Preventing disease and death from food-borne pathogens

LSE research helped formulate more effective food hygiene regulations for preventing E.coli and other bacterial health threats

What was the problem?

Pathogens are bacteria that cause bloodstream infections and have become one of the fastest-growing health threats in the world. One bacterium that can sometimes be pathogenic, and that can spread to humans through contact with contaminated food or water, is called E.coli.

In September 2005, the second largest outbreak of E.coli in the UK broke out in South Wales. Most of the 157 victims were schoolchildren. Thirty-one patients needed hosptialisation and a five-year-old boy died.

In 2011-2012 the overall number of cases of bloodstream infections · 99,000 · was still on the rise, with E.coli accounting for 36% of cases. Half of such pathogens are now resistant to antibiotics and around 5% result in death.

According to the UK Government's Chief Medical Officer, the growing resistance of pathogens to antibiotics poses a threat equal to terrorism and indicates an urgent need to identify new ways to address the problem besides medication. Food hygiene is a critical element of any approach since most E.coli is spread through infected raw and ready-to-eat food.

What did we do?

LSE Professor of Risk Regulation Bridget Hutter has conducted research in the area of regulatory enforcement and compliance for over two decades. In the 1990s she examined the work of regulators in various government departments and then examined the other side of the equation – how businesses respond to regulation and manage their risks. In 2003-6 she conducted a detailed analysis of the risk management practices of food retail and catering businesses in the UK.

In this body of research Hutter found that government regulation was a critical factor in how businesses regulated their risks but was not sufficient by itself. Non-government 'regulators' such as trade associations, consultancies and insurance companies were also influential. Consumer expectations and risks to the reputation of the business also served as a major incentive for businesses to comply with regulations, especially in the food industry.

Hutter also found that the internal capacity of businesses to regulate their own risks was often problematic. Large organisations might have the expertise but often experienced challenges in communicating and embedding such expertise. Small businesses, on the other hand, tended to rely on government officials to help them understand and manage these risks. Government cutbacks in environmental health officers were therefore raising concerns about the ability of food catering and retail businesses, as well as farms, to take appropriate actions to prevent the transmission of food-borne pathogens.

What happened?

In the wake of the 2005 E.coli outbreak a government inquiry was established to investigate its causes and Hutter was commissioned to prepare a report on risk factors. *Risk Regulation and Compliance* was published in 2008 and set out the key principles of food hygiene regulation in the UK.

The report highlighted the main areas of risk regulation in a food hygiene industry populated predominantly by small businesses. It drew on her earlier work, particularly with regard to the fact that government policies advocated self-regulation whereas small businesses found it difficult to self-regulate. In addition, she found that government inspectors did not always possess adequate specialist knowledge when working with such complex technical concepts.

The 2008 report was subsequently used as evidence in the public enquiry into the outbreak and was instrumental in formulating four key recommendations:

- Enforcement systems should be constantly reviewed as small businesses are often unable to understand or manage food hygiene risk (Recommendation 7)
- Training should be developed to ensure that environmental health officers have the necessary knowledge and skills to enforce food hygiene (Recommendation 9)
- Decisions about confidence in food safety management by businesses should be based on scientific research (Recommendation 12)
- The Food Standards Agency should develop a system of assessing food hygiene inspections by local authorities (Recommendation 15).

In March 2009, partly as a direct result of Hutter's research, the Food Standards Agency established a Food Hygiene Delivery Programme designed to measure progress towards

> “Hutter's work has "helped to inform the Agency's on-going development of our compliance and enforcement strategy... providing a broader context for enforcement regulation....and stimulating us to think about our further research needs for supporting and developing our strategies"..”
>
> **Head of the Analysis and Research Division, UK Food Standards Agency**

better food hygiene. Hutter was a consultant on this project and provided specific advice on the management of regulation and compliance.

Hutter also gave oral evidence to the Food Standard Agency's 'Review of Delivery of Official Controls', which was commissioned to help local authorities monitor and ensure local business compliance on food hygiene.

In November 2012, the Food Standards Agency reported that 80% of expected progress on Recommendation 7 had been achieved and 100% on Recommendations 9, 12 and 15. Business compliance rose from 64% in 2009 to 81.6% in 2012, while supervised businesses in the 'not broadly compliant' category fell from 27% to 15.2% over the same period.

Accomplishments related to the specific recommendations were also reported:

- Introduction of a 'cause for concern' initiative which helped failing businesses to achieve compliance (Recommendation 7)
- A programme of training for local authority enforcement officers which was attended by over 2,600 officials (Recommendation 9)
- An evidence-based approach to audits by veterinarians (Recommendation 12)
- Revisions of the local authority inspection process and a new guideline booklet for local authorities called *Making Every Inspection Count* (Recommendation 15).

Hutter's influence also extended to Australia and New Zealand where 41% of E.coli patients were being hospitalised at high public cost. Hutter's research helped the Food Standards Agency (FSANZ) to formulate its approach to outbreaks of food-borne illnesses caused by pathogens such as E.coli and to take into account the regulatory capacity of businesses in the food supply chain, especially home-based farmers who were normally exempt from many government directives.

Bridget Hutter is Professor of Risk Regulation in the Department of Sociology at the London School of Economics and Political Science. She is author of numerous publications on the subject of risk regulation and has an international reputation for her work on compliance, regulatory enforcement and business risk management. She is former Director of the ESRC Centre for Analysis of Risk and Regulation (CARR) and is regularly involved in policy making discussions, with international bodies such as the World Economic Forum and with business organizations and regulatory agencies.

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