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## Chapter 10 - Consumers

### 10.1 Introduction

The consumer is the “fork” in the farm to fork continuum. Because harmful food pathogens can enter the food chain due to behaviour in the home, most public policy initiatives on food safety, from Boards of Health to the World Health Organization,<sup>1</sup> emphasize that efforts aimed at consumers are integral to improving food safety. As much as 50% of foodborne illnesses may be linked to the home setting, so it is important that consumers understand their role in food safety.<sup>2</sup>

The demographics of consumer behaviour are changing food production practices all along the food continuum. Consumers are eating fewer home-cooked meals and more prepared and fast foods. This creates new food safety issues for consumers, as safe storage and cooking of previously cooked and prepared foods differs from raw foods.

There are risks associated with any food and the objective of any government public education intervention should be to enhance consumer knowledge about these risks. Consumer confidence in meat safety is key. To this end, it is important to help consumers understand how the food safety system works, what efforts are being taken by government, producers and industry to reduce risks in food and what prudent and sensible steps they can take to address potential risks.

Government at all levels, as well as producers, commodity groups and industry have an important role to play in delivering public education on food safety.

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<sup>1</sup> WHO, *Foodborne Disease: A Focus for Health Education*, 2000, available from <http://www.who.int/foodsafety/publications> [accessed 20 May 2004]. Chapter 2 lists ten reasons why health education in food safety is both necessary and effective, and argues that a comprehensive and well-funded regulatory system alone cannot prevent foodborne disease.

<sup>2</sup> See earlier discussion on foodborne diseases. In Ontario, it is estimated that 50% of sporadic cases between 1997 and 2001 may be linked to a home setting. M.B. Lee & D. Middleton, *Enteric Illness in Ontario, Canada from 1997-2001*. *Journal of Food Protection*. (Vol.66, No.6, 2003), p.953-961.

## 10.2 Consumer Food Safety Risk Analysis

### 10.2.1 Who is Most at Risk?

The members of our population most vulnerable to unsafe food are: young children, older adults, pregnant women and people with compromised immune systems.<sup>3</sup>

### 10.2.2 Harmful Microorganisms on Meat in the Home

An increasing number of on-line resources available to consumers and educators provide information on the mode of transmission of specific harmful microorganisms, frequently implicated foods and risk reduction measures.<sup>4</sup> Most outbreaks of foodborne illness result from the transfer of harmful microorganisms from meat to humans.

Table 1 lists a number of microorganisms commonly implicated in foodborne illness and the percentage of cases associated with the home.

Table 1: Enteric pathogens, by risk settings associated, Ontario, 1997 to 2001 – Home<sup>5</sup>

Campylobacter	Salmonella	VTEC	Yersina	Shigella	Hep. A	Listeria	Total
51%	50.4%	66.4%	67.3%	19.2%	27.8%	70.7%	50.2%

The potential sources of harmful foodborne pathogens related to meat in the home are plentiful and include: improper handwashing; improper sanitation of food surfaces; improper handling and storage; thawing at room temperature; leaving food at room temperature for longer than two hours;

<sup>3</sup> Healthy adults have usually developed some immunity to pathogens, but small children have not and they are particularly susceptible to serious health results from diarrhea, dehydration and kidney disease. Pregnant women are particularly susceptible to *Listeria*, which can cause miscarriage. For example, pregnant women are twenty times more likely and people with AIDS are almost 300 times more likely to contract *Listeriosis* than the average population. Thomas and Powell, 2003 *Listeria Fact Sheet*, available from [http://www.who.int/foodsafety/publications/general/en/fos\\_brochure1999.pdf](http://www.who.int/foodsafety/publications/general/en/fos_brochure1999.pdf) [accessed 20 May 2004].

<sup>4</sup> For example, see the 46 page appendix on 31 foodborne diseases in *Foodborne Diseases: A Focus for Health Education*, *supra*note 1; and USDA, CFSAN, *Foodborne Pathogenic Microorganisms and Natural Toxins (Bad Bug Book)*, available from <http://www.cfsan.fda.gov/~mow/intro.html> [accessed 20 May 2004].

<sup>5</sup> *Supra* note 2. This is excerpted from a table comparing the outbreaks in different locations, such as restaurants and homes. See also Organization for Economic Cooperation and Development, *The Incidence and Costs of Foodborne Disease*, Doc. No. AGR/CA/APM (2002) 28/FINAL (10 Sept 2003) for a table on foodborne disease outbreaks in OECD countries by place where food was eaten or prepared.

and not observing “best before dates” or “expiration dates” at the time of purchase or consumption.

Each of these sources can either contribute to adding new pathogens to the food, or permit conditions that promote growth of any microorganisms already in the meat to unsafe levels. Food handling behaviours have been implicated to varying degrees in their contribution to foodborne illness. For example, improper cooling (eg. large batches of hot food in containers that do not chill quickly enough) is implicated in 56% of cases, an infected person handling food in 24% of cases and obtaining food from unsafe sources in 6% of cases.<sup>6</sup>

### 10.2.3 Reducing the Risks of Foodborne Illness in the Home

Consumers can generally reduce the risk of foodborne illness by eliminating the sources of harmful pathogens through their own behaviours in food handling and preparation. Some risk-reducing behaviours are specific to the food, the source, method of storage, cooking, preservatives and the specific bacteria. Specific risk-reducing behaviours for consumers include effectively killing bacteria by cooking to specified temperatures. For example, targeted risk reduction campaigns have focused on cooking ground beef to an internal temperature of 160°F (71°C) which is known to kill any *E. coli* O157:H7 that may be present in the meat.<sup>7</sup>

Consumers have control over many of these risk behaviours. However, there are generally no consumer risk-reducing behaviours to reduce chemical or physical contaminants, residues or some biological contaminants such as BSE, if they are present in meat. Therefore, risk-reducing strategies to keep these contaminants out of meat must be engaged elsewhere in the food chain, with information on such efforts being made available, so that consumers can decide for themselves whether they are satisfied with safety measures being taken.

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<sup>6</sup> See table entitled, *Ten Most Important Contributing Factors in Foodborne Disease*, in Windsor-Essex Health Unit, Food Handler Training Materials, *Food Safety - It's in Your Hands*.

<sup>7</sup> See for example U.S. FDA/CFSCAN, *The Safe Food Chart – Meat, Poultry and Seafood* (17-September 2001), available from <http://www.cfscan.fda.gov/~dms/fttmeat.html> [accessed 27 March 2004].

#### 10.2.4 Reducing the Risk of Unsafe Food Sources to Consumers

Consumers generally obtain meat and meat products from either food service or retail outlets. A smaller number of consumers obtain meat directly from farmers and a very small number of consumers produce their own. Consumers assume the meat is safe no matter where it is purchased.

I am confident that most meat sold in Ontario has been properly slaughtered and inspected. Nevertheless, during this Review I heard from a number of sources that illegal slaughter and the sale of uninspected meat continues to occur in Ontario. It is important to eliminate this illegal sale as the sale and consumption of uninspected meat is a food safety concern. As I discuss later, there is a need for increased enforcement of existing laws to address this illegal sale of meat. The problem can also be addressed, at least in part, by making consumers aware that they should avoid uninspected meat and that it is illegal for consumers to purchase live animals to slaughter themselves.

All vendors of meat are subject to the *Health Protection and Promotion Act*<sup>8</sup> and its *Food Premises* regulation. Consumers should be made aware of the requirements for meat to be inspected so they can, if they choose, ask for evidence that the vendor is in compliance. Inspected meat is stamped and waybills and receipts document the licensed abattoirs from which meat has been obtained.

#### 10.3 Consumer Awareness and Education

Consumer food safety initiatives generally try to increase consumer awareness, knowledge or education about the unintentional contributions of consumers to foodborne illness and how consumers can reduce the risks in the home. Very specific education campaigns can be designed to reduce the risk of a specific harmful pathogen. Although many consumer education programs are “top-down” processes, consumer organizations caution against a paternalistic approach to consumers that treats them as being passive,

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<sup>8</sup> *Health Protection and Promotion Act*, R.S.O. 1990, c.H.7.

uninformed receivers of information and recommend a two-way dialogue that also responds to what consumers want to receive information about.<sup>9</sup>

### 10.3.1 Consumer Awareness of Foodborne Illness

Unfortunately, studies show that most consumers are generally unaware of the extent to which their own behaviour is a contributing factor to food safety or about measures needed to prevent foodborne illness in the home.<sup>10</sup> Most consumers feel their knowledge and use of safe handling practices at home is high, but studies disclose gaps in that knowledge.<sup>11</sup>

### 10.3.2 Sources of Food Safety Information for Consumers

There are a number of government and industry initiatives focused on increasing consumer awareness about meat safety. A vast array of educational resources, including websites, hotlines, slide presentations, factsheets, brochures and more, target consumers, educators and health professionals who work with consumers.<sup>12</sup>

A U.S. study cites the most common sources of food safety information as:<sup>13</sup> family/friends; food labels/packaging; newspapers; magazines; television (news and news programs); cookbooks and cooking shows. The study suggested that the internet, government sources (eg. hotlines) and doctors

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<sup>9</sup> E. Groth III, *Assuring Food Quality and Safety: Back to the Basics – Quality Control Through the Food Chain The Role of Consumers*, Consumers Union of USA, Inc. (1999), available from <http://www.fao.org/docrep/meeting/X2602E.htm> [accessed 19 January 2004].

<sup>10</sup> For example, a 1998 *Safe Food Handling Survey* by Environics for the CFIA observed that only 16% of consumers think food safety problems are most likely to occur at home. See studies cited in L. Medeiros et al., *Evaluation of Food Safety Education for Consumers*, Journal of Nutrition Education 2001;33: p.27-34.

<sup>11</sup> *Ibid.* One study that observed consumer food handling behaviour using audit forms commonly used in restaurant settings, found that 96% of 106 households audited had at least one critical violation (one that could potentially lead to a foodborne illness). See also FSIS, PR/HACCP Rule (2002) Evaluation Report, *infra* note 14 – In 2001, 93% of consumers reported confidence that meat and poultry they prepare at home is safe, but only 6% of consumers always or often use a thermometer cooking hamburgers, 12% use one for chicken and 26% safely store leftovers. These numbers are higher than they were 5 years previous.

<sup>12</sup> See CPFSE materials and links, available from [www.canfightbac.org](http://www.canfightbac.org). [accessed 29 March 2004]; See also AMA, ANA, CDC, FSIS, et al. *Diagnosis and Management of Foodborne Illness: A Primer for Physicians and other Health Professionals*(Feb 2004), available from [http://www.ama-assn.org/ama1/pub/upload/mm/36/2004\\_food\\_introclin.pdf](http://www.ama-assn.org/ama1/pub/upload/mm/36/2004_food_introclin.pdf) [accessed 11 May 2004]. It also includes information for health officials to provide to consumers.

<sup>13</sup> FSIS (USDA), *PR/HACCP Rule Evaluation Report – Focus Group Study on Food Safety Messages and Delivery Mechanisms* (2000) available from [www.fsis.usda.gov/OA/research/fsmessages.pdf](http://www.fsis.usda.gov/OA/research/fsmessages.pdf) [accessed 29 March 2004].

and health professionals have not been a major source of information for consumers. A later U.S. study noted that even though consumers do not actively seek safety information, they heed food safety recommendations in the media. Consumers also rely on food labels for food safety information, and regularly check expiration dates on food labels.<sup>14</sup>

Consumers may not be aware that in the context of a food emergency, such as in the case of a power outage or a food recall, government sources have usually provided food safety information to the media. The issue of risk communication is discussed elsewhere in the Report.

### 10.3.3 Key Food Safety Messages

Most food safety awareness and education programs based on epidemiological data have focused on one or more of the five following behaviours:<sup>15</sup> practicing proper personal hygiene; cooking foods adequately; avoiding cross-contamination; keeping foods at safe temperatures; and avoiding food from unsafe sources.

Many consumer awareness and education programs being delivered currently in Ontario draw on materials developed by the Canadian Partnership for Consumer Food Safety Education (CPFSE) and the U.S. FightBac!®. These programs emphasize the following four basic food handling behaviours:<sup>16</sup>

- cook (cook to proper temperatures)
- clean (wash hands and surfaces often)
- separate (do not cross-contaminate)

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<sup>14</sup> FSIS (USDA), *PR/HACCP Rule Evaluation Report. Changes in Consumer Knowledge, Behaviour, and Confidence since the 1996 PR/HACCP Final Rule*, (2002) USDA, Washington, available from <http://www.fsis.usda.gov/OA/research/HACCPImpacts.htm> [accessed 29 March 2004].

<sup>15</sup> This list of five key behavioural constructs is recommended in Medeiros et al (2001), *supra* note 10, based on their review of the epidemiological data. U.S. programs such as FightBAC!® [www.fightbac.org](http://www.fightbac.org) [accessed 26 May 2004] and others have tended to focus on the first four only. The WHO poster on *Five keys to safer foods*, stresses the use of safe water and raw materials as their fifth point, such as foods processed for safety, e.g. pasteurized milk. [http://www.who.int/foodsafety/publications/generalbrochure\\_1999/en/print.html](http://www.who.int/foodsafety/publications/generalbrochure_1999/en/print.html) [accessed 29 March 2004].

<sup>16</sup> *Supra* note 12. A number of the materials are Canadian versions of the FightBAC!® campaign materials developed by the U.S. Partnership for Consumer Food Safety Education.

- chill (refrigerate promptly)

While the old adage still applies, “when in doubt, throw it out” consumers are also being asked to take science-based preventative measures which recognize that most foodborne illnesses are caused by microorganisms that may be at harmful levels, but cannot be detected by sight or smell.

The incorrect belief of many consumers that you can tell bad meat by smell or sight alone needs to be addressed.<sup>17</sup> To be effective, food safety education messages must not only provide factual scientific information, but must also help consumers set aside and modify incorrect beliefs and behaviours.

### 10.3.4 Targeted Food Safety Consumer Education

Many food safety education initiatives have been launched in the past five years, and in this short time, the priorities for food safety education have been evolving. The European Commission noted two such changes in their 2000-2001 campaign:

- information is not enough – another step is required and that is education; and
- a budget can only be put to effective use if it is focused on specific target groups instead of being dispersed across the population as a whole.<sup>18</sup>

The recent trend in public policy to target resources to those most in need of public services, is also true in food safety education. For example, most food safety education efforts by Boards of Health in Ontario target people

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<sup>17</sup> Health communication researchers have found that people often reject a message about food handling because they subscribe to lay theories– beliefs or understandings held by persons without expert knowledge of a field, that run counter to scientific understanding. Maladaptive lay theories include that one can tell by sight, smell, or taste when food is contaminated. CAST, 2004, *Intervention Strategies for the Microbiological Safety of Foods of Animal Origin*. Issue Paper 25, January 2004. Council for Agricultural Science and Technology.

<sup>18</sup> European Commission, *Consumer Information and Education Activities, The 2000-2001 Food Safety Education Campaign*, available from [http://europa.eu.int/comm/consumers/cons\\_info/event35\\_en.pdf](http://europa.eu.int/comm/consumers/cons_info/event35_en.pdf) [accessed 29 March 2004].



working in the food service industry, particularly in businesses deemed to be high and medium risk.<sup>19</sup>

The trend is also to focus on one theme or target group for a given year and cluster food safety education messages around that theme or group for a period of time.<sup>20</sup> A number of food safety programs dealing with meat and poultry are delivered on a seasonal basis.<sup>21</sup>

### 10.3.5 Effectiveness and Evaluation of Consumer Food Safety Education Programs

To be effective, food safety education must both increase consumers' awareness about risks and motivate them to change their food handling and consumption behaviours. Ultimately, consumers have to actually change their behaviours and habits for an education program to be truly effective.

As with the demand for science-based inspection approaches, there is a demand for science-based education programs – programs that have been developed on the basis of solid educational and behaviour-modification theory, tested for validity and reliability and evaluated for effectiveness. There is also a demand for program objectives and benchmarks to evaluate programs.<sup>22</sup> A lot of research has been done in this area that ought to be taken into consideration in developing practical education strategies and programs.<sup>23</sup>

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<sup>19</sup> Boards of Health in Ontario have developed food handler training courses. See Chapter 9 for further discussion. FSIS has a specific campaign targeting thermometer use in cooking meat and poultry, available from [www.fsis.usda.gov/thermy](http://www.fsis.usda.gov/thermy) [accessed 29 March 2004].

<sup>20</sup> For example, the 2001/2002 theme for the CPFSE was food safety for older adults. Materials were sent to Meals on Wheels, magazines such as 50+ and health units. A theme for 2002/2003 CPFSE is food safety for young adults moving out on their own. CPFSE, 2001/2002 Annual Report, available from <http://www.canfightbac.org/english/about/ar/ar01/arole.pdf> [accessed 26 May 2004].

<sup>21</sup> Campaigns targeting food consumption practices around meat have been undertaken in BBQ season and holiday seasons (e.g. *Your burger's done at 71° C*, a fridge magnet produced by Health Canada; turkey - *Infra*, CIPHI note 42).

<sup>22</sup> Medeiros et al (2001), *supra* note 10.

<sup>23</sup> See discussion of social cognitive theory, Health Belief Model, transtheoretical model and others in Medeiros et al (2001), *supra* note 10.

Most importantly, educational programs must be evaluated.<sup>24</sup> In evaluating programs, it is not always enough to ask people if they have done a specific behaviour in the last month or whether they are still doing it, as they will often minimize the actual incidence of undesirable behaviours.<sup>25</sup> Educational materials also need to be evaluated prior to their use.<sup>26</sup>

As noted elsewhere in the Report, disease surveillance information is crucial to establishing priorities and objectives, as well as measuring the effectiveness of meat safety initiatives across the food continuum. If the recommendations in Chapter 3 to improve the ability to collect foodborne illness data in Ontario are implemented, this will greatly assist proper evaluation of consumer educational efforts.

#### 10.4 Partnerships in Consumer Education

Collaborative efforts and partnerships are important to the delivery of multi-media food safety education campaigns. These partnerships recognize that a single “champion” to promote awareness of the interdependence of meat and health is unlikely to achieve heightened consumer awareness and successful meat safety outcomes.<sup>27</sup> A particular message is reinforced if it comes from multiple sources. In addition, it is more efficient to produce one set of educational materials both for cost and for clear, consistent messages to be communicated to consumers.

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<sup>24</sup> There are numerous references on consumer education websites to the fact that an evaluation is intended, but few appear to have been completed. Medeiros et al (2001), *supra* note 10 evaluated 12 food safety programs in the U.S. and found that most of the materials had not been tested for reliability and validity, nor was a comprehensive evaluation built into program delivery. Many of the programs had not been developed specifically around the key food behaviour constructs that would allow evaluation of behavioural change.

<sup>25</sup> For example, in one study, 87% reported they wash their hands before food preparation, but only 45% actually did so when observed. Cited in FSIS (2002) PR/HACCP Report, *supra* note 14. Medeiros et al (2001), *supra* note 10, recommend framing evaluation questions to measure behaviour based on a zero tolerance model and the five key food safety constructs and suggest sample questions.

<sup>26</sup> A U.S. study following up on a number of key education components in their FightBac!® program found that consumers surveyed were generally unaware of government food safety interventions or agencies, were unaware of terms such as HACCP, cross-contamination, pathogens, the two-hour rule, irradiation or even the term “farm to table” and did not understand the “danger-zone” thermometer graphic. Other food safety messages had more positive impacts on consumers. *Supra* FSIS (2000) PR/HACCP, note 13.

<sup>27</sup> National Food Processors Association, News Release, *More Collaborative Efforts Needed to Increase Consumer Understanding of Nutrition and Food Safety, Says NFPA* (15 April 2004).

The CPFSE is an example of a national partnership which brings together governments at all levels, producers, processors, distributors, nutritionists and others in the food industry. Both the Ministry of Agriculture and Food (OMAF) and the Ministry of Health and Long-Term Care (MOHLTC) are members, as well as a number of local health units in Ontario.<sup>28</sup> The CPFSE's Grade 4-7 Learning Program is an example of how this partnership works.<sup>29</sup> CFIA created a distribution plan for school boards, teachers' associations, youth associations and health professionals; Health Canada shipped program and partnership materials; Ontario Agri-Food Education helped to revise the Teacher's Guide and develop a new poster; and local health units encouraged schools to use the program.

The *Chill Out* pamphlet, a brochure on proper cooking, storing and chilling information for meat, is an example involving the meat industry partners, Health Canada and other partners in the CPFSE. The meat industry helped develop and pay for printing costs, the Canadian Turkey Marketing Agency put it on their website and other partners helped distribute it across the country.

A recent paper analyzing intervention strategies for food safety suggests that new strategies for educating consumers must be used, possibly including mass media campaigns that capture people's attention and encourage behavioural change.<sup>30</sup> As noted earlier, most consumers get information on food safety issues through the media, either through news coverage of foodborne illness outbreaks or controversies, public service announcements regarding food recalls and food interest stories such as seasonal tips on food preparation, or advertisements.

There are numerous advantages that I can see to all sectors of the food continuum working together on consumer food safety education, particularly as it may help to capture the interest of the public media. In light of the

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<sup>28</sup> 8 of 37 Boards of Health are listed as being members in the CPFSE 2001-2002 Annual Report.

<sup>29</sup> See CPFSE 2000/2001 and 2001/2002 annual reports for more discussion on these programs, *supra* note 12.

<sup>30</sup> CAST Media release, January 28, 2004, *What Consumers, Regulators, and Researchers Want to Know About Current and Future Intervention Strategies*, available from [http://www.cast-science.org/cast/pub/interventionstrategies\\_nr.htm](http://www.cast-science.org/cast/pub/interventionstrategies_nr.htm) [accessed 27 March 2004].

discussion on evaluation above, as partnerships continue to develop strategic educational campaigns directed to consumers, it will be helpful to collect information on their uptake in the community and evaluate their impact on consumer behaviour.

## 10.5 Labelling and Traceability

Food labelling is an increasingly complex area that is primarily governed by federal legislation. All hazardous foods, including meat and poultry, must be labelled to include the name and address of the manufacturer and the date on which the food was manufactured or an expiry date.<sup>31</sup>

The listing of known allergens in the list of ingredients is perhaps the most important labelling issue from a consumer health perspective and an issue involved in many alerts and food recalls. Labelling is also being used by industry to communicate quality assurance, country of origin, organic certification, and animal diet information among other things. Safe use labelling has to compete for the small space allocated on labels for consumer information.

### 10.5.1 Safe Handling Label

Government-mandated labelling can be a useful tool for achieving social objectives because of the potential power of information on labels to influence consumer behaviours. The U.S. has required safe handling instructions on meat labelling since 1994. The instructions not only alert consumers to the health risks due to possible bacterial contamination of meat, they also describe how to avoid these risks.<sup>32</sup>

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<sup>31</sup> Currently in Canada, labelling is mandatory if there is a health or safety issue with a food, which might be mitigated through labelling under the *Food and Drugs Act*. The *Consumer Packaging and Labelling Act* prohibits fraudulent claims. The *Meat Inspection Act (Canada)* and regulations specify further labelling requirements for meat. There are safe storage labeling requirements for certain cooked meats under section B.22.026 of the *Food and Drug Regulations*. CFIA has recently been developing labelling requirements for organic and GMO based food, with the Canadian General Standards Board, available from <http://www.hc-sc.gc.ca/english/protection/biotech/regulation.htm> [accessed 19 May 2004].

<sup>32</sup> *Mandatory Safe Handling Statements on Labeling of Raw Meat and Poultry Products*. Final Rule, 59 Fed. Reg. 14528-14540. (1994) (Codified at 9 C.F.R. § 317.2, 317.5, 381.125, and 381.134).

The USDA studied the issue of food labelling and determined that information on product use that enhances safety could benefit consumers and that government mandated labelling for this purpose was effective and appropriate. It suggested that labelled warnings are particularly valuable to consumers if they include instruction on how to avoid or minimize the risk, such as in safe handling instructions on meat.<sup>33</sup>

Safe handling labels occasionally appear in Ontario, voluntarily applied by the meat processor or the grocery chain. For example, one label reads as follows:

*Handling instructions: for your protection, ensure that raw meat products are handled and cooked properly. Keep this product refrigerated until ready to prepare. Keep raw meat separate from other foods. Wash work surfaces, utensils and hands with soap and water after touching raw meat.*

*Cook thoroughly until an internal temperature of 160°F (72°C) has been reached. The center of the meat should not be pink and the juices should run clear. Cooking times will vary. Refrigerate leftovers immediately or discard.*<sup>34</sup>

This simple yet informative label helps promote the safety of meat once it is in consumers' hands.<sup>35</sup>

**I recommend that the provincial government, in conjunction with the meat industry and other levels of government, encourage the use of safe handling labels on all meat products for sale to consumers in Ontario.**

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<sup>33</sup> E. Golan et al, *Economics of Food Labelling*, Agriculture Economic Report No. (AER793), 2001, Economic Research Service, USDA.

<sup>34</sup> Lean ground beef. A PC® Product. Prepared for Sunfresh Limited, Toronto Canada M4T 2S8. © Copyright 1998. Note the actual size of English text was 1" x 2" and the text was capitals.

<sup>35</sup> Labels indicating the proper cooking temperature and food handling and storage tips are helpful to consumers. The label above reinforces the four key safety messages listed earlier. It is red in colour and does not include negative warnings – all recommendations for food safety labels. Consumer surveys also suggest making it a peel-off sticker that consumers can keep, increasing the size of the font and including a thermometer graphic on the label to encourage people to use one. FSIS (2000), *supra* note 13.

The information should include the temperature to which the product should be heated to kill any foodborne pathogens and other important food handling, storage and preparation information.

## 10.6 Provincial Government Role in Education on Food Safety

### 10.6.1 OMAF

OMAF provides base funding to Ontario Agri-Food Education Inc. (OAFE) for its programs and services.<sup>36</sup> OAFE was created in 1991 with the mission of building awareness and understanding of the importance of the agriculture and food system. Its members include many producer groups. OAFE also develops curriculum-based resources and provides professional development services for educators across the province and lists 72 resources on their website, some of which include food safety.<sup>37</sup> There does not appear to be any evaluation of the extent to which this information has been used or its effectiveness in changing behaviours and this should be rectified.

Although other agricultural organizations have also produced consumer food safety information,<sup>38</sup> there appears to be a gap related to consumer information regarding on-farm food safety and safety issues for consumers in dealing with farm-gate and farmer's market sales. Given OAFE's mandate for public information regarding agriculture, it is an appropriate organization to develop consumer educational materials about on-farm food safety programs, as well as materials that reinforce the importance of the

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<sup>36</sup> OAFE is a registered charity incorporated under the *Agricultural and Horticultural Organizations Act*, R.S.O. 1990, c.A-9. OMAF provided \$400,000 to OAFE in 2003. See <http://www.oafe.org/section/view/index.php?section=8&page=15&session> [accessed 29 March 2004].

<sup>37</sup> *Ibid.*, OAFE resources are linked to curriculum in science, family studies and health for Grades 4-7. Labelling literacy is linked to social studies, science, health, language and visual arts for Grades 4-6. An Intermediate School Pak, including "Food Safety Can be Fun" is linked to Grades 7-10 and a Junior School Pak with FightBAC!® materials is linked to Grades 4-6. They also have an "Eat Right" program that meets the Grades 9-10 curriculum in family studies and health and focuses on healthy eating, food safety, labelling, fast foods and recent food research. "Complex Issues in Agriculture" includes food safety and is linked to Grades 11 and 12 Science, Geography and Family Studies.

<sup>38</sup> Ontario Farm Animal Council produces various resources for students and teachers, such as a *Factsheet on Medication and Food Safety*, as well as factsheets on animal care and handling, available from <http://www.ofac.org/teacher.html> [accessed 14 April 2004].

consumer ensuring that any meat the consumer purchases has been properly inspected and stored.

**I recommend that the Ministry of Agriculture and Food provide funding for the development of educational resources for delivery to the public relating to the food safety system, including the risks of purchasing uninspected meat.**

#### 10.6.2 MOHLTC and Boards of Health

The MOHLTC has mandatory guidelines requiring Boards of Health in Ontario to deliver public health food safety education to their communities, including food handler training programs.

The Mandatory Health Programs and Services Guidelines<sup>39</sup> prescribe that:

*...each board of health shall provide food safety information annually to:*

- (a) the community, by displaying readily available printed educational material to visitors to board of health offices and by providing the information through the media;*
- (b) to all non-profit community groups such as school nourishment programs, food banks, and community meal programs; and*
- (c) to teachers responsible for teaching food-related subjects to students in grades 7 and 8 and /or other teachers as deemed appropriate. Board of Health staff will assist if requested.*

From the information provided by Boards of Health to this Review, discussed in the Chapter on Meat Retail and Distribution, there are gaps in the delivery of the general public food safety education components required by the MOHLTC and uneven efforts across the province amongst the Boards of Health.

Eight Boards of Health are partners in the CPFSE and deliver the *FightBac!*<sup>®</sup> program materials in their communities, as well as other

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<sup>39</sup> December 1997, MOHLTC.

materials developed by the partnership, such as the *Chill Out* brochure on meat safety. But the materials do not appear to be delivered as part of any organized programs, other than the food handler training program.

Most Boards of Health participate in the *Eat Smart* program<sup>40</sup> and several have developed various methods to give consumers more information about local food premises inspections.<sup>41</sup> Some Boards of Health have developed policies and brochures highlighting food safety for farmers' markets, for wildlife hunters on the safe hanging and storage of wild game carcasses, for in-house catering, for volunteer/church suppers, for special events, for donations to food banks, and for other specific locations or special occasions where meat and poultry may be prepared or consumed in the community.

Although health programs on food safety directed to consumers have been mandatory since before 1997, Board of Health annual reports and other information provided to me showed little or no plans for delivery of food safety programs for consumers. As noted above, there are educational materials available through the CPFSE and elsewhere, so Board of Health resources should be concentrated on the development and delivery of food safety programs. The public health inspectors are well qualified to deliver public education. Their own organization, Canadian Institute of Public Health Inspectors has produced public education materials for the media and their members.<sup>42</sup> Health units commented to the Review that competing demands for West Nile virus, SARS, water quality testing and other public health initiatives have impeded their ability to provide food safety programs. There needs to be a coherent and discrete program in which to deliver food safety information to the public, which is protected within the health unit framework and not eroded by other public health programming or priorities.

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<sup>40</sup> Restaurants wishing to be on the Eat Smart website referral list and in community brochures, are assessed by the public health inspectors for nutrition, food safety and non-smoking seating. Food safety criteria require 12 months excellent inspection reports and one full time kitchen employee certified in safe food handling. Patrons can go online and obtain a listing of restaurants in their health unit district area. There are 878 restaurants on the website for the province, available from <http://www.eatsmart.web.net/english/> [accessed 29 March 2004].

<sup>41</sup> For example, The City of Toronto's Food Premises Inspection & Disclosure System – DineSafe, available from [www.toronto.ca/fooddisclosure](http://www.toronto.ca/fooddisclosure) [accessed 21 May 2004], See Chapter 9.

<sup>42</sup> CIPHI, Media Release, *Food Safety Facts for Cooking Christmas Turkey* (19 December 2003).



The strongest public health education initiative on food safety appears to be the food handler training in each health unit, but it is usually limited to the retail sector. I encourage its promotion to all segments of the community.

Only one Board of Health advised that they offer their food handler certification course within a local high school course. A public health inspector delivers the 6-hour program over the course of a week and students are given the opportunity to write an exam to achieve certification. Given the number of young people whose first jobs are in the retail and foodservice industry, this would seem to be an excellent opportunity to provide important job and life skills.

**I recommend that the Ministry of Health and Long Term Care develop, in collaboration with the Boards of Health and the Ministry of Agriculture and Food, uniform consumer food safety education programs for delivery throughout Ontario.**

These education programs should have clearly defined objectives that focus on risk-reducing behaviour in the home for those people who are most vulnerable to foodborne illness, those foodborne illnesses with the largest economic impact, and those behaviours with the highest correlation in contributing to or limiting foodborne illness.

**I recommend that the provincial government evaluate the effectiveness of consumer food safety education materials and programs.**

### 10.6.3 Ministry of Education

There was a time when home economics was taught as part of the required curriculum in Ontario and health studies courses would have provided an opportunity to teach students basic food safety skills. Although there are materials that have been developed by the CPFSE on food safety for elementary and high school level students, and there are numerous food safety educational resources around the world for use by teachers and schools,<sup>43</sup> food safety is not formally part of the curriculum in Ontario.

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<sup>43</sup> For example, WHO, *Food, Environment and Health: A Guide for Primary School Teachers* and other education resources, *supra* note 1; USDA, FSIS and others have education

The CPFSE had a formal launch of their recently developed Grades 4-7 Learning Program in an Ottawa school. One Board of Health noted that it obtained a commitment from two school boards to incorporate the Learning Programs for Grades K-3 and 4-7 into their curriculum.<sup>44</sup> A number of other Boards of Health noted they had forwarded teacher resource information on food safety to local schools, but there is no information on whether the teachers made use of the materials. It is well known that children can learn safe behaviours if taught in school, and bring them home, initiating behavioural change in their family. More effort is needed to engage students on food safety issues.

Many young people are involved in food preparation at home and in part-time jobs. Basic food safety education should be delivered as a core component at some point to every student, either as part of health, life skills or any job skills related course.

In the European Union, there is more formal involvement of the education sector in food safety education partnerships than in Ontario.<sup>45</sup> It is my view that the Ministry of Education should be encouraged to collaborate in the establishment of food safety education initiatives and explore opportunities for integrating such education into the curriculum.

**I recommend that the curriculum for all elementary and high school students developed by the Ministry of Education include instruction on food safety risks and proper food safety behaviours.**

School boards should work in coordination with MOHLTC and Boards of Health to provide opportunities for food handler certification in every high school, either as a formal component of the curriculum, or an optional program facilitated by the high school on school premises.

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resources, newsletters, electronic information networks, children's pages with curriculum, and other materials, available from <http://www.cfsan.fda.gov/~dms/fttmeat.html>, <http://www.fsis.usda.gov/OA/pubs/consumerpubs.htm>, <http://www.foodsafety.gov/~fsg/fsgkids.html> [accessed 27 March 2004].

<sup>44</sup> See CPFSE 2001/2002 Annual Report, *supra* note 12.

<sup>45</sup> In the EU, government public education ministries and teachers' organizations are often members of national food safety partnerships. *Supra* note 18.