

Q&A

Food Standards Agency Guidance:

Controlling the risk of cross-contamination from *E.coli* O157

Introduction

The Food Standards Agency has produced this Q&A to reflect comments and requests for clarification we have received since issuing guidance on controlling the risk of cross-contamination with *E. coli* O157 in February 2011. General hygiene guidance already exists and is outside the scope of this Q&A.

This is the third version of the Q&A and we will continue to review and update the document as we receive further feedback. Any comments on this Q&A or the guidance document should be submitted to the dedicated mailbox

Controllingecoli@foodstandards.gsi.gov.uk.

What's new in this third version?

There is amended content in question numbers 18, 19, 26, 33, 42, 43, 44 and 48

The questions with entirely new content are: 11, 22, 25, 27, 34, 36 and 39

Index

General

Question	Page number
Q1. Why has this guidance been developed?	1
Q2. As the FSA advice is contained in guidance rather than legislation how will Authorised Officers be able to legally enforce, for example, in relation to stopping the dual use of equipment and machinery, such as vacuum packing machines, mincers and slicers, for raw and ready-to-eat foods?	1
Q3. What type of businesses does the guidance apply to?	2
Q4. I run a small cafe serving homemade cooked food and freshly made ready-to-eat sandwiches. Does all of this guidance apply to my business?	2
Q5. I run my food business from my own home, how does this affect me?	2
Q6. Does the guidance apply to the manufacture of speciality cheeses?	2
Q7. Does the guidance apply to packaged ready-to-eat foods?	3
Q8. Is there an issue with salad vegetables, apples and other fruit customarily eaten raw being sold unpacked alongside untreated vegetables that are likely to have been contaminated by soil?	3
Q9. How do I make raw fruit & vegetables that have been grown in soil “ready-to-eat”?	3
Q10. Should I wash fruit & vegetables in Chlorine?	4
Q11. Can I use the same food preparation sink for washing raw food, such as salad vegetables, and then for rinsing ready-to-eat food such as cooked rice?	5
Q12. What does this guidance mean for the people preparing their own food at home in their kitchens?	5
Q13. The guidance document is quite long and detailed, are there any shorter materials that I can read?	5

Third Edition – July 2012

Q14. I understand the guidance will be undergoing a process of review and evaluation, does this mean that the approach to controlling cross-contamination set out in the guidance is likely to change?	6
Q15. Surely, this cross-contamination guidance is disproportionate to the risk of someone being infected with E.coli O157?	6
Q16. How does the guidance fit with the need to minimise the regulatory burden on business?	6
Q17. Caterers, retailers and some other specific types of food establishments have had support from packages such as Safer Food Better Business (SFBB)/Cook Safe/Safe Catering for several years. Why hasn't the Agency produced similar material for butchers?	7
Q18. Will SFBB/CookSafe/Safe Catering be updated to reflect this guidance?	7
Q19. What is happening in relation to the planned extension of Remedial Action Notices (RANs) to all food premises and in what circumstances is it anticipated they would be used?	8

Separation

Q20. The FSA says that its decisions are based on science. Where is the evidence for separation being the only reliable means of adequately controlling E.coli O157 cross-contamination and for banning the dual use of equipment and machinery, such as vacuum packing machines, mincers and slicers, for raw and ready-to-eat foods?	8
Q21. How do I know if a piece of equipment is regarded as "complex" in terms of the guidance?	9
Q22. I have a complex piece of equipment that was previously used for raw foods. I now want to use it for ready-to-eat foods. Is this OK?	10
Q23. We have read the guidance and would like some clarification on whether bacon is classed as raw meat. We ask with regard to delicatessens that use the vac packers for bacon and ready-to-eat foods. Strict cleaning procedures exist between uses but are we now to prohibit the dual use of vac packers for bacon and ready-to-eat	11

Third Edition – July 2012

foods?	
Q24. I do not use my vacuum packer for ready-to-eat foods but I do use it for raw food as well as partly-cooked foods. However the cooked food will go through more cooking before it is “ready-to-eat”. Is this OK?	11
Q25. Is black pudding a raw or a ready-to-eat product?	11
Q26. Is there a requirement for businesses to have separate cash registers, chip and pin machines etc. for handling raw and ready-to-eat foods?	12
Q27. How do I ensure that the handle on my fridge, which is use for raw and ready-to-eat foods, does not become a source of cross-contamination?	12
Q28. What constitutes a designated clean area within a retail environment?	13
Q29. Is storage and display equipment required to be labelled so that clean areas are readily identifiable as being for ready-to-eat foods?	13
Q30. My business is not able to have a permanent area for ready-to-eat foods. How do I comply with the guidance?	13
Q31. I am the only member of staff serving customers raw and ready-to-eat foods in a small food business. How do I comply with the guidance?	14
Q32. ‘Short order’ chefs will be cooking raw meat dishes and serving ready-to-eat plated meals. Does the guidance mean I need two chefs, one for raw handling and one for ready-to-eat?	15
Q33. I use a probe thermometer to monitor the temperature of food I am cooking, what cross-contamination issues do I need to be aware of?	15
Q34. Can I use probe wipes to clean the tip of my probe thermometer?	16
Q35. What about an inspecting officer? Will they need to change clothing or carry separate thermometers?	17
Q36. The guidance describes worktops as non food contact surfaces. In what situation does this apply?	17

Cleaning

Q37. I clean with an antibacterial sanitiser so why do I need to do two-stage cleaning?	17
Q38. Floors may be shared between clean areas and other areas. In such instances is separate cleaning equipment for the floors still required?	18
Q39. I wash my cloths by hand and steep them in bleach overnight. Is this acceptable?	18
Q40. Please can you confirm that the British Standard (BS) number quoted in the guidance is correct? The guidance quotes BS EN 1276:1997, but the BS site states that this has been withdrawn and replaced by BS EN 1276:2009.	18
Q41. Why are there two test procedures for killing E.coli O157?	19
Q42. It would be helpful if there was a list of commercial products that actually conform to these BS EN numbers. Is there such a list?	19
Q43. What formal action is deemed appropriate if a food premises is found not to be using a BS bacterial detergent?	20
Q44. How will I know if my dishwasher meets the requirements of the guidance?	20
Q45. How should I clean my utensils if I do not have a commercial dishwasher?	20
Q46. Can I use a steamer to sanitise/disinfect utensils or chopping boards that have been used for raw foods so they can be used with ready-to-eat foods?	21

Handwashing

Q47. Does the guidance mean that I must wash my hands if I handle cash at a ready-to-eat counter before serving the next customer?	21
Q48. The guidance recommends the use of non-hand operable taps for handwashing. I don't have these, so what should I do?	21

Q49. Why wasn't the use of non-hand operable taps for handwashing made mandatory, like the banning of dual-use of complex equipment and machinery?	22
--	----

General

Q1. Why has this guidance been developed?

A1. It has been developed in response to the foodborne *E. coli* O157 outbreaks in Scotland in 1996 and Wales in 2005, both of which resulted in the death of some individuals and serious long-term health problems for others. Both outbreaks were attributed to cross-contamination arising from poorly managed food handling practices.

Q2. As the FSA advice is contained in guidance rather than legislation how will Authorised Officers be able to legally enforce, for example, in relation to stopping the dual use of equipment and machinery, such as vacuum packing machines, mincers and slicers, for raw and ready-to-eat foods?

A2. There is a legal requirement on food business operators to manage food safety using Hazard Analysis and Critical Control Point (HACCP) principles, by ensuring that hazards are identified and that valid critical controls are established, implemented and verified. The guidance clarifies:

- The circumstances in which *E. coli* O157 cross-contamination hazards should be considered;
- The strict control measures required to effect adequate control of *E. coli* O157 cross-contamination risks; and
- That a lapse in these controls represents an imminent risk to consumers.

This represents clarification of existing legal standards and the grounds that exist in law to take emergency action to prevent the supply, or continued production, of unsafe food. If alternative methods of control other than those stated in the guidance are in place they must be supported by robust verification. In the absence of verification the guidance provides an evidenced approach to the control of cross contamination.

In relation to complex equipment, such as vacuum packers, slicers and mincing machines, the Agency considers that the dual use of such equipment for raw and ready-to-eat foods should never be considered safe.

The Agency is aware of instances where the guidance has been presented as key evidence in support of a successful application for a Hygiene Emergency Prohibition Order to prohibit the dual use of a vacuum packer.

Q3. What type of businesses does the guidance apply to?

A3. The guidance applies to food businesses of all sizes and categories where both raw food and ready-to-eat foods are handled. Raw food in this context would include raw meat and any raw ingredients that are potential sources of *E.coli* O157, such as raw root vegetables, fruit or other vegetables that are likely to have been contaminated by soil.

Q4. I run a small cafe serving homemade cooked food and freshly made ready-to-eat sandwiches. Does all of this guidance apply to my business?

A4. If there are no potential sources of *E. coli* O157, such as raw meat or root vegetables in addition to the ready-to-eat foods described, the guidance does not apply but normal statutory hygiene rules still do. The guidance will apply to all relevant food businesses operations where there is an *E. coli* O157 cross-contamination hazard whether home-based or not. The guidance only applies to those parts of an operation where cross-contamination has to be controlled. This includes protection of ready-to-eat food produced by the business from cross-contamination originating from raw ingredients for domestic consumption.

Q5. I run my food business from my own home, how does this affect me?

A5. You will need to comply with this guidance, which is for food businesses of all sizes, if both raw food and ready-to-eat foods are handled. *Raw food* in this context means raw meat and any raw ingredients that are potential sources of *E. coli* O157. *Ready-to-eat foods* are foods that will not be cooked or reheated before being eaten and include foods such as cooked meats, sandwiches, cheese, salads and desserts.

Q6. Does this guidance apply to the manufacture of speciality cheeses?

A6. The processing of raw milk in the manufacture of ready-to-eat foods, such as specialist cheeses which are sold as ready-to-eat, is beyond the scope of this guidance. Guidance for specialist cheese manufacturers already exists. Other dairy establishments handling raw milk, such as those pasteurising milk, should already have well-established systems to control cross-contamination.

Q7. Does the guidance apply to packaged ready-to-eat foods?

A7. Ready-to-eat foods that are packaged in such a way that they cannot be contaminated (such as tinned and other hermetically sealed pre-packed foods) should not be regarded as being 'handled' for the purpose of the guidance. However, the guidance will apply to any situation where potentially contaminated packaging could spread that contamination into areas where open ready-to-eat foods are handled.

Q8. Is there an issue with salad vegetables, apples and other fruit customarily eaten raw being sold unpacked alongside untreated vegetables that are likely to have been contaminated by soil?

A8. The hazard from *E. coli* O157 should be treated consistently in all contexts. Fruit or vegetables which are sold unpacked and handled directly by consumers should not be considered as ready-to-eat without washing. Packaged fruit or vegetables should not be regarded as ready-to-eat unless this is stated on the product packaging. Any fruit or vegetables which are sold as ready-to-eat should be protected from potential *E. coli* O157 cross-contamination risks at all times. It is vital that food business operators are aware that unwashed vegetables, particularly those which are visibly contaminated by soil should be considered as potential sources of *E. coli* O157 and stored and presented in such a way that they do not lead to the contamination of ready-to-eat produce. It is also vital that consumers understand whether the vegetables and fruit they are purchasing are intended to be ready-to-eat or require washing, peeling or cooking prior to consumption.

The necessity to consider the risk of *E. coli* O157 contamination of vegetables is particularly significant in light of the recent outbreaks in 2011, where there was a link to consumption and handling of contaminated vegetables.

Q9. How do I make raw fruit and vegetables that have been grown in soil "ready to eat"?

A9. Control measures to achieve the decontamination of foods are outside the scope of the main guidance. However, the Agency recognises that it is appropriate to address this related issue in the Q&A.

Industry implements controls to minimise the potential for contamination in the field from the seed onward through Good Agricultural Practice. However, it should be recognised that fruit and vegetables are produced in non-sterile environments and

while washing cannot guarantee the removal of all bacteria from produce it will help to reduce any bacterial contamination which may be present on the outside.

Raw fruit and vegetables should not be stored with ready-to-eat foods until they are ready-to-eat. Unless they are supplied to the food business as ready-to-eat, it should be assumed that they are not.

Washing will help to remove bacteria including *E.coli* present on the surface of fruit and vegetables. Most of the bacteria will be in the soil attached to the produce therefore washing is particularly important to remove any soil. This can be done effectively by rubbing the vegetables vigorously under water, for example in a bowl of fresh water, starting with the least soiled items first and then rinsing with clean water. Washing loose produce is particularly important as it tends to have more soil attached to it than pre-packaged fruit and vegetables. In general, it is always advisable to wash all fruit and vegetables before you use them as ready-to-eat ingredients to ensure that they are clean and to help remove bacteria from the outside. Peeling or cooking fruit and vegetables can also remove bacteria.

Once these controls have been undertaken, and the food will not undergo another control before being supplied to the customer as ready-to-eat, the food should be protected from any further cross-contamination and stored and displayed in those areas of the premises set aside for ready-to-eat foods.

You should also note the Agency guidance on sprouted seeds at <http://www.food.gov.uk/multimedia/faq/sproutedseedsfaq/>

Q10. Should I wash fruit and vegetables in Chlorine?

A10. The use of chlorine is not recommended for the washing of fruit and vegetables in catering or domestic kitchen settings. Chemicals such as chlorine are used by the fresh produce industry under strictly controlled conditions, and the main role of such chemicals is to sanitise the water being used to wash produce rather than to decontaminate the produce itself. Research has indicated that the reduction in microbiological contamination which occurs through the washing of produce appears to be due to the amount of physical agitation rather than through the effect of washing aides such as chlorine.

We would also strongly advise against using general cleaning products or washing-up liquid as these products may not be safe for human consumption, and by using them harmful residues may be left on the food. In addition, there is no evidence available to show that they are capable of removing contamination.

Q11. Can I use the same food preparation sink for washing raw food, such as salad vegetables, and then for rinsing ready to eat food such as cooked rice?

A11. You can use the same sink for washing dirty vegetables as for rinsing ready-to-eat foods, but you need to operate a strict system of control to do this safely. After a sink has been used for washing dirty vegetables the sink should be thoroughly cleaned and disinfected (including the taps and any other fittings). The same sink may then be used for ready to eat foods.

It is not considered desirable to wash raw meat prior to cooking due to the increased risk of splashing bacteria onto surrounding surfaces. Vegetables and rice should be washed in such a way to avoid contact with the sink both during and after washing e.g. by placing them in a bowl/container or colander.

It is also not necessary to rewash raw foods such as salad items that are already labelled ready-to-eat when purchased.

Q12. What does this guidance mean for the people preparing their own food at home in their kitchens?

A12. Keeping the kitchen clean is essential to keep food safe; otherwise bacteria can grow and spread. While there is no compulsion on the general public to follow the guidance, cleaning and avoiding cross-contamination are issues for every home. The guidance contains good practices that can be adapted for home-use to help prevent incidents of food poisoning occurring in the home.

Q13. The guidance document is quite long and detailed are there any shorter materials that I can read?

A13. Yes. The Agency has produced a four-page Factsheet on this issue <http://www.food.gov.uk/foodindustry/guidancenotes/hygguid/ecoliguide> which includes the key messages. However, we would encourage businesses to read the detailed guidance, if possible, to fully understand the necessary controls and the rationale behind them. Your local authority environmental health service will be able to help you apply the guidance in your own business when they visit your premises.

Q14. I understand the guidance will be undergoing a process of review and evaluation, does this mean that the approach to controlling cross-contamination set out in the guidance is likely to change?

A14. No. The Agency has established a dedicated e-mail address to receive feedback on the guidance (Controllingecoli@foodstandards.gsi.gov.uk) and this will be used to inform further development of this Q&A and also to consider if additional tailored materials are necessary e.g. for particular food business types. However, the FSA does not intend to amend the control measures set out in the published guidance which underpin the overriding principle of protecting the consumer.

Q15. Surely, this cross-contamination guidance is disproportionate to the risk of someone being infected by *E.coli* O157?

A15. In terms of proportionality the approach taken in the guidance is intended to reflect the general proposition set out in the consultation that every consumer needs to be protected from the risk of an isolated instance of low level contamination of food by *E.coli* O157 as to the degree of protection required. A summary of the responses to the consultation can be found on the Agency's website at <http://www.food.gov.uk/consultations/consulteng/2010/reducingriskecolio157eng>

E. coli O157 is a particularly dangerous type of bacteria which can cause serious, untreatable, illness and even death from very low-levels of contamination of ready-to-eat food.

Professor Pennington concluded at paragraph 17.40 of the Inquiry Report into the 2005 outbreak in South Wales that: "It is small food producers/processors in Britain that have the greatest difficulty in achieving and maintaining the safety standards that are required to prevent the contamination of ready-to-eat products with *E.coli* O157. There should be no relaxation of regulation for them. The opposite should be the case."

Q16. How does this guidance fit with the need to minimise the regulatory burden on business?

A16. It was clear from the Inquiry report and from the principles that we consulted on that, in some cases, changes in practice would need to occur to adequately address the cross-contamination risk. Understanding of risk and risk management is always a developing area and changes in practice are always likely to be necessary to address

emerging risks, or those areas where understanding of risk has increased.

The Agency's primary focus is the safety of food supplied to the consumer. We would certainly not support changes in practice that would incur a cost to businesses to implement without being convinced of their necessity. The Agency view is that reducing the regulatory burden on business, while desirable, should never compromise food safety.

Q17. Caterers, retailers and some other specific types of food establishment have had support from packages such as Safer Food Better Business (SFBB)/CookSafe/SafeCatering for several years. Why hasn't the Agency produced similar materials for butchers?

A17. The SFBB/CookSafe/Safe Catering packages were designed specifically for small and medium sized caterers and retailers. It is not considered suitable for butchers where high risk activities take place as they need to set out their control measures, critical limits, monitoring procedures and corrective actions in more detail and need to keep appropriate records. The Agency has developed advice on HACCP in butchers, in order to clarify what appropriate documented food safety management procedures might look like, seeking ways of delivering essential messages to food business operators and food handlers and assessing whether additional activity is required of food authorities in relation to this particular category of food establishment. This advice and associated DVD are now available at www.food.gov.uk/foodindustry/meat/butchers/ .

Q18. Will SFBB/CookSafe/Safe Catering be updated to reflect this guidance?

A18. Yes. SFBB/CookSafe/Safe Catering are currently being reviewed and updated to, amongst other things, include appropriate references to aspects of the guidance on cross-contamination.

Q19. What is happening in relation to the planned extension of Remedial Action Notices (RANs) to all food premises and in what circumstances is it anticipated they would be used?

A19. At its September 2011 meeting, the FSA Board considered the outcome of the public consultation carried out in spring 2011 and agreed a programme of work to achieve the necessary legislative changes to extend RANs to all food establishments. This has now been implemented in Scotland, Wales and Northern Ireland. The Agency wrote to local authorities on 3 July 2012 with an update on the situation in England. You can read the letter at www.food.gov.uk/multimedia/pdfs/enforcement/enf-e-12-021.pdf.

In those countries where they are available, enforcing authorities should consider the use of RANs as a proportionate response to address inadequate controls in relation to cross contamination. Officers should, however, continue to make use of Hygiene Emergency Prohibition Notices where the lack of effective control results in an imminent risk to public health.

Separation

Q20. The FSA says that its decisions are based on science. Where is the evidence for separation being the only reliable means of adequately controlling *E. coli* O157 cross-contamination and for banning the dual use of equipment and machinery, such as vacuum packing machines, mincers and slicers, for raw and ready-to-eat foods?

A20. There are a number of published studies which support the need for separation to facilitate effective cross-contamination control. Research has clearly demonstrated the transference of pathogenic bacteria from raw meat onto surfaces, hands and inanimate objects, and the subsequent spread of these pathogens to ready-to-eat foods. Such indirect cross-contamination has also been shown to be extremely difficult to control when strict adherence to procedures such as hand washing and cleaning is relied upon to prevent the spread of pathogens between raw and ready-to-eat foods. The evidence shows that it is not possible to manage these procedural controls to ensure that they are carried out adequately on all of the appropriate occasions, particularly in busy environments. For further reading the following reports are recommended:

1. Harrison, W. A , Griffith, C. J. and Tennant, D. (2001) *Determining exposure assessment and modelling risks associated with the preparation of poultry products in institutional catering and the home*. Research carried out on behalf of the FSA.
2. Griffith, C.J., Davies, C., Breverton, J., Redmond, E.C. and Peters, A.C. (2002) *Assessing and*

- Reducing the Risk of Cross Contamination of Food Stuffs in Food Handling Environments*. Food Standards Agency, London.
3. Clayton, D.A., and Griffith, C.J (2004) *Observation of food safety practices in catering using notational analysis*. British Food Journal, **106** (3) 211 – 227.
 4. Shiohshuh Sheen, Cheng-An Hwang, (2010) *Mathematical modelling the cross-contamination of Escherichia coli O157:H7 on the surface of ready-to-eat meat product while slicing*. Food Microbiology, **27** 37–43.
 5. Chapman, B., Eversley, T., Fillion, K.; MacLaurin, T., Powell, D. (2010) *Assessment of Food Safety Practices of Food Service Food Handlers (Risk Assessment Data): Testing a Communication Intervention (Evaluation of Tools)* Journal of Food Protection **73** (6) , 1101-1107.
 6. Lubner, P., Brynestad S., Topsch D., Scherer K., Bartelt E. (2006) *Quantification of campylobacter species cross-contamination during handling of contaminated fresh chicken parts in kitchens*. Applied and Environmental Microbiology **72** 66-70.
 7. Møller, C.O., Nauta, M.J., Christensen, B.B., Dalgaard, P., Hansen, T.B. (2011) *Modelling transfer of Salmonella Typhimurium DT104 during simulation of grinding of pork*. Journal of Applied Microbiology **112** 90-98.

Please note that this list of reports is not exhaustive, nor is it presented as a complete literature review.

This is supported by the conclusions published in the Public Inquiry report, in which Professor Pennington highlighted that too much reliance was placed on using chemicals to sanitise surfaces in contact with raw and ready-to-eat meats. This was particularly the case in relation to *E.coli* O157 given its virulence, the low infectious dose, and its ability to survive on metal surfaces. He considered that the use of biocides was not a control measure applied at a critical control point “that can be used to prevent or eliminate a food safety hazard or reduce it to an acceptable level” (Codex Alimentarius). Professor Pennington concluded that a reliance on biocides to reduce the risk from cross-contamination should have been made unnecessary by the use of separate equipment for raw and ready-to-eat meats, particularly in relation to complex equipment such as vac packers.

During its examination of the issue, the FSA found no evidence to suggest that Professor Pennington’s conclusion that cross-contamination could not be fully or reliably controlled using biocides on shared equipment was incorrect. Such a regime is subject to a number of complicating factors that would make reliable proof of safety unachievable.

Q21. How do I know if a piece of equipment is regarded as “complex” in terms of the guidance?

A21. “Complex” equipment is considered to be any piece of equipment that cannot, in its entirety, be subject to appropriate cleaning, as set out in the guidance. Such equipment cannot be adequately cleaned to ensure complete disinfection over all

surfaces and in all its internal components. This is because the detail required in cleaning would not be practically possible and the evidence also shows the difficulties in reliably implementing cleaning procedures. Given the low infective dose of E. coli O157, the guidance is clear that complete separation is the only safe method with regard to complex equipment.

Complex equipment and machinery, such as vacuum packing machines, mincers, slicers and so on, are composed of an array of surfaces and components which have the potential to become contaminated either directly (from raw food) or indirectly (from hands or aerosols). In order to prevent indirect cross-contamination, it is important that complete disinfection is applied to all parts of the equipment and not only those which contact the food directly.

Given the difficulties in controlling spread of contamination by procedural means, the consequent opportunities for indirect cross-contamination, and the difficulties in reliably implementing adequate disinfection each time a surface is subject to contamination, dual use of such equipment for both raw and ready-to-eat foods is considered to present an unacceptable risk.

Q22. I have a complex piece of equipment that was previously used for raw foods. I now want to use it for ready-to-eat foods. Is this OK?

A22. The Agency has commissioned some work to look at steps that may need to be taken to ensure that a piece of complex equipment can be considered safe for use with ready-to-eat foods if it has (or may have) been used previously with raw foods .

Such a circumstance may be due to a change of use in the food business, the acquisition of equipment without full history of usage, or a piece of equipment dedicated for ready-to-eat foods where controls have broken down and it can no longer be considered safe.

Until this work is complete, the Agency's view is that it is not safe for a piece of equipment that it is not known for certain has not been used with raw foods, to be used subsequently with ready-to-eat foods.

Q23. We have read the guidance and would like some clarification on whether bacon is classed as raw meat. We ask with regard to delicatessens that use the vac packers for bacon and ready-to-eat foods. Strict cleaning procedures exist between uses but are we now to prohibit the dual use of vac packers for bacon and ready-to-eat foods?

A23. Yes. Dual use of vacuum packers for bacon and ready-to-eat foods should not be allowed.

Bacon is sold as a raw product and although the salting/curing process could have an antimicrobial effect this will not guarantee removal of pathogens and further processing, usually cooking will be required to achieve this. It should therefore be considered as a potential source of cross contamination and handled in the same way as other raw meat.

Q24. I do not use my vacuum packer for ready-to-eat foods but I do use it for raw food as well as partly-cooked food. However the cooked food will go through more cooking before it is “ready-to-eat”. Is this OK?

A24. In terms of the guidance, food that has yet to undergo a final control measure, such as cooking, is not “ready-to-eat” and therefore the guidance would not apply in the circumstances mentioned.

Food that is to be further cooked can be handled using equipment, including a vacuum packer or mincer, that is designated for raw food, provided that this food is handled and stored separately from ready-to-eat foods in such a way as to protect all ready-to-eat food from contamination.

It should be remembered that the Agency recommendation for killing the E. coli bacteria through cooking is that the food be raised to an internal temperature of 70°C for two minutes. Where lower temperatures are used the times will be considerably longer, and it would fall to the food business to show that their time/temperature combinations are sufficient to achieve the same decontamination as cooking at the recommended temperature.

Q25. Is black pudding a raw or a ready-to-eat product?

A25. Products that have been processed in such a way that they are no longer a potential source of E. coli O157 contamination can be treated as ready-to-eat.

However, products such as black pudding may be sold as ready-to-eat or as requiring further cooking before consumption by the customer.

It is for the retailer to make a decision on how to treat such products. If they are to be sold as ready-to-eat, they must be stored, displayed and handled in the designated clean areas of the premises.

If they are to be sold as raw, then they must be treated as such throughout the product cycle and must not be placed in storage or display with ready-to-eat foods. The retailer should also make it clear to their customers that the product requires further cooking if it has been handled as raw.

The retailer should have documented controls in place to ensure that, whichever decision is taken with regard to the storage and display of these foods, they are consistently applied. An inspecting officer should use their professional judgement to decide if these controls are adequate.

Q26. Is there a requirement for businesses to have separate cash registers, chip and pin machines etc. for handling raw and ready-to-eat foods?

A26. The guidance advocates separation, but accepts that there may be examples of where a single cash register may be used with appropriate controls in place, including handwashing either before or after using the cash register. In this case the guidance states that 'A single cash register can be used if appropriate measures are taken to prevent the spread of bacteria. If the cash register is kept in the clean area, care must be taken to ensure it is not contaminated by staff coming from areas outside the clean area. Similarly if it is kept outside the clean area, staff from the clean area must ensure their hands and clothing are clean after using the cash register before returning to the clean area'.

Q27. How do I ensure that the handle on my fridge, which is used for raw and ready-to-eat foods, does not become a source of cross-contamination?

A27. Where a single fridge is used for storage of raw and ready-to-eat foods, controls must be put in place to ensure that the door handle does not become a source of indirect contamination for those staff handling ready-to-eat foods. In practice, if staff handling raw foods wash their hands before touching the door handle, this will ensure that it is kept clean for staff handling ready-to-eat foods.

Q28. What constitutes a designated clean area within a retail environment?

A28. A designated clean area is an environment within which freedom from *E. coli* O157 contamination is assured through control measures in place.

The clean area includes the space above the work surface. No raw foods, or equipment that may be contaminated by raw food, should be carried over the top of the work surface or stored above it, as this would compromise the clean area.

The designated clean area would not include the floor surface because a floor can never be regarded as clean. All surfaces that could come into contact with food, hands, utensils wrapping materials etc. must not be a possible source of contamination because, during the time of operation, there are no further controls that would prevent a chain of uncontrolled spread of contamination ultimately to ready-to-eat food.

Q29. Is storage and display equipment required to be labelled so that clean areas are readily identifiable as being for ready-to-eat foods?

A29. The guidance does not require this, it requires adequate separation within such equipment and that food handlers know where it is safe to store ready-to-eat foods and to ensure that raw food is kept adequately separate from these locations at all times. The arrangements for separation should form part of the food safety management procedures plan and these must be effectively communicated to staff. There may be circumstances where labelling would help with the implementation of the food safety management procedures e.g. "This refrigerator to be used for cooked meats only".

Q30. My business is not able to have a permanent area for ready-to-eat foods. How do I comply with the guidance?

A30. All businesses should aim to design their work areas to ensure that permanent clean areas are designated for handling ready-to-eat foods. Where a permanent clean area is not achievable, an area can be temporarily designated and maintained as clean. A temporary clean area should never be used as an option where a permanent area is achievable. Permanent designation of a clean area enables businesses to reduce the amount of procedural controls they are required to implement to manage the control of cross contamination. Any move away from this increases the level of potential risk.

If designation of a temporary area is the only option available, the general environment, such as non food contact surfaces, including worktops and walls, must present smooth impervious and easily cleanable surfaces and must be subject to strict cleaning and disinfection procedures, in accordance with the guidance, before they are used for ready-to-eat foods. Separate chopping boards and utensils must be designated for use in clean areas unless cleaned and disinfected by heat in a commercial dishwasher between their use for raw and ready-to-eat foods.

Separation in storage areas must be sufficient to ensure that ready-to-eat foods are protected from cross-contamination risks. Where separate units are not provided, the clean storage area for ready-to-eat food should be clearly identifiable. The separation in such cases should be sufficient to ensure that hands and clothing are not contaminated when storing or removing ready-to-eat foods.

Food businesses must ensure that where permanent physical separation of raw and clean areas, is not possible, that the controls that in place to support the use of temporary clean areas are robust, properly validated and can be practically implemented and adhered to for the entire period that the temporary clean area is in operation.

Where it cannot be shown that such controls are effective or reliable, or where a lapse in the controls is observed, the business should not continue to rely upon them and should revise its operations so that effective controls can be applied.

As indicated in the guidance: “A commercially desired throughput for an establishment should not constitute a physical limitation that prevents separation. In such cases operations should be scaled-down to a level in the establishment that permits physical separation.”

Q31. I am the only member of staff serving customers raw and ready-to-eat foods in a small food business. How do I comply with the guidance?

A31. You will need to maintain a clean area in your business for handling and serving ready-to-eat foods. Only if permanent separation is not achievable can a temporary clean area be set up. You can read about the circumstances in which you can set up a temporary clean area in paragraph 30 of the guidance, as well as question 29 of this Q&A document.

The controls for a single member of staff serving customers are the same as for multiple staff. If you are moving into the clean area, you must ensure that hands and

clothing will not contaminate any ready-to-eat food, or any utensils or equipment that come into contact with ready-to-eat foods.

The controls that you have in place must be robust and effective, and able to be practically implemented at all times. Where it cannot be shown that such controls are effective or reliable, or where a lapse in the controls is observed, the business should not continue to rely upon them and should revise its operations so that effective controls can be applied.

Dual use of complex equipment should never be regarded as safe.

Q32. 'Short order' chefs will be cooking raw meat dishes and serving ready-to-eat plated meals. Does the guidance mean I need two chefs, one for raw handling and one for ready-to-eat?

A32. No. Where staff are cooking raw food to order in a catering operation, the business should ensure that the raw ingredients are kept in a separate location from the clean plates and the ready-to-eat foods. Separate utensils, from those used for raw foods, should be used to plate cooked foods from the cooking range and these must be clean at all times. One way of maintaining clean hands will be to ensure that raw ingredients are only handled using tongs, forks or other utensils that are kept between uses in such a way that the handles are not exposed to risk of contamination. This would mean that hands would not be contaminated when these utensils are used. Hands should nevertheless still be washed on a regular basis by staff handling food.

Q33. I use a probe thermometer to monitor the temperature of food I am cooking, what cross-contamination issues do I need to be aware of?

A33. A probe thermometer must be treated the same as any other piece of equipment, and must not be a vehicle for cross contamination. Any probe thermometer that cannot, in its entirety (including any base unit), be subject to heat disinfection, for example in a commercial dishwasher, would be regarded as complex equipment and would not, therefore, be considered safe for dual use between raw and ready-to-eat foods.

In most cases, where the probe thermometer is being used to check the temperature of partially cooked food, we would expect that the initial use of the probe would take place after the outside surface of the food had been raised to a sufficient temperature

to kill any bacteria, such as E. coli O157, found on the surface of the food. Therefore, the initial use of the probe would not introduce contamination from surface to the centre or, importantly, from the food to the rest of the probe equipment.

In this case there would be no requirement to use a different probe to subsequently check that the food has finished cooking or to probe other ready-to-eat food, although we would recommend cleaning the tip between uses, either with a probe wipe, or in boiling water.

The exception to this would be when the probe is being used to monitor the temperature of partially cooked products made from minced or ground meat. In this case, the bacteria would not be limited to the surface of the product and there is, therefore, a greater risk of cross-contamination. The tip of any probe that has been inserted into partially cooked food made from minced or ground meat, must be appropriately heat disinfected, for example in boiling water, before it can be used again to subsequently check that the food has reached the required temperature.

You should note that temperature probes have a safe operating temperature that should not be exceeded. You should always follow the manufacturers' guidelines on heat tolerances.

Q34. Can I use probe wipes to clean the tip of my probe thermometer?

A34. As mentioned in the answer above, any probe thermometer that cannot, in its entirety (including any base unit), be subject to heat disinfection, for example in a commercial dishwasher, would be regarded as complex equipment and would not, therefore, be considered safe for dual use between raw and ready-to-eat foods. As such, probe wipes are not considered suitable in these circumstances as they do not provide heat disinfection.

However, probe wipes are considered acceptable for use in cleaning a probe tip used solely with raw foods or a probe tip used solely with ready-to-eat foods. They should be used in accordance with the manufacturer's instructions.

Q35. What about an inspecting officer? Will they need to change clothing or carry separate thermometers?

A35. Any activity carried out by an inspecting officer must not compromise the food safety management systems of the food business.

An officer should not be the vehicle of any potential cross-contamination.

The officer's clothing and equipment must be subject to similar controls as those of the food business operator.

Q36. The guidance describes worktops as non food contact surfaces. In what situation does this apply?

A36. Where a worktop is part of a temporary clean area it must be a non food contact surface. In these cases chopping boards or other suitable barriers should be used as the food contact surface. If a worktop is permanently designated for raw or ready-to-eat food the worktop can be used as a food contact surface as it will only come into contact with either raw or ready-to-eat foods.

Cleaning

Q37. I clean with an antibacterial sanitiser so why do I need to do two-stage cleaning?

A37. Sanitisers combine both cleaning and disinfection properties in a single product, usually as a spray. However chemical disinfection can only be reliably achieved on a visibly clean surface and hence the need for a first stage cleaning process to remove visible dirt, food particles and debris before using the sanitiser for disinfection. When used in a single stage process these products are only suitable as an interim 'clean-as-you-go' measure and never as a disinfection control for controlling *E. coli* O157 cross-contamination.

Q38. Floors may be shared between clean areas and other areas. In such instances is separate cleaning equipment for the floors still required?

A38. An area of floor may be within a room or designated clean area but the floor itself can never be regarded as clean and any food or surfaces of food equipment that come in contact with any floor must be considered as potentially contaminated. Floor cleaning equipment will need to be separated from any equipment used to clean other surfaces such as worktops in clean areas. However, it is essential that floor cleaning is carried out in such a way that it does not contaminate surfaces in a clean area that will be treated as safe to contact without the risk of spreading E. coli O157.

Q39. I wash my cloths by hand and steep them in bleach overnight. Is this acceptable?

A39. Separate cloths for cleaning should be provided for use in raw and ready-to-eat areas to prevent cross contamination.

We would not consider steeping in bleach to be an effective method of control for E. coli O157 contamination. This is because any organic matter, such as grease, dirt or food, left on the cloths can stop the disinfectant from working properly. The guidance indicates that cloths previously used outside the clean area that are to be re-used in the clean area should be laundered using a standard boil wash, which typically operates at 90°C.

Q40. Please can you confirm that the BS number quoted in the guidance is correct? The guidance quotes BS EN 1276:1997, but the BS site states that this has been withdrawn and replaced by BS EN 1276:2009.

A40. We have sought advice on this matter and have been informed that the differences between the two standards are all procedural rather than technical. This has had the effect of strengthening the test method and harmonised it with other European disinfectant standards, but has not changed the requirements for the disinfectant to pass the test; i.e. for EN 1276 a 5 log reduction of 4 test organisms in 5 min. Disinfectants that passed the test before the change in standard would, therefore, have been seen to have met the same, current, pass criteria.

Therefore, it is our opinion that a sanitizer complying with BS EN 1276:1997 remains suitable for use and compliance with BS EN 1276:2009 will be acceptable in the context of this guidance, if found upon the label of newer products.

Q41. Why are there two test procedures for killing E coli O157?

A41. Both standards are considered adequate in terms of outcome but the method of assessment in each is different. BS EN 1276 is a suspension test whereas BS EN 13697 is a surface test. BS EN 13697 has a wider scope because it includes fungicidal action, which is not relevant to the control of E. coli O157. Therefore, if products meet BS EN 13697 there is no need for the supplier to also demonstrate compliance with BS EN 1276.

Q42. It would be helpful if there was a list of commercial products that actually conform to these BS EN numbers. Is there such a list?

A42. It is not considered practical for the Agency to produce, and most importantly, keep up-to-date, a prescribed list of cleaning products. In considering our response to this issue we concluded that formulations could change at any time and the FSA would have no way of knowing. The FSA approach, as outlined in the guidance document provides a practical market solution for suppliers and customers. The required specification is clear to the customer and conformity to that specification is confirmed by the supplier.

It may be useful to note that, while the Agency is not able to provide a definitive list of compliant cleaning products, an internet search of the terms; “BS EN1276:1997 Products” or “BS EN 13697:2001” products (also “BS EN 1276:2009 products”) returns a number of results for companies selling compliant products. The Agency would not be in a position to recommend a specific product, but these products are readily available to food businesses. Businesses should ensure that any BS EN products they use in their business are safe for use in food operations. If in doubt the food business should contact the manufacturer of the product for clarification.

The Agency is also liaising with leading cleaning product suppliers to encourage them to make information on compliance with the British Standard more readily available. We have been encouraged by the response from industry and the actions they have taken, or are planning, to address this issue.

Local authorities may wish to access the “Knowledge Hub” online food hygiene forum, where colleagues are populating a Wiki page of applicable products. As this website is for local government use only, food businesses might wish to access this information through their environmental health service. This list of compliant products should not be regarded as exhaustive, and we would advise that the supplier or manufacturer

should be able to provide the information for any specific product.

Q43. What formal action is deemed appropriate if a food premises is found to not be using a British Standard bacterial detergent?

A43. Where disinfection is critical to food safety, a food business operator must have a valid procedure for carrying this out. Use of a product complying with one of the BS EN standards set out in the guidance, in accordance with the manufacturer's instructions, can be considered as valid. It is for the food business operator to demonstrate that procedures are valid and authorised officers must consider the use of a Hygiene Emergency Prohibition Notice where disinfection is critical to food safety and a valid procedure has not been demonstrated by the food business operator. Chemical disinfection should not be used as a substitute where the guidance stipulates that physical separation is required.

Q44. How will I know if my dishwasher meets the requirements of the guidance?

A44. The Agency has commissioned some work to examine the operation of dishwashers in relation to the requirements of the guidance. This work will examine the time/temperature combinations that can produce an adequately sanitised product, as well as the contribution to decontamination made by the chemicals within the wash cycle. Once this work has been completed, we will update this Q&A document accordingly. Until then food businesses should ensure that any dishwashers are in good working order, fit for purpose and the appropriate setting is used.

Q45. How should I clean my utensils if I do not have a commercial dishwasher?

A45. Ideally, a separate sink should be used to wash utensils that have been in contact with raw foods from one used to wash utensils in contact with ready-to-eat foods. However, the guidance acknowledges that this is not always possible and paragraph 30(b) provides advice on the process to follow when washing utensils in a single sink. We would suggest that the utensils used for ready-to-eat foods be washed first, followed by anything used for raw foods. The most important control is to ensure that the sink is properly washed and disinfected following contact with any utensils that have been in contact with raw foods. It is also recommended that utensils washed in this way should be air dried to avoid the risk of contamination with cloths that may have been in contact with raw foods.

If a food business is not decontaminating with heat disinfection, they must have separate chopping boards/utensils for use with raw and ready-to-eat foods.

Q46. Can I use a steamer to sanitise/disinfect utensils or chopping boards that have been used for raw foods so they can be used with ready-to-eat foods?

A46. Any method of temperature disinfection that allows for the temperature of all surfaces of the utensils/chopping boards to reach 82°C may be an acceptable control for utensils/chopping boards, once they are clean of actual food debris etc.

The food business operator would need to demonstrate to the satisfaction of an inspecting officer that the method was an effective control as part of the business' food safety management system.

Handwashing

Q47. Does the guidance mean that I must wash my hands if I handle cash at a ready-to-eat counter before serving the next customer?

A47. The guidance would apply where the cash is likely to be contaminated by sources of E coli associated with raw foods handled in the food operation. This is not likely to be the case where cash is handed over by customers. In such cases, existing advice applies. Tongs and other utensils are used in most ready-to-eat serving areas to avoid any contamination of food from the general environment.

Q48. The guidance recommends the use of non-hand-operable taps for handwashing. I don't have these, so what should I do?

A48. The use of non-hand-operable taps when washing hands is recommended, but if not available, taps should be turned off using a single use towel to control the risk of cross-contamination. An alternative control may be the use of designated sinks for those involved in handling raw or ready-to-eat foods. However, consideration will need to be given to the controls in place to ensure that the hands of those entering the ready-to-eat area are not a source of contamination.

Q49. Why wasn't the use of non-hand operable taps for handwashing made mandatory, like the banning of dual-use of complex equipment and machinery.

A49. At paragraph 58 on page 30 of the guidance, we recommend as best practice the use of non-hand operable taps for handwashing. During development of the guidance it was considered whether a stronger message would be appropriate but concluded that making the use of non-hand operated taps mandatory was unnecessary because the risk of cross-contamination can be controlled by a safe alternative method i.e. turning taps off with a single use towel.

However, where it cannot be shown that the alternative method can be reliably implemented, or where a lapse in the controls is observed, the business should not continue to rely upon them and should reassess the risk posed and the need for non-hand operable taps.

We have not seen convincing evidence that would validate alternative procedures in the case of complex equipment and machinery and the evidence from the report of the E. coli O157 outbreak in Wales, as well as from the papers referenced in Question 20 above, provides strong evidence that alternative procedures should not be regarded as acceptable. As an example, the Agency considers that the dual use of complex equipment such as vacuum packers can never be considered safe.