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CAMPBELL RESEARCH & CONSULTING

A report of two Australian surveys of food businesses
across the States and Territories of Australia

prepared for

The Australia New Zealand Food Authority

National Food Handling Benchmark

2000/2001

Report

December 2001

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1 Executive Summary

This National Food Handling Benchmark study documents research on the awareness and knowledge of safe food handling practices and actual food handling practices by food businesses within Australia. The Australia New Zealand Food Authority (ANZFA) commissioned Campbell Research & Consulting to conduct the benchmark study, which was undertaken between February and May 2001.

The National Food Handling Benchmark study was conducted to support one of six activities identified in the ANZFA Evaluation Strategy. These activities aim to collect baseline data either prior to adoption of new food standards or during the transition period from the old Food Standards Code to the new Australia New Zealand Food Standards Code (new Code). These baseline data will be used by ANZFA as a benchmark to evaluate the impact of implementing new regulatory measures on key stakeholders.

The Australia New Zealand Food Standards Council agreed in July 2000 that three national Food Safety Standards be included in the new Code. Previously, each State and Territory had their own regulations. The Australian States and Territories are currently adopting these standards into their legislation. At the time of this survey, no State or Territory had adopted the new standards. The Food Safety Standards do not apply in New Zealand.

The National Food Handling Benchmark study was undertaken by means of telephone survey of managers of food businesses and an observational on-site survey of food businesses by environmental health officers and public health unit officers. Questionnaires for each survey were developed around key result areas identified in the new Food Safety Standards such as temperature control, preventing contamination, cleaning and sanitation and personal hygiene and health of food handlers. In addition, data were sought on common sources of information and training on safe food handling practices, as well as on the use of written food recall plans and food safety programs.

An interpretative summary of results from the telephone survey and observational survey is presented, followed by the results from each survey. Results have been analysed against a number of variables, including the priority classification of the business (level of risk relating to handling of potentially hazardous food and the customer base).

The research indicates that there is a relatively high level of awareness and knowledge of basic safe food handling practices in food businesses, though the theoretical knowledge did not always match actual practices on–site. Food businesses with written food safety programs more often undertook correct safe food handling procedures than those with no written program. The businesses with written programs tended to be large, high risk businesses. Results in the key areas of protection of food from contamination and personal hygiene indicate that there is a significant minority of businesses that lack knowledge on these issues, particularly amongst medium or low risk businesses and small businesses.

2 Interpretive Summary of Findings

In July 2000, the Australia New Zealand Food Standards Council agreed to the inclusion of three Food Safety Standards in the *Australia New Zealand Food Standards Code* (Standards 3.1.1, 3.2.2 and 3.2.3). The three standards contain requirements relating to food safety practices, premises and equipment. The States and Territories are currently adopting these standards into their legislation commencing with New South Wales on May 16th 2001. They will replace existing State and Territory hygiene regulations. The Food Safety Standards do not apply in New Zealand.

In order to evaluate the impact of the changes, the Australia New Zealand Food Authority (ANZFA) has commissioned Campbell Research & Consulting to conduct benchmark measures of food handling practices in Australian food businesses prior to the commencement of the new standards. This Australian Food Safety Benchmark has two primary objectives. These objectives are to provide separate independent measures of:

> ➤ the level of awareness of safe food handling practices, using a Computer Assisted Telephone Interview (CATI) with the owners and managers of 1,200 food businesses; and

> ➤ the extent to which safe food handling practices are used in food businesses through an on-site survey by Environmental Health Officers or Public Health Unit Officers (referred to as EHOs) of 483 food businesses.

Both surveys included questions on areas of food safety where compliance with required standards or regulations are important indicators in preventing foodborne illness, for example, temperature control of potentially hazardous food. However, substantially different sampling techniques and survey instruments were used.

The telephone (CATI) survey explored knowledge and awareness of food businesses, while the EHO survey used the expertise of EHOs to evaluate actual practices used by food businesses. The EHO survey measured adherence with specific practices, and also identified whether the business had an alternative system to meet safe food handling requirements outlined in the new Food Safety Standards. However, the EHOs were not able to observe all practices in the course of the one hour site visits. The observed/ not observed status of the responses was recorded, and is reported throughout this report where appropriate. Even so, the validity of the EHOs survey responses would be considered to be more rigorous than the CATI responses because of the EHOs ability to probe for appropriate evidence.

Questionnaires for the surveys were developed around four of the five key result areas identified in the new standards:

> ➤ temperature control;
> ➤ prevention from contamination;
> ➤ cleaning; and sanitation; and
> ➤ personal hygiene and staff sickness policy.

In addition the questionnaires identified:

> ➤ information sources used by food businesses (CATI);
> ➤ training issues (CATI);
> ➤ food recall plans (EHO); and
> ➤ food safety programs (EHO).

Both surveys were pilot tested before full enumeration. The pilot included substantial input from ANZFA to achieve a survey instrument that provided baseline measures against which the

implementation of the new standards could be evaluated, as well as providing relevant information for jurisdictions and EHOs.

Businesses in both surveys were classified using the Priority Classification System (PCS) to enable analysis of results by high, medium or low risk business. The PCS has been developed by ANZFA in consultation with Senior Food Officers from each State and Territory. The PCS classifies food businesses into priority ratings based on the risk that the business presents to public health and safety. The system was intended for use by EHOs in the field and uses a short cut manual assignment of priority rating according to a table of business types. The PCS classified businesses as high, medium or low risk according to a scoring system based on the food type, intended customer use, activity of the business, method of processing and customer base. The PCS also specifies criteria for classifying businesses as 'large' or 'small'.

This was the first time the PCS had been trialed in a survey where results were electronically coded. Some modifications to the questions were required for this purpose.

It is important that the classification system be applied consistently in all jurisdictions once Standard 3.2.1 Food Safety Programs is implemented in States and Territories in Australia.

Some comparison has been made to provide a contrasting perspective. However, comparisons between the two surveys should be used with caution because there were different instruments, modes of enumeration, sample frames and sample sizes.

The benchmark measures in this report are pre-implementation measures. The CATI survey was conducted in February 2001 and the EHO survey from February- May 2001, prior to adoption by any State or Territory of the new Food Safety Standards. Evaluation of the effectiveness of the Food Safety Standards and the impact of the strategies developed to improve awareness of safe food handling in Australian food businesses will be undertaken by ANZFA at a later date.

2.1 Telephone (CATI) survey of food businesses

The CATI survey measured awareness of food safety practices in food businesses and the extent of knowledge of persons in supervisory positions in these businesses. There were four key areas of food safety that were the focus of the survey:

- ➢ temperature control and knowledge of temperatures and times for safe food handling practices;
- ➢ protection of food from contamination;
- ➢ personal hygiene and staff illness; and
- ➢ cleaning and sanitation.

Most food businesses knew about, and implemented, safe food handling practices. However, there was a small, but substantial, proportion of businesses (between 10% and 20%) that did not know correct food handling practices or were not implementing the practices. The majority of this group comprised persons who did not know the answer to the detailed questions. The proportion that gave incorrect answers (in contrast to *"did not know"*) was relatively low (around 5% of businesses).

Personal hygiene and approaches to staff illness were the areas of most concern.

2.1.1 Temperature control

Knowledge of temperature control during the transport, preparation and storage of food is critical in maintaining safe food practices. The survey identified the proportion of food businesses engaged in

these different activities. Further, the survey tested knowledge using a number of specific questions that identified awareness of measures and conditions associated with unsafe practices.

Knowledge of specific temperatures and times for storage or cooking of potentially hazardous food indicated room for improvement. Mostly, respondents did not know the detail of specific temperature and times required for safe food handling and some also gave incorrect responses. For example, one in five (21%) food businesses did not know (15%) or incorrectly stated (6%) the temperature at which chilled food should be stored.

However, the EHO survey found businesses were generally using practices in receiving, storing, cooking, displaying and holding hazardous food that provided safe systems for temperature and time. The EHOs found that only 7% did not have a system in place for ensuring that chilled food was stored safely.

This suggests that specific knowledge is not necessarily a good indicator of adherence to safe food handling practices.

It should be kept in mind when considering the low levels of awareness of specific technical information reported in the CATI survey, that the EHO survey found that safe practices were being implemented.

2.1.2   Receiving food

Nearly all (87%) businesses had temperature sensitive foods delivered to their premises. Most (77%) of these businesses at least occasionally checked the temperature of foods delivered. Larger food businesses, which tended to be higher risk, were more likely to check food temperature.

2.1.3   Temperature probes

Having a temperature probe was an indicator that businesses had a higher awareness of the need to check temperatures of delivered food, and was associated with a higher likelihood of appropriate safe practice. One quarter (24%) of businesses that had temperature sensitive food delivered, and who reported that they checked the temperature of food that was delivered, did not have a probe thermometer. Large high-risk businesses were more likely to have a probe thermometer. Businesses were much more likely to check the temperature of chilled or frozen items delivered than hot foods.

2.1.4   Storing chilled food

Nearly all food businesses (92%) store chilled food. One in five businesses storing chilled food either did not know the temperature at which chilled food should be stored or incorrectly reported that chilled food should be stored higher than 5°C. Businesses were more likely not to know (15%) than to re give a wrong temperature answer (5%).

2.1.5   Holding hot food

Four in ten (38%) businesses needed to hold hot food for periods of time. One quarter (23%) of these businesses, either "did not know" the correct temperature (19%) or stated a temperature lower than 60°C (4%) (temperatures below 60°C are too low for safely holding hot food). One in five (17%) businesses did not know how long cooked potentially hazardous food (meant to be served hot) could be safely left at room temperature. Only 1% mentioned a time that was not safe.

2.1.6   Cooling cooked food

Three in ten (31%) businesses reported that they cooked food and cooled it for later re-use. One in ten (10%) businesses that cooled cooked food for later re-use did not know that large amounts of food should be placed in small containers and put in a cool room or refrigerator for cooling. A further two

in ten (19%) incorrectly said that this should *not* be done. A separate question about cooked rice identified that two in ten (19%) did not consider it necessary to keep cooked rice in the refrigerator.

2.1.7   Protecting food from contamination

Poor staff hygiene and lack of policies about staff illness are the aspects of food handling that ultimately lead to high risk of contamination. There was a relatively high proportion of staff who perceived that they could safely touch some forms of food. Two in ten (21%) businesses surveyed incorrectly believed that it was safe for food handlers to directly touch bread. These were more likely to be low risk businesses (29%), and businesses where staff training was not implemented (30%). This finding was supported by the EHO survey. Food handlers may wear gloves to prevent food contamination, but wearing gloves is not an assurance of safe food handling practices. A relatively high proportion of staff did not wear gloves (22%). Very few (2% - 4%) indicated that gloves were not changed between different tasks.

General knowledge about safe food handling practices was directly proportional to the level of staff training and risk category of the business. High risk businesses that catered to vulnerable populations were more likely to have staff training programs, to have displayed correct knowledge about food safety issues and to have implemented safe food handling practices (e.g. were more likely to have used a temperature probe).

Some gender differences were also observed. Females, who were more likely to be holding junior positions within food businesses, had a lower level of knowledge about safe food handling practices.

2.1.8   Personal hygiene and staff illness

There were poor practices and knowledge of washing and sanitising procedures. Half of food businesses thought it would be acceptable for employees experiencing diarrhoea to undertake food handling tasks such as "handling unpackaged food", "serving food" or "setting the table".

2.1.9   Cleaning and sanitation

The CATI survey identified poor knowledge and practices of cleaning and sanitising. The EHO survey identified a *higher* proportion of unsafe practices in regard to cleaning and sanitising than identified in the CATI survey. This was an exception to the general findings that safe practices were being implemented despite an apparent lack of awareness and knowledge from the CATI survey for some businesses.

2.1.10   Washing containers and utensils

The most frequent method of cleaning containers and utensils was washing by hand. The majority of businesses (59%) *only* washed by hand, while a further quarter (24%) used a dishwasher in combination with hand washing.

There was a high proportion of businesses with poor knowledge of temperatures for safe washing practices. This was the case for both hand and machine washing.

One third (36%) of businesses that used hand washing for food preparation materials did not know the temperature at which hot water would kill bacteria on utensils. One quarter of business reported hand washing at temperatures below 70°C, though it should be noted that using hot water above 70°C hand washing has occupational health and safety implications. Use of a dishwasher is preferable.

There was a substantial proportion that did not know key elements of safe practices for the use of dishwashers. One third (35%) did not know the temperature of the final rinse of their dishwasher. One in ten (9%) reported temperatures below 70°C.

2.1.11   Chemical sanitisers

Businesses are required under the new Food Safety Standards to ensure utensils and food contact surfaces are clean and sanitary. Chemical sanitisers may be used to achieve this outcome. One quarter (24%) of businesses "never" used a chemical sanitiser for washing cups, plates and eating utensils. Three in ten (30%) believed that all chemical sanitisers should be mixed with hot water and one half (51%) correctly indicated this was false. Two in ten (18%) businesses incorrectly believed that "detergent would kill micro-organisms".

2.1.12   Staff training and food safety information

One quarter (26%) of businesses reported that they did not provide training for staff on food handling safety. Businesses that were less likely to provide staff training external to the workplace were more likely to be low risk, rural and not supplying to vulnerable groups.

One quarter (24%) of businesses did not find it easy to locate information on food safety.

The majority of food businesses used their "local council" (47%) or "State and Territory Health Department" (42%) when they needed information about food safety issues. The third most frequently mentioned point of call was "industry associations and specialist consultants" (24%).

Neither ANZFA nor the Internet was identified as sources of food safety information.

One third of businesses reported the "most useful" information came from "food safety authorities" (30%), including food safety inspectors, or "food safety brochures and magazines" (27%).

Most (80%) of businesses felt informed about current food safety regulations. Few businesses (5%) reported they felt they were "not informed" about food safety.

2.1.13   The new Food Safety Standards

Three in five (57%) businesses were aware of the new Food Safety Standards.

2.2   EHO/PHU On-site surveys among food businesses

While the CATI survey measured knowledge and awareness of the businesses, the EHO survey measured actual practice, based on observation during a site visit. The observation provided stronger validity measures by using the skills of the experienced Environmental Health and Public Health Unit Officers to establish the baseline measures. These personnel are trained in food hygiene and conduct inspections of food practice as part of their everyday work.

The EHO Survey included the four key areas covered by the CATI survey:

> ➢ temperature control;
> ➢ protection of food from contamination;
> ➢ personal hygiene and staff illness; and
> ➢ cleaning and sanitation.

In addition the EHOs made a general assessment of each business and identified the extent to which formal policies were in place for food safety and recall of unsafe food.

2.2.1 Temperature control

The key measures assessed by EHOs for safe practices relating to temperature control related to:

> ➢ receiving food;
> ➢ storing chilled and holding hot food;
> ➢ cooking food;
> ➢ cooling cooked food;
> ➢ reheating cooled food;
> ➢ transporting food; and
> ➢ displaying food.

The EHO survey was also able to identify where businesses had alternative systems to ensure safe food handling practices.

Thermometers

Temperature checking was frequently done using "practical" or "common sense" approaches rather than formally checking. This is reflected in the relatively low proportion of businesses (39%) with probe thermometers.

Six in ten (60%) businesses handling food that should be checked with a probe thermometer did not have a probe thermometer. Staff did not know how to use a temperature probe thermometer in one in ten (9%) businesses that reported they had a probe thermometer. Six in ten (57%) businesses used "sight" when assessing food temperatures. Four in ten (43%) businesses used "touch" as a method for checking the temperature of food.

In spite of the lack of formal measures, businesses were generally found to have safe food handling practices in regard to temperature control. A small proportion of businesses were not assessed as having safe food handling practices. Apart from checking the temperature of received food, the proportion of businesses without a safe system was less than 10%. It is these businesses that should be the focus of any campaign to improve food-handling practices. Specific areas of concern identified include:

> ➢ *Receiving food.* Nearly all businesses evaluated by the EHOs received potentially hazardous food. One in three (35%) of businesses checked the temperature of potentially hazardous food delivered to their businesses, four in ten (39%) used an alternative system to ensure that food delivered to their business was safe while two in ten (21%) did not check the temperature or use an alternative system.
>
> ➢ *Storing chilled food.* One in ten businesses (7%) neither stored their chilled food at or below 5°C or had an alternative system High risk businesses were more likely to store chilled food at the correct temperature than medium risk businesses.

➤ *Holding hot food.* One in ten (8%) businesses, where hot food was held, *did not* hold potentially hazardous food at the correct temperature. Few (4%) businesses holding hot food lacked the adequate equipment for holding hot food.

➤ *Cooking potentially hazardous food.* Most food businesses checked that potentially hazardous food was cooked at the correct temperature for the correct time (53%) or had an alternative system in place (33%). One in ten had no system at all.

➤ *Cooling cooked food.* 10% did not have a system for cooling cooked food safely.

➤ *Reheating cooled food.* 6% had no system for ensuring that cooked food is reheated safely.

➤ *Displaying food.* One in ten (9%) businesses displaying potentially hazardous food did not have it held at the correct temperature or have an alternative system for ensuring food safety.

2.2.2   Transporting potentially hazardous food

A total of seven in ten (72%) businesses surveyed transported food. Three in ten (28%) of businesses transporting food also transported potentially hazardous food. Chilled food was more likely to be transported. Eight in ten (81%) businesses transporting potentially hazardous food carried chilled food; and half (51%) carried hot food – one third (34%) transported both hot and cold food.

Three in ten (29%) businesses transporting chilled potentially hazardous food used a "refrigerated vehicle" and one quarter (25%) used "eskies with ice". Very few (3%) did not use a temperature-controlled vehicle or other device that would keep the food at 5ºC or below. Most businesses transporting chilled food did so for short periods of time with only one in ten (10%) transporting food for longer than four hours.

In contrast, there was a high proportion of businesses that transported hot food without using a "temperature controlled vehicle" or "temperature controlling tools" (42%). Hot food was transported for shorter periods than chilled foods. 94% of hot food was transported for less than one hour while only 75% of chilled food was transported for less than one hour.

One in ten (12%) businesses transporting potentially hazardous foods (chilled or hot) were not doing so at the correct temperature *and* did not have an alternative system in place. These alternative systems may use time as a control. For example, restricting the time taken to transport food.

2.2.3   Protecting food from contamination

The majority of food businesses protected food from contamination. However, a small proportion did not. Specific issues identified by the EHOs included:

➤ More than one in ten (14%) businesses that used a cool room did not adequately protect their food in the cool room from contamination.

➤ One in ten (8%) businesses storing raw food in the cool room did not have raw food separated from "ready-to-eat food".

➤ One in twenty (6%) businesses handling dry goods did not have adequate protection from contamination of their dry goods and one in twenty (4%) appeared to have pests in their dry goods area.

➤ Just under one in ten (8%) businesses that had food on display did not adequately protect that food from contamination.

➤ One in seven (15%) businesses with food on display which needed to be supervised, did not have staff supervising displayed ready-to-eat food.

> ➢ When displayed food was removed from display, over one in ten (14%) businesses mixed the displayed food with new food for storage to be re-served the next day.

> ➢ One in ten (9%) businesses did not separate the equipment used for preparing raw and ready-to-eat food preparation or clean and sanitise that equipment between uses.

> ➢ One in twenty (6%) businesses where staff handled ready-to-eat food with hands rather than utensils such as tongs were at risk of contamination from staff directly touching food.

Businesses may use gloves as an everyday practice to prevent food contamination. However, wearing gloves is not sufficient to completely protect food from contamination; gloves may actually increase the risk of contamination if incorrectly used. Gloves should be changed when moving from one task to the next and on the same occasions when hands should be washed. One in ten (9%) staff who wore gloves did not change gloves when necessary.

2.2.4 Personal hygiene

Staff personal hygiene is critical in minimising the spread of foodborne disease. The survey addressed actual practices of personal hygiene as well as examining the adequacy of the hand washing facilities. Adequate facilities influenced the likelihood of good staff practices in regard to personal hygiene.

While most food businesses were found to have staff following good personal hygiene practices, one in ten (9%) had staff who did not wash their hands when necessary and one in twenty (6%) had staff that did not cover open wounds with waterproof dressings.

The provision of appropriate hand washing facilities for staff handling food is critical to ensure staff can maintain appropriate standards of personal hygiene. Just under one in five (17%) businesses did not have sufficient hand washing facilities. One in ten businesses (10%) did not provide adequate access for employees, 7% did not supply soap or hand cleanser, 14% did not have warm running water, and 20% did not supply single use towels. Standard 3.2.2 indicates food handlers should use soap or other effective means such as warm running water to wash their hands and thoroughly dry their hands using a single use towel or in another way that will not transfer pathogenic organisms to the hands.

Just over one in ten (14%) food businesses with hand washing facilities did not show evidence of recent use of those facilities.

2.2.5   Staff illness

One fifth (21%) of businesses did not have a staff policy relating to staff sickness.

2.2.6   Cleaning and sanitising

Cleaning and sanitising is an important aspect of food safety. Use of commercial or domestic dishwashers can help achieve safe practices. Only a minority of businesses used dish or glass washers where such facilities would have been appropriate. In a small proportion of cases, staff did not know the correct temperature required for effective sanitising using hot water.

Dishwashers

Three in ten (30%) businesses where a dishwasher was appropriate (i.e. businesses that needed to wash utensils used for eating, drinking and food preparation) used a commercial dishwasher to wash and sanitise eating utensils. One in ten (12%) used a domestic dishwasher. Just under two in ten (16%) businesses used glass washers where a glass washer was appropriate to the business.

One in ten (10%) commercial dishwashers were not working at the correct sanitising temperature while two in ten (19%) domestic dishwashers were not working at the correct temperature.

Staff were unsure of the correct sanitising temperature in 5% of businesses using a commercial dishwasher and 10% that used a domestic dishwasher.

Sanitising

Three quarters (74%) of businesses used chemical sanitisers. When chemical sanitisers were used, one in ten (9%) did not use them appropriately.

Nearly six in ten (57%) businesses used manual sanitising processes where manual sanitising was appropriate. Nearly two thirds (60%) of businesses utilising manual sanitising processes did not maintain the temperature of the hot water at the appropriate temperature (i.e. 77°C or above).

Over one in ten (12%) businesses did not clean and sanitise food contact surfaces and utensils before using them where it was appropriate to do so.

2.2.7   General assessment of food businesses

The final component of the EHO survey comprised a general assessment of the food businesses surveyed. 62% of EHO surveyed businesses were reported to have no problem areas. However, a small proportion of businesses were identified as having problem areas:

> ➢ one in ten (10%) food premises were not considered clean and well maintained;
> ➢ over one in ten (12%) businesses did not clean and sanitise food contact surfaces before using utensils where such sanitation was appropriate;
> ➢ over one in ten (12%) EHO surveyed businesses identified food preparation, processing and cooking areas as problematic;
> ➢ one in ten (10%) identified a cool room as a problem area;
> ➢ one in ten (10%) food premises showed evidence of pests; and
> ➢ one quarter (24%) did not have adequate pest control measures in place where such controls were appropriate.

2.2.8   Food recall plans

Two thirds (66%) of businesses in the "wholesale/ manufacturing/ importing" sectors did not have a written food recall plan. Businesses more likely to have a written food recall plans included high risk larger metropolitan businesses.

2.2.9   Food safety programs

Food businesses are not currently required to have a food safety program. However, one in five (19%) were found to have written food safety programs. Businesses with food safety programs in place were most likely to be classified as " large businesses" and were more likely to have safe practices checking the temperature of food, owning a temperature probe and having a staff sickness policy and pest control program.

2.3   Comparison between the two survey sample groups

The sample for the two surveys was drawn to achieve a representative selection of food businesses. The sample for the CATI survey was randomly selected from the electronic Yellow Pages directories using food business categories and filtered at the commencement of interview to ensure the business met the relevant specifications. The EHO survey was conducted using interviews with a random selection of businesses in a random selection of 55 Local Government Areas (LGAs).

The EHO survey sample comprised primarily high and medium risk businesses with very few low risk businesses. This should be kept in mind when making comparisons with the CATI survey that had a higher proportion of low risk businesses.

2.3.1   Business type

The CATI and EHO samples contained similar types of business, which were proportionally distributed across all States and Territories in both surveys. Just under two in ten businesses served or provided food to "at risk" groups (CATI 17% and EHO 15%). One half of both CATI (52%) and EHO (50%) businesses surveyed were located in rural regions. The over-representation of rural food businesses was a function of the sampling to ensure that sample segments were of sufficient size to enable confidence. In general, there was little difference by rural/ metropolitan region. Nine in ten CATI (93%) and EHO (90%) businesses surveyed were classified as "small businesses".

Six in ten (60%) businesses in both surveys were medium risk. The EHO survey had a higher proportion of businesses that were classified as high risk (34%) compared to the CATI sample (15%). There were few (5%) businesses classified as low risk in the EHO survey with one in four (23%) of the CATI sample of the CATI sample were classified as low risk.

3   Reading this report

Reading the tables

> ➢ Questions are written in italics.
> ➢ Angle brackets <> around a word or phrase in the survey question indicate terms that may be substituted in a CATI script.
> ➢ The base for each table is identified under the left hand column of the table.
> ➢ The base for each column is given in parentheses under the column header.
> ➢ "n/a" means that the particular cell is not applicable and no result can be reported.
> ➢ "-" means that there were no responses for the cell or the responses were too low to provide a percentage.
> ➢ Subtotals are right justified and printed in parentheses.
> ➢ Proportions are rounded to the nearest whole percent.

A superscript capital letter in a column means that the survey estimate noted in that column is significantly greater (at the 95% confidence level) than comparable estimates shown in the column(s) noted.   The corresponding capital letters for comparison may be found in the column header.

Reading the graphs

> ➢ The relevant survey questions are identified underneath the graph header.
> ➢ Each column is a percentage of the base.
> ➢ The base for the graphs refers to the total number of responses upon which the percentages have been calculated. This is identified under the left hand corner of the graph.

Disclaimer

Please note that, in accordance with our Company's policy, we are obliged to advise that neither the Company nor any member nor employee undertakes responsibility in any way whatsoever to any person or organisation (other than Australia New Zealand Food Authority) in respect of information set out in this report, including any errors or omissions therein, arising through negligence or otherwise however caused.

3.1 Acronyms used in this report

ANZFA	Australia New Zealand Food Authority.
CATI	Computer Assisted Telephone Interview.
EHO	Environmental Health Officers (includes NSW Public Health Unit Officers).
LGA	Local Government Area.
PCS	Priority Classification System. A system developed by ANZFA to rank food businesses by exposure to risk.
PHU	Public Health Unit.
SFO	Senior Food Officers.

3.2 References

Australia New Zealand Food Authority. (ANZFA). (2001). *Food Safety: The priority classification system for food businesses.*

Australia New Zealand Food Authority. (ANZFA). (2001). *Safe Food Australia* 2nd edition. January 2001: A Guide to the Food Safety Standards

4 Background and Objectives of the Project

4.1 Background to the Project[1]

There are four national Food Safety Standards. The Australia New Zealand Food Authority (ANZFA) developed these standards in consultation with State and Territory health authorities, the food industry, and other interested organisations and individuals.

The four Food Safety Standards are:

> ➢ 3.1.1 Interpretation and Application;
> ➢ 3.2.1 Food Safety Programs;
> ➢ 3.2.2 Food Safety Practices and General Requirements; and
> ➢ 3.2.3 Food Premises and Equipment.

In July 2000, the Australia New Zealand Food Standards Council[2] agreed to the adoption of Standards 3.1.1, 3.2.2 and 3.2.3. These Food Safety Standards form part of the *Australia New Zealand Food Standards Code*. They apply only in Australia.

The Australia New Zealand Food Standards Council had previously deferred consideration of the fourth standard, Standard 3.2.1 *Food Safety Programs*, and requested further study of the efficacy of these programs for a range of food businesses. Pending the results of this work, the Council agreed in November 2000 that Standard 3.2.1 should be adopted as a voluntary standard. It did so as some States planned to proceed with the introduction of food safety programs without waiting for the results of the study requested earlier by the Australia New Zealand Food Standards Council.

As a voluntary standard, Standard 3.2.1 *Food Safety Programs* will apply only in those States or Territories that choose to implement this standard.

Standards 3.1.1, 3.2.2 and 3.2.3 become enforceable from February 2001, depending on the regulatory situation in each State and Territory. The notification provision and the requirement that food handlers and supervisors have food safety skills and knowledge commensurate with their duties within the food business, both in Standard 3.2.2, come into effect from February 2002 to give businesses time to comply with these requirements.

The Food Safety Standards will replace existing State and Territory food hygiene regulations. These regulations were nationally inconsistent and tended to be prescriptive and sometimes significantly out of date. They presented businesses with unnecessary costs and difficulties. In addition, they included requirements that could not be justified in terms of public health and safety.

The new standards reflect international best practice. Taken together, they are based on a preventative approach to the incidence of foodborne illness in Australia and are designed to help ensure that food business in Australia produce food that is safe to eat.

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[1]   From *Safe Food Australia* 2nd edition, ANZFA, January 2001, p. 1

[2]   Ministers of Health from the States, Territories and Commonwealth of Australia and from New Zealand meet as the Australia New Zealand Standards Council to approve food standards for Australia and New Zealand.

4.2   Objectives of the Project

The objectives of the study were to establish benchmark measures within Australian food business of:

> ➢ the level of awareness and knowledge of safe food handling practices; and
> ➢ the extent to which safe food handling practices are used.

Two different methodologies were used to achieve these objectives.

1. A telephone survey of 1,200 food business owners or managers; and

2. An on-site survey of 483 food businesses conducted by Environmental Health Officers or Public Health Unit Officers.

The telephone survey measured the level of awareness and the on-site survey measured the extent to which safe food practices were applied.

Campbell Research & Consulting was commissioned to undertake the two surveys as part of an evaluation strategy to assess the effectiveness of the new Food Safety Standards. The current project provides benchmark, baseline data of knowledge *prior to implementation* of new food regulations that prescribe safe food handling practices. Over the next few years ANZFA will conduct additional surveys to monitor change in food handling practices over time.

The questions in the current surveys are designed to measure broadly the key areas of safe food handling as outlined in the new Food Safety Standards (see *Safe Food Australia*, 2nd edition, ANZFA, January 2001), and target businesses handling potentially hazardous food.

The project was not conducted as a part of any formal inspection or enforcement regime, and the information gained will be used to inform future policy decisions and adjustments to the Food Safety Standards setting system.

4.3   Questionnaire development

Questionnaires were developed around four of the five key result area identified in the new standards. These are:

> ➢ temperature control;
> ➢ prevention from contamination;
> ➢ cleaning, sanitation and some testing; and
> ➢ personal hygiene and staff sickness policy.

In addition the questionnaires identified:

> ➢ information sources used by food businesses (CATI);
> ➢ training issues (CATI);
> ➢ food recall plans (EHO); and
> ➢ food safety programs (EHO).

4.4 Pilot

Prior to full enumeration, a pilot study for both the telephone and on-site EHO surveys was conducted. A separate report was produced to summarise the methodological procedural outcomes from the pilot study for both the telephone and on site EHO surveys encompassing:

> ➢ testing of project methodology;
> ➢ testing of flow, organisation and length of telephone and EHO surveys; and
> ➢ telephone interviewer and EHO feedback.

A copy of the full pilot report is included in Appendix E of this report.

5 Introduction to the project

5.1 Overview

5.1.1 Telephone surveys

The aim of the telephone survey was to obtain benchmark data on the extent to which food business "owners / managers[3]" were aware of safe food handling practices *prior* to implementation of the new Food Safety Standards. The questions were designed to assess the level of general knowledge about food safety and food handling prior to implementation of the new Food Safety Standards.

The telephone survey was designed to be implemented across a broad range of food service and food business types, and among "owners / managers" who were directly involved in overseeing the handling and processing of food, particularly potentially hazardous food[4].

5.1.2 On-site food business surveys

The aim of the EHO survey was to obtain benchmark data on the extent to which safe food handling practices were already being carried out within food businesses *prior* to implementation of the new Food Safety Standards. The questions were designed to be answered by Environmental Health Officers who have a high degree of specialist food handling knowledge. Owners, managers or supervisors from the business could assist with the survey, but the intention was for the questions to be answered based on what the surveying officer observed within the premises. (N.B. A note has been added in the text where a practice was not observed at the time of the survey).

The EHO survey was designed to be conducted across a broad range of food service and food business categories taken from the electronic Yellow Pages. The sample of businesses was randomly selected from food business categories where food regulations were likely to apply to achieve a representative national sample.

5.2 Methodology

Prior to the full scale project, pilot surveys were conducted with a sample of businesses using both the CATI and EHO methodologies. A full copy of the pilot report, including a detailed methodology section, has been included in Appendix G of this report. The information presented here in Section 5.2 outlines the methodology for the final project.

5.2.1 Sample selection

For both the CATI and EHO surveys random lists of businesses were generated from the electronic Yellow Pages. For the purposes of this project, food businesses were defined as:

> *Business directly involved in handling potentially hazardous food intended for human consumption. Medium to high risk businesses were targeted over low risk businesses (based on the ANZFA priority classification system). Manufacturers of flavourings, mixers, processing agents and businesses solely involved in storage or transport of pre-packaged foods (e.g. potato chips or soft drinks) were excluded from the surveys:*

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[3]   Target respondents were persons responsible for managing staff directly involved in food handling. In most small businesses this was the owner/proprietor.

[4]   Potentially hazardous food includes: cooked and raw meat, fish, egg, chicken and other poultry, desserts with dairy or egg ingredients, rice and pasta salads, as well as other prepared salads.

Business categories utilised from the Yellow Pages for generating the sample selection can be found in Appendix H.

To obtain a nationally representative sample, target samples were stratified across States and Territories and LGAs (Local Government Areas) in proportion to the population as follows:

Target Sample stratification by State and Territory			
State / Territory	CATI target sample	EHO target sample	Target LGAs (EHOs)
NSW	240	120	12
VIC	240	120	12
QLD	240	120	12
SA	160	80	8
WA	160	80	8
TAS	80	40	4
NT	40	30	3
ACT	40	30	1
Total	**1200**	**620**	**60**

Sixty-four (64) LGAs were selected for the EHO surveys with an expectation that ten (10) surveys would be returned from sixty (60) of the LGAs. Of these sixty-four LGAs, 483 surveys from fifty-five (55) LGAs were actually received.

The exclusion of low risk businesses resulted in a sample bias toward high risk businesses including hospitals and childcare centres.

In addition, butchers and small goods manufacturers were commonly not included in the EHO surveys. In many States and Territories the monitoring of meat based businesses was reported to be undertaken by a separate authority and the EHOs and PHUs did not feel able or comfortable with surveying these businesses. In some cases the surveying officer called the business to seek permission and in others they contacted the meat authority and went to the business together. However due to limited resources within LGAs, it was not always seen as appropriate to survey outside the 'jurisdiction' and thus, including these businesses was not common with only 5% of the EHO surveys conducted with businesses in the meat industry. Individual EHOs used their discretion regarding whether or not they were able to survey any butchers or small goods manufacturers, and we are unable to account for frequency of exclusion as LGAs may not have informed us of a decision to either include or exclude these businesses.

5.2.2 ANZFA involvement

At the commencement of the project ANZFA established a project team with members external to ANZFA to supplement the knowledge and expertise of ANZFA team members and the consultant. The team comprised representatives from State government (NSW, Queensland and Victoria), the food industry (the Australian Food and Grocery Council and the Restaurant & Caterers Association) and the Food Policy Unit of the Commonwealth Department of Health and Aged Care.

ANZFA was involved at key points of the project including:

➢ formulating the questionnaires and briefing materials and obtaining comments and suggestions on these materials from the Project Team;

➢ keeping the Project Team and Senior Food Officers of all States and Territories informed of the progress of the project;

➢ assisting to obtain cooperation from LGAs;

➢ clarifying issues with LGAs and answering queries raised during the surveys by individual EHOs;

➢ responding to queries from surveyed businesses; and

➢ seeking comments and suggestions from the Project Team on the reports of the pilot surveys and the mains surveys.

In particular, ANZFA was instrumental in liasing with the States and Territories, as well as individual EHOs to gain co-operation for participating in the survey. At various points a representative from ANZFA provided progress summary to the Senior Food Officers.

5.2.3 Telephone survey methodology

An electronic file of the Yellow Pages random business list was generated and telephone interviewers called businesses until target samples were achieved for each State and Territory. Individual targets were not set for metropolitan and rural and regional businesses rather the allocation of businesses was randomised.

Interviewers were briefed extensively on definitions of terminology and the meaning of questions, however they were also instructed not to guide businesses into 'correct' responses. This was particularly important in undertaking a benchmark survey of this type where depth of knowledge and understanding were key measures. Hence, the survey identified particular areas where businesses had less knowledge about food handling practices or the terminology used in standard food handling documentation.

5.2.4 Telephone survey response rate results

The telephone interviews were conducted between February 13th and 26th 2001 and lasted on average 13.8 minutes. Calls were made at all times of the day, seven days a week, avoiding peak meal preparation and serving times. Businesses could also schedule call-back appointments at a time more suitable for them.

Conducting interviews with food businesses during February (at the end of summer school holidays) was beneficial to the response rate, as this was a slow period in many food businesses.

The following table of call results illustrates that of a total sample of 12,157 business numbers, nearly half (47%) were incorrect or out of date and 46% were able to be contacted. Seven per cent (7%) of numbers were not needed and therefore not called.

Of the correct food business numbers called, there was a 21% response rate, a small 8% of businesses refused to participate before the survey began and 13% ended the interview after it had started.

Nearly half (46%) of businesses contacted asked to be called back at another time but did not refuse participation. Three per cent (3%) asked to be called back because the person appropriate to speak with was not available.

A small proportion (2%) had language difficulties and could not participate because the survey was only conducted in English. Seven per cent (7%) of businesses indicated they were not eligible (e.g. not directly involved in food handling or preparation).

Call Results	N	%
Total Sample	**12,157**	
Total Called	**11,337**	
Proceed with interview	1,200	21%
Respondent not available during survey period	144	3%
Refused - first level	470	8%
Language difficulties	91	2%
Ineligible does not qualify	397	7%
Abandoned /stopped interview	752	13%
Appointment / call backs	2,593	46%
Total contact made (46% of total sample)	**5,647**	**100%**
Incorrect numbers/no contact		
Change phone number	30	1%
Business/Private number other expected	48	1%
No answer	27	0%
Answering machine	747	13%
Busy/Engaged	26	0%
Number disconnected	4	0%
Fax	52	1%
Dialer – busy	679	12%
Dialer - no answer	3,421	60%
Dialer - nuisance hangup	49	1%
Dialer – incomplete	276	5%
Dialer - site out of service	304	5%
Dialer - new number dropped	6	0%
Dialer – unknown error	21	0%
Total no contact (47% of total sample)	**5,690**	**100%**

Note: When the survey quota of 1,200 was achieved, no further attempts were made to interview "appointments", "busy" or "no answer". "Appointments" are generally loose arrangements where the interviewer has identified a likely time to reach a respondent.
Percentages do not add up to 100% due to rounding

5.2.5 EHO survey methodology

Food safety regulations are enforced primarily by Local Government Councils and specifically EHOs and PHUs within those Local Government Areas (LGAs). The first step in conducting the surveys was to choose a random selection of the Local Government or Council Areas in which to conduct the surveys.

To provide optimal confidence in results at the 95% confidence interval (see the discussion of sampling error in Section 5.3 below) within breakdowns across States and Territories, a target of 600 returned surveys was set. It was anticipated that in light of the on-going and impending changes in Food Safety Standards that EHOs/PHUs would be interested in undertaking the survey and therefore co-operative.

It was also anticipated that each LGA would be able to undertake 10 surveys within a 2-4 week period and therefore to obtain the optimal target of 600 returned surveys, a total of 64 LGAs were targeted. During sample generation, some of the LGAs were identified to have a very small number of staff and/or businesses and therefore 65 LGAs were ultimately included.

Selection of LGAs by State and Territory was stratified to be proportionately representative of the population. A random sample of LGAs was generated in each State and Territory and the Senior Food Officers in each State and Territory were notified of those LGAs to be included in the project.

Once LGAs were selected to participate, they were matched with postcodes and then random lists of food businesses within those postcodes were generated from the electronic Yellow Pages. A total of 30 businesses were included in the sample for each LGA. To avoid sampling bias at the LGA level only 12 businesses were sent to each LGA at a time, and when that list was exhausted they were requested to seek additional business names from Campbell Research & Consulting). This process identified particular types of business to be excluded (e.g. butchers). Through this method Campbell Research & Consulting maintained day to day contact with many LGAs and could gain a clear understanding of why specific businesses were not surveyed. Reasons for EHOs excluding a business on their list included:

> business no longer operating;
> type of business not applicable to the survey (e.g. no handling of potentially hazardous food, see definition on page 4);
> business had recently been inspected and surveying officer did not want to 'pester' the business;
> business located in another LGA (due to overlap of postcodes); or
> business located a long distance away from where the EHO/PHU was stationed and it would not be feasible for them to attend the business during the survey period.

Information about the project, expected time lines and requirements from EHOs/PHUs was faxed directly from Campbell Research & Consulting to an EHO/PHU point of contact within each LGA. The information from Campbell Research & Consulting stressed the voluntary nature of participation and the importance of involvement.

Extensive briefing instructions and information about how to conduct the survey was provided to the EHOs, both in hard copy documents, and in a pre-prepared briefing video tape sent out to each LGA. While Campbell Research & Consulting constructed the briefing materials, ANZFA was intimately involved with on-going feedback to ensure instructional materials were correct and appropriate. This detailed involvement included providing written instructions and definitions for most survey questions directly on the survey form.

A key element of the EHO survey was the actual observation of practices. However food businesses were not likely to undertake all practices within the one-hour site visit allowed for the survey. On average, the interview took 54 minutes. Twelve percent (12%) took less than 30 minutes, and twenty three percent (23%) took longer than one hour. The survey relied on the competency, skill and experience of EHOs to make the judgement about whether practice was undertaken safely. Where the practice was not observed directly, EHOs identified the "not observed" status. This is reported in the EHO survey results.

5.2.6   EHO survey response rates

Preliminary faxed information was sent out to LGAs in late February 2001 and survey materials were posted to LGAs in early March 2001. A much longer than expected survey return process followed and the final surveys were returned on May 30th, 2001.

Once the survey period commenced, telephone calls, faxes and emails were sent to all participating LGAs on a regular basis to either provide additional information or follow-up on the status of the surveying process. Some individual LGAs negotiated extensions to the survey returns when needed and these were accommodated where reasonable to ensure an adequate sample was obtained.

The primary issue delaying the return of surveys, or ultimately the number of surveys completed, was the availability of resources within each LGA. Some LGAs requested funding for an additional staff member to complete the surveys, or responded they were unable to make the time to complete the required number of surveys due to a lack of staff. No funding was supplied to the LGAs for conducting the surveys.

In a few LGAs, some EHOs and PHUs were particularly interested in the survey and volunteered to undertake more surveys than required.

By the end of the survey period some LGAs who did not have staff available at the beginning did have staff appointed or available and subsequently asked to be included at that time.

Wherever possible interested LGAs were included and time lines extended. Reasons for extensions of time lines and smaller numbers of surveys returned from various LGAs included:

- ➢ allocation of priorities (such as outbreaks of illness, floods and other natural disasters);
- ➢ availability of staff (such as one EHO shared between multiple LGAs, or staff resignations);
- ➢ lack of food based businesses; and
- ➢ restructuring of EHO duties and/or councils (such as combining councils and restructuring roles and responsibilities).

In the end, 47 LGAs were represented in the sample and 499 surveys returned, including 16 that were unusable due to inadequate information. A total of 483 surveys were included in the final sample including 28 from the ACT, as there was only a single LGA in the ACT[5]. An overall 78% response rate was achieved from the original target sample of 620 surveys.

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[5]   Although there is also only one LGA in the Northern Territory, the sample was able to be stratified by town / urban areas.

5.2.7   Classification of Business Food Safety Risk (low, medium & high)

Businesses have been classified into high, medium and low risk in accordance with the ANZFA Priority Classification System (PCS).

The PCS has been developed by ANZFA in consultation with Senior Food Officers from each State and Territory. The PCS classifies food businesses into priority ratings based on the risk that the business presents to public health and safety. The system was intended for use by EHOs in the field and uses a short cut manual assignment of priority rating according to a table of business types. The PCS classified businesses as high, medium or low risk according to a scoring system based on the food type, intended customer use, activity of the business, method of processing and customer base. The PCS also specifies criteria for classifying businesses as 'large' or 'small'.

This was the first time the PCS had been trialed in a survey where results were electronically coded. Some modifications to the questions were required for this purpose.

The CATI survey also used modified versions of these questions to include skip questions to eliminate ineligible businesses and to shorten the telephone interview.

Once the surveys were completed, coding of risk classification of businesses was carried out manually using the examples in the PCS and by using a formula in a Microsoft Excel spreadsheet. A separate spreadsheet formula was used for each of the CATI and EHO surveys.

Both PCS and the Excel formulas raised problems that are summarised below.

Overall, the problems encountered were largely due to insufficient detail obtained to determine whether or not pathogen reduction processes were carried out on the foods before they were sold (e.g. cooking foods). Specifically, the problems were:

➢ the information obtained from businesses was not specific enough. At times it was difficult to ascertain the level of production and preparation, and the processing undertaken by the business;

➢ difficulty in knowing if foods were high risk – e.g. eggs in the shell are low risk but the question asked about eggs or egg products indicate higher risk; and

➢ unexpectedly large numbers of high risk businesses were identified and may be due to:

  – businesses not understanding some of the questions relating to high risk businesses e.g. a large proportion of "café / take-away" businesses indicated they catered off-site, however this may be interpreted as food delivery; or

  – businesses stating they manufactured salami (automatic high risk classification) however this did not match the business type (e.g. school tuck shop).

The development and validation of the PCS tool is outside the scope of this project. However, a number of issues have been identified in the responses to the PCS questions. These warrant a full and detailed investigation.

5.3   Sampling error

The aim of selecting a sample is to be able to limit the cost of interviewing to a small and manageable number. However **the objective is to make inferences about the population from which the sample is drawn**.

In any sample survey a degree of sampling error will occur. The sampling error is the extent to which the survey responses can be generalised to the population from which the sample was drawn (i.e. food businesses). As sample size increases, sampling error decreases. The technical term for sampling error is standard error.

Error! Reference source not found. provides survey estimates 50%, 60%, 80% and 90% at the 95% confidence interval for the sample sizes in the Food Safety Standards EHO surveys and CATI interviews. For example, if 50% of the EHO sample of 483 gave a particular response, we would be 95% certain that between 45.4% and 54.5% of the entire population would give this response.

Table 1[6]:   Survey estimates of 50%, 60%, 80% and 90% at 95% confidence interval (CI)

Survey estimates of 50% and 60 at 95% confidence interval (CI)						
	Survey estimate of 50%			**Survey estimate of 60%**		
Sample size	**Confidence interval**	**Lower band**	**Upper band**	**Confidence interval**	**Lower band**	**Upper band**
483 (EHO surveys)	± 4.5%	45.5%	54.5%	4.4	55.6	64.4
1,200 (CATI surveys)	± 2.8%	47.2%	52.8%	2.8	57.2	62.8
Survey estimates of 80% and 90% at 95% confidence interval (CI)						
	Survey estimate of 80%			**Survey estimate of 90%**		
Sample size	**Confidence interval**	**Lower band**	**Upper band**	**Confidence interval**	**Lower band**	**Upper band**
483 (EHO surveys)	± 3.6%	76.4%	83.6%	2.7	83.7	92.7
1,200 (CATI surveys)	± 2.3%	77.7%	82.3%	1.7	88.3	91.7

For example, the EHO survey identified that 20% of businesses supplied potentially hazardous food off-site (Section 6.1.4). Using the survey estimate above, we could expect with 95% confidence that between 16.4% and 23.6% of businesses would provide potentially hazardous food off-site.

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[6] Refer to Section 2, Reading this report for a full explanation of the tables contained in this report.

6 Businesses involved in the National Food Handling Benchmark survey

The first eight questions in each survey were designed to calculate business risk classification in accordance with the ANZFA Priority Classification System (PCS) (see Section 5.2.7 for a discussion on this risk classification system). Analysis of these questions also provides independent demographic information on the sample of businesses presented in this Section.

6.1.1 Business type

The CATI and EHO samples contained similar types of business. However, the EHO surveyed a higher proportion of "restaurant / café / take-away" businesses, while the CATI interviews surveyed a higher proportion of "schools / child care / hospitals" and "other manufacturing / processing" businesses (Figure 1). Nearly half of the CATI businesses (47%) and just over half of the EHO surveyed businesses (56%) were classified as "restaurant / café / take away" (Figure 1). Two in ten (19%) of both CATI and EHO surveys were undertaken within "mixed businesses (e.g. Bakery) establishments".

Figure 1:   Description of business[7]
Q1a: CATI: How would you describe your business in your own words?
Q1:   EHO: Describe the business
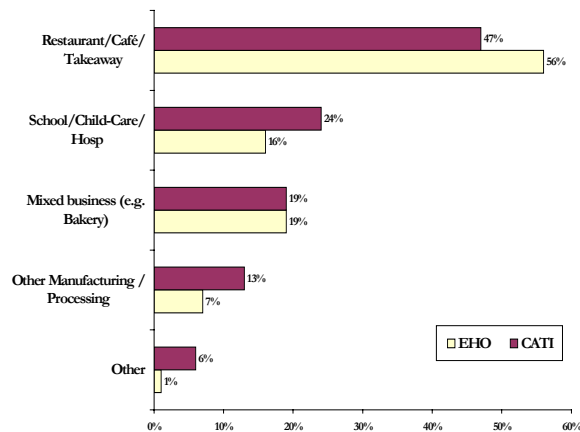
Base: All respondents
           EHO = 483   CATI = 1,200

One quarter (25%) of CATI surveys were conducted with "schools / child care / hospitals" compared with 16% of the EHO surveys. A larger proportion of CATI surveys (13%) were conducted among "other manufacturing / processing" businesses compared to EHOs (7%).

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[7] [7] Refer to Section 2, Reading this report for a full explanation of the graphs contained in this report

6.1.2 Manufacturing, processing, catering and transport food businesses

Similar proportions of CATI (84%) and EHO surveyed businesses (87%) were involved in "other manufacturing and/or processing" of food (Figure 2).

Figure 2: Manufacturing or processing of food[8]
Q1B: CATI: Do you manufacture any products at your business?
Q5:   CATI: Do you process, prepare or cook the food that you sell, distribute or transport?
*Q3:   EHO: Does the business **manufacture** or **process food** before sale or distribution?*

Base: All respondents
             CATI = 1,200   EHO = 483
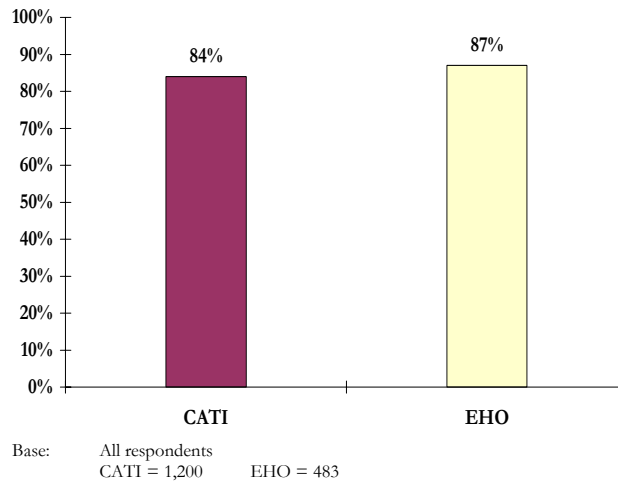
6.1.3 Food safety business classification

Businesses were classified as low, medium or high risk according to a formula based on responses to questions 1-8 in both of the two surveys. For a discussion of the priority classification system see Section 5.2.7.

The distribution of risk in the two samples reflects the recruitment procedures that focussed on the inclusion of medium to high-risk businesses. Correct food handling procedures are less likely to be relevant for low risk businesses.

The recruitment of businesses into both surveys was based on excluding businesses where the food standards may not have applied, for example, service stations that sold only pre-packaged products. For the EHO survey, this decision was based on local knowledge. Consequently, there is a lower proportion of low risk food businesses in the EHO survey compared to the CATI survey (see Figure 3).

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8   **'**Process', in relation to food, means preparing food for sale including chopping, cooking, drying, fermenting, heating, pasteurising, or a combination of these activities.

Six in ten (60%) EHO and CATI businesses surveyed were classified as medium risk (Figure 3). One third (34%) of high risk businesses surveyed by the EHOs were classified as high risk, notably higher than businesses that were interviewed through CATI (15%). One in four (23%) CATI businesses were low risk compared to only 5% EHO surveyed businesses.

Figure 3: Business classification

Base: All respondents
        CATI = 1,200   EHO = 483
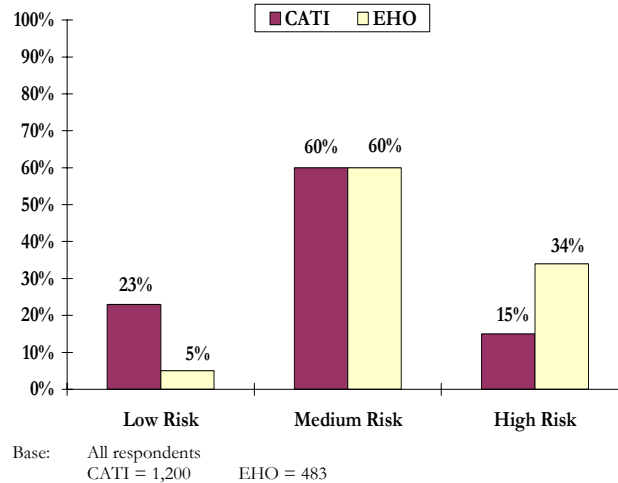
6.1.4   Food supplied off-site

Just over one in ten (13%) CATI, and one in five (20%) EHO food service or retail businesses reported they sold "ready-to-eat (RTE) food off-site from where it was prepared" that is, were involved in catering (Figure 4).

Figure 4:   Business supplies food off-site
Q8B: *CATI: Do you provide ready-to-eat food off-site from where you prepare it?*
Q8EHO: *Does this business sell ready-to-eat* **potentially hazardous food** *at a different location from where it is prepared?*

Base: Business is a food service or retail business
             CATI = 866   EHO = 431
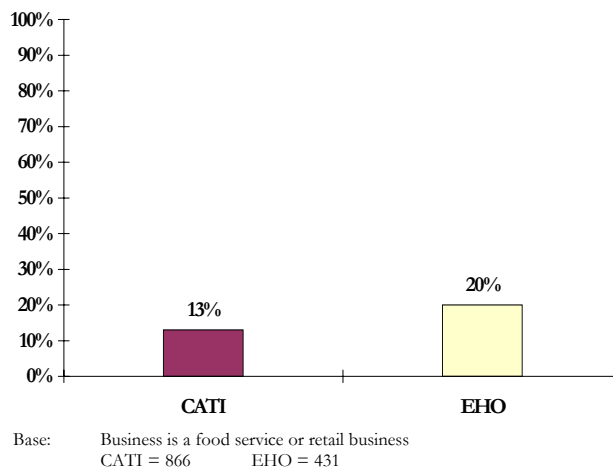
6.1.5   Food types

An overview of the types of food handled by businesses revealed a broad cross-section of food types in large proportions (Table 2). As the majority of businesses surveyed were "restaurant / café / takeaway" businesses, or "hospitals / schools / child care centres" this wide range of foods would be expected.

An analysis of food types (Table 2) revealed that low risk businesses could still sell high risk foods such as:

> ➢ raw meat, poultry or seafood;
> ➢ cooked or processed meat poultry or seafood;
> ➢ fermented or dried meat products;
> ➢ egg or egg products;
> ➢ dairy products; and/or
> ➢ prepared salads.

It also can be seen that there was a larger proportion of businesses supplying "prepared ready-to-eat table meals" among EHO surveyed businesses and larger proportions of most other food categories within CATI surveyed businesses. This finding suggests that businesses self-report a larger range of food types than what EHOs might classify within the business.

Close to three-quarters of the businesses in the CATI survey produced or manufactured:

> ➢ cooked or processed meat poultry or seafood;
> ➢ soft drinks or juices;
> ➢ bread, pastries or cakes;
> ➢ egg or egg products; and
> ➢ dairy products.

Similar proportions of CATI and EHO surveyed businesses provided "meat pies, sausage rolls or hot dogs", and "infant or baby food".

In addition to the foods listed in Table 2, businesses were asked if they provided uncooked, fermented comminuted meat. Only 5% of CATI and 2% of EHO surveyed businesses reportedly handled this type of food. In some States and Territories butchers and meat producers and processors are not regulated by EHOs or PHUs and some surveying officers informed Campbell Research & Consulting that they were uncomfortable, unwilling or unable to survey meat producers and processors (See Section 5.2.1).

Table 2:	Food type by business classification							
Q2 CATI:	*We would like some specific information on the foods that you produce, do you provide, produce or manufacture any of the following foods.*							
EHO:	*Please list the food types that apply to this business.*							

	High Risk		Medium Risk		Low Risk		Total	
	CATI (185) % A	EHO (166) % B	CATI (719) % C	EHO (291) % D	CATI (280) % E	EHO (26)* % F	CATI (1,200) % G	EHO (483) % H
Prepared ready-to-eat table meals	61[E]	62	58[E]	56	11	0	47	55[G]
Frozen meals	22	20[D]	30[AED]	11	15	4	26[H]	14
Raw meat, poultry or seafood	51[EB]	38	47[ED]	30	38[F]	0	46[H]	31
Cooked/processed meat, poultry or seafood	83[EB]	42	83[ED]	38	43[F]	4	74[H]	38
Fermented or dried meat products	43[CEB]	14	33[ED]	11	18	4	32[H]	12
Meat pies, sausage rolls or hot dogs	61[EB]	49	58[ED]	49	25	4	51	47
Sandwiches or rolls	77[EB]	64[D]	72[ED]	49	18	0	60[H]	52
Soft drinks / juices	78[EB]	67	88[AED]	69	54	38	79[H]	67
Raw fruit and vegetables	78[EB]	48[D]	74[ED]	33	48	31	69[H]	38
Processed fruit and vegetables	63[CEB]	46[D]	50[ED]	27	25	15	46[H]	33
Confectionery	42	41	54[AED]	40	36	15	48[H]	39
Infant or baby foods	18[CE]	21[D]	10	10	11	4	12	13
Bread, pastries or cakes	84[EB]	66[D]	83[ED]	51	48	38	75[H]	55
Egg or egg products	83[EB]	51[D]	79[ED]	39	46	19	72[H]	42
Dairy products	83[EB]	62[D]	83[ED]	52	51	27	76[H]	54
Prepared salads	69[EB]	46[D]	64[ED]	36	13	0	53[H]	37

Base: All respondents
Note: Letters in the cells represent statistically significant differences between columns (see page i for an explanation).
• Sample too small to permit statistical significance testing

6.1.6   Providing food to "at risk" consumer groups

Less than two in ten CATI (17%) and EHO surveyed businesses (15%) served or provided food to "at risk" groups including (Figure 5):

> ➢ hospitals or sites where sick or frail people reside;
>
> ➢ nursing homes, hostels or other organisations serving elderly people;
>
> ➢ organisations serving pregnant women; or
>
> ➢ child care centres or other organisations serving children less than 5 years old.

Figure 5:   Providing food to "at risk" consumer groups
Q6:   CATI: Do you directly supply or manufacture food for the following organisations?
Q7:   EHO: Does the business directly supply or manufacture food for organisations catering to the sick, elderly, children under 5 or pregnant women?

Base: All respondents
          CATI = 1,200   EHO = 483
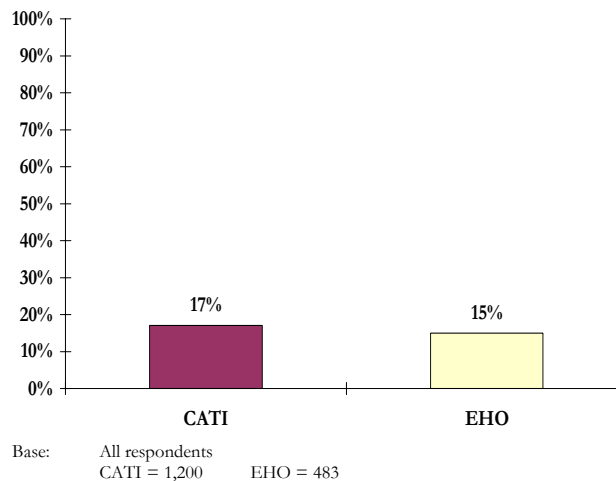
A breakdown of CATI businesses surveyed within each of these individual risk population classifications is presented in Table 3. Individual risk population categories were not classified within the EHO surveyed businesses.[9]

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[9]   EHOs are more familiar with the definition of an "at risk" population due to their training in food safety and therefore one general question about "at risk" populations was asked of them. Additionally, EHOs were briefed to use the same definition of "at risk". This was reinforced on each questionnaire. To obtain a similar assessment from CATI surveyed businesses, where the respondent could have very little understanding of "at risk" groups, this question was broken down into population categories.

Nearly all CATI and EHO surveyed businesses providing foods to "at risk" populations were classified as high risk businesses (Table 3), thus confirming appropriate application of the automated risk classification system. Four in ten (42%) of the EHO and eight in ten (77%) of the CATI surveyed businesses classified as high risk provided food to "at risk" populations. Differences between classifications of businesses as low or medium risk are likely to be due to differences in the type of food supplied.

Table 3: Providing food to "at risk" consumer groups by business classification			
Q6 CATI: Do you directly supply or manufacture food for the following organisations?			
	High Risk CATI (185) % A	**Medium Risk CATI (719) % B**	**Low Risk CATI (280) % C**
Hospitals, or other sites where sick or frail people reside	24^{BC}	4	4
Nursing homes, hostels or other organisations serving elderly people	46^{BC}	3	5
Organisations serving pregnant women	8^{BC}	1	1
Child care centres or other organisations serving children under 5 years old	26^{BC}	2	1
Net yes CATI	**77%**	**8%**	**7%**
	High Risk EHO (166) % A	**Medium Risk EHO (291) % B**	**Low Risk EHO (26) % C**
Net yes EHO	**42^{B}**	**1**	**0**

Base: All respondents
Note: Letters in the cells represent statistically significant differences between columns (see page i for an explanation).

6.1.7   Location of business

Similar proportions of businesses were interviewed in most States and Territories for both surveys (Figure 6). There were no significant differences between the two samples by either state or business size.

Figure 6:   State location of business

Base: All respondents
CATI = 1,200   EHO = 483
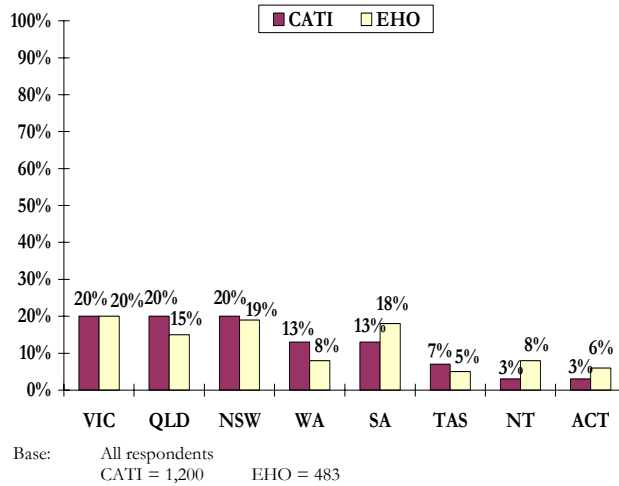
Survey target samples were set to achieve a proportional representation of interviews in each state depending on state population. Targets were more easily achieved on the CATI interviews where businesses were selected through the telephone directory. EHO targets were more difficult to achieve, as the response rates were not known until survey return dates had passed. After this time, decisions about whether to extend the deadline to ensure better representation had to be made. In many instances individual councils were contacted to negotiate a reasonable extension of time where there was a possibility of inclusion.

One half of both CATI (52%) and EHO (50%) businesses surveyed were located in rural regions and very similar proportions in metro regions (Figure 7). The over-representation of rural food businesses was a function of the sampling to ensure that sample segments were of sufficient size to enable confidence. In general, there was little difference by rural/ metropolitan region.

Figure 7:   Rural/regional and metro

Base: All respondents
CATI = 1,200   EHO = 483
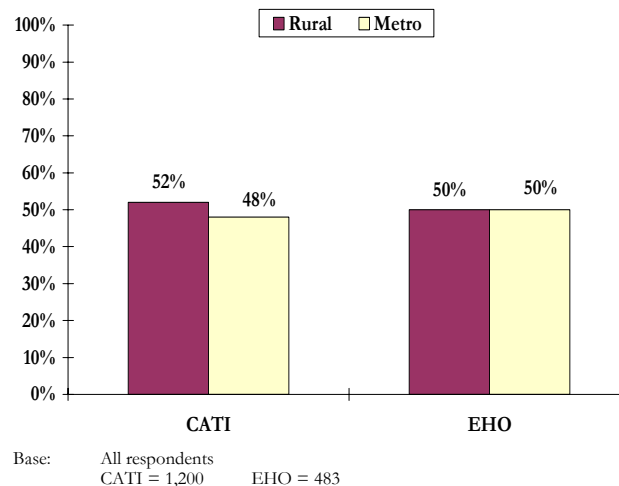
"Schools / child care centers / hospitals" were more often surveyed in metro areas compared with rural and regional areas among both EHO (20%) and CATI (32%) samples (Table 5).

63% of the EHO rural and regional surveys were of "restaurant / cafe / takeaway" businesses, substantially more than in metropolitan areas (49%).

Table 4: Business types by regional location						
Q1a CATI: How would you describe your business in your own words?						
	Metropolitan		Rural/Regional		Total	
	CATI (581) % A	EHO (240) % B	CATI (619) % C	EHO (243) % D	CATI (1,200) % E	EHO (483) % F
School / Child Care / Hospital	32C	20D	18	12	24	16
Restaurant / Takeaway	44	49	50	63B	47	56
Mixed business (e.g. bakery)	17	19	21	19	19	19
Other Manufacturing / Processing	12	9	14	5	13	7
Others	4	1	7	-	6	1

Base: All respondents
Note: Letters in the cells represent statistically significant differences between columns (see page i for an explanation).

CATI surveyed businesses had similar levels of risk regardless of whether they were located in rural or metropolitan regions (Table 5). However, EHO surveyed metropolitan-based businesses were more often high risk (38%) or low risk (9%) compared with rural businesses (30% and 2% respectively). EHO surveyed rural and regional businesses were comparatively more likely (67%) to be medium risk than the metropolitan businesses (53%).

| Table 5: Business classification by regional location						
	Metropolitan		Rural/Regional		Total	
	CATI (581) % A	EHO (240) % B	CATI (619) % C	EHO (243) % D	CATI (1,200) % E	EHO (483) % F
High risk	17	38D	14	30	15	34
Medium risk	59	53	61	67B	60	60
Low risk	23	9D	24	2	23	5

Base: All respondents
Note: Letters in the cells represent statistically significant differences between columns (see page i for an explanation).

Among EHO surveyed businesses (Table 6), all of those surveyed in the Northern Territory (100%) were classified as rural and those in the ACT (100%) as metropolitan. Western Australia had a comparatively higher proportion of metropolitan-based businesses (72%).

Within the CATI survey (Table 6), Queensland and Tasmania had a larger proportion of interviews among rural based businesses while Western Australia and the ACT were over represented in metropolitan areas.

Table 6: Regional location by state

	NSW		VIC		QLD		SA		TAS		WA		ACT		NT	
	CATI (240) % A	EHO (94) % B	CATI (240) % C	EHO (98) % D	CATI (240) % E	EHO (74) % F	CATI (160) % G	EHO (88) % H	CATI (80) % I	EHO (26)* % J	CATI (160) % K	EHO (39) % L	CATI (40) % M	EHO (27)* % N	CATI (40) % O	EHO (37) % P
Metropolitan	48 EI	56 FP	50 EI	49 P	31	38 P	56 EIO	45 P	30	62	66 ACEI O	72 DFH P	100 ACE GIK O	100	35	0
Rural / regional	53 KM	44	50 KM	51 L	69 ACG KM	62 BL	44 M	55 L	70 ACG KM	38	34 M	28	0	0	65 GKM	100 BDF HL

Base: All respondents
Note: Letters in the cells represent statistically significant differences between columns (see page i for an explanation).
* Sample too small to permit statistical significance testing

Comparing business type by state (Table 7) illustrates a few notable differences in each surveyed sample.

In the EHO sample, New South Wales (13%) had a larger proportion of "manufacturing & processing" businesses surveyed than Victoria (4%). Queensland (26%) EHOs surveyed more "mixed business / bakery" business types compared to Western Australia (8%).

A smaller proportion of CATI surveys from Tasmania (14%) were among "schools/ child care centres/ hospitals" compared to New South Wales (32%), South Australia (26%), Queensland (25%) and Western Australia (25%).

CATI Northern Territory surveys more often were undertaken in "restaurants/ café/ takeaways" (65%) compared to Queensland (48%), South Australia (43%) or Western Australia (39%).

Table 7:	Business type by state															

Q1a CATI: How would you describe your business in your own words

Nett	NSW		VIC		QLD		SA		TAS		WA		ACT		NT	
	CATI (240) % A	EHO (94) % B	CATI (240) % C	EHO (98) % D	CATI (240) % E	EHO (74) % F	CATI (160) % G	EHO (88) % H	CATI (80) % I	EHO (26)* % J	CATI (160) % K	EHO (39) % L	CATI (40) % M	EHO (27)* % N	CATI (40) % O	EHO (37) % P
School /Child Care /Hospital	32 CIO	14	21	22	25 IO	15	26 IO	13	14	12	25 IO	18	25	15	10	22
Restaurant /Takeaway	49 K	53	51 K	57	48	55	43	60	49	38	39	69	45	41	65 EGK	62
Mixed business (e.g. bakery)	17	16	15	14	19	26 L	19	19	28 AC	38	20	8	25	33	18	11
Other Manufacturing/ Processing	11	13D	13	4	13	4	19 AKM	8	15	8	11	5	5	11	10	3
Others	5	1	6	1	4	0	7	0	4	4	8	0	8	0	8	3

Base: All respondents
Note: Letters in the cells represent statistically significant differences between columns (see page i for an explanation).
*   Sample too small to permit statistical significance testing

6.1.8   Business size

Business size was identified in terms of number of full time equivalent people employed. This was calculated by asking:

1. number of full time staff;

2. estimated total hours of part-time or casual staff;

3. converting part-time or casual hours to full time equivalent in the most recent week; and

4. estimating the total staff by adding full time to full time equivalent.

The definition of a small business used by ANZFA was: "a business that employs less than 50 people in the food manufacturing sector or which employs less than 10 people in the food services sector."

By utilising this definition, nine in ten CATI (93%) and EHO (90%) businesses surveyed were small businesses (Figure 8).

Figure 8:   Small business

Base: All respondents
             CATI = 1,200   EHO = 483
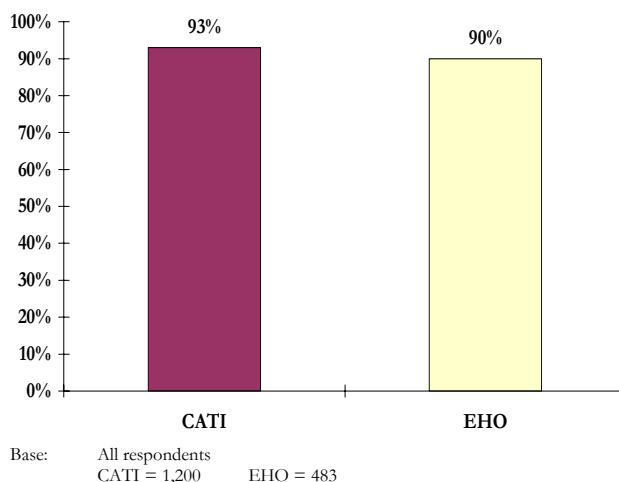
More "schools / child care centres and hospitals" (25%) or "restaurant / takeaway" businesses (49%) were classified as small businesses using the CATI survey compared to the EHO survey,

EHO surveyed small businesses (58%) were more commonly "restaurant / takeaway" businesses than were the large businesses surveyed by EHOs (35%).

Table 8: Business type by business size						
Q1a CATI: How would you describe your business in your own words						
	Small Business		**Large Business**		**Total**	
Nett	**CATI (1,113) % A**	**EHO (437) % B**	**CATI (87) % C**	**EHO (46) % D**	**CATI (1,200) % E**	**EHO (483) % F**
School/Child Care/Hospital	25[CB]	16	15	20	24	16
Restaurant/Takeaway	49[CB]	58[D]	31	35	47	56
Mixed business (e.g. bakery)	18	17	30[A]	37[B]	19	19
Other Manufacturing / Processing	12[B]	7	21[A]	4	13	7
Others	5[B]	0	11[A]	4[B]	6	1

Base: All respondents
Note: Letters in the cells represent statistically significant differences between columns (see page i for an explanation).

Three in twenty (15%) metropolitan businesses surveyed by EHOs were classified as large (Table 9), notably higher than one in twenty large businesses surveyed in rural areas (5%). The reverse was also true, a substantially higher proportion of rural businesses surveyed by EHOs (95%) were small businesses compared 85% of metropolitan businesses.

Table 9: Business size by regional location						
	Metropolitan		Rural		Total	
	CATI (581) % A	EHO (240) % B	CATI (619) % C	EHO (243) % D	CATI (1,200) % E	EHO (483) % F
Small business	91	85	94	95B	93	90
Large business	9	15D	6	5	7	10

Base: All respondents
Note: Letters in the cells represent statistically significant differences between columns (see page i for an explanation).

6.1.9 Risk classification and business type

Analyses of business classification by business type and size is presented here to confirm the classification system allocated businesses as intended.

Six in ten (64%) EHO and CATI (61%) medium risk businesses were "restaurant / takeaway" businesses, compared with high risk (46%) or low risk (35%) businesses (Table 10).

"Mixed business (e.g. bakery)" (34%) or "other manufacturing / processing" (25%) were more often classified as low risk businesses.

Table 10: Business type by business classification								
Q1a CATI: How would you describe your business in your own words								
	High Risk		Medium Risk		Low Risk		Total	
	CATI (185) % A	EHO (166) % B	CATI (719) % C	EHO (291) % D	CATI (280) % E	EHO (26)* % F	CATI (1,200) % G	EHO (483) % H
School/Child Care/Hospital	43CE	30D	25E	10	13	8	24	16
Restaurant/Takeaway	30	46	61AE	64B	23	35	47	56
Mixed business (e.g. bakery)	15	19	14	18	34AC	35	19	19
Other Manufacturing / Processing	15C	5	8	8	25AC	15	13	7
Others	5	0	4	1	9C	4	6	1

Base: All respondents
Note: Letters in the cells represent statistically significant differences between columns (see page i for an explanation).
* Sample too small to permit statistical significance testing.

There were no notable differences in the proportion of risk categories of businesses surveyed across the individual States / Territories (Table 11).

Table 11: State/ Territory by business classification	High Risk		Medium Risk		Low Risk		Total	
	CATI (185) % A	EHO (166) % B	CATI (719) % C	EHO (291) % D	CATI (280) % E	EHO (26)* % F	CATI (1,200) % G	EHO (483) % H
New South Wales	23	16	21	19	16	42	20	19
Victoria	21	22	19	20	21	15	20	20
Queensland	20	19	20	14	20	0	20	15
South Australia	14	22	13	16	16	19	13	18
Tasmania	5	4	7	6	8	4	7	5
Western Australia	12	4	13	11	15	8	13	8
The Australian Capital Territory	5	5	3	5	2	8	3	6
Northern Territory	2	8	4	8	2	4	3	8

Base: All respondents
Note: Letters in the cells represent statistically significant differences between columns (see page i for an explanation).
* Sample too small to permit statistical significance testing.

6.1.10 Type of respondent

Three in ten CATI surveys were conducted with either "owners" (33%) or "senior managers" (29%). Other people involved were "food service or quality managers" (13%) or a "chef / kitchen hand" (12%).

EHO surveys, while intended to be based on observations rather than questions, were usually conducted in the presence of someone from the business. In nearly half (48%) of the surveys this was the "owner". Senior management accompanied another three in ten (35%) EHOs. General staff were less likely to be involved in EHO surveys probably due to the enforcement role EHOs have in conjunction with their position in the local council.

Figure 9: Title of respondent

Base: All respondents
           CATI = 1,200   EHO = 483
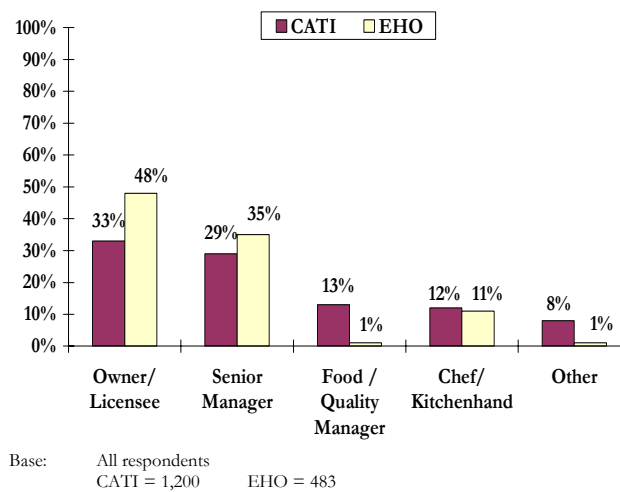
Over half (54%) of CATI interviews were conducted with females who held a variety of positions within the organisations. Males interviewed were more likely than females to hold positions such as "owner/ proprietor/ licensee", "senior manager" or "head/ executive chef". Conversely, females were more likely to be employed in positions such as "food service manager" or "other manager". Women interviewed were more likely than men to be employed in businesses such as "schools/ child care centres/ hospitals" Men and women were equally represented in "restaurant/ takeaway" businesses, and men were more likely to work in "mixed businesses (e.g. bakery" or "other manufacturing/ processing".

7 Telephone survey among food businesses

The objective of the telephone survey was to identify the extent of knowledge about food safety issues and practices in food businesses. The primary interviewing technique was to encourage businesses to respond, but not force them to guess. It was just as useful to identify the extent to which people do not know the answer to food handling questions as it was to identify correct and incorrect responses.

7.1 Temperature control

Controlling the temperature of food is a critical element of food safety. Businesses can maintain food safely by keeping chilled food 5°C or below and hot food 60°C or hotter. Businesses were asked about their temperature control practices and about their knowledge of the temperatures that were suitable for keeping hot and cold food safe.

Food that has to be kept under temperature control is termed potentially hazardous food.   However, in a short telephone interview with businesses that would be unfamiliar with this expression, generally questions referred to chilled or hot food. The report refers to these foods as 'temperature sensitive'.

Some foods may be kept at refrigeration temperatures for quality rather than safety reasons for example, whole fresh fruit and vegetables. The survey did not distinguish these from foods that were kept chilled for safety reasons.

7.1.1   Receiving hot and chilled food

Businesses were asked if food was delivered to their business that had to be kept chilled or hot, how often temperature checks were made of this food and how these checks were made. They were asked which foods they checked.

Nearly nine in ten (87%) businesses reported that they had foods delivered to their business that were temperature sensitive[10] and needed to be kept hot or cold (Figure 10).

> Nine in ten businesses had hot and chilled foods delivered to their premises.

[10]   Temperature sensitive foods include foods that need to be kept chilled or hot to maintain quality.

Of businesses where hot or chilled foods were delivered, two in ten (22%) "never" checked the temperature of foods that were delivered (Figure 11), and another one in ten (10%) "occasionally" checked the temperature of delivered foods.

Less than two in ten (18%) businesses receiving hot or chilled food regularly checked the temperature of foods delivered.

Figure 10: Delivery of temperature sensitive food

Q9a: Do you have foods delivered to your business that have to be kept chilled or hot?
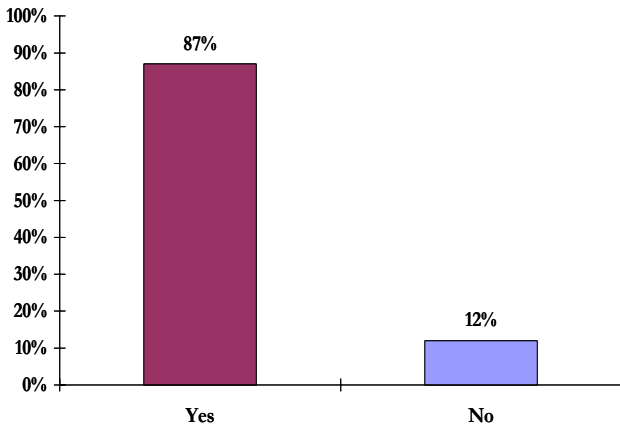
Base: All respondents = 1,200 (CATI)

Figure 11: Frequency of checking temperature of delivered food

Q9b: How often would you check the temperature of foods delivered? Would you check them?
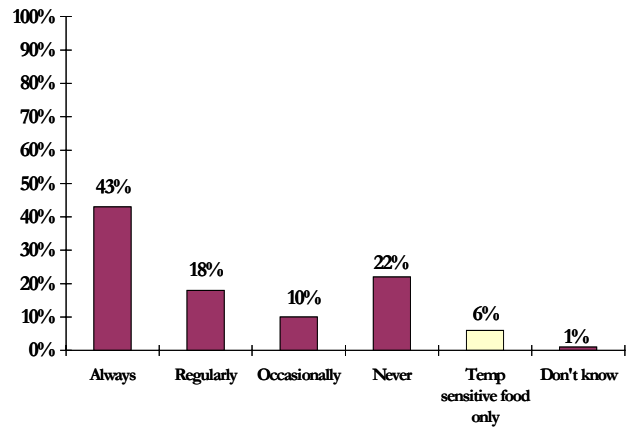
Base: Have food delivered = 1,049 (CATI)

One fifth of businesses receiving hot or chilled food deliveries never checked the temperature of food delivered to their premises.

7.1.2   Thermometers

Businesses that check temperatures of food need a probe thermometer if they are to check the food temperature accurately. Information was sought on whether businesses had a probe thermometer. If food businesses stored chilled food they were asked about their knowledge of storage temperatures of chilled food.

Most (73%) businesses that had temperature sensitive food delivered, and who reported they checked the temperature of food that was delivered had a probe thermometer. One in four (23%) did not have a probe thermometer (Figure 12). Very few (1%) reported they were unsure if they had a probe thermometer or did not believe it was a necessary piece of equipment for the type(s) of food they handled (1%).

Figure 12: Temperature probe

Q9e: Do you have a temperature probe? That is, a thermometer that can be inserted into food to measure its temperature?

Base: Has temperature sensitive food delivered to business AND checks temperature of food = 818 (CATI)
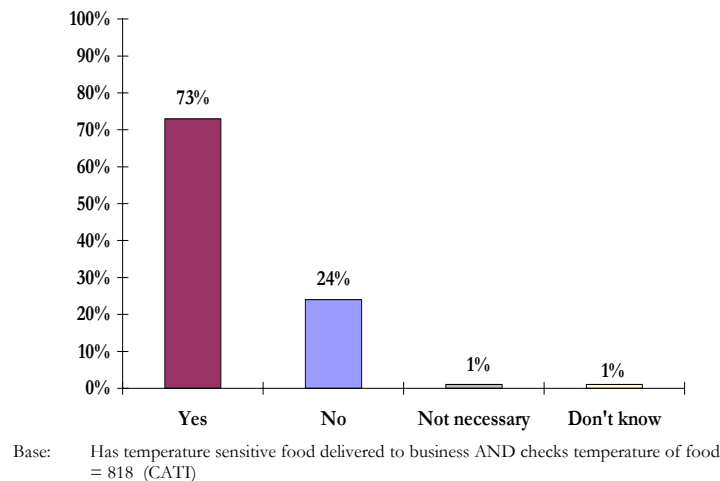
Businesses more likely to have a temperature probe included:

➢ high (81%) or medium (73%) risk businesses as compared with low risk (65%);

➢ large (93%) compared to small (71%);

➢ Victorian businesses (89%) compared to all other States and Territories;

➢ those reporting they felt informed (76%) about food safety compared with not informed (60%); and

➢ those offering staff training (77%) compared to not offering staff training (60%).

7.1.3   Temperature check by business classification and business size

Comparing risk classifications and business size illustrated some difference in frequency of checking the temperature of food delivered to the business (Table 12). Small business were more likely "never" to check their food temperature (23%), when compared to large businesses (4%). Large businesses (72%) were more likely to "always" check temperatures compared to small businesses (41%).

Table 12: Check temperature of delivered food by business classification **and business size**						
Q9B: *How often would you check the temperature of foods delivered?*						
	Business classification			**Business size**		
	High Risk (173) % A	**Med Risk (661) % B**	**Low Risk (200) % C**	**Small (974) % D**	**Large (75) % E**	**Total (1,049) % F**
Never	13	24[A]	25[A]	23[E]	4	22
Occasionally	9	11	8	10	11	10
Regularly, but not every delivery	21	16	21	18[E]	7	18
Always	50	42	42	41	72[D]	43
Only temperature sensitive food	5	6	4	6	5	6
Don't know	2	1	2	1	1	1

One quarter of medium (24%) and low (25%) risk businesses receiving hot and chilled food "never" checked the temperature of food delivered to the business. High risk businesses were less likely to report they "never" checked the temperature of the food (13%).

Nearly all businesses receiving hot/chilled food checked the temperature of food delivered to their business at least occasionally:

> ➢ 85% of high risk businesses;
> ➢ 75% of medium risk businesses; and
> ➢ 73% of low risk businesses.

Businesses with a temperature probe were more likely to check hot or chilled food (Table 13). Businesses with a temperature probe (61%) more often reported they "always" checked the temperature of delivered food compared to those businesses without a temperature probe (43%).

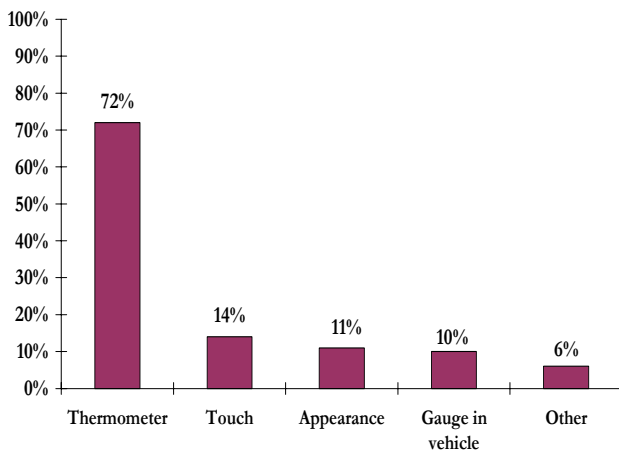| Table 13:	Check temperature of delivered food by use of temperature probe		
Q9A:	*Do you have foods delivered to your business that have to be kept chilled or hot?*		
Q9B:	*How often would you check the temperature of foods delivered?*		
Q9E:	*Do you have a temperature probe? That is, a thermometer that can be inserted into food to measure its temperature?*		
		Has temp probe	
		%	
		Yes (600) B	**No (200) C**
Never		0	0
Occasionally		11	20[B]
Regularly, but not every delivery		21	26
Always		61[C]	43
Only temperature sensitive food		6	11[B]
Don't know		1	2

Base: Had chilled or hot food delivered (818)

Very few businesses receiving hot and chilled food said that a temperature probe was not necessary (1%) or did not know if they had a temperature probe (1%)

Of businesses that checked the temperature of food, over one in ten (14%) checked the temperature by "touch" and another one in ten (11%) checked the temperature by "looking at the appearance" of the food (Figure 13). A clear majority of seven in ten (72%), businesses that checked food temperature, reported they used a thermometer to check the temperature of foods delivered to their business.

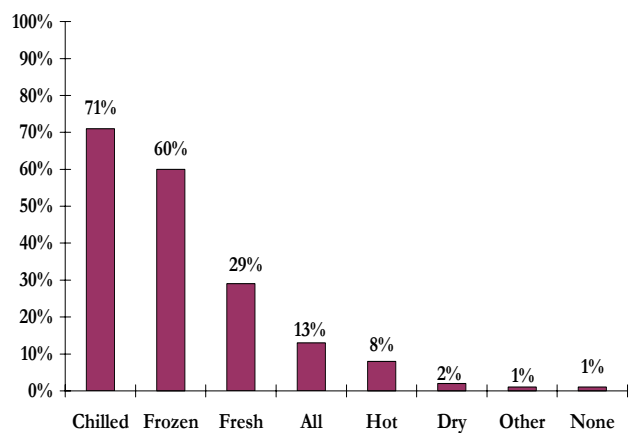**Figure 13: Method for checking temperature of delivered food**

Q9c: How do you check the temperature of the food?

Figure 14: Food types to check temperature when delivered

Q9d: Which type of foods would you check the temperature of when delivered?

	Thermometer	Touch	Appearance	Gauge in vehicle	Other
	72%	14%	11%	10%	6%

Base: Has hot or chilled food delivered to business AND checks temperature of food = 818 (CATI)
Total may be greater than 100% due to multiple responses

	Chilled	Frozen	Fresh	All	Hot	Dry	Other	None
	71%	60%	29%	13%	8%	2%	1%	1%

Base: Has hot or chilled food delivered to business AND checks temperature of food = 818 (CATI)
Total may be greater than 100% due to multiple responses

Businesses were much more likely to check the temperature of chilled or frozen items compared to hot foods (Figure 14).

When asked which types of food a business checked the temperature:

➢ a majority of businesses (71%) checked the temperature of chilled food when it was delivered;

➢ six in ten (60%) checked frozen food;

➢ over one in ten (13%) checked "all" foods; and

➢ one in ten (8%) checked "hot" foods.

> One in ten businesses where hot or chilled food was delivered and the temperature was checked, checked the temperature of foods by their appearance rather than by touch or a thermometer.

High (65%) and medium (62%) risk businesses were more likely to check the temperature of frozen food compared to low risk (46%) businesses (Table 14). Other than frozen food, no differences were identified by risk classification or business size.

Table 14:	Temperature control for different types of food by business classification and business size					
Q9D:	*Which types of food do you check the temperature of when delivered?*					
	Business classification			**Business size**		
	High Risk (151) % A	**Med Risk (503) % B**	**Low risk (151) % C**	**Small (746) % D**	**Large (72) % E**	**Total (818) % F**
Chilled food	73	73	66	71	75	71
Frozen food	65C	62C	46	59	68	60
Fresh food	32	30	24	29	39	29
All foods	15	13	13	13	15	13
Hot food	9	9	5	8	7	8
Dry foods	2	3	0	2	1	2

Base: Have hot or chilled food delivered & check temperature of food delivered (818)
Note: Businesses where a risk classification has not been made have been excluded from this table

When considering the total population of businesses, those which were less likely to check the temperature of delivered food were (Table 15):

> ➤ businesses who did not feel informed on food safety regulations;
> ➤ businesses not providing staff training; and
> ➤ businesses where females responded to the survey.

Table 15:	Check temperature of delivered food by staff knowledge and gender of respondent						
Q9B:	*How often would you check the temperature of foods delivered?*						
Q24:	*How well informed do you feel about the current regulations about food safety?*						
Q28A:	*Do you provide staff training on handling food safely?*						
	Informed of food safety regulations		Staff training		Gender		
	Total informed (850) % A	Not informed (193) % B	Yes (797) % C	No (252) % D	Male (484) % E	Female (565) % F	Total (1,049) % G
Never	19	36[A]	18	36[C]	17	26[E]	22
Occasionally	9	15[A]	9	12	10	10	10
Regularly, but not every delivery	17	18	18	15	18	17	18
Always	49[B]	20	48[D]	28	47[F]	40	43
Only temperature sensitive food	5	8	5	8	6	5	6
Don't know	1	4[A]	2	1	1	1	1

Base: Have hot or chilled food delivered (1,049)

7.1.4 Temperature controlled storage

If food businesses stored chilled food they were asked about their knowledge of storage temperatures of chilled food. Most (92%) businesses stored chilled food on their premises (Figure 15).

> Few (one in twenty) businesses storing chilled food did not know the correct temperature for storage of chilled food

One in twenty (6%) businesses storing chilled food incorrectly reported that chilled food could be stored higher than 5°C (Figure 16). Three in twenty (15%) did not know what temperature to store chilled food, while eight in ten (78%) answered the question correctly (5°C or lower).
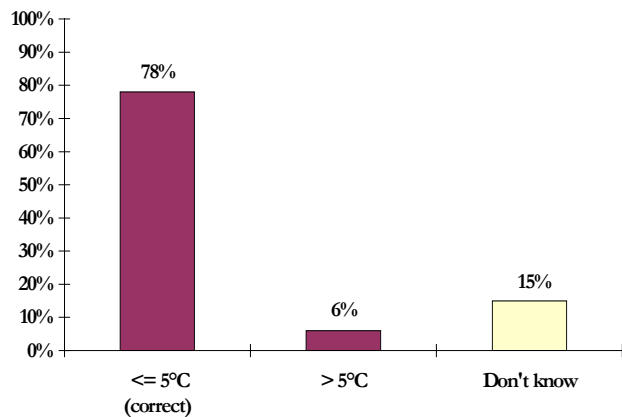
Figure 15: Storing chilled food

*Q10a: Do you **store** chilled food at your business?*
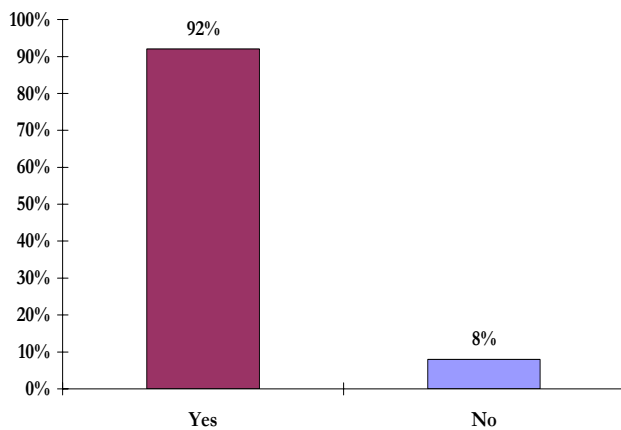
Base: All respondents = 1,200 (CATI)

Figure 16: Temperature for storing chilled food

*Q10b: What temperature should **chilled** food be stored at?*

Base: Store chilled food = 1,102 (CATI)

Low risk businesses (10%) storing chilled food, more often reported chilled food storage temperatures higher than appropriate (5°C or less) compared to medium (5%) risk businesses (Table 16). One in ten high risk (12%), one in seven medium risk (15%) and one in twenty (19%) low risk businesses didn't know the correct temperature.

Nearly one in five (16%) small businesses storing chilled food did not know the correct temperature for storing chilled food compared with only 6% of large businesses.

	Business classification			Business size		Total (1,102) % F
Table 16: Temperature for chilled food storage by business classification and business size						
Q10B: What temperature should chilled food be stored at?						
	High Risk (179) % A	Med Risk (675) % B	Low Risk (232) % C	Small (1,020) % D	Large (82) % E	Total (1,102) % F
5°C or less (correct)	83C	80C	71	78	89D	78
More than 5°C	5	5	10B	6	5	6
Don't know	12	15	19	16E	6	15

Base: Stores chilled food (1,102)

> Nearly one in five high risk businesses either did not know (12%) or incorrectly stated (5%) the correct temperature of storing chilled food.

Businesses that stored chilled food, and did not feel they were informed of food safety regulations, were also more likely to report that:

  ➢ chilled food should be stored at higher temperatures than appropriate (above 5°C); or
  ➢ they did not know at what temperature chilled food should be stored (Table 17).

One quarter (26%) of businesses without staff training programs, and who stored chilled food, were less likely to know the correct temperature for storing chilled food (Table 17) compared to businesses with staff training (12%).

One quarter (24%) of females in businesses storing chilled food did not know the correct temperature compared to males (4%). This reflects the positions typically held by women compared to men. As discussed in Section 6.1.10, males were more often held positions such as "owner / proprietor", "senior manager" or "head / executive chef". Conversely females tended to hold less senior management positions such as "food service manager" or "other manager".

| **Table 17:**	**Temperature for chilled food storage by staff knowledge and gender of respondent**						
Q10B:	*What temperature should chilled food be stored at?*						
Q24:	*How well informed do you feel about the current regulations about food safety?*						
Q28A:	*Do you provide staff training on handling food safely?*						
	Informed of food safety regulations		**Staff training**		**Gender**		
	Total informed (897) % A	**Not informed (195) % B**	**Yes (826) % C**	**No (276) % D**	**Male (494) % E**	**Female (608) % F**	**Total (1,102) % G**
5°C or less (correct)	82[B]	63	82[D]	67	89[F]	70	78
More than 5°C	5	11[A]	6	7	6	6	6
Don't know	13	27[A]	12	26[C]	4	24[E]	15

Base: Stores chilled food (1,102)

7.1.5   Hot holding of food

If food businesses held food hot in a display unit or similar they were asked what temperature the food should be held.

➢ Four in ten (38%) businesses needed to hold hot food for periods of time (Figure 17).

➢ One quarter (23%) businesses needing to hold hot food either "did not know" the correct temperature (19%), or stated a temperature too low (4%) for safely holding hot food (lower than 60°C) (Figure 18).

➢ Eight in ten (77%) businesses holding hot food correctly indicated that hot food should be held at or above 60°C.

Figure 17: Holding hot food

*Q11a: Do you **hold cooked** food in a bain marie unit (or something similar) to keep food hot?*
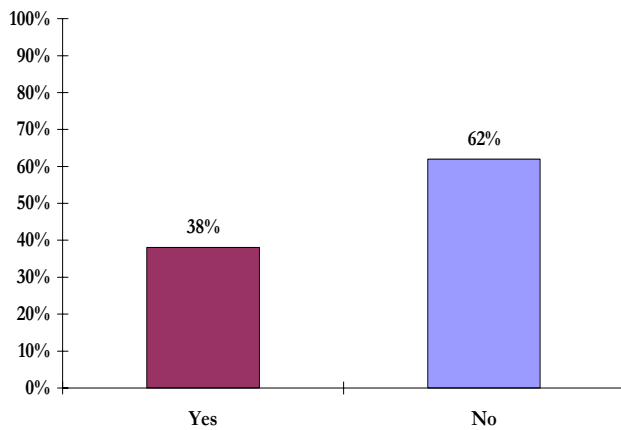
Base: All respondents = 1,200 (CATI)

Figure 18: Temperature for holding hot food

*Q11b: What temperature should **cooked** food be held in a bain marie unit (or something similar to keep food hot)?*
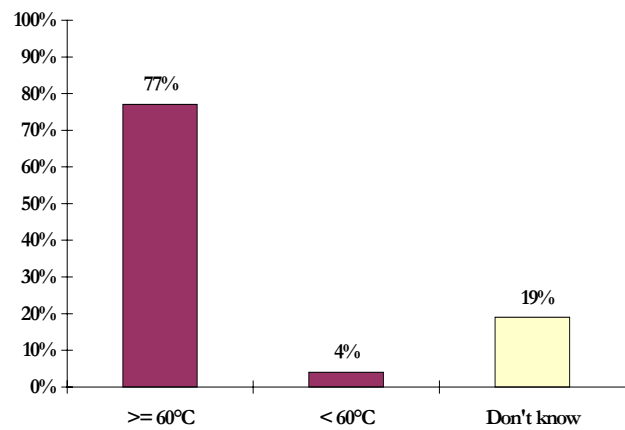
Base: Holds hot food = 453 (CATI)

One quarter of businesses involved with holding hot food did not know, or incorrectly identified, the appropriate temperature for safely holding hot food.

Medium (21%) and low (24%) risk businesses where hot food was more likely to be held did not know the correct temperature for holding hot food than high risk businesses (9%) (Table 18). Similar results were found for small (21%) compared to large (3%) businesses.

Businesses that were informed of food regulations were more likely to know the correct temperature for holding food in a bain marie (80%), compared to those that did not feel informed (59%). A similar pattern was observed for staff training (Table 19)

Table 18: Temperature control for holding hot food by business classification and business size						
Q11B: *What temperature should cooked food be held in a bain Marie unit?*						
	Business classification			Business size		Total (453) % F
	High risk (81) % A	Med risk (323) % B	Low risk (41) % C	Small (414) % D	Large (39) % E	
Less than 60°C	7	3	7	5	3	4
At or above 60°C (correct)	84^C	75	68	75	95^D	77
Don't know	9	21^A	24^A	21^E	3	19

Base: Holds hot food (453)

More than three in ten (37%) businesses where hot food was held, and the business did not feel informed of food safety regulations, or where staff training was not provided (31%), also "did not know" the correct temperature for holding hot food (Table 19).

Table 19: Temperature for holding hot food by staff knowledge and gender							
Q11B: *What temperature should cooked food be held in a bain marie unit?*							
	Informed of food safety regulations		Staff training		Gender		
	Total informed (368) % A	Not informed (81) % B	Yes (366) % C	No (87) % D	Male (197) % E	Female (256) % F	Total (453) % G
Less than 60°C	5	4	4	6	4	5	4
At or above 60°C (correct)	80^B	59	80^D	63	86^F	70	77
Don't know	15	37^A	16	31^C	10	26^E	19

Base: Holds hot food (453)

CR&C

Female respondents (26%) were more likely than male respondents (10%) to report that they didn't know the temperature for holding hot food.

7.1.6   Cooling

If food is prepared and cooked in advance it needs to be cooled rapidly to be kept safe. This only applies to food that may contain bacteria and which provides a medium for bacterial growth. However, to keep questions straightforward, if businesses cooked *any* types of food for later use, they were asked some questions about cooling.

One third (31%) of businesses reported that they cooked food and cooled it for later re-use (Figure 19).

Figure 19: Cooking food and cooling for re-use

Q12a   Do you cook food and then cool it for later use?

Base: All respondents = 1,200 (CATI)
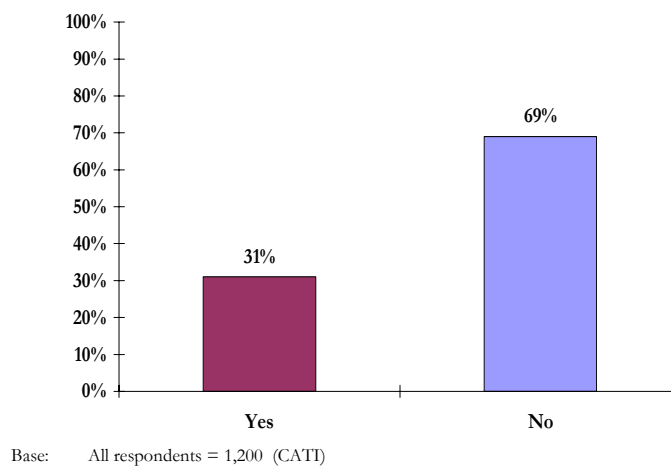
> One third of businesses cook food and cool it for later re-use.

A series of true/false questions were asked about the correct procedures for cooling food that has been cooked.

The first four statements offered a series of choices on how much time it should take to reduce the temperature of foods when cooling. A fifth statement asked businesses about the procedure for storing food in containers when cooling.

All businesses involved with cooking and then cooling food were asked to respond true or false to each of the following:

> ➢ cooked food must be cooled from 60°- 21° within two hours (True);
> ➢ cooked food must be cooled from 60°- 21° within four hours (False);
> ➢ cooked food must be cooled from 21°- 5° within six hours (False)
> ➢ cooked food must be cooled from 21°- 5° within four hours (True); and
> ➢ large amounts of cooked food should be placed in small containers and put in a cool room or refrigerator for cooling (True).

The comparative responses for statements on temperature and time of cooling food are presented in Figure 20.

Approximately half of businesses gave the correct response to each statement with the remainder being equally distributed between incorrect answers and "don't know" (Figure 20).

Figure 20: Temperature and time for safely cooling cooked food
Q12b: *Thinking about cooling or chilling **hot or cooked** food, can you tell me whether each of the following statements are true or false? Cooked food must be cooled from…*
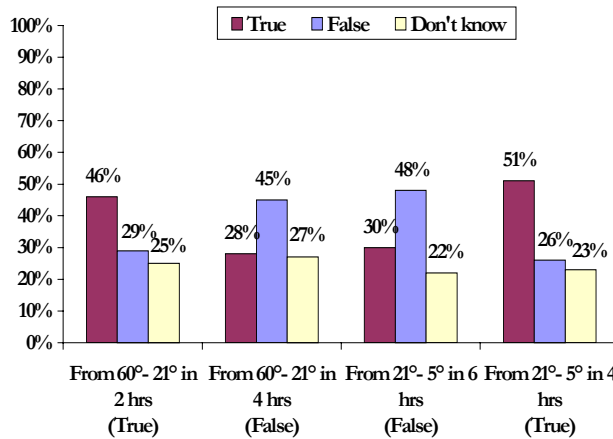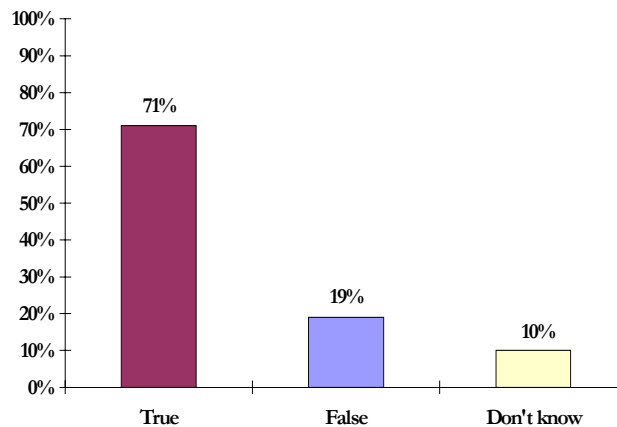

Base: Cools cooked food for later re-use = 375 (CATI)

Three in ten businesses (29%) either did not know (10%) or incorrectly reported "false" (19%): that "large amounts of cooked food should be placed in small containers and put in a cool room or refrigerator for cooling" (Figure 21).

Figure 21: Safely cooling large amounts of cooked food
Q12b: *Thinking about cooling or chilling **hot or cooked** food, can you tell me whether each of the following statements are true or false? Large amounts of cooked food should be placed in small containers and put in a cool room or refrigerator for cooling. (True)*

Base: Cools cooked food for later re-use = 375 (CATI)

> Three in ten businesses (29%) involved in cooling cooked food for later re-use did not know that large amounts of food should be placed in small containers and put in a cool room or refrigerator for cooling.

Males more often than females reported the correct responses for cooling cooked foods, females were more likely to report "don't know", as were businesses where staff training was not provided (Table 20).

Table 20:	**Cooling/Chilling cooked food by staff knowledge and gender**						
Q12B:	*Thinking about cooling or chilling HOT/COOKED food, can you tell me whether each of the following statements are true or false?* *Cooked food must be cooled from 60 to 21 Celsius within two hours.*						
	Informed of food safety regulations		**Staff training**		**Gender**		
	Total informed (308) % A	**Not informed (60) % B**	**Yes (305) % C**	**No (70) % D**	**Male (194) % E**	**Female (181) % F**	**Total (375) % G**
True (correct)	48	37	48	39	53^B	40	46
False	29	30	30	23	33	24	29
Don't know	23	33	22	39^C	14	36	25
Q12B:	*Thinking about cooling or chilling HOT/COOKED food, can you tell me whether each of the following statements are true or false?* *Cooked food must be cooled from 60 to 21 Celsius within four hours.*						
True	27	30	30	21	31	25	28
False (correct)	47	38	47	36	51^F	38	45
Don't know	26	32	24	43^C	18	37^E	27
Q12B:	*Thinking about cooling or chilling HOT/COOKED food, can you tell me whether each of the following statements are true or false?* *Cooked food must be cooled from 21 to 5 Celsius within six hours.*						
True	31	27	31	29	36^F	24	30
False (correct)	50	45	50^D	37	53^F	43	48
Q12B:	*Thinking about cooling or chilling HOT/COOKED food, can you tell me whether each of the following statements are true or false?* *Cooked food must be cooled from 21 to 5 Celsius within four hours.*						
True (correct)	51	53	54^D	40	60^F	42	51
False	28	17	27	21	26	25	26
Don't know	21	30	19	39^C	14	33^E	23
Q12B:	*Thinking about cooling or chilling HOT/COOKED food, can you tell me whether each of the following statements are true or false?* *Large amounts of cooked food should be placed in small containers and put in a cool room or refrigerator for cooling.*						
True (correct)	73	62	74^D	59	69	73	71
False	18	23	17	24	21	16	19
Don't know	8	15	9	17^C	10	11	10

Base: Cooks food then cools for re-use (375)
Note: Columns do not add to base because "don't know" columns are not included.

7.1.7   Holding food at room temperature

Potentially hazardous food can be safely held at room temperature for a very limited amount of time because pathogenic bacteria may multiply rapidly at these temperatures. As the answers needed to be clearly related to potentially hazardous foods (and not to other foods e.g. some hot desserts), the question described types of food that are potentially hazardous to the business. The foods described were lasagne and cooked rice. Businesses were given time intervals and asked to give the correct time that these types of food could be left at room temperature.

Very few businesses (3%) knew how long that cooked, potentially hazardous food (to be served hot) could be left at room temperature (Figure 22). The correct response was between 2-4 hours. Eight in ten businesses (79%) specified a shorter time period, and one fifth (17%) did not know.

Figure 22: Safely leaving potentially hazardous food at room temperature

Q13:   How long can potentially hazardous food that is **meant to be served hot** *be left at room temperature and still be safe? For example, how long can you safely leave lasagne or cooked rice at room temperature?*
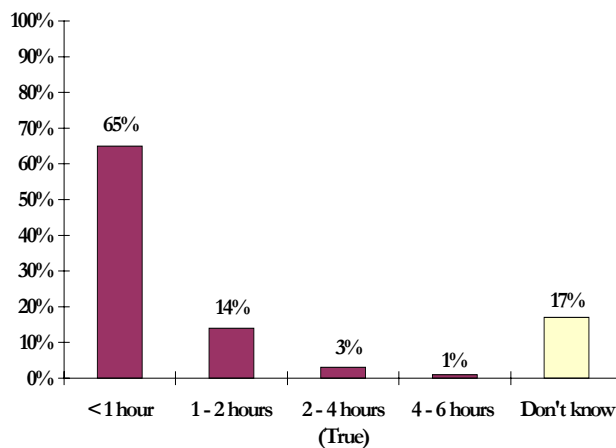
Base: Handles *"ready-to-eat food"* AND holds hot food OR cools cooked food for re-use = 367 (CATI)

7.1.8   Ready to eat foods requiring refrigeration

The knowledge of businesses on the types of food that had to be kept refrigerated was checked. Specific foods were listed

Businesses involved in preparing or handling ready-to-eat foods were read out a list of ready-to-eat foods and asked if they needed to be kept refrigerated in order to remain safe.

The correct responses included the following foods that needed to be kept refrigerated:

> ➢ lasagne;
> ➢ egg sandwiches;
> ➢ beef curry; or
> ➢ cooked rice.

The vast majority of businesses questioned would keep most prepared, ready-to-eat foods refrigerated to ensure they remained safe (Figure 23). However approximately one in ten would not keep lasagne, egg sandwiches or beef curry in the fridge. Two in ten (19%) did not consider it necessary to keep cooked rice in the refrigerator.

Figure 23: Ready-to-eat foods needing refrigeration

Q14:   Which of the following foods need to be kept refrigerated to ensure they remain safe?
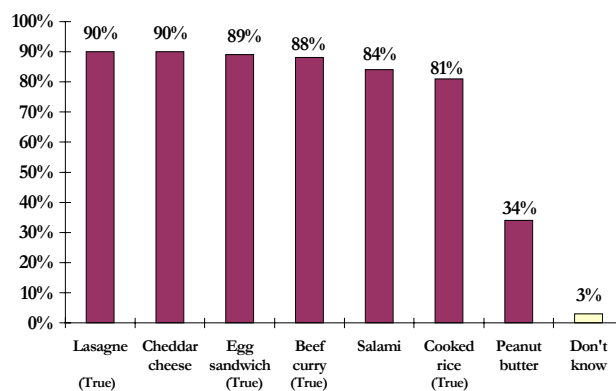
Base: Handles *"ready-to-eat food"* = 552 (CATI)

Two in ten businesses that handle ready-to-eat food did not report that it was important to keep cooked rice refrigerated.

Females more often than males nominated the correct foods needing to be kept refrigerated to ensure they remained safe (Table 21). Rural and regional based businesses were more aware of the need for the refrigeration of cooked rice and beef curry when compared with metropolitan businesses. It is worth noting that while women were more likely to recognise the foods that require refrigeration, they were less likely to know the temperature at which food should be refrigerated.

Table 21: Potentially hazardous food needing refrigeration by gender and region					
Q14: Which of the following foods need to be kept refrigerated to ensure they remain safe?					
	Gender		**Region**		
	Male (251) % A	**Female (301) % B**	**Metropolitan (261) % C**	**Regional (291) % D**	**Total (552) % E**
Cooked rice	78	84A	78	85C	81
Salami	83	86	83	86	84
Lasagne	87	93A	89	91	90
Egg sandwich	86	92A	87	91	89
Peanut butter	28	39A	30	38C	34
Beef curry	85	89	84	90C	88
Cheddar cheese	84	94A	88	91	90
Don't know	4B	1	3	3	3

Base: Handles ready to eat table meals (552)

7.2   Protecting food from contamination

Protecting food from contamination by staff, raw food and dirty equipment is a key food handling practice.

Businesses were asked two questions aimed at providing some information on current practices and on knowledge:

1) Whether employees wore gloves to handle food. Disposable gloves are sometimes used by businesses to prevent their staff transmitting micro organisms from hands. This gives an indication of the extent to which businesses claim to use gloves but could not, in a telephone survey, give any indication of whether the use was appropriate. However it could be cross-checked against other responses by the business for example, against those that provided staff training (indicating greater awareness of food safety issues) and whether the same gloves can be used for different food handling tasks.

2) A series of statements about contamination the business were asked to identify as were true or false.

7.2.1   Food handling

One fifth (22%) of businesses reported their employees did not wear gloves when handling food (Figure 24). A small proportion did not believe gloves were necessary (3%) for their business or did not know whether gloves were necessary (1%).

Figure 24: Gloves and food handling
Q20:   Do employees wear gloves when handling foods?

Base: All respondents = 1,200 (CATI)
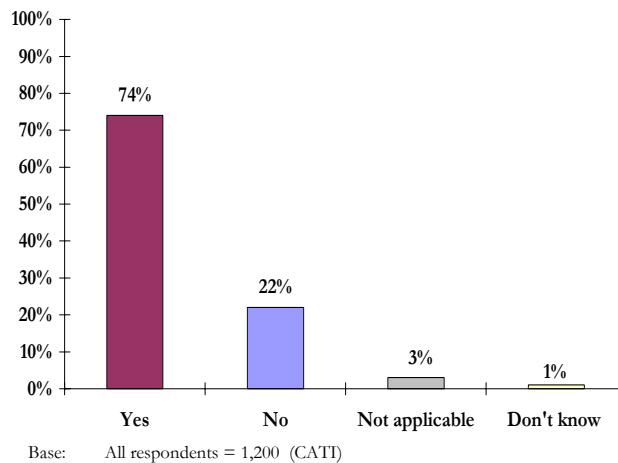
One fifth of businesses did not have employees wear gloves for food handling.

Businesses where staff were more likely to wear gloves included:

➢ high (82%) and medium (77%) risk compared to low risk (63%);

➢ large businesses (84%) compared to small (74%);

➢ those located in the ACT (90%) or NSW (85%) compared with VIC (73%), QLD (73%), SA (68%), WA (68%) and NT (58%);

➢ those where a female (80%) was interviewed rather than a male (68%); and

➢ those providing staff training (78%) compared to those without training (65%).

A series of true/false statements about general knowledge of safe food handling practices were asked of all CATI surveyed businesses including:

➢ the same gloves can be used to unpack raw vegetables and to slice cold meat (False);

➢ the same gloves can be used to clean and wipe tables as well as unstacking the dishwasher (False);

➢ the same equipment can be used to prepare raw meat and raw vegetables that are going to be cooked together (True);

➢ thinking about storing vegetables in the cool room, raw vegetables can be stored above uncovered cooked food (False);

➢ a knife can be cleaned by wiping with a damp sponge (False);

➢ it is safe for food handlers to directly touch bread (False); and

➢ it is safe for food handlers to directly touch ham (False).

Sometimes a business stated that the issue was not applicable for their business and would not give a response. In the case of these true/false statements a "not applicable" answer should be viewed as another segment of "don't know".

A very small proportion (2%) of businesses incorrectly reported that they could wear the same gloves for unpacking raw vegetables as well as slicing cold meat (Figure 25). Similarly, one in twenty (4%) incorrectly believed the same gloves could be used for both for cleaning and wiping tables, then unpacking the dishwasher. One per cent did not know whether these statements were true or false.

Figure 25: Wearing gloves for multiple food handling tasks

Q21a: *Please answer true or false to the following…*
                 The same gloves can be used to unpack raw vegetables and to slice cold meat. (False)
                 The same gloves can be used to clean and wipe tables as well as unstacking the dishwasher. (False)
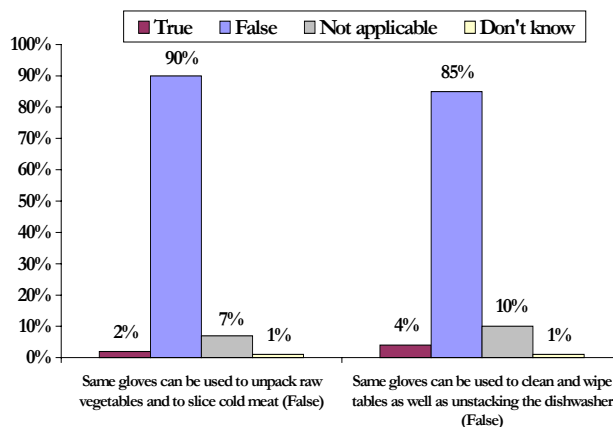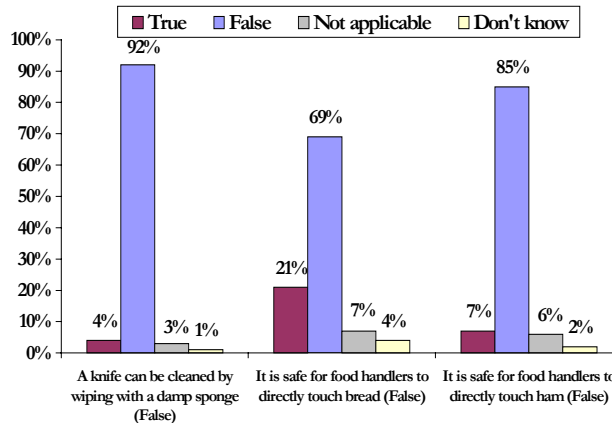

Base: All respondents = 1,200 (CATI)

Less than one in ten (8%) businesses answered correctly that it was true they could "use the same equipment to prepare meat and raw vegetables that were going to be cooked together" (Figure 26). Another 10% did not believe the question was relevant to them (9%) or did not know the answer (1%).

Fewer than one in ten (7%) incorrectly thought it was safe to store raw vegetables on a shelf above uncooked cooked food. In total, one in ten did not think it was an applicable question for them (12%) or did not know (3%) the answer to this statement.

Figure 26: Handling raw vegetables and cooked food

Q21a: *Please answer True/ False to the following…*
           The same equipment can be used to prepare raw meat and raw vegetables that are going to be cooked together. (True)
           Thinking about storing vegetables in the cool room, raw vegetables can be stored above uncovered cooked food. (False)

Base: All respondents = 1,200 (CATI)
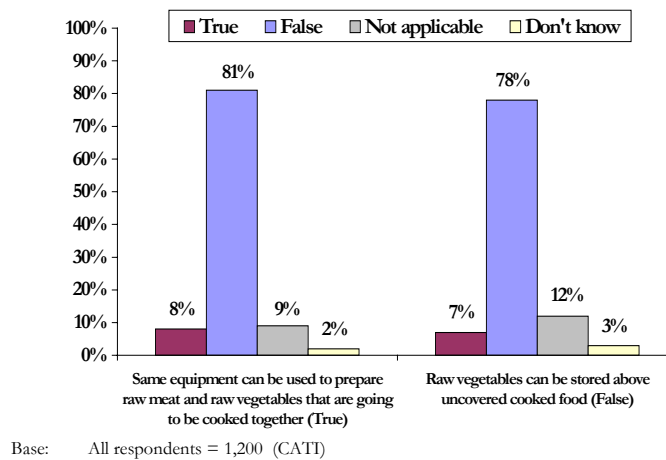
The final few true/false statements dealt with contamination of food directly by handlers touching or cleaning food implements.

A substantial two in ten (21%) businesses surveyed incorrectly believed it was safe for food handlers to directly touch bread and another 10% were unsure or felt the question was not applicable to them (Figure 27).

Only one in twenty incorrectly believed they could safely clean a knife by wiping with a damp sponge (4%) or that it was safe for food handlers to directly touch ham (7%).

Figure 27: Food handling: touching food and cleaning utensils
Q21a: Please answer true/false to the following….
*   A knife can be cleaned by wiping with a damp sponge. (False)*
*   It is safe for food handlers to directly touch bread. (False)*
*   .It is safe for food handlers to directly touch ham. (False)*

Base: All respondents = 1,200 (CATI)

A notable two in ten businesses surveyed believed it was an acceptable practice for food handlers to directly touch bread.

7.3   Personal hygiene and staff illness

There are requirements in the Food Safety Standards to control the transmission of illness through food from food handlers who are ill, have symptoms or otherwise might transmit the pathogens they are, or maybe, carrying.

Staff that are unwell with an illness that may be foodborne, or who may be a carrier of such an illness, can transmit that illness through food if they are at work. For example, persons who present at work with a symptom such as diarrhoea could have an illness that could be transmitted through food. They pose a risk of transmitting that illness if they handle food, eating and drinking utensils or equipment that comes in contact with food. Such persons should not be handling food.

7.3.1   Food handling

Three food handling tasks were presented to businesses, the businesses were then asked whether an employee with an illness of diarrhoea should avoid these tasks.

Half of the businesses interviewed reported that staff experiencing an illness of diarrhoea should not "handle unpackaged food" (52%), "serve food" (50%) or "set the table" (47%). The reverse was also true; one half of businesses did not believe these tasks should be avoided (Figure 28).

In addition to the three tasks suggested:

> ➢ four in ten (37%) businesses gave an unprompted mention that employees with diarrhoea should not be at work; and

> ➢ another 3% mentioned employees with diarrhoea should not undertake any tasks that would involve food or food implements.

Figure 28: Safe food handling and staff illness

Q22:   If you have an employee with diarrhoea, which of the following tasks should they avoid?
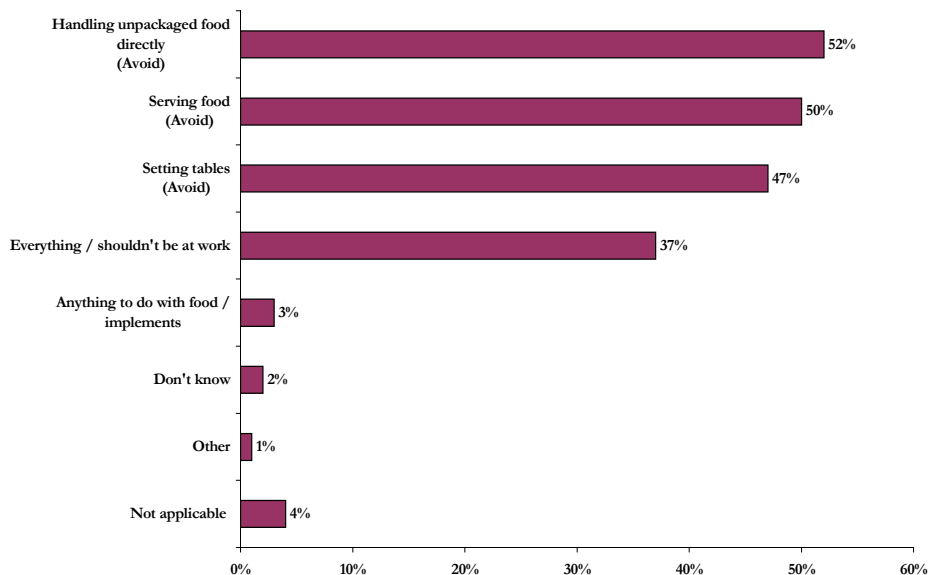
Base: All respondents = 1,200 (CATI)
Total is greater than 100% due to multiple responses

Half of food businesses thought it would be acceptable for employees experiencing diarrhoea to undertake food handling tasks such as "handling unpackaged food", "serving food" or "setting the table".

7.4 Cleaning and sanitation

Businesses are required under the new Food Safety Standards (or will be when the Standards are in force in the jurisdiction) to ensure that they use only eating and drinking utensils and food contact surfaces that are clean and sanitary.

Clean and sanitised eating and drinking utensils, as well as equipment that is in contact with food, minimises the risk of transferring pathogenic micro organisms to food. Generally, using a properly working dishwasher is a more effective way of cleaning and sanitising equipment than washing manually. This is because dishwashers make use of more effective cleaning chemicals and very hot water for rinsing. In addition, many models include drying cycles.

Information was sought on how businesses cleaned and sanitised their eating and drinking utensils and equipment used for food preparation.

7.4.1   Washing containers and utensils

Businesses were asked whether they used dishwashers or whether they washed equipment manually (by hand). They were also asked whether they knew the temperature of the final rinse of the dishwasher.

The most frequently utilised method of cleaning containers and utensils was hand washing (Figure 29). Six in ten (59%) businesses undertook hand washing only and one quarter (24%) used both hand washing and a dishwasher. One in ten (11%) used a dishwasher only.

Figure 29: Method of washing containers and utensils
Q15:   When washing containers and utensils used for food preparation or eating, do you use a dishwasher, do you hand wash, or both?

Base: All respondents = 1,200 (CATI)
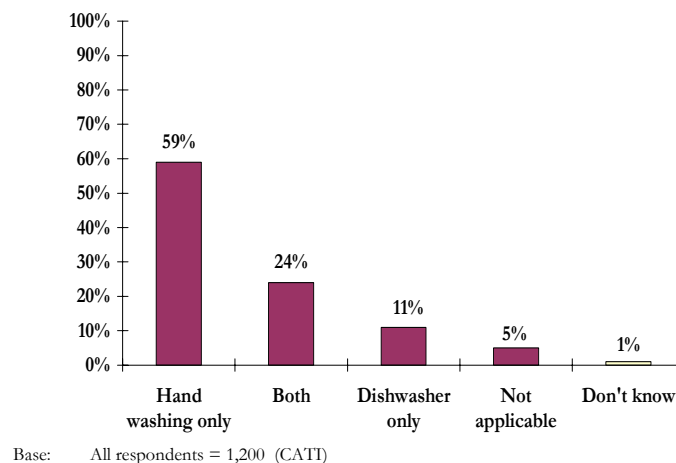
Business more likely to have "hand washing facilities only" included:
  ➢ small (61%) compared to large (40%); and
  ➢ medium (62%) and low (64%) risk compared to high risk (41%).

Six in ten businesses used hand washing for cleaning and sanitising containers and utensils for food preparation or eating.

One third (35%) of businesses using a dishwasher did not know the temperature of the final rinse of their dishwasher (Figure 30). Four in ten (39%) businesses reported a final rinse higher than 80°C. One in ten (9%) businesses reported temperatures too low to kill bacteria, that is below 70°C

Two in ten (19%) businesses reported a correct temperature of 70-80°C.

One third (36%) of businesses that used hand washing for food preparation materials did not know what temperature of hot water would kill bacteria on utensils (Figure 31). One quarter of business reported hand washing temperatures below 70°C; temperatures too low to kill bacteria.

Figure 30: Temperature of final rinse in dishwasher

Q16:   What is the temperature of the final rinse in your dishwasher?

Base: Business uses dishwasher = 418 (CATI)

Figure 31: Hand washing and food safety

Q17:   When hand washing, what temperature of hot water will kill bacteria on food preparation utensils
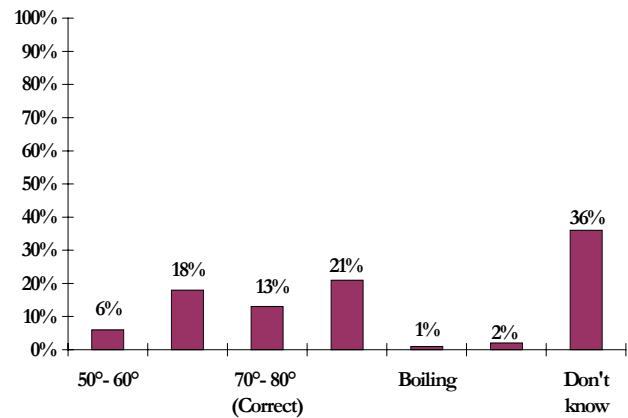
Base: Business hand washes = 992 (CATI)

7.4.2   Chemical sanitisers

If a business cleans and sanitises eating and drinking utensils and food contact surfaces by hand it can use a chemical sanitiser to sanitise. Businesses that cleaned manually were asked whether they used sanitisers and some questions to establish if they had knowledge of using the sanitisers.

One quarter (24%) of businesses "never" used a chemical sanitiser (Figure 32) for washing cups, plates and eating utensils. One in fourteen (7%) either were not sure if they used chemical sanitisers or reported the question was not applicable.

Chemical sanitisers were used by seven in ten food businesses either "always" (63%), or "sometimes" (6%).

Three in ten (30%) businesses believed that all chemical sanitisers should be mixed with hot water and one half (51%) correctly indicated this was false (Figure 33). One in seven (14%) did not know the answer.

> One third of businesses believe that all chemical sanitisers should be mixed with hot water.

Figure 32: Use chemical sanitiser

Q18: Do you use a chemical sanitiser for washing cups, plates and eating utensils?
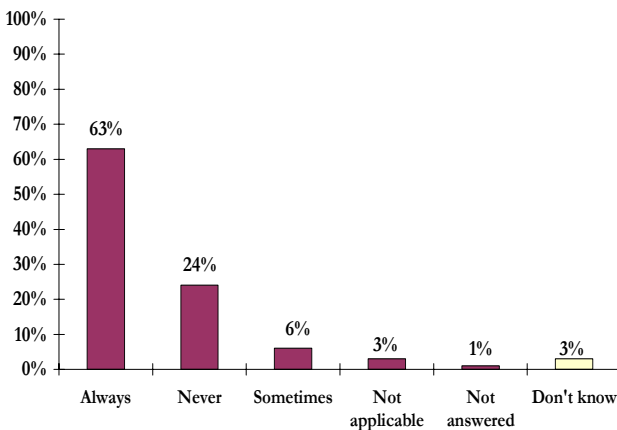
Base: All respondents = 1,200 (CATI)

Figure 33: Mixing chemical sanitisers

Q19a: All chemical sanitisers should be mixed with hot water. True or false?
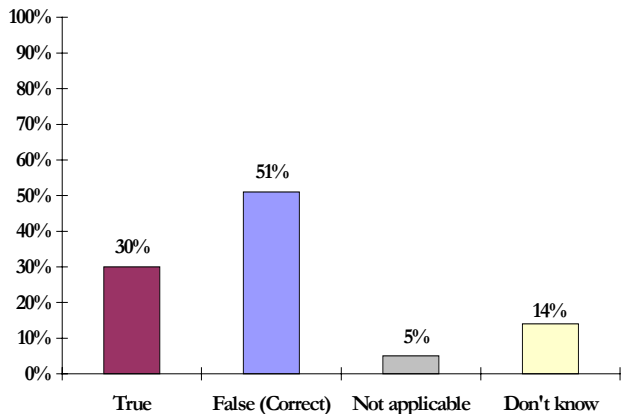
Base: All respondents = 1,200 (CATI)

Two in ten (18%) businesses incorrectly believed that "detergent would kill micro-organisms" while seven in ten (68%) correctly believed that "detergent would not kill micro-organisms" (Figure 34).

Very few (4%) businesses incorrectly reported it was false that: "a dirty chopping board needed to be washed before being sanitised" (Figure 35:). The correct response of "true" was given by nine in ten businesses (89%).

Figure 34: Detergent and micro-organisms

Q19b: Detergent kills micro-organisms. True or false?

Base: All respondents = 1,200 (CATI)
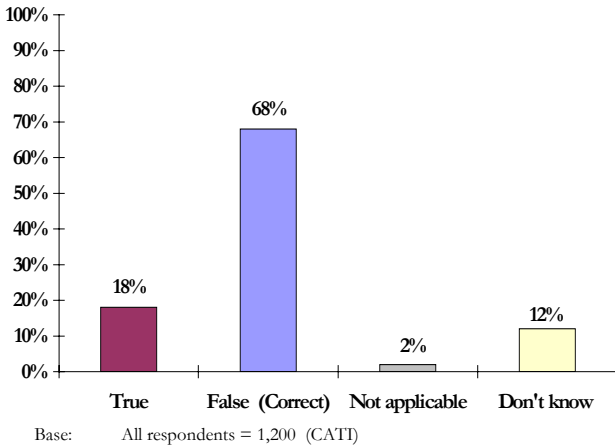
Figure 35: Sanitising chopping boards

Q19c A dirty chopping board must be washed before being sanitised. True or false?

Base: All respondents = 1,200 (CATI)
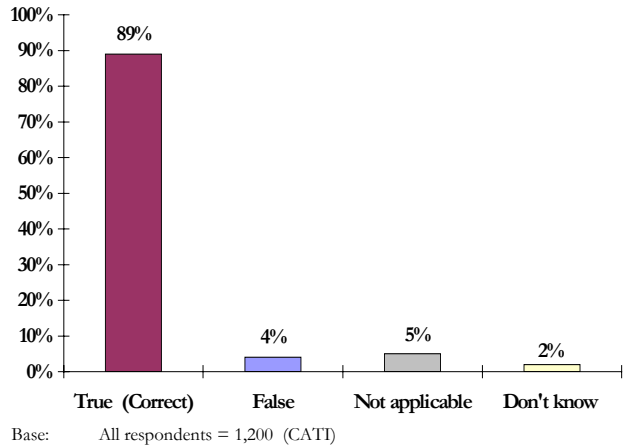
Businesses less likely to report that a "dirty chopping board needed to be washed before being sanitised" included:

➢ low risk (80%) compared to medium (92%) or high (93%) risk; and

➢ large (83%) compared to small (90%).

7.5   Staff training

The Food Safety Standards will, when the relevant provision comes into effect, require food businesses to ensure that their staff have skills and knowledge in food safety and food hygiene matters relevant to the work carried out by the staff.

The Standards do not specify how businesses must ensure that their staff have these skills and knowledge. There are many alternatives that range from formal training courses to in-house, on-the-job training. Businesses were asked whether they provided any staff training and the type of training provided.

One quarter (26%) of businesses reported they did not provide staff training on food handling safety (Figure 36). Specific differences that appeared included:

➢ provision of staff training was directly proportional to the level of risk associated with the business, that is, businesses classified as having a high level of food safety risk more often reported provided staff training (90%) compared with medium (74%) or low risk (62%);

➢ businesses supplying foods to high risk groups more often provided training (85%) compared to those businesses not providing foods to high risk groups (72%); and

➢ regional differences were also apparent where metropolitan businesses more often provided staff training (78%) compared with regional and rural businesses (70%).

Figure 36: Staff training

Q28a: Do you provide staff training on handling food safely?
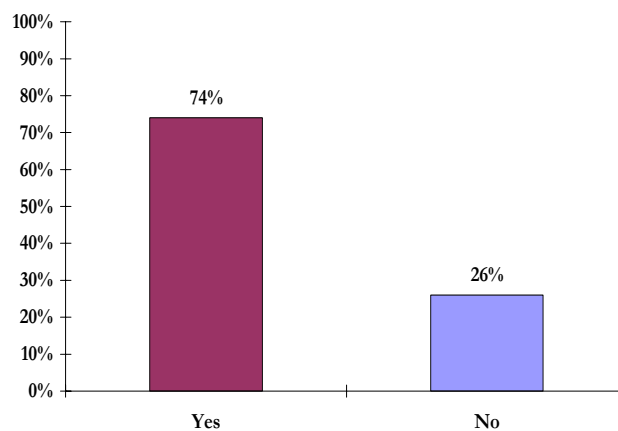
Base: All respondents = 1,200 (CATI)

Figure 37: Type of staff training

Q28b: If yes, what kind of training? (all mentions)
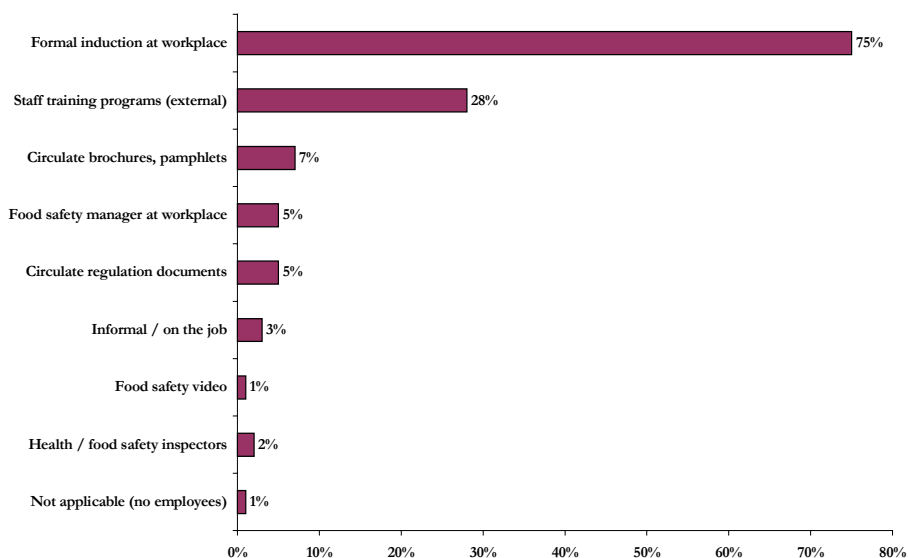
Base: Provided staff training = 887 (CATI)

➢ High risk (43%) more often provide "external staff training" compared with medium (25%) and low (22%) risk businesses.

➢ Metropolitan (78%) businesses were more likely to provide "induction training programs at the workplace" compared to regional businesses (72%)

➢ Business that supplied food to high risk groups (42%) tended to offer "staff training external to the workplace" compared to those not supplying high risk groups (24%).

➢ Regional and rural businesses were more likely to provide "staff training external to the workplace" (31%) compared to metropolitan business (24%).

7.6   Source of food safety information

The Commonwealth, State and local governments produce advice for food businesses on food safety matters and on food safety legislation.   There is also information available from professional and industry organisations, in books and magazines, in other media sources and on the Internet.

It is useful for these organisations to know where food businesses go to for information in order that they can provide the information where it will be accessed by the most businesses.

Businesses were asked where they sought information, was food safety information easy to find and whether they were aware of the new Food Safety Standards.

7.6.1   Information about food safety

The most frequently mentioned sources of information for food safety issues were "local council" (47%) and "State and Territory Health Department" (42%) (Figure 38).   The third most frequently mentioned source was "industry associations and specialist consultants" (24%).

Only a very small group of businesses (2%) mentioned they would obtain information specifically from ANZFA.   Less than 1% of businesses indicated they would look for information on the Internet.

Figure 38: Sources of food safety information

Q23:   If you need information about food safety or hygiene, who would you contact? (All mentions)
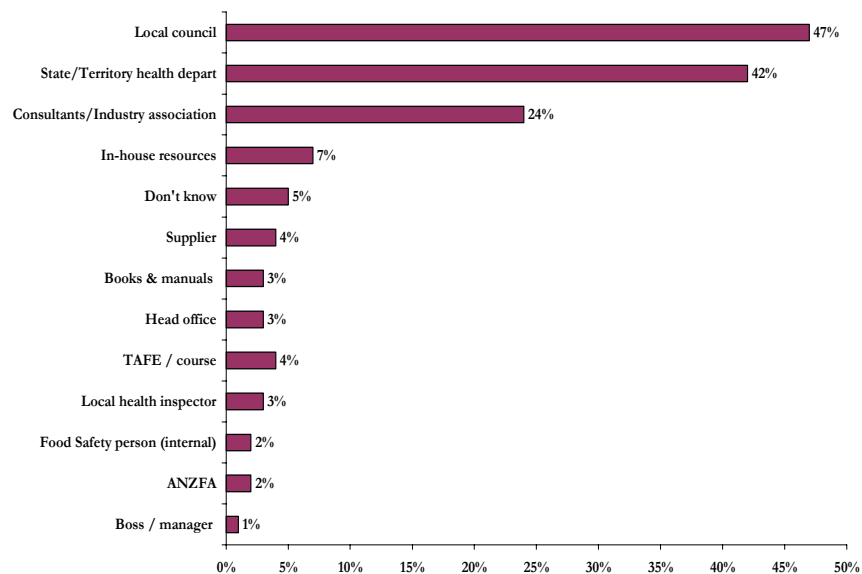
Base: All respondents = 1,200 (CATI)
Note: Total equals more than 100% due to multiple response

The Internet is almost never used by food businesses for food and safety information.

Variations in location information occurred among the following groups:

➢ small businesses were more likely to contact "local councils" (48%) compared with large business (30%);

➢ males (28%) more often contacted "industry associations" compared with females (21%);

➢ businesses supplying food to high-risk groups (33%) more often obtained information from "industry associations" compared to those not supplying these groups (22%); and

➢ businesses reporting they felt "informed" on food safety issues (26%) sought information from "industry associations" less frequently compared to those "not informed" (61%).

One quarter (24%) of businesses did not find it easy to locate information on food safety (Figure 39). A small but notable proportion had "never looked for it" (6%) or didn't know (21%) if it was difficult to locate information or not.

Figure 39: Ease of locating food safety information
Q26:   Do you find it easy to locate food safety information?
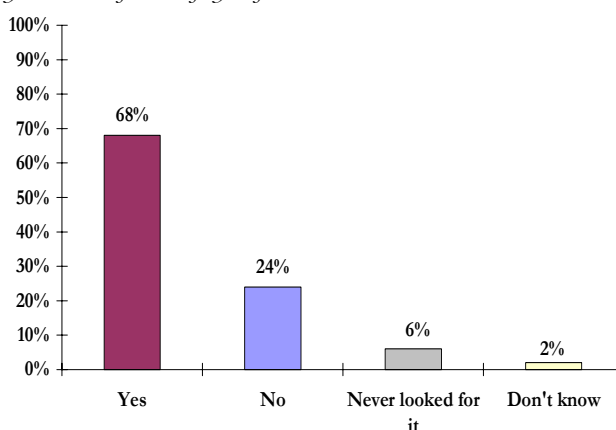
Base: All respondents = 1,200 (CATI)

Businesses more likely to report it was "not easy to locate information" included:

➢ medium risk (26%) compared to low risk (20%);

➢ those not involved in manufacturing (25%) compared to being a manufacturing company (22%); and

➢ those processing food (25%) compared to not processing food (19%).

Businesses that did not provide staff training (10%) were more likely to indicate they had "never looked for food safety information" compared to organisations that did offer staff training (5%).
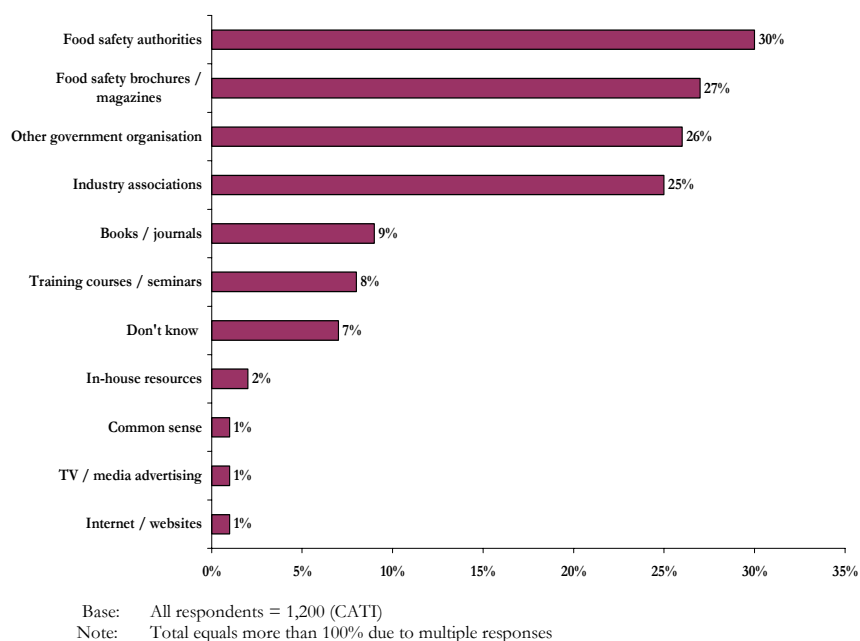
Usefulness of information

One third of businesses reported the most useful information came from "food safety authorities" (30%), including state, territory and local government food inspection officers and ANZFA, or "food safety brochures and magazines" (27%) (Figure 40).

One quarter (26%) indicated information from "other government organisations", such as the health department, was most useful. Another quarter (25%) nominated "industry associations" including "equipment or material suppliers and consultants", as well as "other people in the industry".

Figure 40: Usefulness of information about food safety

Q27a: Can you tell me where you find the most useful information about food safety at the workplace? (All mentions)

Base: All respondents = 1,200 (CATI)
Note: Total equals more than 100% due to multiple responses

Small businesses (27%) were much more likely to report the most useful information came from "food safety authorities" than large businesses (11%). Large business (38%) more often relied upon "food safety brochures and magazines" than small organisations (26%).

Other differences included:

 ➢ metropolitan based businesses (30%) were more likely to indicate that "food and safety brochures or magazines" were useful when compared to regional and rural businesses (24%);

 ➢ female respondents (31%) were more likely to indicate that "food safety brochures or magazines" were useful when compared to male respondents (22%); and

 ➢ organisations that provided staff training (27%) more often indicated that "industry associations" were useful compared to those businesses without training (17%).

Two in ten businesses (20%) either reported they felt that they were "not informed" about food safety or didn't know if they were informed or not (Figure 41).

Figure 41: Informed about current food safety regulation
*Q24:   How well informed do you feel about the current regulations about food safety?*
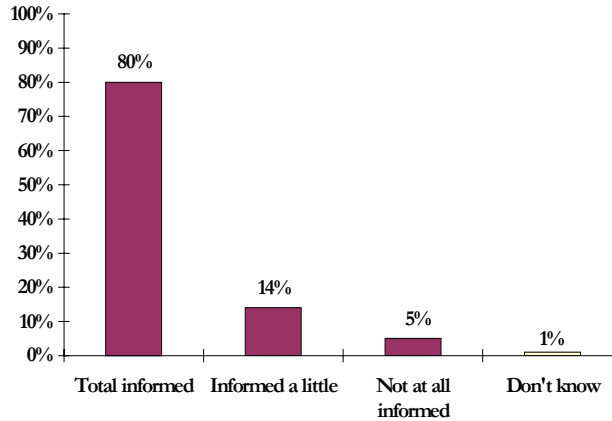
Base: All respondents = 1,200 (CATI)

Businesses that more often felt "informed" on food safety issues included:

➢ large (89%) compared to small (80%);

➢ businesses located in ACT (88%), Western Australia (86%) or Victoria (86%), compared to Queensland (77%) or South Australia (72%); and

➢ those providing staff training (83%) rather than not providing training (72%).

Figure 42: Awareness of new Food Safety Standards
Q25:   Are you aware that the government is bringing in a new set of national Food Safety Standards from February 2001?
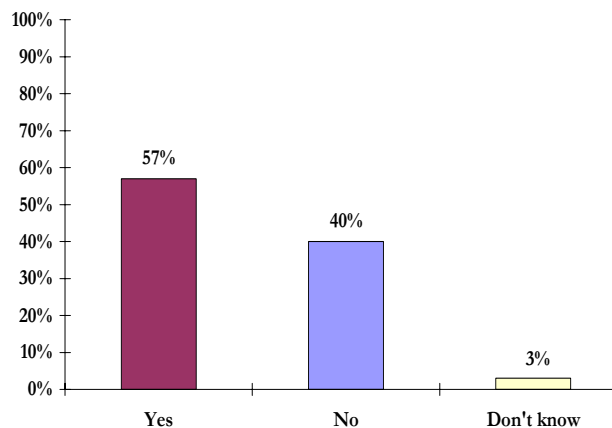
Base: All respondents = 1,200 (CATI)

Four in ten (40%) businesses were not aware of the new Food Safety Standards coming into effect in February 2001 (Figure 42).

Most (57%) businesses were aware that new regulations were to be introduced. Businesses in South Australia were more likely to be aware of the new regulations in spite of being less informed.

Awareness varied across business types and categories, greater awareness occurred among:

> ➢ high risk (62%) businesses compared to low risk (52%);
>
> ➢ large organisation (69%) compared to small (56%);
>
> ➢ South Australian businesses (73%) compared to the other larger states (52% - 53%); and
>
> ➢ organisations manufacturing food (62%) as opposed to not manufacturing (53%).

8 EHO/PHU On-site surveys among food businesses

On-site surveys were completed by Environmental Health officers (EHO's) or, in NSW, Public Health Unit (PHU's) officers. The on-site survey used the skills of these trained personnel, usually employed by local government, to assess food businesses. The officers were briefed to collect the survey data in a consistent manner.

EHOs were instructed to record responses based on their observations rather than questioning the proprietor or manager whenever possible. If a surveyor was unable to observe a practice because it did not occur during their visit (such as food deliveries), they questioned someone responsible and knowledgeable (the owner or manager) to establish business practices in that situation. When information was sought from someone at the business the surveyor was to complete the question with the appropriate answer (e.g. "yes/no") and also circle "not observed". Thus, "not observed" does not indicate that the element was not assessed, but that the information was based on discussion rather than observation of the practice. The percentage of "not observed" responses was dependent on the specific task and the same percentage would not be expected for each task. That is, while one task may not have been observed, other tasks were observed.

In most cases responses were limited to "yes/no" choices, other questions provided a list of response options appropriate to the question.

Responses presented in the graphs in this section of the report:

> ➢ nett yes (combined "yes" and "yes but not observed");
> ➢ nett no (combined "no" and "no but not observed"); and
> ➢ not applicable (measure does not apply to this business, e.g. If a business does not have food delivered the response to delivery outside business hours would be "not applicable").

The percentage of "not observed" cases is identified under each graph.

8.1 Temperature control

Information was sought on the practices used by businesses to ensure that potentially hazardous food is kept under temperature control during storage, display and transport. Businesses can maintain safety by keeping chilled food 5°C or below, hot food 60°C or above or by ensuring that the time that potentially hazardous food is at another temperature is insufficient to allow bacteria to multiply to unsafe levels.

Businesses that were not storing, displaying or transporting potentially hazardous food at the above temperatures were asked whether they had an alternative system to ensure the time/temperature was safe and whether they documented that system.

The EHO survey identified whether businesses cooked potentially hazardous food to the correct temperature for an adequate time and whether reheating of food that was to be held hot was carried out correctly. Temperature control of frozen food was also identified.

The EHOs identified whether businesses had a probe thermometer to measure temperature and whether staff knew how to use it.

8.1.1   Receiving food

It is important that potentially hazardous food is under temperature control when received by a business and that businesses have a system for checking potentially hazardous food when it is delivered. A staff member needs to be available to check temperatures or the business needs to have some other system for ensuring food is at the correct temperature.

The EHO survey identified whether businesses had food delivered outside businesses hours, whether temperature checks were made or whether the business had alternative, documented systems in place.

One quarter (23%) of businesses had food delivered outside of business hours (Figure 43). Food delivery to these businesses may have been be at risk of contamination through lack of temperature control depending on the types of food delivered and the set-up in the receiving area.

Figure 43: Food delivered outside business hours

Q9   Food is delivered to the premises outside of business hours?
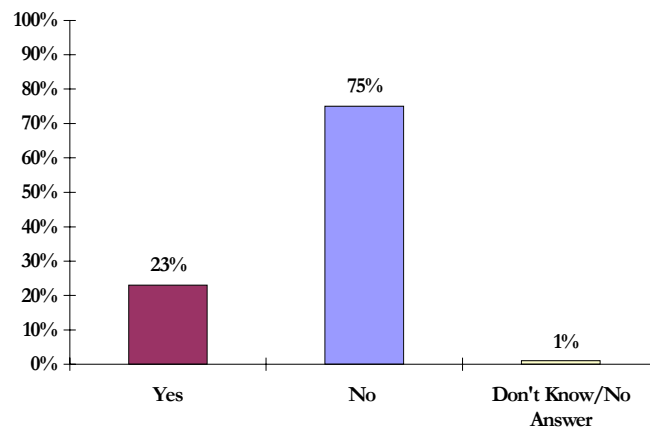
Base: All respondents = 483 (EHO)
Response given but practice not observed by EHO = 48% of base

8.1.2   Thermometers and checking temperature of food

Businesses that check potentially hazardous food need a probe thermometer if they are to check the food temperature accurately. The EHO survey identified whether businesses had a thermometer; staff knew how to use it and the procedure staff used to take temperatures.

Six in ten (60%) businesses handling potentially hazardous food did not have a probe thermometer (Figure 44). Staff did not know how to use a probe thermometer in one in ten (9%) businesses where a probe thermometer was reported (Figure 45).
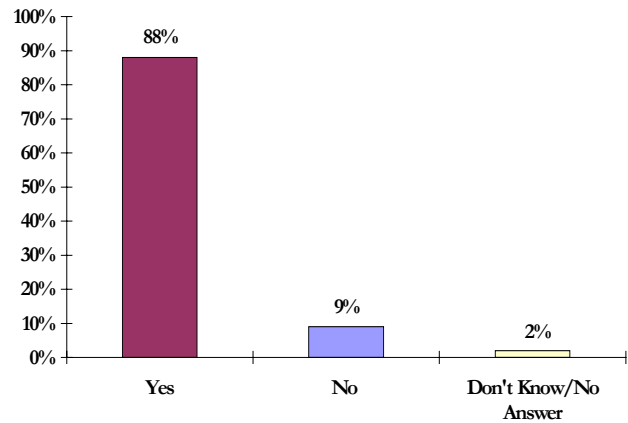
Figure 44: Probe thermometer

Q45: If applicable, the business has a probe thermometer.

Figure 45: Use of probe thermometer

Q46: If applicable, the staff know how to use the probe thermometer.
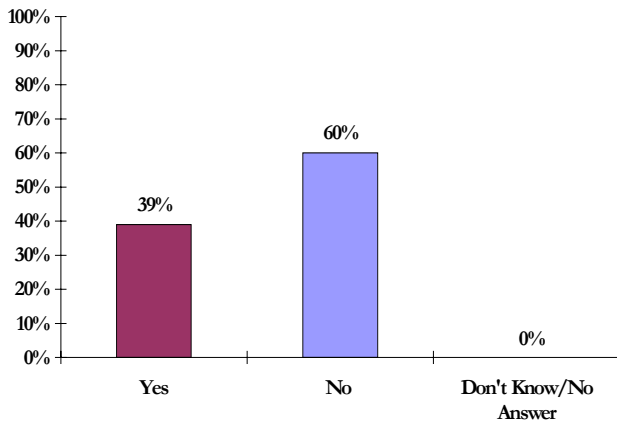
Base: Handles potentially hazardous food suitable for a probe thermometer = 466 (EHO)
Response given but practice not observed by EHO = 8% of base

Base: Have probe thermometer = 184 (EHO)
Response given but practice not observed by EHO = 30% of base

Businesses that were more likely to have a probe thermometer included:

➢ high risk businesses (53%) compared with medium risk (34%);
➢ large businesses (80%) compared to small businesses (35%);
➢ businesses located in metro (45%) compared with regional areas (34%);
➢ businesses supplying food for high risk groups (62%) compared to those not supplying these groups with food (35%);
➢ those that had potentially hazardous food delivered (58%) compared to those who do not (31%);
➢ businesses that reported they checked the temperature of delivered food (73%) compared to those not checking (23%); and
➢ those with a written food safety program (89%) compared to not having a written plan (29%).

Six in ten businesses handling potentially hazardous food did not have a probe thermometer.

Checking the temperature of food was undertaken by variety of methods depending on the food type and location where the check was carried out (Figure 46).

EHOs reported that six in ten (57%) businesses used "sight" when assessing food temperatures. Additionally "touch" was used by four in ten (43%) businesses.

Half (52%) of businesses used a temperature gauge located inside a vehicle, oven or other container and one third (36%) used a thermometer.

Figure 46: Methods for checking food temperature

Q47   How do staff generally check the temperature of the food?

Base: All respondents = 483 (EHO)
          Total is greater than 100% due to multiple responses
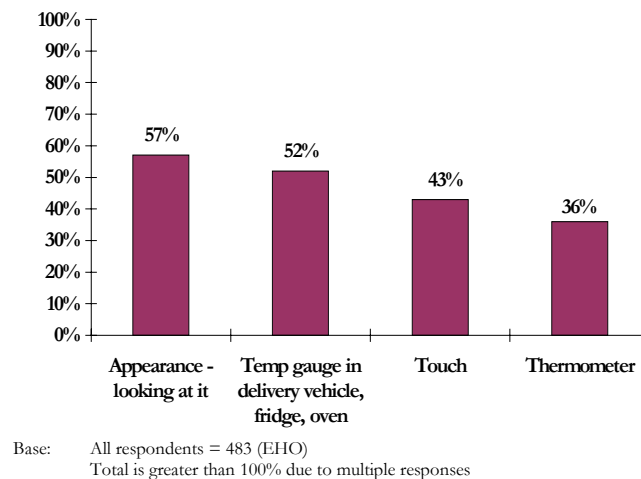
One third of businesses checked the temperature of food with a thermometer.

"Other" methods for measuring food temperature among one in ten businesses included:

> ➢ experience (3%);
> ➢ time and invoice record of delivery (2%);
> ➢ temperature of equipment (1%);
> ➢ sound, taste, test, smell or routine checks (2%); or
> ➢ standard cooking procedures or manufacturers instructions (1%).

Comparing business types revealed:

> ➢ small businesses more often checked the temperature of food by the food's "appearance" (60%) or "touch" (45%) compared with large business (26% and 22% respectively);
> ➢ high risk businesses more often used a thermometer (49%) compared with medium risk (30%); and
> ➢ non metropolitan based businesses more often utilised "appearance" (67%) compared with metropolitan based businesses (47%).

8.1.3 Checking food temperature

Three quarters (74%) of businesses that had potentially hazardous food delivered (Figure 47) either:

➤ checked the temperature of the potentially hazardous food delivered (35%); or

➤ had an alternative system in place (39%).
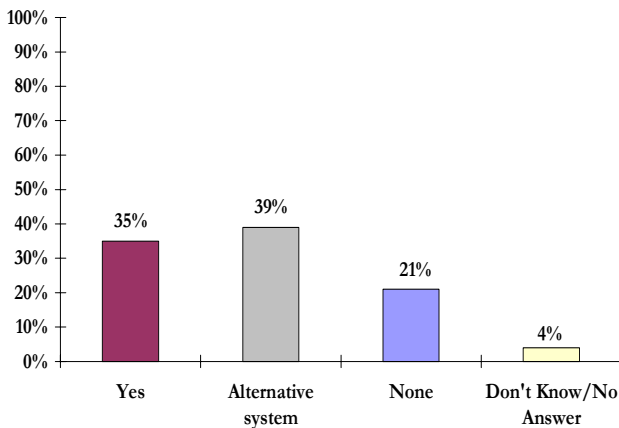
Few (1%) had documented the alternative system.

Two in ten (21%) neither checked the temperature nor had an alternative system for checking the safety of food.

One in ten (8%) businesses that received deliveries of food that was intended to be delivered frozen did not check the temperature of the food (Figure 48).

Figure 47: Staff checks the temperature of potentially hazardous food delivered to the business

Q10   A member of staff checks that potentially hazardous food is received at the correct temperature at the time of delivery?

Q11   Does the business have an alternative system for ensuring that potentially hazardous food is received at a temperature that will not adversely affect the business being able to use the food safely?

Figure 48: Potentially hazardous frozen food is frozen upon delivery

*Q12   The business checks that potentially hazardous food intended to be **frozen upon delivery** is frozen when accepted*

Base: Potentially hazardous food delivered to business = 466 (EHO Response given but practice not observed by EHO = 46% of base
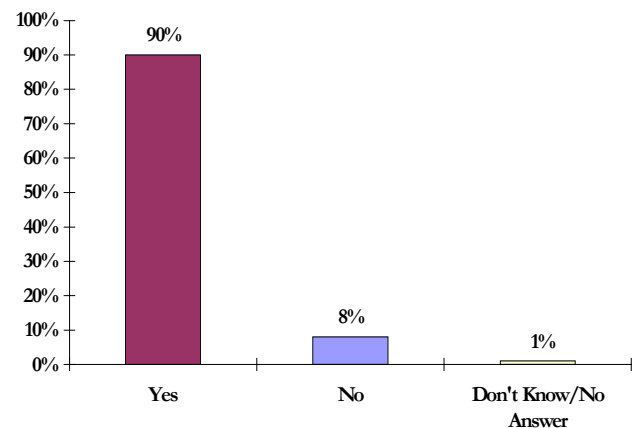
Base: Has frozen food delivered = 417 (EHO Response given but practice not observed by EHO = 53% of base

Businesses more likely to check the temperature of potentially hazardous food delivered to their business included:

➤ high risk (46%) compared with medium risk businesses (28%); and

➤ large businesses (75%) compared to small business (30%).

> Two in ten businesses that received delivery of food "did not" check the temperature of potentially hazardous foods delivered to their business.

8.1.4   Temperature controlled storage of potentially hazardous food

Potentially hazardous food must be either stored chilled (5°C or below) or hot (60°C or above) or at another temperature if the time the food is at that temperature is safe. The EHO survey identified whether chilled food was stored chilled and whether there was adequate space in the cool room. If chilled food was not refrigerated, the EHOs asked whether the business had an alternative, documented system in place.

Nearly all businesses that stored potentially hazardous food that required chilling either stored the food at the correct temperature[11] (90%) or had an alternative system in place (Figure 49). A small minority (1%) businesses had their alternative system documented to ensure effective usage of the system. Less than one in ten businesses (7%) did not store their chilled food at or below 5°C (Figure 49).

Figure 49: Chilled potentially hazardous food stored at or below 5°C

Q14   *Chilled potentially hazardous food is stored at or below 5°C*
Q15   *Does the business have an alternative system for ensuring that chilled potentially hazardous food is being stored safely?*

Base: Stores chilled potentially hazardous food = 462 (EHO)

Response given but practice not observed by = 5%
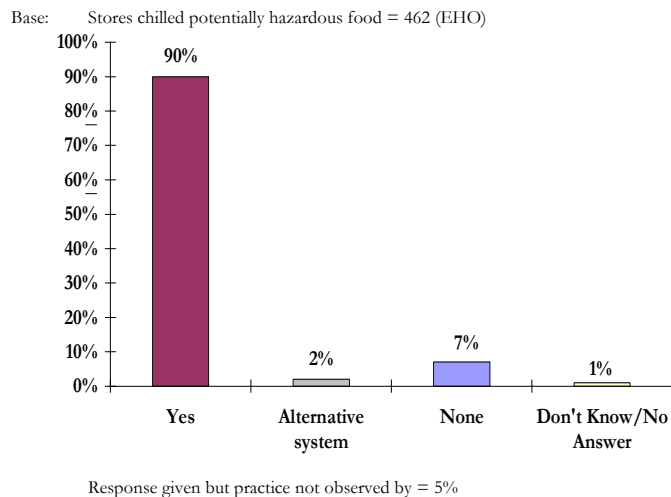
> The majority of businesses storing chilled potentially hazardous food kept their chilled food at the correct temperature (5°C or lower), and fewer than one in ten businesses did not correctly store chilled food.

---

[11]   The briefing for EHOs for this question stated that businesses may have another way of ensuring potentially hazardous food was safe. See Attachment 3 in Appendix C for a description of alternative systems – using time as a control for potentially hazardous food.

Medium risk (88%) businesses were less likely to store chilled potentially hazardous food correctly when compared to high risk businesses (94%) (Table 22).

Table 22:	Storing chilled potentially hazardous food by business classification					
Q14:	*Chilled Potentially Hazardous Food is stored at or below 5°C*					
	Business classification			Business size		
	High Risk (163) % A	**Med Risk (283) % B**	**Low Risk (16) % C**	**Small (417) % D**	**Large (45) % E**	**Total (462) % F**
Nett yes	94B	88	94	90	89	90
Has an Alternative System	3	1	0	1	6	2
Has None	3	9	0	7	2	7
Don't Know/No Answer	0	1	6	1	2	1

Base: Stores chilled potentially hazardous food (462)

EHOs observed that one in twenty (6%) businesses utilising a cool room "did not have adequate storage space" to accommodate their level of potentially hazardous food usage (Figure 50). The vast majority of businesses, over nine in ten (94%), had adequate storage.

Figure 50: Adequate space for potentially hazardous food in cool room

Q17   There is adequate space to store potentially hazardous food in the cool room?
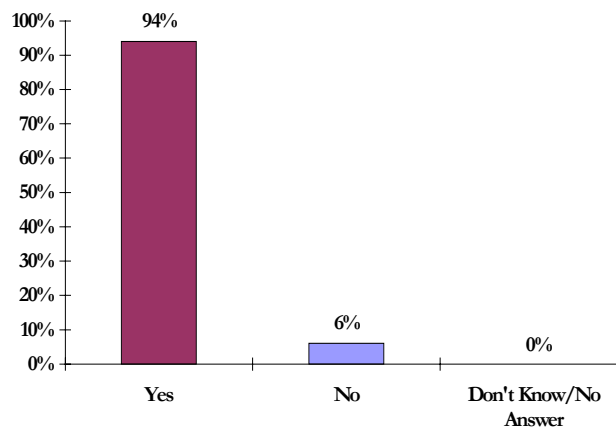
Base: Stores potentially hazardous food in store room = 454 (EHO)
Response given but practice not observed by EHO = 2%

8.1.5　Cooking potentially hazardous food

The EHO survey identified whether potentially hazardous food was cooked for the correct amount of time at the correct temperature. If the business did not check the time and temperature of cooking the EHOs asked whether the business had another way of ensuring that the food was correctly cooked.

Five in ten (53%) businesses that cooked potentially hazardous food monitored that potentially hazardous food was cooked at the correct temperature and for the correct amount of time (Figure 51).

A further one third (33%) had an "alternative system" [12] in place to ensure food was correctly cooked. Documentation for ensuring that the alternative system was working effectively was observed in 2% of these businesses.

One in ten (11%) businesses did not have a system for ensuring the time and temperature of cooked potentially hazardous food was appropriate to meet safe standards.

Figure 51:　Potentially hazardous food cooked at correct temp for correct amount of time

Q24　　　　Potentially hazardous food is cooked at the correct temperature for the correct amount of time.
Q25　　　　The business does not check the temperature and time at that temperature but has another way of ensuring that food is correctly cooked.

Base:　　　Cooks potentially hazardous food　= 392 (EHO)
　　　　　　Response given but practice not observed by　=40%
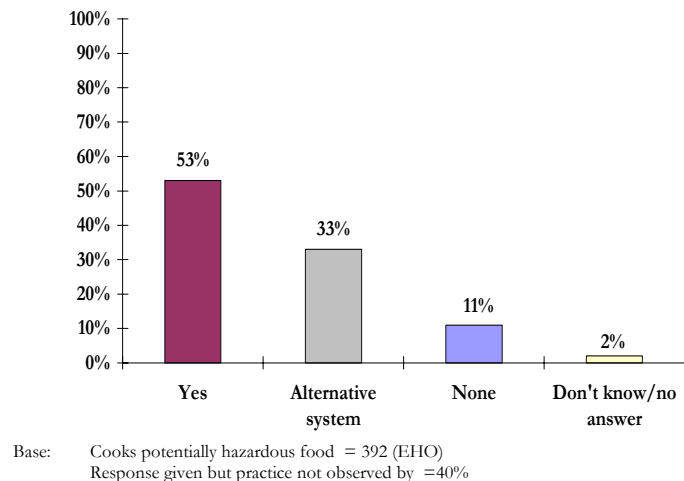
Alternative systems for cooking potentially hazardous food (for the correct length of time and at the correct temperature) were common among businesses – however few businesses documented these systems. One in ten had no system at all.

---

[12]　　　The note of information on this question stated that businesses may have another way of ensuring potentially hazardous food was safe. See Attachment 3 in Appendix C for a description of alternative systems – using time as a control for potentially hazardous food

8.1.6   Hot holding of potentially hazardous food

The EHO survey identified whether potentially hazardous hot food was stored at an appropriate temperature, or whether the business had a safe alternative system.

Nearly all businesses that held potentially hazardous hot food, held that food at the correct temperature (88%). 1% had an alternative system to do so.

One in twenty (5%) businesses, where hot food was held, did not hold potentially hazardous food at the correct temperature (Figure 52).

Four per cent (4%) of businesses involved in holding hot food did not have the appropriate equipment (Figure 53).

Figure 52: Hot potentially hazardous food held at correct temperature

Q21   Hot potentially hazardous food is being held at correct temperatures

Q22   Does the business have an alternative system for ensuring that hot potentially hazardous food is being held safely?

Figure 53: Appropriate equipment for holding hot potentially hazardous food

Q23   There is appropriate and adequate equipment for holding hot potentially hazardous food
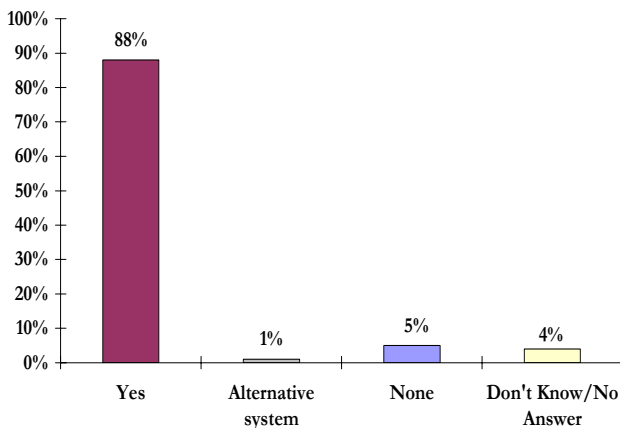
Base: Holds hot food = 305 (EHO)[13]
        Response given but practice not observed by EHO = 25% of base
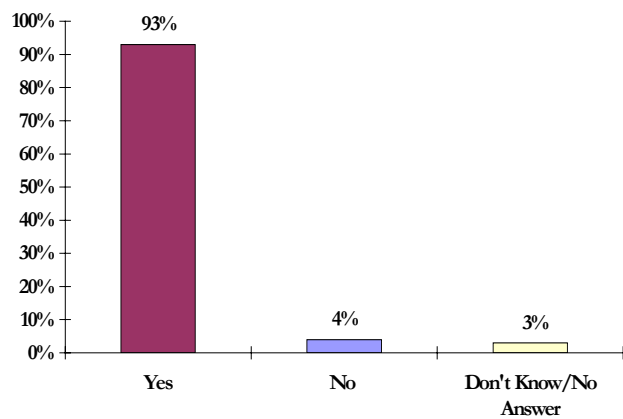
Base: Holds hot food = 311 (EHO)
        Response given but practice not observed by EHO = 4% of base

> Four out of every one hundred businesses holding hot food did not have adequate equipment for holding hot food.

---

[13]   Responses for this question were recorded where the EHO deemed the item was applicable. It is not clear why there is a discrepancy between the base for Q21 and Q23.

The majority of businesses held potentially hazardous hot food at the correct temperature. (Table 23).

Table 23: Holding hot potentially hazardous food by risk classification and business size

Q21:   Hot potentially hazardous food is held at correct temperature

	Business classification			Business size		Total (305) % F
	High risk (112) % A	Med risk (190) % B	Low risk (3)* % C	Small (270) % D	Large (35) % E	
Nett yes	93	86	67	87	100D	88
Has an Alternative System	0	2	0	1	0	1
Has None	3	6	0	6	0	4
Don't Know/No Answer	3	4	33	4	0	7

Base: Holds hot potentially hazardous food (305).
*   Sample too small to perform tests of statistical significance.

Businesses with a temperature probe (95%) were more likely to hold hot food at the correct temperature (Table 24) compared to those without a temperature probe (83%). There were no notable differences by region, or by whether or not a business had a written food safety program.

Table 24: Holding hot potentially hazardous food by temperature probe, region and written food safety program

Q21:   Hot potentially hazardous food is held at correct temperature

	Have temp probe		Region		Written safety program	
	Yes (134) % A	No (166) % B	Metro (149) % C	Regional (156) % D	Yes (54) % E	No (235) % F
Nett yes	95B	83	86	90	94	89
Has an Alternative System	0	2	1	1	0	1
Has None	3	8	6	4	0	6
Don't Know/No Answer	2	6	6	5	5	3

Base: Holds hot potentially hazardous food (305)

8.1.7 Cooling cooked potentially hazardous food to correct temperature

It is important that cooked potentially hazardous food is cooled rapidly. The Food Safety Standards specify cooling from 60°C to 21°C within 2 hours and from 21°C to 5°C within an additional 4 hours. The EHO survey identified whether businesses cooled potentially hazardous hot food rapidly, or whether business had a safe alternative system for cooling such food. Rapid cooling ensures that bacteria do not get an opportunity to multiply to dangerous levels. Because cooling takes place over several hours and thus was not necessarily able to be observed by the EHOs, a large proportion (53%) of the responses were classified "not observed".

Most (82%) businesses cooking potentially hazardous food, then cooling that food for storage, did so to the correct temperatures within the correct amount of time (Figure 54).

A small proportion (4%) had a safe alternative system in place for cooling cooked potentially hazardous food. One business documented their alternative system. One in ten (10%) did not cool cooked potentially hazardous food appropriately.

Figure 54: Cooling cooked potentially hazardous food to correct temperature
Q28:   Cooked potentially hazardous food is cooled to correct temperatures within the correct amount of time.
Q29:   Cooked potentially hazardous food is cooled using safe alternative system.

Base: Cook and cool potentially hazardous food = 244 (EHO)
Response given but practice not observed by EHO = 53% of base
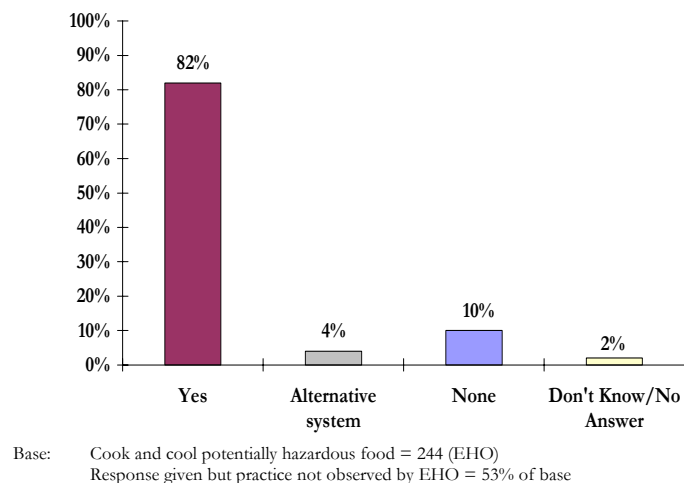
One in ten businesses did not cool their cooked potentially hazardous food appropriately.

8.1.8   Reheating cooked and cooled potentially hazardous food

Reheating potentially hazardous food must be carried out rapidly to ensure that bacteria do not get the opportunity to multiply to dangerous levels.

Nearly all (87%) businesses that reheated food that had been cooked then cooled, did so rapidly. One in twenty (5%) businesses did *not* rapidly reheat potentially hazardous food (Figure 55). Few (2%) had an alternative system for ensuring food was reheated safely. None of these businesses documented their alternative system.

Figure 55: Cooked and cooled potentially hazardous food is reheated rapidly

Q26:   Potentially hazardous food that has been cooked then cooled, and is being reheated for holding at hot temperatures, is reheated rapidly.

Q27:   Does the business have an alternative system for ensuring potentially hazardous food is reheated safely?
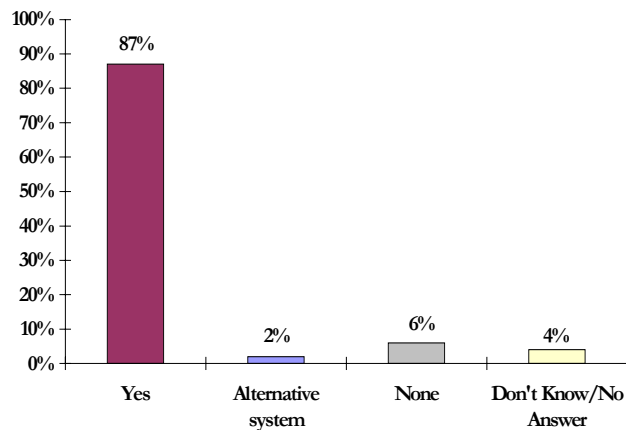
Base: Q26 All respondents = 483 (EHO)
           Response given but practice not observed by EHO = 22%

One in twenty businesses did not rapidly reheat cooked food.

8.1.9   Display

Displayed potentially hazardous food must be kept either chilled (5°C or below) or hot (60°C or above) or at another temperature if the time is safe. Temperature control of food on display was assessed (Figure 56).

Most businesses displayed potentially hazardous food at the correct temperature (82%) or had an alternative system for safely displaying food (4%). Only two businesses documented this procedure.

One in ten (9%) businesses displaying potentially hazardous food neither held it at the correct temperature nor had an alternative system.

Figure 56: Potentially hazardous food on display is held at the correct temperature
Q32   Potentially hazardous food on display is held at the correct temperature.
Q33   Does the business have an alternative system for ensuring potentially hazardous food is displayed safely?
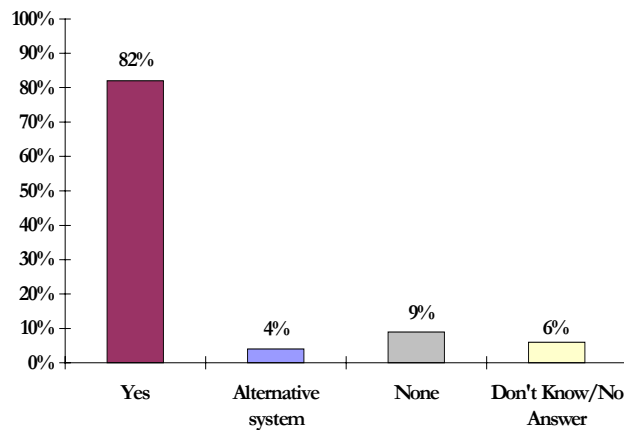
Base: Q32 Displays potentially hazardous food = 273 (EHO)
           Response given but practice not observed by EHO = 16% of base

One in ten businesses displaying potentially hazardous food did not have a method for ensuring the displayed food remained safe.

8.1.10 Transport of potentially hazardous food

Transported potentially hazardous food must be transported either chilled (5°C or below) or hot (60°C or above) or at another temperature if the time is safe. Businesses were asked about temperature control of food during transport.

Three in ten (28%) businesses transporting food also reported that they transported potentially hazardous food (Figure 57).

Eight in ten (81%) businesses transporting potentially hazardous food carried chilled food. Half (51%) carried hot food (Figure 58) and one third (34%) transported both hot and cold food.

Figure 57: Potentially hazardous food transported

Q36: The business transports potentially hazardous food.

Figure 58: Type of potentially hazardous food transported

Q37: If the business does transport potentially hazardous food, does it transport chilled, hot food or both?
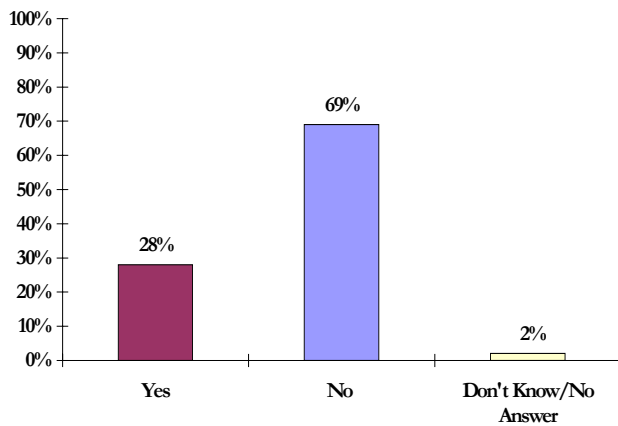
Base: Transports food = 350 (EHO)
         Response given but practice not observed by EHO = 13% of base
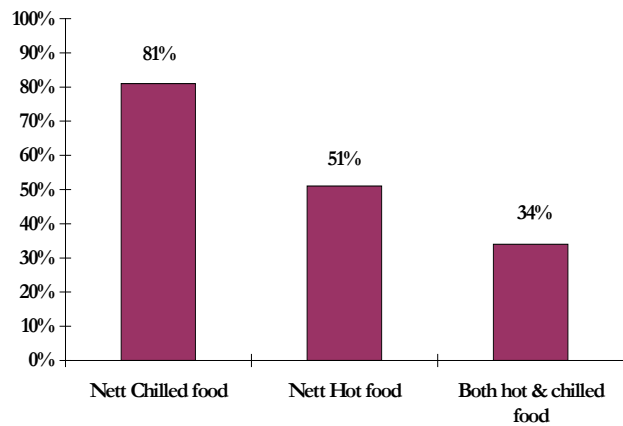
Base: Transports potentially hazardous food = 99 (EHO)
Note: Multiple response possible

> Three in ten businesses transporting food also reported they transported potentially hazardous food.

Three in ten (29%) businesses transporting chilled potentially hazardous food used a refrigerated vehicle and one quarter (25%) used eskies with ice (Figure 59). A further one quarter of businesses (28%) stated other forms of transport including:

➢ delivery on plate, trolley, basket or box (8%);

➢ plastic bag (5%);

➢ insulated box (5%);

➢ insulated carry bag (4%);

➢ dry ice (1%); and

➢ foil (1%).

Figure 59: Method of transporting *chilled* potentially hazardous food

*Q38: If chilled potentially hazardous food is transported, what method is used?*
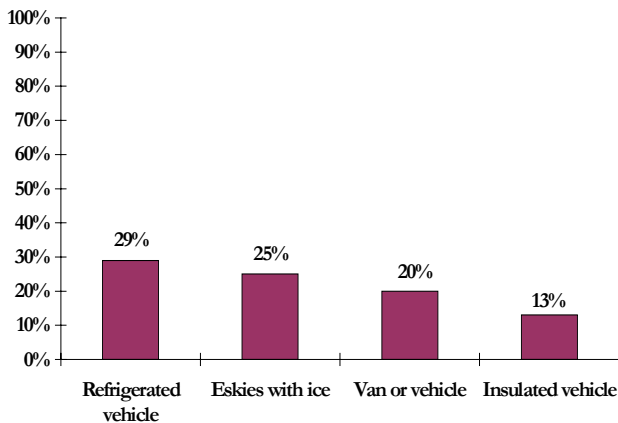
Base: Transports chilled potentially hazardous food = 80 (EHO)
Total is greater than 100% due to multiple responses

Figure 60: Maximum time of transporting *chilled* potentially hazardous food

Q39: If chilled potentially hazardous food is transported, what is the maximum time of transportation?
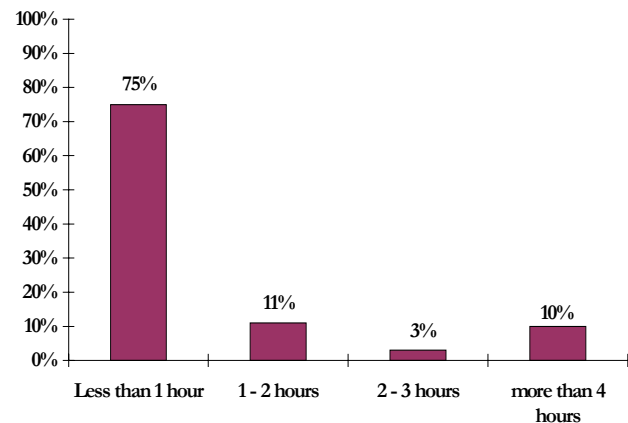
Base: Transports chilled potentially hazardous food = 80 (EHO)

Three in four (75%) businesses reported they transport chilled potentially hazardous food in time periods of less than one hour (Figure 60). One in ten (10%) transported chilled potentially hazardous food for time periods longer than four hours.

One quarter of businesses transporting chilled potentially hazardous food did not mention use of temperature control equipment ensuring food would stay chilled.

Four in ten (42%) businesses that transported hot potentially hazardous food did not use a temperature controlled vehicle or temperature controlling tools. An additional three in ten (32%) used a plate or something similar without temperature controls (Figure 61). One quarter of businesses (24%) used some other form of transport including:

> ➢ container (8%);
>
> ➢ pie warmer (6%);
>
> ➢ eskie (4%);
>
> ➢ insulated plate with lid, trolley or box (4%); or
>
> ➢ van, car or vehicle without temperature control (2%).

Figure 61: Method for transporting *hot* potentially hazardous food

Q40   If hot potentially hazardous food is transported, what method is used?
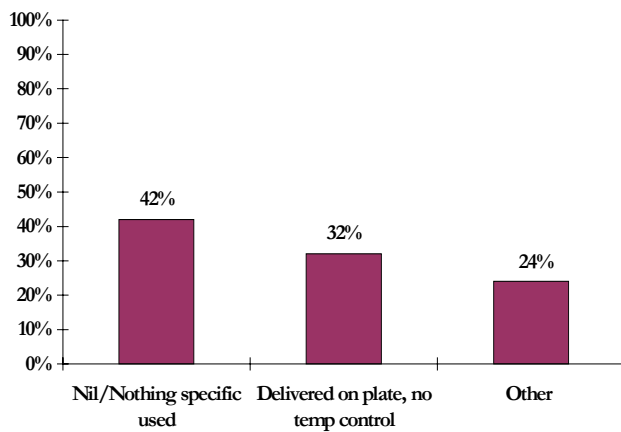
Base: Transports *hot* potentially hazardous food = 50 (EHO)

Figure 62: Maximum time for transporting *hot* potentially hazardous food

Q41   If hot potentially hazardous food is transported what is the maximum time of transportation?
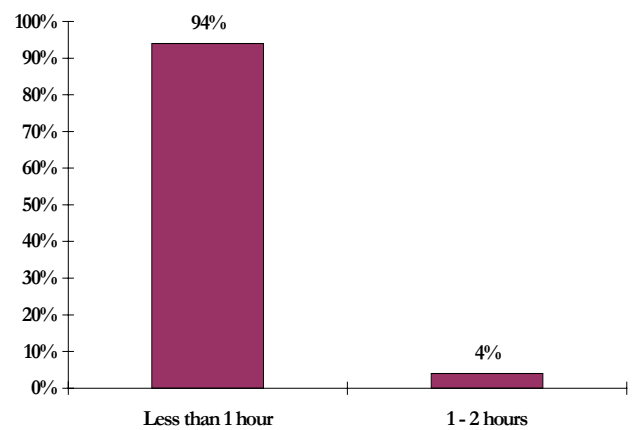
Base: Transports *hot* potentially hazardous food = 50 (EHO)
"No answer" not included in the graph

One in ten businesses transporting hot potentially hazardous food used temperature controlled equipment such as insulated containers or pie warmers.

Most food businesses transported potentially hazardous hot food for short periods of time. One in twenty (4%) businesses transporting hot potentially hazardous food did so in a time period of more than one hour, but less than 2 hours (Figure 62). None of the businesses surveyed were transporting hot potentially hazardous food for more than 2 hours.

Three in four (74%) businesses that transported potentially hazardous food did so at the correct temperature. One in ten (9%) used an alternative system. Two in ten (21%) businesses transporting potentially hazardous foods (chilled or hot) were not doing so at the correct temperature (Figure 63).

Figure 63: Potentially hazardous food transported at appropriate temperature
Q42:   Potentially hazardous food is transported at the appropriate temperature.
Q43:   Does the business have an alternative system for ensuring potentially hazardous food is transported safely?
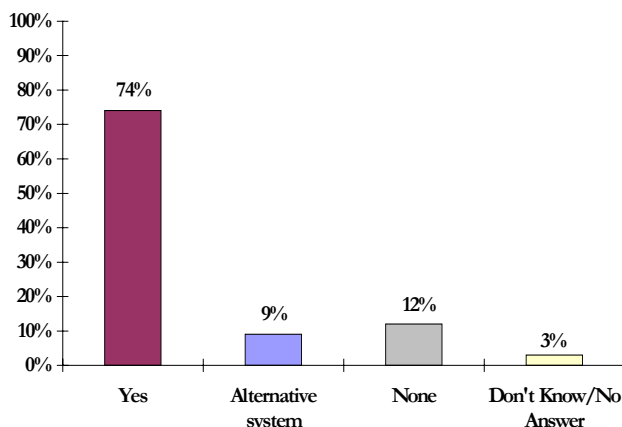
Base: Q42 Transports potentially hazardous food = 99 (EHO)

8.2   Protecting food from contamination

Pathogenic micro organisms from dirt, people, animals, pests or other food may contaminate unprotected food. Food may also be contaminated by chemicals from spillages or vapours and by physical matter.

The EHO survey identified whether food was protected at all stages of handling in the business. These steps were: receiving, storage, processing, display and transport of food. Space for chilled storage was checked for adequacy as insufficient space can not only affect cooling rates but increase the risk of cross contamination.

Food storage in the cool room was checked to observe whether raw food was separated from cooked food. Dry goods were checked to ensure they were free from pests.

Information on cleaning, sanitising, hand washing and covering of wounds was obtained to check the possibilities of contamination of food during processing.

Displays of food for self service were checked to observe whether they were supervised, whether separate serving utensils were provided, and whether new batches were mixed with previous batches.

Protection from contamination was measured across five areas:

> ➤ at the time of receiving food;
> ➤ in storage areas;
> ➤ in food display areas;
> ➤ during food processing; and
> ➤ during transport of food.

8.2.1   Receiving food and protection from contamination

One quarter (23%) of businesses had food delivered to their business outside of operational hours (Figure 64).

Regardless of whether food was delivered to the business during or after operational hours, 3% of businesses where food was delivered had unprotected food in their delivery area (Figure 65).
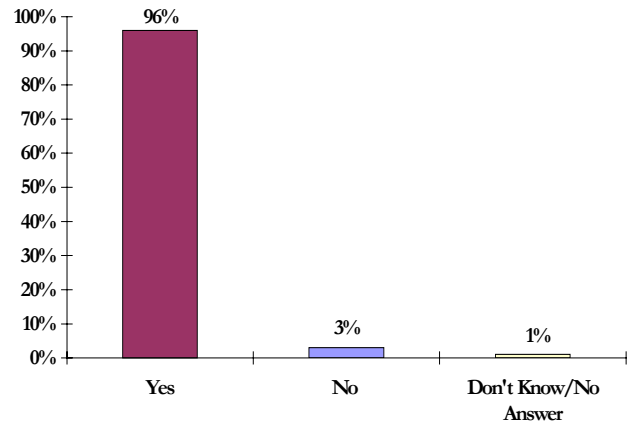
Figure 64: Delivery of food outside business hours

Q9:   Food is delivered to the premises outside of business hours
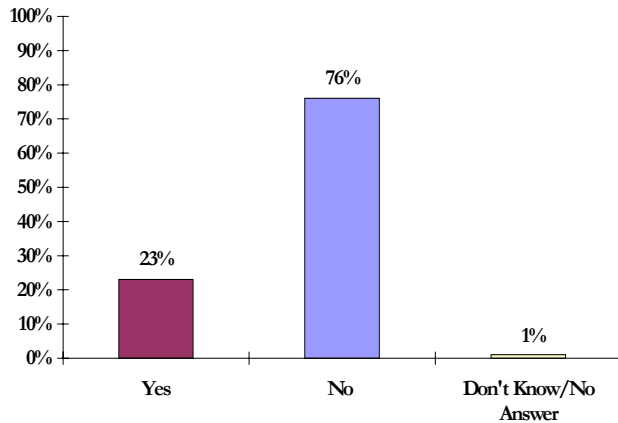
Base: All respondents = 483 (EHO)
           Response given but practice not observed by EHO = 48% of base

Figure 65: Protecting delivered food from contamination

Q13:   Food received is protected from contamination

Base: Has food delivered = 456 (EHO)
           Response given but practice not observed by EHO =46%

Very few (3%) businesses that had food delivered, had food that was unprotected from contamination when it was delivered.

8.2.2   Food storage and protection from contamination

One in ten (8%) businesses storing raw food in the cool room did not have raw food separated from ready-to-eat food.

Figure 66: Raw food separated in cool room

Q16:   Raw food is separated from ready-to-eat food in the cool room

Base: Stores raw food in the cool room = 425 (EHO)
         Response given but practice not observed by EHO = 5% of base
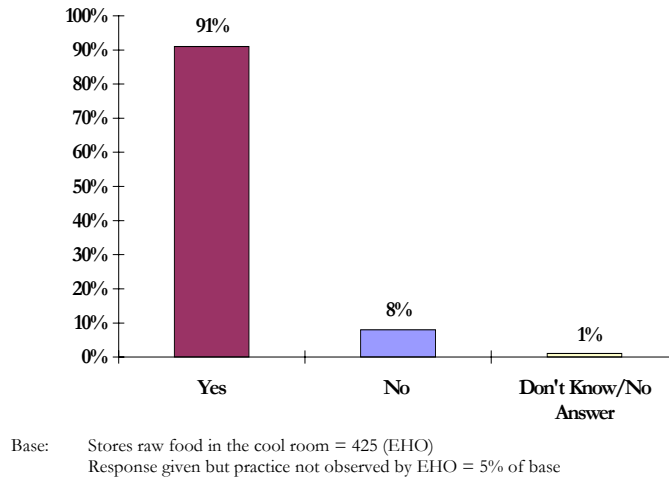
One in twenty (6%) businesses utilising a cool room did not have adequate space in the cool room to store potentially hazardous food (Figure 67).

More than one in seven (14%) businesses utilising a cool room did not adequately protect their food in the cool room from contamination (Figure 68).

Figure 67: Adequate space for potentially hazardous food in cool room

Q17   There is adequate space to store potentially hazardous food in the cool room.

Base: Utilised a cool room = 454 (EHO)
         Response given but practice not observed by EHO = 2% of base
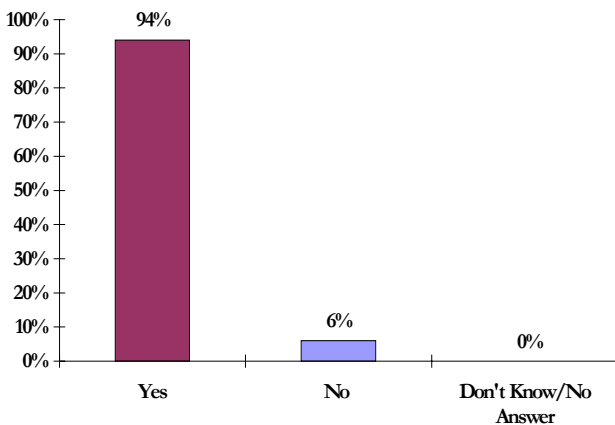
Figure 68: Protected from contamination in cool room

Q18   All food is protected from contamination in the cool room?
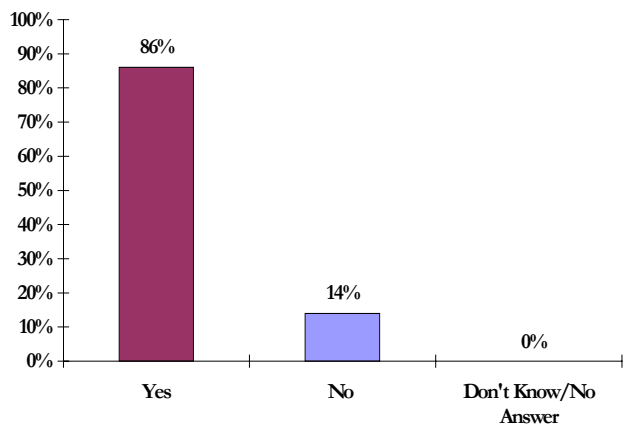
Base: Utilised a cool room = 459 (EHO)
         Response given but practice not observed by EHO = 2%

One in twenty (6%) businesses handling dry goods did not have adequate protection from contamination of their dry goods and a similar proportion (4%) appeared to have problems with pests in the dry goods areas (Figure 69), (Figure 70).

Figure 69: Dry goods protected from contamination

Q19: Dry goods are protected from contamination?
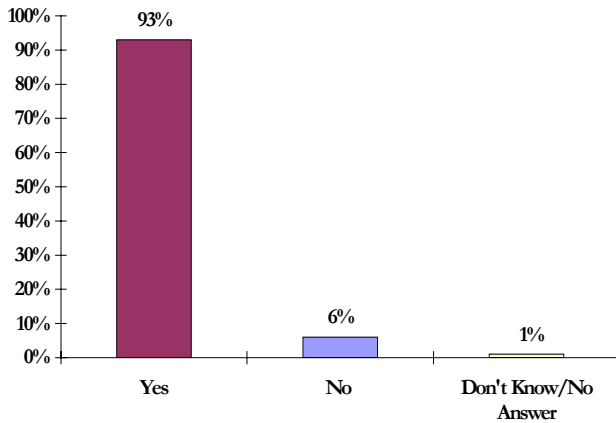
Base: Handles dry goods = 467 (EHO)
           Response given but practice not observed by EHO = 1% of base

Figure 70: Dry goods free from pests

Q20: Dry goods appear to be free from pests.
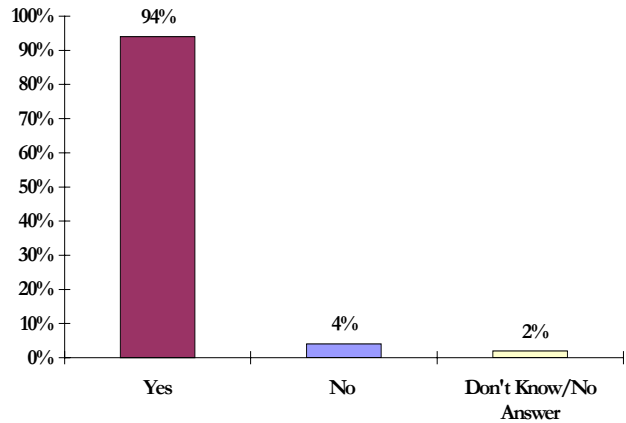
Base: Handles dry goods = 468 (EHO)
           Response given but practice not observed by EHO = 2%

8.2.3   Display and protection from contamination

Just under one in ten (8%) businesses with food on display did not have their displayed food adequately protected from contamination (Figure 71).

Figure 71: Protection of displayed food

Q30   Food on display is protected from contamination.
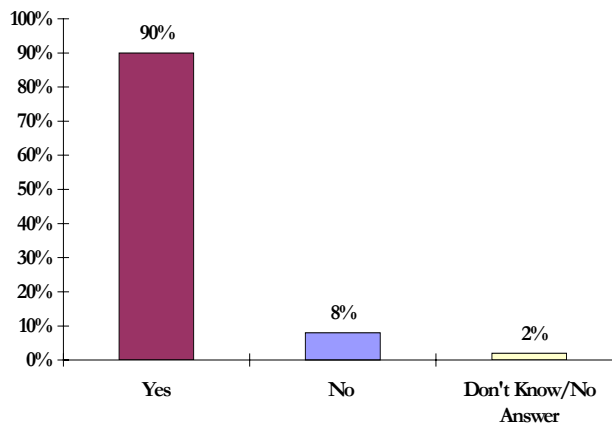
Base: Has food on display = 274 (EHO)
             Response given but practice not observed by EHO = 4% of base

One in seven (15%) businesses with food on display, and which needed to be supervised, did not have staff supervising displayed ready-to-eat food (Figure 72).

When displayed food was removed from display, one in seven (14%) businesses mixed the displayed food with new food for storage to re-serve the next day (Figure 73).

**Figure 72: Displayed ready-to-eat food supervised by staff**

*Q31: Displayed **ready-to-eat** food intended for self-service is supervised by staff.*

Figure 73: Food removed from display mixed with new food

Q34: Is food removed from display mixed with new batches of food for display on the next day?
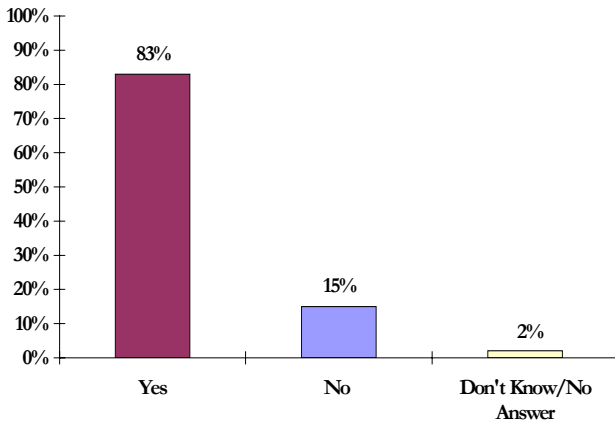
Base: Have food on display needing supervision = 103 (EHO)
       Response given but practice not observed by EHO = 27% of base
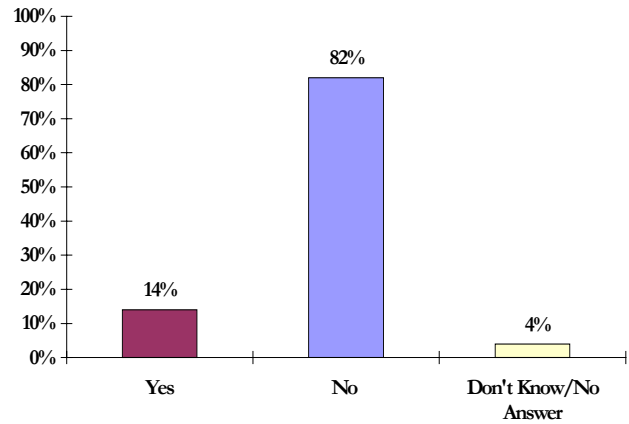
Base: Has food on display = 294 (EHO)
       Response given but practice not observed by EHO = 38%

Businesses more likely to remove food from display and mix it with new batches of food for display the next day included:

> high risk (21%) businesses (who are also more likely to handle these types of food) compared with medium risk (11%) businesses;

> those supplying ready-to-eat food off-site from where it was prepared (23%) compared with those not supplying ready-to-eat food off-site (11%); and

> those with a written food safety program (24%) compared to those without a plan (13%).

8.2.4   Processing of food and protection from contamination

One in ten (9%) businesses did not separate equipment used for preparing raw and ready-to-eat food, or sanitise that equipment between uses (Figure 74).

Figure 74: Separate equipment used for raw & ready-to-eat food?

Q62   Separate equipment is used for preparing and processing raw and ready-to-eat food, or equipment is cleaned and sanitised between these uses?
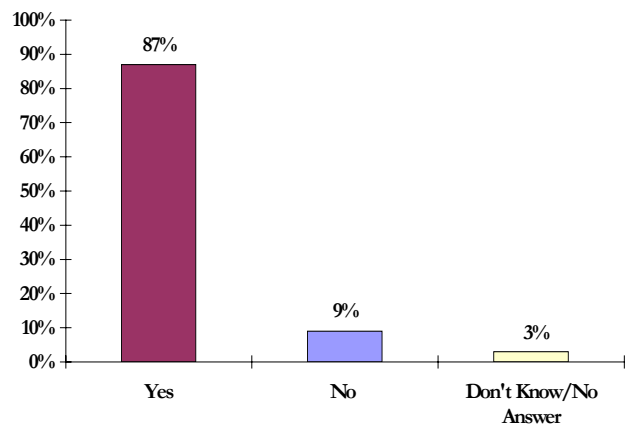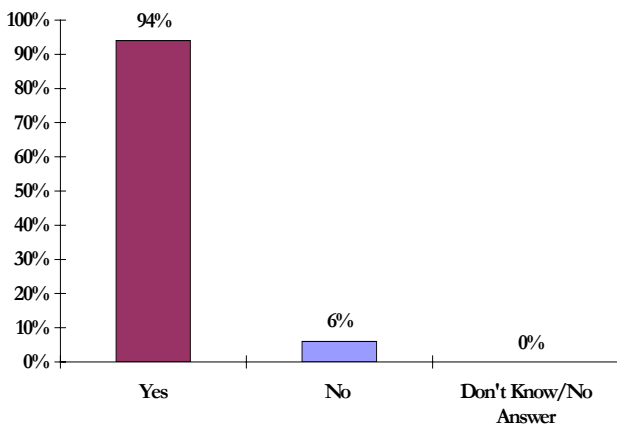

Base: Prepares & processes raw and ready-to-eat food = 418 (EHO)
Response given but practice not observed by EHO = 36%
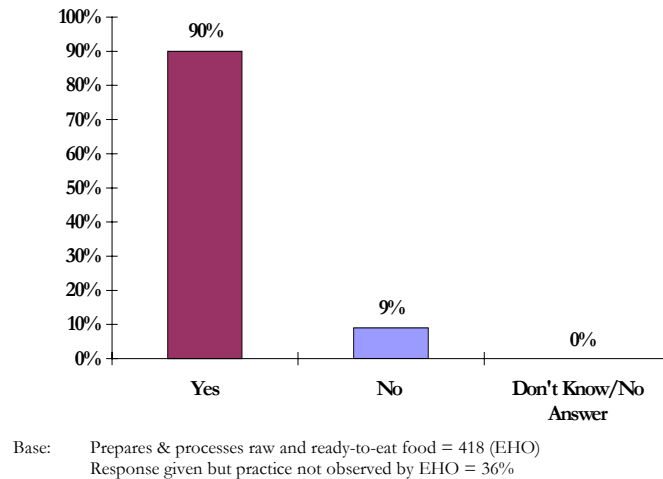
One in twenty businesses (6%) were at risk of contamination from staff directly touching food in businesses where staff handled ready-to-eat food with hands rather than utensils such as tongs (Figure 75). One in ten (9%) staff who wore gloves did not change gloves when necessary (Figure 76).

Figure 75: Hands are not used to handle food

*Q64: Staff handle ready-to-eat food with utensils or other barriers (not hands)*

Base: Staff handle ready-to-eat food = 453 (EHO)
Response given but practice not observed by EHO = 27% of base

Figure 76: Gloves are changed

Q65: Staff change gloves when necessary.

Base: Staff wear gloves = 341 (EHO)
Response given but practice not observed by EHO = 47%

One in ten (9%) businesses had staff who did not wash their hands when necessary (Figure 77). Additionally, one in twenty (6%) staff did not cover wounds appropriately (Figure 78).
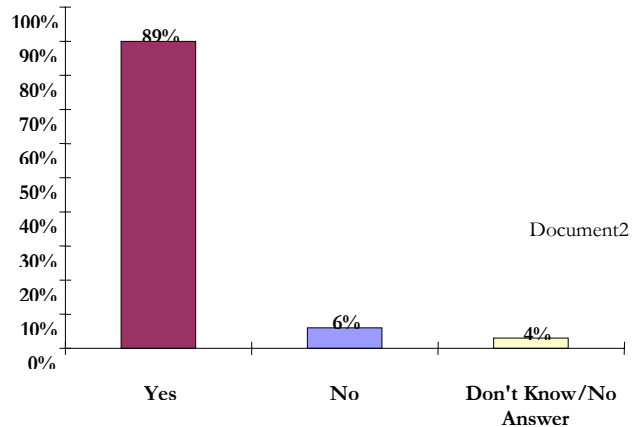
Figure 77: Hand washing

Q66   Staff wash hands when necessary.
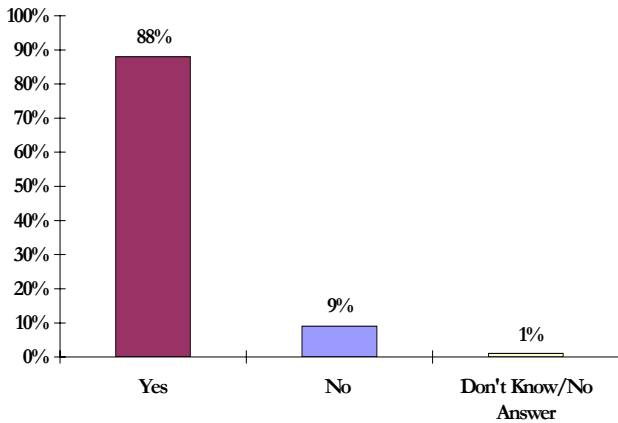
Base: All respondents = 483 (EHO)
         Response given but practice not observed by EHO = 49% of base

Figure 78: Wound covering

Q76   Staff cover open wounds with a waterproof dressing.

Base: All respondents = 483 (EHO)
         Response given but practice not observed by EHO = 44%

> Between one in ten and one in twenty businesses faced a risk of food contamination from staff through infrequent glove changing, using hands rather than utensils to touch food, or infrequent wound covering.

8.2.5   Transport and protection from contamination

Nearly all (99%) businesses transporting food had adequate protection from contamination during transportation (Figure 79).

Figure 79: Transport of food

Q44   Food is protected from contamination during transportation
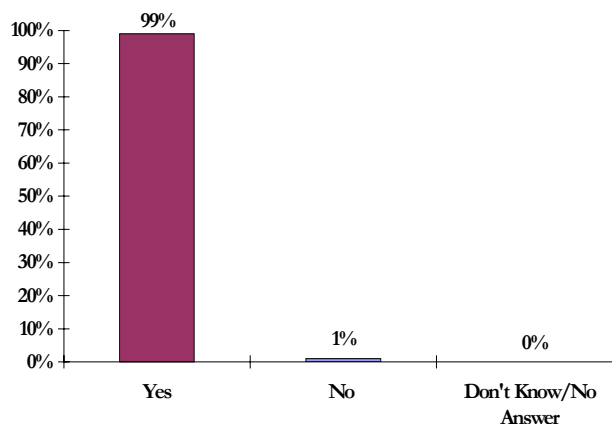
Base: Transports food = 99 (EHO)
         Response given but practice not observed by EHO = 44% of base

8.3   Personal hygiene and staff illness

Staff are a potential source of pathogenic micro organisms and foreign matter that could contaminate food. The contamination may be from the food handlers body such as intestinal, respiratory or skin micro organisms, or foreign material and micro organisms from clothing. Information was sought on hand washing practices and facilities, clothing worn by handlers, and the extent of the use of gloves.

Businesses were asked about their policies regarding staff that are ill and are at work. Staff that are suffering from symptoms of illness that may be transmitted through food or are carriers of these illnesses may contaminate food or surfaces that come in contact with food.

8.3.1   Hand washing facilities

Hand washing practices and ensuring that there are adequate facilities for hand washing are key components of personal hygiene. Information was sought on whether staff members wash their hands, which facilities they use and whether hand wash basins are available, are accessible and are suitable equipped with soap, warm running water, towels etc. EHOs were asked to observe whether hand basins showed signs of recent use.

Just under one in five (17%) businesses did not have sufficient hand washing facilities (Figure 80).

One in ten (10%) businesses did not provide their employees with adequate access to hand wash facilities (Figure 81).

Figure 80: Sufficient hand washing facilities

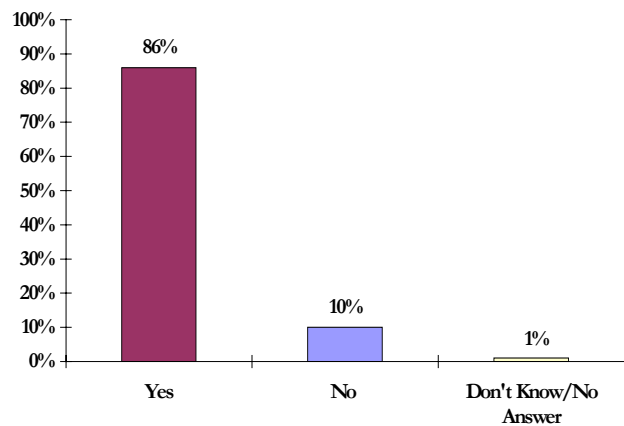*Q69   Sufficient hand washing facilities are provided.*
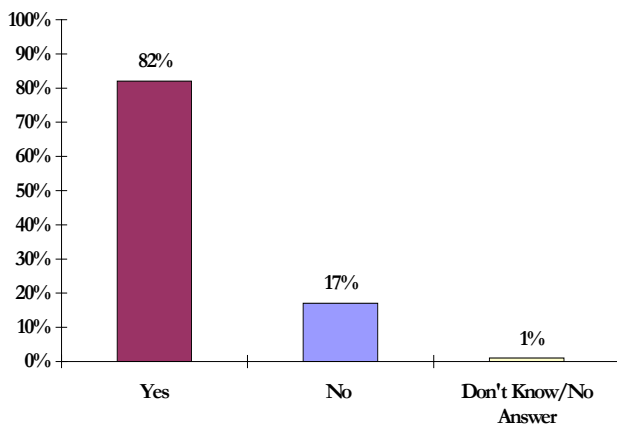
Base: All respondents = 483 (EHO)
            Response given but practice not observed by EHO = 1% of base

Figure 81: Accessible hand washing

Q70   Hand washing facilities are accessible to employees

Base: All respondents = 483 (EHO)
            Response given but practice not observed by EHO = 1%
            Question not applicable = 2%

> Just under one in five businesses did not provide sufficient hand washing facilities for staff.

Provision of appropriate facilities increased the likelihood of good practice. Nine in ten (92%) businesses with sufficient hand wash facilities had staff who washed their hands when necessary. This compares to only seven in ten (70%) businesses without sufficient hand wash facilities where staff washed their hands when necessary.

> Staff working in businesses with sufficient hand washing facilities were more likely to wash their hands when necessary.

Medium risk businesses more often had insufficient hand wash facilities (19%) and lack of access (13%) to hand wash facilities compared with high risk (12% and 5% respectively) (Table 25). There were no substantial differences according to business size.

Table 25: Hand wash facilities by business classification and business size						
	Business classification			**Business size**		
	High risk (166) % A	**Med risk (291) % B**	**Low risk (26) % C**	**Small (437) % D**	**Large (46) % E**	**Total (483) % F**
Q69: Sufficient hand washing facilities are provided						
Nett Yes	88B	79	69	81	89	81
Nett No	12	19A	27	18	9	17
Not Observed	1	1	4	1	0	1
No Answer	0	1	4	1	0	2
Q70: Hand washing facilities are accessible to employees						
Nett Yes	93B	83	81	85	96	86
Nett No	5	13A	15	11	2	10
Not Observed	1	-	4	1	0	1
No Answer	0	1	4	1	0	3

Base: All respondents (483)
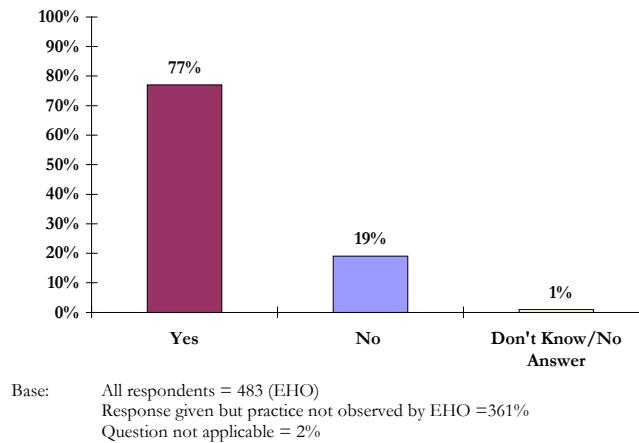   Sample to small to permit statistical significance testing

Significant differences observed between hand washing facility provision by State / Territory were:

➢ Businesses in South Australia (88%) and Victoria (89%) were more likely to provide hand washing facilities when compared to businesses in New South Wales (76%).

➢ Businesses in Victoria (95%) were more likely to have hand washing facilities that are accessible to employees when compared to businesses in ACT (86%).

Staff did not use the designated hand wash facilities in two in ten (19%) businesses.

Figure 82: Staff wash their hands in designated facilities

Q67   When staff wash hands, they use the designated hand washing facilities.

Base: All respondents = 483 (EHO)
               Response given but practice not observed by EHO =361%
               Question not applicable = 2%

> One fifth of businesses with designated staff hand wash facilities had staff who did not utilise these hand wash facilities.

Just under one in ten (7%) businesses did not supply soap or hand cleanser (Figure 83) and over one in ten (14%) did not have warm running water in their hand washing facilities (Figure 84).

Medium risk businesses were less likely to supply soap or hand cleanser (9%), compared with high risk businesses (4%).

Figure 83: Soap or hand cleanser supplied

Q71: Hand washing facilities are supplied with soap or hand cleanser

Figure 84: Warm running water available

Q72: Hand washing facilities have warm running water
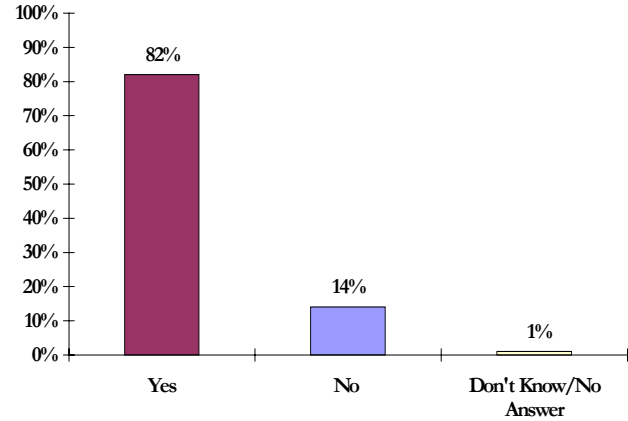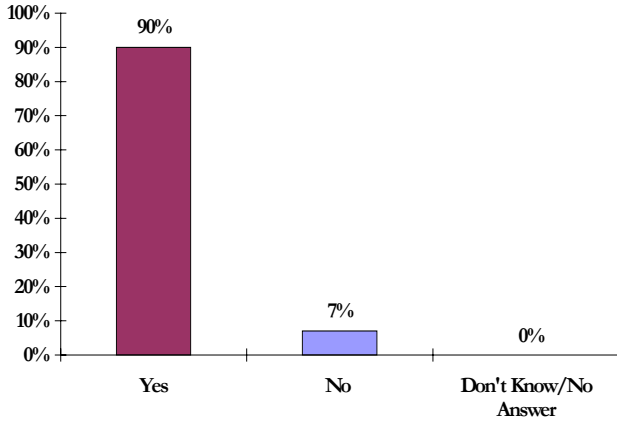
Base: All respondents = 483 (EHO)
         Response given but practice not observed by EHO = 2% of base
         Question not applicable = 2%

Base: All respondents = 483 (EHO)
         Response given but practice not observed by EHO = 1%
         Question not applicable = 3%

> Over one in ten businesses with designated staff hand wash facilities did not have warm running water in these facilities.

One fifth (20%) of businesses did not supply single use towels[14] (Figure 85) and one in seven (14%) businesses' hand washing facilities did not show evidence of recent use (Figure 86).

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[14]   Each facility must have single-use towels. An air-dryer on its own is not acceptable. Standard 3.2.2 states that food handlers must thoroughly dry their hands on a single use towel or in another way that is not likely to transfer pathogenic micro-organisms to the hands. The user guide: 'Safe Food Australia' (pg. 94, 2nd edition notes that food handlers should use single use towels, or a combination of single use towels and air drying to thoroughly dry hands.

Medium risk businesses were less likely to supply single use towels (25%) compared with high risk businesses (13%). Small businesses were less likely to supply single use towels (22%) when compared with large (4%) businesses.

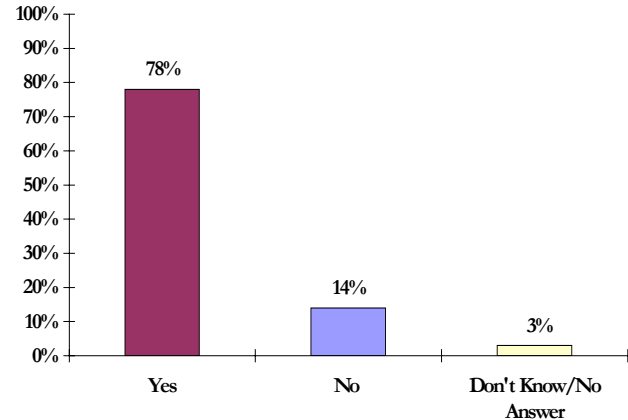**Figure 85: Single use towels supplied**

Q73: Hand washing facilities are supplied with single use towels
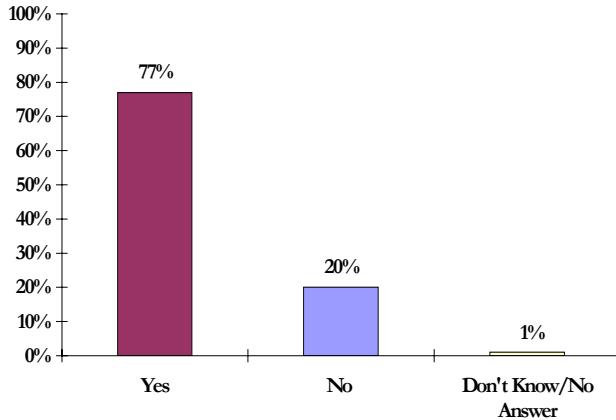
Base: All respondents = 483 (EHO)
         Response given but practice not observed by EHO = 2% of base
         Question not applicable = 2%

Figure 86: Recent use of hand washing facilities

Q74: Hand washing facilities show evidence of recent use.

Base: All respondents = 483 (EHO)
         Response given but practice not observed by EHO = 3%
         Question not applicable = 4%

One fifth of medium risk and small businesses did not have single use towels available in designated staff hand wash facilities.

Just under two in ten businesses (16%) had staff who *did not* wash and dry their hands correctly (Figure 87). Staff employed in high risk businesses (86%) washed and dried their hands correctly more often than staff employed in medium risk (78%) businesses.

Figure 87: Staff wash & dry hands correctly

Q68:   When staff wash hands, they wash and dry their hands correctly
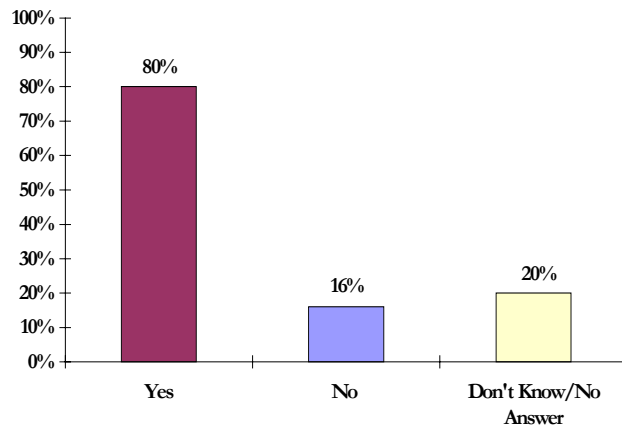
Base: All respondents = 483 (EHO)
             Response given but practice not observed by EHO = 48% of base

Just under two in ten (16%) of all businesses had staff who did not wash and dry their hands correctly.

8.3.2   Clothing

Staff were observed to see whether they wore clean outer clothing. Storage for personal clothing was checked for adequacy. Staff did not wear clean outer clothing in only a small proportion (4%) of businesses (Figure 88). Personal clothing was not stored appropriately in one out of fourteen (7%) businesses (Figure 89).
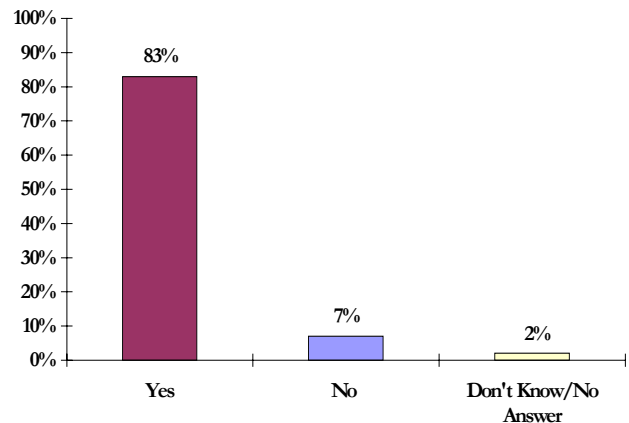
Figure 88: Staff wear clean outer clothing

*Q63: Staff preparing and processing food are wearing **'clean'** outer clothing*

Base   All respondents = 483 (EHO)
            Response given but practice not observed by EHO = 8% of base
            Question not applicable = 13%

Figure 89: Personal clothing storage

Q85: Personal clothing is stored appropriately

Base   All respondents = 483 (EHO)
            Response given but practice not observed by EHO = 5%
   Question not applicable = 8%

8.3.3   Staff sickness policies

Businesses were asked whether they had a policy relating to staff that were unwell. One in five (21%) businesses did not have staff sickness policies (Figure 90).

Figure 90: Policy for unwell staff
Q75:   The business has a policy relating to staff who are unwell

Base: All respondents = 483 (EHO)
               Response given but practice not observed by EHO = 32%
               Question not applicable = 1%
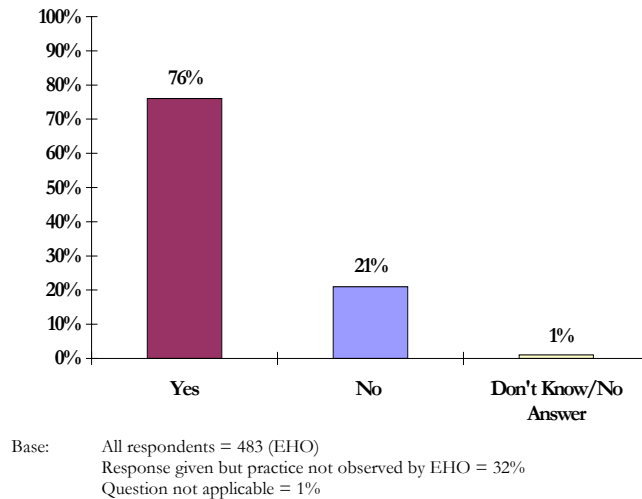
Types of businesses without a staff sickness policy included:

➢ medium risk (25%) compared to high risk (12%);

➢ small businesses (20%) compared to large (7%); and

➢ those not supplying food to high risk groups (23%) compared to those who did supply high risk groups (7%).

Additionally, staff sickness policies appeared in businesses where more caution was taken in relation to food handling practices including:

➢ checking the temperature (86%) of potentially hazardous food delivered to the premises compared with those who did not check the temperature of potentially hazardous food delivered to the business (73%);

➢ having a temperature probe (87%) compared to those without a probe (70%);

➢ having a written food safety program (94%) compared to those without a written food safety program (74%); and

➢ having a "good" overall appearance (79%) compared with those not having a "good" overall appearance (66%).

Staff sickness policies appeared more often within businesses where greater caution was taken with food safety overall (including checking food temperature of delivered food, having a temperature probe or the existence of a written food safety program).

8.4   Cleaning and sanitising

The EHO survey identified whether business cleaned and sanitised eating and drinking utensils and food contact surfaces for example, chopping boards, using commercial dishwashers, glass washers, domestic models of dishwashers or whether they cleaned and sanitised manually.

If food businesses used such equipment, The EHOs identified the operating temperatures of the equipment.

The temperature of water used in manual cleaning and sanitising was also obtained and whether the business used chemical sanitisers.

Effective cleaning and sanitising was assessed by identifying:

➢ the methods of washing and sanitising equipment used during food handling; as well as

➢ whether the equipment used was working appropriately.

8.4.1   Commercial dishwashers

One third (30%) of businesses where a dishwasher was appropriate (i.e. businesses that had a need to wash eating, drinking or food preparation utensils) used a commercial dishwasher to wash and sanitise eating utensils (Figure 90).

One in ten commercial dishwashers were not working at the correct sanitising temperature and one in twenty (5%) businesses were unsure of the temperature of the dishwasher (Figure 92). To answer yes to correct temperature, the final rinse or sanitising rinse must be 77°C or above.

**Figure 91: Use commercial dishwasher to wash and sanitise**

*Q48: Business uses a **commercial dishwasher** to wash and sanitise eating and drinking utensils and food contact surfaces*

Figure 92: Correct sanitising temperature

*Q49: **Commercial** dishwashers operates at the correct sanitising temperature*
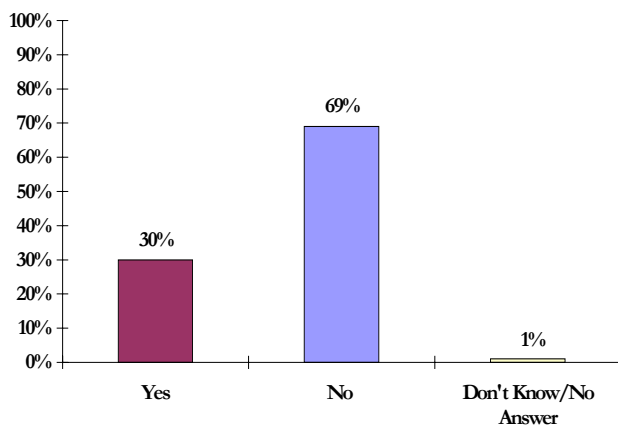
Base: Dishwasher appropriate to business = 399 (EHO)
Response given but practice not observed by EHO = 5% of base
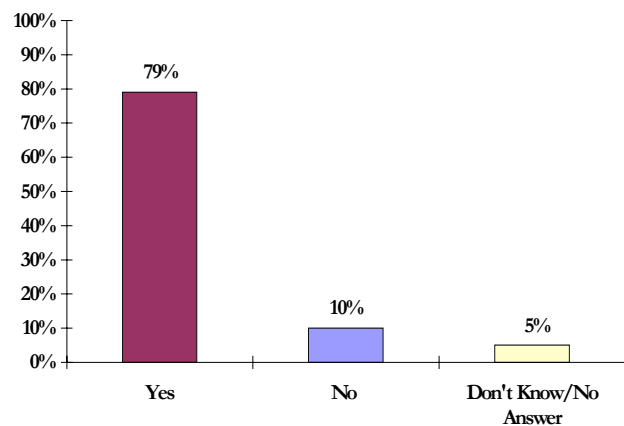
Base: Uses commercial dishwasher = 120 (EHO)
Response given but practice not observed by EHO = 25%

> One in seven businesses using a commercial dishwasher either did not know the sanitising temperature or found it was not working at the correct temperature.

Businesses that were more likely to use a commercial dishwasher included:

➢ large (55%) compared to small (27%);

➢ those supplying food to high risk groups (43%) compared to those not supplying these groups (28%);

➢ those using chemical sanitisers (36%) compared to those not (10%) using chemical sanitisers; and

➢ those with a written food safety program (45%) compared to those without a written food safety program (28%).
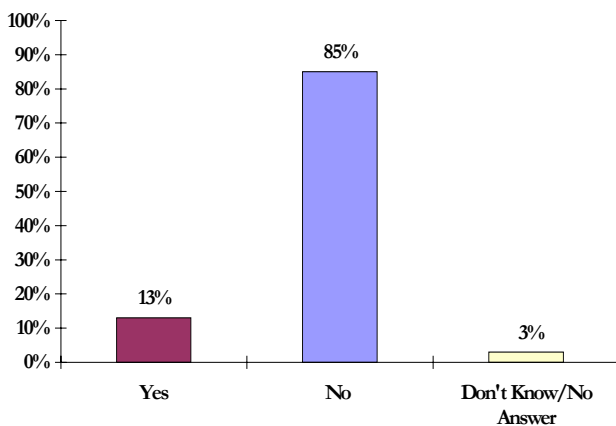
8.4.2 Domestic dishwashers

Over one in ten (13%) businesses where a dishwasher was appropriate (i.e. businesses that had a need to wash eating, drinking or food preparation utensils) used a domestic dishwasher and two in ten (21%) reported a domestic dishwasher was not applicable to the business (Figure 93).

One fifth (19%) of domestic dishwashers did not operate at the correct temperature (Figure 94). One in ten did not know the sanitising temperature of their domestic dishwasher. The correct sanitising temperature for a final rinse or sanitising rinse is 77°C.

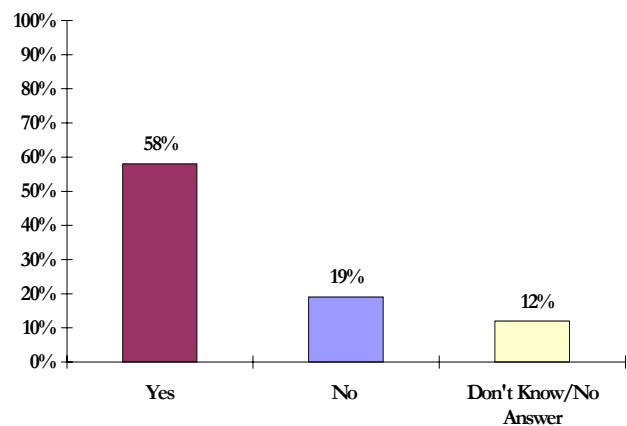**Figure 93: Domestic dishwasher to sanitise eating & drinking utensils**

Q51: Business uses a **domestic dishwasher** *to wash and sanitise eating and drinking utensils and food contact surfaces*

Base: Dishwasher appropriate to business = 382 (EHO)
        Response given but practice not observed by EHO = 3% of base

Figure 94: Domestic dishwasher at correct temp

Q52: **Domestic** *dishwasher operates at correct temperature*

Base: Uses domestic dishwasher = 48 (EHO)
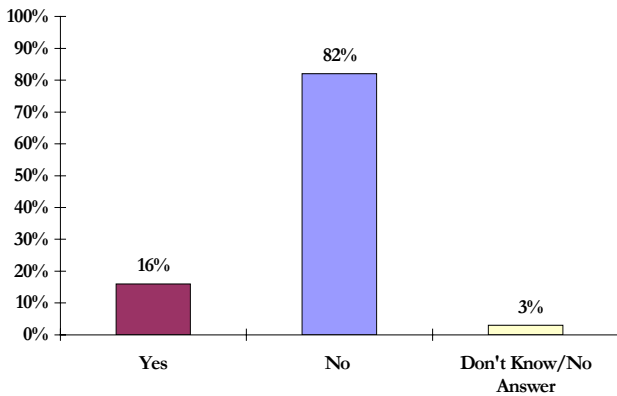   Response given but practice not observed by EHO = 46%

One third of domestic dishwashers either did not work at the correct sanitising temperature, or the temperature was not known.

8.4.3   Glass washers

One in seven (16%) businesses where a glass washer was appropriate to the business used glass washers (Figure 95). Two in ten (19%) glass washers did not operate at the correct temperature and one in ten could not identify the sanitising temperature (Figure 96).

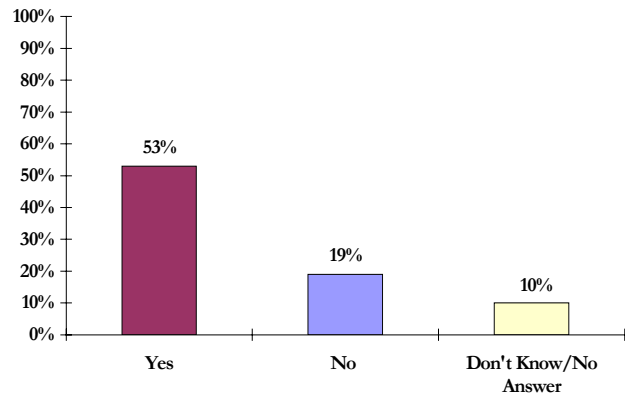**Figure 95: Glass washer to sanitise eating & drinking utensils**

Q54:   The business uses glass washers to sanitise using hot water

Base: Glass washer appropriate to business = 372 (EHO)
          Response given but practice not observed by EHO = 5% of base

Figure 96: Glass washers operate at correct temperature

Q55:   Glass washers operate at the correct temperature

Base: Uses glass washer = 59 (EHO)
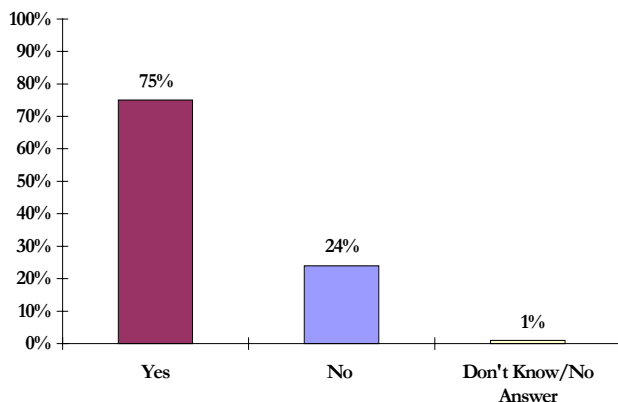   Response given but practice not observed by EHO = 29% of base

> One fifth of domestic dishwashers and glass washers did not operate at the correct sanitising temperature. Commercial dishwashers were a little better with only one in ten not working at the correct temperature.

8.4.4   Chemical sanitisers

One quarter (24%) of businesses did not use chemical sanitisers (Figure 97) and in those cases where they were used, one in ten (9%) did not use them appropriately (Figure 98).

Figure 97: Chemical sanitisers used
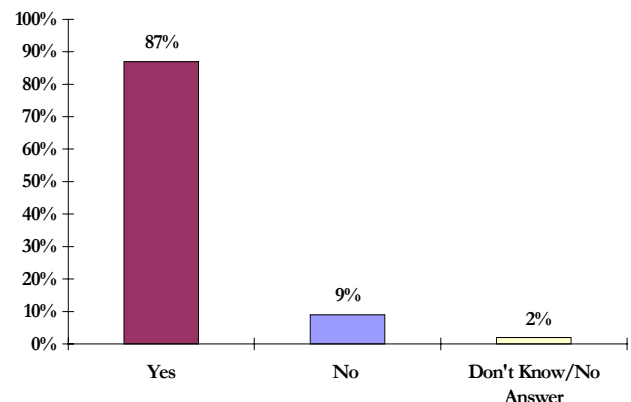
Q57   The business uses chemical sanitisers for some or all of its equipment

.Base: Chemical sanitiser appropriate to business = 453 (EHO)
          Response given but practice not observed by EHO = 20% of base

Figure 98: Appropriate use of sanitisers

*Q58   Chemical sanitisers are used appropriately*

Base: Uses chemical sanitiser = 342 (EHO)
          Response given but practice not observed by EHO = 45% of base

8.4.5   Manually sanitising using hot water

Nearly six in ten (57%) businesses where manual sanitising was appropriate used manual sanitising processes (Figure 99).

Figure 99: All equipment sanitised manually

*Q59   Business sanitises all or some of its equipment and surfaces **Manually** using hot water (without chemicals) e.g. in a sink.*
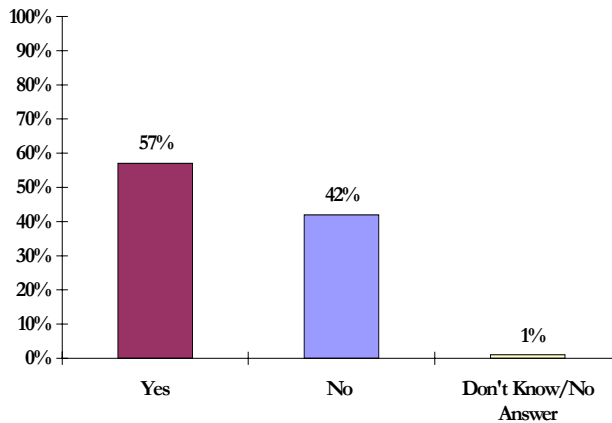

Base: Manually sanitising appropriate to business = 462 (EHO)
           Response given but practice not observed by EHO = 28% of base

Six in ten (60%) of businesses utilising manual sanitising processes did not hold the hot water at the appropriate temperature (e.g. 77°C or above) (Figure 100). Where the correct temperature was not used, two in ten had a temperature of between 60-64 °C and one quarter less than 59 °C (Figure 101).

**Figure 100:   Sanitising temperature is 77°C or above**

Q60: If business manually sanitises using hot water, the temperature of the hot water used is 77°C or above
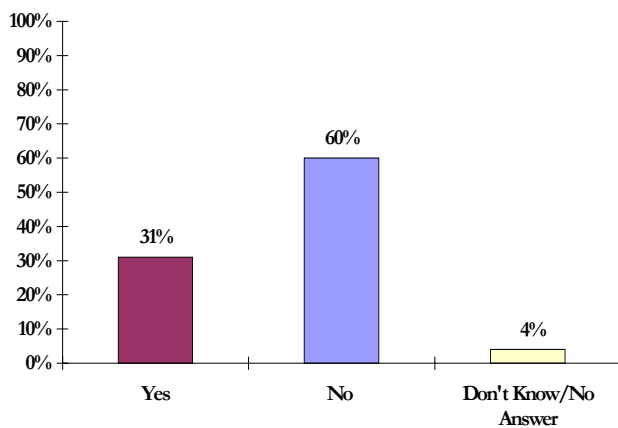
Base: Uses manual sanitising processes = 263 (EHO)
         Response given but practice not observed by EHO = 25% of base

Figure 101:   Record of temperature

Q61: Record the temperature of the hot water (either at the tap or in the sink as appropriate).
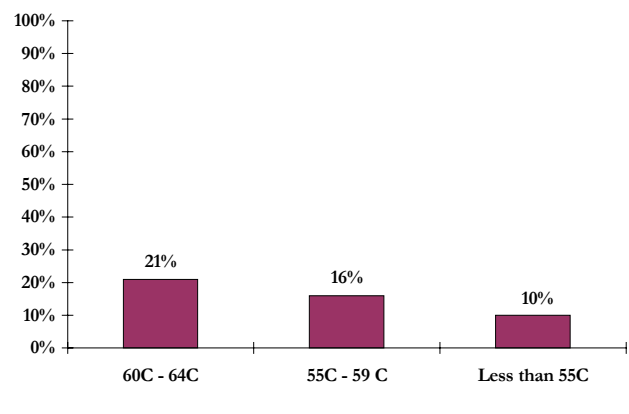
Base: Temperature of water for manual sanitation <77°C = 159 (EHO)
         No response = 53% of base

Businesses less likely to have the correct temperature of water used for manual sanitising included:

➢ regional (76%) compared with metropolitan (44%);

➢ those not checking the temperature of delivered food (66%) compared to those who did check (53%); and

➢ those without a written food safety program (63%) compared to those with a written food safety program (43%).

8.5 General assessment

The EHO survey identified some general information about the premises of food businesses. Observations included:

➢ whether the premises were clean and if not, the problem areas were noted;

➢ whether lighting was adequate;

➢ whether ventilation was adequate;

➢ the presence of adequate equipment for processing food;

➢ that such equipment was cleaned and sanitised before use; and
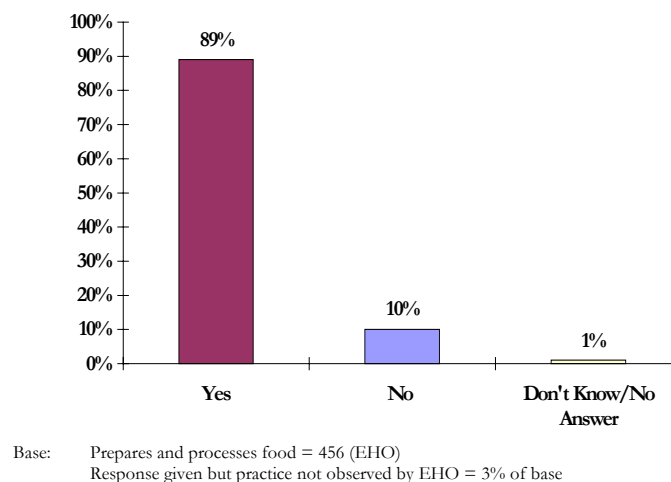
➢ the safe storage of chemicals.

Information was sought on pest control at the business. Premises were checked to establish whether they were free from pests. Businesses were asked whether they contracted pest control companies or had a pest control program.

8.5.1 Equipment

One in ten (10%) businesses that prepared and processed food did not have adequate equipment[15] for these tasks (Figure 102).

Figure 102: Adequate equipment for food preparation

Q35:   There is adequate equipment for preparing and processing food.

Base: Prepares and processes food = 456 (EHO)
            Response given but practice not observed by EHO = 3% of base

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15   See Attachment 4 in Appendix C for a description of assessing adequate equipment.

8.5.2   Cleaning & sanitation

Over one in ten (12%) businesses where it was appropriate to clean and sanitise food contact surfaces and utensils did not do so before using the surface or utensils (Figure 103).

Figure 103: Utensils are clean & sanitised

Q77:   Food contact surfaces and utensils are clean and sanitised before use.
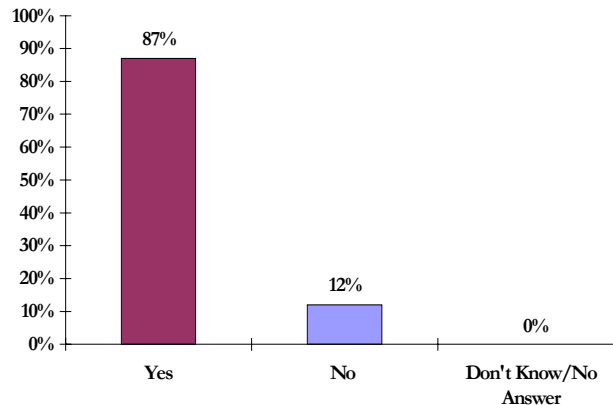
Base: Appropriate to clean and sanitise food contact surfaces = 467 (EHO)
            Response given but practice not observed by EHO = 18% of base

Across all businesses, one in ten (10%) were not considered clean and well maintained (Figure 104). Overall cleanliness rated lower among:

➢ small business (11%) compared with large (2%);

➢ medium risk (13%) compared with high risk (7%) business; and

➢ businesses that consistently used fewer cautious food handling practices such as those:
  – without a temperature probe (13%);
  – not providing sufficient hand wash facilities (27%);
  – not using chemical sanitisers (16%); and
  – without a written food safety program (11%).

EHOs identified specific problem areas needing attention within one third of businesses (62% reporting no problem areas). In particular, one in ten (12%) mentioned food preparation and processing and cooking areas and another one in ten (10%) mentioned the cool room (Figure 105).

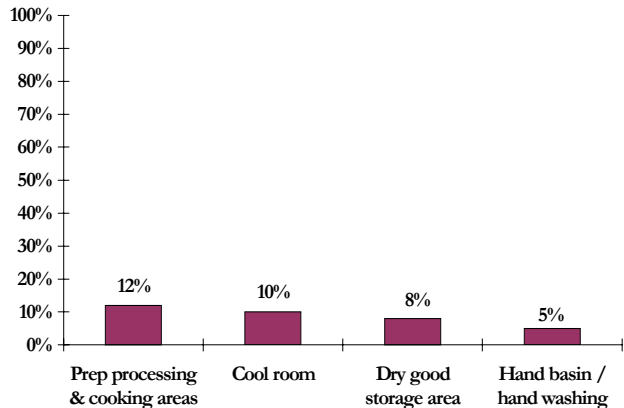**Figure 104: Overall business is clean**

Q80 The overall business premises and equipment are clean and well maintained?
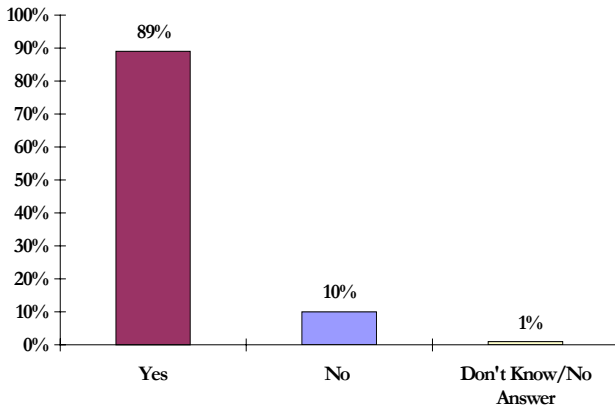
Base: All respondents =483 (EHO)
Response given but practice not observed by EHO = 1% of base

Figure 105: Identify problem areas

Q81 If there are problem areas, please identify where they are.

Base: All respondents =483 (EHO)
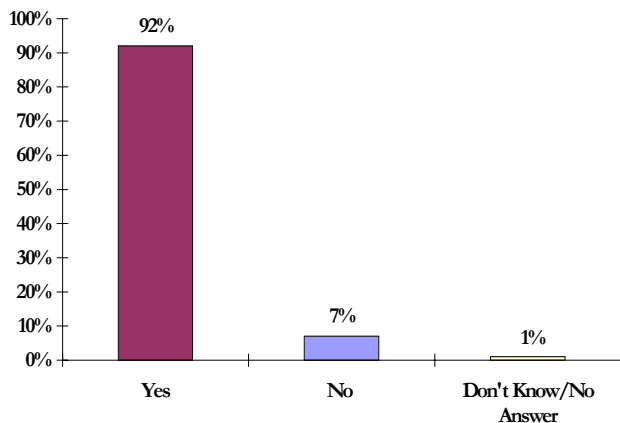Response given but practice not observed by EHO = 62% of base

8.5.3 Lighting & ventilation

One in twenty (4%) businesses did not have adequate lighting, (where lighting issues were appropriate to assess) (Figure 106).

Just under one in ten (7%) businesses did not have adequate ventilation in the premises (where ventilation issues were appropriate to assess) (Figure 107).

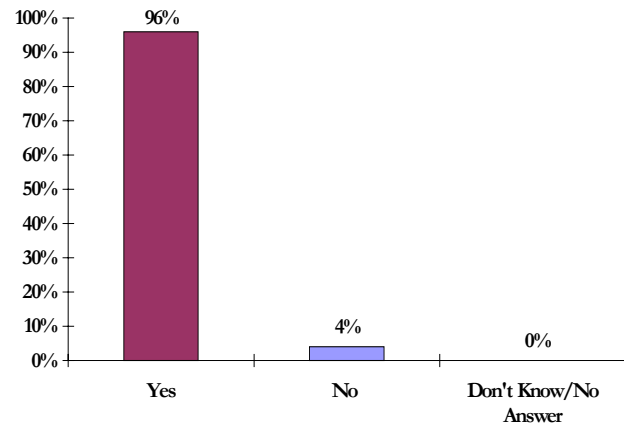**Figure 106:   Adequate lighting for food preparation**

Q78: Lighting is adequate for preparation and processing food.

Base: Lighting appropriate in business =472 (EHO)
Response given but practice not observed by EHO = 1% of base

Figure 107:   Adequate ventilation for food preparation

*Q79: There is adequate ventilation when preparing and processing food.*

Base: Ventilation appropriate to business =452 (EHO)
Response given but practice not observed by EHO = 2% of base

8.5.4   Pest control

One in ten (10%) food businesses showed evidence of pests (Figure 108). Where pest control was appropriate, one quarter (24%) did not have adequate pest control measures in place (Figure 109)
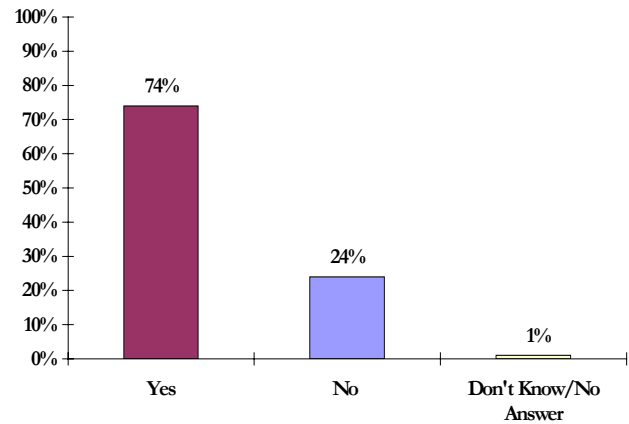
Figure 108:   Premises free of pests

Q82: The premises is free of pests
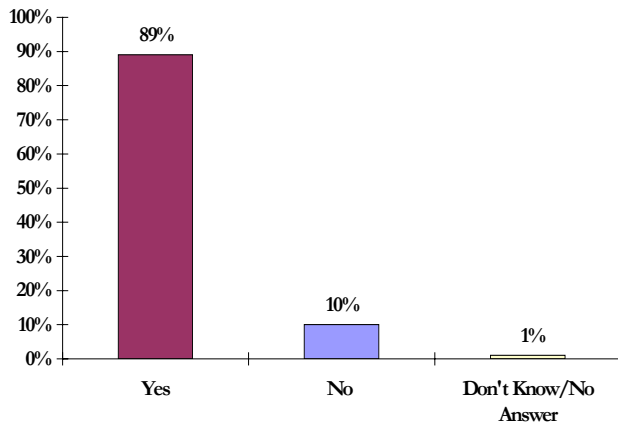
Base: All respondents =483 (EHO)
        Response given but practice not observed by EHO = 5% of base

Figure 109:   Has pest control

Q83:   The business contracts a pest control company or has a pest control program.

Base: Pest control company appropriate to business =478 (EHO)
        Response given but practice not observed by EHO = 18% of base

Businesses less likely to have pest control measures in place (if appropriate) included:

> ➢ small (26%) compared to large (2%);
> ➢ those not using chemical sanitisers (35%);
> ➢ those not undertaking some safe food handling practices such as:
>> – not checking the temperature of potentially hazardous food delivered to the business (27%); and
>> – not having a written food safety program (26%).

8.5.5   Chemical storage

In business where chemical use was an issue, one in twenty (6%) did not store chemicals safely (Figure 110).

Figure 110: Chemicals are stored safely

Q84:   Chemicals are stored safely
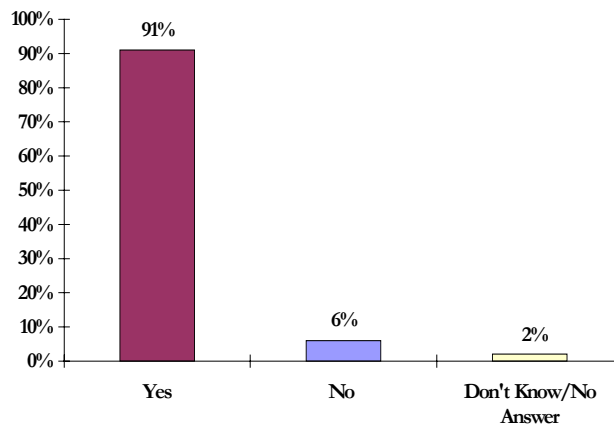
Base: Business stores chemicals = 476 (EHO)
        Response given but practice not observed by EHO = 3% of base

8.6   Food recall plans

When the Food Safety Standards come into effect in a State or Territory, business that are engaged in the wholesale supply, manufacturing or importing of food will need to have developed plans to recall food that has been released into the market and subsequently found to be unsafe.

These types of businesses were asked whether they had written food recall plans. No assessment of the adequacy of the plan was made.

Two thirds (66%) of "wholesale / manufacturing / importing" businesses did not have a written food recall plan (Figure 111). Businesses more likely to have a written food recall plan included:

➢ those classified as high risk (39%) compared with medium risk (17%); and

➢ those having potentially hazardous food delivered (43%) compared to those not having potentially hazardous food delivered (9%).

Figure 111: Wholesale/ Manufacturers/ Importers have food recall plan

Q86:   If business is engaged in **wholesale supply, manufacturing or importation** *of food, the business has a written food recall plan.*
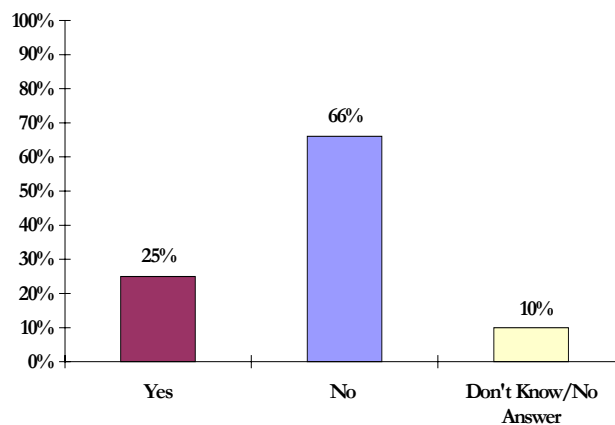
Base: Wholesale/Manufacturing/Importing business 186 (EHO)
Response given but practice not observed by EHO = 7% of base

In general, businesses undertaking other safe food handling precautions were more likely to have a written food recall plan such as those with a:

➢ temperature probe (48%) compared to those without a probe (2%);

➢ written food safety program (79%) compared to those without a program (6%);

➢ staff sickness policy (28%) compared to those without a policy (11%); and

➢ pest control program (30%) compared to those without a pest control program (12%).

Businesses more likely to have implemented other precautions to ensure safe food handling such as written food safety programs, staff sickness policies and pest control programs were more likely to also have a written food recall plan.

8.7   Food safety programs

Most types of food business included in this survey are not required to have food safety programs in any of the States and Territories, except Victoria. In Victoria high risk business are required to have a safety program and it will be a requirements for all businesses (except those of minimal risk) from 2002.

Businesses that use alternative temperature control systems in compliance with the temperature control requirements of Standard 3.2.2 can use a food safety program to demonstrate their system.

Businesses were asked whether they had a written food safety program. This program had to identify food safety hazards and ways to control and monitor these hazards. The adequacy of the program was not assessed.
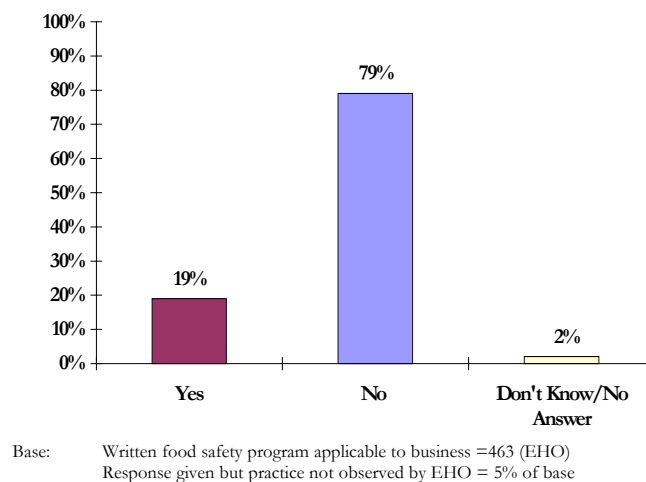
Two in ten (19%) businesses did not have a written food safety program (Figure 112).

Businesses more likely to have a written food safety program included:

> ➢ high risk (32%) compared with medium risk (12%);
>
> ➢ large (54%) compared with small (15%);
>
> ➢ those based in Victoria (43%) compared with NSW (15%), Qld (14%) SA (12%) or NT (3%);[16]
>
> ➢ those supplying food to high risk groups (45%) compared to those who did not supply these groups (14%); and
>
> ➢ those having potentially hazardous food delivered to their business (31%) compared to not having potentially hazardous food delivered (10%).

Figure 112: Has written food safety program

Q87:   Business has a written food safety program

Base: Written food safety program applicable to business =463 (EHO)
            Response given but practice not observed by EHO = 5% of base

---

16   Victoria is the only state to require that all food businesses (except some with minimal risk) have to have written food safety programs in place by January 2003. At the time the surveys were being undertaken many EHOs in Victoria were intending to visit businesses to assist with the implementation of the food safety programs.

Businesses implementing additional safe food handling procedures were also more likely to have a written food safety program. Businesses more likely to have a written food safety program included those that:

- ➤ checked the temperature of potentially hazardous food delivered to their premises (44%) compared to those not checking the temperature of potentially hazardous food delivered (6%);
- ➤ had a temperature probe (42%) compared to those without a temperature probe (3%);
- ➤ used chemical sanitisers (21%) compared to not using chemical sanitisers (10%);
- ➤ had a staff sickness policy (23%) compared to those without a staff sickness policy (5%);
- ➤ had a pest control program (22%) compared to those without a program (11%); and
- ➤ were reported to have had a good overall appearance (23%) compared to not having a good overall appearance (3%).

> Businesses more likely to have implemented additional safe food handling practices such as having a temperature probe, using chemical sanitisers, staff sickness policies and pest control programs were also more likely to have a written food safety program.

Additionally, businesses with a written food safety program were more likely to:

- ➤ remove food from display and mix it with new batches of food on the next day (24%) compared to those without a written food safety program (13%); and
- ➤ use a commercial dishwasher (45%) compared to those without a written food safety program (28%).

Businesses without a written food safety program (10%) were less likely to use separate equipment for raw and ready-to-eat food, or sanitise equipment between use compared to those with a written food safety program (3%).

Businesses with staff sickness policies (92%) were more likely to use separate equipment for preparing raw and ready-to-eat food, or sanitise equipment between uses than those without policies (85%) (Table 26).

Table 26:	Preparation and processing raw food by safety program, sickness policies and region						
Q62:	*Separate equipment is used for preparing and processing raw and ready to eat food, **or** equipment is cleaned and sanitised between these uses*						
	Written Food safety program		**Staff Sickness Policy**		**Region**		
	Yes (79) A	**No (314) B**	**Yes (323) C**	**No (87) D**	**Metro (201) E**	**Regional (217) F**	**Total (418) G**
Nett Yes	96	89	92ᴰ	85	88	92	90
Nett No	3	10ᴬ	7	14ᶜ	11	6	9
Nett Not Observed	32	38	37	33	36	35	36

No Answer	0	-	-	0	-	-	-

Base: Process raw and ready-to-eat food (418)