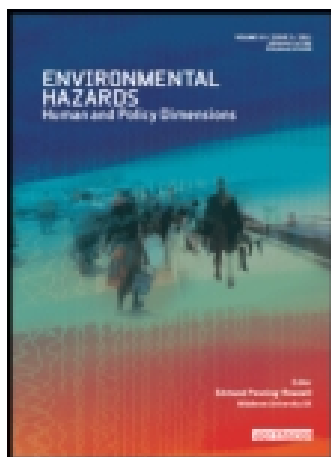


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A fresh perspective on food safety in Canada: risk communication, public involvement, and the impact of the 2008 listeriosis outbreak

Maciej Mikulsen^a & Alan P. Diduck^b

^a Natural Resources Institute, University of Manitoba, 303-70 Dysart Road, Winnipeg, MB R3T 2M6, Canada

^b Department of Environmental Studies and Sciences, The University of Winnipeg, 515 Portage Avenue, Winnipeg, MB R3B 2E9, Canada

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A fresh perspective on food safety in Canada: risk communication, public involvement, and the impact of the 2008 listeriosis outbreak

Maciej Mikulsen^{a*} and Alan P. Diduck^b

^a*Natural Resources Institute, University of Manitoba, 303-70 Dysart Road, Winnipeg, MB R3T 2M6, Canada;* ^b*Department of Environmental Studies and Sciences, The University of Winnipeg, 515 Portage Avenue, Winnipeg, MB R3B 2E9, Canada*

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While the listeriosis outbreak of 2008 brought attention to food safety decision making in Canada, little of that attention was placed on public involvement and risk communication. With a primary focus on Health Canada (HC) and the Canadian Food Inspection Agency (CFIA), this article describes the state of microbial-related public involvement and risk communication undertakings and suggests ways in which improvements can be made. The findings show that public involvement and risk communication activities have been strengthened since the outbreak, but they have become neither dialogical nor highly participatory. HC engages with experts to a far greater extent than with the lay public and it has fallen short in fulfilling its stated commitment to openness and transparency. Furthermore, both HC's and the CFIA's approach to risk communication has been overly general, has failed to provide opportunities for dialogue with vulnerable and more general groups with whom it is communicating and is not rooted in foodborne surveillance data. Public involvement in food safety governance would be improved if HC provided the lay public with a seat on advisory committees and improved its public involvement reporting methods. HC and the CFIA could also make risk communication improvements by creating opportunities for dialogue between officials and the general public, and by exploring alternative risk communication vehicles, such as food labels.

Keywords: risk communication; public involvement; food safety governance; listeriosis

1. Introduction

Two forms of legitimacy underpin food safety governance. With the first, scientific and professional legitimacy, those with scientific and technical knowledge have the authority to establish issues, provide solutions to those issues, or do both. The second form, democratic legitimacy, is attained when diverse eligible actors have been given a reasonable opportunity to contribute to decision-making processes (although the question of eligibility is often a highly complicated and contested matter). Food safety governance has been dominated by technocratic and decisionist models, each of which emphasizes scientific over democratic legitimacy. In recent years, however, the democratic underpinnings of governance have received increased attention from scholars and policy makers (Millstone, 2007, 2010).

A number of participatory and communicative models of governance have been developed to address the inadequacies of top-down and technocratic approaches. Such models are seen as particularly effective in decision circumstances characterized by high complexity and uncertainty. In emphasizing multiple knowledge sources, dialogue, mutual learning, and the continual evolution

*Corresponding author. Email: mikulec11@hotmail.com

of ideas, such approaches highlight the need for provisions that enable individuals and organizations are able to converge on legitimate endpoints, identify appropriate means for reaching those endpoints, and navigate through complex governance dynamics (Cardinall & Day, 1998; Diduck, 2010; Funtowicz & Ravetz, 1993). Moreover, participatory and communicative models are viewed as having likely benefits, such as furnishing access to new financial, human, and in-kind resources, preventing 'capture' of management agencies by the industry being regulated, increasing accountability for decisions made, facilitating the building of trust and the creation of collaborative solutions, and reducing the level of controversy associated with a problem or issue (McGurk, Sinclair, & Diduck, 2006; Mitchell, 2002; Smith & McDonough, 2001; Todd, 2001).

In the food safety literature, noteworthy participatory and communicative models have been proposed by Ely et al. (2009), Koenig et al. (2010), and Walls, Rowe, and Frewer (2011). In these models, deliberative public participation and inclusive communication are at the core of all stages of food safety governance, that is, framing, assessment, evaluation, and management. In the context of food safety, the benefits of participatory and communicative approaches are particularly pronounced given that wide disconnects often exist between scientific risk assessments and layperson risk perceptions. Experts mainly present risk information in quantitative terms, assigning equal value to probabilities and magnitudes, while the public at large tends to think about risk issues in qualitative terms (Kasperson et al., 1988; Leiss, 2004). Lay people assign unequal value to probabilities and magnitude, and are influenced by factors such as their level of control over the risk, whether exposure is voluntary, familiarity with the hazard, and the catastrophic potential of a risk consequence (Frewer, 2004; Kasperson et al., 1988). The disjuncture of risk appraisals is further exacerbated when the risk is invisible and has the potential to create negative health effects after a long incubation period (Renn, 2009), as is the case with listeriosis.

This risk divide reaffirms the need for frameworks, such as those proposed by Ely et al. (2009), Koenig et al. (2010), and Walls et al. (2011), in which dialogical risk communication and deliberative public participation are central to decision making. At the same time, it is important to recognize that participatory and communicative approaches are not panaceas; they have disadvantages, present challenges, and involve tradeoffs. In the broader environmental governance literature, authors have identified concerns such as delays and added costs in decision making (Rosenberg & Korsmo, 2001; Rist, Chidambaranathan, Escobar, Wiesmann, & Zimmermann, 2007), power imbalances among governance actors (Buchy & Race, 2001; Masuda, McGee, & Garvin, 2008), the risk of exacerbating conflict among the actors (Mostert et al., 2007; Parson, 2000), and a tendency in decision making to reinforce the status quo rather than support innovation (Beder, 1994). Further, with respect to food safety, basic features of the overall risk governance context, such as political culture and regulatory frameworks, affect the feasibility and efficacy of participatory and communicative approaches. Such approaches are simply not suitable or possible in political and management cultures without participative traditions or experiences. Nor are they permitted in some regulatory regimes that prescribe directive or top-down approaches. That being said, participatory and communicative models of food safety governance hold considerable promise and can be highly instructive in understanding and improving responses to food safety risks. This paper, therefore, examines a recent food safety risk in Canada through a lens provided by participatory and communicative governance.

1.1. *The context and objectives of the study*

Canada's food safety system was tested during an outbreak of listeriosis in the summer of 2008. The outbreak's origin was a Maple Leaf Foods operated Toronto-area processing plant, where various ready-to-eat (RTE) meats had been contaminated with *Listeria monocytogenes*. Consumption of the contaminated products led to 57 illnesses of which 23 were confirmed deaths.

Seniors felt the greatest impact; the median age of those who died was 76 years (Government of Canada, 2011). The outbreak exposed limitations in the Canadian approach to complex and uncertain food safety risks, such as listeriosis, and became a catalyst for change, particularly within the federal food safety partnership, which includes Health Canada (HC) and the Canadian Food Inspection Agency (CFIA).

HC's and the CFIA's responses to the outbreak came under intense public scrutiny, including being the subject of a review by an independent investigator, Sheila Weatherill. The Weatherill (2009) report produced 57 recommendations but did not place a great deal of emphasis on risk communication (RC) and public involvement (PI). In addition, in the immediate aftermath of the outbreak, a relatively low level of attention was directed towards the PI and RC activities undertaken by HC and the CFIA. Examining these activities prior and subsequent to the outbreak sheds light on an important aspect of food safety governance in Canada, and fills gaps in the literature on the state of PI and RC in Canada with respect to bacterial food safety. The objectives of this research, therefore, were to describe and assess PI and RC in food safety governance, identify changes made to PI and RC since the 2008 listeriosis outbreak, and make general recommendations to improve PI and RC in food safety governance.

2. A framework of participatory and communicative food safety governance

As previously noted, food safety governance has been dominated by technocratic and decisionist models, which fail to fully incorporate dialogical and deliberative decision-making opportunities (Millstone, 2007, 2010). Moving away from these models, Ely et al. (2009), Koenig et al. (2010), and Walls et al. (2011) have formulated frameworks of food safety governance that have as their core features communication and PI (Figure 1). These two features are viewed as key aspects of each of the four stages of governance, namely framing, assessment, evaluation, and management. Framing establishes the institutional and legal context within which risk assessment is conducted. Assessment includes gathering and considering information and perspectives that are pertinent to the decision-making process, including determinations of the risks and benefits of alternative products, processes, investments, standards, regulations, and strategies. Evaluation involves considering value-based factors as well as the results of scientific-based risk assessment. Management is based upon the results of evaluation, and encompasses various concerns, such as production and consumption standards, regulatory compliance, food preparation guidelines, monetary incentives, and labels.

2.1. Public involvement and risk communication

PI in food safety governance can be viewed as falling along a continuum of shared decision making. At the lowest level, members of the public are merely provided with information concerning a particular issue. At higher levels, the public's views are solicited and sometimes used in decision making. At the highest levels, the public has a degree of decision-making authority (Rowe & Frewer, 2000). The lower levels are characterized by a technocratic orientation while the higher-level activities are based upon two-way communication and mutual decision making. Fiorino (1990) evoked a normative argument for PI in decision making, and drew from participation theorists in determining four criteria with which institutional mechanisms of layperson involvement can be assessed: direct participation, decision making, interaction, and equality. For Fiorino (1990), the basis of citizen engagement is to allow citizens to express their competence, overcome feelings of powerlessness and alienation, and contribute meaningfully to the legitimacy of the political system. Complementing this work, Rowe and Frewer (2000) viewed citizen involvement in relation to democratic criteria: representativeness, independence, early involvement, influence, and transparency. Their approach recognized that public

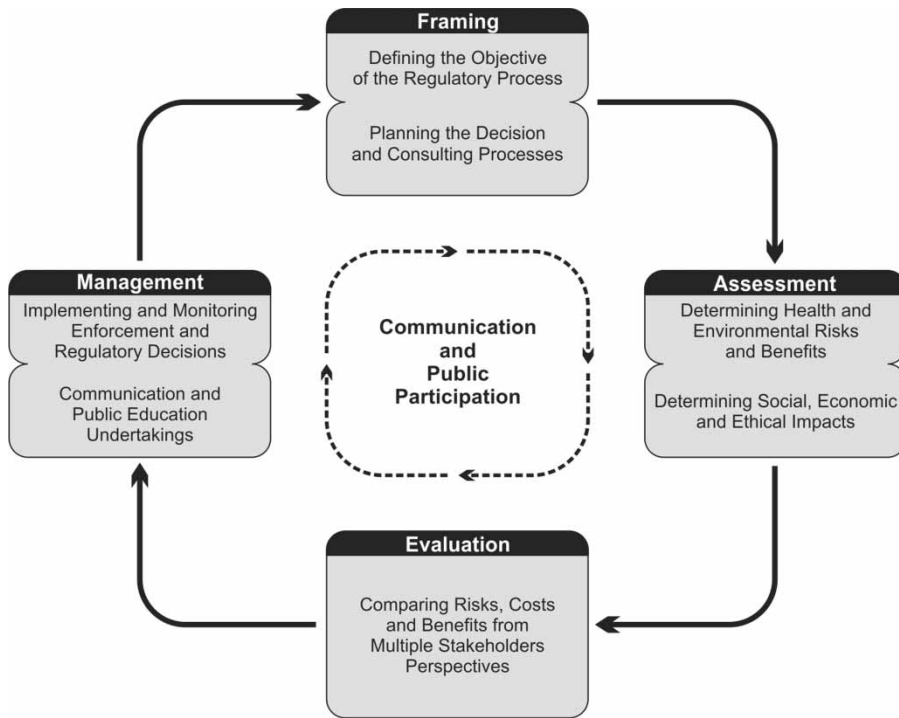


Figure 1. The framework of food safety governance with participation and communication as the core components.

Sources: Adapted from Ely et al. (2009), Koenig et al. (2010), and Walls et al. (2011).

participation in traditionally scientific and technological areas is a necessary condition for the restoration of trust and democratic ideals in decision making (Rowe & Frewer, 2000).

Improving food safety governance requires a reorientation of RC activities so that they are consistent with the principles of what Leiss (1996) called the third phase in the evolution of RC, that is, a highly participatory and dialogical phase focused on building trust among risk assessment and management stakeholders. While experts typically develop quantifiable risk probabilities and lay people typically hold qualitative-based values (Leiss, 2004), these two views are not irreconcilable. But for reconciliation to occur RC needs to be multilateral and it needs to encompass a high degree of interaction among interested parties and be inclusive of competing messages (Sellnow, Ulmer, Weeger, & Littlefield, 2009). The negotiation of these competing perspectives should not necessarily produce outcomes based on complete consensus but, rather, the goal for managers should be to create a convergence of perspectives regarding any particular issue (Sellnow et al., 2009). Sellnow et al.'s (2009) process view of RC is grounded in nine best practices generated from the literature, particularly Leiss' (1996) third evolutionary phase referred to above. Like Sellnow et al. (2009), Renn (2009) proposes that under a more inclusive food governance framework, there is a place for both scientific and lay participants to exchange perspectives. He proposed four principles of good RC practice that are underpinned by dialogical communication.

Together, Renn's principles (2009) and Sellnow et al.'s (2009) best practices provided the assessment criteria for the RC aspect of this research, while Fiorino's normative criteria (1990) and Rowe and Frewer's (2000) democratic criteria were used for the PI aspect. The criteria and how we applied them to the study are discussed in the next section.

3. Methods

Three qualitative data collection procedures were used in this research: a document review, face-to-face and telephone interviews, and focus groups. The analysis began with a review of federal guidance documents and materials related to PI and RC. In particular, documents such as the 2004–2005 Public Involvement Performance Report (Health Canada, 2006) facilitated an assessment of PI undertakings at HC. Following the document review, 16 semi-structured interviews were conducted with 19 respondents. These interviews ranged in duration between 30 and 60 minutes. The first category of five respondents included federal government officials representing HC (2), the CFIA (1), and the Public Health Agency of Canada (2). The second category of 14 respondents represented various stakeholder interests, including senior care homes (3), provincial health officials (3), industry (2), academia (2), HC PI participants (1), and consumer groups (3).

Following the interviews, two focus groups were held with seniors in Winnipeg Canada. Seniors are one of the three population subsets, along with pregnant woman and people with immune-deficiencies, possessing a heightened vulnerability to the ill effects of *L. monocytogenes*. The age of participants varied generally from 65 to 85 years of age, with the single exception being a 61-year-old female participant. The first focus group comprised seven participants of whom all, but one, were female while the second focus group comprised nine female participants. The focus groups were conducted at two separate senior center facilities, where participants of the first focus group were involved in a cooking group, and the participants of the second group were volunteers in the cafeteria. The focus group discussions were moderated and each lasted approximately one hour.

The interview and focus group data were audio recorded and transcribed. The raw data were then analysed and managed with the aid of a qualitative data analysis software package, NVivo 8. Relational, content analysis was used, employing pre-existing categories derived from the literature and inductive subcategories derived from ideas expressed by the participants. Codification sought core consistencies, meanings and patterns in semantically divergent statements and ideas, while at the same time establishing basic differences and nuances in the intended meanings of the participants (Kondracki & Wellman, 2002; Patton, 1990; Punch, 1998).

As noted earlier, the analytic framework consisted of criteria derived from the PI and RC literature (Fiorino, 1990; Renn, 2009; Rowe & Frewer, 2000; Sellnow et al., 2009). The criteria, listed and defined in Table 1, were chosen because of their applicability to the listeriosis outbreak. The criteria are relevant because the case was highly complex and uncertain. It spanned multiple political and administrative jurisdictions, and it involved an invisible risk with the potential to create negative health effects over a long incubation period. Furthermore, HC has a political culture and regulatory framework that permits it to take a participatory and communicative approach. It should be noted, however, that not all potentially applicable criteria were applied. For one thing, Sellnow et al.'s (2009) best practice, 'present messages with honesty', as well as Renn's (2009) principle, 'start with a critical review of one's performance', were not used because of insufficient data. As well, because it was difficult to obtain relevant data, three of Rowe and Frewer's (2000) criteria, 'representativeness', 'independence', and 'early involvement' did not factor into the results.

4. Results

4.1. Canadian food safety governance

The responsibility for food safety in Canada is shared among consumers at the handling stage, the food processing industry at the manufacturing, processing, and distribution stages, and various federal, provincial, territorial, and municipal governments at different stages throughout the

Table 1. Risk communication assessment criteria, based on Sellnow et al.'s (2009) best practices and Renn's (2009) principles, and public involvement assessment criteria, based on Fiorino's (1990) normative and Rowe and Frewer's (2000) democratic criteria.

Criteria	Descriptors
Public involvement	
Directness	Direct participation of citizens in decision making
Decision making	The involvement of citizens in collective decision making
Interaction	Face-to-face interaction over a period of time
Equality	Citizens participate on some basis of equality with administrative officials and technical experts
Influence	The output of the procedure has a genuine impact on policy
Transparency	The public can see what is going on and how decisions are being made
Risk communication	
Policy integration	Infuse risk communication into policy decisions
Process view	Treat risk communication as a process
Uncertainty	Account for uncertainty inherent in risk
Cultural sensitivity	Design risk messages to be culturally sensitive
Diverse tolerance	Acknowledge diverse levels of risk tolerance
Public involvement	Involve the public in dialogue about risk
Accessibility	Meet risk perception needs by remaining open and accessible to the public
Coordinated	Coordinate among credible information sources
Continuity	Continuous effort of communication with the most important stakeholders and the consumers
Audience focused	Tailor communication according to the needs of the targeted audience and not to the needs of the information source
Feedback	Adjust communication programs as a result of an organized effort to collect feedback and to sense changes in values and preferences

system (Weatherill, 2009). While market mechanisms and voluntary corporate initiatives are important food safety activities, regulations enforced through compliance monitoring are the primary mechanism for controlling the hazards of industrial food processing (Schofield & Shaoul, 2000).

Although it has neither a regulatory nor an enforcement role in food safety, the Public Health Agency of Canada is a player in the governance regime, with responsibility for public health and with the goal of protecting and improving the health of Canadians (Public Health Agency of Canada, 2008). Among other responsibilities, the agency is mandated to protect Canadians from infectious diseases and to prepare and respond to public health emergencies (Public Health Agency of Canada, 2008).

Beyond the Public Health Agency of Canada, the federal regulatory agencies principally responsible for food safety in Canada are HC and the CFIA. HC, at the forefront, formulates policies and regulations, the sum of which covers a broad spectrum of issues (Skogstad, 2006), and which are fortified by the Food and Drug Act and other legislation. Playing a complementary role, the CFIA is responsible for enforcing regulatory compliance in the food-processing sector. Broadly speaking, the CFIA carries out 14 inspection programmes related to foods, plants, and animals (Safe Canada, 2009).

Both the CFIA and HC are scientifically orientated institutions that have traditionally operated with a high degree of autonomy. In addition, Canada's approach to food safety is risk based, with the two sides of the risk-based coin, assessment and management, demarcated respectively between HC and the CFIA. The reliance in Canada on scientific-based risk assessments has

meant that laypersons (e.g. citizens, consumers, and community-based organizations) have generally had limited roles to play in food safety governance in Canada. A complicating factor is that, historically, decision makers have insulated themselves from the lay public (Skogstad, 2006). This insulation and the agencies' strong focus on science and expert-driven policy making have limited HC's and the CFIA's capacity to engage with the lay public, affirming what Skogstad (2006) and Isaac (2002) have asserted, namely that food safety governance in Canada is largely technocratic in nature.

4.2. Public involvement

4.2.1. Changes at Health Canada since the 2008 listeriosis outbreak

Following the listeriosis outbreak, HC took steps to improve the safety of RTE foods, and undertook PI processes in these reform efforts. First, in its revised policy on *L. monocytogenes* in RTE foods, it solicited input both actively (by sending out requests to scientific stakeholders) and passively (by allowing the lay public to submit web-based comments), with the goal of providing guidance to industry and regulators regarding the control of *L. monocytogenes*. HC's provision of added involvement opportunities for technical and scientific experts was further enhanced in 2010, two years after the outbreak, when it established the Food Regulatory Advisory Committee (later renamed the Food Expert Advisory Committee) within its Food Directorate. While the committee members represent various interests, such as researchers/academia, health professionals and industry, none are laypersons.

In the months following the outbreak, HC issued an Interim Marketing Authority for the use of sodium acetate and sodium diacetate in RTE meat products, which were not previously permitted under the federal Food and Drug Act. Use of the Interim Marketing Authority process in this manner was consistent with recommendation 12 of the Weatherill (2009) report: to provide faster approval of food safety measures, such as food additives and new technologies. More recently, and further to the Weatherill (2009) report, HC's Bureau of Chemical Safety developed a policy for the priority scheduling and expedited approval of food additives and technologies that have the capacity to enhance food safety (Health Canada, 2011a). The policy change serves to ensure the most up-to-date food safety measures are instituted into production activities and that significant delays in review processes are avoided (Health Canada, 2011a). The document's most glaring oversight, however, is in its failure to propose how the public will be consulted on submissions as they come in.

4.2.2. Changes at the Canadian Food Inspection Agency since the 2008 listeriosis outbreak

Very little information about CFIA's PI activities has been made publicly available either through the CFIA website or through the Government of Canada website, Consulting with Canadians (Government of Canada, 2010). Prior to 2010, and unlike what has been stated on HC's website, the CFIA had not appeared to formally recognize that the public at large was interested in contributing to the agency's decision making. However, there is evidence to show that the CFIA's position on PI has changed since the listeriosis outbreak. The CFIA now officially acknowledges the importance of soliciting the public's input and engaging in a dialogue on its activities. As of October 2010, the CFIA had reported that it had developed an agency-wide consultation framework based on the recommendations of the Weatherill report (Canadian Food Inspection Agency, 2010b).

In addition, in June 2009, the CFIA assembled a four-member academic advisory committee to meet face-to-face twice yearly and to comment on food safety. And in the winter of 2010, the

CFIA published the first edition of its *Liaison* magazine, a publication described as, ‘the voice of the CFIA’ (Canadian Food Inspection Agency, 2010a). It is through this publication that CFIA officials contribute articles about the agency’s activities.

4.2.3. *Democratic norms*

We distinguish between two groups that comprise the ‘public’: persons involved in their professional capacities, referred to as professional stakeholders, and non-professionals, who we call the lay public. HC has recognized a need to involve both groups in decision making, and a year-to-year analysis of its PI initiatives confirms that it has been willing to engage both groups on a variety of issues. The 2004–2005 and 2005–2007 Public Involvement Performance Reports provide good descriptions of the range, methods and purposes of PI activities conducted by HC’s Health Products and Food Branch (HPFB) within the three fiscal periods between 1 April 2004 and 31 March 2007. As of October 2011, no summary description of PI activities had been disclosed publicly for periods subsequent to April 2007.

The HPFB’s PI framework (Health Canada, 2005) presents a five-level continuum in which the lowest level, Informing, denotes little to no involvement and influence of stakeholders and the progressively higher levels, Listening, Discussing, Engaging, and Partnering, reflect increased levels of involvement and influence (Health Canada, 2005). Of the 53 non-continuous food-related involvement opportunities that took place between 1 April 2004 and 31 March 2007, 43, or just over 81%, fell within the Listening and Discussing phases (non-continuous opportunities are those in which there are no formalized ongoing interactions between the public and government officials).

The technical and scientific nature of decision making at HC reflects the types of opportunities the department selects in involving the public, and these opportunities reflect the department’s desire to be informed by professional stakeholders, and not necessarily by the lay public. The most common of the 19 Engagement-level methods were of a continuous advisory board nature and 12 of those involved scientific and technical advisory bodies.

Active involvement of the lay public largely occurred in Listening activities, with the most common methods being focus groups and surveys (we did not include submitting comments via a web page as active involvement). Only the HPFB’s Public Advisory Committee (PAC), disbanded in 2005, provided the lay public with an opportunity to be involved in an Engagement-level activity that was ongoing and that provided face-to-face dialogue with officials (Health Canada, 2011b), which are important aspects of Fiorino’s (1990) directness, interaction, and equality criteria of PI. The PAC, which convened between 2002 and 2005, comprised 20 members representing cross-sectoral diversity through a blend of ages, genders, regions, cultures, and languages (Health Canada, 2011b).

A fundamental reason the HPFB involves the public is to increase accountability and legitimacy in decision making. As HC respondent 1 stated:

We recognized not only that the public increasingly wants to be engaged in issues affecting them but, also, the public’s involvement leads to a more legitimized process of decision making.

Similarly, the Health Canada Policy Toolkit for Public Involvement in Decision Making (Health Canada, 2000, p. 8) suggests that the participation of the lay public in decision making is promoted on democratic rather than instrumental grounds. The results noted above, however, reveal that HC’s approach does not exemplify Rowe and Frewer’s (2000) criterion of influence nor any of Fiorino’s (1990) democratic criteria. Concerning the lay public, the results show a low level of influence, little direct participation in decision making, no shared decision

making, and no continuous interaction. Overall, HC's approach shows a distinct preference for professional stakeholders. That being said, it is important to note that with respect to both lay and professional stakeholders, HC's capacity to engage in shared decision making is limited by its statutory responsibility to hold final decision-making authority (Health Canada, 2010).

That HC finds less of an instrumental need to involve the lay public than professional stakeholders is not to say that lay participant deliberations carry no impact on decision making. Rather, the rationale for involving lay participants is focused on gathering information (e.g. public opinion research) or on legitimizing decision-making processes (for instance, when the public is welcome to submit online feedback about an issue). In contrast, the purpose for involving professional stakeholders (i.e. scientific and technical experts) is more often to engage them in a dialogue about an issue.

4.2.4. *Transparency*

Rowe and Frewer (2000) suggest that satisfying the condition of transparency in PI necessitates an approach that goes beyond simply collecting stakeholder input, towards ensuring that information central to the decision-making process is disclosed. Transparency and openness are recurring themes identified in HPFB reports, frameworks, publications, and Internet pages related to PI. Despite this, the HPFB cannot be said to have implemented a systematic approach to openness and transparency, which would include making public the results of all its decision-making processes.

Within the HPFB, what is reported upon, the detail to which it is reported, and the timeframe within which it is reported is highly inconsistent and ad hoc. Most information disclosed on HC's website is fragmented and inconsistent. HC respondent 2 indicated that the department's performance in allocating resources for websites has been inadequate:

... I don't think they give enough resources to both making sure things get up there in a timely fashion but also, all the issues around properly designing it...

Further, there is a great deal of inconsistency among HC bureaus and from one PI process to another in terms of the manner and the degree to which information is reported. HC respondent 1 stated:

Part of the problem is that we can't impose [sic] all branches to make public their reports and do their reports on consultations. We are not in a place where we are systematically providing feedback on these consultations and in a place where we are reporting back on how this information was used.

The most recent Public Involvement Performance Report (Health Canada, 2007), which covers the period from 1 April 2005 to 31 March 2007, states in clear language the HPFB's commitment to report upon PI activities:

Starting in 2007–08, the Branch will report its public involvement activities against key performance indicators in its 2007–12 Strategic Plan and other departmental reporting documents.

Performance reports are unavailable for any period subsequent to 1 April 2007. This fact indicates a contradiction between the agency's professed commitment to reporting PI activities and the extent to which it actually reports. HC respondent 1 spoke of the ongoing and delayed effort to systematically track PI initiatives:

We are developing for the first time a corporate information management system where all of the information on all of our stakeholders on all of our consultations will be captured, tracked and monitored.

While HC continues to work on improving transparency, the gaps between its stated commitment and its actual practice indicates that its approach does not satisfy Rowe and Frewer's (2000) criterion of transparency in PI. There is little in the way of a consistent and systematic approach, and what is reported upon is incomplete to the extent that it often fails to disclose the precise manner in which the views of the lay public and professional stakeholders are, or are not, considered and applied to policy decisions.

4.3. Risk communication

4.3.1. Feedback from target groups

Feedback from target groups is an important component of RC, especially when RC is treated as an interactive rather than a directive process. Feedback can help make RC more effective; it allows communication officials to refine messages, understand the effect a message has had on its recipient, and learn about the target groups' perspectives on the matter at hand (Table 1, process view and feedback criteria) (Renn, 2009; Sellnow et al., 2009). Consumer group respondent 1, an expert in the field of food-related RC, noted that the feedback component has historically been missing and that government agencies focus too much on behaviour change and too little on consumer perspectives of safe food handling:

We are or were in the past called upon by some of our members to inform them how to change consumer behavior. There was and sometimes is very little interest in understanding what the drivers are of consumer behavior.

Consumer group respondent 1 also underscored that while communicating without adequate feedback lacks effectiveness, her organization is often asked to do just that:

We can't exactly change consumer behavior if we don't know what exactly that behavior is. What we normally do ... is an education campaign. ... We don't know if the campaign makes a difference or where it has been successful.

Despite those views, there is evidence that since the listeriosis outbreak, HC and the CFIA changed their approach to obtaining feedback from consumers. Although we do not have direct evidence linking the changes to RC activities, the changes are consistent with Sellnow et al.'s (2009) process view and policy integration criteria as well as Renn's (2009) feedback criterion. We found no evidence that HC had conducted public opinion research into consumer perception and behaviour regarding food safety in the five-year period prior to the outbreak. However, in the time since the outbreak, the department has conducted such research to gauge the public's opinion of food safety issues in Canada, gain an understanding of the public's risk perspectives and behaviours, and establish knowledge, attitude, and behaviour benchmarks (Canadian Food Inspection Agency, 2010b; EKOS, 2010). HC's new strategy also has a stated focus on 'at-risk' groups, such as seniors (Canadian Food Inspection Agency, 2010b). The CFIA, on the other hand, has not devoted many resources to understanding consumer behaviour. While it had funded public opinion research in 2010, that survey gave little attention to consumer behaviour (Decima Research, 2010).

4.3.2. Lack of surveillance data

The government of Canada estimates there are 11 million cases of foodborne illness in Canada every year (Canadian Food Inspection Agency, 2011). However, this figure is an estimate and

is not based on foodborne illness patterns in Canada. This is because Canada borrows its illness surveillance data from other countries (Holley, 2010).

Because of this approach to surveillance, there is considerable uncertainty in federal food safety RC efforts, which is a limitation according to Sellnow et al.'s (2009) criterion of accounting for uncertainty inherent in risk. In the absence of more accurate information, geographic or temporal patterns are likely not to emerge and RC will be limited to the general. Not surprisingly, interview respondents representing academia, industry, and non-governmental consumer groups revealed a principal criticism of the food safety system to be the lack of surveillance data upon which RC can be based. Industry respondent 1 said:

Here we are talking about targeting resources, deciding where effort needs to be expended, what are the food groups that present the greatest risk and so on. You can't do that if you don't start with a good integrated national surveillance system.

4.3.3. *The gap between consumer perception and technical assessment of risk*

The RC literature speaks of the need to deliver messages that reflect the target population's needs and which acknowledge diverse levels of risk tolerance (Table 1, audience focused and diverse tolerance criteria) (Renn, 2009; Sellnow et al., 2009). This requires a diversified approach using multiple methods. In Canada, however, the federal approach to disseminating food handling, storage, and preparation advice has been general and delivered mostly through the Internet. Information for at-risk groups has typically been part of a general communication package and has not been delivered through targeted campaigns. While federal agencies have created a designated food safety website, www.foodsafety.gc.ca, and expanded the use of social networking tools such as Twitter, Facebook, and YouTube, they have not employed the full range of Web 2.0 tools, such as discussion forums and 'Ask an expert' mechanisms. Expanding their use of such tools would more fully satisfy the audience focused criterion as well as the accessibility criterion, that is, being open and accessible to the public. It could also prove helpful in better accounting for diverse levels of risk tolerance.

We also found that HC failed to translate safe food-handling brochures and information into languages apart from English and French, indicating that Sellnow et al.'s (2009) cultural sensitivity criterion has not been fully met. In contrast, certain other brochures published by HC are made available in 10 languages other than French and English (Health Canada, 2011c).

Further suggesting that HC could better target its communications, not a single focus group respondent was aware of being in a high-risk group with respect to *L. monocytogenes*. Supporting this suggestion is that the focus group respondents actually considered themselves more interested in and knowledgeable about food safety than others in their age cohort. Moreover, many reported strong tendencies to protect themselves from foodborne illness (washing bananas and raisins, for instance). These results are an indication that HC sometimes fails to tailor communication needs to this particular target audience, which is incongruent with Renn's (2009) audience-focused criterion.

While not aware of the particular risk of foodborne illness from *L. monocytogenes*, focus group participants were strongly aware of the nutritional and dietary risks associated with certain foods. In fact, the reason they gave for avoiding RTE meats stemmed from dietary (high sodium levels), rather than safety considerations.

This provides an opportunity to communicate in ways not yet fully explored. Certain focus group respondents showed a willingness to learn about risk-related information on food packaging and agreed that reading food labels is a necessary part of their shopping experience, one they engaged in less in the past. Focus group 1 respondent 1 said, 'Well, I read labels now, whereas years ago if I bought a soup I would just buy it. I wouldn't look at the content inside'.

Through an increase in their public opinion research activities, HC and the CFIA have devoted more effort since the listeriosis outbreak in understanding consumer perceptions and behaviours. And while their approach to RC also appears to be slightly less general, than it has historically been, our research shows there is room for improvement.

4.3.4. *Opportunities for dialogue and collaboration*

The results of this research have so far shown that while HC and the CFIA have become increasingly interested in understanding the public's perception of risk, there has been less effort devoted to engaging the lay public in meaningful dialogue and collaboration now than in the past. A case in point is the treatment of the aforementioned PAC. Mandated to have its members provide advice on issues and initiatives within the purview of the HPFB, the committee's formation was 'a component of the Branch's strategy to increase transparency and public involvement through the consultation processes' (Health Canada, 2011b).

Meant to be replaced with a broadening of PI activities within the branch (Health Canada, 2011b), a review of consultations disclosed on the HC website shows that since 2005, there has been no systematic process through which an ongoing dialogue between laypersons and HC has been maintained on issues related to food safety. This is not only inconsistent with Fiorino's (1990) democratic criteria regarding PI, but also with Sellnow et al.'s (2009) public involvement and Renn's (2009) continuity criteria respecting RC.

In October 2010, the CFIA (2010b) released a collaborative report prepared by Agriculture and Agri-Food Canada, the CFIA, HC, and the Public Health Agency of Canada on the progress they have made in the area of food safety. The report highlights that the food safety partners are promoting greater collaboration among themselves and with the food industry with the creation of an Agri-Subcommittee on Food Safety:

The purpose of the Subcommittee is to strengthen relationships among all federal food safety partners and the food industry to ensure a common understanding of the roles and responsibilities of all partners, and to contribute to the continuous improvement of food safety policies and standards (Canadian Food Inspection Agency, 2010b).

Certainly, it is positive for partnerships to be strengthened among federal departments and between federal departments and industry members. However, doing so in the absence of promoting partnerships with other interest groups and with the lay public hinders a balanced approach and is inconsistent with Sellnow et al.'s (2009) coordinated and Renn's (2009) continuity criteria. It is important to note that each of HC, the CFIA, the Public Health Agency of Canada, and industry states that food safety is a responsibility shared not only between federal, provincial, and municipal levels of government and industry but also with the public at large.

5. Discussion and recommendations

The results reveal that despite the fact that federal PI and RC activities have been strengthened since the listeriosis outbreak, they have become neither dialogical nor highly participatory. They exemplify few of the criteria found in Table 1. The ensuing discussion expands on this observation and then offers recommendations to make the federal approach more consistent with these criteria. In making our recommendations, we recognize that budgetary constraints can impinge upon the government's ability to fully embrace change in its PI and RC approaches. We, therefore, focus on incremental changes, ones that are presumed to create a relatively light financial burden for federal agencies.

The political and regulatory culture of HC is open to the possibility of participatory and communicative approaches to food safety governance. HC has experience with PACs, it has developed sophisticated guidance documents for public involvement, and it has a branch dedicated to involvement. However, the department's predominant approach is reliant on scientific investigation, and does not yet facilitate a thorough non-scientific consideration of food safety risks. The scientific approach towards *L. monocytogenes* in Canada is not dissimilar to that of other food safety risks characterized by a high degree of uncertainty and complexity. And while participatory and communicative models of food safety governance can be highly instructive for understanding and improving responses to food safety risks, the results of this research show that the Canadian approach to food safety governance remains entrenched in a technocratic orientation. This position is understandable in disaster response scenarios in the management phase of governance when time is of the essence and clear and directive communications are required. However, it is less understandable in relation to other management scenarios and in the other governance stages (Figure 1). In those contexts, there are ample opportunities for ongoing, deliberative, and dialogical involvement in activities. Furthermore, such activities have the potential to yield an array of beneficial outcomes for governance, such as broad understanding of the objectives of regulatory action (pertinent to the framing stage), greater democratic legitimacy for scientific risk analysis (pertinent to assessment), valid value-based judgments on the tolerability or acceptability of a particular food safety threat (relevant to evaluation), and the identification of appropriate and effective social marketing and public education measures (an issue in management).

5.1. *The British Food Standards Agency approach to involving the lay public*

Though HC, the CFIA, and Agri-Food Canada have assembled certain food safety committees in the time since the 2008 listeriosis outbreak, Canada has lagged behind other jurisdictions in its efforts at involving a wide range of stakeholders in food safety governance. Further, the PI leader among these three federal entities, HC, remains in a state of regression with respect to the involvement of lay people, due in particular to the absence of a body such as the PAC.

While a direct comparison of PI activities in Canada and other jurisdictions was not undertaken in this study, the British regulatory model is instructive. The British Food Standard Agency currently convenes 13 advisory committees related to food. Each committee has a precise focus (e.g. Advisory Committee on the Microbiological Safety of Food) and each committee meeting is reported upon in an accessible and transparent manner (Food Standards Agency, 2010). Though most of these committees have a technical and scientific focus, at a minimum, each of them includes at least one layperson, 'whose role is to challenge the committees to consider the needs of non-specialists and to ensure effective communication of the risk assessment advice' (Food Standards Agency, 2010).

In addition, the Food Standards Agency facilitates consumer-focused stakeholder forums twice yearly with the goal of providing laypersons direct access to decision makers to discuss issues of importance. This initiative resembles HC's now dissolved PAC. In our view, PI activities in Canada would be improved if HC and the CFIA were to resurrect such a consumer-focused entity. Moreover, we recommend that HC appoint laypersons to all scientific, technical, and expert advisory committees and subcommittees. As an important food safety governance actor, the lay public should be provided with reasonable opportunities for engagement-level involvement. Such involvement would not only improve HC and CFIA planning and decision making, it would improve RC efforts by creating opportunities for legitimate dialogue between those traditionally doing the communicating and those to whom the communications are traditionally targeted.

5.2. *Product labels as vehicles for risk communication*

RC in Canada is general and will likely remain general until such time that the federal food safety partners improve the way in which foodborne illness surveillance, consumer behaviour, and RC performance data are collected and used in RC activities. RC could also be improved with a broadening of the methods through which messages are disseminated, which is consistent with both Sellnow et al.'s (2009) best practices and Renn's (2009) principles of good RC.

Both the focus group data as well as data found in government-funded public opinion research (EKOS, 2010) revealed that individuals 65 years of age or older do not view themselves to be at greater risk to foodborne illness. RC messages have either not resonated with this group or if they have the group simply does not share the predominant risk perspective held by the experts.

Apart from identifying print and television campaigns as effective ways through which they like to obtain information, focus group respondents also revealed that direct labelling on products would be effective for the communication of risk and food safety information. Drawn to product labels for their dietary and nutritional content, respondents were receptive to the idea that labels could effectively provide them with secondary information they need. Certainly an inference can be made that the communication of risk using this method has the potential to reach those not actively seeking such information. This would further enable managers to meet the intended recipient audiences' needs.

Various product label options exist, the most direct of which would be to include a targeted warning to specific populations. Such a warning on RTE meats, for instance, might be targeted towards seniors or any other vulnerable population, informing them that they are at greater risk from listeriosis and providing them with food-handling suggestions that could mitigate such a risk.

It is important to state that using food labels as a communication tool is currently employed by the industry on a voluntary basis to disclose product benefits. It is difficult to imagine that negative warning labels, advising vulnerable consumers of some level of risk associated with the consumption of a food product would likely be implemented under a voluntary scheme. It is, therefore, recommended that HC and the CFIA explore the potential benefits that mandatory product risk or warning labels for a certain class of food might have for vulnerable persons.

5.3. *Improving transparency*

This research shows there is a clear contradiction between HC's professed commitment to reporting upon PI activities and the degree to which it actually reports on these activities. The lack of a systematic, continued branch-wide approach to reporting upon PI activities and the lack of easily accessible information disclosing the way in which public input has been incorporated into decision making demonstrate HC has not met its own stated obligation regarding openness and transparency. This is the state of transparency within the HPFB even while it has an office devoted entirely to PI – the Office of Consumer and Public Involvement.

HC's failure in this regard is not aided by weaknesses in its website. In 2011, HC's Food and Nutrition webpage had a link for Public Involvement and Partnerships but it provided very little in the way of an organized, coherent, and comprehensive list of PI initiatives. The initiatives were separated into two categories, Current Consultations and Past Consultations, with the latter being incomplete. Though the list appeared to be chronological, most listed consultations had no date associated with them. Furthermore, clicking on most of the links brought one to the original consultation invitation page, and apart from the few summary links information on the results of the consultation processes were not provided, including how they may have impacted on decision making.

With that in mind, HC should improve its website to make it easier for interested parties to obtain information on current and past consultation processes. Categorizing consultations

according to food-related topics and presenting information in clearly identified chronological categories are two ways in which improvements can be made. While more likely needs to be done to improve transparency, instituting these changes would at least be a modest initial step in the right direction.

6. Conclusion

Two fundamental implications are drawn from this research. First, that the risk to vulnerable groups (particularly seniors) posed by the bacterium *L. monocytogenes* has not been significantly reduced through any PI undertakings with the lay public nor through any fundamental action in the area of RC. Second, the approach to PI at HC and the CFIA fails to fully consider and represent the interests of the lay public. While HC and the CFIA, the two principal federal actors in the food safety governance system, have instituted important changes since the listeriosis outbreak, each can make improvements.

The CFIA, while not historically focused on involving the public in decision making, has, since the outbreak become more open, begun to consult with external experts in the field of food safety. However, the absence of a clearly defined PI implementation plan will continue to limit its efficacy at involving the lay public. Though HC has historically involved the public in management decisions, its approach has focused largely on involving technical and scientific experts, rather than laypersons. HC has also failed to capitalize on the opportunity to consult in policy making, where it has clearly been possible to do so. Such was the case with respect to the policy on the priority scheduling and expedited handling of submissions with the capacity to enhance food safety.

Certain strategic changes can lead to improvement in the overall RC and PI approaches taken by HC and the CFIA. These changes echo what has been identified to be important by the research participants and in the literature: promoting dialogue between the lay public and officials, directly involving laypersons in decision making, exploring alternative methods of communication, such as food labels, and improving web-based access to decision-making processes.

While our recommendations would improve the state of PI and RC in food safety governance, they can also be considered within a larger context. Modernization has brought with it new types of food risks and hazards and new expectations as to how those risks and hazards should be handled. Modern food safety risks are manufactured (Giddens, 1999), having been created by the scientific and technological progression of human development. How we have come to deal with these modern risks, through regulation, is consistent with responses contained in Beck's (1992) notion of a risk society. Regulation offers a systematic way of dealing with the hazards and insecurities induced and introduced by modernization itself.

And even though the public holds expectations that food safety should be the subject of strong regulatory and enforcement action (which carries with it an equally strong commitment to consult and communicate), de-regulation (and less consultation) is always possible, particularly in a neo-liberal political context. While few would deny the importance of strict regulation and enforcement, such an approach is too often only adopted subsequent to, rather than before, food safety crises, as was the case with the listeriosis outbreak. While HC and the CFIA are moving in the direction of better RC and more PI, their approach does not resemble the dialogical and participative food safety governance framework proposed by Ely et al. (2009), Koenig et al. (2010), and Walls et al. (2011) wherein involvement and communication span the spectrum of the regulatory/enforcement cycle, that is, framing, assessment, evaluation, and management. Having a system of involvement and communication in place that has a clear focus on laypersons promotes a regulatory and enforcement culture that is less likely to become captured by those parties the system is tasked to regulate and enforce.

Moving beyond the scope of this work, more research is necessary to gain an understanding of the institutional mechanisms that can advance the involvement and communication objectives of dialogical and participative food safety governance in Canada. Comparing Canada's approach to that of countries with similar political and regulatory cultures, such as Great Britain and the United States, can also promote an understanding of Canada's approach in relation to its counterparts and can lead to the identification of opportunities for improvement.

Further research is also required into the fundamentally important question of whether a more participatory and communicative approach to food safety governance delivers more safety when confronted with an outbreak of listeriosis. An important part of such work would be considering pertinent empirical evidence from jurisdictions with similar political and regulatory cultures and beyond, including European countries with experience with participatory and communicative approaches such as Germany and Denmark, and then building on those reported results. A promising approach is offered by community-based action research emphasizing mutual learning and capacity enhancement, but this would require a longitudinal design and would not yield widely generalizable results. Extensive quantitative approaches would also be required, examining at a broader scale the causal connections among participation, communication, and safety.

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