

Foods Standards Agency consultation on the FSA Foodborne Disease Strategy 2010-2015

EVIDENCE SUBMITTED BY THE SOCIETY FOR GENERAL MICROBIOLOGY

Introduction

The Society for General Microbiology (SGM), founded in 1945, is an independent learned and professional scientific body dedicated to promoting modern microbial science. It has established itself as one of the two major societies in its field globally, with some 5,000 members in the UK and abroad. Further information about SGM is provided in Appendix 1.

Response to consultation questions:

Q1: *Whether, in your view, the overall approach described (i.e. pathogen-specific action, rather than commodity-focused) is the most appropriate to achieve the intended outcome? If not, please explain briefly your reasoning.*

A pathogen-specific action is the most appropriate approach considering the different behaviour of foodborne pathogens. For pathogens associated with a particular foodstuff, such as *Campylobacter* whose major source is poultry, a commodity-focussed approach is appropriate, as the properties of the foodstuff affect the survival and growth of the pathogen. For *Listeria* no one commodity appears to be associated with recent foodborne disease and hence a pathogen-specific action is the only approach which can be taken. Similarly for *E.coli* O157:H7 although meat has often been the source, infection has resulted from various cross-contamination events. In this case controlling the spread of the organism is the major factor.

Q2: *Whether we have prioritised for action the pathogens that, if the strategy is successful, will lead to the greatest reduction in the incidence and burden of UK foodborne disease? Do you agree these are the right priorities?*

The organisms that have been prioritised are those which cause the greatest number of cases of disease or cause disease with the most severe consequences. Control of these organisms would therefore cause a major reduction in foodborne disease and/or reduction in conditions resulting from foodborne disease.

Foodborne viruses is an area where the risks are not well understood and research in this area is welcomed.

Q3: *Whether, in your view, it is likely that successful achievement of the*

objectives described in the Strategy will deliver a significant reduction in UK human foodborne disease? If not, please explain briefly your reasoning.

Control of *Campylobacter* through control of contamination of poultry: The parallel situation of reducing *Salmonella* in poultry through a National Control Programme had a major impact on reduction of *Salmonella* in poultry flocks and this has been successful in significantly reducing the number of cases of salmonellosis. Risk assessment models have predicted that a reduction in levels of *Campylobacter* on carcasses would have a major impact on numbers of cases of foodborne disease. Hence the strategy of controlling *Campylobacter* in the poultry supply, if achieved, should have an impact in reducing foodborne disease. The strategy is looking to implement controls across the food chain; while controls at the bird level are likely to be specific for controlling only *Campylobacter* (as was seen with *Salmonella*), controls implemented in the slaughter house to reduce cross-contamination/final product contamination may have added benefits in controlling other food-pathogens carried by poultry.

***Listeria* Risk Management Programme:** The current rise in listeriosis in the over 60s is little understood and further research is needed in this area. Communication of risk to at-risk groups was a successful strategy in the 1980s with advice targeted to pregnant women through pregnancy clinics regarding foods to avoid. However without a better understanding of the causes of the current problem this strategy cannot be implemented.

***Salmonella*:** The control of *Salmonella* in poultry has had a major impact on statistics. Although levels of *Salmonella* in pigs remains a major problem this does not seem to have created the same level of food borne disease as poultry carriage, perhaps through differences in eating practice. However *Salmonella* in eggs has continued to cause a number of outbreaks of disease in the UK since 2000. These have usually been attributable to imported eggs used in catering from countries which do not apply the same control programmes as the UK. Any monitoring strategy needs to consider the source of products causing disease and develop strategies for control when production of the commodity is outside DEFRA control.

***E.coli* O157:H7:** The Public enquiry on the South Wales outbreak showed failings in hygiene that were similar to the previous Lanarkshire outbreak. Much of this can only be addressed through improved practice by food handlers and stricter enforcement by the appropriate agencies. However food borne transmission of *E.coli* O157:H7 only accounts for about 50% of disease caused by this organism and other transmission routes are a major problem eg direct contact with contaminated farm animals. Control of the organism at source may therefore be needed to reduce the incidence of disease caused by this organism; however this may fall outside the Agency's remit.

Additional comments: The majority of published microbiological research into foodborne pathogens (particularly *Campylobacter*), has come from microbiologists in universities and research institutes. Very little research has been published by industrial microbiologists, whose roles seem confined to that of monitoring rather than research. The large food companies appear to have distanced themselves from research, which is an issue that should be addressed.

Sources

This response was prepared from written evidence provided by Professor Christine Dodd, University of Nottingham and Dr Keith Jones, Lancaster University.

Appendix 1

The Society for General Microbiology (SGM) was founded in 1944/1945 and is now the largest microbiological society in Europe. It has over 4500 individual members of whom 75% are resident in the UK. The remainder are located in more than 60 countries throughout the world. Almost all full members are qualified to doctoral or higher level; there are 1000 postgraduate student members. More than 700 schools and a number of companies are corporate members.

The Society provides a common meeting ground for scientists working in academic centres and in a number of fields with applications in microbiology (medicine, dentistry, veterinary medicine, pharmaceuticals, numerous industries, agriculture, food and beverages, the environment and education). The majority of Society members are employees of universities, research institutes, health services, government agencies and small to multinational companies.

The science of microbiology covers a great diversity of life forms: disease-related molecular structures such as prions and viruses, archaea, bacteria, fungi, protozoa and algae. Microbes are of crucial importance in a number of processes affecting all life on Earth: the cause and control of disease, fertility of soils and aquatic environments, fermentation, biodegradation of waste materials and dead biomass, bioprocessing steps in drug and antibiotic production, and molecular biotechnology.

The Society's objective is to advance the art and science of microbiology. It does this by:

- Organizing regular scientific meetings at centres throughout the UK and abroad, where microbiologists meet to hear and discuss the latest research findings. The largest meetings last 4 days and involve up to 1400 participants.
- Publishing four major international learned journals: *Microbiology*, *Journal of General Virology*, *Journal of Medical Microbiology* and *International Journal of Systematic and Evolutionary Microbiology*. The journals are available on-line through HighWire Press (<http://www.sgmjournals.org>).
- Representing the science and profession of microbiology to government and the media. The Society is represented on a number of biological and biomedical committees and organizations, in the UK and internationally, thereby exerting influence on science policy and education, regulatory affairs and international collaboration.
- Promoting microbiology as a career for young people, by increasing awareness of microbiology in schools and aiding the development of teaching

resources. The Society also provides grants for young scientists to attend scientific meetings and training courses.

- Keeping members informed of current developments in professional and scientific matters in microbiology, through publication of the magazine *Microbiology Today* and other means.

The Society is a Charity registered in England and Wales (No. 264017) and in Scotland (No. SC039250) and a Company Limited by Guarantee, registered in England and Wales (No. 1039582). It is governed by a Council drawn and elected from the membership. The Society employs a staff of over 30 at its headquarters.

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