



postnote

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FOOD HYGIENE STANDARDS

Food poisoning caused by microbes is a serious public health problem. Hygiene standards and procedures are laid down in food legislation to protect public health. However, improving food hygiene is not just a matter of implementing and enforcing regulations. This briefing describes recent developments in food regulation and examines options to improve food hygiene in businesses through monetary penalties, training and the use of local “Scores on the Doors” schemes.

Background

Food poisoning is caused by the consumption of contaminated food or water. Poor hygiene, cross contamination, improper handling and inadequate heat treatment are the most common causes of foodborne disease. Food poisoning is believed to be widely under reported to GPs. In 2007, there were an estimated 850,000 UK cases of food poisoning, over 19,500 hospitalisations and over 500 deaths¹. Restaurants (42%), non-residential caterers (21%) and retail (7%) sectors were the major sources of outbreaks.

The main hazards in food processes are contamination with bacteria that cause disease (pathogenic bacteria) such as *Campylobacter*, *Salmonella*, *E. coli* O157:H7, *Listeria monocytogenes*, and *Clostridium perfringens* (see Box 1). Vulnerable groups such as the elderly, the sick, babies, young children and pregnant women are most at risk from food poisoning.

The UK's largest outbreak of *E. coli* O157 in Scotland in 1996, resulted in 17 deaths of elderly people. Another major outbreak of the same pathogen in Wales in 2005 led to the death of a school child. Professor Pennington is chairing the Public Inquiry into this outbreak and is expected to publish his report in Spring 2009.

Food Hygiene Regulation

The Food Standards Agency (FSA) is the Government department set up to protect public health and consumer interests in relation to food. While policy responsibility for food hygiene rests with central government, enforcement

Box 1. Pathogenic Food Poisoning Bacteria

The following pathogenic bacteria are responsible for the vast majority of UK cases of food poisoning:

- *Campylobacter* is found in raw and undercooked poultry; other sources include red meat, unpasteurised milk and untreated water. Food can be contaminated by improper handling and poor hygiene.
- *Salmonella* - main sources are poultry, and red meat, unpasteurised milk and raw egg products. Food can be contaminated by improper handling and poor hygiene.
- *Clostridium perfringens* – a spore forming bacteria found in meat and poultry and their products. Contamination occurs due to inadequate cooking, re-heating, cooling and lack of refrigeration. This allows surviving spores to develop and cause food poisoning.
- *E. coli* O157:H7 is often found on undercooked minced beef and unpasteurised milk. Outbreaks have also involved sprouted seeds, unpasteurised fruit juices, leafy greens and cheese. It particularly affects the very young and the very old.
- *Listeria monocytogenes* is widespread in the environment and so is commonly present in many raw foods and ingredients. It is ubiquitous and is associated with certain chilled ready-to-eat foods such as pates, soft cheeses and sliced cooked meats. It especially affects people over 60 and pregnant women.

is primarily at local level by 434 Local Authorities (LAs) in the UK. In 2007, the Rogers Review set the national enforcement priorities for LA regulatory services². It identified the “hygiene of businesses” as one of the top 5 enforcement priorities for LAs due to the high impact on public health and potential losses to the economy.

In the UK, general food requirements are laid down in Food Hygiene Regulation (EC) 852/2004 which came into force in January 2006. It provides rules for food businesses handling/processing foods through the food chain. It requires food business operators to:

- put in place and maintain food safety management procedures based on the Hazard Analysis and Critical Control Point (HACCP) principles (see next section);
- supervise, instruct and/or train food handlers on food hygiene and provide training on HACCP procedures.

What is HACCP?

HACCP is a preventative system designed to ensure food safety by identifying all the critical control points in a food process where contamination can occur. A critical control point (CCP) is simply any step in a food process where control can be applied to eliminate a food safety hazard or reduce it to an acceptable level. (See Box 2 for a HACCP example). If a loss of control occurs at a CCP, a corrective action is applied to prevent unsafe food, which may be contaminated, from reaching consumers.

In practice, an effective HACCP system requires good manufacturing processes (GMP) and good hygiene practices (GHP) to be in place, covering aspects such as personal hygiene, cleaning and sanitation, training, the design of food premises and pest control. Among the main benefits of HACCP-based procedures are:

- improved hygiene standards;
- reduced microbial counts in products;
- higher customer satisfaction;
- providing a formal basis for developing a relationship between food companies and regulatory authorities;
- providing a basis for a legal defence in court.

Box 2. HACCP Case Study: Chicken Salad

The HACCP analysis would look at each of the steps in preparing the chicken salad. These are:

- delivery of all the ingredients;
- chilled storage of the ingredients;
- preparation of the chicken;
- cooking the chicken;
- cooling and chilled storage of the cooked chicken;
- preparing and serving the salad.

The main hazard in this case is the possibility that the chicken will be contaminated with pathogenic bacteria and that these might survive the cooking process and grow. A HACCP analysis would identify the following critical control points and specify a critical limit for each of these:

- cooking the chicken thoroughly to reach an internal temperature above 75°C for at least 30 seconds to ensure that any pathogenic bacteria are killed;
- cooling the chicken within 90 minutes to 8°C;
- chilled storage of the cooked chicken at a refrigerator temperature below 8°C to prevent bacterial growth.

A HACCP analysis would also specify the following actions:

- Monitoring – a visual check on the colour of the meat to make sure it is thoroughly cooked (i.e. not pink), use of a temperature probe during cooking and a check on fridge temperatures during storage.
- Corrective actions - continue cooking if the meat appears pink or if the correct temperature is not reached. Change the food to another refrigerator or throw it away if the storage temperature is too high.
- Verification – evaluation and review of HACCP plan and prerequisite programs (GMP and GHP).
- Documentation – ensuring that there is a written HACCP plan and that relevant records are kept, including any corrective action taken.

- lack of time;
- caterers handling a wide range of different foods;
- lack of technical expertise;
- lack of trained personnel and high staff turnover.

In 2006/07 the number of UK food establishments supplying food direct to consumers was estimated to be 545,000, with 87% employing 10 people or fewer.

Implementing HACCP-based Procedures

The European Commission has produced guidance to allow flexibility and proportionality for small businesses implementing HACCP. In England, the Food Standards Agency (FSA) used the flexibility in the regulation and collaborated with industry, local authorities and academics to develop Safer Food Better Business (SFBB). SFBB for caterers is a HACCP-based programme to overcome the constraints small businesses may have with HACCP. It consists of a set of documented safe hygiene methods that cover most food handling practices within the catering industry. These are based on the '4Cs' for food safety: cross contamination, cleaning, cooking and chilling. Similar schemes operate in Scotland, Wales and Northern Ireland. Feedback from LAs, businesses and other stakeholders using SFBB found it to be a success and not overly burdensome³.

Proposal to Exempt Small Businesses from HACCP

In 2007, The European Commission proposed to exempt certain small food businesses from the requirement of Regulation (EC) 852/2004 to have HACCP-based procedures in place. Under this proposal, food hygiene would be maintained by implementing GHP and GMP. The exemption would apply to small businesses with fewer than 10 employees and/or annual turnover not exceeding €2 million. Progress of the proposal is uncertain. It is currently 'parked' at EU level and its implementation is likely to depend on the inclination of successive EU Presidencies to pursue the matter further.

The majority of respondents to an FSA consultation in 2007 did not support the proposal. This included the majority of LAs and most industry respondents. Common objections were that the proposal was based on size and not on risk, and that the legislation already provides flexibility to small businesses. There were also concerns that the proposal would undermine the successful work carried out with the SFBB programme to maintain and improve food safety standards in small businesses.

Enforcement

LAs employ Environmental Health Practitioners (EHPs) to plan and implement an inspection programme of food premises. EHPs use a risk-based approach to planning inspections. Premises that pose the highest risk are inspected most frequently, while those operating quality assurance schemes may be inspected less frequently.

Consistency of Enforcement

The available evidence suggests that there is inconsistency in the levels of enforcement between LAs.

Constraints to introducing HACCP-based Procedures

In practice, food companies may experience a number of constraints implementing HACCP-based procedures. This is especially true for small businesses; barriers include:

- lack of financial resources;

For instance, in 2006/07, only 46% of all LAs achieved all their high risk planned inspections although 80% achieved at least 90% of such inspections. In 2005, the Hampton review⁴ recommended the use of an approach based on risk for inspection and enforcement. As a result, the government introduced initiatives to reduce the number of regulators, streamline the regulatory process and improve communications. In 2008, the Local Better Regulation Office (LBRO) was established as a non-departmental public body by the Regulatory Enforcement and Sanctions Act 2008 to help LAs reduce red tape. To reduce the burdens of regulation without compromising public health, LBRO is working in collaboration with national regulators such as the FSA and with the Better Regulation Executive, the Chartered Institute of Environmental Health (CIEH) and Local Authorities Coordinators of Regulatory Services.

The CIEH believes that much of the apparent inconsistency between LAs is due to the risk-based nature of the regulation. This requires individual EHPs to exercise their professional judgement in assessing the level of risk for each individual business, and what action to take. The CIEH suggests that this flexibility allows appropriate and proportionate action to be taken, yet recognises the need for training and peer review to reduce the risk of enforcement inconsistencies.

The FSA has set up the Enforcement Liaison Group to support LAs on enforcement and other queries relating to food law. At the same time, the LBRO has launched a project on leadership and outcome change in regulatory services. It aims for inspections to be focused on public health and to promote competence among EHPs.

Improving Food Hygiene Standards

Improving food hygiene standards is not just a matter of implementing and enforcing food legislation. Recent years have seen several related developments including:

- a toolkit of monetary and other civil sanctions;
- mandatory food hygiene training;
- so-called "Scores on the Doors" schemes.

Monetary administrative penalties

In 2006, the Macrory Review looked at compliance with regulations across UK businesses. Evidence submitted in the review suggests that many regulators are heavily reliant on criminal prosecution. The review suggested that regulators should use alternative civil sanctions such as fixed and variable monetary penalties for businesses that are not compliant with the law. This was incorporated into the Regulatory Enforcement and Sanctions Act 2008.

One option open to the FSA and LAs is to use the powers in this Act to impose monetary administrative penalties when enforcing food hygiene regulations. This would require a statutory instrument to be approved by each devolved Parliament/Assembly where the penalties would apply. Before applying for such powers the FSA has stated that it would need to collect evidence on the effect such penalties would have on public protection.

Mandatory Food Hygiene Training

Another way to improve hygiene standards is through appropriate training of food handlers. For instance:

- A study in small retail and catering businesses found a higher proportion of food samples of unsatisfactory/unacceptable microbial quality in premises where the manager had not received food hygiene training.
- Another study has shown that the microbial quality of food products was less acceptable where managers did not receive training, compared with those trained.

There is currently no legal requirement for food handlers and managers to attend formal and/or accredited training; the hygiene regulation simply requires food operators to supervise, instruct and/or train food handlers on food hygiene. The necessary skills may be obtained through on-the-job training, self study or relevant prior experience. However, the CIEH suggests that high hygiene standards cannot be achieved without adequate and regularly updated training, that meets employer defined National Occupational Standards. It believes accredited training is vital to improving food hygiene standards and reducing cases of food-borne illnesses.

The CIEH has argued for mandatory food hygiene training. However, the FSA agrees with the European regulation with businesses taking responsibility for ensuring food handlers know how to do their job. It points out that formal training could place unnecessary burdens and costs on businesses and does not guarantee that food handlers will apply their knowledge in practice.

"Scores on the Doors" Schemes

Scores on the doors (SOTD) schemes are another potential way of improving hygiene standards. The basic idea of such schemes is for food businesses to display a hygiene score based on their most recent LA inspection. The scores given are derived from the assessment made of the level of compliance with the following 3 elements: food safety and hygiene procedures; the structural integrity of the premises and; confidence in management/control procedures. The objective of SOTD is to allow consumers to make informed choices and through this, to encourage businesses to improve their standards and to comply with food hygiene legislation. The CIEH and the Institute of Food Science and Technology suggest that SOTD is a way of improving standards and driving self-regulation.

Current SOTD Schemes

Various different types of SOTD schemes operate across the UK. Each differs in the way that information is presented to the consumer. Most schemes operate on a star rating system with a number of tiers, such as 1 to 3 stars (a 3 tier scheme), or 0 to 5 stars (a 6 tier scheme). Others use rating systems such as Poor-Satisfactory-Excellent or are based on a simple pass/fail assessment. Some 214 UK LAs are committed to an SOTD scheme of one sort or another. Most (83%) of these LAs, covering just under half (48%) of the UK population, use one of the several 6 tier schemes represented in 5 stars (see Box 3 for details of one such scheme). In Scotland, 16%

of LAs operate a simple pass/improvement required scheme.

An FSA consultation found that most food businesses stated a preference for a simple 2 tier scheme and for consumers, it was apparent that the need to establish a single UK-wide scheme was a more important factor than the number of tiers used. A survey by the LAs' SOTD-user group set up to support a 5-star scheme outlined in Box 3 reported that:

- 86% of consumers prefer a 0-5-star (6 tier) scheme;
- 84% of businesses were satisfied with the "star" symbol and the 6 tier rating system they were currently using.

Using SOTD Schemes to Improve Food Hygiene

Research conducted by the FSA suggests that the current SOTD schemes may have led to measurable improvements in hygiene inspection scores. For instance, evaluation of a 5 star scheme found that over time, the number of businesses rated two star and below fell, while the number rated at 4-5 stars increased. Similar findings have been reported from research by the CIEH, the University of Birmingham, University of Northumbria, the SOTD user-group (Box 3) and in other countries using similar schemes. However, the improvements in hygiene standards might also be due to other factors such as the introduction of the new regulation in 2006.

Moving Towards a National Scheme

In December 2008, the FSA Board announced a national SOTD scheme for England, Wales and Northern Ireland. It decided on a 6 tier scheme, where scores will be based on routine LA inspections using the 3 criteria explained previously. Scotland will maintain its current "pass/improvement required" rating scheme.

The symbols and words to represent each tier are not yet determined, and will depend on the results of FSA-funded consumer research. The two national schemes will cover businesses in the catering and retail sectors. An SOTD Steering Group will provide a forum for assistance and manage the move towards the national scheme. The LBRO will work with LAs to encourage them to use the scheme and ensure consistency in its implementation and application.

Costs

Research on existing SOTD schemes suggest that LAs and businesses alike are satisfied with the relatively inexpensive costs of implementing SOTD schemes. Costs to LAs include designing and launching a scheme, and maintaining websites. The immediate costs to businesses were minimal⁵. The FSA has estimated its costs for the national scheme to be between £3 and £5.7 million over the first 3 years. This would cover support for LAs to design, test and operate a web-based SOTD platform as well as to develop communication strategies. It is estimated these costs will be offset by savings of £12.3 million arising from a 1% decrease in food poisoning over a 3-year period.

Box 3. Example of a 0-5 Star (6-tier) Scheme

The www.scoresonthedoors.org.uk scheme started in 2005 as a collaboration between 6 LAs. They use a commercial provider for IT support and business advice. Each LA pays an annual subscription fee of 2-3% of its total inspection costs. The number of authorities has now increased to 95, and no LA has dropped out of the scheme since it started. Since March 2008, the scheme has been working with 30 LAs in London that also use similar 6-tier star rating, to harmonise their schemes. To tackle inconsistency problems, an SOTD-user group has been set up to share materials, experience and expertise and to adopt a standard process based on best practice.

Should the National Scheme be Mandatory?

Participation in SOTD schemes is not mandatory for LAs, and businesses are not required to display any certificate awarded to them by a scheme; the FSA envisages the new national scheme operating on a voluntary basis. At present, high scoring (4 or 5 star) businesses are more likely to display a certificate than lower scoring businesses (0-3 stars). Many LAs and consumer stakeholders support a mandatory requirement to display an SOTD certificate but this would require primary or secondary legislation. Most businesses are opposed to such a move. The Tenth London Local Authorities Bill, currently before Parliament, includes a proposal for mandatory display of SOTD in businesses within London.

Overview

- Food poisoning is still a major issue in the UK that is believed to be widely under-reported.
- Use of a HACCP-based approach can identify and effectively control food hazards.
- Opinion is divided over whether formal training for food handlers should be made mandatory.
- The Regulatory Enforcement and Sanctions Act 2008 allows a minister to give regulators access to new civil sanctions as an alternative to criminal prosecution.
- A national "Scores on the Doors" scheme may help food businesses to raise standards by displaying to the public a score based on inspection results.

Endnotes

- 1 Figures courtesy of the Food Standards Agency.
- 2 Rogers Review, *National enforcement priorities for local authority services*, Cabinet Office, 2007; www.berr.gov.uk/files/file45168.pdf
- 3 *SFBB Milestone evaluation report*, FSA, 2007; www.food.gov.uk/multimedia/pdfs/board/fsa071204.pdf
- 4 Hampton Review, *Reducing administrative burdens*, HM Treasury, 2005; www.hm-treasury.gov.uk/d/bud05hamptonv1.pdf
- 5 *Evaluation of scores on the doors final report*, FSA, 2008; www.food.gov.uk/multimedia/pdfs/sotdmainreport.pdf

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