Food Safety Practice and Food Safety Knowledge in Queensland’s Retail Food Businesses: Levels, Gaps and Direction for Reform

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Abstract

Food safety is one of the World Health Organisation’s (WHO) top ten priorities (WHO 2008). The WHO (1999a) estimates that the incidence of diarrhoeal diseases alone is 4000 million cases per year worldwide indicating serious underlying food safety problems. WHO (1999a) also advises that contaminated food contributes to 1.5 billion cases of diarrhoea in children each year, resulting in more than three million premature deaths. These food-borne deaths and illnesses are shared by both developed and developing nations (Centre for Science in the Public Interest 2005). Food poisoning remains a significant public health issue for Australia (Australia New Zealand Food Authority (ANZFA) 1996), with an estimated 4.2 million individual cases of food-borne illness in Australia per year, resulting in a total annual cost to Australia of approximately $2.7 billion per year (Queensland Health 1999; ANZFA 1999b). Unofficial estimates of the number of food-borne illness cases in Queensland in 2002 are between 1.6 million and 1.9 million cases per year.

Internationally the WHO has called for more systematic and aggressive steps to be taken to significantly reduce the risk of food-borne diseases (WHO 2008). Nationally the federal government states that the most important reason for introducing food safety reform in Australia is the need to reduce the national incidence of food-borne illness (Roche 2002). The Queensland government has advised that it is committed to food safety in the food supply chain from source to consumption (Queensland Health 2000). Australia’s food hygiene regulatory system costs government $18.6 million (net) to enforce and small business $337 million in compliance costs per year, and yet 11,500 consumers contract food-borne disease every day (ANZFA 1999b). Federal, state and territory governments throughout Australia have all acknowledged that this is unacceptable.

A reduction in food-borne illness of just 20% would result in an annual saving to the Australian community of over $500 million (ANZFA 1999a), as well as reducing human mortality, morbidity and suffering. To improve the safety of our food, reduce food-borne illness and to assist Australia develop a thriving food industry, the federal, state and territory governments agreed on a series of national food safety reforms (Queensland Health 2000; ANZFA 1999a).

But this is not an easy task. The food industry is one of Australia’s major employers with an estimated 131,500 food businesses throughout the country and an annual retail turnover in 1996-1997 of $41 billion (Queensland Health May 1999). In Queensland there are approximately 30,000 registered food businesses (Queensland Health 2004). The majority of these are small food businesses. Owners of small food businesses face considerable challenges to be successful. To improve food safety levels, a number of challenges must be faced and overcome by the both the food industry and government at all levels.
This study focuses on the food handling practices and food safety knowledge levels in Queensland’s food industry. The study design used quantitative methods with a triangulation approach. The research was conducted in two parts. Firstly, the assessment of on-site food business practices was conducted using observation and a structured personal interview. Assessments were made of 403 food businesses, from a sampling frame which included 41 Queensland local government areas, covering approximately 85% of Queensland’s population. Secondly, operators’ food safety knowledge, basic understanding of their legislative requirements, how they comply and their opinions regarding the legislation were assessed through computer assisted telephone interviews (CATI). Interviews were conducted with 1316 food businesses, from a sampling frame which included all Queensland local government areas and covered 100% of Queensland’s population.

The findings provide baseline data on the food industry in Queensland. Qualitative analysis of the findings provides further insight and important guidance for improving food safety. The thesis concludes that (1) while 91.4% of all food business owners/operators report that they have appropriate food hygiene skills and knowledge, the findings do not support this; (2) there is low industry awareness of the food safety legislation that applies to their business; (3) there are a number of areas where safe food handling practices are lower than acceptable standards; (4) overall food industry operational compliance levels with food safety requirements tend to be higher than associated industry knowledge levels; and (5) food businesses with Hazard Analysis Critical Control Point (HACCP) based food safety plans operate more safely than businesses without food safety plans.

The major recommendations of the study are that (1) mandatory level food safety training be introduced for all food handlers (including food safety supervisors) and a food safety supervisor be on site at all times for all high and medium risk food businesses; (2) all food businesses have on site, copies of the food safety legislation that applies to their business; (3) there is a legislative requirement for a consistent approach and uniform inspection regime for all local governments based on risk management principles and local governments submit annual reports to the State government; (4) when determining the operator’s compliance with the food safety skills and knowledge requirements of the Food Safety Standards, that direct correlation between a food business’s operations and the operator’s food safety skills and knowledge is not used as the sole indicator of compliance; and (5) after improvements in industry food safety skills, knowledge and operational levels are obtained, the food safety reform process in Queensland progress to introduce mandatory HACCP based food safety programs in all high and medium risk food businesses.
Declaration of Originality

This thesis presents the original research of the author. This work has not been previously submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no materials previously published or written by another person, except where due reference is made in the thesis.

Between April and October 2002 the researcher was contracted by Queensland Health to design and manage a benchmark survey to determine the level of food safety in Queensland’s food businesses. At the start of the research, overall direction was provided by Queensland Health in that:

- The survey would be similar in principle to the National Food Handling Benchmark 2000/2001 report,
- The survey would allow comparison of results with the National Food Handling Benchmark 2000/2001 report,
- The survey would consist of an on site survey and a computer assisted telephone interviews survey,
- To provide statistical validity of results the onsite survey would have an n of 400 and the computer assisted telephone interviews survey would have an n of 1200.

All other design and organisation was developed by the researcher reporting to a Queensland Health steering committee. This included:

- Designing the on site survey and CATI survey methodology,
- Managing the on site and CATI surveys,
- Recording and analysis of the on-site survey data and results,
- Writing the first draft of the Queensland Health report for the background, methodology and on site survey results.

The CATI survey data was not available until after October 2002. The Queensland Health report remains unpublished. Queensland Health has kindly allowed use of the data collected from the benchmark survey (which the researcher managed) to be used in this thesis. All data taken from the unpublished Queensland Health report is acknowledged (referenced).

Statistical and epidemiological analyses of the data was conducted by Dr. Philip Baker, Environmental Health Unit (Queensland Health), David Firman, Epidemiology Services Unit (Queensland Health) and Michael Findlay, Epidemiology Services Unit (Queensland Health). The Queensland Health - Queensland Food Handling Benchmark Survey 2002 report was
written by James Stephanos, Environmental Health Unit (Queensland Health), Dr. Philip Baker, Environmental Health Unit (Queensland Health) and Trevor Green (Queensland Health).

Queensland Health has ownership and intellectual property of the data. The data can not be reproduced without the permission of Queensland Health (Appendix 13).

Signed

Trevor David Green
Table of Contents

Abstract i
Declaration of Originality iii
Table of Contents v
List of Tables ix
List of Figures ix
List of Abbreviations x
Acknowledgements xi

CHAPTER 1 INTRODUCTION 1
  1.1 Introduction 1
  1.2 Background 3
  1.3 Nature, Scope and Aim of Research 5
  1.4 Methodology 6
  1.5 Structure of Thesis 7
  1.6 Conclusion 9

PART 1 LITERATURE REVIEW 10

CHAPTER 2 FOOD SAFETY AND FOOD REGULATION 10
  2.1 Introduction 10
  2.2 Background 10
  2.3 Food-Borne Illness 11
  2.4 Factors Responsible For Increased Food-Borne Illness 15
  2.5 Food Safety Regulation 17
  2.6 Cost of Food Safety Regulation 25
  2.7 The National Food Safety Reform Process 27
  2.8 The New Food Safety Standards 29
  2.9 Queensland Food Act 2006 33
  2.10 Conclusion 35

CHAPTER 3 SMALL BUSINESSES 36
  3.1 Introduction 36
| 3.2 | Small Businesses: A Definition | 36 |
| 3.3 | Australian Small Business Statistics | 37 |
| 3.4 | Advantages and Disadvantages of Small Business Ownership | 38 |
| 3.5 | Personal Characteristics and Suitability for Successful Small Business Ownership | 39 |
| 3.6 | Basic Problems of Small Business | 41 |
| 3.7 | Small Business Failure | 41 |
| 3.8 | Reasons for Small Business Failure | 42 |
| 3.8.1 | Internal Factors for Small Businesses Failure | 43 |
| 3.8.2 | External Factors for Small Businesses Failure | 45 |
| 3.9 | Small Food Businesses | 46 |
| 3.10 | Conclusion | 48 |

**CHAPTER 4  HACCP BASED FOOD SAFETY PROGRAMS**

| 4.1 | Introduction | 49 |
| 4.2 | HACCP | 49 |
| 4.3 | The Seven HACCP Principles | 51 |
| 4.4 | Implementation and Maintenance of the HACCP Plan | 53 |
| 4.4.1 | Factors affecting HACCP success | 53 |
| 4.4.2 | Procedural steps for HACCP | 54 |
| 4.5 | HACCP Based Food Safety Programs and Small Food Businesses - The Challenge | 58 |
| 4.6 | Adopting HACCP to be more suited to small business operations: the ‘Process Approach” | 62 |
| 4.7 | The introduction of HACCP based food safety programs for high risk food businesses in Queensland | 63 |
| 4.8 | Interstate and Overseas Trends | 64 |
| 4.8 | Conclusion | 66 |

**PART 2  METHODOLOGY**

**CHAPTER 5  CONCEPTUAL FRAMEWORK, STUDY DESIGN AND DATA COLLECTION**

| 5.1 | Introduction | 68 |
| 5.2 | Developing the Conceptual Framework | 68 |
| 5.2.1 | Research Rational | 68 |
| 5.2.2 | Research Question | 69 |
| 5.2.3 | Research Objectives | 70 |
| 5.3 | Conceptual Framework | 70 |
| 5.4 | Research Objective | 72 |
7.5 Conclusion

CHAPTER 8 DISCUSSIONS AND RECOMMENDATIONS

8.1 Introduction

8.2 Major Findings
8.2.1 Knowledge of Food Safety
8.2.2 Knowledge of Food Safety Legislation
8.2.3 Food Safety Practice
8.2.4 Food Safety Practice compared to Food Safety Knowledge
8.2.5 HACCP Based Food Safety Programs

8.3 Recommendations of the Study
8.3.1 Recommendation 1 Food Safety Knowledge
8.3.2 Recommendation 2 Food Legislation Knowledge
8.3.3 Recommendation 3 Food Safety Practice
8.3.4 Recommendation 4 Food Safety Practice compared to Food Safety Knowledge
8.3.5 Recommendation 5 HACCP Based Food Safety Programs

8.3 Conclusion

CHAPTER 9 CONCLUSIONS

9.1 Introduction

9.2 Conclusions from this Study

9.3 Future Challenges for Implementation of the Research

REFERENCES

Appendix 1. Standard 3.2.1 – Food Safety Programs
Appendix 2. Standard 3.2.2 – Food Safety Practices and General Requirements
Appendix 3. Business Selection Criteria
Appendix 4. Local Government Areas
Appendix 5. Survey Form - For On-site Survey
Appendix 6. Letter sent to Businesses for On-site Survey
Appendix 7. Letter sent to Local Governments for On-site Survey
Appendix 8. Interview Questions for CATI Survey
Appendix 9. Letter sent to Businesses for CATI Survey
Appendix 10. On Site Survey Results
Appendix 11. CATI Survey Results
Appendix 12. Findings – HACCP Based Food Safety Programs (Chi-square Tables)
Appendix 13. Queensland Health Approval For Use of Data
List of Tables

Table 1  Food-borne pathogens and chemicals of public importance                       14
Table 2  Primary and subordinate food legislation in Australia (May 1999)           18
Table 3  Cost of food safety regulation                                              26
Table 4  Recent initiatives towards national uniformity in food safety               28
Table 5  Food Safety Standards                                                      30
Table 6  The Australian small business sector                                        38
Table 7  Internal and external reasons for small business failure                    43
Table 8  Advantages of HACCP over traditional food safety systems                    50
Table 9  The seven principles of HACCP systems                                        51
Table 10 Fundamental prerequisite programs for the successful introduction of HACCP 54
Table 11 Examples of matters observed                                                75
Table 12 Examples of matters observed through measurement                             76
Table 13 Examples of matters where findings were specifically obtained via Interview 77
Table 14 Survey estimate of 50%, 60%, 70%, 80% and 90% at 95% confidence intervals (CI) for the 403 sample size. 87
Table 15 Findings – knowledge of food safety                                         155
Table 16 Findings – knowledge of food safety legislation                              161
Table 17 Findings – food safety practice                                             163
Table 18 Findings – Food safety practice compared to food safety knowledge           169
Table 19 Findings – HACCP based food safety programs                                  171

List of Figures

Figure 1  Conceptual Framework                                                       7
Figure 2  HACCP Foundations                                                            56
Figure 3  Food Safety Direction Model                                                   182
## List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS</td>
<td>Australian Bureau of Statistics</td>
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<tr>
<td>ANZFA</td>
<td>Australia New Zealand Food Authority (now FSANZ)</td>
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<td>BSE</td>
<td>Bovine Spongiform Encephalopathy</td>
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<td>CATI</td>
<td>Computer Assisted Telephone Interview</td>
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<td>CCP</td>
<td>Critical Control Point</td>
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<td>CI</td>
<td>Confidence Interval</td>
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<tr>
<td>EHEC</td>
<td>Enterohaemorrhagic <em>Escherichia coli</em></td>
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<tr>
<td>EHO</td>
<td>Environmental Health Officer</td>
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<tr>
<td>FSANZ</td>
<td>Food Standards Australia New Zealand (formerly ANZFA)</td>
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<tr>
<td>FSS</td>
<td>Food Safety Standards</td>
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<tr>
<td>GMP</td>
<td>Good Manufacturing Programs/Practices</td>
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<td>HACCP</td>
<td>Hazard Analysis Critical Control Points</td>
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<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<tr>
<td>HUS</td>
<td>Haemolytic Uraemic Syndrome</td>
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<tr>
<td>LACOTS</td>
<td>Local Authorities Co-ordination Body on Food and Training Standards</td>
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<tr>
<td>LGA</td>
<td>Local Government Areas</td>
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<tr>
<td>NASA</td>
<td>National Aeronautics and Space Agency</td>
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<tr>
<td>SOP</td>
<td>Standard Operating Procedures</td>
</tr>
<tr>
<td>PHF</td>
<td>Potentially Hazardous Foods</td>
</tr>
<tr>
<td>PHU</td>
<td>Queensland Health Public Health Unit</td>
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<tr>
<td>RRMA</td>
<td>Rural Remote Metropolitan Areas Classification Scheme</td>
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<td>WHO</td>
<td>World Health Organisation</td>
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