

## **2I: ARE WE COMPLACENT ABOUT FOOD SAFETY?**

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### **Foodborne illness has increased in Australia**

Foodborne illness in Australia is a significant and increasing public health problem. The causative agents are mostly harmful microorganisms. The increase in foodborne illness in Australia and worldwide is linked to the way consumers choose, handle and store food (Collins 1997, Food Marketing Institute 1996). In the USA, 90% of outbreaks of food poisoning are attributed to mishandling of food in the food service sector and in the home (Hall 1999). Around 20% of these total outbreaks are linked to home consumption (Council of Agricultural Science and Technology 1994). In Australia, the largest proportion (60-80%) of foodborne illness is also attributed to the food service industry (ANZFA 1999). In Australia between 1980-1995, around 10% of reported outbreaks of food poisoning were confined to private households. This value represents reported information only. We actually have no idea how many people get sick from eating contaminated food. Most people with gastro-intestinal upsets do not see a doctor. If they do see a doctor with diarrhoea and vomiting, they are not often tested for the presence of foodborne pathogens.

Most foodborne illness results from inappropriate food hygiene and food handling practices, which could be avoided. Other factors influencing the increase in foodborne illness worldwide include: the emergence of new and virulent strains of pathogens; the increased consumption of, and consumer preference for, fresh, minimally processed food, takeaway and ready-to-heat meals; changes in animal husbandry; and the increase in the proportion of elderly and other at-risk groups (Gerba et al. 1996, ANZFA 1999).

Although recent reforms to the Australian food safety standards have been introduced to address, improve and monitor the quality of food at most levels of the food production chain including the food service industry, they do not adequately address food safety practices of consumers in the home. Consumers are the final participants in the system of food and safety monitoring. If consumers are complacent, unaware or have misconceptions about food safety, then changing these attitudes is a crucial step in public education to decrease foodborne illness.

### **Consumers differ in their perceptions and concerns about food safety compared with food experts**

Experts and consumers differ in their perceptions and definitions of risk associated with food. Experts rank nutritional problems (eg obesity, diabetes, heart disease) and pathogenic microorganisms (bacterial contamination) highest among food-related risks, followed by environmental contaminants and natural toxicants, pesticides, residues and lastly food additives.

In contrast, surveys in the late 1980s and early 90s in Australia, in the USA and UK showed that consumers perceived that the presence of synthetic chemicals, pesticides, and additives in food were at the top of their list of threats to food safety. Negative views about these perceived threats persisted in the late 90s although a recent national telephone survey of 702 Australians conducted by Quantum Market Research in 2000 indicated a shift towards food poisoning as the predominant concern. Seventy-two percent of respondents in this survey reported concerns about food poisoning. Pesticide use still

rated as the second highest concern (68% of respondents), followed by tampering with foods in the manufacturing process (65% concerned) (Biotechnology Australia, [www.biotechnology.gov.au](http://www.biotechnology.gov.au)). Surveys conducted by the Australian Supermarket Marketing Institute indicated that shoppers in 1997 were more concerned about food hygiene compared with earlier surveys of 1992 and 1994. This suggests that shoppers were more aware of microbial contaminants, although concerns about pesticides still remained high.

However, not all Australian consumers share these beliefs. In a 1998 survey of 566 Canberra adults, randomly selected from the electoral roll, only 29 respondents reported concerns about bacterial contamination (Deakin et al. 1998, unpublished). Yet for those consumers who expressed concerns about food safety (n=345), the main concerns were; handling and storage (28%); chemical contamination (chemicals, pesticides) (23%); and additives and preservatives (10%). Despite more than half the respondents expressing concern about food safety, these results suggest some ignorance of bacterial contamination as the major risk to food safety. Although this and other surveys suggest that the widespread consumer perception of chemicals and pesticides in food as major risks to food safety are shifting, consumers still report low concerns about bacterial contamination as a risk factor.

These changing and varied concerns of consumers reflect the characteristics of the populations surveyed, the variability in questions used or the way questions were asked in surveys (eg open-ended versus fixed response), and also the potential sensitivity of the respondents to food-related incidences. There is usually a much higher level of concern when consumers are asked to rank a specified list of food safety concerns (ie fixed response questions) rather than when asked to volunteer concerns by open-ended questioning. The Australian Supermarket Marketing Institute and Quantum Market Research used fixed response questions in their surveys, which may account for the relatively higher levels of reported concerns about food safety.

### **Consumer beliefs about where food poisoning occurs**

Most people consider their homes as the least likely place for food safety problems to occur and perceive other external sources as the major culprit (Australian Supermarket Marketing Institute 1998). For example, in our survey of the ACT population, respondents ranked takeaway outlets and restaurants as the most likely source for food poisoning and the home as the least likely source (Deakin et al. 1998, unpublished). Microbial contamination from poor handling and storage practices and poor personal hygiene around the home are viewed as voluntary risks (Hall 1999). Consumers therefore are unlikely to be receptive to the messages about food safety practices targeted at their home environment if they see the home as a low risk area.

Consumer knowledge of food and food safety practices is declining especially in people with lower levels of education (Collins 1997, Raab and Woodburn 1997) and in younger people (Stanton 1999). This highlights the need for continued public and school-based education. Although consumers have reported concerns about the way other people handle food, they do not necessarily see themselves or the way they handle food as a problem. Personal hygiene practices (ie handwashing) when preparing or consuming food are declining (Collins 1997, Hall 1999). The absence of soap (eg in some washrooms in primary schools) is of concern and sends inappropriate messages to schoolchildren about the importance of handwashing. Education messages about correct food safety practices (eg wash your hands, keep hot food hot, and cold food cold etc), initiated in 1997 in

Australia (Warnock 1998) may not be acted upon if consumer perception of personal mishandling of food or risk of food poisoning is low.

### **Are consumers complacent about food safety practices?**

If consumers have poor food knowledge or mistaken beliefs about risks to food safety, they are likely to be complacent in their food handling practices. In the USA, several surveys have revealed that many consumers reported risky food handling practices and were unaware of, or misinformed about safe food handling practices (Raab and Woodburn 1997, Albrecht 1995). The Australian Supermarket Marketing Institute Surveys in 1996 and 1997 showed that consumers had poor knowledge about safe food handling practices. To date, little is known about the food handling and food storage practices of Australian consumers after purchase of food. What do consumers do with leftovers and takeaways? How and where do consumers store meat in their fridges? How often is pre-cooked food reheated? How long is food left on the bench after heating? Are consumers thawing food in the fridge? These are just some of the issues that need investigation.

### **Where do consumers learn about food safety and hygiene?**

Food knowledge and skills, including food safety is learned from years of observation and reinforcement from family, from formal programs in schools, and from living independently (Collins 1997). In our 1998 survey of 566 adults living in Canberra, only 16% of respondents reported receiving any formal/school-based education on safe food handling practices. Adults under 40 years reported less formal education about food safety than older adults (Cashel et al. 1998, unpublished).

While the relative importance of home-based versus school-based acquisition of knowledge and skills about food is not known, the school provides a key opportunity for ongoing, structured education about food safety. In Australia, opportunities for formal education in high schools about food safety issues have diminished, and focused more on nutrition. Few high schools now offer food preparation or hands-on cooking as a core learning component. Food studies are usually a non-compulsory elective option in schools and are not popular or trendy, particularly in adolescent boys. Although formal school-based education about food and practical food skills is still a component of the National Curriculum Profile for High Schools (ie in the Design and Technology Course; in Personal Development, Health and Physical Education Course), there is no defined component of food safety education (Reynolds et al. 1996, Curriculum Corporation 1994). Furthermore, food education is now under threat as both a core and as an elective option in Australian High Schools (Curriculum Corporation 1994). The National Curriculum for Primary Schools also incorporates food safety education; however, primary school teachers have little opportunity in their teacher training courses to undertake specific studies in food hygiene, food safety and nutrition. The beliefs, attitudes and practices of primary teachers in food safety are unknown.

With the changes in family structures and lifestyles (eg more women in the workforce, more single-parent families), families are spending less time in the home preparing meals. Children and adolescents have less opportunity to learn food skills from a parent and are more reliant on pre-prepared, ready-to-eat or -heat meals and takeaways. Children and adolescents prepare food for themselves more often. Young adults eat outside the home more often and have lower confidence in cooking skills than older age groups.

### **What can we do about educating consumers and school children?**

Consumers are essential to achieving safe food, but all too frequently they are unaware of their role and fail to recognise the major risks associated with foodborne disease until they are sensitised by an outbreak in their community. We have little information available about how people handle or store food after purchase. Identifying and obtaining a detailed knowledge of food handling practices, perceptions and behaviours of consumers and food handlers is crucial to devising an approach to improve communication of the risks about food safety to the Australian population. Communicating such risks to the consumer is a difficult task if the perception of risk is already low. To be effective, food safety education must increase consumers' perception about risk and motivate them to change their food handling and consumption behaviour. Research is needed to identify the barriers and facilitators to changing these consumer perceptions. Without this, we cannot design and implement successful risk communication strategies to address food safety and hygiene practices after food purchase.

The Foodborne Disease Working Party for the Communicable Diseases Network for Australia and New Zealand has highlighted the importance of consumer education programs and targeted the development and implementation of food safety programs to be incorporated into school curricula (Commonwealth Department Health & Family Services 1997). Introduction of such programs early in the school curriculum was highlighted by the working party. The challenge for health professionals and tertiary institutions will be to provide and enhance opportunities in the first instance to formally educate teachers, who are themselves consumers and food handlers, about the technical knowledge concerning food safety and how to effectively communicate food safety messages and practices to school children.

### **Discussion notes**

- Since the introduction of public health measures following the industrial revolution we seem to have become complacent about personal hygiene. Education about the importance of hand washing can start not only in the home but also in pre-schools. The recent introduction of hand-washing songs on arrival and before eating food resulted in a steep decline in reported gastro-intestinal infections in Canberra pre-schools. In the 1980s in Malaysia, productivity was low and absence from work frequent because of iron deficiency as a result of infestation with gastro-intestinal parasites in about 90% of factory workers. Cross contamination was a major cause of transmission and re-infestation by parasites in such a closed environment where poor hygiene and sanitary conditions prevailed. The solution was simple: the introduction of soap and running water in the toilets had a major impact on reducing the parasite infestation, improving the iron deficiency and ultimately increasing productivity. Frequent hand washing can also reduce the incidence of respiratory tract infections, as shown in a recent study on US military recruits.
- The Food Safety Campaign Group, a partnership between Australian industry, government, consumers and professional bodies which was set up in 1997 to educate the Australian public on aspects of food safety has a range of educational materials (see <http://www.safefood.net.au>). This site provides resource material on many aspects of food hygiene and safety that is ideal for children, adolescents and adults. Another resource on the net was written by Dr Carl Winter, a food toxicologist from the University of California who specialises in converting the lyrics of popular songs into safety messages. These messages, in verse or song, include mostly contemporary food safety issues such as proper hand washing and home food handling practices. The music, power point presentations can be downloaded from

<http://foodsafe.ucdavis.edu/music.html>. His version of *You'd better wash your hands* (from the Beatles classic *I want to hold your hand*) is brilliant. Dr Winter claims that the musical approach successfully reaches audiences that don't respond well to traditional educational messages.

- We, as consumers, are complacent about food safety. We seem to be quite happy to let others be concerned about our health. We see food packaged and assume that it must be safe to eat. In today's culture of pre-packaged foods it is a great sadness that the joys of growing food, selecting food, preparing food, cooking food and consuming food have been removed from the education system (we still have something to learn from our hunter-gatherer ancestors here!)
- With increasing consumer demand for pre-packaged foods such as pre-chopped fruit and vegetables, or pre-mixed meat and vegetable combinations that minimise preparation time there is a perceived risk of contamination by food handlers. The Australia and New Zealand Food Authority (ANZFA) released their new national food standards in February 2001. These address food safety practices in food retail outlets and are being introduced throughout Australia. Particular emphasis is placed on the knowledge and practices of food handlers (more information from the ANZFA's website: <http://www.anzfa.gov.au>). The outcome of implementing these standards, which apply to both food handlers and food premises, is to decrease the incidence of foodborne illness from this source.

### Further reading

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