survey*, on a scale of 1-5, how useful they found each of these materials, findings are presented in Table 4.3. The first column aggregates responses across the UK.

The majority of EOs perceived both the Q&A and Factsheet as useful or very useful (77 per cent and 79 per cent respectively). Fewer regarded the DVD as positively, 40 per cent of EOs rated it as useful or very useful, possibly reflecting the fact that it is designed specifically for butchers and designed to be readily understood by food businesses.

Table 4.3: How useful guidance documents are in supporting implementation (EO)

Cell percentages

Regarded as useful or very useful
in helping implementation of the guidance

	All	England	N. Ireland	Scotland	Wales
The Q&A	77	81	56	58	60
The Factsheet	79	83	69	50	70
The DVD	40	45	6	14	40
Base N	150	110	16	14	10

Source: Enforcement officer survey. Q.C8
Note: some small base sample sizes

EOs in Northern Ireland and Scotland appear to have found the DVD in particular less useful than EOs in Wales and England (at 6 per cent, 14 per cent, 40 per cent and 45 per cent respectively). The *follow-up interviews* with EOs found that awareness of the DVD and its content was lower in Northern Ireland and Scotland. Consequently the usefulness of the DVD as a resource may have been rated lower because of this.

Table 4.4 sets out the advantages of the Q&A, DVD and Factsheet compared with the longer, more detailed, full guidance. A majority of EOs felt that all three materials were easier to understand. Half the EOs felt that the Q&A and DVD were also useful due to their brevity, rising to over three quarters (79 per cent) of EOs in relation to the Factsheet. Presentation of information is also important with around two thirds of EOs suggesting that all three materials were useful because they present the

information clearly. An additional observation is that the visual approach taken by the DVD is effective – mentioned by one fifth (21 per cent) of the EOs.

Table 4.4: Ways in which documentation has been useful (EO)

Cell percentages

	Q&A	DVD	Factsheet
Easier to understand than full guidance	63	58	75
Because it is brief	51	48	79
Presents information clearly	63	63	69
Answers questions	17	-	-
Contains all relevant information		7	3
Offers practical guidance	7	6	-
Easy to relate to	-	7	-
Visual approach is effective	-	21	-
Easier to send out	-	-	4
Base N	112	56	116

Note: multiple response option
- is no response
Source: Enforcement officer survey. Q.C9

During the *follow-up research*, EOs and food businesses were asked their views on the Q&A document. EOs commented that the document had been useful for clarifying content of the guidance although recall was limited on what sections of the Q&A they referred to. This may be because, at the time of the research, the most recent version of the Q&A dated from November 2011, six months prior to the research. Among those who could recall, content on dual use and separation of non-complex equipment were cited as useful. Not all respondents were aware that the Q&A is updated regularly by the FSA, although most said they were using the November 2011 version. One EO suggested that content in the Q&A should be incorporated into the full guidance so that it can be relied upon as evidence in court. It was also suggested that the FSA should notify food safety teams when an update has been released[18].

Relatively few food businesses who participated in the follow-up interviews had seen the Q&A, reflecting the lower proportion in the survey who were aware of the document (Chart 3.4). Among those who had seen the Q&A, very few were aware it

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[18] The Q&A is circulated to all UK LAs when new versions are published.

was a 'live' document regularly updated by the FSA. One respondent had referred to the document for advice on meat cooking temperatures and considered it to be more useful on the topic compared to the full guidance. One drawback on the Q&A is the format. A number of food business respondents said that they weren't at ease looking up information on a computer and/or didn't have access to a computer at their workplace and so would not have found the Q&A helpful.

The 17 EOs who were contacted for the *follow-up research* were also asked their views on the DVD. The resource was praised as a visual medium for getting messages across and/or for reinforcing the work that food safety teams had already been doing with butchers prior to release of the new guidance. Some had shown the video during workshops hosted for butchers. However, the DVD was criticised for showing situations with potential for cross-contamination risk, for example a scene which showed a hand on a door push-plate. It was suggested that the DVD might be more effective if it showed proprietors, rather than EOs, explaining how to implement recommendations within the guidance and if more content was devoted to showing practical solutions as opposed to 'selling the guidance'.

Feedback on the DVD from butchers who participated in *follow-up* interviews was mostly positive; some commented that the visual format was more interesting than reading paper guidance and that it was useful or potentially useful for staff training; and one commented that it was engaging to staff because it was tailored to issues of concern to butchers. Negative comments were rare. A few butchers said that the DVD was not a good format for them because they did not have the facilities to watch it in the workplace. As a cost effective alternative, it was suggested the DVD could be reproduced as a You Tube video.

4.7   Alternative resources

In addition to the range of publications and other materials provided by the FSA and LAs to inform food businesses about the new cross-contamination guidance, both EOs and food businesses were asked, *by the surveys*, whether other resources might be helpful to assist food businesses in understanding the Guidance.

The most common response among EOs was to express uncertainty - 38 per cent said they could not think of any additional resources (Table 4.5). 14 per cent suggested that seminars for businesses would be a helpful addition to the range of support available to food businesses. Other suggestions, raised by minorities of less than one in ten EOs included: use of case studies and more visual content; sector and size specific information, including butcher specific SFBB documentation; documents in multiple languages; and clarification of BS.

Table 4.5: Other resources which would help food businesses understand the guidance (EO)

	Cell percentages
Seminars for businesses	14
Use of case studies	7
More visual content (eg. pictures or charts)	7
More sector and size specific information	6
Documents in other languages	6
Clarification of British safety standards	4
More training for EOs	4
Clear and concise wording	4
Add new information to SFBB folder	3
Butcher specific SFBB	3
Other[19]	12
Don't know	38
Base N	150

Note: multiple response option
Source: Enforcement officer survey. Q.C11

The majority of food businesses (71 per cent) did not see the need for additional resources beyond the full guidance, factsheets, DVD and Q&A materials (Table 4.6). Among those who did suggest additional products or approaches, recommendations included a dedicated website (cited spontaneously by 4 per cent of businesses), documents with simplified language (4 per cent) and a DVD for caterers (3 per cent). Smaller proportions suggested translated resources, more visual delivery of information, regular updates and training. Requests for translated materials were more common among restaurants (4 per cent) than other sectors and among business owner/managers for whom English is not their first language (7 per cent) – but nevertheless low in both instances.

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[19] The 'other' codes were very disparate but available in the full tables.

Table 4.6: Other resources that would help understand the guidance (FB)

	Cell percentages
Nothing more needed	71
Dedicated website	4
Simplified language	4
Visits from LA/EOs	3
DVD for caterers	3
Translation	2
More visual resources (with images and charts)	2
Regular updates	1
Training	1
Use of case studies	..
Don't know	9
Base N	1330

 Note: spontaneous, unprompted responses
.. less than 0.5%
Source: Food business survey. Q.C6

5   Scale and range of changes made following introduction of the new guidance

This chapter assesses the extent to which food businesses have implemented change as a result of the guidance. The views of both EOs and food businesses are examined. The most common changes made are identified, with reference to processes, practices and use of equipment. Also explored are changes to staff training, product lines bought and sold and whether reading the new guidance has made food businesses more aware of the potential risks associated with some of their practices. The final section of the chapter examines differences in a range of outcomes associated with whether the guidance was read in full, read in part or not read at all.

Chapter key findings

- Incidence and range of changes implemented by FBs as a result of the guidance:
    - According to EOs, the most common change made by butchers is the introduction of separate complex equipment (cited by 53% of EOs).
    - According to EOs, the most common changes made by non-butchers is the use of BS disinfectants (cited by 25% of EOs), introduction of separate complex equipment (18%), designation of separate storage and display (18%) clean areas (16%) and separate chopping boards/utensils (16%)
    - According to FBs, overall, a little under one third of businesses (31%) had introduced a change to their business
    - The vast majority of FBs who had not introduced any changes reported this was because they already met the requirements of the guidance in full
    - Consistent with the perceptions of EOs, the most common change implemented by butchers was the introduction of separate complex equipment (cited by 66% of butchers)
    - Also broadly consistent with the perceptions of EOs, the most common changes reported by non-butchers were the designation of clean areas (cited by 68% of non-butchers), separate storage and display (62%) and use of BS disinfectants (58%).
    - Around half the businesses also made the following changes: introduction of separate or colour coded chopping boards and utensils (50%), improved hand-washing techniques (55 per cent) and changed clothing (48%).

- ➢ 9% of surveyed FBs changed the products they buy and sell. Examples from the *follow-up interviews* included: the sale of ready cooked sliced meats that were vacuum packed – this meant they need not purchase additional expensive equipment; buying in ready prepared coleslaw instead of preparing on site to avoid purchasing a second slicing machine; and purchasing raw chicken breast wrapped in individual portions where previously the purchase of larger quantities required staff to handle each piece when re-packaging on site.
  - ➢ Two fifths of businesses (39 per cent) introduced changes to the way they train their staff as a consequence of the new guidance

- Around half the food businesses (55 per cent) asserted that their awareness of the risks of cross-contamination has been enhanced by the guidance materials

- Differences in outcomes among businesses who have read the guidance in full compared with those who have read it in part and those who have not read it:
  - ➢ reading the guidance at all increased the chance of implementing at least one change
  - ➢ reading the guidance in full was associated with a somewhat greater chance of having changed product lines
  - ➢ reading the guidance in full was associated with a greater likelihood of having changed staff training methods
  - ➢ reading the guidance in full was also associated with ease of comprehension and a reduced likelihood of requesting further clarification on the contents of the guidance

5.1   Incidence and range of change – enforcement officer perspectives

Tables 5.1 and 5.2 show, according to EOs, the most common changes made by butchers and other food businesses as a result of the guidance. The main difference between butchers and other food businesses is that the former are more likely to have introduced separate complex equipment (with 53 per cent of EOs identifying this as the most common change) while the latter have most often changed their use of BS disinfectants (identified by 25 per cent of EOs).

Other changes made by butchers are: introduction of separate storage and display (cited by 12 per cent of EOs); use of BS disinfectants (14 per cent); separate chopping boards and utensils (11 per cent); and designated clean areas (10 per

cent). A small minority of EOs cited other aspects of change as most commonly made by butchers.

Table 5.1: Most common changes made by Butchers according to EOs

	cell percentages
No dual use of complex equipment	
Introduction of separate complex equipment	53
Physical separation	
Separate storage and display	12
Separate chopping boards and utensils	11
Designating clean areas	10
Separate staff for raw and RTE	4
Packaging materials in clean areas	3
Designated cash registers for raw and RTE	2
Effective cleaning and disinfection	
Use of BS disinfectants	14
Increased awareness of best practice	3
Personal hygiene and handwashing	
Improved handwashing procedures	7
Changing clothing	3
Base N	150

Source: Enforcement officer survey. Q.D6
Note: multiple response option

Other changes most commonly made by other food businesses are: introduction of separate storage and display (cited by 18 per cent of EOs); introduction of separate complex equipment (18 per cent); separate chopping boards and utensils (16 per cent); designated clean areas (16 per cent); and improved handwashing procedures (11 per cent). A small minority of EOs cited other aspects of change as most commonly made by other food businesses.

Table 5.2: Most common changes made by other food businesses according to EOs

	cell percentages
Effective cleaning and disinfection	
Use of BS disinfectants	25
Physical separation	
Separate storage and display	18
Designating clean areas	16
Separate chopping boards and utensils	16
Separate staff for raw and RTE	8
Packaging materials in clean areas	3
Designated cash registers for raw and RTE	1
No dual use of complex equipment	
Introduction of separate complex equipment	18
Personal hygiene and handwashing	
Improved handwashing procedures	11
Changing clothing	3
Base N	150

Note: multiple response option
Source: Enforcement officer survey. Q.D7

5.2   Incidence and range of change – food business perspectives

Food businesses were also asked whether they had introduced any changes to their business practices since learning of the new cross-contamination guidance. Chart 5.1 shows the incidence of change according to country, business type and business size. Overall, a little under one third of businesses (31 per cent) had introduced a change to their business. With reference to the country in which the business is located, change was most widespread in Northern Ireland (46 per cent) and least widespread in Scotland (24 per cent). In terms of sector, butchers were most likely to have implemented change (44 per cent) with food retail stores the least likely (29 per cent). Change was more common among businesses where the first language of the owner/manager is not English. The incidence of change was similar across the different business size categories.

Among the two thirds of food businesses (69 per cent) who had not introduced any changes, nearly one in ten (9 per cent) planned to make changes at some point in the future, while the remaining 91 per cent have no intention of introducing change, primarily because they believe they already meet the requirements of the guidance in full. In a small minority of cases this was due to head office decisions (5 per cent). There would appear to be some inconsistency in the perspectives of EOs and food businesses in relation to perceptions of full implementation. Around two fifths of EOs (41 per cent – see section 3.3) suggested that only one half or fewer food businesses have implemented the guidance in full. By contrast, around two thirds of surveyed food businesses have not introduced changes on the grounds they already adhere to guidance recommendations. It is possible that these latter food businesses are not fully aware of the detail contained in the guidance which may indeed require further change in practices.
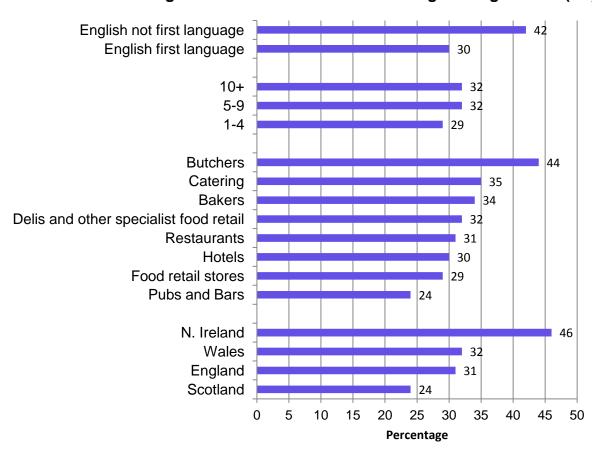
Chart 5.1: Made changes to their business since learning of the guidance (FB)

Source: Food business survey. Q.E1
Base: 1330

Findings from a multivariate analysis of the factors associated with implementing change are presented in Table 5.3 (see technical appendix, annex 1). Butchers, food

businesses within Northern Ireland and businesses with an owner whose first language is not English have an increased likelihood of implementing change. Other differences are not statistically significant.

The range of changes implemented are shown in Table 5.4. The most common change introduced has been related to physical separation, in particular the designation of clean areas (introduced by 67 per cent of businesses which have made at least one change) and ensuring separation in the storage and display of raw and RTE foods (60 per cent). Use of BS disinfectants is also among the more common changes made (58 per cent). Around half the businesses also made the following changes: introduction of separate or colour coded chopping boards and utensils (50 per cent), improved handwashing techniques (55 per cent) and changed clothing (48 per cent).

There are no clear patterns of change associated with business size except that smaller businesses were more likely to have cited all of the different types of change than larger businesses.

Table 5.4: Changes implemented since learning of the guidance (FB)

cell percentages

	Business Size			
	1-4	5-9	10+	All
Physical separation				
Designating clean areas	68	72	63	67
Separate storage and display	66	62	55	60
Separate chopping boards and utensils	63	51	53	55
Packaging materials in clean areas	53	53	47	50
Separate staff for raw and RTE	43	36	31	36
No dual use				
Introduction of separate complex equipment	41	31	23	31
Effecting cleaning and disinfection				
Use of BS disinfectants	57	65	54	58
Other	55	62	50	55
Personal hygiene and handwashing				
Improved handwashing procedures	62	60	45	55
Changing clothing	57	42	45	48
Base N	162	149	148	459

Note: multiple response option
Source: Food business survey. Q.E1

Table 5.5 compares changes introduced by butchers and non-butchers. The key difference was the greater likelihood of butchers introducing separate complex equipment (66 per cent compared with 26 per cent of non butchers). Non butchers, instead, were more likely to have introduced changes to ensure separation in storage and display (62 per cent compared with 50 per cent of butchers) and to have separated staff dealing with raw and RTE products (38 per cent compared with 23 per cent).

Table 5.5: Changes implemented since learning of the guidance (FB)

cell percentages

	Business Type		
	Non Butchers	**Butchers**	All
Physical separation			
Designating clean areas	68	60	67
Separate storage and display	62	50	60
Separate chopping boards and utensils	55	53	55
Packaging for RTE in clean areas	50	55	50
Separate staff for raw and RTE	38	23	36
No dual use			
Introduction of separate complex equipment	26	66	31
Effecting cleaning and disinfection			
Use of BS disinfectants	58	58	58
Other	56	50	55
Personal hygiene and handwashing			
Improved handwashing procedures	54	56	55
Changing clothing	48	48	48
Base N	311	148	459

Source: Food business survey. Q.E2

During the qualitative *follow-up interviews*, butchers reported that changes in the use of vacuum pack equipment resulted in the purchase of a second vacuum packer or in the discontinuation of a product line, like sliced cooked meat. One pub manager reported several changes to procedures involving colour coded utensils and cutting boards, separate counter spaces for raw and RTE foods and the use of BS cleaning chemicals. One respondent who manages a hotel that is part of a chain said they follow the procedures issued by the head office. Following the new guidance, separate work areas were more clearly delineated. A hand basin was installed in every section with dedicated cleaning chemicals for that area stored near the sink. This avoided staff walking through other sections to wash hands or for cleaning purposes.

Changes were also noted among large food chains as reported in the *follow-up* research. For example, one chain had made a number of changes to their operational practices since the publication of the guidance. They had started using colour coded equipment and different utensils to put meat on and off grills. In their outlets that had insufficient space for separate preparation areas, cleaning between the preparation of raw and cooked meat was being monitored. Additionally, this food

business had also introduced single use aprons and where hands-free sinks were not installed, staff were required to use paper towels for turning taps on and off. The installation of hands-free sinks was a common change reported by the interviewed chain businesses. Other changes included stopping the practice of dual use vacuum packers and verifying the specifications of cleaning and sanitising products with suppliers.

5.3   Changes to product lines

In total, 127 surveyed businesses changed the products they buy and sell as a result of the new guidelines (i.e. 9 per cent – see Table 5.6). Differences according to size, type and country of the businesses are small. The four most common changes made (Table 5.7) are now to: use vetted, nominated or recommended suppliers (27 per cent of non-butchers); avoid using certain ingredients and selling certain products (20 per cent of butchers and 21 per cent of non-butchers); buy in pre-portioned or packed cooked meats (22 per cent of butchers and 7 per cent of non-butchers); and buy in pre-packed cheeses (13 per cent of butchers). In terms of the impact of these changes, 28 per cent indicated there had been no impact, 30 per cent did not know the impact, for 8 per cent practices are now easier and for 5 per cent profits have declined. It should be noted, however, that among butchers who had changed their products, 26 per cent said this led to a reduction in profits. Just under 1 in 10 butchers (8 per cent) also indicated they now have fewer customers (no other business type experienced this impact).

From the *follow-up interviews*, product changes among butchers related primarily to the sale of ready cooked sliced meats that were vacuum packed – this meant they need not purchase additional expensive equipment. Apart from butchers, other businesses reported buying in pre-packed and ready cooked products like cole slaw and portion sized meats. These changes were considered more economical than purchasing additional equipment.

Among the large food chains, interviewed at the *follow-up stage*, only a few businesses mentioned making food product changes as a result of the guidance. One food business had decided to take bean sprouts off their menus as they believed that the guidance suggested cooking these.[20] Some confusion was expressed about washing fresh fruit and vegetables and consequently, another food business had resorted to purchasing pre-washed fruit and vegetables.

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[20] Many of the issues raised as requiring clarification are not covered by the scope of the guidance or discussed in the guidance and associated materials such as the Q&A, but as they have been raised by research respondents it is possible that the points referred to are ambiguous, not being picked up or are not understood.

Table 5.6: Changes to products bought and sold since learning of the guidance (FB)

Percentage making change

	%	Base N
England	9	949
N. Ireland	8	122
Scotland	8	154
Wales	14	106
Food retail stores (non specialist)	9	44
Bakers	7	77
Butchers	11	339
Hotels	9	127
Restaurants	11	370
Pubs and Bars	6	210
Catering	11	105
Delis and other specialist food retail	13	58
1-4	13	484
5-9	11	420
10+	6	426
Base	9	1330

Source: Food business survey. Q.E7

Table 5.7: Changes to product lines

	cell percentages	
	Butchers	Non Butchers
Now buy in pre-packed meats	22	7
Avoid certain ingredients/products	20	21
Now buy in pre-packed cheese	13	0
Now buy in pre-cooked burgers	6	..
Now only use pre-packed RTE fruit, veg or salad	5	8
Use vetted/recommended suppliers	2	27
Only sell raw meat now	0	1
No longer sell raw meat	0	2
Base	89	38

Note: some small base sample sizes.
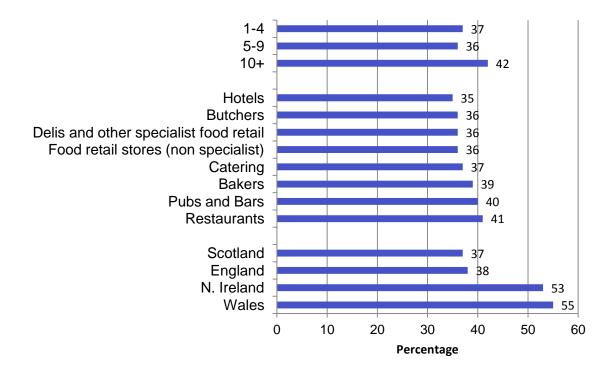Source: Food business survey. Q.E8

5.4   Training related changes

Two fifths of businesses (39 per cent) introduced changes to the way they train their staff as a consequence of the new guidance (Chart 5.2), whether in terms of processes or content. Changes to training are more prevalent in Northern Ireland and Wales (53 per cent and 55 per cent respectively) compared with England and Scotland (38 per cent and 37 per cent respectively). Differences are less apparent across business types while large businesses with ten or more staff are somewhat more likely to have changed their staff training regimes compared with smaller businesses (42 per cent compared with 36 per cent).

Regardless of whether food businesses changed the manner in which they train their staff, all food businesses with more than 2 members of staff were also asked what impact implementing the guidelines has had on the length of time it takes to train their staff. For most businesses (75 per cent), there has been no impact. For around one fifth of businesses, however, training now takes longer, somewhat more often among larger businesses with ten or more staff (25 per cent) than among smaller businesses with fewer than ten employees (18 per cent). Statistically significant differences in the likelihood of training taking longer are not evident according to country or business type.

Among those businesses for which training does now take longer, for nearly half (46 per cent) the additional time is just one or two hours but for one fifth (19 per cent) more than an additional two days is devoted to training (Table 5.8).

Chart 5.2: Changes to staff training due to the guidance (FB)

Source: Food business survey. Q.E10

Base: 1284

Note: some small bases

Table 5.8: Additional time spent training staff (FB)

column percentages

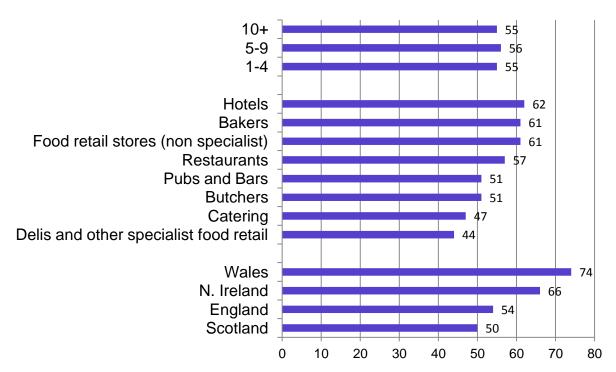| Additional hours spent | Business Size | | | |
	2-4	5-9	10+	All
1	19	28	33	28
2	19	18	17	18
3-6	18	12	13	14
7-8 (1 full day)	7	12	10	10
9-16 (1-2 days)	10	8	12	11
17 plus (over 2 days)	27	22	14	19
Base N	93	82	114	289

Source: Food business survey. Q.E12

5.5   Change to awareness of risks

Prior to reading the guidance materials, 87 per cent of food businesses were completely aware, and 13 per cent aware to some extent, of the risks of cross-contamination. Butchers and caterers were particularly aware, with 94 per cent and 91 per cent respectively describing themselves as having been completely aware, compared with somewhat lower proportions of food retailers (73 per cent), delis (83 per cent) and pubs (85 per cent).

Nevertheless, around half the food businesses (55 per cent) asserted that their awareness of the risks has been enhanced by the guidance materials (scoring 4 or 5 on a 5 point scale ranging from 1 – not at all increased, to 5 – increased a great deal)[21]. Chart 5.3 shows how these proportions differ according to business type, size and country. Businesses most likely to have benefited from the guidance in terms of increased awareness include those from Wales (74 per cent) and Northern Ireland (66 per cent) and, in terms of sector, food retail stores, bakers and hotels (61 to 62 per cent).

Chart 5.3: Changes to awareness of risks due to the guidance (FB)

Source: Food business survey. Q.B3
Base: 1128
Note: some small base sample sizes

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[21] Overall, 29 per cent of businesses chose a score of 5 while 26 per cent chose a score of 4

5.6   Reading the guidance – survey evidence of outcomes

Of interest are any differences in outcomes among businesses who have read the guidance in full compared with those who have read it in part and those who have not read it. Table 5.9 indicates whether there were any differences in whether businesses implemented any changes, changed their product lines, changed the way they trained their staff, whether they found it necessary to seek further clarification and whether they found the guidance easy to understand.

Looking initially at the likelihood of implementing change, reading the guidance at all seems to have increased the chance of implementing at least one change (29 per cent, 37 per cent and 33 per cent respectively among businesses which did not read, read in part and read in full) but the differences are not statistically significant. Similarly, reading the guidance in full was associated with a greater chance of having changed product line, but again the difference is not statistically significant (8 per cent, 10 per cent and 15 per cent respectively among businesses which did not read, read in part and read in full). The remaining findings are statistically significant however, and reading the guidance in full was associated with a greater likelihood of having changed staff training methods (52 per cent of those who read the guidance in full compared with 48 per cent of those who read it in part and 34 per cent of those which did not read it). Reading the guidance in full was also associated with ease of comprehension – 46 per cent of those who read the guidance in full found it very easy to understand compared with 28 per cent who read it in part (finding it less easy to understand may explain, in part, why it was not read in full). Businesses which read the guidance in full also had a reduced likelihood of requesting further clarification on the contents of the guidance (17 per cent compared with 25 per cent of businesses which read it partially).

Table 5.9: Variation in outcomes according to how much of the full guidance has been read

cell percentages

	Not read	Read in part	Read in full
Implemented any changes	29	37	33
Changed product lines	8	10	15
Changed method of staff training	34	48	52
Asked for clarification of guidance	20	25	17
Guidance very easy to understand		28	46
Base	918	267	145

Source: Food business survey, Q.A10, A11, E1, E7, E10, D4, C1

6   Challenges implementing the guidance

There are potentially a range of challenges which food businesses may face when implementing the guidance. These are explored in this chapter in order to highlight where Food businesses may require additional help or where the guidance may be developed to clarify the changes needed. The chapter provides evidence from both EOs, who draw on feedback received from various businesses and directly from food businesses.

Chapter key findings

- Challenges implementing the guidance – EO perspective
  - ➢ The introduction of separate complex equipment was raised by the largest proportion of EOs (44 per cent) as causing difficulties for food businesses.
  - ➢ Around one quarter of EOs (27 per cent) also referred to the use of BS disinfectants as problematic.
  - ➢ In terms of sector, butchers and caterers were most likely to have had a problem implementing the guidance (cited by 42% and 44% of EOs respectively). The most commonly cited business type, however, was small businesses – 58 per cent of EOs felt they were most likely to have experienced problems.

- Challenges implementing the guidance – FB perspective
  - ➢ Half the surveyed butchers (53%) and nearly three quarters of the non-butchers (70%) suggested that nothing was notably challenging when implementing the guidance.
  - ➢ 17% of butchers found the introduction of separate complex equipment challenging but fewer than 10% of FBs cited any other changes as notably challenging
  - ➢ Overall, the majority of surveyed businesses found the management of staff very easy (30%) or fairly easy (50%) and were therefore well able to ensure their workforce consistently implement the guidance.
  - ➢ A slightly lower 75% of businesses with 10 or more staff found staff management very or fairly easy.
  - ➢ *Follow-up interviews* with larger businesses also identified training challenges, for example: constant staff monitoring was difficult and the risk of slippage into incorrect practices was an ongoing concern; and reliance on low-paid staff was viewed as an issue in terms of staff commitment to following food business operational practices.

> In *follow-up qualitative interviews* other examples of challenges raised included: cost, space and time issues. Butchers mentioned that the cost of purchasing new equipment, such as vacuum packers, was prohibitively expensive. Small butchers also highlighted the costs of having separate staff serving raw and ready–to-eat food. Non-butchers talked about the constraints of space and difficulty of having completely separate preparation areas for raw and cooked foods.

Enforcement officers' perspectives

Table 6.1 sets out the aspects of the guidance which EOs believed have caused problems for food businesses. The introduction of separate complex equipment was raised by the largest proportion of EOs (44 per cent) as causing difficulties for food businesses. Around one quarter of EOs (27 per cent) also referred to the use of BS disinfectants as problematic. Other areas highlighted by EOs as causing problems among at least some food businesses included: having separate areas for storage and display (cited by 20 per cent of EOs); separate chopping boards and utensils (19 per cent); separate staff for raw and RTE (16 per cent); and finding enough space in small business premises (12 per cent). Smaller numbers of EOs referred to all the remaining aspects of the guidance.

Having established which aspects of the guidance were most challenging for businesses, also of interest is which types of business were most likely to have experienced a problem with implementation. It is clear from Chart 6.1 that according to EOs, small businesses in general and, in terms of business sector, butchers and caterers, are among those most likely to have encountered difficulties. 42 per cent of EOs suggested that butchers were most likely to have had a problem, with 44 per cent indicating caterers are among the most challenged. 17 per cent of EOs believed Delis were among those most likely to have experienced problems. The most commonly cited business type, however, was small businesses – 58 per cent of EOs felt they were most likely to have experienced problems whether due to cost, space, understanding the guidance or for other reasons. Where EOs indicated that small businesses experienced most problems they were prompted to specify which sector - 40 per cent specified butchers, 37 per cent specified caterers and 24 per cent specified Delis. No more than 4 EOs specified any other sector.

With reference to the 28 EOs who identified businesses with language barriers, these too were asked to specify which sector. Their responses were fairly evenly distributed across the following sectors: delis, butchers, food retailers and caterers. The small sample size should be noted however.
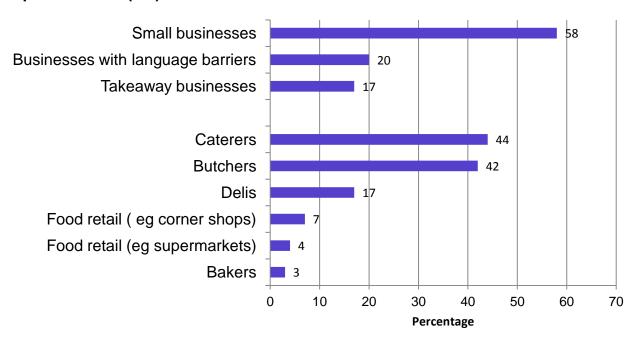
Table 6.1: Aspects of guidance causing problems for food businesses – EO perspective

cell percentages

Physical separation

	Separate storage and display	20
	Separate chopping boards and utensils	19
	Separate staff for raw and RTE	16
	Designating clean areas	15
	Finding space in small premises	12
	Cost of separation related changes	6
	Designated cash registers for raw and RTE	5
	Packaging materials in clean areas	3
No dual use of complex equipment		
	Introduction of separate complex equipment	44
	Cost of new equipment	8
Effective cleaning and disinfection		
	Use of BS disinfectants	27
	Identifying correct chemicals which comply	7
Personal hygiene and handwashing		
	Improved handwashing procedures	16
	Changing clothing	10
	Enforcing the guidance	5
No aspects have caused problems		12
Base N		150

Note: multiple response option

Source: Enforcement officer survey. Q.D2

Chart 6.1: Types of business more likely to have experienced problems with implementation (EO)

Source: Enforcement officer survey.
Base: 150
Note: caterers include restaurants, pubs, hotels and restaurants

Follow-up research – EO perspectives

In the *follow-up research*, EOs provided their views on the more problematic aspects of implementing the guidance. One respondent related the issues for food businesses to resources, skills and time:

> *'Having to put in place some of the procedures that are necessary to deal with cross-contamination of equipment that might be used for example, for vacuum packing, raw and ready to eat food, it's just a resource problem for them. If they can do it themselves, if they have the necessary skills it is just a time problem for them. Or if they buy it in, then it does become a funding problem as well.'*

(Enforcement Officer)

EOs identified general issues with the new guidance pertaining to its practical application. It was viewed to be more relevant to butchers and larger businesses with sufficient space to house separate equipment and work surfaces. It was consequently more difficult to apply in small work spaces. Separation-in-time (where raw foods are prepared early in the day, surfaces are thoroughly cleaned, then

ready-to-eat foods are prepared) was a practical solution to the space issue suggested by EOs and food businesses during the follow-up research. EOs also mentioned working with small businesses to change their menus in order to avoid risk of cross-contamination[22].

Related to small businesses is the issue of family run food businesses preparing ethnic foods. Poor English language skills, limited staff training and staff turnover were issues associated with these businesses.

EOs also identified ambiguities about the definition of preparing raw foods at risk of *E. coli* cross-contamination. One questioned if the guidance applied when a proprietor only handles raw meat, for example, that arrives at the site pre-cut and in a sealed bag. Using cabbage as an example of a vegetable that is eaten raw, after removing the outer leaves, another EO questioned at what point does the cabbage become ready-to-eat and subsequently get moved to the clean preparation area? A similar question was raised about the preparation of carpaccio, made from thin shavings of seared beef. The respondent was unclear whether a raw or cooked food slicer was to be used.

Food businesses' perspectives

Businesses which introduced more than one change to their practices as a result of the guidance were asked which change was the most challenging (Table 6.2). Most businesses suggested that nothing was notably challenging although butchers were significantly less likely to say 'nothing' (53 per cent) compared with non Butchers (70 per cent). Butchers were most likely to have found the introduction of separate complex equipment challenging (17 per cent). Other changes found challenging included: implementing separate storage (cited by 8 per cent of non butchers and 10 per cent of small businesses employing fewer than 5 staff) and changing the clothing of staff (cited by 6 per cent of non butchers and 8 per cent of Butchers). Remaining challenges such as clean areas, separate staff, chopping boards, BS disinfectants and handwashing improvements were cited by very few businesses.

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[22]An approach which is suggested in the Guidance and adopted by some food businesses.

Table 6.2: Which change was most challenging (FB)

cell percentages

	Type		Size		
	Non Butcher	Butchers	1-4	5-9	10+
Introduction of separate complex equipment	1	17	5	2	2
Implementing separate storage	8	3	10	5	7
Designating clean areas	3	2	2	4	4
Separate staff for raw and RTE	1	4	1	1	2
Chopping boards	3	2	1	5	3
Using BS disinfectant	1	1	1	..	1
Improved handwashing	3	4	2	4	3
Change clothing of staff	6	8	3	9	6
Nothing challenging	70	53	67	69	69
Total	259	126	146	120	119

.. < 0.5%
Source: Food business survey
Base: Businesses which had introduced more than 1 change. Q.E5

Reasons for finding some changes challenging are listed in Table 6.3. Most common among them is a lack of space to implement the changes introduced – particularly among small businesses with 1-4 employees (cited by 40 per cent). Cost was also a reason for experiencing the change as a problem – significantly more so for butchers (49 per cent) than non Butchers (19 per cent), explained by them being more likely to have introduced separate complex equipment. Cost was also more likely to be a problem for smaller businesses with fewer than 10 staff (27 and 31 per cent) than large businesses (16 per cent). Staff issues also explained why some changes were challenging, a factor which is more prevalent the more staff that are employed. Less frequently, time issues and changing old habits or procedures were raised as reasons for finding particular changes a challenge.

Table 6.3: Why was the change challenging (FB)

| | *Cell percentages* | | | | |
| | **Type** | | **Size** | | |
	Non Butcher	**Butchers**	**1-4**	**5-9**	**10+**
Lack of space	35	24	40	33	25
Cost	19	49	27	31	16
Staff issues	14	16	9	13	21
Time issues	7	5	4	10	6
Changing old habits/procedures	8	6	7	2	14
Other	17	10	14	9	22
Don't Know	5	0	0	6	6
Base N	72	54	50	38	38

Source: Food business survey. Q.E6

Base: Businesses which had introduced more than 1 change and indicated which was the most challenging

Notes: Multiple response option. Some small base sample sizes

Follow-up research – FB perspectives

In *follow-up qualitative interviews*, butchers mentioned that the costs of purchasing new equipment, such as vacuum packers, in order to avoid dual use of the equipment for raw and RTE products, were prohibitively expensive. In one instance, the butcher had stopped supplying vacuum packed meats (to farm shops and restaurants) which had a small cost implication for the business. Small butchers also mentioned that it was too costly to have separate staff serving raw and ready to eat food.

Non-butchers, *in follow-up interviews*, often talked about the constraints of space, for example the difficulty of having completely separate preparation areas for raw and cooked foods. Instead, food businesses tended to separate by time where this was feasible, although some said that this was not possible during busy periods. Separate storage areas for raw and cooked foods were also said to be problematic due to space limitations and one contract caterer referred to difficulties in operating separate equipment (in this case a slicing machine) due to the location of electricity supply points.

The separation of storage and work spaces for raw and cooked products, and the separation of staff for specific handling tasks were identified as most problematic among the large food chains that participated in the *follow-up research*. Again, there were space restrictions within the smaller business sites. The cost of implementing

changes was more of an issue for the smaller food chains, given the current economic climate.

While the majority of *surveyed* food businesses found the management of staff easy (see section 6.1), a number of food business (both butchers and others) during the *follow-up interviews* referred to difficulties in overseeing the implementation of changes. Some mentioned that staff were busy, worked long hours and had little downtime, and they thus found it difficult to ensure that staff made the time either to read and understand new procedures, or to complete the documentation required to show compliance with procedures,

> *'This is where it falls down for butchers as they want everything documented, that's okay in an ideal world, but in a living world it's not. … We already work long hours, as I say, and that means bringing in extra staff, which means increasing costs, which effectively are passed on to the public at the end of the day. We're all in a competitive market especially competing with supermarkets. … you're bogged down with paperwork and documentation ... and that's fine if your staff have got maybe a half an hour/three quarters of an hour down time where they can record everything they've done in the day, but if they don't have that kind of down time, that time has to be found from somewhere, that time has to be found from bringing in extra staff which puts pressure on the business.'*
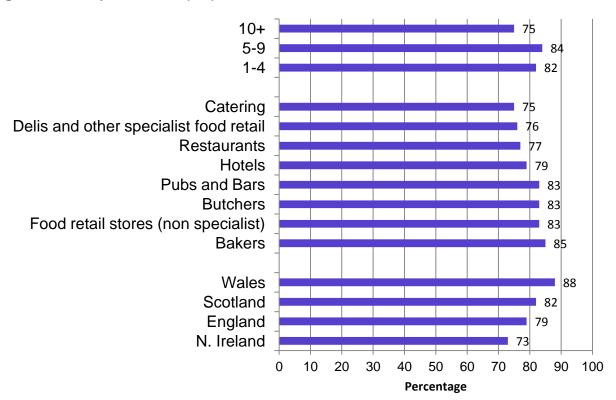>
> (FB manager)

Some respondents also mentioned the difficulty of ensuring compliance among low paid and inexperienced staff. One manager noted that it would require a significant amount of his management time to monitor and ensure compliance with separate food preparation areas.

6.1   Training challenges

In addition to the range of changes food businesses have made to their equipment, separation and storage procedures, cleaning processes and personal hygiene, a critical component of these changes is to ensure that all staff employed within the food establishments are familiar with the changes and are vigilant in maintaining good practice. This training aspect is potentially a challenge for business owners and may represent an obstacle to full and ongoing compliance. Food businesses were asked during the survey how easy they found it to manage their staff and ensure high standards of compliance, findings are shown in Chart 6.2. Overall, the majority of businesses found the management of staff very easy (30 per cent) or fairly easy

(50 per cent) and were therefore well able to ensure their workforce consistently implement the guidance. Differences between countries were not statistically significant. Comparing different types of business, caterers, delis and restaurants were the least likely to find staff management easy (75 per cent and 76 per cent and 77 per cent respectively). Larger businesses with ten or more staff were also less likely to find it easy or very easy to manage their staff (75 per cent) compared with smaller businesses (82-84 per cent). These businesses may benefit from tips and advisory leaflets setting out good management practice and effective approaches to training.

Chart 6.2: Ease of managing staff to ensure consistent implementation of guidance requirements (FB)

Source: Food business survey. Q.F1
Base: 1284
Note: some small base sample sizes

Examples of the challenges faced by line managers were supplied by large food business chains that participated in the *follow-up* research. Human error was identified as a key challenge as constant staff monitoring was not possible and the risk of slippage into incorrect practices was an ongoing concern. For example, one respondent felt that staff would forget to use paper towels to turn taps on and off at sites where sinks were not hand-free. Food business reliance on low-paid staff and

high staff turn-over were viewed as issues in terms of staff commitment to following food business operational practices. For example, one manager had staff working reduced hours due to economic and financial constraints and said it was difficult to maintain consistency in kitchen practices particularly during busy periods. This respondent thought the best way to maintain practices would be to have a designated member of staff present who would be responsible for checking temperatures and ensuring cleaning practices were maintained at all times.

7 Costs and benefits incurred by food businesses following changes to practices or equipment

Both time and financial costs can potentially arise for businesses when introducing changes to implement the cross-contamination guidelines. More rigorous processes may take longer to implement, new equipment may need to be purchased, changing product lines may impact on profits and BS compliant products may be more expensive than alternatives, to take a few examples.

In this chapter, some of the costs of change are considered, to assess the scale of such costs and how widely they are experienced. An appreciation of potential time and financial costs can highlight where and why key barriers to full implementation of the guidance may arise. Data gathered on time and financial costs are estimates by food businesses and results are therefore indicative as the study has not undertaken an audit of costs. Benefits associated with changes are also discussed.

Chapter key findings

- Time costs
  - The familiarisation stage is a one-off cost in terms of time and around half the businesses (47%) took less than an hour to read their chosen guidance materials.
  - The largest group of food businesses overall were able to implement change within half a day (39%) but butchers were twice as likely as other business types to have taken more than one week to implement change (28% compared with 14% respectively).
  - One fifth of food businesses now spend more time training their staff. On average businesses now take an additional three hours to train their staff. Many food businesses experience high volumes of labour turnover, training costs cannot therefore be interpreted as one off costs and are, instead, ongoing.
  - Time costs are also associated with new systems, processes or paperwork which now take longer for around one fifth of FBs.

- Financial costs
  - Among the businesses which had implemented changes, 34% had incurred financial costs as a consequence.
  - The average cost was £802.07.
  - Changes to product lines have had an impact on profits among butchers – 26% reported a reduction in profits and 8% a decline in customer numbers. However 6% of butchers and 4% of non butchers

reported improved customer satisfaction. Non butchers reported 7% more customers. These figures are based on small sample sizes however.

- Benefits of change
  - ➢ Virtually all businesses acknowledged benefits associated with change.
  - ➢ One third of businesses (31%) referred to reduced health risks as a key benefit, over one quarter (28%) benefited from their staff now having a clearer idea of their responsibilities and good practice. For 16% of businesses, systems now run more smoothly.

7.1   Time costs

Initially, food businesses will have taken time to familiarise themselves with the new guidance and to read one or more of the associated documents or watch the DVD. This familiarisation stage is a one-off cost in terms of time and, as shown in Table 6.1, was not an onerous commitment for most businesses. Around half the businesses (47 per cent) took less than an hour to read the guidance materials. A further 30 per cent took between one and four hours, while a minority of 14 per cent spent more than four hours reading materials and/or watching the DVD.

Table 7.1: Time taken to read documentation (FB)

	column percentages
15 minutes or less	9
16-30 minutes	17
31-60 minutes	21
1-2 hours	20
2-4 hours	10
Over 4 hours	14
Don't know	9
Total	412

Source: Food business survey. Q.A12

Implementing changes also represent a one off cost in terms of time which can vary considerably depending on the nature and scale of changes introduced. Table 7.2 shows the time taken by butchers compared with non butchers – no significant differences were evident by country or business size. The largest group of food businesses overall were able to implement change within half a day (39 per cent) but significant differences in time commitment affected butchers compared with non

butchers. Butchers were twice as likely as other business types to have taken more than one week to implement change (28 per cent compared with 14 per cent respectively). Butchers were more likely than other sectors to implement change and were notably more likely to have introduced new complex equipment.

Table 7.2: Time taken to implement changes (FB)

	Non butchers	Butchers	All
		column percentages	
Up to half a day	40	31	39
Between half to 1 day	14	10	14
2-4 days	15	11	14
1 week (5-7 days)	9	9	9
More than 1 week	14	28	15
Don't know	9	12	9
Total	467	177	644

Source: Food business survey. Q.E14

As indicated in chapter 6, one fifth of food businesses now spend more time training their staff. On average (using the median) businesses now take an additional three hours to train their staff. For some businesses, however, the extra burden of training time is much longer (Table 7.3). For one fifth (19 per cent) of food businesses, more than an additional two days is devoted to training, with these higher time commitments appearing to be more prevalent among smaller businesses than large. Among food businesses with 1-4 members of staff, 27 per cent are taking more than two additional days for training purposes, compared with 14 per cent of food businesses with ten or more staff.

The additional training time is exacerbated by the fact that many food businesses experience high volumes of labour turnover, training costs cannot therefore be interpreted as one off costs and are, instead, ongoing.

Table 7.3: Additional time spent training staff (FB)

	Business Size			
				column percentages
Additional hours spent	1-4	5-9	10+	All
1	19	28	33	28
2	19	18	17	18
3-6	18	12	13	14
7-8 (1 full day)	7	12	10	10
9-16 (1-2 days)	10	8	12	11
17 plus (over 2 days)	27	22	14	19
Base	93	82	114	289

Source: Food business survey. Q.E11

The 729 food businesses which had introduced changes were also invited to reflect upon whether any other new systems, processes or paperwork implemented were now taking longer than before. The vast majority (82 per cent) indicated that nothing in particular was taking longer. Among the 18 per cent for whom some aspects of their business were taking longer, the following were spontaneously highlighted:

- New documents, forms and other paperwork (cited by 6 per cent of food businesses)
- Staff training (3 per cent)
- Extra checking and record keeping (5 per cent)
- Paperwork and documentation surrounding the cleaning schedule (2 per cent)
- All of it (1 per cent)
- Preparation of meat products (1 per cent)

Additional evidence from the *follow-up* fieldwork found that large food chain businesses that used the guidance or found sections of the guidance useful, described spending from 1 day to 2-3 months implementing the new guidance. Changes in internal documents; operational procedures and training as a result of the guidance were identified. Unaccounted or hidden time was spent reviewing the guidance and discussing aspects of the guidance with EOs or the FSA.

7.2   Financial costs

Apart from additional time costs, the survey also addressed the financial costs associated with changes introduced. Among the businesses which had implemented changes, 34 per cent had incurred financial costs as a consequence. Data were collected from 204 businesses (with a further 46 businesses unable to estimate the value of their added costs). The average cost was £802.07.

Table 7.4 sets out the range of additional costs incurred. For half the food businesses (53 per cent) the additional costs were £200 or less. For the remaining half, costs exceeded £200 with around one in ten (11 per cent) incurring additional costs of over £2,000. The smallest businesses, with 1-4 staff, were somewhat more likely to have incurred costs of more than £500 (41 per cent) compared with larger businesses with 5-9 or 10 plus staff (33 per cent to 34 per cent). The higher costs associated with the very small businesses may reflect the findings shown in Table 4.4 - businesses with fewer than 5 staff were more likely to have implemented nearly every category of change, ranging from aspects of physical separation and new equipment to handwashing techniques. No differences by country were evident.

Table 7.4: Additional financial costs (FB)

column percentages

	Business Size			
Additional pounds spent	1-4	5-9	10+	All
1-49	15	15	18	16
50-100	20	21	10	17
101-200	9	20	31	20
201-500	14	9	9	11
501-1000	14	4	19	13
1001-2000	16	14	6	12
2001+	11	16	8	11
Base	92	61	51	204

Source: Food business survey. Q.G1

Sample sizes were too small to differentiate all business types but, in Table 7.5, findings are shown comparing butchers with non-butchers. The distribution of costs clearly differ, with over half the butchers (58 per cent) incurring costs in excess of £1,000 compared with just 15 per cent of non butchers. The financial costs

associated with implementing changes to implement the cross-contamination guidelines is therefore greater for butchers than other business types. Butchers are the most likely to have implemented changes and, as discussed in chapter 5, are the most likely by far to have purchased and installed separate complex equipment. This key difference is likely to account for the notable differences in costs associated with change.

Table 7.5: Additional financial costs (FB)

column percentages

	Business type		
	Non Butchers	**Butchers**	**All**
Additional pounds spent			
1-49	18	7	16
50-100	18	11	17
101-200	23	5	20
201-500	11	10	11
501-1000	15	9	13
1001-2000	9	25	12
2001+	6	33	11
Base	116	88	204

Source: Food business survey. Q.G1

The final cost to be considered is the impact on profits associated with changes to product lines. In order to meet the recommendations of the guidance some businesses stopped buying and selling raw meat, fruit, vegetables or salad and RTE products rather than introducing a range of other changes to their processes and practices to prevent cross-contamination. As discussed in chapter 5, 28 per cent of businesses asserted that such changes had not impacted on the business, 30 per cent did not know the impact, but for 5 per cent profits have declined (see section 5.3). This impact on profits is particularly marked for butchers, 26 per cent of which experienced a reduction in profits and 8 per cent of which now have fewer customers. The greater impact on butchers may reflect their different profile of changes introduced (Table 7.6) – butchers were more likely than non butchers to now buy in pre-packed or pre-cooked meats, cheese and burgers and are more likely to have changed their cleaning products. However, 6% of butchers and 4% of non butchers reported improved customer satisfaction and non butchers reported 7% more customers (these figures are based on small sample sizes).

Table 7.6: Changes to product lines (FB)

	Butchers	Non Butchers
		cell percentages
Now buy in pre-packed meats	22	7
Avoid certain ingredients/products	20	21
Use better cleaning products	14	8
Now buy in pre-packed cheese	13	0
Now buy in pre-cooked burgers	6	..
Now only use pre-packed RTE fruit, veg or salad	5	8
Use vetted/recommended suppliers	2	27
Only sell raw meat now	0	1
No longer sell raw meat	0	2
Base	89	38

Source: Food business survey. Q.E8
.. < 0.5%
Note: some small base sample sizes

7.3 Benefits of changes

While some businesses incurred time and financial costs when implementing changes, virtually all businesses also acknowledged benefits associated with change. Table 7.7 lists the various benefits spontaneously cited. One third of businesses (31 per cent) referred to reduced health risks as a key benefit, over one quarter (28 per cent) benefited from their staff now having a clearer idea of their responsibilities and good practice. For 16 per cent of businesses, systems now run more smoothly and one in ten see that now fully adhering to the guidance as a benefit in itself. In each case, non-butchers were somewhat more likely than butchers to cite the benefit. Small proportions of businesses also referred to: new procedures, improved FHRS score, customer satisfaction and peace of mind as benefits associated with changes implemented.

Table 7.7: Benefits of various changes implemented (FB)

cell percentages

	Non butchers	Butchers	All
Less health risk	32	24	31
Staff have clearer idea of what to do	29	20	28
Systems run more smoothly	17	12	16
Now implemented the guidance recommendations	9	11	9
New procedures	5	2	5
Improved FHRS score	2	4	2
Customer satisfaction	2	2	2
Peace of mind	2	4	2
No benefits	1	7	1
Don't know	9	11	10
Base	529	200	729

Source: food business survey. Q. E13
Note: multiple response option

8   Inspections and legal processes

This chapter investigates a number of inspection and formal action issues subsequent to the introduction of the *E. Coli* cross-contamination guidance. It explores: whether any changes have been made to inspection visits among EOs; informal actions taken; whether HEPNs are being considered; and, finally, the extent to which food businesses believe that the new guidance is a voluntary or a legal requirement.

Chapter key findings

- Changes to inspection visits:
  - ➢ The most widespread change is that EOs explicitly endeavour to ensure that food businesses are aware of the new guidance (mentioned by 49% of EOs).
  - ➢ Linked to this change, around one third of EOs (30%) have made changes to the level of detail of information provided to food businesses.
  - ➢ Around one fifth (21 per cent) now conduct longer visits.
  - ➢ Nearly one fifth of EOs (18 per cent) have changed their approach during the visit and use new or different pro-formas, checklists or aide memoirs.

- Informal actions taken:
  - ➢ The most common action taken (by 53 per cent of EOs) was to have written a letter advising the food business on compliance or an informal written warning (by 41 per cent of EOs).
  - ➢ 19 per cent of EOs have re-visited the underperforming site.
  - ➢ EOs in the follow up research described how informal actions are generally the preferred approach - educating, coaching and encouraging food businesses to make changes. The preferred aim is to achieve voluntary agreement.
  - ➢ Among those aware of the effect of the informal action, the majority stated that the action resulted in an improvement.

- Whether HEPNs are being considered:
  - ➢ The use of HEPNs had been considered by somewhat over half the EOs surveyed (58%) where inadequate controls had been encountered.

➢ Where a HEPN had been considered, a HEPN was most often served (in 43% of cases), followed by a HIN (33%) or a voluntary closure (20%).

➢ In all instances the formal action resulted in improvements being made within the businesses concerned.

- The majority of FBs believed that implementation of the guidance is a legal requirement (86%).

Inspection visits

Looking firstly at changes to the inspection visit, Table 8.1 details developments across the UK. The incidence and type of changes made appear to be similar within each of the four countries. The most widespread change across the UK is that EOs explicitly endeavour to ensure that food businesses are aware of the new guidance (mentioned by 49 per cent of EOs). Linked to this change, around one third of EOs (30 per cent) have made changes to the level of detail of information provided to food businesses. Around one fifth (21 per cent) also conduct longer visits (more so in Wales, with 31 per cent claiming such a change). Nearly one fifth of EOs (18 per cent) have changed their approach during the visit and use new or different pro-formas, checklists or aide memoirs (again more so in Wales where 31 per cent of EOs have made such a change). Across the UK small minorities of EOs have also made other changes, including: using the guidance as a tool during inspections, increasing or decreasing the frequency of their visits; focussing on dual use of equipment; the use of swabbing and sampling or issuing a Hygiene Emergency Prohibition Notice or Improvement notice.

Across the UK, a minority of just 13 per cent of EOs stated they did not make any changes to their inspection visits. Differences by country are evident, however - no changes have been made by 6 per cent of EOs in Northern Ireland, 12 per cent of EOs in England, 21 per cent of EOs in Scotland and 30 per cent of EOs in Wales (with the usual caveat that these findings are not robust, as based on very small sample sizes).

Table 8.1: Changes made to inspection visits due to the guidance (EO)

Cell percentages

	All	England	N. Ireland	Scotland	Wales
Ensuring food businesses aware of guidance	49	50	44	43	50
Detail of information provided to food businesses	30	32	31	14	20
Longer visits	21	21	38	14	20
Pro-formas or checklists used	18	17	31	14	20
Using guidance as a tool during inspection	7	7	19	0	0
Regularity of visits	6	5	6	14	10
Focussing on dual use of equipment	3	4	0	0	0
Likelihood of issuing HEPNs or Improvement notices	2	2	0	0	0
Use of swabbing	1	1	0	0	0
Use of sampling	1	1	0	0	0
No changes made	13	12	6	21	30
Base N	150	110	16	14	10

Source: Enforcement officer survey. Q.E1

Note: some small base sample sizes

The 33 EOs who described their inspection visits as now taking longer were asked the duration of that extended time (Table 8.2). Among this sub-group, half the EOs (53 per cent) now take between 20-39 minutes longer to inspect a food business. Nearly one fifth (19 per cent) take an additional 40 minutes or more to conduct an inspection. These notably longer inspection visits do arise in a minority of cases overall though.

Table 8.2: Extra duration of inspection visits where they are now longer (EO)

	Column percentages
1-9 minutes	3
10-19 minutes	10
20-39 minutes	53
40-49 minutes	3
One hour or more	16
Don't know	14
Base N	33

Source: Enforcement officer survey. Q.E2. Note: small base sample size

Informal Actions

The type of action taken by EOs when they encounter a business which does not have adequate controls in place was quite varied (see Table 8.3). The most common action taken (by 74 per cent of EOs) was to have written a letter advising the food business on the actions they needed to take or 19 per cent of EOs have re-visited the underperforming site. A full report of an inspection detailing areas which require improvement has been provided by 14 per cent of EOs. In a minority of instances (among 12 per cent of EOs) no informal actions were taken. The incidence of these informal actions was broadly similar across the four countries.

Table 8.3: Informal actions where businesses have not implemented guidance

	All	England	N. Ireland	Cell percentages Scotland	Wales
Written letters advising businesses on actions required	74	75	75	86	40
Revisits for underperforming sites	19	18	13	21	40
Written report of inspections identifying areas for improvement	14	15	6	14	10
No informal action taken	12	11	13	14	20
Advised business not to sell certain products	3	3	0	0	10
Base N	150	110	16	14	10

Notes: multiple response option, some small base sample sizes. Q.E3

In the *follow-up research*, EOs across all countries described how informal actions are generally the preferred approach when a food safety risk is observed, in line with the hierarchy of enforcement in the Food Law Code of Practice. EOs stated they use a 'soft approach', educating, coaching and encouraging food businesses to make improvements. As one EO explained, '*A lot of it's just persuading businesses to do things differently.*' A common approach described by EOs followed a staged process of overseeing implementation that aimed to achieve voluntary agreement. An initial advisory visit would be used to discuss the guidance, identify potential hazards and areas for change. For some food businesses this would have been the first time they were made aware of the new guidance. Then a follow-up visit would focus on the required changes. In a similar approach, particularly in cases where food businesses had been notified of the new guidance in advance of an inspection, EOs said they would issue an informal written warning or letter advising the business on actions required following the initial visit. An enforcement visit would then follow. However, as reflected in the survey data, EOs reported that informal notification was usually sufficient to enact changes.

As established in chapter 3, EOs prioritised butchers when enforcing the guidance and those who took part in follow-up interviews generally provided examples of encounters with butchers when describing instances of non-compliance. One EO reported that verbal advice, followed by a letter, was usually enough to ensure compliance. For example, the EO described how she convinced a butcher who protested about the expense of purchasing extra equipment. When stating the need for a second vacuum packer, the EO argued that the cost to humans outweighed the cost to the food business,

> '… the cost of that vacuum packer compared to the cost of an outbreak of serious food poisoning, there's no comparison in the cost really is there....you're dealing with people's lives.'

<div align="right">(Enforcement Officer)</div>

Table 8.4 highlights the effectiveness of the informal actions taken by EOs. In around one fifth of the cases, the impact of the action remained unknown, but among those aware of the effect, the majority stated that the action resulted in an improvement.

Table 8.4: Extent to which informal actions have resulted in improvements (EO)

Column percentages

	All	England	N. Ireland	Scotland	Wales
Improved	56	56	63	29	80
Somewhat improved	19	19	19	36	0
Not improved	3	3	6	7	0
Don't know	22	22	13	29	20
Base N	150	110	16	14	10

Source: Enforcement officer survey. Q.E4

Note: some small base sample sizes

Formal Actions

In addition to the informal actions taken, formal responses to inadequate controls were also been considered by somewhat over half the EOs surveyed (58 per cent) (Table 8.5). HEPNs were most likely to have been considered in Wales (80 per cent) and least likely in Northern Ireland (38 per cent). The relatively low proportions of EOs who considered formal actions may be explained by the extent to which the guidance has been implemented to date. As reported in Tables 3.4 and 3.9, just over half of food businesses that prepared or sold raw and ready-to-eat foods were aware of the guidance and EOs reported that implementation is ongoing. Moreover, in the qualitative follow-up research EOs mentioned implementation schedules that spanned over many months and some EOs described the implementation in terms of 'early days'.

EOs who had not considered formal actions in response to inadequate controls were asked why not. Responses from these 60 EOs were as follows: 49 stated the situation had not arisen and for the remaining respondents there was no consensus on the reasons given, with these ranging from situation was not extreme enough to preferring to take a more informal approach initially.

Table 8.5: Whether HEPNs have been considered where inadequate controls have been encountered (EO)

				Column percentages	
	All	**England**	**N. Ireland**	**Scotland**	**Wales**
Yes	58	58	38	64	80
No	39	39	63	36	20
Don't know	2	3	0	0	0
Base N	150	110	16	14	10

Source: Enforcement officer survey. Q.E5

Note: some small base sample sizes

As shown in Table 8.6, in one quarter of cases (23 per cent) where a HEPN had been considered, a HEPN or an alternative, was subsequently served[23]. A HEPN was most often served (in 43 per cent of cases), followed by a HIN (33 per cent) or a voluntary closure (20 per cent) (Table 8.7). In all instances the formal action resulted in improvements being made within the businesses concerned.

Table 8.6: Where HEPNs have been considered whether they were served (EO)

					Column percentages
	All	**England**	**N. Ireland**	**Scotland**	**Wales**
A HEPN or alternative form of enforcement was served					
Yes	23	25	0	0	38
No	77	75	100	100	63
Base N	87	64	6	9	8

Source: Enforcement officer survey. Q.E7

Note: some small base sample sizes

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[23] The survey does not provide information on the number of HEPNs served only the number of LAs which have served HEPNs.

Table 8.7: Where action taken, the form of enforcement used (EO)

	Cell percentages	N
HIN	33	6
HEPN	43	8
Voluntary closure	20	4
Other (not specified)	9	2
Base N		19

Note: Multiple response option
Source: Enforcement officer survey. Q.E8
Note: small base sample size

In the *follow-up* qualitative research, one EO described the circumstances surrounding a HEPN that was actioned due to the new guidance. This involved a farm shop that was using a single vacuum packer to package raw meat and cheese. The HEPN prohibited the dual use of the vacuum packer. This also prevented the sale of both cheese and raw meat products that were vacuum sealed on the premises until additional equipment was purchased.

In discussions with EOs, a decision to issue a formal notice tended to be a matter of professional judgement based on the proportionality of the infraction: taking into account the context of the food business, outcomes from previous inspections and the seriousness of the observed risk. As one EO stated,

> *'In terms of the enforcement action side, it would really have to be assessing the risk at the time and looking at it in the context of everything that's going on.'*

(Enforcement Officer)

The EO went on to explain that in their view the absence of a hand basin or dual use of complex equipment would be grounds for an enforcement notice. But the use of a disinfectant that was not British Standard compliant would be dealt with informally.

EOs who have issued a formal notification, either for enforcing the new guidance or for other food safety enforcement, outlined extreme cases of risk. For example, one butcher was issued a HEPN for a number of interlinked problems: dual use of equipment, unsafe cooked food and non-compliance for handwashing.

8.1   Food business perceptions of the guidance as a legal requirement

There is a legal requirement on food businesses to manage food safety using Hazard Analysis and Critical Control Point (HACCP) principles, by ensuring that hazards are identified and that valid critical controls are established, implemented and verified. The Agency's guidance represents clarification on how businesses can comply with this legal requirement, as it applies to cross-contamination.

The extent to which food businesses believe that the new guidance is a voluntary or a legal requirement may have a bearing on the extent of their implementation. Table 8.8 sets out food businesses' perceptions of the guidance in this regard. The majority believed that implementation of the guidance is a legal requirement (86 per cent), most often in Wales (92 per cent) and among large businesses with ten plus staff (92 per cent). Butchers were the least likely of all groups to perceive the guidance as legally binding (78 per cent).

Table 8.8: Whether food businesses perceive new guidelines as voluntary (FB)

| | | | *Row percentages* | |
	Voluntary	Legal requirement	Don't know	Base
England	12	84	3	948
N. Ireland	8	86	6	122
Scotland	10	85	6	154
Wales	6	92	2	106
Food retail stores (non specialist)	9	85	6	44
Bakers	5	87	8	77
Butchers	17	78	5	339
Hotels	10	88	2	127
Restaurants	12	85	2	370
Pubs and Bars	7	89	4	210
Catering	12	88	1	105
Delis and specialist food	9	90	2	58
1-4	15	81	4	484
5-9	13	83	4	420
10+	6	92	3	426
All %	11	86	3	1330

Source: Food business survey. Q.C7.

Base: 1330

The application of the new guidance in a court of law was perceived as an issue for EOs. During the follow-up research, concerns about no statutory provision or legal support for enforcement of the new guidance were voiced among EOs in all

countries. For example, an EO freported that food businesses ask if it is a legal requirement to make changes. On this the respondent felt the guidance is not explicit enough.

Another EO described a restaurant with a butchery on site that had failed to install a second sink as requested. The EO was planning to issue a prohibition notice but was concerned that there is no legislation to back the enforcement.[24]

The nature of the scientific evidence on cross-contamination during the preparation of raw and ready-to-eat foods was also called into question. One EO's view was that the research was based on contamination of surfaces through another pathogen, not *E. coli*. The concern was that the evidence was not sufficient to support an enforcement prohibition notice in court.

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[24] Many of the issues raised as requiring clarification are not covered by the scope of the guidance or discussed in the guidance and associated materials such as the Q&A, but as they have been raised by research respondents it is possible that the points referred to are ambiguous, not being picked up or are not understood.

9 Conclusions and recommendations

In order to protect the public from food borne illness it is imperative that food businesses are aware of the potential risks inherent in their practices and have the support and information necessary on how to avoid those risks. New FSA guidance was designed specifically to help businesses prevent *E.coli* O157 cross-contamination. Published in February 2011, it provides detailed guidance in relation to separation, equipment, cleaning and personal hygiene. This study set out to evaluate the FSA guidance on cross-contamination with the following broad objectives:

- To assess the extent of awareness of the guidance and associated materials
- To ascertain views on how comprehensible the guidance is and how it might be improved
- To identify the scale and range of changes made following implementation of the new guidance and identify challenges associated with this
- To explore enforcement officer practices and legal actions

This chapter summarises findings in relation to these issues and provides a number of recommendations which have emerged from the study.

Implementation and awareness of guidance

Guidance implementation is ongoing with a rolling programme of inspection visits underway. High risk businesses were prioritised in all countries, with detailed dissemination, inspections and active support more recently being extended to non priority businesses. As a result of this staggered dissemination process, by March 2012 only 12 per cent of EOs believed that all the food businesses they are responsible for have implemented the guidance in full, although over one third of EOs reported that the majority of food businesses have fully implemented the guidance. Full implementation was less widespread in some LAs reflecting their earlier stages of implementation.

Reflecting the staggered approach to implementation, there remains scope to expand awareness of the guidance in general. A little over half the food businesses sampled were aware that new guidance on cross-contamination had been issued, although 80 per cent of butchers were aware, in keeping with the common practice of prioritising these businesses.

Among businesses aware of the guidance in general, the majority (85 per cent) were also aware of at least one of the guidance documents – primarily LA and FSA Factsheets. Despite widespread awareness and receipt of the documentation, many food businesses had not read them in full.

The most common methods used by EOs for disseminating the guidance documents were to post materials and then provide more detailed clarification and support during routine face-to-face inspection visits. As the process of rolling inspections continues, more widespread awareness of the guidance and knowledge of the changes businesses may need to undertake can be expected.

Understanding the guidance

Understanding of the guidance was not a problem among EOs - two thirds described the full guidance as easy or very easy to understand. The guidance therefore appears to be sufficiently well written and pitched at the right level for their purposes. A majority of EOs also found the documentation useful in helping businesses to put in place effective separation and cleaning practices. Many found the guidance less useful in relation to hand-washing, however, primarily because it was felt behaviour cannot be monitored and busy businesses may lapse and slip into bad habits.

Two thirds of food businesses also described the full guidance as 'easy' or 'very easy' to understand. The most readily understood of the associated materials was the DVD, followed by LA Factsheets and then the Q&A and Factsheet.

A number of suggestions for further improvement of the guidance were nevertheless made by EOs and food businesses, these are discussed in section 9.1 below.

Scale and range of change

While implementation may not yet be complete, there is evidence of widespread change among food businesses in relation to: separation, complex equipment (most notably among butchers), cleaning, personal hygiene and staff training routines. Overall, a little under one third of businesses have introduced a change to their business and nearly two fifths have changed the way they train their staff. A further important development is that around half the food businesses agree that their awareness of the risks of cross-contamination has been enhanced by the guidance materials.

Among food businesses which have not introduced any changes, nearly one in ten plan to make changes at some point in the future, while the remainder have no intention of introducing change, primarily because they believe they already meet the requirements of the guidance in full. There would appear to be some inconsistency in the perspectives of EOs and food businesses, however, in relation to perceptions of full implementation. Around two fifths of EOs suggested that only one half or fewer food businesses have implemented the guidance in full. By contrast, around two

thirds of surveyed food businesses have not introduced changes on the grounds they already adhere to guidance recommendations. It is possible that these latter food businesses are not fully aware of the detail contained in the guidance which may indeed require further change in practices. There is scope, therefore, to assess communication approaches in relation to why and how the guidance is both relevant and potentially helpful to food businesses. One example of how the guidance might be promoted in terms of its broader benefits is in relation to FHRS scores as improved FHRS scores were identified as a benefit of implementing the guidance by businesses.

The incidence of change was highest among butchers, among businesses in Northern Ireland and in businesses where the owner/manager did not speak English as a first language. The majority of surveyed businesses (53 per cent of butchers and 70 per cent of non butchers), reported that the implementation of change was not notably challenging. Nearly one fifth of butchers (17 per cent), however, identified the introduction of separate complex equipment as challenging. Other barriers to the full implementation of change highlighted by businesses included the following, but it should be noted that each of these potential difficulties was raised by fewer than ten per cent of businesses:[25]

- problems with cost of equipment
- impact of changed product lines on profits
- cost of disposable aprons
- the challenge of physical space limitations and separate preparation areas for raw and cooked foods
- separate storage areas for raw and cooked in small areas
- identifying approved disinfectants
- too costly to have separate staff serving raw and ready to eat food
- impracticality and customer service implications of having separate staff
- challenges of high turnover of staff and of low paid and inexperienced staff - considerable management time required to train and monitor staff and ensure compliance

According to EOs, small businesses in all sectors were most likely to have experienced problems whether due to cost, space, understanding the guidance or for other reasons (identified by 58 per cent of EOs). Butchers and caterers (i.e. restaurants, hotels, pubs and contract caterers) were also identified as businesses more likely to have experienced challenges compared with other sectors (cited by 42 per cent and 44 per cent of EOs respectively).

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[25] Some of these barriers are not necessarily unique to the new guidance on cross-contamination of *E. coli* O157 but are general issues associated with introducing changes within businesses.

It should be noted that while many businesses have faced a range of challenges, including financial and time costs when implementing changes, virtually all businesses also acknowledged benefits associated with the changes, including: reduced health risks, staff having a clearer idea of their responsibilities and good practice, systems running more smoothly, improved FHRS scores, customer satisfaction and peace of mind.

Inspections and legal processes

In summary, the guidance has led to a number of changes in the inspection process, in particular: many EOs now ensure that food businesses are aware of the new guidance, changes have been made to the level of detail of information provided to food businesses, around one fifth conduct longer visits (typically 20-30 minutes longer) and nearly one fifth of EOs have changed their approach during the visit and use new or different pro-formas, checklists or aide memoirs.

One issue raised by large business chain managers and some EOs during the *follow-up stage*, however, was variation in local authority approaches to implementing the guidance. Interpretative differences among EOs were viewed as a problem and resulted in confusion across business sites and, to a lesser extent, across enforcement authorities. The issue of inconsistent interpretation by EOs was a concern for the business chains as it hindered the standardised application of food safety procedures across all food business outlets.

Actions

Follow-up research with EOs found that EOs across all countries preferred an 'informal approach' initially when inadequate cross-contamination controls were observed. A 'soft approach' included educating, coaching and encouraging food businesses to implement necessary changes. A staged process of overseeing implementation that aimed to achieve voluntary agreement was common. This was said to promote a good working relationship between EOs and food businesses. An initial advisory visit was typically used to discuss the guidance and identify areas for improvement. For some food businesses this would have been the first time they were made aware of the guidance. A follow-up visit would focus on the required changes, after which an informal written warning or letter advising the business on actions required would be issued if necessary. An enforcement visit would then follow but informal notification was usually sufficient to enact changes.

In addition to the informal actions taken, formal responses to inadequate controls have been considered by somewhat over half the EOs surveyed. According to *follow up interviews* with EOs, where a formal approach has been considered this tended to

arise in response to the context of the food business, outcomes from previous inspections and the seriousness of the observed risk. One issue that was raised by EOs was a concern that an HEPN taken to court in relation to the guidance, may not be successfully upheld. The sharing of LA experiences in relation to the serving of HEPNs may therefore be needed.

9.1   Recommendations

Recommendations have emerged from the evaluation evidence in relation to:
- Increasing awareness of the guidance and associated documentation
- Improving the guidance and potential additional resources
- Improving enforcement

Each of these is addressed in turn below.

Increasing awareness of guidance and associated materials

Given limited resources, the staggered approach adopted by EOs seems appropriate. Moving beyond phase I, during which butchers and other high risk businesses were prioritised, further attention to how the guidance is communicated to food businesses may be warranted. Business proprietors for whom English was not their first language and non-butchers in particular could be targeted to improve overall levels of awareness.

Future dissemination and communication approaches might also be reconsidered in light of the fact that (a) 15 per cent of businesses were unaware of any documentation and (b) only around half the food businesses had actually read any of the documents in full. In some instances documents had not been received or consultants were used to advise on practice, but the main reasons for not reading documents or watching the DVD in full were a lack of time and/or an assumption that the language used would be too technical and difficult to understand. Yet most businesses owners/managers who had read the guidance materials found them easy to understand. There may therefore be scope to promote the message that the guidance documents are not technical and that they are designed to be readily understood by food businesses. Fears can also be allayed in relation to the time commitment, highlighting the fact that most managers/owners who read the Factsheet, for example, took just thirty minutes or less.

Very few businesses required translated versions – of those businesses surveyed, 10 per cent did not have English as a first language and, of these, only 7 per cent indicated the need for translations.

Improving the documentation

Most surveyed food businesses suggested that no improvements were necessary to the documentation. On the whole, therefore, the documents would seem to be of sufficient detail, well written, not too complex and in a format that is well received. Most EOs also found the guidance useful in the field in tackling cross-contamination and were confident in doing so. Nevertheless, there is scope for improvement and both food businesses and EOs suggested a range of changes, improvements or clarifications, whether in terms of content, format or the need for additional resources. Food businesses sought advice when guidance was perceived as impractical to implement. Practical tips would therefore be of benefit. Recommendations on how further to improve the documentation included:

- Use of more practical examples within the guidance with reference to different work environments (cited by 23 per cent of surveyed EOs).
- Clearer language or better explanations of terminology (cited by 17 per cent of EOs).
- Keeping all materials concise (suggested by 28 per cent of food businesses in relation to the full guidance, and between 14 per cent and 17 per cent of food businesses in relation to the Factsheets and Q&A).
- Additional suggestions included the following, but these were raised by small minorities of surveyed EOs or food businesses: more visual guidance, eg. showing photos of correct and incorrect procedures using ticks and crosses; use of case studies; provision of a list of acceptable cleaning chemicals and disinfectants.

Both food businesses and EOs were asked whether additional resources would be useful to supplement existing documentation but 38 per cent of surveyed EOs and 71 per cent of surveyed FBs did not see the need for additional resources. A minority of 14 per cent of EOs suggested that seminars for businesses would be a helpful addition to the range of support available to food businesses and a diverse range of other suggestions were raised but by small minorities of EOs or FBs.

Enforcement: inconsistencies and enforceability

In the qualitative research, inconsistencies between and within LAs on the interpretation and application of the guidance were commonly raised as a concern by representatives from trade organisations and large food businesses and the EOs themselves. A comprehensive programme of training for EOs is currently underway. This is likely to iron out UK wide differences of interpretation noted during the course of this study. This training should also address any uncertainties among EOs on the use of formal actions in relation to the *E.coli* O157 guidance.