

Final Action Report for Food Safety Victoria

Training Baseline Study

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Executive Summary

The Principal Hypothesis

Food Safety Victoria (FSV) wished to test their principal hypothesis. Namely,

"That while the senior staff working in the various food businesses possess a consistently high level of knowledge in the correct procedures for food safety, this knowledge is not being consistently passed on to those junior staff who work under their direct supervision."

The results of the inaugural FSV benchmark study confirmed this principal hypothesis to be correct.

The overall conclusions from the data analyzed indicated that the junior staff surveyed have significantly lower levels of knowledge in the correct procedures for food safety, when compared to senior staff. This is especially the case in the area of food storage temperatures, both for the heating and chilling of stored foods.

The Background

As a result of amendments to the food act (1984), businesses responsible for food preparation and handling will now have to comply with a national food safety standard. In order for this new food safety regime to succeed, the level of staff training at food businesses will need to be improved. Before this can be done, a benchmark study needs to be undertaken to measure the current level of staff training in the correct methods of food preparation and handling.

In particular the extent to which the knowledge of how to safely handle food has penetrated throughout the various types of food business that FSV has to regulate.

The types of food business surveyed were: Hospitals and Aged Care Facilities, Fast Food Restaurants, Full-Service Restaurants, Manufacturing, Wholesale and Retail.

The Main Objectives:

- Measure the level of knowledge regarding the correct temperature for cold storage (and heating) of food.
- Measure the level of knowledge regarding the correct procedures for food preparation and handling.
- Investigate to determine how much of this knowledge is passed onto the junior staff.
- Identify the most suitable sources of educational information for training food staff in the correct procedures.

The Overall Findings:

- That senior staff were better educated than junior staff.
- That junior staff were more likely to have been trained on the job.
- The level of education had no real impact on the level of knowledge regarding food safety. A person with a degree or diploma was no more or less knowledgeable about food safety than a person trained on the job.
- That this on the job training is not as effective as it could be, due to the fact that the junior staff consistently lagged behind the senior staff in terms of their knowledge of the correct procedures for food safety.
- Junior staff employed in fast food outlets have the lowest knowledge levels and therefore are the most vulnerable to making a mistake through ignorance.
- Both senior and junior staff appeared confused when asked questions regarding the length of time that food can be stored.
- Both senior staff and junior staff gave conservative answers to questions. This meant that those same answers were technically incorrect.

The Key Recommendations:

- A campaign targeting senior staff to educate them that it is their responsibility to educate their subordinates, with a particular emphasis on training the casual junior staff.
- Given that local government were mentioned as a significant source of food safety information, any campaign conducted by FSV will need to embrace local government as a strategic partner.
- Further research would allow an examination of how the senior staff actually train their junior staff. It would also be able to test the effectiveness of how well the senior staff are supervising their juniors. This research needs to cover all types of junior staff members, especially the casual junior staff who spend the least amount of time at the actual food business, and who may not receive the same level of training that the more regular staff members receive.
- Additional qualitative research needs to be conducted to probe the current attitudes of food handling personnel into food safety knowledge and procedures. Such research would need to cover the senior staff, the regular part time junior staff, and the casual junior staff.

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Background

As a result of amendments to the food act (1984), businesses responsible for food preparation and handling will now have to comply with a national food safety standard. In addition, food businesses will now have to nominate a food safety supervisor to ensure that the appropriate standards are implemented and maintained.

Further, the setting minimum training standards is often proposed as a potential requirement of a food safety system. To enable an assessment of the current changes, and any further proposals, a benchmark study needs to be undertaken to measure the current level of staff training, and their knowledge in the correct methods of food preparation and handling.

To this end Adept research was commissioned to manage the research project, arrange a suitable team of interviewers, supervise the data processing, analyze the final results and report to FSV.

Methodology

A structured face to face survey was administered using the interviewers from AB Research Services. A total of 583 responses were obtained across senior and junior staff. Representing the food business categories of: Hospitals and Aged Care Facilities, Fast Food Restaurants, Full-Service Restaurants, Manufacturing, Wholesale and Retail.

Each interview lasted approximately 12 minutes in length. The data was key punched and cross tabulated by Fieldworks Pty Ltd and produced in Excel format. The final report has the data placed in tables with the key analysis points displayed below each table.

Limitation

This research was limited by the design of the original questionnaire. Further research would allow an examination of how the senior staff actually train their junior staff. It would also be able to test the effectiveness of how well the senior staff are supervising their juniors.

Prior to the study commencing it was agreed that the junior casual staff were the most vulnerable group, as it was assumed that they would lack knowledge in the correct procedures for food safety.

When the actual interviewing took place, the interviewers had difficulty in obtaining interviews with casually employed junior staff, due to the fact that they were only present during peak periods of activity when all the staff present were too busy to be interviewed. As a result the junior staff interviewed in this study were more likely to be regular part time employees, who may have had a relatively higher level of training in food safety.

Glossary of Abbreviations.

1. Qualifications

DEG = Degree

DIP = Diploma

CERT = Certificate

INT = Internally paid training course.

EXT = Externally paid training courses.

OTJ = On the job training.

2. Category of business.

FSR = Full Service Restaurant

TA/FF = Take Away / Fast Food

HOSP = Hospital & Aged Care

MANUF = Manufacturing

WHOLE = Wholesaler

RETAIL = Retail

3. Definition of senior and junior staff.

Junior staff categories

- Apprentice Chef
- Cook
- Waitress / floor staff
- Kitchen hand / kitchen assistant
- Crew
- Shop Assistant / salesperson
- Other

Senior staff categories

- Manager / Store Manager
- 1st Assistant Manager
- 2nd Assistant Manager
- Owner/Manager
- Director
- Head Chef
- Executive Chef
- Chef
- Supervisor / shift supervisor
- Duty Manager

Overall findings on a question by question basis.

Q1 What is your job title?

Table 1. The total number of staff by business

JOB TITLE	TOTAL	FSR	TA/FF	HOSP	RETAIL	MANUF	WHOLE
Number of actual respondents	583	149	183	82	97	52	20
Percentage	100	100	100	100	100	100	100
Manager / Store Manager	16	14	20	12	18	13	20
1st Assistant Manager	5	5	10	5	2	0	0
2nd Assistant Manager	1	0	4	0	0	0	0
Owner/Manager	20	21	21	6	30	23	10
Director	2	1	0	0	2	12	10
Head Chef	4	11	1	5	0	2	0
Executive Chef	1	2	0	0	0	0	0
Chef	7	13	4	15	1	4	0
2nd Chef	2	5	0	1	1	0	0
Apprentice Chef	1	1	0	0	3	2	0
Cook	4	4	2	10	3	6	10
Waitress / floor staff	5	13	4	4	2	0	0
Kitchen hand / kitchen assistant	9	3	13	13	6	8	20
Crew	2	1	6	0	0	0	0
Supervisor / shift supervisor	3	4	2	10	2	0	0
Duty Manager	1	1	1	0	0	0	0
Shop Assistant / Salesperson	8	3	6	0	19	21	20
Baker / Partner	1		1	0	2	6	0
Other	8	3	5	24	9	8	10
None / no title supplied	0	0	0	0	1	0	5
Not answered	0	0	0	1	0	0	0

- Those business that serviced directly to the general public (fast food / take away outlets, full service restaurants, and retail outlets) were the largest groups surveyed. This reflected their larger numbers, relative the other businesses covered in the study.
- Respondents in the owner / manager category were the largest response group in the senior category. Particularly in retail outlets (30%), full service restaurants (21%) and fast food / take away outlets (21%).
- Respondents in the junior categories were most obvious in:
 - Waitress / floor staff at 13% in full service restaurants.
 - Kitchen hand / kitchen assistant at 13% in fast food / take away outlets.
 - Shop Assistant / Salesperson at 19% in retail outlets.

Q2 How many staff (if any) work under your direct supervision?

Table 2.1 Staff under supervision matched by type of business.

Only senior staff responses were analyzed for this table, due to the very small number of junior staff who had any kind of supervisory role.

	FSR	TA / FF	HOSP	RETAIL	MANUF	WHOLE	TOTAL
RESPONDENTS	149	183	82	97	52	20	583
Percentage	100	100	100	100	100	100	100
None supervised	23	33	40	32	33	45	32
1 supervised	7	8	4	7	4	5	6
2 supervised	8	4	1	9	19	15	7
3 supervised	8	4	6	13	13	0	8
4 supervised	8	7	4	5	7	5	6
5 supervised	9	3	2	5	0	5	4
6 supervised	6	3	5	3	2	5	4
7 supervised	4	2	4	4	4	0	3
8 supervised	3	3	1	4	0	0	3
9 supervised	1	0	1	0	2	5	1
10 supervised	8	3	2	1	6	5	4
More than 10 supervised	15	31	29	14	10	10	21
Not Answered	0	0	1	3	0	0	1

- The responses were concentrated at the two opposite ends of the answer range. With the largest response percentage having no staff under their supervision, followed by those with more than ten staff under their supervision.
- In manufacturing and wholesaling, the trend was to have only two staff under their supervision.
- In full service restaurants and retail outlets the trend was to have more than ten people under their supervision. But to a lesser degree than is the case with the fast food / take away and hospitals / aged care sectors.

Table 2.2 Staff under supervision matched by type of education.

Only senior staff responses were analyzed for this table, due to the very small number of junior staff who had any kind of supervisory role.

	DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
RESPONDENTS	16	51	256	89	63	312	52	583
Percentage	100	100	100	100	100	100	100	100
None supervised	6	10	22	18	16	35	38	32
1 supervised	0	6	7	3	3	4	12	6
2 supervised	0	8	8	6	5	7	4	7
3 supervised	0	8	8	4	2	7	6	8
4 supervised	0	2	7	6	5	8	2	6
5 supervised	19	2	4	2	6	4	8	4
6 supervised	13	4	7	3	10	3	2	4
7 supervised	0	4	5	2	0	2	4	3
8 supervised	13	4	3	2	3	3	6	3
9 supervised	6	4	1	1	2	1	0	1
10 supervised	0	2	6	8	5	4	2	4
More than 10 supervised	44	47	22	43	43	23	17	21
Not Answered	0	0	0	1	2	1	0	1

- As with table 2.1, the answers were concentrated at the two opposite ends of the answer range.
- More staff with degrees or diplomas responded with having over ten people under their supervision. This response was slightly higher than the response for the staff with internal or external training courses.
- When both of the above tables are analyzed, a pattern emerges of senior staff either have a relatively large number of people reporting to them, or no one at all.

Q 3 Please describe your type of employment.

Table 3.1 Employment matched with education.

	DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
RESPONDENTS (raw figures)	13	43	183	66	46	176	30	361
SENIOR (%)	100	100	100	100	100	100	100	100
Full time	92	91	87	93	92	91	91	89
Part time	8	9	7	2	4	5	3	7
Casual	0	0	5	0	2	3	3	3
Not answered	0	0	1	5	2	1	3	1
RESPONDENTS (raw figures)	1	4	48	15	10	117	19	178
JUNIOR (%)	100	100	100	100	100	100	100	100
Full time	100	75	48	60	40	39	53	42
Part time	0	0	35	27	20	29	21	28
Casual	0	25	17	13	40	32	26	30
Not answered	0	0	0	0	0	0	0	0

- Full time senior staff are the most strongly represented in all types of education.
- Full time junior staff are more represented in tertiary qualifications and internal training courses.
- Part time junior staff are more represented in certificates, internal training courses and the job training.
- Casual junior staff are more represented in external training courses and on the job training.
- Overall 89% of qualified senior staff are full time.
- Overall 42% of qualified junior staff are full time, followed by 28% part time and 30% casual.

From the above we can conclude that the overall spread of tertiary education is heavily concentrated among full time senior staff. With the junior staff, full time workers are still more likely to have these qualifications, but the gap is narrower. With part time and casual junior staff the education is spread more evenly.

Q4. Which of these qualifications do you have in food handling (Select all that apply)

Table 4.1 Qualifications matched with industry sector.

	FSR	TA / FF	HOSP	RETAIL	MANUF	WHOLE	TOTAL
RESPONDENTS	111	116	40	56	30	8	361
SENIOR	100	100	100	100	100	100	100
On-the-job training	43	53	53	52	43	38	49
Certificates	61	37	68	41	67	25	51
Employer paid ITC	15	24	20	16	7	25	18
Employer paid ETC	14	10	28	9	7	13	13
Diploma	12	14	15	5	13	13	12
Other	12	5	13	9	0	13	8
Bachelor Degree	5	3	8	0	0	13	4
None	4	9	3	9	0	25	6
Not answered	0	1	0	0	0	0	0
RESPONDENTS	37	58	22	32	19	10	178
JUNIOR	100	100	100	100	100	100	100
On-the-job training	54	71	45	72	84	70	66
Certificates	30	12	41	38	42	10	27
Employer paid ITC	5	5	27	9	0	10	8
Employer paid ETC	5	3	14	3	5	10	6
Diploma	0	3	0	3	5	0	2
Bachelor Degree	0	0	0	3	0	0	1
Other	11	3	32	3	5	40	11
None	14	17	0	3	0	0	9
Not answered	0	1	0	0	0	0	0

- With senior staff, certificates predominate particularly in full service restaurants, hospitals and manufacturing. Ahead of on the job training.
- Take away / fast food, retail and wholesale senior staff are more likely to have been trained on the job, ahead of certificates.
- Employer paid training (both internal and external) comes in third, ahead of diplomas as a source of education for senior staff.
- With the junior staff, the education is heavily concentrated in on the job training. Significantly ahead of certificates. This applies to all industry groups.
- The widest gap was in fast food / take away - 71% on the job compared with 12% certificates.

Q 5 Which of these descriptions best describes your business? (Pick more than one, if necessary)

Table 5.1 Category of business.

	FSR	TA / FF	HOSP	RETAIL	MANUF	WHOLE	TOTAL
RESPONDENTS	149	183	82	97	52	20	583
	100	100	100	100	100	100	100
Restaurant/cafe	95	58	5	23	12	30	49
Snack bar/take away	23	92	6	35	23	30	44
Retailer	4	9	7	97	85	60	31
Food service	20	36	28	29	29	35	29
Manufacturing/processor	1	1	5	21	94	70	16
Hospital/nursing home	1	0	98	0	0	0	14
Caterer	3	5	13	6	2	10	6
Hotel/motel/guesthouse	23	0	0	0	0	0	6
Distributor/importer	0	0	2	3	23	65	5
Pub/tavern	11	1	0	0	6	0	3
Canteen/kitchen	1	2	13	0	0	0	3
Other	1	1	2	5	0	30	3
Home delivery	1	3	0	0	0	10	2
Meals on Wheels	0	1	4	1	0	5	1
Transport	1	0	4	0	0	10	1
Storage	0	0	4	1	0	5	1
Packer	0	1	2	0	0	5	1
Childcare centre	0	0	4	0	0	0	1
Charitable or community organisation	1	0	1	0	0	0	0
Mobile food operator	0	1	0	0	0	0	0
Temporaty food premises	0	0	0	0	0	0	0
Market stall	0	0	0	0	0	0	0
Don't know	0	0	0	0	0	0	0

Q 6 Do you directly supply or manufacture food for organizations regularly serving any of the following types of people?

Table 6.1 Supplies food to elderly people, sick people or pregnant women.

	Elderly people	Sick people	Pregnant women	Children under 5 years
RESPONDENTS	583	583	583	583
	100	100	100	100
Yes	15	8	5	5
No	82	89	92	92
Not answered	3	3	3	3

- The clear majority surveyed do not supply food to any of these recipients.

Q7. How often should you check the temperature of foods delivered? Would you check...

Table 7.1 Frequency of temperature checking match with qualification.

		DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
Senior	Never	0	2	3	0	7	5	0	4
	Occasionally	0	7	5	5	0	5	10	5
	Regularly	8	19	28	12	23	25	23	26
	Always	92	72	62	81	70	64	63	63
	Don't know	0	0	2	2	0	1	3	2
	Not answered	0	0	0	0	0	0	1	0
Junior	Never	0	0	6	0	0	3	21	8
	Occasionally	0	0	4	0	0	9	0	7
	Regularly	0	25	19	33	20	25	5	20
	Always	100	75	67	60	80	50	74	54
	Don't know	0	0	2	7	0	10	0	9
	Not answered	0	0	2	0	0	3	0	2

- In the important "check the temperature" category, a very high percentage was recorded in both senior and junior as always checking the temperature..
- With senior staff, the higher the level of education, the more likely they would always check the temperature.
- With junior staff temperature checking is less frequent, particularly for those who are trained on the job.

Q 8 Which type of these foods should you check the temperature when delivered?

Table 8.1 Food category matched with qualification.

		DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
Senior	Frozen food	85	77	78	80	80	78	67	75
	Chilled food	77	74	78	77	74	74	67	71
	Fresh food	62	60	58	61	67	57	57	57
	Hot food	46	37	43	35	39	35	43	35
	All foods	8	7	10	11	11	9	23	12
	Dry foods	15	7	7	11	9	5	10	6
	Not answered	0	0	1	0	2	1	3	1
Junior	Frozen food	0	50	65	87	80	73	74	67
	Chilled food	0	50	69	87	70	70	53	65
	Fresh food	100	50	44	60	60	40	58	41
	Hot food	0	0	35	47	40	35	37	34
	All foods	0	25	15	7	10	11	11	13
	Dry foods	100	25	10	7	10	4	0	5
	Not answered	0	0	6	7	0	6	11	7

- There appears to be a high level of awareness regarding the need to check the temperature of frozen, and chilled food.
- This level of awareness applies evenly across all the education levels.
- Overall, senior staff are more likely to check the temperature than junior staff.
- The one relative weakness for both senior and junior staff is hot food. Both recorded much lower levels of awareness of the need to check hot food temperatures, when compared against the other three food categories. This reflects the lack of experience in this area. Due to the fact that very few businesses actually get hot food delivered to their premises.

Q9. Do you have a temperature probe?

Table 9.1 Senior and junior staff who identify that the business has a temperature probe matched with level of education.

		DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
Senior	Yes	100	91	93	98	91	93	93	91
	No	0	7	4	2	7	4	3	5
	Not necessary for the type of food received	0	0	1	0	0	2	0	2
	Don't know	0	2	1	0	2	1	0	1
	Not answered	0	0	1	0	0	1	3	1
Junior	Yes	100	100	83	100	90	79	68	78
	No	0	0	13	0	10	3	26	8
	Not necessary for the type of food received	0	0	0	0	0	3	0	2
	Don't know	0	0	2	0	0	11	0	9
	Not answered	0	0	2	0	0	3	5	3

- Nearly all senior staff surveyed are aware that the business has a temperature gauge.
- Most of the junior staff are aware that the business has a temperature gauge, however only 79% of the staff who have on the job training have a temperature gauge, with 11% not knowing what the question was about and 3% not answering the question at all. A combined level of ignorance of 14%.

Table 9.2 Showing the number of businesses possessing a temperature probe.

	TOTAL	FSR	TA/FF	HOSP	RETAIL	MANUF	WHOLE
RESPONDENTS	583	149	183	82	97	52	20
Percentage	100	100	100	100	100	100	100
Yes	87	85	88	90	87	88	80
No	6	9	3	6	5	8	10
Not necessary for the type of food received	2	0	3	0	3	0	10
Don't know	3	5	5	0	2	4	0
Not answered	2	1	1	4	3	0	0

- A clear majority confirmed that they had a temperature probe.

Q 10 What temperature should chilled food be stored at?

Table 10.1 Those respondents who were able to nominate a food chilling temperature, regardless of whether their answer was correct or not. Matched with their education level.

		DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
Senior	Celsius/ Centigrade	100	98	96	92	98	91	97	92
	Don't know	0	0	1	0	2	5	3	4
	Not applicable - do not have chilled food on site	0	2	1	6	0	3	0	3
	Not answered	0	0	2	2	0	1	0	1
Junior	Celsius/ Centigrade	100	100	94	87	100	74	89	75
	Don't know	0	0	4	13	0	22	11	21
	Not answered	0	0	2	0	0	2	0	1
	Not applicable - do not have chilled food on site	0	0	0	0	0	3	0	3

- Again this was very high across all areas of senior staff with 92% overall being able to nominate a temperature.
- It was also high among junior staff, although the don't know was 21% overall. The two main training weak points were:
 - On the job training had a don't know of 22%.
 - Paid internal training had a don't know of 13%.

Table 10.2 Those who responded with the correct temperature matched with their industry grouping. The combined total of senior and junior staff .

	FSR	TA/FF	HOSP	RETAIL	MANUF	WHOLE	TOTAL
RESPONDENTS	149	183	82	97	52	20	583
OVERALL	100	100	100	100	100	100	100
Correct temperature	71	62	63	64	67	55	66
Incorrect temperature	19	19	29	21	17	20	20
Don't know	5	14	4	7	10	15	9
Not applicable - do not have chilled food on site	4	4	0	3	2	10	3
Not answered	1	1	4	5	4	0	2

- Accurate knowledge varies between industries, with full service restaurants recording the highest level of knowledge and wholesalers the lowest level. Overall only 66% (2/3 of respondents) could nominate the correct temperature.
- The incorrect temperature was highest in hospitals, followed by retail outlets.
- The don't know response was highest in fast food/take away and wholesalers.

Table 10.3 Those who responded with the correct temperature matched with their education level. The combined total of senior and junior staff.

	DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
RESPONDENTS	16	51	256	89	63	312	52	583
OVERALL	100	100	100	100	100	100	100	100
Correct temperature	75	82	73	73	78	65	56	66
Incorrect temperature	25	16	21	18	20	19	36	20
Don't know	0	0	2	2	2	11	6	9
Not applicable - do not have chilled food on site	0	2	1	6	0	3	0	3
Not answered	0	0	3	1	0	2	2	2
	100	100	100	100	100	100	100	100

- The overall knowledge figure was again 66%.
- All education groups recorded a correct percentage of above 70%, with the exception of those respondents who received on the job training. Where the result was only 65%.
- Staff who had received specific training, or a certificate, recorded a range of 18 - 21% incorrect answers.
- Those with a diploma only recorded a 16% incorrect answer.
- On the job training was a 19% incorrect answer.
- Excluding staff with degrees, there was no significant improvement in the level of correct answers across the staff who had received specialist training.

The 25% incorrect answer for degrees needs to be treated cautiously due to the small number of actual respondents (16) which makes drawing accurate conclusions difficult.

Q 11 What temperature should cooked food be held in a bain marie (or something similar that holds hot food)

Table 11.1 Those respondents who were able to nominate a hot food storing temperature, regardless of whether their answer was correct or not. Matched with their education level.

		DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
Senior	Celsius/ Centigrade	92	89	77	73	74	73	67	72
	Don't know	0	2	2	3	2	4	3	4
	Not answered	0	0	6	6	4	4	3	4
	Not applicable - do not have hot food on site	8	9	15	18	20	19	27	20
Junior	Celsius/ Centigrade	100	100	81	66	90	60	57	62
	Don't know	0	0	4	7	0	18	11	16
	Not answered	0	0	2	0	10	3	21	4
	Not applicable - do not have hot food on site	0	0	13	27	0	19	11	18

- Senior staff are more knowledgeable regarding storage temperatures, than junior staff.
- The level of don't know responses is significantly higher for junior staff, especially those who have received on the job training. Indicating that this area needs to be improved.

Table 11.2 Those who responded with the correct temperature matched with their industry grouping. The combined total of senior and junior staff.

	FSR	TA/FF	HOSP	RETAIL	MANUF	WHOLE	TOTAL
RESPONDENTS	111	116	40	56	30	8	361
SENIOR	100	100	100	100	100	100	100
Correct temperature	30	36	45	29	17	13	32
Incorrect temperature	48	35	43	23	43	50	39
Don't know	3	7	0	4	3	0	4
Not applicable - do not have hot food on site	16	16	13	36	33	38	20
Not answered	4	6	0	9	3	0	5
RESPONDENTS	37	58	22	32	19	10	178
JUNIOR	100	100	100	100	100	100	100
Correct temperature	35	28	23	28	11	10	26
Incorrect temperature	32	38	45	22	42	30	35
Don't know	14	24	9	3	16	30	16
Not applicable - do not have hot food on site	16	10	14	38	26	10	19
Not answered	3	0	9	9	5	20	5

- A reasonably even spread between correct and incorrect answers across all the senior staff, irrespective of their industry sector, With restaurants and manufacturers recording the most significant gaps.
- The larger gaps between correct and incorrect answers occurred in the junior responses covering fast food, manufacturing and hospitals.
- Junior staff were more likely to say they did not know the correct temperature, particularly in the fast food area.

Table 11.3 Those who responded with the correct temperature matched with their education level. The combined total of senior and junior staff.

	DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
RESPONDENTS	13	43	183	66	46	176	30	361
SENIOR	100	100	100	100	100	100	100	100
Correct temperature	23	30	33	27	39	36	27	32
Incorrect temperature	69	58	44	45	35	36	37	39
Don't know	0	2	2	3	2	4	3	4
Not applicable - do not have hot food on site	8	9	15	18	20	19	27	20
Not answered	0	0	7	6	4	5	7	5
RESPONDENTS	1	4	48	15	10	117	19	178
JUNIOR	100	100	100	100	100	100	100	100
Correct temperature	100	50	29	33	30	27	26	26
Incorrect temperature	0	50	50	33	60	32	32	35
Don't know	0	0	4	7	0	18	11	16
Not applicable - do not have hot food on site	0	0	13	27	0	19	11	19
Not answered	0	0	4	0	10	3	21	5

- With both senior and junior staff there appears a clear lack of knowledge regarding correct temperatures.
- The problem is greater with junior staff.
- Junior staff with on the job training recorded the highest don't know response.
- Junior staff were more likely to say they did not know the answer than senior staff.
- There was no significant improvement in the level of correct answers across the senior staff who had received some sort of specialist training. This excludes staff with degrees due to the small sample size.

Q 12 How long may you display food in this bain marie (hot holding) equipment?

Table 12.1 Length of time food can be displayed in bain marie matched with education level.

		DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
Senior	2 hours	54	72	73	70	80	70	70	70
	4 hours	23	14	10	5	0	6	7	9
	More that 4 hours	8	0	1	2	0	2	0	1
	Not answered	15	14	16	24	20	23	23	20
Junior	2 hours	100	75	83	86	80	65	63	68
	4 hours	0	0	8	0	0	13	5	12
	More that 4 hours	0	0	0	7	0	2	0	2
	Not answered	0	25	9	7	20	20	32	18

- Storage times mentioned were consistent at the two hour time period, followed by the four hour time period.
- These storage times were very similar for both the senior and junior staff. The exceptions being for the area of junior staff trained by certificates and internal training courses. Here the gap widened in favor of the junior staff when a storage time of two hours was mentioned.
- The not answered category also recorded a high frequency of answers.
- Given that the correct answer to the original question was - more than four hours, it can be concluded that a either:
 - There is a degree of ignorance regarding the length of time food can be stored. and,
 - That the respondents erred on the side of caution when answering the original question.

Q 13 With regard to cooling or chilling cooked food, which of the following statements are true or false?

Table 13.1 Establishing which of the following answers are correct.

		Cooked food must be cooled to 21 Celsius within 2 hours	Cooked food must be cooled to 60 Celsius within 2 hours	Cooked food must be cooled to 5 Celsius within 2 to 6 hours	Cooked food must be cooled to 5 Celsius within 7 to 8 hours	Large amounts of cooked food should be placed in big containers and put in a cool room or refrigerator for cooling
Senior	TRUE	36	5	69	9	18
	FALSE	52	82	19	78	70
	DK	12	13	12	14	12
Junior	TRUE	35	7	60	11	20
	FALSE	48	76	22	71	65
	DK	17	17	18	18	16

- Most respondents got the first part wrong.
- Most respondents got the second part right.
- Most respondents got the third part right.
- Most respondents got the fourth part right.
- Most respondents got the fifth part right.

- The above was consistent across senior and junior staff.
- These answers clearly indicate confusion and a lack of knowledge regarding how to proceed with cooling and chilling.

Q 14 When food is removed from hot display should you?

Table 14.1 Identifying the correct procedures for disposing left over hot food. Matched with education.

		DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
Senior	Cool it and put in cold storage and reheat display next day	8	0	4	2	7	4	10	3
	Throw it away	77	93	89	87	87	90	70	87
	Sell off at end of the day	0	5	2	3	2	2	0	3
	Not answered	15	2	5	8	4	5	20	7
Junior	Cool it and put in cold storage and reheat display next day	0	0	8	0	0	3	0	5
	Throw it away	100	100	85	93	100	91	74	88
	Sell off at end of the day	0	0	4	0	0	3	0	3
	Not answered	0	0	3	7	0	3	26	4

- Throwing excess food away is the preferred option for both staff levels and across all education levels, as well as being the correct option.

Q 15 How long can food that is meant to be served either hot or chilled be left at room temperature? (select one answer only)

Table 15.1 The correct length of time food can be stored at room temperature. Matched with education.

		DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
Senior	Less than 1 hour	77	73	85	82	81	83	64	84
	Between 1 to 2 hours	8	23	10	8	13	10	13	9
	Between 2 to 4 hours	0	2	2	2	2	2	7	2
	Between 4 to 6 hours	0	0	1	0	0	1	3	0
	Don't know	15	0	0	5	4	2	0	2
	Not answered	0	2	2	3	0	2	13	3
Junior	Less than 1 hour	100	100	81	93	70	89	89	84
	Between 1 to 2 hours	0	0	15	7	20	7	11	10
	Between 2 to 4 hours	0	0	2	0	10	0	0	2
	Between 4 to 6 hours	0	0	0	0	0	0	0	0
	Don't know	0	0	2	0	0	4	0	3
	Not answered	0	0	0	0	0	0	0	1

- Less than one hour was the preferred time for both types of respondents and for all types of education.
- Between 1-2 hours was the second most frequently mentioned time.
 - 23% of senior staff with a diploma mentioned 1-2 hours.
 - 20% of junior staff with an external training course mentioned 1-2 hours.
- Given that the correct answer is between 2-4 hours, only one category gave this answer any significance with a response of 10%. (junior staff with external training).
- This suggests that there is a lack of accurate knowledge and that the respondents erred on the side of caution when answering this question. It may also be an instance of the respondents committing a form of "unconscious response error" by providing an answer that they believe the interviewer wishes to hear.

Q 16 How should you cool foods that are intended to be used that day or later?

Table 16.1 The correct procedure for cooling foods that are intended for later use.
Matched with education.

		DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
Senior	Put into fridge immediately after cooking	15	21	21	18	17	30	30	24
	Make smaller portions and put into the fridge	46	51	63	52	58	50	37	56
	Leave out and use later	8	2	1	2	0	2	0	1
	Don't know	8	5	2	6	7	4	3	4
	Not answered	0	7	4	11	9	4	17	6
	Other	23	14	9	11	9	10	13	9
Junior	Put into fridge immediately after cooking	0	0	21	13	30	31	22	27
	Make smaller portions and put into the fridge	0	50	60	60	70	43	47	47
	Leave out and use later	0	0	4	0	0	3	0	4
	Don't know	0	25	0	7	0	9	0	7
	Other	0	0	11	13	0	11	26	12
	Not answered	100	25	4	7	0	3	5	3

- Making smaller portions and then placing them into the fridge is the most frequently mentioned approach across both levels, and all types of education. This is followed by placing the food into the fridge immediately after cooking.
- The smaller portions based approach was most often mentioned by:
 - Senior staff with certificates.
 - Junior staff with certificates, internal and external training courses.

Making smaller portions and then placing them into the fridge is the correct procedure.

Q 17 Which of the following foods need to be kept refrigerated to ensure they remain safe?

Table 17.1 The foods that require refrigeration. Matched with education.

		DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
Senior	Lasagne	92	91	95	77	93	89	83	90
	Beef Curry	85	93	95	74	93	87	87	89
	Egg Sandwich	85	91	95	79	91	88	70	87
	Cooked rice	85	88	91	71	85	84	90	86
	Mixed Salads	92	93	89	80	80	86	87	85
	Vegemite	8	7	9	6	7	12	7	10
	Flour	0	0	1	0	0	0	0	0
	Not answered	0	2	3	8	4	3	3	4
Junior	Mixed Salads	100	100	92	93	100	91	79	89
	Egg Sandwich	100	100	92	93	100	91	84	88
	Lasagne	0	75	90	93	100	91	84	88
	Beef Curry	0	75	88	87	100	90	84	86
	Cooked rice	0	25	90	93	90	83	79	82
	Vegemite	0	0	8	13	20	9	11	10
	Flour	0	0	0	0	0	1	0	1
	Not answered	0	0	2	7	0	2	16	3

- Senior staff across all education levels selected all the foods except flour and vegemite.
- Junior staff across all education levels selected all the foods except flour and vegemite.

Both groups reflected the correct choices when answering this question.

Q18 Are the following statements true or false?

Table 18.1 Establishing the level of knowledge regarding contaminated food.

		Food that makes someone ill will smell off	Cooking destroys all food poisoning organisms
Senior	TRUE	17	10
	FALSE	82	88
	Not answered	1	2
Junior	TRUE	23	10
	FALSE	76	89
	Not answered	1	1

- Strong answers to the false question applied in both senior and junior staff, which were the correct replies.

Q 19 Which of the following statements are true or false?

Table 19.1 Establishing the level of knowledge regarding the correct procedures for the physical handling of food.

	Senior				Junior			
	TRUE	FALSE	DK	NA	TRUE	FALSE	DK	NA
A dirty chopping board should be washed before being sanitized	97	2	1	1	97	2	1	1
When using chemical sanitisers they should be mixed with hot water	41	50	6	3	44	41	13	2
Detergent does not kill micro-organisms	78	15	5	2	78	13	8	1
The same board can be used to slice raw meat and raw vegetables going into the same casserole	6	91	1	2	3	92	3	2
Raw vegetables can be stored directly above uncovered quiches in a cool room	9	84	4	2	11	79	8	2
A knife can be safely cleaned by wiping with a damp sponge	5	93	0	1	4	93	1	1
A healthy food handler can contaminate food with poisoning bacteria	81	12	4	2	83	11	4	2
It is safe for food handlers to handle money and then cooked meat	1	98	1	1	1	98	1	1

- The responses from senior and junior were almost identical.
- They both knew what to do about: Washing chopping boards, the weakness of detergent, using the chopping board, storing raw vegetables, cleaning a knife, bacteria, money and cooked meat.
- The question on sanitisers drew a mixed response (again almost identical for senior and junior staff) suggesting an uncertainty regarding what to do in this situation.

Q20. Are the following statements true or false?

Table 20.1 Establishing the level of knowledge regarding the correct procedures for the physical handling of food.

		The same gloves can be used to unpack raw vegetables and to slice cold meat	The same gloves can be used to clean and wipe tables and unstack the dishwasher
Senior	TRUE	3	7
	FALSE	95	91
	Don't know	1	2
	Not answered	1	1
Junior	TRUE	1	11
	FALSE	95	84
	Don't know	2	3
	Not answered	2	2

- Both groups understood what not to do with gloves.
- The junior staff were slightly less knowledgeable in not using the gloves to clean tables and stack the dishwasher.

Q 21 What foods would you describe as “ready to eat” foods?

Table 21.1 Establishing the level of knowledge regarding what constitutes a "ready to eat food". Matched with education.

		DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
Senior	Food that does not need cooking or processing on food	92	84	87	92	87	88	80	84
	Food that has to be reheated	15	33	19	17	26	19	13	18
	Food that has to be cooked	31	14	13	20	17	19	30	16
	When you buy a marinated raw meat	0	0	0	2	0	2	0	1
	Not answered	0	5	5	3	2	2	7	5
Junior	Food that does not need cooking or processing on food	100	100	81	100	80	87	68	82
	Food that has to be cooked	0	0	23	0	20	14	11	17
	Food that has to be reheated	0	25	21	7	10	15	16	16
	When you buy a marinated raw meat	0	0	0	0	0	1	0	1
	Not answered	0	0	0	0	10	3	26	6

- Both groups understand that food that does not need to be cooked, is ready to eat. This drew very high percentage figures.
- Confusion exists concerning knowledge about food that has to be re-heated, versus food that has to be cooked. Based on the low percentage figures recorded for these two answer categories, neither of the groups could give a confident response to either of these two questions.
- They all saw marinated raw meat as not ready for consumption.

Q 22 If a fellow employee had diarrhea, which of these tasks should they avoid?

Table 22.1 Establishing the correct procedure in a situation where a staff member has Diarrhea. Matched with education.

		DEG	DIP	CERT	INT	EXT	OTJ	OTHER	TOTAL
Senior	Shouldn't be at work	100	95	90	95	96	93	93	92
	Handle unpackaged food directly	46	51	56	53	48	61	37	53
	Serve food	46	49	55	53	48	59	40	52
	Setting tables	46	42	50	50	48	55	30	48
	Don't know	0	0	0	2	0	1	0	1
	Not answered	0	0	1	0	0	1	0	1
Junior	Shouldn't be at work	100	100	98	93	100	93	100	93
	Serve food	100	50	63	80	60	60	42	58
	Handle unpackaged food directly	100	50	63	73	60	61	42	57
	Setting tables	100	75	50	67	60	53	42	51
	Don't know	0	0	0	0	0	3	0	2
	Not answered	0	0	0	0	0	0	0	0

- Clear knowledge exists on all the key don't do's concerning diarrhea.
- Overall this knowledge is stronger among the senior staff, regardless of their education level.
- Junior staff are more knowledgeable about not serving food, and not handling unpackaged food directly, than their senior counterparts.

Q 23 If you need information about food safety or hygiene, who would you contact?

Table 23.1 The sources of information nominated as the most frequently used. Matched with industry group.

	FSR	TA / FF	HOSP	RETAIL	MANUF	WHOLE	TOTAL
Government health department	74	69	73	70	83	75	72
Local Council	66	53	88	78	67	55	67
Industry association (eg. Food Retailers Association)	20	20	18	27	27	45	22
Chemical company supplying cleaning products	16	14	18	14	15	15	15
Another supplier	1	6	5	5	4	5	4
Don't know	0	1	0	2	0	0	1
Other	11	22	15	10	10	0	14

- Government and local council are the main sources of information regarding food safety.

Q 24 How well informed do you feel about the current regulations about food safety?

Table 24.1 The confidence level of the respondents. Matched with industry group.

	FSR	TA / FF	HOSP	RETAIL	MANUF	WHOLE	TOTAL
Not at all informed	3	3	1	3	2	5	3
Informed a little	21	17	6	24	23	30	19
Informed	35	28	15	23	35	30	28
Well informed	22	30	43	30	23	20	29
Very well informed	17	21	35	18	17	15	21
Don't know	1	2	0	2	0	0	1
Not answered	0	0	0	1	0	0	0

- Confidence in their level of knowledge of food safety procedures was evenly spread among the respondents.
- Hospitals and aged care were the most confident.

Q 25 Are you aware that the State government is bringing in a new set of national food safety standards in January 2002?

Table 25.1 Level of awareness of the new food safety regime. Matched with industry group.

	FSR	TA / FF	HOSP	RETAIL	MANUF	WHOLE	TOTAL
Yes	67	54	65	62	67	70	62
No	26	37	28	29	19	25	30
Don't know	6	9	7	7	13	5	8
Not answered	1	0	0	2	0	0	1

- Awareness of the new safety standards is relatively high across all areas.
- Lack of awareness is highest in the fast food / take away sector.

Q 26 Do you find it easy to locate food safety information?

Table 26.1 The perception of how easy it is to locate food safety information. Matched with industry group.

	FSR	TA / FF	HOSP	RETAIL	MANUF	WHOLE	TOTAL
Yes	74	84	94	84	84	75	82
No	6	5	2	7	6	15	6
Never looked for it	12	8	4	8	6	5	8
Don't know	7	2	0	1	4	5	3
Not answered	1	1	0	0	0	0	1

- All sectors had no problems locating information.

Q 27 Where do you find the most useful information about food safety issues at the workplace? (Rate these)

Glossary of abbreviations.

FSA = Food safety auditors
 Suppliers = Suppliers of food equipment/materials
 FSRG = Food safety regulation documents
 FSB = Food safety brochures
 FSP = Food safety posters
 IA = Industry association
 GD = Government departments
 EA = Employer associations
 OPI = Other people in industry
 TM = Trade magazines & journals
 TC = Training courses
 SEM = Seminars
 Media = Seminars
 LC = Local Councils

Table 27.1 Sources of information on food safety. NB. Only those responses who gave a ranking from 1 - 3 in terms of importance (to them) are included in this table.

Information source	FSA	Suppliers	FSRG	FSB	FSP	IA	EA	OPI
Number of respondents	354	301	487	484	436	297	282	356
Percentage who ranked the source at number one in terms of importance	15	3	37	8	4	2	6	2
Percentage who ranked the source at number two in terms of importance	10	3	14	24	11	4	5	7
Percentage who ranked the source at number three in terms of importance	8	5	15	16	18	7	5	7

Table 27.1 continued.

Information source	TM	TC	SEM	Media	GD	LC
Number of respondents	296	446	322	269	417	461
Percentage who ranked the source at number one in terms of importance	1	19	2	2	9	17
Percentage who ranked the source at number two in terms of importance	5	10	6	4	15	16
Percentage who ranked the source at number three in terms of importance	5	14	6	5	10	14

- Food safety regulation documents were ranked as the most important source of information, with the highest percentage of respondents (37%) giving it the number one ranking in terms of importance.
- The second highest number one ranking went to training courses (19%), followed by local councils in third place with 17% of respondents giving it their number one ranking.
- Food safety brochures scored the most frequent number two ranking with 24% of respondents, followed by local councils with 16% of respondents giving it their number two ranking.
- Food safety posters scored the most frequent number three ranking at 18%, followed by food safety brochures at 16%

Below is Table 27.2 which shows the combined total for all three rankings.

EG. The largest combined ranked category is for food safety regulation documents (FSRG) with 37% ranked number one in importance, 14% ranked number two and 15% ranked number three, for a combined total of 66%.

Information source	FSA	Suppliers	FSRG	FSB	FSP	IA	EA	OPI
Combined total percentage	33	11	66	48	33	13	16	16

Information source	TM	TC	SEM	Media	GD	LC
Combined total percentage	11	43	14	11	34	47

- Based on the above we can see that after food safety regulation documents, the next most popular source of information is food safety brochures (FSB) with 48%, followed by local councils (LC) with 47%. Training courses (TC) at 43% also should be considered as a significant source of information.

Conclusions

1. Education

- Senior staff are more likely to be employed full time and be better trained and educated.
- Junior staff are more evenly spread between full time part time and casual employment.
- Full time junior staff are slightly better educated than part time junior staff. Both are ahead of casual junior staff.
- With junior staff, in all categories, on the job training is the principal means of education.

2. Temperature

- Senior staff are very consistent in checking food temperature.
- Junior staff are also consistent, but not to the same level as the senior staff. Those junior staff who were trained on the job were the least regular temperature checkers.
- The four vulnerable foods that need to have their temperature checked were all mentioned. But hot food was mentioned significantly less often than frozen, chilled and fresh food. This applied to both senior and junior staff.
- Nearly all senior staff (91%), and a clear majority of junior staff (79%), said they have a temperature gauge. Those least likely to have a temperature gauge were junior staff with on the job training.
- Knowledge of food storage temperature was very high among senior staff.
- Knowledge of food storage temperature was also high among junior staff, but less than senior staff. Again junior staff with in the job training had the lowest level of knowledge.
- Both senior and junior staff answered the bain marie questions cautiously. In most cases choosing a storage time of two hours. Significantly less than the correct time of over four hours.
- Some confusion exists across both senior and junior staff when asked about cooling and chilling. Most of them got the first answer to Q 13 wrong, but the other parts right.
- A strong majority of both groups would throw away excess food. Irrespective of education level.
- As with the bain marie answers above, most respondents underestimated the time that food could be stored at room temperature. The majority said less than one hour, when the correct answers is 2-4 hours.
- When cooling foods, making small parcels and putting them into the fridge was the most frequent answer. Again junior staff with on the job training recorded a lower result when compared with the other categories.
- They all nominated the correct foods than need to be refrigerated.
- The level of education had no real impact on the level of knowledge regarding food safety. A person with a degree or diploma was no more or less knowledgeable about food safety than a person trained on the job.

3. Hygiene

- A good knowledge exists regarding the correct hygiene procedures. In particular food that is a health hazard, washing and sanitizing, usage of knives, and usage of gloves.
- Some confusion exists regarding reheating of food as against having to cook food.
- Clear knowledge exists regarding what not to do in the case of diarrhea.

4. Information on food safety

- Government and local councils are the two main sources of basic food safety information.
- This information is seen as being easy to obtain.
- The most useful information sources (from the respondents point of view) and ranked in numerical order are:
 1. Food safety regulation documents.
 2. Food safety brochures.
 3. Local councils.
 4. Training courses.
- Most respondents are aware of the new food safety standards that have come into force.
- Confidence in their knowledge about food safety seems reasonably good. (Refer Q24) However the answers are spread out across the different answers categories, so this result needs to be treated with caution. It may well be the case that some people think they know more about food safety than is actually the case. The earlier conclusions that mentioned confusion in some areas re-enforces this point.

SWOT Analyses

Strengths

- The broad food safety campaign is working well.
- Food safety information is seen as being easy to find.
- There is a solid level of awareness regarding the new food safety standards that have come into force.
- Food safety knowledge is very high among senior managers who work full time and who are well educated. This knowledge covers all the areas mentioned in the study.
- Senior staff at hospitals recorded the highest results in terms of their knowledge of correct procedures.

Weaknesses

- Junior staff lag behind their senior counterparts in overall food safety knowledge, although their level of knowledge is still relatively high in most instances, except take away / fast food outlets.
- Junior staff at fast food / take away outlets recorded the lowest results in terms of their knowledge of correct procedures.
- Junior staff are in most cases less well educated than their senior counterparts.
- Junior staff are more reliant upon on the job training, which by its nature is provided by their senior counterparts. The quality and regularity of this training was not measured by this study.
- Confusion exists at both levels regarding the length of time food can be store at room temperature
- Confusion exists at both levels regarding the length of time food can be kept in a baine marie.
- Confusion exists at both levels regarding re-heating food versus cooking food.

Opportunities

- As senior staff are (in most cases) very knowledgeable about food safety, they could become the new generation of food safety trainers for the junior staff. This would enable Food Safety Victoria to leverage the current preponderance of on the job training that is delivered to junior staff.
- Further training of permanent full time staff to fulfill this objective.
- Building more awareness of food safety issues among junior staff, especially casual staff.
- Targeting fast food / take away outlets with such a campaign.

Threats

- Senior staff not passing on the knowledge to junior staff on a regular and consistent basis.
- Some senior staff (who are the owners of small food businesses) may not be willing to cooperate fully with FSV.
- The itinerant and unpredictable work routines of casual junior staff may make it hard for this knowledge to be passed onto them in the manner required.

Recommendations

- A campaign specifically targeting junior staff. Especially those who only receive on the job training and are therefore the most vulnerable.
- A campaign targeting senior staff to educate them that it is their responsibility to educate their subordinates, with a particular emphasis on training the casual junior staff.
- Given that local government were mentioned as a significant source of food safety information, any campaign conducted by FSV will need to embrace local government as a strategic partner.
- FSV should continue to make use of the following communication tools:
 - Food safety regulation documents.
 - Food safety brochures.
 - Food safety posters.
 - Food safety training courses.
- This research was limited by the design of the original questionnaire. Further research would allow an examination of how the senior staff actually train their junior staff. It would also be able to test the effectiveness of how well the senior staff are supervising their juniors.

This research needs to cover all types of junior staff members, especially the casual junior staff who spend the least amount of time at the actual food business, and who may not receive the same level of training that the more regular staff members receive.

- Additional qualitative research needs to be conducted to probe the current attitudes of food handling personnel into food safety knowledge and procedures. Such research would need to cover the senior staff, the regular part time junior staff, and the casual junior staff.

Appendix 1. The questionnaire used in the study.

Business Name			
Trading Name:			
Name of Proprietor:			
Business Address:			
Suburb:		Postcode:	
Phone Number:			
Email Address:			
Gender:	Male	Female	

1

What is your job title (if any)	
---------------------------------	--

2

How many staff (if any) work under your direct supervision	
--	--

3

Are you:		
1	Employed Full-time	
2	Employed Part-time	
3	Employed as a casual	

4

Which of these qualifications do you have in food handling (Select all that apply)		Name of Course
1.	Bachelor Degree (or higher)	
2.	Diploma	
3.	Certificate	
4.	Employer paid Internal Training courses	
5.	Employer paid External Training courses	
6.	On-the-job training	
7.	Other	
8.	None	

5. Which of these descriptions best describes your business (Pick more than one, if necessary)

1.	Manufacturing/processor	
2.	Retailer	
3.	Food Service	
4.	Distributor/Importer	
5.	Packer	
6.	Storage	
7.	Transport	
8.	Restaurant/Café	
9.	Snack bar/Takeaway	
10.	Caterer	
11.	Meals on Wheels	
12.	Hotel/motel/guesthouse	
13.	Pub/tavern	
14.	Canteen/kitchen	
15.	Hospital/nursing home	
16.	Childcare centre	
17.	Home delivery	
18.	Mobile food operator	
19.	Market stall.	
20.	Charitable or community organization	
21.	Temporary food premises	
22.	Other (specify)	
23.	Don't know	

6. Do you directly supply or manufacture food for organizations regularly serving any of the following types of people

	Yes	No
1. Elderly people (such as nursing homes)		
2. Sick people (such as hospitals)		
3. Pregnant women (such as hospitals)		
4. Children under 5 years old (such as childcare centres)		
5. Do not know		

7. How often should you check the temperature of foods delivered? Would you check...

1. Never	
2. Occasionally	
3. Regularly, but not every delivery	
4. Always	
5. Don't know	

8. Which type of these foods should you check the temperature when delivered?
- | | | |
|----|--------------|--|
| 1. | Fresh food | |
| 2. | Frozen food | |
| 3. | Hot food | |
| 4. | Chilled food | |
| 5. | Dry foods | |
| 6. | All foods | |
9. Do you have a temperature probe?
- | | | |
|----|---|--|
| 1. | Yes | |
| 2. | No | |
| 3. | Not necessary for the type of food we receive | |
| 4. | Don't know | |
10. What temperature should chilled food be stored at?
- | | | |
|----|--|--|
| 1. | -----Celsius/Centigrade | |
| 2. | Don't know | |
| 3. | Not applicable, do not have chilled food on site | |
11. What temperature should cooked food be held in a bain marie (or something similar that holds hot food)
- | | | |
|----|--|--|
| 1. | -----Celsius/Centigrade | |
| 2. | Don't know | |
| 3. | Not applicable, do not have hot food on site | |
12. How long may you display food in this bain marie (hot holding) equipment?
- | | | |
|----|-------------------|--|
| 1. | 2 hours | |
| 2. | 4 hours | |
| 3. | More than 4 hours | |
13. With regard to cooling or chilling cooked food, which of the following statements are true or false?
- | | True | False |
|--|------|-------|
| 1. Cooked food must be cooled to 21° Celsius within 2 hours | | |
| 2. Cooked food must be cooled to 60° Celsius within 2 hours | | |
| 3. Cooked food must be cooled to 5° Celsius within 2 to 6 hours | | |
| 4. Cooked food must be cooled to 5° Celsius within 7 to 8 hours | | |
| 5. Large amounts of cooked food should be placed in big containers and put in a cool room or refrigerator for cooling. | | |

14. When food is removed from hot display should you
- | | | |
|----|---|--|
| 1. | Cool it and put in cold storage and reheat display next day | |
| 2. | Throw it away | |
| 3. | Sell off at end of the day | |
15. How long can food that is meant to be served either hot or chilled be left at room temperature (select one only)
- | | | |
|----|----------------------|--|
| 1. | Less than 1 hour | |
| 2. | Between 1 to 2 hours | |
| 3. | Between 2 to 4 hours | |
| 4. | Between 4 to 6 hours | |
| 5. | Don't know | |
16. How should you cool foods that are intended to be used that day or later.
- | | | |
|----|---|--|
| 1. | Put in to fridge immediately after cooking | |
| 2. | Make smaller portions and put into the fridge | |
| 3. | Leave out and use later | |
| 4. | Other please state: | |
| 5. | Don't know | |
17. Which of the following foods need to be kept refrigerated to ensure they remain safe?
- | | | |
|----|--------------|--|
| 1. | Cooked Rice | |
| 2. | Mixed Salads | |
| 3. | Lasagne | |
| 4. | Egg Sandwich | |
| 5. | Vegemite | |
| 6. | Beef Curry | |
| 7. | Flour | |
18. Are the following statements true or false
- | | True | False |
|--|------|-------|
| 1. Food that makes someone ill will smell off | | |
| 2. Cooking destroys all food poisoning organisms | | |

19. Which of the following statements are true or false?
- | | True | False | Don't know |
|--|------|-------|------------|
| 1. A dirty chopping board should be washed before being sanitised. | | | |
| 2. When using chemical sanitizers they should be mixed with hot water. | | | |
| 3. Detergent does not kill micro-organisms. | | | |
| 4. The same board can be used to slice raw meat and raw vegetables going in to the same casserole. | | | |
| 5. Raw vegetables can be stored directly above uncovered quiches in a cool room. | | | |
| 6. A knife can be safely cleaned by wiping with a damp sponge. | | | |
| 7. A healthy food handler can contaminate food with food poisoning bacteria. | | | |
| 8. It is safe for food handlers to handle money and then cooked meat. | | | |
20. Are the following statements true or false?
- | | True | False | Don't know |
|---|------|-------|------------|
| 1. The same gloves can be used to unpack raw vegetables and to slice cold meat. | | | |
| 2. The same gloves can be used to clean and wipe tables and unstack the dishwasher. | | | |
21. What foods would you describe as "ready to eat" foods
- | | |
|---|--|
| 1. Food that has to be cooked | |
| 2. Food that has to be re-heated. | |
| 3. Food that does not need cooking or processing on the food. | |
| 4. When you buy a marinated raw meat | |
22. If a fellow employee had diarrhea, which of these tasks should they avoid?
- | | |
|--------------------------------------|--|
| 1. Serving food | |
| 2. Handling unpackaged food directly | |
| 3. Setting tables | |
| 4. Shouldn't be at work | |
| 5. Don't know | |
23. If you need information about food safety or hygiene, who would you contact?
- | | |
|---|--|
| 1. Local Council | |
| 2. Industry association (eg Food Retailers Association) | |
| 3. Chemical company supplying cleaning products | |
| 4. Another supplier | |
| 5. Government health department | |
| 6. Other (Specify) | |
| 7. Don't know | |

24. How well informed do you feel about the current regulations about food safety?
- | | | |
|----|---------------------|--|
| 1. | Not at all informed | |
| 2. | Informed a little | |
| 3. | Informed | |
| 4. | Well Informed | |
| 5. | Very well informed | |
| 6. | Don't know | |
25. Are you aware that the State government is bringing in a new set of national food safety standards in January 2002?
- | | | |
|----|------------|--|
| 1. | Yes | |
| 2. | No | |
| 3. | Don't know | |
| | | |
26. Do you find it easy to locate food safety information?
- | | | |
|----|---------------------|--|
| 1. | Yes | |
| 2. | No | |
| 3. | Never looked for it | |
| 4. | Don't know | |
27. Where do you find the most useful information about food safety issues at the workplace? (Rate these)
- | | | |
|-----|---------------------------------------|--|
| 1. | Food Safety auditors | |
| 2. | Suppliers of food equipment/materials | |
| 3. | Food safety regulation documents | |
| 4. | Food safety brochures | |
| 5. | Food safety posters | |
| 6. | Industry associations | |
| 7. | Employer associations | |
| 8. | Other people in the industry | |
| 9. | Trade magazines/journals | |
| 10. | Training courses | |
| 11. | Seminars | |
| 12. | TV/Media advertising | |
| 13. | Government departments | |
| 14. | Local Councils | |
| 15. | Other (specify) | |
| 16. | None/no other | |
| 17. | Don't know | |

Appendix 2. Profile on Mr Duncan Buchanan - Principal Consultant of Adept Research.

Areas of Expertise:

- Conducting large scale qualitative and / or quantitative research projects.
- Research for new IT projects, IT product development and commercialization.
- Research into business to business (B2B) and relationship marketing.
- Research for marketing communication.
- Research into the Information Technology sector.
- Consumer/Franchisee research.
- E-Business research including internet and e-mail surveys.
- Customer retention research (including customer satisfaction indexes).

Technical Skills:

- Project management.
- Designing research proposals.
- Questionnaire design.
- Focus group moderation.
- In-depth interviewing.
- Data analysis & interpretation.
- Report writing & presentation.

Qualifications:

- Bachelor of Business Marketing - Monash University.
- Graduate Diploma Education - Melbourne University.
- Graduate Certificate Tertiary Teaching - RMIT University.

Professional Memberships:

- Market Research Society of Australia.
- The Australian Marketing Institute.
- Monash University Marketing Alumni.

Duncan Buchanan has over 21 years of business consulting experience in the following industry sectors – finance and insurance, information technology and telecommunications (IT & T), retail and franchise business, human resources, building & construction, steel, oil, engineering plastics, medical & pharmaceutical, fast moving consumer goods (FMCG), confectionery and agricultural chemicals.