

Evidence-informed decision-making for food safety in Ontario: Do we have what it takes?

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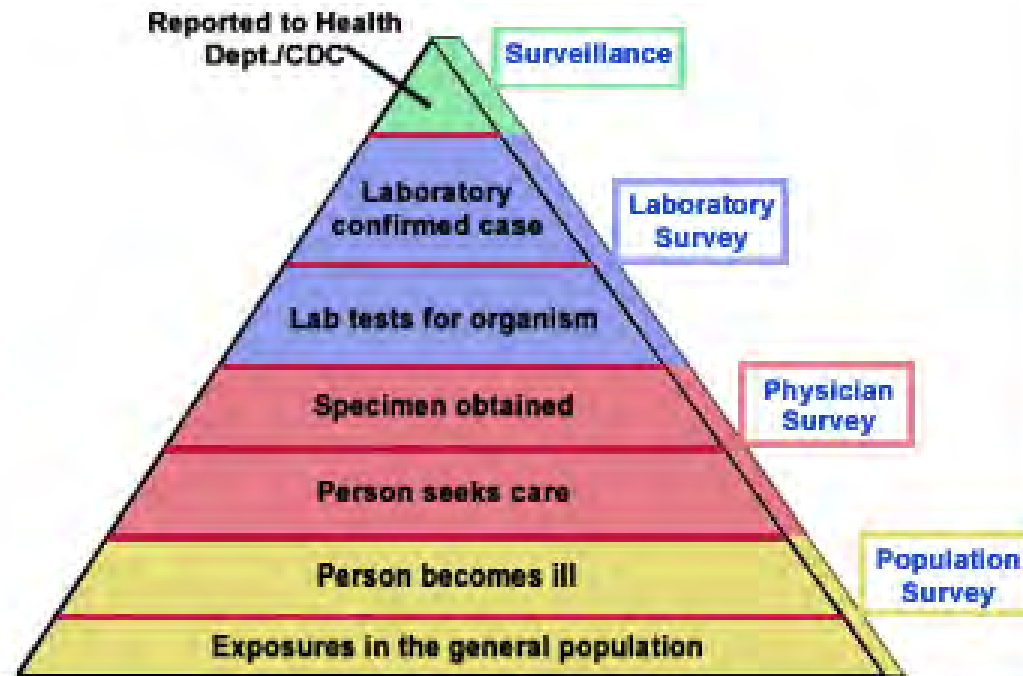
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How Big a Problem?

- From C-enternet evaluation PHAC estimates 13M cases/yr foodborne illness in Canada
- Cost of enteric illness \$115 per Canadian/yr
- Estimates only, exact figures not tracked or known.
- CDC 2011 – 1 in 6 Americans (48 million people) get sick; 128,000 are hospitalized; 3,000 die of foodborne diseases

Burden of Illness Pyramid



What's the evidence?

- Information on FB illness and outbreaks is seriously incomplete and biased
- Little or no linkage of illness data back to foods or risk factors in food preparation/processing
- Although 'impossible' to generate complete information much can be done to improve the system
- Can the public provide useful information? Hotline? RRFSS?

Foodborne Illness - public health role in Ontario

- Food safety – substantial investment of resources in food safety at HU level, roughly 350 FTEs
- Permanent food premises per staff member varies across HUs but average is about 210-220 Ontario wide.
- OPHS Food Safety and Food Safety protocol
- A large (the major) component of HU Food Safety programs is inspection.

Ontario Public Health Standard –Food Safety

Requirement #1

- The board of health shall conduct surveillance of: suspected and confirmed food-borne illnesses; and food premises in accordance with Food Safety (FS) and Population Health Assessment and Surveillance protocols
- Additional requirements deal other aspects of FS program

FOOD SAFETY Protocol requires;

- 1)b)iii) A monitoring and evaluation process to annually assess and measure the effectiveness of food safety strategies
- 1)c) The board of health shall conduct an annual site-specific risk assessment of each food premises and, based on the results of the assessment, shall assign a risk category for each food premises as high, moderate or low. (refer to model)
- 1)d) The board of health shall conduct inspections of all fixed food premises in accordance with the following minimum schedule:
 - i) Not less than once every 4 months for high-risk premises
 - ii) Not less than once every 6 months for moderate-risk premises
 - iii) Not less than once every 12 months for low-risk premises

FOOD SAFETY Protocol requires;

- 1)i) The board of health shall conduct additional inspections as necessary to address:
 - i) Unsafe food-handling practices;
 - ii) Issues of non-compliance with regulations;
 - iii) Investigation of food-borne illnesses and food-borne outbreaks;
 - iv) Investigation of consumer complaints; and
 - v) Action on food recalls, fires, floods and emergencies.

Anyone else?

- The MOHLTC should conduct a review of its Mandatory Programs food safety standards in consultation with Boards of Health and other stakeholders and correct any identified deficiencies. The review should specifically address the number of annual inspections.
- The MOHLTC should use such (refers to standardized) data to evaluate the effectiveness of the food safety standards of the Mandatory Programs on an ongoing basis.

From Haines report p366, 369

- To what extent is our current Food Safety standard and protocol *‘Evidence-informed’*?

Effectiveness of Public Health Interventions in Food Safety: A systematic review, Campbell ME et al CJPB 89(3)1998

- *“Commissioned by Ont Ministry of Health to assist in re-shaping the 1989 Program Standards for the Food Safety Mandatory Core Program”*
- Rating of 9 ‘Strong’ at Health Evidence.ca *website*

FINDINGS?

- 168 potentially relevant studies (127 published, 41 unpublished)
- After application of inclusion/exclusion criteria 34 relevant evaluation studies retained (23 published, 11 unpublished)
- Of the 34 – 4 were RCTs, 6 CTs, 1 cohort, 1 case-control, 13 pre/post-test, 7 cross-sectional, 1 ecological, 1 time series
- 10 evaluated inspections only, 20 food handler interventions only, 2 both training and inspection, 2 examined community-based education interventions
- Quality – 1 strong, 14 moderate, 19 weak.

RISK ASSESSMENT

Study	Design	Intervention	Outcomes
Briley&Klaus1985 USA	Cohort	Inspections every 1-2,3,4-5,6-12 months depending on risk score	In high risk group sig number changed to lower risk group after receiving inspections every 1-2 m. No reduction in risk scores in lower risk premises w/lower insp freq
Sandford & Amorim 1996 Canada	Cross-sectional	Inspection of previously low risk premises to determine current status	9% of low had changed to medium

INSPECTION

Study	Design	Intervention	Outcomes
Bader et al 1978 USA	RCT	Insp 4/ yr or only after complaint	Inspection scores better for those inspected 4/ yr than after complaint
Corber et al 1984 Canada	RCT	Inspection 6,9,12 / yr	No sig difference in insp scores based on freq of insp
Irwin et al 1989 USA	Case control	Comparison of violations in restaurants with o/breaks to those w/out	Sig assoc between violations of many inspection criteria and o/breaks

INSPECTION and TRAINING

Study	Design	Intervention	Outcomes
Kirschner 1991 Canada	RCT	Inspections 2,4,6 /yr. Food handler training through on-site education w/ A/V aids	No sig diff in inspection scores based on freq on insp On-site educ sessions not effective in reducing infraction scores
Mathias 1995 Canada	Cross-sectional	Time intervals since last insp were 0-3, 4-6, 7-12 and >12 months. Past food safety training	Insp scores were sig poorer in rest last insp >1y before Rest in which staff completed f.handler training has better insp score

What's the Evidence?

- Any indication it was used in OPHS?
- Was the evidence usable?
- Generalizability of studies was noted as a 'limitation' in the systematic review.

Evidence for Decision making

- If we are looking at performance of a ‘system’, to what extent is evidence from other systems *relevant*? To what extent is relevant evidence system specific?
- Is the evidence gap best filled generating better information on system performance and observing changes in outcomes (or other performance measures) after ‘interventions’ (e.g. changes to policy, protocols or practices) on that system?

Your Thoughts?

- Do we have all evidence we need to make *'evidence-informed'* decisions on food safety programs in Ontario?
- If not, what are key gaps/needs?
- Is there a 'disconnect' between our disease surveillance and linking back to exposures through food?
- What role can Public Health Ontario (working with Health Units and others!) play in meeting these?