

Are staff management practices and inspection risk ratings associated with foodborne disease outbreaks in the catering industry?

Funded by the Food Standards Agency, London.

Implications to the environmental health profession

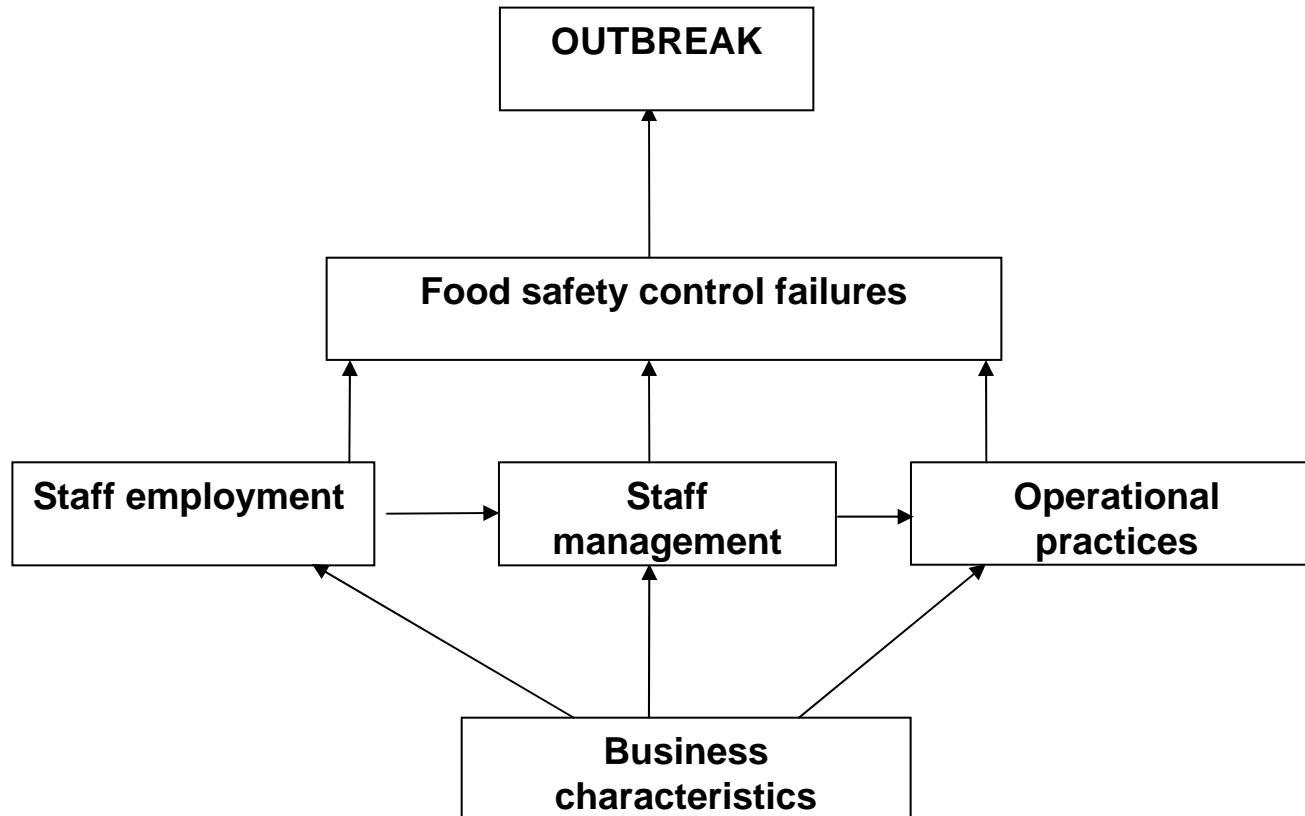
- Do we make a difference?
 - Inspection frequencies
 - Food hygiene training
 - HACCP
- Where's the evidence?
- Can we use catering business information more efficiently?

Matched case control study

Foodborne outbreaks:

- reported to the national surveillance scheme operated by HPA
- Collected from a network of industry and E.H. professionals maintained for the duration of the project
- 1st December 2002 – 31st December 2003
- England and Wales

Hypothesised causal pathway



Study population

- All foodborne disease outbreaks (n = 148)
 - 88 outbreak from main study
 - 60 outbreaks from pilot study
- Data was also stratified by business size and pathogen (viral and Salmonella)

Results: Catering businesses

- Larger SME businesses were more likely to be associated with FBO than micro SME businesses
- In larger businesses, cases were more likely to be hotels and more commonly associated with viral FBO
- Operational practices did not differ between case and control businesses
- Businesses associated with Salmonella infections were more likely to use regional suppliers, especially for eggs
- Businesses associated with egg-associated outbreaks were less likely to use eggs produced under an approved quality assurance scheme.

Operational and food safety practices in the catering industry

- Poor practice is common in the catering industry (Lee et al, 2004; Sagoo et al, 2003, Green and Selman, 2005)
- Little difference in operational and hygiene practices in outbreak and non-outbreak businesses, only the choice of supplier influenced outcome
- The use of contaminated foods from ‘high risk’ suppliers provides the necessary conditions for outbreaks to occur
 - Jones et al. (2008)
 - Gillespie et al. (2005)
 - Bryan, Guzewich and Todd (1997)

Food source and supply may have a greater impact on the occurrence of outbreaks than operational practices

Results: Environmental health

- HACCP was not protective
- Formal food hygiene training was not protective
- Risk rating scores and categories were not useful in predicting catering businesses associated with FBO

HACCP – not protective

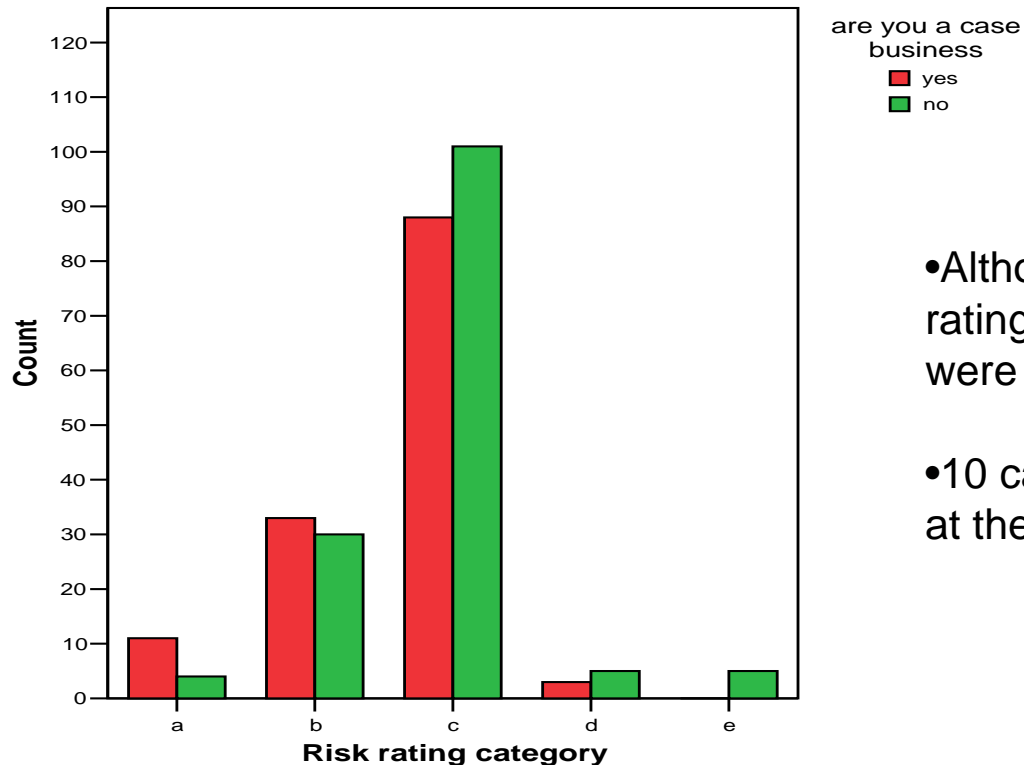
- Hedberg et al. (2006) found that awareness of HACCP was not associated with outbreak status in restaurants in U.S.A.
- Barriers associated with application (The Pennington Group, 1997; Panisello et al. 1999; Mortlock et al. 1999; Taylor and Kane, 2005)
- Safer Food Better Business Initiative funded by FSA targeting micro businesses

Formal food hygiene training – not protective

- ‘supervised, instructed and/or trained’
 - How effective are we in the enforcement of ‘supervision’
 - Proportionality
- Greater knowledge and understanding do not necessarily result in implementation of good food safety practices (Taylor, 1996; Ehiri et al. 1997)
- Commercial pressures have greater impact than food safety controls than knowledge and enforcement (Luby et al. 1993)
- The ‘Gap’ between knowledge of food handlers and observed standards

Risk rating system

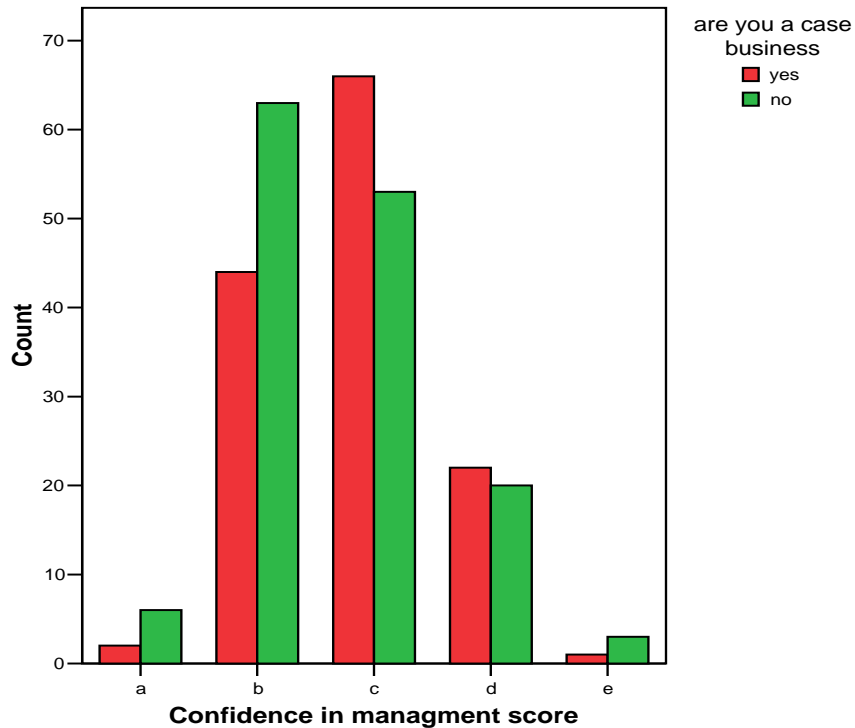
Bar graph to show risk rating categories



- Although the case and control mean risk rating scores differed significantly both were in the same inspection category C
- 10 case businesses were not registered at the time of the outbreak

Risk rating system

Bar graph to show confidence in management scores



- No significant difference between case and control confidence in management scores.

What do we want out of the risk rating system?

- Is it to predict foodborne disease outbreaks?
- ‘A’ rated premises
 - Present the greatest risk of being associated with outbreaks
 - Businesses that have the lowest standards of food safety compliance
- Is it a management tool that prioritises the local authority resources?
- Do ‘C’ rated premises require review?
- How useful is ‘Confidence in management’

The way forward

- Use information on catering businesses to either prioritise or apply different intervention strategies
 - Suppliers
 - Larger SMEs
 - Types of businesses
- Time for review?
 - Risk rating system
 - Approach to food hygiene training
 - Independent evaluation of HACCP initiatives

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