

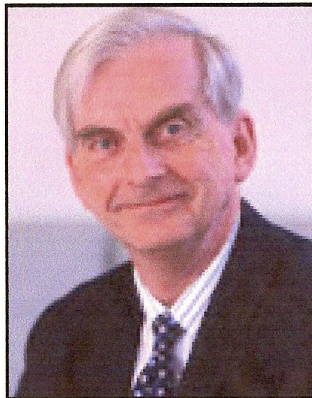
# HUSH NEWSLETTER

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## Aberdeen hosts conference on food safety and quality

Almost 850 delegates from 50 countries attended **Food Micro 2008**, which explored a huge range of microbiological issues surrounding the safety and quality of food.

One of the key speakers at the University of Aberdeen organised event was Prof Hugh Pennington, who asked whether lessons have been learned from the 1996 Lanarkshire E.coli outbreak when 21 elderly people died after eating contaminated meat from a Wishaw butcher.



*Prof Hugh Pennington*

Prof Pennington chaired the public inquiry into the case (which was the world's worst recorded outbreak of E.coli food poisoning) and is currently chairing the public inquiry into the 2005 E.coli O157 outbreak in Wales which claimed the life of a five-year-old and left 150, mainly schoolchildren, ill. Again contaminated meat supplied by a butcher was to blame.

More cases of E.coli have been detected in Scotland — particularly in the north-east — than any other country. Just prior to the conference there were 14 confirmed cases in nearby Auchinlech linked to a private water supply\*. Prof Pennington commented: "We have higher O157 infections in humans in Scotland than anywhere else in the world and we don't really have a very good explanation for that..... Part of the problem may be that we do have a nastier strain."

Delegates also heard of pioneering research at the University of Aberdeen that has found E.coli O157 infections in humans are more like to have come from cattle rather than sheep. Researchers have used state of the art technology to analyse the DNA of the bacteria found in humans and compared it with the DNA of E.coli found in cattle and sheep.

One of the tests presented for identifying foodborne pathogens including *E. coli* O157:H7 is called Pathatrix Recirculating IMS. This has been developed to find *E. coli* O157 in large samples of food, such as raw minced beef, and is the fastest available anywhere in the world. It uses tiny magnets to specifically coat the bacteria which are then pulled out of the food sample being tested.

The Pathatrix test was used by the Californian Public Health Department during the *E.coli* O157 outbreak related to contaminated spinach that killed 3 people at the end of 2006. This was the first time that the identical matching *E.coli* O157 outbreak strain was isolated from the environment where the spinach had been grown. Usually the environmental source is not confirmed (just suspected) They found the same bug that had made people ill in samples of cow manure taken from fields and water courses surrounding the spinach fields.

*\*This outbreak highlights the risks associated with private water supplies, which are liable to bacteriological contamination. Householders are encouraged to contact the Environmental Health Service and seek advice on how to improve their supply. Grants of up to £800 are available to install ultraviolet treatment and other improvements.*

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## **Experts say the rise in antibiotic resistance is reaching worrying levels**

The Health Protection Agency (HPA) said that while the focus on infections such as MRSA had been largely successful, new trends in other bugs were now posing a threat. Twelve percent of bloodstream infections by E.coli in England, Wales and Northern Ireland now show some signs of not responding to drugs. The HPA said the NHS must be careful over antibiotic use and urged industry to look into developing new drugs.

There are two main families of bacteria known as Gram-positive, such as MRSA, and Gram-negative, which includes E.coli and other less common bugs Acinetobacter and Pseudomonas. The HPA said there had been a drive to tackle MRSA in recent years which had helped reduce infection rates and led to a host of new antibiotics to be developed. By comparison, the development of antibiotics targeting Gram-negative bacteria such as E.coli, was much less common.

The fight against drug resistance is an on-going battle because many bacteria constantly mutate, gaining resistance to current antibiotics in the process. This is what has been happening in recent years to the likes of E.coli.

HPA data show that there are about 20,000 bloodstream infections of E.coli each year - although the true level of infections would be much higher if urinary tract infections were taken into account. Of these, 12% show signs of resistance—up from about 4% at the turn of the century. The infections are mostly not yet resistant to all forms of antibiotics, just what doctors call the first-line. This means they are having to use back up drugs, which tend to have more side effects and raises the prospect of the widespread emergence of a new strain which is totally antibiotic resistant.

Reports have already emerged of such a scenario in Israel and the US, while four cases have been reported in the UK.

Dr David Livermore, an infections expert at the HPA, urged industry to start looking at developing new antibiotics. But he added: "The NHS must be careful over its use of antibiotics to slow down the development of resistance.

"Hospitals must make sure they use the right dose, for the right length of time.

"GPs should not prescribe - nor patients expect - antibiotics for routine coughs and colds.

"Resistance has been accumulating. We are having to use reserve antibiotics more than previously... that is worrying.

"There are some cracks in the system, but they are not big ones yet."

A spokesman for the Association of the British Pharmaceutical Industry said drug firms were working hard to develop new antibiotics. He pointed out they were supporting the work of the Infectious Disease Research Network, a group of NHS academics which is exploring ways of developing new treatments.

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