

Food Safety Expert

Dr Belinda Stuart-Moonlight provides an insight into litigation involving food safety

Types of work undertaken

Holding the CUBS (Cardiff University) Certificate for both criminal and civil expert witness work, Dr Stuart-Moonlight takes instruction in both arenas. Her technical competence is within the fields of environmental and public health and hygiene, including:

- food safety / poisoning (contamination with physical, microbiological, chemical or allergenic matter)
- due diligence
- competence of food business operators and adequacy of their food safety management systems and HACCP plans
- food, water (including pools and spas) and environmentally transmitted infections (including *Campylobacter*, *Salmonella*, *E coli*, *Staphylococcus*, *Clostridium*, *Leptospirosis*, *Cryptosporidium*, *Giardia*, Hepatitis and LCMV)
- Norovirus outbreaks
- merits of enforcement action (food and workplace safety)
- workplace safety, risk assessment and safe systems of work, particularly in the food industry

She finds that her training and early career experience as an EHO (where in the 1990s she was colloquially known as the ‘prosecution queen’ at the Royal Borough of Kensington and Chelsea) has held her in good stead in understanding one dimension of a criminal case. More latterly her experience as the ‘gamekeeper’ in her consultancy work now closes the circle, to give a fuller understanding and context to subjects in cases in which she is instructed.

“A crucial element of my work as an expert witness is to collaborate with my instructing solicitors, their barristers and any other experts appointed. I find, particularly in civil cases, that I work closely with medical microbiologists in large outbreak cases. The latter cover causation – which bug or toxin caused illness – and I cover breach. In reviewing breach, I look at evidence of whether the control systems, for instance food safety management, environmental cleaning and disinfection, water quality management, were (i) adequate and (ii) effectively implemented.”



Dr Belinda Stuart-Moonlight is proud to hold Lawyer Monthly’s award, Expert Witness of the Year, 2017.

She cut her teeth as an Environmental Health Officer (EHO) in Central London and went on to conduct research in microbial survival at King’s College University of London. She began consultancy work in the late 1990s, and in 2001 established Moonlight Environmental – her business that delivers consultancy, auditing, training and expert witness services.

One of her early clients was the iconic Borough Market, now well known as ‘foodie heaven’ to connoisseurs, but then very much in its infancy as a fine food market. Moonlight Environmental grew up with the market and still retains the pick of those start-up stallholders, some of whom have become multi-million-pound food manufacturers and traders.

As growers and producers, the stallholders were largely unaware of a need for advice and certification. Belinda’s consultancy business, engaged by the Trustees of Borough Market as trader auditor and workplace safety adviser, was soon regarded by those ambitious businesses as indispensable.

With her roots still in consultancy, auditing and training, she is never out of touch with the day-to-day business of best practice and problem prevention. This means her expert witness work is informed by current industry practice, in addition to considerable experience, knowledge and wisdom.

Food Safety and The Criminal Sentencing Guidelines (2016) – A New Focus on Risk and Increasing Source of Instruction

Food safety cases naturally make up the bulk of Dr Stuart-Moonlight’s workload. In February last year a change came into effect to make the issue of sentencing in criminal cases arguably more formulaic.

That change in emphasis means an increasing call to analyse evidence and provide opinion on the areas of culpability and particularly, harm and risk of harm. Perhaps that shift can be illustrated by picturing a mouse running across a kitchen surface: alarming to

most people, but if a whole mischief (a rather apt collective) of mice scampers through the food business, the human reaction is one of revulsion. However, in looking at the risks one should ask:

- what are the overall risk issues (disease from pathogenic microorganisms and allergy from proteins in their urine)?
- what are the pathogens that cause the risk to arise?
- how likely are these pathogens to be carried by mice in the geographical area in question?
- how well do the pathogens survive in the environment?
- how easily are the pathogens transferred from surface to surface?
- what sort of food is involved? (This is key to whether pathogens might survive in or on food)
- who is the consumer? Vulnerable groups would be made more ill more easily

The surprising fact that some experts are beginning to realise is that risks to health from a mouse infestation (though not necessarily rats), particularly in retail food establishments handling low risk, wrapped food, are less significant than generally assumed, even by enforcers. Given the association of plagues and the natural human reaction to rodents, a measured and objective approach is needed and this can contrast starkly with the precautionary principle required in general food law. In the sentencing process, the Court thus requires quality technical guidance to assess microbiological risk, even if nobody has been made ill.

Risk of Cancer from Eating a Mouldy Chocolate Cake - Chemical Contamination Risk

One of the first food cases to be sentenced under the new Sentencing Guidelines involved a chocolate loaf cake. A consumer had purchased the cake which had, it seemed, green frosted icing. In fact, the 'frosting' was actually mould. Dr Stuart-Moonlight's instruction was to comment upon the scaremongering in the EHO's witness statement, which suggested that a consumer could develop cancer from eating the mouldy cake. The required evidence was therefore about the likelihood of, and potential seriousness of, the health effects associated with the mould.

The Environmental Health Officer's train of thought was that *Aspergillus* species (identified by the laboratory as the mould causing the green fluff) can generate mycotoxins (toxic and potentially carcinogenic compounds); these can cause cancer and cancer is a serious threat to human health. For this reason, at sentencing, the prosecution invited the Court to consider the harm category as Category 1 – the most significant – and importantly, carrying the highest fine.

The technical material required to provide an objective view of the risk involved questions such as:

- do all *Aspergillus* species produce mycotoxins? (Given that the sample had not been analysed beyond genus level)
- what environmental conditions are required by the mould to produce mycotoxins and were these conditions present in the cake and packaging environment?
- how many recorded food incidents and cases of illness resulting from ingestion of mycotoxins have occurred in this country in the last 10 years?
- what are the permitted levels of mycotoxins in food?
- what levels of mycotoxins are necessary to cause serious illness?

The local authority had not tested the cake for mycotoxins themselves so there was no indication of the level of the toxins, if indeed any were present.

The conclusions were that there are limits defined in food law for aflatoxin presence in different classes of foodstuffs. Mycotoxin production only happens at certain temperatures and levels of available water. Further, that the identified presence of aflatoxins in food is rare in the UK and mainly associated with products at import from third countries. It had never been noted with UK-produced chocolate cake. Finally, the disease, aflatoxicosis, is rare throughout the world with little or no disease being recorded in the UK.

The result? The Judge was persuaded that the local authority had not provided sufficient evidence for their assertion that the case should be sentenced using Category 1 risk of harm.

Other Typical Food Safety Criminal Cases Integrity of Enforcement Investigation and Decision Making

A seemingly open-and-shut case brought by a local authority involved a party of 15 businessmen, all but one of whom were taken violently ill after eating an evening meal. It involved unsafe food, lack of a safe management system, food temperature abuse, and lack of training. Dr Stuart-Moonlight was instructed by the caterer/defendant's legal team.

As a result of the rapid and violent onset of the illness, EHO's were able to begin their investigation on the day following the meal. They obtained food samples, one of which, the soup, contained high levels of the food poisoning bacterium *Clostridium perfringens*. Two of the diners, who said their soup had been lukewarm or cold, submitted faecal specimens and these contained both the *Clostridium perfringens* bacterium and its toxin – the element responsible for diarrhoea symptoms. The EHOs should have had this case in the bag. Indeed the scale of the outbreak was such that the Health Protection Agency conducted epidemiological and microbiological analysis and concluded that food temperature abuses were the cause of the pathogen in the food.

A detailed investigation of the records found that the food samples submitted for microbiological examination had not been taken in accordance with the relevant Codes of Practice and Practice Guidance. Samples had been maintained overnight in an office fridge that was too warm and this could have enabled the microbial levels to grow in the sample and give an unreliable result. Furthermore, for three days the sample of soup in the laboratory had been confused with a sample of custard.

The evidence, of which there was plenty, in fact had dubious integrity, and the case against the caterer did not go to trial. An unexpected result welcomed by Dr Stuart-Moonlight's instructing solicitor.

Fatal Food Poisoning Outbreaks

The businessmen's dinner did not, fortunately, result in any deaths. However, two cases of *fatal pathogenic food poisoning* illustrate two other aspects of how the 'day job' historically as an inspector and currently as a consultant practitioner, crucially informs expert witness work.

The first was a landmark case with the most significant fine (pre-Sentencing Guidelines) in the food safety arena.

Christmas dinner at a hotel was a busy affair involving the cooking of turkey, which would then be reheated according to demand. While normal safe practice is to cook, cool, maintain chilled and then reheat, failures to adhere to the standard time/temperature combinations led a customer to die and dozens of others to suffer food poisoning from *Clostridium perfringens*.

The case examined the method of cooling and the time taken to cool the turkey. If cooling takes too long then *Clostridium* spores germinate and subsequent vegetative bacteria multiply to unsafe levels. The records for cooking and cooling of the turkey led Dr Stuart-Moonlight to question the speed with which it was claimed the meat had cooled down. As an experienced consultant and auditor she knew that meat does not normally cool as quickly in an ambient setting as the records suggested. Further, that with the numbers of covers to be delivered and staff on shift, time pressure would have been acute.

In respect of the chef and his collaborating manager, the prison sentence did not relate to poisoning but to falsifying records about the details of cooking, cooling and reheating.

This is another example of how day-to-day consultancy work dovetails and informs expert witness work. Having the knowledge of the records required, and what they would be expected to look like in an honestly completed fashion means alarm bells ring when falsified records are submitted. The manager and chef were jailed for perverting the cause of justice.

The second, equally sad case again concerned temperature abuse, where meat from a pub's Sunday roast was served up on a Tuesday as the 'Pensioner Special'. The meat and gravy had probably been heated and cooled several times and left out of the fridge for too long. The final reheat, as in the previous case, had not been completed with sufficient temperature to kill the *Clostridium perfringens* bug. The pensioner died not directly from the infection but as a result of choking on her own vomit, a symptom caused by the infection.

Hygiene Emergency Prohibition Procedures (closure) and Pests in Food Businesses

Persistence to carry on in the face of obvious danger is always surprising to those in the business of safe practice. Last year a local authority brought a leading hotel chain to prosecution for infestation after infestation within one of their premises' kitchens and restaurants. Dr Stuart-Moonlight was instructed by the Council's legal team. Her role here was (1) to comment on the sufficiency of the hotel's claim of due diligence, (2) to comment on defendant claims that the enforcement action was unreasonable and (3) outline the risks associated with rats, mice and cockroaches.

It was claimed that the infestations were largely historic but with good photographic evidence taken by the EHOs, it was clear that there were moist, plump droppings indicating that rodents were still present. The evidence of all life stages of cockroaches meant that the infestation was very likely to have been long standing. The obvious dirt and defective structure contributed food and water resources and harbourage for the pests.

The hotel was a Grade II listed building, and Dr Stuart-Moonlight was compelled to question claims by the hotel's expert witnesses that older buildings with their charming nooks and crannies had some sort of licence to accept a pest problem, almost an inevitability they suggested. Indeed, the sheer scale of the operation – a quarter to half a million meals per year - should have been matched by proportionate controls, she argued in her evidence.

The case involved a very intense and long meeting between the experts (two for the defendant and just Dr Stuart-Moonlight for the prosecution). For a week following the meeting several drafts of the joint statement were exchanged and finally, once agreed and submitted, the hotel chain changed their plea from not guilty to guilty.

Peanut Allergy Death

When new legal requirements were implemented regarding allergen labelling in 2014, Dr Stuart-Moonlight was approached by the Food Standards Agency to provide nationwide training for EHOs and TSOs (Trading Standards Officers) on recognising

compliance and enforcement of the Food Information for Consumers Regulations.

One case notable in this field, not only for its tragic outcome but also for the resistance of the defendant to acknowledge culpability, is one of a curry house where a peanut allergic customer died from consuming a contaminated product.

The customer was very aware of his allergy and had specifically requested the takeaway meal he was ordering to be made without peanuts. Told that the product would be safe, he went ahead with his curry order, with fatal results.

Instructed by the defence, Dr Stuart-Moonlight examined the training records of the staff, including those of the chef, to ascertain knowledge and understanding in practice of cross-contamination. She also examined the effectiveness of management and supervisory controls of staff practices. Additionally, the supply chain was reviewed.

The evidence suggested numerous defects in the management of food safety. The recurring practice of falsification of records also arose with a false training certificate. The restaurant had previously been alerted by another allergy sufferer, who had been hospitalised after eating its food but had survived. She, too, had received a verbal reassurance that the food did not contain peanuts. Against this backdrop the owner/defendant did not put systems right and at his trial continued to refuse to accept responsibility. Whilst in prison, his appeal has failed.

Civil Cases

Holiday and Travel Litigation

Examining procedures and the sequence of events is always crucial in expert witness work, and in the arena of holiday and travel litigation this can be more ambivalent, because people may have arrived with an illness rather than have caught it through practices by the holiday company/resort.

This was the assertion made by a cruise line in a case brought by numerous people who suffered Norovirus while on a cruise. Given that anyone could bring the virus onto a ship and it could be difficult to contain, it is likely that an outbreak might occur. But what made this case different was that there were Norovirus outbreaks on cruise after cruise. The implication was that the bug was residing on board and re-emerging with every new cohort of holidaymakers.

Since the company asserted that the virus was being brought on with each new batch of travellers it was necessary to look at its policy and procedures. Cleaning and disinfection and protection from cross-contamination in the control of infected materials were key to see whether the cruise ship was working in a safe manner appropriate to the outbreak.

A significant element to the case was the question of whether it was possible to do an effective deep clean in the number of hours that a ship was in port between cruises. Calculating space volumes (as misting is one element of decontamination) of the number of cabins, public and back rooms within the cruise ship and reviewing this against the number of crews sent on board to decontaminate, the conclusion was that a full and effective clean could not have taken place.

Judgement found in favour of the claimants and although the cruise line subsequently appealed, the judgement was upheld.

Norovirus Outbreaks

Norovirus outbreaks are a recurring issue for civil litigation. The virus is easily transmitted and quite resilient. Unlike foodborne outbreaks, which may be modest as well as large in scale, Norovirus outbreaks often affect many people.

Cases frequently hinge on policies and procedures to:

- maintain a safe environment through adequate cleaning and disinfection
- try to stop people already affected from entering a resort/hotel/food business/cruise ship. This is obviously not a practical control for hotels and food businesses
- contain the virus once initial cases arise
- step up cleaning and disinfection during an outbreak
- decide when controls are failing and the resort/hotel/food business/cruise should close to new visitors

The virus is transmitted through the air as well as food. Where outbreaks arise in food businesses, policies and procedures associated with the effective exclusion of food-handling staff are critical. Sometimes they are the primary source of the pathogen, for instance if they vomit in the kitchen and the virus enters food. Sometimes food handlers become infected, just like visitors and diners. If they subsequently return to work too soon, they recirculate the virus through food, resulting in new cohorts becoming ill.

In analysing evidence in large outbreaks, particularly associated with holiday litigation, the illness recording logs are often key. They help show the profile of the outbreak, shedding light on the source as well as the perpetuation of the virus.

Dr Stuart-Moonlight's experience of working with businesses putting Norovirus control policies in place helps her to know what is possible and what is rhetoric when analysing Norovirus outbreak evidence.

Waterborne Infectious Disease

Cryptosporidium is a protozoan that causes infectious

intestinal disease and is not uncommon in the UK. It is highly resistant to chlorine and therefore outbreaks occur through public water supplies (often indicated by a 'boil water notice') and via swimming pool and spa water.

The bug comes from faeces of animals or humans. A dead rabbit in a water supply tank was responsible for a large outbreak several years ago. In civil litigation cases the origin of illness is sometimes unknown. Claimants list a range of observations about food and leisure pools/spas. Dr Stuart-Moonlight's job in analysing the evidence, along with medical microbiologists, involves narrowing down the potential sources and scenarios that could have caused the symptoms and/or confirmed illness. In respect of *Cryptosporidium*, her experience and qualification in pool water quality management assist in reviewing evidence to help provide opinion on whether water was the source and if so, the effectiveness of its quality control.

Conclusion

Dr Stuart-Moonlight speaks with incredible passion and excitement about her chosen field. "I'm the luckiest person, I have a job I love and every instruction excites me with the prospect of learning something new. Cases are like mini PhDs and I so enjoyed doing my research."

Straddling so many disciplines keeps the work fresh, certainly. It is the requirement to delve beneath the obvious, however, that makes the work of the expert witness essential. Where local authorities may develop tunnel vision and fail to see beyond the norm or the prescribed; where laws put in place for public protection are made a convenience to avoid revealing poor practice; or where the seemingly obvious cause of illness is claimed as the truth – this is where the voice of a fresh, forensic mind can close the gap in the legal process.

The essence of being able to opine on food safety issues in legal cases comes from continuing to work in the practitioner role. Teaching food safety at every level from how to wash hands to advising a Board on liability gives Dr Stuart-Moonlight regular contact with culture and understanding of issues within the field. Her continued auditing of abattoirs, food factories and caterers exposes her to current standards and practices. Her consultancy work with food industry clients means that she continues to provide safety management systems in a world of increasing technological innovation in the surveillance and recording of food and infectious disease. One thing that can be said is that the whole arena of food law is never, ever, dull. ■

The views and opinions expressed in this article are those of the author and do not refer to specific individuals or companies.



MOONLIGHT
Environmental



Dr Belinda Stuart-Moonlight is one of the UK's foremost food safety and infectious disease experts, with over 15 years' expert witness experience. She is tenaciously thorough, her growing reputation built on exacting attention to detail. Her numerous successful outcomes are grounded in scientific knowledge and ongoing experience of industry practice through her consultancy, training and auditing work. She frequently wins plaudits in her capacity as an expert witness in both criminal and civil cases:

Why choose Dr Belinda Stuart-Moonlight as your Expert Witness?

- ❖ Has worked on landmark cases
- ❖ Cardiff University CUBS certificate in civil and criminal arenas
- ❖ Every action instigated as EHO successful in Court
- ❖ PhD in microbiological risk and its legal context
- ❖ Daily experience of industry practice through consultancy, auditing and training work
- ❖ In large outbreak cases, she is fundamentally a breach expert (reviewing systems), complimenting causation evidence of medics and microbiologists
- ❖ Advisor to ABTA and Chartered Institute of Environmental Health (CIEH) for 10+ years

Areas of work in the food safety arena include: Microbiological, chemical and physical contamination risk, food fitness, the due diligence defence, HACCP, staff training, travel related gastroenteritis, food poisoning incidents and outbreaks, food safety management and health risk criteria and statutory notices.

Areas of work in the infectious disease arena include: Norovirus on cruise ships, Norovirus in other hospitality settings e.g. hotels, other infectious intestinal diseases of protozoal, viral and bacterial origin, food poisoning and infections caught during employment such as Leptospirosis

Areas of work in health and safety include: Suitability of Health and Safety policy, general and specific risk assessment, employer's and employees' duties so far as is reasonably practicable, accidents and safe systems of work, safety in kitchens and food factories and health in kitchens and food factories.

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