

Advisory Committee on the Microbiological Safety of Food

Annual Report 2005

Advises the Food Standards Agency on the
Microbiological Safety of Food

Further copies may be obtained from:

Food Standards Agency
Aviation House
125 Kingsway
London
WC2B 6NH

Telephone: 0207 276 8946

Fax: 0207 276 8907

E-mail: acmsf@foodstandards.gsi.gov.uk

Advisory Committee on the Microbiological Safety of Food

Annual Report 2005

**Advises the Food Standards Agency on the
Microbiological Safety of Food**

Contents

Subject	Paragraph
Foreword	2
Introduction	5
Chapter 1 : Administrative Matters	7
Membership	7
Appointments	7
Periods of appointment	7
Spread of expertise	7
Appointments in 2005	7
Re-appointments in 2005	8
Retirements in 2005	8
Committee and Group meetings	8
Current membership and Declarations of Interests	9
Personal liability	9
Openness	9
Improving public access	9
Open meetings	9
Work of other advisory committees and cross-membership	10
Chapter 2 : The Committee's Work in 2005	11
<i>Campylobacter</i>	11
<i>Clostridium botulinum</i>	11
Infant botulism	11
Botulism in cattle	12
<i>Listeria</i>	13
<i>E.coli</i> O157	14
Hepatitis E	14
Avian Influenza	15
Bush meat	16
Imported Foods	17
Safe cooking of burgers	18
Salt	18

Microbiological status of ready-to-eat fruit and vegetables	19
Report from the Defra Antimicrobial Resistance Co-ordination Group	20
Antimicrobial treatment (decontamination) of poultry meat	20
Egg advice	20
DWI report case control study on MAP risk factors	21
Microcriteria proposals-requirements for <i>Salmonella</i> in minced meat	21
Epidemiology of Foodborne Infections Group	22
Surveillance	23
<i>Survey of Salmonella and Campylobacter</i>	23
Contamination of whole, raw poultry on retail sale in Wales and Northern Ireland in 2004	
Information papers	23
Chapter 3 : A Forward Look	25
Future work programme	25
Horizon scanning	26
Imported foods	26
Newly-emerging pathogens	26
Annex I Membership	27
Annex II Register of Members' Interests	34
References	37

The Advisory Committee on the Microbiological Safety of Food (ACMSF) was established in 1990 to provide the Government with independent expert advice on the microbiological safety of food.

The Committee's terms of reference are:

to assess the risk to humans from microorganisms which are used, or occur, in or on food, and to advise the Food Standards Agency (FSA) on any matters relating to the microbiological safety of food.

The various issues addressed by the Committee since its inception are detailed in this and previous Annual Reports¹⁻¹³ and in a series of subject-specific reports.¹⁴⁻²³

Foreword

1. I am pleased to present this, the 2005 Annual Report of the Advisory Committee on the Microbiological Safety of Food (ACMSF).

2. The Committee's major output in 2005 has been to complete two key areas of work on botulism. In June the Committee's *Ad Hoc* Group on infant botulism reported on the outcome of its work to consider the potential health risk from infant botulism associated with the consumption of chilled or frozen baby foods. Key conclusions arising from the work of the Group were that having reviewed the microbiology and epidemiology of infant botulism, there was no evidence to suggest that chilled and frozen weaning foods were implicated in causing infant botulism. The Group also carried out an independent peer-reviewed risk assessment. From this work the Group concluded that chilled and frozen infant foods were not a major source of infant botulism and that these products did not pose a greater risk than other products already on the market. The report also highlighted the need for microbiological controls to destroy or prevent growth of non-proteolytic *Clostridium botulinum* spores and prevent recontamination of minimally processed baby food after heat processing. Development of guidance for Local Authorities and a code of practice for safe production of baby food was also recommended. In addition the Group recommended that honey should not be added to foods specifically targeted at infants under 12 months unless these foods received a full botulinum cook or equivalent process control.

3. The ACMSF also concluded its work to consider the potential risk to human health from cattle botulism associated with the spreading of poultry litter on agricultural land. The *Ad Hoc* Group on botulism in cattle met four times in 2005 to examine food chain issues linked to botulism or suspected botulism in cattle. The Group considered documentary information and scientific literature, and heard evidence from several government departments and agencies and the scientific community on a number of issues. These included the molecular biology and structure of *C.botulinum*, its toxins and process of delivery to the neuromuscular junction, epidemiology and diagnosis of botulism in cattle, poultry waste, management of on farm botulism outbreaks in the UK, risk to public health, and public health advice. Key conclusions and recommendations arising from the report were that there should be no requirement to restrict sales of milk from clinically healthy animals from farms where there have been clinically suspected cases of botulism in cattle. Also there should be no requirement to restrict the slaughter of healthy cattle from herds where cases of confirmed or suspected botulism have occurred. However meat and milk from clinically affected animals should not enter the food chain due to concern that this may pose a risk to consumers.

4. The conclusions and recommendations from both these reports will be used to inform the future development of ACMSF advice to the Food

Standards Agency.

5. We also considered the microbiological risks associated with salt and nitrate/nitrite reduction in certain foods and alternatives for preservation, particularly in relation to *Clostridium botulinum*. Specifically we examined the scope for reducing the level of salt in certain foods without impacting on microbiological safety, the ability of industry to undertake salt reductions, and how to address the needs of small manufacturers, for example by developing guidance. We concluded that modelling work to assess microbiological risks required refining and simplification to make it user friendly for the small producer. We also recommended that the FSA worked with industry to develop guidance for small producers and that industry should not make changes to salt levels without considering the impact on microbiological safety of the specific product. Together the FSA and industry should also review current salt levels with a view to establishing a baseline in individual products against which changes in salt formulations could be measured.

6. Other potential risks to human health through food chain exposure pathways discussed by the Committee included hepatitis E, illegal importation of bush meat, avian influenza and the microbiological status of ready-to-eat fruit and vegetables. The Committee also examined a case control study on *Mycobacterium avium sub sp. paratuberculosis* (MAP) risk factors and concluded that the findings from the report did not suggest a need to change current FSA advice on consumption of meat.

7. Another issue tackled in 2005 was the changing pattern of human listeriosis in England and Wales since 2000. We examined the rise in non-pregnancy related listeriosis in the older population and concluded that consideration needed to be given to the levels of *Listeria* spp. in foods implicated in outbreaks, and whether some infection occurred due to repeated exposure to low levels of *Listeria monocytogenes*. We also highlighted the need for further research and surveillance resources to investigate *Listeria*. Given the clinical importance and change in presentation of this disease we agreed to review listeriosis again in 2006.

8. Work continued to review whether the current advice on the safe cooking of burgers, issued by the Chief Medical Officer in 1998, was still appropriate. Our *Ad Hoc* Group of the safe cooking of burgers agreed its terms of reference, scope and approach needed to address this issue. The Group met on two occasions and considered published information and guidance in other countries, modelling approaches to setting confidence limits and the epidemiology of *E.coli* O157. This Group will report on the outcome of its deliberations in 2006.

9. Our Working Group on surveillance has continued to provide input to the Committee. It considered protocols for FSA surveys on *Listeria* spp. in smoked fish, *Salmonella* in eggs used in the catering industry and in non UK

eggs on retail sale. The Group also considered a survey of red meat

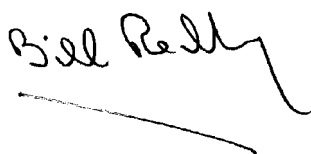
10. Horizon scanning also continues to be an important function of the Committee's work and a vital element in the forward planning process. We concluded work in the Imported Foods area, which followed up on last year's activities. This included additional new work to consider the microbiological risks associated with 'bush' meat. An electronic message board also continued to be available to facilitate immediate discussion of emerging issues relating to newly-emerging pathogens.

11. The Committee's drive to become publicly accessible has continued in 2005. All of our quarterly meetings continue to be open to the public with a public question and answer session featuring at the end of each agenda. Aside from meetings, we are also accessible via our e-mail address and web pages. Indeed, our web pages are regularly updated for each meeting, and provide a useful source of information about the Committee and its activities. In 2005 we used the web site to publicly consult on our Report on infant botulism. We received a very positive response to the Report including comments on the consultation from a wide-range of interested parties, the views of which will be carefully considered by the Committee prior to finalising the Report for publication.

12. Looking to the future, the Committee will publish the outcome of the work of its *Ad Hoc* Groups on the risk to human health associated with infant botulism, botulism in cattle associated with poultry litter and the safe cooking of burgers. In addition, we hope to work with the FSA to develop principles for presenting scientific advice including a best practice agreement for Scientific Advisory Committees. We shall also be returning to the subject of listeriosis to report on developments linked to the increase in listeriosis and in cases linked to the elderly.

13. I am indebted to the members of the Committee and its Working and *Ad Hoc* Groups without whose efforts the ACMSF could not operate effectively, and to the many other individuals and organisations who have helped the Committee with its work. I am also very grateful for the support of the Secretariat, whose efforts in ensuring the efficient and effective conduct of Committee business is greatly appreciated.

14. Finally I would like to thank Professor O'Brien, in her capacity as acting ACMSF Chair, for her personal contribution to lead the work on the Committee in 2006, until a successor is appointed.



Professor Bill Reilly
Chairman (2005)

Introduction

1. This is the fourteenth Annual Report of the Advisory Committee on the Microbiological Safety of Food (ACMSF). It covers the calendar year 2005.

Chapter 1: Administrative Matters

Membership

Appointments

2. Appointments to the ACMSF are made by the Food Standards Agency (FSA), after consultation with United Kingdom Health Ministers (i.e. the “Appropriate Authorities”) in compliance with Paragraph 3(1) of Schedule 2 to the Food Standards Act 1999. The Agency has resolved that appointments to the ACMSF should be made in accordance with Nolan Principles²⁵ and the guidance issued by the Office of the Commissioner for Public Appointments (OCPA).²⁶ The FSA is not bound to follow OCPA guidance, as this applies only to appointments made by Ministers. However, although ACMSF appointments are not made by Ministers, the Agency has decided that it would nevertheless be right to comply with OCPA guidance.

Periods of appointment

3. To ensure continuity, appointments to the ACMSF are staggered (usually for periods of 2, 3 or 4 years) so that only a proportion of Members falls to be appointed, re-appointed or retire each year.

Spread of expertise

4. A wide spectrum of skills and expertise is available to the ACMSF through its Members. They are currently drawn from commercial catering, environmental health, food microbiology, food processing, food research, food retailing, human epidemiology, medical microbiology, public health medicine, veterinary medicine, and virology. The Committee also has 2 lay/consumer Members.

5. Members are appointed on an individual basis, for their personal expertise and experience, not to represent a particular interest group.

Appointments in 2005

6. Three Members were appointed to the ACMSF during 2005. Mrs Vivianne Buller, Mr Robert Rees and Mr John Bassett.²⁷ Mrs Buller provides the Committee with public sector commercial catering expertise. Her period of appointment runs from 1 April 2005 until 31 March 2008. Mr Rees provides the Committee with commercial catering and small and medium sized enterprises expertise. His period of appointment runs from 1 April 2005 to 31 March 2008. Mr Bassett had previously been appointed in 2004 on a temporary basis for a period of one year. His period of

appointment runs for a period of 3 years from 1 April 2005 until 31 March 2008. Mr Bassett continues to provide the Committee with expertise in food processing and risk assessment.

Re-appointments in 2005

7. The periods of appointment of 7 members – Dr David Brown, Ms Susan Davies, Professor Mike Gasson, Professor Tom Humphrey, Mr Alec Kyriakides, Ms Eva Lewis and Professor Sarah O’Brien – expired on 31 March 2005. Professor Humphrey and Mr Kyriakides were re-appointed for a further 4-year term running from 1 April 2005 until 31 March 2009. Dr Brown, Ms Davies and Professor O’Brien were re-appointed a further 3-year term running from 1 April 2005 until 31 March 2008. Professor Gasson and Ms Lewis were re-appointed for 2-year terms from 1 April 2005 until 31 March 2007.²⁷

Retirements in 2005

8. Mr Brian Peirce and Mr David Piccaver retired from the Committee on 31 March 2005 after completing 4 years’ service.

9. The Chairman expressed his gratitude to all the retiring Members for their contribution to the work of the ACMSF and wished them well for the future.

Committee and Group meetings

10. The full Committee met 4 times in 2005 - on 17 March, 9 June, 22 September and 1 December. All four meetings were chaired by Professor Bill Reilly. All full Committee meetings were open to members of the public.

11. The *Ad Hoc* Group on Infant Botulism (Chair: Professor O’Brien) met twice to consider the potential human health risk from infant botulism associated with the consumption of chilled or frozen baby foods. The final draft report on the findings of this Group was presented to the Committee at the June meeting. The report was issued for public consultation in September 2005. The horizon scanning *Ad Hoc* Group on imported foods met twice (Chair: Mr Mephram) and presented its final report to the December meeting. The *Ad Hoc* Group on Botulism in Cattle (Chair: Professor Reilly) met 4 times to consider the potential risk to human health from botulism or suspected botulism in cattle. The Group presented its draft final report to the Committee at the December meeting and the Committee agreed to issue the report for public consultation in early 2006. The *Ad Hoc* Group on the Safe Cooking of Burgers (Chair: Professor Williams) met twice. The *Ad Hoc* Group on Emerging Pathogens (Chair: Professor Hunter) exchanged views in correspondence via an electronic message board.

12. The standing Surveillance Working Group (Chair: Professor Humphrey) met once to consider the FSA's protocols for surveys on the microbiological quality of smoked fish with reference to *Listeria*, a UK survey of *Salmonella* in eggs used in the catering industry, and a survey of *Salmonella* in non-UK eggs on retail sale. The Group also considered a survey of red meat.

Current membership and Declarations of Interests

13. Full details of the membership of the Committee and its Working and *Ad Hoc* Groups are given in Annex I. A Register of Members' Interests is at Annex II. In addition to the interests notified to the Secretariat and recorded at Annex II, Members are required to declare any direct commercial interest in matters under discussion at each meeting, in accordance with the ACMSF's Code of Practice (see Annex III of 2002 Annual Report).¹¹ Declarations made are recorded in the minutes of each meeting.

Personal liability

14. In 1999, the Secretary of State for Health undertook to indemnify ACMSF Members against all liability in respect of any action or claim brought against them individually or collectively by reason of the performance of their duties as Members (Annual Report 1999⁸ paragraph 6 and Annex III). In 2002, the Secretariat asked the FSA to review this undertaking, given the fact that, since 2000, the ACMSF had reported to the Food Standards Agency where previously it had reported to UK Health Ministers. In March 2004 the Food Standards Agency gave a new undertaking of indemnification in its name, which superseded the earlier undertaking given by the Secretary of State (see Annex IV of 2004 Annual Report¹³).

Openness

Improving public access

15. The ACMSF is committed to continuing to open up its work to greater public scrutiny. The agendas, minutes and papers (subject to rare exceptions on grounds of commercial or other sensitivity) for the Committee's quarterly meetings are publicly available and are posted on the FSA website at:

<http://www.food.gov.uk/science/ouradvisors/microbiogsafety>

16. The Committee also has an e-mail address:

acmsf@foodstandards.gsi.gov.uk

Open meetings

17. Following the recommendations flowing from the FSA's Review of Scientific Committees,²⁸ the ACMSF decided that, from 2003 onwards, all of its quarterly meetings should be held in public.

18. The March and September 2005 meetings of the Committee were held in Aviation House, the Food Standards Agency's London Headquarters. The June meeting was held at The New Connaught Rooms, 61-65 Great Queen Street, London, WC2B 5DA. The December meeting was held in Trinity House, Tower Hill, London EC3.

19. All of these open meetings follow a common format. Time is set aside following the day's business for members of the public and others present to make statements and to ask questions about the ACMSF's work. The names of participants, the organisations they represent, and details of any statements made, questions asked and the Committee's response, are recorded in the minutes of the meeting concerned.

Work of the other advisory committees and cross-membership

20. The Secretariat provided Members with an annual report of the work of the other expert advisory committees advising the Food Standards Agency.²⁹ Professor Gasson continued to serve as a member of the Advisory Committee on Novel Foods and Processes (ACNFP), thereby providing a first-hand link between the 2 committees.³⁰

Chapter 2: The Committee's Work in 2005

Campylobacter

21. The Committee published its second report on *Campylobacter* in March 2005.³¹ It also published its response to the public consultation on the FSA's website.³²

Clostridium botulinum

Infant botulism

22. The *Ad Hoc* Group on infant botulism continued its work to complete the development of food safety advice for chilled and frozen puréed baby food. The Group met twice in 2005 to draft a report of their deliberations. The Group also considered the outcome of peer-reviewed risk assessment work undertaken by a sub-group of experts.

23. The draft report was presented to the June ACMSF meeting.³² The key conclusions from the report were that having reviewed the microbiology and epidemiology of infant botulism, there was no evidence to suggest that chilled and frozen infant weaning foods have been implicated in causing infant botulism. There were mixed views within the scientific community as to whether some cases of Sudden Infant Death Syndrome (SIDS) could be misdiagnosis of extreme forms of infant botulism. There were no UK data available, and as such, there might be merit in assessing the link between SIDS and infant botulism on a UK basis.

24. The report also concluded that any minimally processed chilled or frozen baby food intended for infants should have suitable controls in place to destroy non-proteolytic *C. botulinum* spores or prevent any growth during the shelf life of the product/after defrosting (if frozen). Procedures must also be in place to prevent recontamination of minimally processed baby foods after heat processing. A code of practice for the safe production of minimally processed baby foods should be developed.

25. In addition Local Authorities needed to be aware of the risks of infant botulism and there was a need for consistent guidance for EHOs to inform baby food manufacturers. Existing advice on food safety management based on HACCP should be reiterated. There was also a need for key controls and good manufacturing processes.

26. A sub-Group also carried out a risk assessment that was subjected to peer-review. Based on this risk assessment the *Ad hoc* Group concluded that chilled and frozen infant foods were not a major source of infant botulism, and that these products did not pose a greater risk than other products already on the market. Further, if the controls to destroy non-proteolytic *C. botulinum* were in place, there was no reason why manufacturers should not be allowed to market these foods. The Group also recommended that there was further merit in carrying out an extended risk assessment exercise. Finally the sub-Group recommended that, based on a consideration of risk, honey should not be added to foods specifically targeted at infants under 12 months (unless these foods received a full botulinum cook or an equivalent process control).

27. The ACMSF adopted the report and agreed that it should be published for public consultation. The consultation period took place between 27 September and 30 December 2005. It is envisaged that the final report will be published in autumn 2006 following consideration of the outcome from the consultation exercise.³⁴

Botulism in cattle

28. The *Ad Hoc* Group on botulism in cattle met four times in 2005 to continue its work to consider the potential risk to human health from botulism or suspected botulism in cattle, particularly in relation to the spreading of poultry litter on agricultural land. The Group received further evidence from the Department of Agriculture and Rural Development in Northern Ireland on botulism mouse bioassay testing, vaccination and outbreak management. The Group also reviewed geographical mapping information of outbreaks in England and Wales.³⁵

29. The *Ad Hoc* Group presented its draft final report to the December ACMSF meeting.³⁶ Professor Williams outlined the scope of the work undertaken by the Group. Key areas subjected to examination included the molecular biology and structure of *Clostridium botulinum*, its toxins and process of delivery of the toxin from a food source to the neuromuscular junction, epidemiology and diagnosis of botulism in cattle, poultry waste, management of on farm botulism outbreaks in the UK, risk to public health, and public health advice.

30. Key recommendations and conclusions from the report were that after absorption by affected animals it was unlikely that toxin produced by *C. botulinum* would be responsible for causing re-intoxication following consumption of meat from the affected cattle. While clinical diagnosis was satisfactory for identification and clinical management of single cases and large outbreaks of botulism, it did not provide an adequate basis for implementation of food safety precautions such as exclusion of animal products from the food chain. Therefore, as part of outbreak investigations, the mouse bioassay should be applied to gastrointestinal samples to aid

diagnosis and assess risk. Work should be undertaken to understand the diagnostic and clinical significance of finding botulinum toxins in the gastrointestinal tract of cattle. In view of concerns over the use of live mice for bioassays, consideration should be given to the development of other highly sensitive tests which did not use animals. Samples collected during clinical investigations should be archived to assist method development.

31. The report also concluded that DARDNI and VLA messages on use and disposal of poultry litter should be reinforced and that FSA should work closely with the poultry industry to encourage good practice in litter management and disposal. UK veterinary authorities should also continue to encourage cattle farmers to report suspected cases. In addition FSA biosecurity messages to broiler farmers should be expanded to highlight the risk of disease transmission through deficient carcass removal practices.

32. Other key conclusions arising from the report were that there should be no requirement to restrict sales of milk from clinically healthy cattle from farms where there have been clinically suspected cases of botulism in cattle. Also there should be no requirement to restrict the slaughter of healthy cattle from herds where cases of confirmed or suspected botulism have occurred. However meat and milk from clinically affected animals should not enter the food chain due to concern that this may pose a risk to consumers.

33. In addition laboratory evidence suggested that recent UK outbreaks were associated with toxin types C and D. However the risk to human health from the food chain should be re-assessed if other toxin types emerged.

34. Subject to minor editorial amendment, the ACMSF agreed to publish the report for a period of public consultation in early 2006. The Committee also agreed to present the draft report at a closed workshop on *Clostridium botulinum* in December 2005.

Listeria

35. The Health Protection Agency presented a review of the changing pattern of human listeriosis in England and Wales from 2001-2004.³⁷ The Committee discussed the rise in non-pregnancy related listeriosis in the older population (60 and above) and concluded that consideration needed to be given to the levels of *Listeria* in foods implicated in outbreaks, and whether some infection occurred due to repeated exposure to low levels of *Listeria monocytogenes*. Members considered that advice on foods to avoid might need to be different for different age groups, as the usual high-risk foods may not be relevant. Members also noted that HPA were collecting epidemiological information via questionnaires administered to all cases of listeriosis, but the quality of data was constrained by the fact that many of these were elderly or seriously ill.

36. The Committee also noted a recent 7-fold increase in bacteraemia and that no change in cases presenting with neurological symptoms or in bacterial serotypes had occurred. Similar rising trends in listeriosis cases had been reported in Scotland, Belgium, Finland, Germany and the Netherlands in 2002. There had been no significant increase in cases in Northern Ireland.

37. The ACMSF recognised that there were data limitations, but given the clinical importance and change in presentation of this disease, the issue of ascertainment needed to be ruled out. The Committee recommended that the FSA consider the need for provision of further research and surveillance resources to investigate *Listeria*. Any surveillance should also consider unusual foods for the presence of *Listeria*. Members agreed to review listeriosis again in June 2006.

***E.coli* O157**

38. In December the FSA briefed Members on the recent outbreak of *E.coli* O157 in South Wales.³⁸ The Committee was informed that this was the most serious outbreak of this nature that had occurred since the formation of the Food Standards Agency. To date 172 cases of *E.coli* O157 had been linked with the outbreak, of which 133 had been microbiologically confirmed. Members noted that the National Assembly of Wales had set up a Group to consider Terms of Reference for the Enquiry Committee. The FSA intended to consider lessons learned from the incident and the outcome of a Review conducted by the Chief Medical Officer of Wales. An update would be provided to the ACMSF in due course. The investigations into the cause of the outbreak were ongoing and might lead to legal proceedings. Members noted that the release of information about this incident was restricted.

39. The Committee commented that as current cases being identified were secondary in nature, there might be future lessons to be learned relating to controlling the spread of secondary infections within communities. Members agreed to retain this subject as a standing item on the agenda and that the ACMSF should consider lessons learned from the outcome of the investigation at a future meeting.

Hepatitis E

40. Dr David Brown informed the Committee that Hepatitis E was a systemic infection which had been common in pigs for 20 years in the UK. In the last 10 years there had been reports from other countries of cases in humans associated with consumption of raw or undercooked meat (muscle) or offal from pigs and other mammals. He outlined recent published cases not associated with travel, noting that consumption of raw or undercooked meat and offal might be a risk factor for Hepatitis E in Japan. Recent evidence indicated that only a small number of non-travel associated cases

in humans had been identified in the UK to date, and that the risk of acquiring Hepatitis E through the food chain in the UK was likely to be low. Members were informed that the virus found in humans was similar to the virus found in pigs. Effective cooking would destroy any virus present in meat, and thus should prevent foodborne transmission. A better understanding of the burden of infection and transmission routes was needed in order to assess the risk to the food chain and to consumers.³⁹

41. The Committee discussed cooking advice for meat noting that terms such as 'effective cooking' and 'proper cooking' were difficult to interpret. Members considered that searing the outside of meat joints would not be sufficient to destroy viruses such as Hepatitis E if they were present in muscle tissue. The Committee concluded that the FSA needed to review its advice on cooking of pork, and recommended that all pork and pig products (including liver) should be cooked all the way through.

42. Members were informed that there was no direct evidence linking food as a route of transmission for UK reported cases. However there was evidence of such a link in other parts of the world where routes of transmission were established. Current understanding of the burden of disease was limited and there was no direct epidemiological data available to identify likely routes of transmission in the UK due to poor sensitivity of tests. Therefore most UK cases of Hepatitis E were not detected due to under reporting as this virus was not routinely tested for. Recent enhanced surveillance systems included testing of Hepatitis E and these had resulted in an increase in the number of recognised cases.

43. Members discussed the aetiology of the virus. Hepatitis E was an RNA type virus and therefore mutated quickly. Thus several types of virus could exist within the pig population making it difficult to assess links between human cases and cases originating from pigs.

44. The Committee requested that the FSA revisit its advice on cooking of meat, recommending that all pig products including liver should be cooked thoroughly. Members considered that more information was needed to increase understanding of the epidemiology of disease in humans and the presence of the Hepatitis E virus in pig populations and pig meat products. The ACMSF agreed to revisit this issue in the first half of 2006.

Avian Influenza

45. Dr David Brown briefed the Committee on recent developments on Avian Influenza.⁴⁰ Members were reminded that in 2003, the ACMSF reviewed a risk assessment which considered the risk to human health from acquiring avian influenza through the food chain. This assessment concluded that the risk of acquiring avian influenza through the food chain

was low, and that there was no direct evidence to support this route of infection.³⁹ In November a group of influenza virologists and epidemiologists, chaired by Dr David Brown, met to review new information and to consider the potential future risk to the UK from avian influenza. This group concluded that:

- *Following review of the existing 2003 ACMSF risk assessment and new information on human susceptibility to avian influenza, presence of avian influenza in eggs from affected birds, and ducks, no change was required to existing ACMSF advice;*
- *Individuals involved in food handling and preparation might be exposed to the virus but the risk of this was low;*
- *Additional risks in the event of high pathogenicity avian influenza circulating in the EU were low;*
- *However a more detailed review of import control measures for poultry meat and eggs was required.*

46. Members discussed the membership of the review Group. Although veterinary experts had been consulted in the preparation of paper ACM/768, Members agreed that veterinary expertise needed to be represented on the Group. Members also reviewed FSA advice for cooking of eggs noting that the advice to cook eggs properly was targeted to protect all consumers.

47. The Committee endorsed the conclusions reached by the review Group. The Committee agreed that the existing risk assessment carried out in 2003 remained valid, noting that with regard to risks in the event of avian influenza circulating elsewhere in the European Union, a more detailed review of import control measures for poultry meat and eggs was required. Members also agreed to establish a Working Group to include Defra and veterinary experts to carry forward the work of the expert Group and to keep a watching brief on developments.

Bush meat

48. In June the Committee was briefed on an FSA-funded review of the public health risks associated with the illegal importation of meat, specifically in relation to microbiological hazards and risk of illness from handling and consumption of bush meat brought into the UK.⁴² Members were informed that a formal risk assessment had not been carried out due to a lack of available published data. The views expressed in the document aimed to indicate, in a qualitative way, the likelihood of there being a risk associated with the hazards examined.

49. The *Ad Hoc* Group on imported foods accepted that a formal risk assessment was not possible due to a lack of available data. However, in order to gather more data about pathogen presence and survival, consideration should be given to analytical examination of seized imported meat. The Group questioned the assumption that ingestion of traditionally cooked food presented a low risk, as cooking methods varied and therefore the assumption that bush meat was always cooked in a traditional manner (i.e. slow stewing) could not be relied upon. The Group also highlighted concerns linked to risks from unknown hazards. The Committee generally supported the paper presented noting it would be beneficial if seized meat could be used to help quantify risk, exposure characterisation and animal origin. At the request of the FSA, the report was referred to the *Ad Hoc* Group on imported foods for further consideration including the development of advice that distinguished between risks of foodborne transmission of viruses, and risks of transmission during preparation and handling of food.⁴¹

Imported Foods

50. The *Ad hoc* Group on Imported Foods met twice in 2005. At the March ACMSF meeting the Group presented an interim report which outlined work undertaken on the controls of foods of non-animal origin, traceability, and outbreaks of food-borne illness associated with imported foods.⁴³ In December the Group presented the final report of its deliberations⁴⁴ and briefed the Committee on previously reported conclusions relating to foods of non-animal origin.

51. The final report reviewed all the areas of work carried out by the Group including evidence previously reported to the Committee in December 2003.⁴⁵ The report also summarised the Group's recent deliberations on the microbiological risks of illegal imported bush meat. Key recommendations arising from the report were that the ACMSF should keep a watching brief on foods of non-animal origin and that the Committee should request an annual update from the Health Protection Agency on trends in outbreaks and food vehicles linked to imported foods. In addition local authorities and other bodies involved in monitoring and management of outbreaks should investigate the origin of food and ingredients implicated recognising that recently implemented traceability legislation may have a role in the development of improved investigation techniques.

52. In October the *Ad Hoc* Group considered a review of the microbiological risks of illegal imported bush meat, information on controls to prevent illegal imports and research on species identification of seized meat. The Group concluded that the risk of foodborne illness from consumption of bush meat appeared to be very low, and that the risk of foodborne illness from cross contamination was also minimal. In addition

normal cooking would probably destroy any viruses and bacteria present although there was no data available to verify this. The Group also concluded that there was a lack of quantitative data relating to the microbiological risks associated with bush meat.

Safe cooking of burgers

53. At the first meeting of the *Ad Hoc* Group on the safe cooking of burgers the group agreed its Terms of Reference and identified the scope and approach needed to meet its objectives. Areas for consideration included a review of literature and information on global epidemiology. A risk assessment approach based on modelling data was needed to support their deliberations.

54. In August the Group met and received presentations on modelling approaches for the safe cooking of burgers and the epidemiology of *E. coli* O157. The Group was also briefed on historical outbreaks of *E. coli* O157 occurring in the UK and in the United States. The Group intended to report the outcome of its deliberations to the Committee in the first half of 2006.

Salt

55. In March the FSA asked the ACMSF to consider an Agency-funded review which was being undertaken by the Institute of Food Research on the microbiological risks associated with salt and nitrite/nitrate reduction in certain foods and alternatives for preservation, particularly in relation to *Clostridium botulinum*. The review was commissioned to provide clear evidence regarding the role of salt and nitrate/nitrite in the control of the safety of certain products such as cured meats, and to provide information for small manufacturers reducing levels of salt in those products to enable them to do so safely.

56. The ACMSF considered that the Agency's strategy on salt reduction was sound and agreed that its delivery should be supported by scientific work to understand and manage the microbiological risks. Members expressed concern relating to the communication and awareness of salt reduction messages to small producers and considered that products should not be reformulated with lower salt levels until a hazard analysis had been carried out. The Committee commented that salt reduction might have an adverse affect on product quality resulting in increased spoilage and product wastage and suggested that the impact of salt reduction on product shelf life needed to be considered as part of the review. Members also queried the focus of the food groups under review and suggested that work should focus on only those foods which contribute significant salt intake in the diet (e.g. processed meals), and identify those foods where salt reduction would have the greatest

effect. Relevant models and available research should also be examined, and any shortfalls identified. There was also a requirement to ensure microbiological risk to foods as a result of salt reduction was clearly identified.

57. In June the Committee reviewed the conclusions of the review undertaken by the Institute of Food Research.⁴⁶ Views were sought on the scope for reducing the level of salt in certain foods without impacting on microbiological safety, the ability of industry to undertake salt reductions, particularly small manufacturers and how to address the needs of small manufacturers, for example by the development of guidance. The Committee recommended that additional work to refine the modelling included the need to include challenge testing focussing on *Clostridium botulinum* and that the model required simplification to make it user-friendly for the small producer. Members also reiterated that the FSA needed to work with industry to ensure that guidance was available for small producers and that industry should not make changes to salt levels without considering the impact on the microbiological safety of the specific product. The Committee also recommended that the industry and the FSA should work together to review current salt levels with a view to establishing a baseline in individual products against which changes in salt formulations could be measured.

Microbiological status of ready-to-eat fruit and vegetables

58. In March the Health Protection Agency updated the Committee on the microbiological status of ready-to-eat fruit and vegetables.⁴⁷ Members noted that in connection with ready-to-eat salads, a large proportion of the outbreaks were linked to commercial catering establishments whereas outbreaks linked to salad consumption in the home were less frequent. Members also noted that pre-packed ready-to-eat salads were subject to stringent raw material and washing controls and discussed whether the same controls applied to whole lettuce and salads in catering outlets. The Committee was informed that outbreak investigations were not always able to collect enough information to enable identification of the food or ingredient vehicle for infection and that the HPA's main priority was to control an outbreak and not necessarily to find the origin of the source. Members commented that it was important to report information on outbreaks, and to state the origin of material in any reporting procedure. Ready-to-eat salads were seasonal crops, so these were often imported from other countries at different times of the year and therefore the origin of such products was significant in any outbreak investigation.

59. The ACMSF recommended that the FSA considered developing the production of guidance for caterers on the handling and preparation of salads, and that the Agency considered ways to improve the data quality on the contamination of salads.

Report from the Defra Antimicrobial Resistance Co-ordination Group

60. The Chair updated the Committee on work carried out by the Defra Antimicrobial Resistance Co-ordination Group (DARC) to implement the recommendations which the ACMSF had made in its Report on Microbial Antibiotic Resistance.⁴⁸ The DARC paper reported on developments in key areas of work including the undertaking of surveys on prevalence and sub-type and antibiotic resistance of foodborne pathogens; harmonisation of ring trials on antibiotic resistance methods to identify any differences in methods and the publication of a strategy for developing and implementing a programme of surveillance for antibiotic resistance in animals in England and Wales. In addition it reported on the development of an overarching Antibiotic Resistance report for the UK, the publication of annual veterinary sales data and government funded research. The Committee queried DARC's remit noting that the group considered animal-based recommendations only. The ACMSF accepted the report and requested that the Committee receive a progress summary on all the recommendations made in the ACMSF report (not just those covered in the DARC report).

Antimicrobial treatment (decontamination) of poultry meat

61. The FSA briefed the Committee on a draft Commission Regulation laying down specific conditions for antimicrobial treatment of food of animal origin.⁴⁹ The ACMSF supported the FSA's view that the draft Regulation was premature and that more work was needed on the use of proposed antimicrobial decontamination treatments before their use was approved. Members also agreed that the SCVPH opinion was inadequate in terms of toxicological assessment. The Committee considered that a risk assessment as proposed by Codex was needed to consider potential food safety benefits in the context of any possible toxicity. Adoption of the proposal could adversely affect efforts to promote hygiene measures. Consumer concerns about the use of these treatments and requirements for labelling were also unknown. The Committee recommended that the FSA carried out research to explore consumer views, and that a risk assessment should be considered.

Egg advice

62. The FSA updated the Committee on developments in relation to advice on egg use and consumption.⁵⁰ Members noted that the National Outbreak Team Dossier on the outbreak which had been associated with imported eggs was presented to the Commission in December and that the FSA were awaiting a response. Members also noted that the FSA's survey of non-UK eggs at retail sale had commenced and that a survey of catering eggs was under development.

DWI report case control study on MAP risk factors

63. In September the FSA briefed the Committee on the findings of a case control study on MAP risk factors.⁵¹ Members were informed that, despite extensive research and epidemiological studies, no causal link had yet been demonstrated between Crohn's Disease and *Mycobacterium avium sub spp. paratuberculosis* (MAP). The Agency sought advice from the ACMSF on whether the findings in the case control study report associated with meat had any implications for current FSA advice on the consumption of meat.

64. The Committee considered that the study was well designed and conducted and the data analysis was thorough. Members concluded that the findings of the report did not suggest a need to change current FSA advice on consumption of meat but did request that the FSA considered further the survival of MAP in solid foods. Members also considered that it was not appropriate for the Committee to comment on the reference to a possible association between total animal protein and Crohn's Disease and requested that the FSA consult its Advisory Committee on Nutrition on this matter.

Microbiological criteria proposals – requirements for *Salmonella* in minced meat

65. The FSA briefed the Committee on legislation which came into force on 1 January 2006 which required minced meat preparations and certain meat products to be clearly labelled at the point of sale informing the consumer of the need for thorough cooking prior to consumption.⁵² Comments were sought on the type of wording/information which should be used on labelling and to form part of best practice guidelines. Comments were also sought on whether (i) different wording was applicable to products benefiting from the transitional derogation; (ii) consideration of time/temperature requirements and (iii) use of symbols.

66. The ACMSF agreed that labelling needed to be consistent for all products and that it was not appropriate to have different labelling for meat falling under transitional derogation arrangements. Members recognised that labelling meat with time/temperature combinations was not practical as consumers tended not to use meat thermometers or probes. However manufacturers' instructions for oven temperatures and times should be followed. There were also difficulties associated with printing large amounts of information/symbols on labels designed for loose products. Members supported the use of symbols, but only in conjunction with appropriate wording. The risks associated with the presence of other pathogens such as *E.coli* in meat also needed to be considered.

Epidemiology of Foodborne Infections Group

67. The FSA updated the Committee on the outcome of the meeting of the Epidemiology of Foodborne Infections Group which took place in March. Members were informed that the Group had considered animal data noting that, in general, 2004 was a relatively quiet year with the number of *Salmonella* reports from all species, except horses and ducks, showing a decrease. The main serotypes found in animals were consistent from year to year. One new serovar was reported as emerging in cattle (*S. London*). The Group noted a report of extended spectrum beta-lactamase producing *E. coli* in cattle. Details of the survey of cattle, sheep and pigs at slaughter, which had been published in November 2004, were also discussed. In terms of human data, the Group discussed *Salmonella* Enteritidis non-PT4 related outbreaks associated with eggs in England and Wales, noting *Salmonella* Enteritidis figures for 2004 were lower than those for 2003. Levels of *Campylobacter* also continued to decline in 2004 (observed across several countries). The incidence of foodborne disease associated with *E. coli* O157 remained relatively constant in 2004 (slight increase observed). Outbreaks associated with foodborne pathogens in 2004 were also discussed.

68. The Group also discussed development of an enhanced surveillance system for monitoring *Listeria* data, following the doubling of cases in 2003 and 2004. HPA/LACORS were also conducting sandwich and butter surveys, as these foods were linked to previous outbreaks of *Listeria*. The EFIG Group was updated on developments to commission a follow-up study of infectious intestinal disease, which would focus on prevalence and would not include the risk factor questionnaires included in the previous study. Other issues discussed included Johnes Disease and MAP, and the shift in approach from surveys to rolling surveillance of food. Finally the Group received brief update reports on the incidence of *Salmonella* associated with foreign travel, and forthcoming surveillance of eggs and laying flocks.

69. The Committee discussed outbreaks of *Salmonella* associated with non-UK eggs. Members noted that the current incidence of *Salmonella* was low, and that the purchase of Spanish eggs had dropped and purchase of UK-produced eggs had increased. A report on the implementation of a control plan for reducing prevalence of *Salmonella* in laying flocks from Spain was also anticipated. There were no changes in the prevalence of different serovars in animals, with the exception of *Salmonella London*.

70. Members discussed the impact of the reduction in HPA funding on the availability of surveillance and epidemiological data and noted that the respective Chief Executives of the FSA and HPA met regularly and this issue could be raised at one of these meetings. Members shared some concern following reports of the doubling of laboratory reported cases associated with *Listeria* reported in 2003 and 2004, querying where the increase in listeriosis originated from. The FSA agreed to report back to the Committee with further information.

Surveillance

Survey of *Salmonella* and *Campylobacter* contamination of whole, raw poultry on retail sale in Wales and Northern Ireland in 2004

71. Dr Meldrum (National Public Health Service, Wales) briefed the Committee on the findings of a 2004 survey of *Salmonella* and *Campylobacter* contamination of whole, raw poultry on retail sale in Wales and Northern Ireland.⁵³

72. Dr Meldrum provided an overview of the survey's objectives, sampling protocols and methodology, data on *Salmonella* and *Campylobacter* rates between 2001 and 2004, and a comparison of findings from samples taken from retailers and butchers, and fresh and frozen samples.

73. Members discussed the provenance of chicken samples, noting that frozen chicken was more likely to be imported for use in catering establishments. *Salmonella* was more likely to occur in frozen than in fresh chicken due to use of processing techniques such as water immersion chilling. Dr Meldrum reported that most samples collected for the survey were standard broilers which were widely available. Limited sample numbers precluded analysis of kosher, halal and free-range poultry.

74. Members emphasised the need to take account of seasonal volumes of poultry retail sales when sampling retail premises in order to give a truly representative prevalence to assess the risk of exposure to pathogens. In addition, when interpreting graphical seasonal data there was a need to be aware of random or chance factors occurring from month to month.

75. The Committee welcomed the work being carried out on *Salmonella* speciation, noting that no *Salmonella* Enteritidis isolates had been reported in the 2004 figures. Members highlighted the importance of identifying pathogen species and the link to species occurring in humans.

Information papers

76. The ACMSF is routinely provided with information papers on topics which the Secretariat considers may be of interest to Members. This affords them the opportunity to identify particular issues for discussion at future meetings. Among the documents provided for information during 2005 were:

- Letter to the Veterinary Record on extended-spectrum beta-lactamase in *E.coli* recovered from calves in Wales⁵⁴

- Recommendations and Government's response to ACMSF's Report on Microbial Antibiotic Resistance in Relation to Food Safety. Joint Food Safety and Standards Group, February 2000
- Provisional agenda of the Thirty-Seventh Session of the Joint FAO/WHO Food Standards Programme, Codex Committee on Food Hygiene – 14-19 March 2005 (ACM/737)⁵⁵
- Microbiological status of ready to eat fruit and vegetables - addendum to ACM/729 (ACM/745)
- Report of the Thirty-Seventh Session of the Joint FAO/WHO Food Standards Programme, Codex Committee on Food Hygiene – 14-19 March 2005⁵⁶
- EFSA biohazard opinion on *Bacillus* spp. in foodstuffs⁵⁷
- EFSA biohazard opinion on *Clostridium* spp. in foodstuffs⁵⁸
- Microbiological Safety of Food Funders Group Reports on *Listeria* and *Yersinia enterocolitica* (ACM/749)
- ACMSF Membership – updated pen portraits (ACM/758)
- Implementation of the Agency's Foodborne Disease Strategy: Update⁵⁹
- LACORS/HPA Co-ordinated Food Liaison Gp studies: The Microbiological Examination of Butter from Production, Retail and Catering Premises for *Listeria monocytogenes* and other *Listeria* spp (ACM/760)
- Infant feeding advice on making up infant formula bottles and guidance on healthy eating for infants (ACM/762)⁶⁰
- Update from other advisory committees (ACM/770)
- EFSA opinion on safety of heat treatment of manure⁶¹
- EFSA opinion related to the microbiological risks on washing of Table Eggs⁶²
- Items of possible interest from the literature (ACM/735, 750, 761, 774)
- Update from September meeting of the Epidemiology of Foodborne Disease Group (ACM/775)

Chapter 3: A Forward Look

Future work programme

77. The Committee will keep itself informed, through its close links with the Food Standards Agency and the Health Protection Agency, of developing trends in relation to foodborne disease. A continuing task will be to respond promptly with advice on the food safety implications of any issues, which may from time to time be referred to the Committee by the FSA. It is anticipated the Committee will report on developments relating to its work to investigate the reported changing pattern in human listeriosis including the increase in listeriosis and in cases linked to the elderly.

78. The Committee will publish the outcome of the public consultation on its draft report to consider the potential human health risk associated with botulism or suspected botulism in cattle, particularly in relation to the spreading of poultry litter on agricultural land. The Committee will also publish its report on minimally processed infant weaning foods and the risk of infant botulism.

79. The Committee will complete, consult on and publish its review of current advice issued by the Chief Medical Officer in 1998 on the safe cooking of burgers, in the light of new published evidence available.

80. The committee will work with the FSA to develop principles for presenting scientific advice and a best practice agreement for the Scientific Advisory Committees.

81. The Committee will continue the work of the *Ad Hoc* Group on emerging pathogens through use of an electronic message board in order to facilitate discussions on emerging issues without the need to convene.

82. The Committee, through its standing Surveillance Working Group, will continue to provide advice as required in connection with the Government's microbiological food surveillance programme and any other surveillance relevant to foodborne disease.

83. The Working Group on avian influenza will continue to keep a watching brief on developments.

84. The Committee will continue to keep itself informed of Government horizon scanning activities and initiatives, and their potential impact on the ACMSF's future work programme. The Committee will also prioritise areas future horizon scanning activities for its consideration.

Horizon scanning

85. The ACMSF has continued its work on horizon scanning via the work of 2 *Ad Hoc* Groups which have explored issues relating to imported foods and newly-emerging pathogens.

Imported foods

86. The Imported Foods Group concluded its work to examine the microbiological safety of food of non-animal origin entering the UK market; role of traceability systems; and formation of a systematic approach to monitoring information on foodborne disease in different countries (paragraphs 50-52 refer). This Group also considered public health risks associated with the illegal importation of meat. Specifically in relation to microbiological hazards and risk of illness from handling and consumption of bush meat brought into the UK (paragraphs 48-49 refer).

Newly-emerging pathogens

87. In 2005 Members continued to have access to an electronic message board to facilitate dissemination of information and advice on newly or re-emerging food pathogens.

Annex I: Membership of the Advisory Committee on the Microbiological Safety of Food, its Working Groups and its *Ad Hoc* Groups

		ACMSF	Surveillance Working Group
Terms of reference		To assess the risk to humans from microorganisms which are used or occur in or on food and to advise the Food Standards Agency on any matters relating to the microbiological safety of food.	To facilitate the provision of ACMSF advice to government in connection with its microbiological food surveillance programme and other surveillance relevant to foodborne disease, particularly in relation to the design, methodology, sampling and statistical aspects; and to report back regularly to the ACMSF.
Chairman			
Professor W J Reilly	Head, Gastrointestinal and Zoonoses Section, Health Protection Scotland	✓	
Members			
Mr J Bassett	Microbiological risk assessor, Unilever Safety & Environmental Assurance Centre	✓	
Dr C Bell	Consultant (retired food industry)		✓
Dr D W G Brown	Director, Enteric Respiratory and Neurological Virus Laboratory, Central Public Health Laboratory, Health Protection Agency	✓	

		ACMSF	Surveillance Working Group
Mrs Vivianne Buller ¹	Business improvement & catering consultancy	✓	
Ms S Davies MBE	Chief Policy Adviser, Which?	✓	
Professor M J Gasson	Head of Food Safety Science Division, Institute of Food Research	✓	✓
Dr K M Hadley	Senior Lecturer, Department of Immunology and Bacteriology, University of Glasgow. Honorary Consultant in Clinical Microbiology, North Glasgow University Hospitals NHS Trust, Western Infirmary, Glasgow	✓	
Professor T J Humphrey	Professor of Veterinary Bacterial Zoonoses, University of Bristol	✓	✓ ²
Professor P R Hunter	Professor of Health Protection, University of East Anglia	✓	
Mr A Kyriakides	Head of Product Safety, Sainsbury's Supermarkets Ltd	✓	✓
Ms E Lewis	Computer consultant. Consumer representative	✓	
Mr P McMullin	Senior Veterinarian & Managing Director, Poultry Health Services	✓	

¹ Appointed 1 April 2005.

² Professor Huphrey chairs the Surveillance Working Group.

		ACMSF	Surveillance Working Group
Mr P Mepham	Environmental Health Manager (Policy), Leeds City Council (to 31 March 2005). Independent Environmental Health Consultant	✓	
Professor S J O'Brien	Professor of Health Sciences & Epidemiology, Hope Clinical Academic Group, University of Manchester	✓	✓
Mr B J Peirce ³	Caterer	✓	
Mr D J T Piccaver ⁴	Farmer	✓	
Professor L J V Pidcock	Professor of Microbiology, Division of Immunity & Infection, University of Birmingham	✓	
Mr R Rees	Chef and Food Consultant	✓	
Dr Q D Sandifer	Director of Health Improvement, Kent and Medway Strategic Health Authority	✓	
Professor P Williams	Professor of Microbiology, Dept. of Genetics, University of Leicester	✓	
Assessors			
Mr P J R Gayford	Department for Environment, Food and Rural Affairs	✓	
Dr J Hilton	Food Standards Agency	✓	
Dr G McIlroy	Northern Ireland Department of Agriculture and Rural Development	✓	

³ Appointment ended 31 March 2005.

⁴ Appointment ended 31 March 2005.

		ACMSF	Surveillance Working Group
Dr S Neill	Northern Ireland Department of Agriculture and Rural Development	✓	
Dr S Pryde	Food Standards Agency (Scotland)	✓	
Mrs J Whinney	Food Standards Agency (Wales)	✓	
Secretariat			
Administrative Secretary Dr L Foster	Food Standards Agency	✓	✓
Scientific Secretary Dr P E Cook	Food Standards Agency	✓	
Administrative Secretariat			
Mrs E A Stretton	Food Standards Agency	✓	✓
Miss S Butler	Food Standards Agency	✓	
Mr S Rahman	Food Standards Agency		
Scientific Secretariat			
Dr K Callaghan	Food Standards Agency		

Ad Hoc Group on:		
	Imported Foods	Newly-emerging pathogens
Terms of reference	To assemble information on the current situation on these topics in order to decide whether there is a potential problem in relation to the microbiological safety of food; and to recommend to the ACMSF whether the Committee needs to undertake further action	
Members		
Dr D W G Brown		✓
Ms S Davies MBE	✓	
Dr K M Hadley		✓
Professor P R Hunter		✓ ⁵
Professor A M Johnston	✓	
Mr A Kyriakides	✓	✓
Mr P Mephram	✓ ⁶	
Miss L Noddings		
	Veterinary Surgeon (Portal), Suffolk Coast Port Health Authority	
Professor S J O'Brien		✓
Mr D J T Piccaver	✓	
Professor L J V Piddock	✓	
Secretariat		
Administrative Secretary		
Dr L Foster	✓	✓
Administrative Secretariat		
Mrs E A Stretton	✓	✓

⁵ Professor Hunter chairs the Ad Hoc Group on Newly Emerging Pathogens.

⁶ Chaired Imported Foods Group from March 2004.

Ad Hoc Group on:			
	Infant botulism	Botulism in cattle	Safe Cooking of Burgers
Terms of reference	To consider the potential human health risk associated with the consumption of chilled or frozen, pureed baby foods, particularly in relation to <i>Clostridium botulinum</i> and infant botulism, to inform the development of ACMSF advice to the Food Standards Agency.	To consider the potential human health risk associated with botulism or suspected botulism in cattle, particularly in relation to the spreading of poultry litter on agricultural land. To report back with recommendations to the ACMSF.	To review the current advice issued by the Chief Medical Officer in 1998 on the safe cooking of burgers and to report back with recommendations to the ACMSF.
Members			
Professor W J Reilly		✓ ⁷	
Mr J Bassett	✓		✓
Dr M Brett	Consultant (retired from HPA)	✓	
Ms S Davies MBE			✓
Dr K M Hadley	✓		
Professor A M Johnston			✓
Mr A Kyriakides	✓	✓	✓
Ms E Lewis	✓	✓	
Mr P McMullin		✓	
Mr P Mepham	✓	✓	
Professor S J O'Brien	✓ ⁸		✓

⁷ Professor Reilly chairs the Ad Hoc Group on Botulism in Cattle.

⁸ Professor O'Brien chairs the Ad Hoc Group on Infant Botulism.

<i>Ad Hoc Group on:</i>			
	Infant botulism	Botulism in cattle	Safe Cooking of Burgers
Professor M W Peck	Head, Food Safety Microbiology Section, Institute of Food Research	✓	
Mr D J T Piccaver		✓	
Mr B J Peirce			✓
Dr M Stringer	Director, Campden & Chorleywood Food Research Association	✓	
Professor P H Williams		✓	✓ ⁹
Assessors			
Dr J Hilton		✓	
Mr P Gayford		✓	
Administrative Secretary			
Dr L Foster		✓	✓
Administrative Secretariat			
Mrs E A Stretton		✓	✓
Miss S Butler		✓	✓
Scientific Secretariat			
Dr P E Cook			✓
Mrs O Coffey		✓	
Dr J Aish		✓	

⁹ Professor Williams chairs the *Ad Hoc* Group on Safe Cooking of Burgers.

Annex II: Advisory Committee on the Microbiological Safety of Food Register of Members' Interests

Member	Personal interests		Non-personal interests	
	Name of company	Nature of interest	Name of company	Nature of interest
Professor W J Reilly	No commercial companies University of Glasgow University College Dublin DEFRA FSA	Occasional fee paid work Occasional fee paid work Occasional fee paid work and Collaborator on grants funded by DEFRA Collaborator on grants funded by FSA	No commercial companies FSA	Health Protection Scotland undertakes the co-ordination of contractual work on the surveillance of food on behalf of the FSA
Mr J Bassett	Unilever plc	Employee		
Dr D W G Brown	None		Various	HPA industry-funded research and laboratory investigations
Mrs V Buller	Nutmeg UK Ltd North East Land Links Local Authorities and Schools Association of Public Service Excellence	Consultancy work Consultancy Project-Public Sector Food Procurement Consultancy work Consultancy work for Local Authority members	None	
Ms S Davies MBE	Which? (formerly the Consumers' Association) ¹⁰	Employee	None	
Professor M J Gasson	Novacta	Shareholder	Various	IFR Food Safety Science Division industry-funded research projects
Dr K M Hadley	None		None	
Professor T J Humphrey	British Egg Industry Council	<i>Ad hoc</i> consultancy work	Various	Funding for research projects

¹⁰ Ms Davies has additionally declared shares held by her father in Marks and Spencer.

Member	Personal interests		Non-personal interests	
	Name of company	Nature of interest	Name of company	Nature of interest
Professor P R Hunter	Suez International Paris Institute for Public Health & Water Research	Chair of Science Advisory Committee Chair of Board of Directors Medical/Legal advice regarding Travel Health	Chambre Syndicale des Eaux Minérales, Paris	Study of Antibiotic Resistance in Food & Water in France
Mr A Kyriakides	J Sainsbury plc Sainsbury's Supermarkets Ltd CCFRA Scientific & Technical Committee	Shareholder Employee Chairman	None	
Ms E Lewis	None		None	
Mr P McMullin	Poultry Health Services (PHS) Ltd	Employee and shareholder	Various through PHS Ltd	Consultancy, Veterinary care, Laboratory services
Mr P Mephram	Philip Mephram Associates Ltd	Director	None	
Professor S J O'Brien	None		Various	Research funding in collaboration with industrial partners
Mr B J Peirce	None		None	
Mr D J T Piccaver	Defra Research Priorities Group J E Piccaver & Co (Gedney Marsh) Piccaver Farms Ltd QV Foods Ltd Lingarden Ltd Lingarden Flowers Ltd Holbeach Marsh Cooperative Ltd	Member Managing Director Managing Director Non Executive Director Non Executive Director Non Executive Director Chairman. Non Executive Director	None	
Professor L J V Pidcock	None	<i>Ad hoc</i> consultancy work	Various	Funding for research projects
Mr R Rees	None		None	
Dr Q D Sandifer	None		None	
Professor P H Williams	None		None	

Member	Personal interests		Non-personal interests	
	Name of company	Nature of interest	Name of company	Nature of interest
Ad Hoc Group on Botulism in Cattle				
Dr M Brett	None		None	
Ad Hoc Group on Imported Foods				
Miss L Noddings	None		None	
Ad Hoc Group on Infant Botulism				
Professor M Peck	None		Various	IFR Food Safety Science Division industry – funded research projects
Dr M Stringer	EFSIS Holdings Ltd Campden and Chorleywood Food Research Association Technology Ltd	Director Director	A range of companies from the food and drink industry	Director of Food Technology at Campden and Chorleywood Food Research Association. A portion of the RA's work is funded by the food and drink industry
Ad Hoc Group on Safe Cooking of Burgers				
Professor A M Johnston	Humane Slaughter Association Tesco Stores Ltd	Veterinary advisor Consultant	Various	

References

1. Advisory Committee on the Microbiological Safety of Food (1993). Report of Progress 1990-92. HMSO, London. ISBN 0-11-321664-5.
2. Advisory Committee on the Microbiological Safety of Food (1994). Annual Report 1993. HMSO, London. ISBN 0-11-321816-8.
3. Advisory Committee on the Microbiological Safety of Food (1995). Annual Report 1994. HMSO, London. ISBN 0-11-321921-0.
4. Advisory Committee on the Microbiological Safety of Food. Annual Report 1995. Department of Health, Wetherby. ISBN 1 85839 5763.
5. Advisory Committee on the Microbiological Safety of Food (1997). Annual Report 1996. Department of Health. ISBN 85839 7243.
6. Advisory Committee on the Microbiological Safety of Food (1998). Annual Report 1997. Department of Health.
7. Advisory Committee on the Microbiological Safety of Food (1999). Annual Report 1998. Department of Health.
8. Advisory Committee on the Microbiological Safety of Food (2000). Annual Report 1999. Department of Health.
9. Advisory Committee on the Microbiological Safety of Food (2001). Annual Report 2000. Food Standards Agency. FSA/0012/0401.
10. Advisory Committee on the Microbiological Safety of Food (2002). Annual Report 2001. Food Standards Agency. FSA/0577/0502.
11. Advisory Committee on the Microbiological Safety of Food (2003). Annual Report 2002. Food Standards Agency. FSA/0817/0303.
12. Advisory Committee on the Microbiological Safety of Food (2004). Annual Report 2003. Food Standards Agency. FSA/0888/0204.
13. Advisory Committee on the Microbiological Safety of Food (2005). Annual Report 2004. Food Standards Agency. FSA/0990/0805.
14. Advisory Committee on the Microbiological Safety of Food (1992). Report on Vacuum Packaging and Associated Processes. HMSO, London. ISBN 0-11-321558-4.
15. Advisory Committee on the Microbiological Safety of Food (1993). Report on *Salmonella* in Eggs. HMSO, London. ISBN 0-11-321568-1.
16. Advisory Committee on the Microbiological Safety of Food (1993). Interim Report on *Campylobacter*. HMSO, London. ISBN 0-11-321662-9.

17. Advisory Committee on the Microbiological Safety of Food (1995). Report on Verocytotoxin-Producing *Escherichia coli*. HMSO, London. ISBN 0-11-321909-1.
18. Advisory Committee on the Microbiological Safety of Food (1996). Report on Poultry Meat. HMSO, London. ISBN 0-11-321969-5.
19. Advisory Committee on the Microbiological Safety of Food (1998). Report on Foodborne Viral Infections. The Stationery Office, London. ISBN 0-11-322254-8.
20. Advisory Committee on the Microbiological Safety of Food (1999). Report on Microbial Antibiotic Resistance in Relation to Food Safety. The Stationery Office, London. ISBN 0-11-322283-1.
21. Advisory Committee on the Microbiological Safety of Food (1999). Report on Microbial Antibiotic Resistance in Relation to Food Safety. Synopsis. The Stationery Office, London. ISBN 0-11-322295-5.
22. Advisory Committee on the Microbiological Safety of Food (2001). Second Report on *Salmonella* in Eggs. The Stationery Office, London. ISBN 0-11-322466-4.
23. Advisory Committee on the Microbiological Safety of Food. Report on *Mycobacterium bovis*. A review of the possible health risks to consumers of meat from cattle with evidence of *Mycobacterium bovis* infection. Food Standards Agency. January 2002. FSA/0400/2002.
24. Advisory Committee on the Microbiological Safety of Food. Second Report on *Campylobacter*. June 2005. Food Standards Agency. FSA/0964/0605.
25. Committee on Standards in Public Life (Nolan : First Report). May 1995.
26. The Commissioner for Public Appointments. Office of the Commissioner for Public Appointments. Code of Practice for Ministerial Appointments to Public Bodies. July 2001.
27. Food Standards Agency. Appointments to the Advisory Committee on the Microbiological Safety of Food. Announced August 2005. <http://www.food.gov.uk/science/ouradvisors/microbiogsafety/pressreleases/acmsfappointments>.
28. Food Standards Agency. Report on the Review of Scientific Committees. 2002. FSA/0567/0402.
29. Advisory Committee on the Microbiological Safety of Food. ACM/770. Update on the work of the other Advisory Committees.
30. Food Standards Agency. News release 2003/0398 of 4 August 2003. Food Standards Agency announces appointment of new Advisory Committee on Novel Foods and Processes (ACNFP) Chairman.

31. Advisory Committee on the Microbiological Safety of Food. Second Report on *Campylobacter*. 2005. FSA/0986/0605.
32. <http://www.food.gov.uk/Consultations/ukwideconsults/2004/acmsfcampylobacter>
33. Advisory Committee on the Microbiological Safety of Food. ACM/742. Draft report on minimally processed infant weaning foods and the risk of infant botulism.
34. <http://www.food.gov.uk/Consultations/ukwideconsults/?year=2005&completed=Yes>
35. Minutes of the fifty-fifth meeting of the Advisory Committee on the Microbiological Safety of Food. ACM/MIN/55.
36. Advisory Committee on the Microbiological Safety of Food. ACM/765. Draft report from the *Ad Hoc* Group on Botulism in Cattle.
37. Advisory Committee on the Microbiological Safety of Food. ACM/753. Changing pattern of human listeriosis in England and Wales 1993-2004.
38. Advisory Committee on the Microbiological Safety of Food. ACM/767. *E. coli* O157 update.
39. Advisory Committee on the Microbiological Safety of Food. ACM/766. Risk assessment of the role of foodborne transmission of Hepatitis E in the UK.
40. Advisory Committee on the Microbiological Safety of Food. ACM/768. Avian Influenza Risk Assessment – update November 2005.
41. ACM/MIN/56. Minutes of the fifty-sixth meeting of the Advisory Committee on the Microbiological Safety of Food held on 9 June 2005.
42. Advisory Committee on the Microbiological Safety of Food. ACM/741. Review of possible microbiological hazards that may be associated with the illegal importation of bushmeat.
43. Advisory Committee on the Microbiological Safety of Food. ACM/732. *Ad Hoc* Group on Imported Food. Interim Report to ACMSF.
44. Advisory Committee on the Microbiological Safety of Food. ACM/764. *Ad Hoc* Group on Imported Food. Final Report to the ACMSF.
45. Advisory Committee on the Microbiological Safety of Food. ACM/665. *Ad Hoc* Group on Imports.
46. Advisory Committee on the Microbiological Safety of Food. ACM/739. Ensuring that salt reduction does not compromise food safety.

47. Advisory Committee on the Microbiological Safety of Food. ACM/729. Microbiological status of ready-to-eat fruit and vegetables.
48. Advisory Committee on the Microbiological Safety of Food. ACM/730. Report from the Defra Antimicrobial Resistance Coordination Group (DARC).
49. Advisory Committee on the Microbiological Safety of Food. ACM/731. Antimicrobial Treatment (Decontamination) of Poultry Meat.
50. Advisory Committee on the Microbiological Safety of Food. ACM/743. Update on advice on egg consumption and use.
51. Advisory Committee on the Microbiological Safety of Food. ACM/752. Scientific report of a Defra and Drinking Water Inspectorate commissioned study on risk factors associated with Crohn's Disease.
52. Advisory Committee on the Microbiological Safety of Food. ACM/754. Commission Regulation on Microbiological Criteria for Foodstuffs; the labelling of minced meat, meat preparations and meat products.
53. Advisory Committee on the Microbiological Safety of Food. ACM/755. Survey of *Salmonella* and *Campylobacter* in raw retail chicken available to consumers in Wales and Northern Ireland.
54. Letter on extended-spectrum beta-lactamase detected in *E. coli* recovered from calves in Wales. C J Teale, L. Barker, A P Foster, E Liebana, M Batchelor, D M Livermore and E J Threlfall. Published in The Veterinary Record, 5 February 2005.
55. Codex Alimentarius Commission. CX/FH 05/37/1. January 2005. Codex Commission on Food Hygiene. 37th Session. Buenos Aires, Argentina, March 14-19 2005. Provisional Agenda.
56. Codex Alimentarius Commission. Alinorm 05/28/13. Report of the 37th session of the Codex Committee on Food Hygiene. Buenos Aires, Argentina, 14-19 March 2005.
57. Opinion of the Scientific Panel on Biological Hazards on *Bacillus cereus* and other *Bacillus* spp in foodstuffs. The EFSA Journal (2004) 175, 1-49.
58. Opinion of the Scientific Panel on Biological Hazards on a request from the Commission related to *Clostridium* spp in foodstuffs. The EFSA Journal (2004) 199, 1-65.
59. Paper FSA 05/05/02 from Food Standards Agency Board meeting, 12 May 2005. Implementation of the Agency's Foodborne Disease Strategy. Update.

60. Weaning. Leaflet 267797. Department of Health. August 2005. Also, paper WHA58.32 Agenda item 13.11 from the 58th World Health Assembly. Infant and young-child nutrition.
61. Opinion of the Scientific Panel on Biological Hazards on the biological safety of heat treatment of manure. The EFSA Journal (2005) 265, 1-16.
62. Opinion of the Scientific Panel on Biological Hazards on the request from the Commission related to Microbiological Risk on Washing of Table Eggs. The EFSA Journal (2005) 269, 1-39

