A B S T R A C T

This report identifies strategies used by public health inspectors in the Central West Region of Ontario during restaurant inspections, based on and comparing the perceptions of inspectors, their managers, and restaurant operators. Factors influencing the choice of strategies are reviewed, putting into perspective the importance of manager and policy expectations relative to other influences experienced by inspectors in the field. The need to set pragmatic and reality-tested criteria and objectives for a HACCP-based inspection protocol is discussed.

A B R É G É

Ce rapport présente les stratégies utilisées par les inspecteurs de la santé publique dans la région du centre-ouest de l'Ontario au cours des inspections dans les restaurants, en fonction et en comparant les perceptions des inspecteurs ainsi que des gérants et des exploitants des restaurants. On passe en revue les facteurs influençant le choix de stratégies, en prenant en considération l'importance des attentes des gérants et celles découlant des politiques par opposition aux autres influences ressenties par les inspecteurs sur le terrain. L'article traite de la nécessité de fixer des critères et des objectifs pragmatiques et réalistes dans les protocoles d'inspection fondés sur les ARMPC.

Public Health Inspectors in Restaurants: What They Do and Why

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Food premises inspections (e.g., of restaurants, institutional food services, cafeterias) are a regulatory requirement under the Ontario Health Protection and Promotion Act.¹ In September 1991, the province introduced a HACCP (hazard analysis critical control points) inspection protocol² as the recommended standard for food premises inspections to be conducted by public health inspectors employed by local public health agencies. The implementation by inspectors of the strategies proposed under this protocol was examined as part of an investigation into the role of public health inspectors in food safety. The study conducted in 1996 and 1997 was, in part, an attempt to capture information about the realities of policy implementation. More specifically, this paper considers and compares the perceptions of public health inspectors, their managers and restaurant operators concerning restaurant inspection practices; with an examination of factors perceived to influence the practices of inspectors in the field.

METHODS

Three surveys were conducted in the winter and early spring of 1996/97: one of food safety program managers, one of public health inspectors in food safety, and one

of restaurant operators in the Central West Region of Ontario. Each survey involved a mailed questionnaire. The Ministry's HACCP protocol outlining the recommended inspection strategies to be used by inspectors, was used as the template for developing the questions used in each questionnaire. Both closed and open-ended questions were developed. The inspector's questionnaire was peer reviewed for content validity and pre-tested with three inspectors to ensure ease of use, acceptability and meaningfulness of the questions. The operator questionnaire was developed in consultation with inspectors and was pre-tested with five restaurant operators. The questions in the operator questionnaire were based on the activities outlined in the HACCP protocol, but using terminology intended for the operator respondent. Response codes for open-ended questions were later developed based on common response themes identified with the assistance of four reviewing inspectors.

The questionnaires addressed to managers and inspectors included questions concerning their perceptions of what is done during inspections. Inspectors were also asked to identify factors influencing their choice of strategy when conducting restaurant inspections. Operators were asked their perceptions of what they witnessed or experienced during inspections, and of what they perceived to be helpful. Inspectors were also asked questions more specific to the use of HACCP audits during inspections, while operators were asked questions concerning their awareness of HACCP.

All seven managers in Central West received a questionnaire by mail in November 1996. The inspector question-

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naire was distributed by mail to all inspectors during November, followed by a reminder notice 10 days later, and a phone call reminder in December to non-respondents. Based on a sample size requirement of 352 (95% confidence that the observed results would be $\pm 5\%$ of the true values, assuming an expected prevalence of 50%), and allowing for an estimated 15% of unreachable listings, a random sample of 405 restaurants was selected from the 4,133 high and medium risk restaurants listed by the seven Central West health units. Questionnaires were mailed to operators in January, a reminder card was mailed to non-respondents 10 days later, and a second questionnaire 10 days after the reminder. A phone call interview using three trained interviewers was attempted for all operators who had not responded by mid-March.

RESULTS

Respondents

Response rates were 100% (7/7) for food safety managers, and 91% for inspectors (70/77). Of the 405 restaurant operators selected for the operator survey, only 304 could be reached – either the mailed questionnaire was returned as “no such address” or the phone number for the restaurant was no longer in service. With the return of 190 questionnaires, the response rate for the operators survey was calculated at 62% (190/304). Ninety questionnaires were completed by mail and 100 were completed by phone. A true random sample of 190 respondents would give 95% confidence that observed results are $\pm 7\%$ of the true result if the true prevalence is 50%.

All responding managers had responsibility for management of their health unit's food safety program. Characteristics of the inspector respondents are given in Table I. Characteristics of the restaurants for the responding operators are given in Table II. Information was not available for comparing respondents with non-respondents to the inspector and restaurant operator surveys.

Content of inspections

Inspectors were asked to indicate from a list of activities, what it is they do while

TABLE I
Characteristics of Respondents to the Inspector Questionnaire

Characteristics	n	(%)
Decade of Certification		
1950s/60s	4	(6)
1970s	26	(37)
1980s	21	(30)
1990s	19	(27)
Gender		
Male	43	(61)
Female	26	(37)
Degree		
Yes	31	(44)
No	39	(56)
Currently inspects restaurants		
Yes	62	(89)
No	8	(11)
Days per week in food safety (n=65)		
<2 days	16	(25)
2 to 3 days	31	(48)
3 to 5 days	18	(28)

TABLE II
Restaurant Characteristics of Participating Operators

Characteristics	n	%
Years of operation		
1 - 2	50	(26)
3 - 5	40	(21)
6 - 14	46	(24)
≥ 15	52	(27)
no response	2	(1)
Number of staff		
1 - 4	54	(28)
5 - 14	68	(36)
15 - 29	39	(21)
≥ 30	29	(15)
Number of seats		
<25	31	(16)
25 - 49	45	(24)
50 - 74	30	(16)
75 - 99	25	(13)
≥ 100	59	(31)
Liquor licence		
Yes	92	(48)
No	96	(51)
No response	2	(1)
Franchise restaurant		
Yes	43	(23)
No	144	(76)
No response	3	(2)
Managed by owner		
Yes	132	(70)
No	55	(29)
No response	3	(2)

inspecting restaurants. Allowed responses were “always”, “most times”, “sometimes”, “rarely” or “never”. The activities most often reported as performed “always” or “most times” were compliance inspections (an environmental assessment to ensure sanitation and structural requirements), critical control point monitoring, and manager consultations (Figure 1).

Operators were asked to consider a list of activities reflective of the type of strategies used by inspectors during inspections, and to indicate what it is the inspector usually does during an inspection. Activities recognized by more than 90% of operators

respondents were “checks for order and cleanliness”, indicative of a compliance inspection, and “checks temperatures”, one form of critical control point monitoring. Activities recognized by 75 to 80% of operators were “talks about food handling”, “gives information on prevention” and, “watches you prepare food”, the latter being an expected component of a HACCP audit. The activity least noted by operators was “swabbing for germs” (102 or 54%).

Managers were also asked to indicate what they expect their inspectors to do during routine restaurant inspections using the same list of strategies and 5-point

The food safety managers proposed three broad objectives to be achieved through HACCP audits. Fifty-seven inspectors (81%) felt the objective to prompt safe food handling practices among food premise operators was achievable, while 39 (56%) felt prompting food premise operators to routinely monitor common critical control points could be achieved. Only 18 inspectors (26%) felt the objective of enabling operators to develop their own HACCP protocols for all hazardous menu items could be achieved through HACCP audits conducted by inspectors.

Sixty-nine of 190 restaurant operators (36%) reported having ever heard of HACCP. Forty-nine (26%) reported having staff trained in the use of HACCP. Of the 49 respondents with trained staff, 15 (31%) received HACCP training from a public health inspector. Another 14 (29%) received on-the-job training. Operators identifying themselves as part of a franchise were more likely to report having staff trained in HACCP, (21/35 or 60%) compared to others who were not part of a franchise, (27/112 or 24%). This was found to be statistically significant ($\chi^2 = 19.1, p=0.000$).

TABLE III
Factors Influencing Inspection Choices as Perceived by Inspectors

Influencing Factor	Influenced by a Moderate to Large Degree	
	n	%
Food premises regulations	66	94
Personal experience with what works	65	93
Past performance of establishment	61	87
Personal workload/time constraints	57	81
Provincial (Mandatory core prog.)	57	81
Unexpected circumstances onsite	51	73
Your management expectations	48	69
Type of establishment	47	67
Operator managed HACCP program	44	63
Operator response/preferences	39	56
Locally accepted practice	34	49
Local politics	12	17
Something else	8	11

response scale given to inspectors. The degree of association between what inspectors reported as the strategies they use during restaurant inspections, and the expectations of their own managers, was tested using the ensemble estimator.³ Correlations were not found to be significant with the exception of the use of full HACCP audits (corr.=0.5, 95% C.I. 0.31 to 0.69). Both inspectors and their managers generally agreed to the infrequent use of this strategy during usual inspections.

When inspectors were asked specifically what they include in a HACCP audit, 51 of 68 (75%) indicated they conduct a modified audit in which the inspector is present for only key food-processing steps. Other components of the process from receipt to service of the food product are reviewed through discussions with the operator or food handler. In a full HACCP audit, the inspector is present for the entire process; 12 of 68 (18%) identified this as their usual audit.

What is perceived to influence practice?

Inspectors were asked to indicate from a list of items, to what degree each influences their choice of what to do when inspecting a restaurant ("large degree", "moderate degree", "a little", or "none"). Ninety-four percent of respondents identified the food premises regulations as a factor influencing their practice, while 93% indicated their own personal experience with what works. The third most frequently identified factor was the past performance of the establishment (Table III). In response to an open-ended question asking inspectors to indicate what they consider when deciding on strategies for inspecting restaurants, risk assessment of the establishment and, again, past performance were the most frequently identified considerations (Table IV).

The operators' own interests and preferences for what is done during inspections, was reported as a consideration by a moderate number of inspectors in response to both the open-ended and closed questions.

TABLE IV
Factors Considered by Inspectors when Deciding on Strategies

What is considered : (Open responses)	# of Inspectors	% of Total (70)
Risk assessment	36	51
Past performance	31	44
Staff training/experience/knowledge	25	36
Type of establishment	25	36
Operator attitude/working rapport/interests	20	29
Condition of establishment	12	17
Time of day	6	9
Situational assessment/circumstances	5	7
Other	17	24

TABLE V
Components of Inspections Reported to be Most Helpful

What do you find most helpful? (Open responses)	# of Operators	% of Total
Practical advice-identifies problems and solutions	49	26
New information/explanations/education	27	14
Everything/all	18	10
Reassurance	6	3
Encourages continuous good practice	3	2
Reading and resource materials	4	2
Other	20	11

When operators were asked themselves what they found most helpful about inspections, they indicated first the practical advice and solutions provided by inspectors (Table V).

DISCUSSION

The provincial policy on food premises inspections was revised in January 1998⁴ to prescribe only modified HACCP audits, which is consistent with the usual practice reporting in this study. Another revision allows the past performance of a food establishment to influence its risk assessment status which, in turn, determines the inspection strategies to be used with that establishment. Again this change reflects what inspectors in this study had already identified as a factor influencing their strategy decisions. In this study, the inspector's reported inspection activities did not necessarily correlate with his or her manager's expectations. Differences between inspector behaviour and manager expectations are indicative of the competing issues and influences faced by inspectors in the course of their work. The introduction of new or revised inspection strategies requires further investigation in terms of practical application.

Reasonable outcome objectives from inspections also need to be identified, given, for example, the inspectors' reported perceptions of what is and is not accomplished through a HACCP audit. The desire to have restaurants develop and maintain their own HACCP protocols may not be an objective that can be achieved through the involvement of inspectors alone. The expected outcomes of HACCP-based inspections need to be balanced against the diverse abilities of a variety of food service premises, and it may be more realistic and beneficial if some level of flexibility is allowed.⁵ The implementation of a full-scale HACCP program by a food premises requires the knowledge and commitment of resources that are more likely to be achieved by larger operations.⁶ Agencies inspecting large food processing plants also acknowledge the need to consider the plant's "HACCP readiness" with the existence of prerequisite programs before prescribing the introduction of a HACCP program.⁷

In summary, there is a need to identify practical solutions to achieve realistic expectations of public health inspectors working in food safety. The effectiveness of current strategies, although based on intuitive and efficacious judgement, is not well

understood.^{8,9} Research aimed at comparing alternative strategies in food safety practice is required.

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