

Editorial

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A recent editorial in this journal was dedicated to incidents of chemical contamination in food, highlighting the extent of impacts on society concerning economic, environmental, social and political costs associated with the various events (see QAS 2010, 2, 4). One important and not too reassuring fact concerning chemical contaminants stated that in contrast to microbiological outbreaks, the evaluation of cause and effect of many chemical contaminants is complicated by the delayed onset of symptoms. One might think that the reverse conclusion would imply that there is a high certainty – supported by the ‘relatively immediate’ onset of symptoms, established analytical tools, food safety management and hygiene guidelines, and political transparency – to trace the effect of microbial contamination back to its source and eliminate the offending intruder from the food chain. A recent example of an EHEC [enterohaemorrhagic *Escherichia coli* (*E. coli*) – a very potent pathogenic bacterium] outbreak in Germany showed the vulnerability of the system and taught us a lesson that we cannot lay back in self-complacency and shift the blame to ‘imported’ contaminants, if safety management ‘inside’ does not make use of the tools and the support of established food safety networks.

Salmonella, *Shigella* and *E. coli* O157:H7 are the most prevalent pathogenic bacteria in developing and developed countries. These pathogens account for a large number of incidents of foodborne bacterial disease. In case of an outbreak, it is of utmost importance to rapidly isolate the pathogenic organisms from the patient (usually from faeces or blood samples) and to match the strain to isolates from suspect food sources. This sounds simple and straightforward, but experience shows that this is more complex than that. As a matter of fact, a speedy reaction in identifying an outbreak as such and initiating the necessary steps of risk management are a race against time. If not discovered soon enough after the outbreak, the source of infection might disappear and the necessary epidemiological link may never be established.

During the May 2011 outbreak in Germany, 50 deaths were reported, over 4000 hospitalised and hundreds of them have been damaged for the rest of their lives, suffering kidney failure, brain damage and other long-term disabilities. This has happened in the heart of Europe, in rich countries with well-resourced public health systems. The EU already recognised the need to strengthen its defences

against epidemics after SARS in 2003 and ‘mad cow disease’ in the 1990s. Repercussions of the EHEC outbreak on the economic side have included a (temporary) ban of European vegetables in Russia as well as a significant decrease in the sale of vegetables in Europe. As a response, the EU has agreed on an emergency aid package for the farmers concerned, worth €210 million. Furthermore, the EU has banned the imports of fenugreek seeds from Egypt, which were finally identified as source of the outbreak.

A recent press release from the European Centre for Disease Control (ECDC) identified several lessons learned during the recent crisis: (1) The vital role of EU microbiology networks, such as ECDC’s Food and Water Borne Disease network, and the collaboration with EU reference laboratories and WHO’s collaborating laboratories; (2) EU level cooperation helped the national investigations, mainly through the EU’s Early Warning and Response System on health threats, the EWRS network; (3) agreeing clinical reference materials on treatment of patients by discussing best practice with the doctors on the frontline of a multi-country outbreak; (4) risk communication is key through being a ‘one voice’ information to policy makers and citizens. And a note at the side: What looks like a local outbreak can quickly become an international event.

As devastating outbreaks like these might be for affected individuals, communities and society as a whole, these events show that despite good monitoring and risk management schemes, scientists and policy makers play an important part in avoiding such incidents. However, it will remain a challenge to be prepared for the unexpected – be it inadvertent contamination of foods or fraud. The positive outcome of such events makes us realise that we must work together and we need to have one voice to the public and to policy makers. Science and published research work – such as found in this journal – supports prevention of and quick response to crises. Scientific networks are of utmost importance in pulling essential expertise rapidly when needed. Thus, networks like ICC and MoniQA have an important role to play in providing safe, healthy and nutritious, and sufficient foods for all people.

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