

14 February 2022

190-22

Supporting document 1

Consultation Regulation Impact Statement – P1053 Food Safety Management Tools

Executive summary

Food Standards Australia New Zealand (FSANZ) commenced Proposal P1053 – Food Safety Management Tools to consider whether regulatory measures should be mandated to manage food safety risks in food service and related retail sectors.

The purpose of this consultation regulation impact statement (CRIS) is to explain the options being considered, and seek information from stakeholders to help analyse the relative costs and benefits of these options. Options and preferred options may change as a result of feedback if better options can be identified from additional information.

This CRIS has relied on the best available information at this point in time, but data gaps remain and the analysis is based on several assumptions. These gaps and assumptions are identified for further stakeholder feedback.

Over the past decade, foodborne illness outbreaks have been consistently linked to food service and selected retail businesses. The total number of probable and actual foodborne outbreaks in Australia for 2010–2017 was 1,257. Of these, 970 (77%) were associated with food prepared in the food service and retail settings that are the focus of this proposal. The 970 outbreaks resulted in 15,286 people being reported ill, 1,371 of which were hospitalised, and 34 fatalities. However, the true nature and size of the problem is likely to be much larger as many cases are not reported.

This analysis considers which measures over and above existing general requirements would result in reduced foodborne illness attributed to these sectors. FSANZ categorised food businesses based on risk profiling their food handling activities and association with foodborne illness outbreaks. This categorisation allows for differential regulation, based on the risk the business potentially poses.

Businesses in-scope for P1053

Category 1	Category 2	Category 3
Food service/caterers that both make and sell potentially hazardous food (PHF)	Retailers that just sell PHF (do not make it)	Businesses that only sell pre-packaged PHF (that remains packaged for sale)

e.g. restaurants, takeaways, caterers, bakeries and delis that make and sell PHF	e.g. delis and bakeries that don't make PHF onsite, cafes selling PHF made by another business	e.g. service stations, some cafes or stalls
--	--	---

In managing the risks occurring within each businesses risk category, FSANZ considered the status quo, self-regulation, food safety management tools as regulatory requirements that apply to all businesses in these sectors, and a targeted combination of regulatory measures based on differing food safety risks.

States and territories currently regulate these differently; thus there are different 'gaps' between the options proposed and status quo in each jurisdiction.

Proposed regulatory requirements

Our preferred approach is to amend the Australia New Zealand Food Standards Code to require a food safety supervisor (FSS), food handler training (FHT), and evidence to substantiate food safety management (E), for some but not all business types. Our assessment is that there is no one-approach-fits-all businesses; measures need to be tailored based on the risk of a business's food handling activities. These regulatory measures will be supported by non-regulatory tools that focus on food safety culture and education.

Business category	Food safety supervisor	Food handler training	Keeping evidence of critical process management
Category 1	✓	✓	✓
Category 2	✓	✓	X
Category 3	X	X	X
	non-regulatory measures only - targeted education on temperature control		

Our cost-benefit analysis demonstrates net benefits for the preferred options. In addition to cost-benefit, we also considered 'fit-for-purpose' or appropriateness of each food safety management tool, rather than relying on economic modelling alone. Therefore, the option with the largest net benefit is not necessarily the preferred option. Less onerous regulatory options have been determined to fit better with the capabilities and resources of industry and regulators in some instances. For the preferred options identified in this analysis, the regulatory tools are considered practical, readily implementable and sustainable. There are also existing resources available to support their understanding and implementation.

Commencement period

FSANZ is proposing a 12-month commencement period for the new standard, if it is gazetted. Compliance with the proposed requirements would not be mandatory before then.

Table of Contents

EXECUTIVE SUMMARY	1
TABLE OF CONTENTS.....	3
ABBREVIATIONS.....	4
1 INTRODUCTION.....	5
1.1 BACKGROUND.....	6
1.2 SCOPE.....	6
1.3 CURRENT STATUS OF FOOD SAFETY MANAGEMENT.....	8
2 WHAT IS THE PROBLEM AND WHY IS GOVERNMENT ACTION NEEDED?	10
3 WHAT POLICY OPTIONS ARE BEING CONSIDERED?	12
3.1 OPTION 1 – MAINTAIN THE STATUS QUO.....	12
3.2 OPTION 2 – SELF-REGULATION	12
3.3 OPTION 3 – REGULATED FOOD SAFETY MANAGEMENT TOOLS	12
4 WHAT ARE THE LIKELY NET BENEFITS OF EACH OPTION?	13
4.1 INTRODUCTION	13
4.2 OPTION 1 – MAINTAIN THE STATUS QUO (ABANDON THE PROPOSAL)	13
4.3 OPTION 2 – SELF-REGULATION	15
4.4 OPTION 3 – REGULATED FOOD SAFETY MANAGEMENT TOOLS	16
4.5 COST AND BENEFITS.....	25
4.6 COMPARISON OF OPTIONS AND CONCLUSION	28
5. WHO WAS CONSULTED AND HOW WAS THEIR FEEDBACK INCORPORATED?.....	29
5.1 WHO AND HOW WE CONSULTED.....	29
5.2 STAKEHOLDER VIEWS	29
5.3 HOW WE INCORPORATED FEEDBACK.....	30
5.4 FUTURE CONSULTATION	30
6. WHAT IS THE BEST OPTION FROM THOSE CONSIDERED?	30
7. HOW WILL THE CHOSEN OPTION BE IMPLEMENTED AND EVALUATED?	31
8. CASE STUDIES.....	32
8.1 EXAMPLES OF BUSINESSES THE STANDARD WOULD APPLY TO	32
8.2 EXAMPLES OF WHERE PROPOSED STANDARD 3.2.2A WOULD NOT APPLY:.....	37
9. REFERENCES.....	38
APPENDIX 1 – COST–BENEFIT ANALYSIS	41
INTRODUCTION	41
COST OF INTERVENTIONS	41
EFFICACY OF INTERVENTIONS	45
NUMBER OF BUSINESSES	45
NUMBER OF ILLNESSES FROM IN-SCOPE FOOD BUSINESS SETTINGS	46

NET BENEFIT OF EACH OPTION	47
APPENDIX 2 – FOOD SAFETY CULTURE INITIATIVES AND EDUCATION	48
GLOBAL, INTERNATIONAL AND NATIONAL FOCUS ON FOOD SAFETY CULTURE.....	48
FOOD SAFETY CULTURE INITIATIVES IN AUSTRALIA	48
APPENDIX 3 – INTERNATIONAL APPROACHES	49
CODEX OVERARCHING PRINCIPLES.....	49
REGULATORY MEASURES FOR FOOD SAFETY MANAGEMENT	49

Abbreviations

CRIS	consultation regulatory impact statement
DRIS	decision regulatory impact statement
E	evidence to substantiate food safety management
EHO	environmental health officer
FHT	food handler training
FRSC	Food Regulation Standing Committee
FSANZ	Food Standards Australia New Zealand
FSM WG	Food Safety Management Working Group
FSP	food safety program
FSS	food safety supervisor
P1	Priority 1 business (using the national Risk Profiling Framework)
P2	Priority 2 business (using the national Risk Profiling Framework)
PHF	potentially hazardous food
RTE	ready to eat

1 Introduction

FSANZ Proposal P1053 – Food Safety Management Tools considers whether regulatory measures over and above existing general requirements should be mandated to manage food safety risks in food service and related retail sectors. This CRIS has been prepared to consult with interested stakeholders on potential options. It has been prepared in accordance with the *Regulatory Impact Analysis Guide for Ministers' Meetings and National Standard Setting Bodies* (May 2021)¹ and answers the following seven questions using the best available information:

- What is the problem?
- Why is government action needed?
- What policy options are to be considered?
- What is the likely net benefit of each option?
- Who was consulted and how was their feedback incorporated?
- What is the best option from those considered?
- How will the chosen option be implemented and evaluated?

In our assessment, FSANZ considered the extent of foodborne illness caused by food service and retail businesses in Australia², and where improvements in food safety management are needed. We examined current regulatory arrangements in Australia and international approaches³. We considered several regulatory and non-regulatory options by assessing risks, costs, benefits and appropriateness of the interventions.

The food service and retail sectors cover a broad range of business types, including restaurants, takeaways, commercial caterers, camps, cruise/airline, national franchised fast food outlets and delicatessens (Abelson 2006). Many of these businesses are small-to-medium enterprises with a transient workforce, not affiliated with industry associations.

By their nature, food service and retail businesses are challenging environments for adequately controlling food safety risks. They deal with high-risk food that is often substantially and directly handled (i.e. unpackaged food) during preparation, often under time pressures and with no further treatment by consumers before eating. Food businesses have reported challenges dealing with competing and often complex priorities including staffing, managing suppliers, increasing costs, remaining competitive, providing high-quality products at affordable prices, and working long hours. Compounding these issues, food service sectors are characterised by high staff turnover and relatively high proportions of workers who are inexperienced, casual staff and/or migrants from diverse cultural and language backgrounds.

FSANZ is seeking information from stakeholders on issues related to the options set out in this CRIS with specific questions asked. In addition, we welcome any general comments, data, or information on the proposed options. Information collected will inform a more detailed consideration of costs and benefits and be used to prepare a Decision RIS for the FSANZ Board and ministers.

¹ <https://obpr.pmc.gov.au/resources/guidance-impact-analysis/regulatory-impact-analysis-guide-ministers-meetings-and-national>

² Supporting Document (SD) 1: OzFoodNet data

³ Appendix 3: International approaches to manage food safety in food service

1.1 Background

In June 2018, ministers responsible for food regulation agreed to strengthen food safety management in food service and retail priority business sectors, to reduce foodborne illness. The 2011 Revised Ministerial Policy Guideline on Food Safety Management for General Food Service and Closely Related Retail Sectors⁴(the Policy Guideline) identifies these priority business sectors.

A multi-jurisdictional food safety management working group (FSM WG) evaluated current requirements and concluded that extra measures would improve food safety outcomes in these sectors (see the project history in SD4). It proposed additional food safety management tools, both regulatory and non-regulatory.

Following stakeholder consultation⁵, the FSM WG presented a package of regulatory and non-regulatory food safety tools to the Food Regulation Standing Committee⁶ (FRSC). The regulatory measures proposed were:

- the requirement for a food safety supervisor (involving competency-based training)
- mandatory training for all food handlers (non-competency based)
- requiring evidence be provided to demonstrate that key activities or control measures are managed.

The non-regulatory tools proposed were:

- food safety culture initiatives
- comprehensive and integrated, support and education package to guide both food businesses and local government as key regulatory partners.

Ministers endorsed this work and referred the package to FSANZ for assessment. Ministers also recommended the integrated model for standards development and consistent implementation (integrated model) be used. This model involves FSANZ working closely with food regulators, to ensure new regulatory measures can be consistently implemented in all jurisdictions, and that guidance is available to industry upon commencement of a new standard.

FSANZ has prepared Proposal P1053 to consider whether to amend the Australia New Zealand Food Standards Code⁷ (the Code) to mandate any of the food regulatory measures in the package endorsed by ministers. The *Food Standards Australia New Zealand Act 1991* (FSANZ Act) requires FSANZ to assess the proposed food regulatory measures in accordance with that Act, and to make its own decision on mandating these or other measures.

1.2 Scope

The Policy Guideline identifies eight business sectors as high priorities for improving food safety management. These sectors have been assigned Priority 1 (P1) and Priority 2 (P2)

⁴ Ministerial Policy Guidelines' were developed to guide the processes for determining and implementing appropriate risk management tools for specified retail/food service sectors or business types.

⁵ In 2017 a stakeholder consultation roadshow was done across all jurisdictions. The feedback provided helped the FSM WG refine the package presented to FRSC. Section 5.1 provides more detail.

⁶ FRSC is a committee under the Ministerial Forum responsible for developing food policy

⁷ [Food Standards Code](#), FSANZ website

classification using the national *Risk Profiling Framework* (the Framework)⁸, the endorsed national methodology for classifying food businesses by food safety risk. The sectors are:

- on-site and off-site caterers
- food service for ready-to-eat (RTE) food prepared in advance
- retailers that process bakery products containing potentially hazardous foods (PHF), see below
- food service for express order
- retailers of bakery products containing PHF
- retailers of RTE pre-packaged PHF
- retailers of RTE processed seafood products
- retailers of RTE delicatessen products.

The scope of P1053 includes these businesses, as well as other food service and related retail businesses with similar risks (i.e. handling unpackaged RTE PHF).

Characteristics of in-scope businesses

Many food handling activities of food service and related retail food businesses are inherently risky because they involve PHF. This food has certain characteristics that support the growth of pathogenic microorganisms or the production of toxins that may cause foodborne illness. Examples of PHF include products containing raw eggs, poultry, meat, seafood, fruit, vegetables, and cooked rice and pasta.

Food service and related retailers provide consumers with PHF that will be either eaten raw or is ready to eat without further cooking—there is no further step before consumption that would destroy any pathogens present. These foods are high risk because of potential pathogen growth, especially if not immediately consumed. They require careful handling to avoid contamination. They must also be kept under strict temperature control to minimise the growth of any pathogens that may already be present in the food, and to prevent formation of toxins.

Under the Framework, food businesses are characterised by the type of food handling activities they engage in. The Framework has a series of decision trees intended to identify whether a business' food handling activities impact the risk of the food eaten by a consumer. It also gauges how critical that business sector's contribution is to overall consumer safety.

Under the Framework, whether a business has or requires at least one critical control step (in the sense used in Hazard Analysis and Critical Control Point (HACCP⁹) systems) needs to be determined. Critical controls ensure the food is as safe as practically possible. Classification is based on known risk-affecting factors, including the need to eliminate pathogens, potential for microbial (re)contamination and growth, potential for inadvertent introduction of physical or chemical hazards that will not be detected, and the size and health status of the population served.

⁸ Risk classification for these business was assessed by a working group of technical experts and endorsed by the Australian Department of Health. <https://foodregulation.gov.au/internet/fr/publishing.nsf/Content/risk-profiling-framework>

⁹ The HACCP system, is a science based and systematic identification of hazards and control measures to ensure the safety of food along the food chain, rather than relying mainly on end-product testing http://www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252FStandards%252FCXC%2B1-1969%252FCXC_001e.pdf

FSANZ considered characteristics of food handling activities typically undertaken by in-scope business sectors. We used details of previous classifications by Ross et al (2009¹⁰) (see SD1). We assigned category levels and within each level included a common set of controls to mitigate the food safety risks of that level. The category levels are:

Category 1:

- Handling activity 1: process high-risk PHF in advance of serving RTE food to the consumer.
- Handling activity 2: process and serve high-risk PHF as RTE food to the consumer within a time period that does not adversely affect the microbiological safety of the food.

Five controls are critical to ensuring food remains safe during these activities:

- storage of PHF at appropriate temperatures before processing
- adequate cooking or reheating
- adequate cooling of cooked foods
- minimising cross-contamination and re-contamination
- storage of processed RTE food at appropriate temperatures before service to the consumer.

Cooking should eliminate pathogens in the food. Other controls should prevent introduction of pathogens to the food, and prevent (or minimise) bacterial growth and toxin production.

Category 2:

- Handling activity 3: serve unpackaged high-risk PHF as RTE food for retail sale.

Two controls are critical to ensuring food remains safe during this activity:

- storage of PHF at appropriate temperatures
- minimising cross-contamination and re-contamination.

Category 3:

- Handling activity 4: serve packaged high-risk PHF as RTE food. The food is packaged prior to receipt by the food business for retail sale and sold to the consumer in its packaging.

One control is required for the safety of food during this activity:

- storage of PHF at appropriate temperatures.

Each of these categories has been considered individually to assess if a net benefit is likely to be achieved when applying the options identified.

1.3 Current status of food safety management

In Australia, state and territory food regulators use a wide range of food safety management tools aimed at reducing foodborne illness. Tools can be regulatory or non-regulatory and include legislation, guidance material, education and training. Tools are used to varying degrees in different jurisdictions, to require or encourage food businesses to manage their food safety risks and strengthen their food safety culture.

¹⁰ In 2009, an independent team of food safety experts led by the University of Tasmania's Food Safety Centre, was commissioned to classify 32 business types throughout the food supply chain using the science-based national Risk Profiling Framework. Each business type was given a risk classification under the four-tier model between Priority 1 and Priority 4.

Food safety requirements are contained in several standards in the Code; particularly the Food Safety Standards of Chapter 3. This chapter provides general food handling controls that all food business must follow to ensure only safe and suitable food is produced and sold. In particular, Standard 3.2.2 outlines base-level food safety requirements for each step of the food handling process: food receipt, storage, processing, display, packaging, transport, disposal and food recall. Other requirements relate to skills and knowledge of food handlers and their supervisors; food handler health and hygiene; and cleaning, sanitising and maintenance of premises and equipment.

A complementary guide to the food safety standards, Safe Food Australia¹¹, provides information for food regulators and businesses on how the requirements may be met.

Standards in the Code are adopted into legislation through state and territory food acts. In addition to the standards, several jurisdictions have incorporated extra food safety requirements into their Food Acts to manage risks associated with the food service and retail sectors. Four jurisdictions (Victoria, New South Wales, Queensland and ACT) have requirements for food safety supervisors with competency-based training. Victoria and Queensland also have template-based food safety programs, which include record keeping requirements for key activities. Record keeping may be one way a business might keep evidence that key processes are managed.

There are differences in how these extra requirements are implemented in each jurisdiction, including the business classifications used and attainment and duration of qualifications.

The nationally agreed Framework has been adopted for use in some Australian jurisdictions, while other jurisdictions use an alternative classification system. The different approaches across Australian jurisdictions are summarised in Table 1.

Table 1: Summary of risk classification systems used in each Australian jurisdiction

Jurisdiction	Risk classification system used
Australian Capital Territory	Currently use ANZFA* priority classification system for food businesses (low, medium, high) ¹² .
New South Wales	Adopted the nationally agreed risk profiling framework
Northern Territory	Adopted the nationally agreed risk profiling framework.
Queensland	Adopted a hybrid model based on nationally agreed risk profiling framework and ANZFA priority classification system ¹³ .
South Australia	Adopted the nationally agreed risk profiling framework.
Tasmania	Adopted the nationally agreed risk profiling framework.
Victoria	Use VIC food business classifications, Class 1 to 4 with Class 1 being highest risk ¹⁴ .
Western Australia	Uses an amended ANZFA priority classification system (low, medium, high) ¹⁵ .

* Food Standards Australia New Zealand (FSANZ) was formerly the Australia New Zealand Food Authority (ANZFA).

Given ongoing foodborne illness linked to food service businesses and related retailers, regulators have recognised that current risk management measures are not enough for these sectors.

¹¹ <https://www.foodstandards.gov.au/publications/pages/safefoodaustralia3rd16.aspx>

¹² [ANZFA 1578 Info Paper final.pdf \(foodstandards.gov.au\)](https://www.foodstandards.gov.au/publications/pages/anzfa_1578_info_paper_final.pdf)

¹³ <https://www.qld.gov.au/health/staying-healthy/food-pantry/starting-a-food-business/food-business-licences/do-i-need-a-food-business-licence>

¹⁴ <https://www.health.vic.gov.au/food-safety/food-business-classification>

¹⁵ https://www2.health.wa.gov.au/~media/Files/Corporate/general%20documents/food/PDF/WA_Food_Regulation_Food_Business_Risk_Profiling.pdf

Considerable work has been done to review the existing measures both nationally and in each jurisdiction and identify best options for moving forward. This work has included government-commissioned research, technical analyses and stakeholder consultations. Much of the work has been completed by the FSM WG under FRSC. Key activities include:

- developing ministerial policy guidelines:
 - *Ministerial Policy Guideline on Food Safety Management in Australia* (2003)
 - *Ministerial Policy Guideline on Food Safety Management for General Food Service and Closely Related Retail Sectors* (2011)
- risk profiling work, identifying food service and related retailers as priority business sectors
- evaluating the adequacy of existing measures to manage food safety in these sectors
- identifying potential additional tools to improve food safety in these sectors
- consulting with stakeholders on these tools
- developing *Australia's Foodborne Illness Reduction Strategy 2018–2021*¹⁶.

These activities have culminated in the package of tools being considered in this proposal. Further details are provided in the project history (SD4).

Under the national foodborne illness reduction strategy, ministers prioritised nationally consistent arrangements for food service and retail sectors. FSANZ has assessed whether, and how, a national approach could strengthen food safety management in these sectors and reduce Australia's foodborne illness.

2 What is the problem and why is government action needed?

While the vast majority of food in Australia is safe, foodborne illness is an ongoing and sometimes serious problem that is largely preventable. Foodborne illness results in pain and suffering, productivity losses and medical expenses. It even results in death for a small percentage of the population.

Over the past decade, foodborne illness outbreaks have been consistently linked to food service and retail businesses that handle PHF (OzFoodNet data 2004–2017). The term 'outbreak' is used when health departments are notified of multiple people becoming sick from the same source.

The total number of actual and probable foodborne outbreaks in Australia for 2010–2017 was 1,257 (see SD1). Of these, 970 foodborne outbreaks were associated with food prepared in the business settings considered in this proposal. The 970 outbreaks resulted in 15,286 people being reported ill, 1,371 of whom were hospitalised, and 34 fatalities.

OzFoodNet¹⁷ reports that there are over 200 different types of illness that may be transmitted by food, although only a handful are notifiable¹⁸ to health departments.

Due to the often mild nature of foodborne diseases, most cases do not appear in surveillance statistics collected by health departments. To understand the real magnitude of

¹⁶ Australia's Foodborne Illness Reduction Strategy 2018-2021+ identifies three priority areas for 2018 to 2021 and beyond to further strengthen the food regulatory system
<https://foodregulation.gov.au/internet/fr/publishing.nsf/Content/aus-foodborne-illness-reduction-strategy-2018-2021-Jun-2018>

¹⁷ OzFoodNet is a national health network to enhance the surveillance of foodborne diseases in Australia. [OzFoodNet surveillance data reports](#)

¹⁸ The [National Notifiable Diseases Surveillance System](#) (NNDSS) co-ordinates the national surveillance of more than 50 communicable diseases or disease groups.

foodborne illness linked to food service and retail sectors, FSANZ developed population estimates to reflect current foodborne illness rates.

FSANZ estimates that up to 3.2 million cases of foodborne illness a year are likely linked to these sectors. The cost benefit analysis attributes the current cost of illness from PHF consumed in these settings around 1.5 billion per year, including medical costs, productivity losses and pain and suffering.

This is a considerable burden on Australian society. It appears the population estimates of foodborne illness have increased since they were last estimated in 2010 but we need to take into account an increased population size, changing consumption patterns, revised methodological approaches in terms of measurement and detection and public health behaviour in response to COVID. Therefore, there are clear challenges in estimating whether there's been a significant change since they were last estimated.

From the early 2000s, specific food handling errors have been consistently reported as contributing to foodborne illness outbreaks. These include improper temperature control, poor personal hygiene and cross contamination (Ashbolt et al. 2003; Todd 2007; FSANZ 2009).

FSANZ has reviewed more recent foodborne outbreaks attributed to Australian food service and retail sectors. Data was sourced from the OzFoodNet outbreak register for 2010–2017 (see SD1). During this period 70% (879/1,257) of outbreaks were associated with food prepared in priority food service and retail businesses. Restaurant settings accounted for the largest proportion (45.1%, 567/1,257) of all foodborne outbreaks.

Salmonella spp. was the most frequently reported agent responsible for foodborne outbreaks in the priority food service and retail business sectors. It also accounted for the largest proportion of people ill and hospitalised. The majority of the *Salmonella* spp. outbreaks were linked to eggs (45.5%, 205/450). However, the causal agent or food could not be identified for many outbreaks.

Numerous factors enabling bacterial growth were reported to have contributed to the outbreaks. These factors include insufficient cooking, foods left at room or warm temperature, inadequate refrigeration, and delay between food preparation and consumption. Key reported factors affecting bacterial survival were insufficient time/temperature during cooking, inadequate acidification of food and inadequate sanitisation.

This analysis indicates failings in the food service and retail business sectors to effectively mitigate food safety risks, resulting in foodborne illness. This confirms the proposition by ministers and ISFR that illness would be reduced by targeting improvements in food handling skills and knowledge, and managing critical factors enabling bacterial growth and survival.

There are several justifications for direct government intervention:

- There is a market failure, in that, in these settings, consumers are typically unable to assess the safety of a product and/or unlikely to take any control measures (e.g. cooking) before they consume it. This is further compounded by potentially inadequate restorative remedies (such as compensation) for consumers once they become sick. It is unlikely that civil action will be taken in most circumstances, due to evidentiary challenges of establishing causation when food has already been consumed, and the often small costs borne by an individual.
- Current regulation does not seem to be adequately managing risk. Businesses may need to take further responsibility for safe food, rather than relying on periodic inspections to reduce their day-to-day risks.

- The current situation represents an unacceptable and possibly growing risk to members of the community. Consumers are unaware and not able to manage this risk, other than by avoiding food prepared by somebody else.

Foodborne illness threatens not only an individuals' health, but has the potential to do economy-wide damage.

3 What policy options are being considered?

The purpose of this CRIS is to determine if the community, government, and industry as a whole are likely to benefit, on balance, from a move from the status quo.

As indicated in section 1.3, jurisdictions currently have different approaches to managing food safety. The proposed options will thus have different impacts across jurisdictions, reflecting the different way businesses are currently regulated across Australia. In some jurisdictions the proposed requirements will mean little change, with low costs and small changes in risks. In other jurisdictions, it will mean larger change, higher costs and bigger decreases in risk. These differences are reflected in our analysis.

3.1 Option 1 – Maintain the status quo

This is the benchmark option against which all other options are compared against.

Under the status quo option, proposal P1053 would be abandoned and the current regulatory environment would continue. The general requirements of Chapter 3 of the Code applies broadly to all food businesses. Given some jurisdictions have implemented additional jurisdiction-specific measures, there would be no nationally consistent set of food safety requirements specifically covering food service and related retail. As such, there would be no differentiation of food safety regulatory measures based on risk that is applied consistently at a national level.

Efforts to improve education within the industry and its food safety culture will be implemented regardless of what option is chosen. Such non-regulatory initiatives are already underway as part of Australia's foodborne illness reduction strategy. This work has strong support from regulators and will both complement and facilitate the implementation of new regulation. These are relatively low-cost interventions for regulators and industry. Therefore, they have not been considered as a separate option here. They should be considered as part of the status quo, even though they will better enable the options considered below.

Further discussion on education and food safety culture is contained in Appendix 2.

3.2 Option 2 – Self-regulation

Self-regulation would involve food businesses putting their own systems in place to improve food safety. These systems would be similar to measures under option 3 and involve similar costs, but would not be subject to regulatory oversight. Given the diverse nature of the sector, there would be no consistency in what each business implemented nor any single/major peak industry body that would drive it.

3.3 Option 3 – Regulated food safety management tools

This option would involve amending the Code to mandate one or more of the three tools endorsed by ministers. The tools are referred to as:

- food safety supervisor (FSS)
- food handler training (FHT)
- evidence to substantiate food safety management (E).

FSANZ considered different combinations of these tools. In our cost–benefit analysis, we condensed these down to two options:

- **Option 3.1:** Requiring a certified food safety supervisor (FSS), and food handler staff to complete food handler training (FHT)
- **Option 3.2:** Requiring all three tools (FSS, FHT, E).

In addition to looking at the cost–benefit analysis outcomes of options 3.1 and 3.2, our assessment also considered the whether these options were practical and implementable in the context of our risk profiling of food handling activities in each of our business categories.

4 What are the likely net benefits of each option?

4.1 Introduction

FSANZ considers that small businesses would be the ones most affected by new regulation. Larger, more complex businesses are likely to already have systems and processes in place that meet or exceed the proposed requirements.

The details underpinning the cost–benefit analysis are set out in Appendix 1. We have drawn heavily on previous work in this area to develop key assumptions. The analysis is sensitive to a number of these assumptions, so views and additional evidence from stakeholders to either support or provide alternatives is requested.

4.2 Option 1 – Maintain the status quo (abandon the proposal)

Under the status quo option, proposal P1053 would be abandoned and the current regulatory settings would continue. As noted above, food safety culture and educational initiatives would still continue under this option. While culture and education initiatives are important in increasing awareness and uptake of food safety practices, they alone are not reducing food borne illness.

Foodborne illness management occurs at an individual jurisdictional and business level. Food safety is managed by several standards in the Code, which are largely outcomes based rather than prescriptive. These standards are generally enforced by local governments.

The food safety standards in Chapter 3 contain minimum food safety requirements designed to ensure a food business only sells food that is safe and suitable. Standard 3.2.2 outlines base requirements for good hygienic practices. It specifies process control at each step of the food handling process, including receipt, storage, processing, display, packaging, distribution, disposal, and recall of food. Other requirements relate to skills and knowledge of food handlers and their supervisors, health and hygiene of food handlers, and the cleaning, sanitising, and maintenance of premises and equipment.

The food safety standards are supported by the *Safe Food Australia* guide, which provides examples of how to meet requirements. However, this guide and the best practice examples are not mandatory

Safe Food Australia does not suggest businesses have food safety supervisors where they are not currently mandated by the Code. It notes that all food handlers (including any FSSs) must have the skills and knowledge in food safety and hygiene commensurate with their responsibilities. It also outlines examples of how staff could gain the required skills and knowledge, listed below:

- in-house training
- distribution of relevant documentation to employees

- having operating procedures in place that clarify the responsibilities of food handlers and supervisors
- attendance at food safety courses run by local councils or other bodies
- completion of online food safety training courses
- hiring a consultant to present a course
- formal training courses.

The guide recommends best practice is to monitor and record the outcome of processes important for food safety, such as time and temperature controls. This is recommended to assist businesses in managing their high-risk activities, and in demonstrating compliance to food regulators.

In the absence of an agreed national approach, several jurisdictions have moved unilaterally to manage risks associated with the food service sector, through additional requirements in their respective food acts (Table 2).

Table 2: Additional* food safety management measures regulated in jurisdictions

Tool / Jurisdiction	Victoria	NSW	Queensland	ACT
Food safety supervisor	yes	yes	yes	yes
Food safety supervisor (competency training)	yes	yes	yes	yes
Food handler training (non-competency)	no	no	no	no
Evidence of food safety management	template-based food safety programs	for raw egg handling	template-based food safety programs	no
Target businesses	class 1 and class 2 businesses ¹⁹	businesses serving ready-to-eat PHF which are not sold and served in their package	businesses which meet specific food service or catering criteria ²⁰	all registered food businesses ²¹

*Additional to national requirements in Chapter 3 standards in the Code.

These jurisdictional arrangements have some similarities. For instance, all require FSS to have competency-based training by a registered training organisation, and all cover hospitality businesses (restaurants, cafes and hotels). However, there are differences across the arrangements. In particular, the range of food retail businesses covered differs, the validity of the FSS qualification varies between five years and no expiry, and the required competency units differ. A full comparison is provided in section 4.4.

¹⁹ Class 1 premises are those that prepare food for vulnerable persons. Class 2 premises are those that handle unpackaged potentially hazardous foods that need correct temperature control during the food handling process. This includes restaurants, fast-food outlets, pubs, caterers, delicatessens, supermarkets with delicatessens, cafes, food vending machines handling high risk foods and most manufacturers.

²⁰ Includes off-site caterers and on-site catering where the primary activity is at the premises stated in the license or where the primary activity at part of the premises stated in the licence to cater to 200 or more people on 12 or more occasions in any 12 month period.

²¹ ACT has registration exemptions for some businesses: <https://www.health.act.gov.au/businesses/food-safety-regulation/starting-food-business>

This option is the point of reference against which the other options are compared. Abandoning this proposal does not address the problem of persistent foodborne illness outbreaks associated with the food service and related retail businesses, nor the costs for business of inconsistent legislation across jurisdictions.

Option 1 is not the preferred option.

Stakeholders views are sought on the merits of this approach, particularly the following:

1. Are there any other costs or benefits that should be taken into account in considering the status quo?
2. What issues do businesses face in complying with the current food handling requirements?
3. What difficulties, if any, do the differences in requirements between states and territories create for your business?

4.3 Option 2 – Self-regulation

Jurisdictions anecdotally report that non-compliances with Standard 3.2.2 are the main contributors to foodborne illness from the food service and related retail sectors. This is despite enforcement action applied by regulators, and best practice guidelines (e.g. in *Safe Food Australia*). Poor temperature control, inadequate cleanliness and a lack of hygiene skills and knowledge are common reported non-compliances.

Where there is persistent non-compliance and high risk of serious and widespread harm to consumers (e.g. as with foodborne illness), self-regulation is not considered an appropriate solution (Treasury Taskforce 2000). Greater control over food handling practices is needed, especially with businesses that sell PHF.

The food service and retail sectors cover a broad range of business types with many small-to-medium enterprises, a transient workforce, not affiliated with industry associations. Unlike other sectors, these businesses are not a cohesive group with like-minded participants. The many small, family owned business in these sectors is not conducive to adoption of a self-regulatory approach.

In theory, an industry scheme could be implemented relatively quickly and provide greater flexibility than regulation. However, the lack of membership of industry associations means many individual businesses in these sectors are not receiving a group ‘push’ to comply. In addition, when businesses’ resources are limited, they tend to focus on regulatory requirements—voluntary measures become lower priority.

The Office of Best Practice Regulation’s *Best Practice Regulation Handbook*, August 2007 provides guidance that self-regulation should be considered where²²:

- there is no strong public interest or concern and in particular, no major public health and safety concern
- the problem is low-risk, low impact or of low significance
- the problem can be fixed by the market itself.

The likelihood of the effectiveness of self-regulatory schemes is increased if there is:

- adequate coverage of the industry concerned

²²Page 105. Note that this guidance is not provided in the present version of the handbook but it remains useful guidance in consideration of whether a self-regulatory approach is appropriate.

- a viable industry association
- a cohesive industry with like-minded or motivated participants committed to achieving the goals
- evidence that voluntary participation can work—effective sanctions and incentives can be applied, with low scope for benefits being shared by non-participants
- a cost advantage from tailor-made solutions and less formal mechanisms.

FSANZ assessed option 2 against the above criteria and determined it would not be an appropriate intervention, as:

- foodborne illness is a significant health and safety concern
- foodborne illness, especially in the context of an outbreak, is a high-impact event in terms of costs to consumers and industry
- the market is unlikely to be able to fix the problem itself, given difficulties of identifying the source and cause of many illnesses, and the often low costs typically incurred by most individuals, limiting incentives to seek legal redress through the court system
- costs associated with outbreaks are often incurred by the whole industry, not just the business that contributed to the outbreak
- the businesses that are typically not covered by voluntary schemes are often not members of industry organisations, and are highly heterogeneous in terms of language background, literacy, education and knowledge, and motivation in terms of food safety.

Option 2 is not FSANZ's preferred option.

Stakeholders views are sought on the merits of this approach, particularly the following:

4. Are there any other costs or benefits that should be taken into account in consideration of self-regulation?
5. What issues do you think businesses and the industry generally would face attempting to self-regulate?

4.4 Option 3 – Regulated food safety management tools

As outlined in section 3.3, FSS, FHT, and E are the three regulatory tools proposed by the FSM WG and endorsed by ministers. They are the focus of this proposal.

This section will consider these interventions in general terms. Their combined use in different risk categories of food businesses will be considered further in section 4.4.

These food safety management tools will not eradicate all foodborne illness—there will continue to be residual risk. The efficacy of an intervention provides an estimate of how effective it will be in reducing foodborne illness. The assumed efficacy of the tools in this proposal has been estimated based on:

- the contributing factors of foodborne illness outbreaks (as reported by OzFoodNet) and whether the tools will target these factors
- whether the tools have already been implemented in jurisdictions

- the estimated likely efficacy for similar measures in key reference documents: the NSW Regulatory Impact Statement²³, the Allen Report (2002), and the National Risk Validation Project (2002).

In considering the efficacy of these tools, the FSANZ assessment assumes their impact to be at the lower end of the scale and thus are conservative (i.e. only a small to modest impact on reducing foodborne illness); it may be these tools have a more significant impact in which case the estimates of net benefit would be even greater. The base efficacy for each of the tools is: 10% for FSS, 5% for FHT, 10% for E, and an additional 5% where all three food regulatory tools are implemented, to recognise their complementary nature.

FSANZ's assessment of each tool's capacity to mitigate the key contributors to foodborne illness is described below.

4.4.1 Food safety supervisor (FSS)

We considered a measure where in-scope businesses would be required to have at least one certified FSS. The Code does not currently include requirements for any businesses to have a FSS. Four jurisdictions have implemented their own FSS requirements for some of the businesses in the scope of this proposal.

FSS certification would require successful completion of training that is competency verified (i.e. including formal assessment). Through such training, FSSs would be qualified in recognising and preventing the risks associated with food handling in food service and retail food businesses.

Under Standard 3.2.2, all food handlers must have the skills and knowledge relevant to their food duties. However, FSANZ considers that a FSS with specified competency training would be able to manage the overall food safety of the business, across staff.

Evaluation: FSS

Evaluation studies on the impact of a FSS on foodborne illness and industry compliance with regulation are scarce. However, it appears that FSS requirements can make improvements.

New South Wales implemented a mandatory FSS requirement for certain businesses in 2010 and evaluated this after 12 months²⁴. The findings indicated:

- a food handler's knowledge of food safety and handling increased after competency based FSS training
- generally, compliance with food safety standards increased after the FSS scheme was introduced.

The impact on reducing foodborne outbreaks was not reflected in the report, as the requirement had only been in place a relatively short time.

Stakeholder feedback provided in FSM WG and FSANZ consultations also indicates existing jurisdictional FSS requirements have resulted in some improvements in food safety.

International studies, on compliance impacts of food safety training on food service operations, show improved outcomes with FSS or equivalents. Restaurants with trained and certified food managers have significantly fewer critical food safety violations, compared to restaurants without certified managers (Aik et al. 2020; Kassa et al. 2010). These types of training programs appear to have a greater impact on restaurants that are not part of chains or large franchises (Hedberg et al. 2006).

²³ NSW prepared a RIS for the introduction of a Food Safety Supervisor regulatory measure in their Food Act

²⁴ The evaluation report is available online: <https://www.foodauthority.nsw.gov.au/media/6876>

Gap analysis: FSS

A gap analysis of the differing FSS requirements in Australian states and territories is outlined in Table 3 below. In summary, the proposed FSS measure would have greatest impact on the jurisdictions that do not already have existing FSS requirements.

Table 3: Gap analysis of food safety supervisor (FSS) requirements across jurisdictions

State/territory	Current requirement	Gap between current and proposed measure
National (FSC)	No legislative training requirement; however Standard 3.2.2 requires a food business to ensure persons supervising food handling operations have skills and knowledge in food safety and food hygiene matters commensurate with their work activities. Applies to all food businesses, not just P1 and P2 catering.	Large gap Proposed requirement would require competency based training and a certified person to supervise food handling. Currency of certification (5 years)
ACT	Food businesses must be registered. A FSS required for registered businesses handling PHF (includes P1 and P2 catering sector and retailers of PHF). Currency of certification (must have statement of approved food safety training within last 5 years). FSS defined in food act.	No real gap.
NSW	All food businesses must be licenced. At least 1 FSS required for businesses processing/selling ready-to-eat PHF that is not pre-packaged (includes P1 and P2 catering sector). Currency of certification (must have certificate from approved RTO within last 5 years). FSS defined in food act.	No real gap.
NT	Food businesses must be registered. No requirement for FSS. No requirement for training.	Large gap. Proposed measure would require FSS with competency training renewed every 5 years.
Queensland	Certain businesses must be licenced (based on criteria and includes P1 and P2). A licenced business must have at least 1 FSS. No regulatory requirement for the training provider to be an RTO (in guidance material). No currency requirement (no expiry of FSS certification).	Small gap. Proposed measure require re-certification after 5 years and that training be provided by an RTO.
SA	Notification requirement only (no registration or licencing requirements). No requirement for FSS. No requirement for training, or standardised or competency-based training.	Large gap. Proposed measure would require FSS with competency training renewed every 5 years.
Tasmania	Notification requirement only. Director of Public Health may require registration. No requirement for FSS.	Large gap. Proposed measure would require FSS with competency training renewed every 5 years.

	No requirement for training, or standardised or competency-based training.	
Victoria	All businesses must be registered or notified; specified as priority Class from 1 to 4. FSS defined in food act. Class 1 and class 2 business (covers P1 and P2 in-scope businesses) required to have FSS. No currency requirement (no expiry).	Small gap. Proposed measure requires re-certification after 5 years.
WA	Notification requirement only (no registration or licencing requirements). No requirement for FSS. No requirement for training, or standardised or competency-based training.	Large gap. Proposed measure would require FSS with competency training renewed every 5 years.

FSC = Food Standards Code, P1 and P2 = priority classifications under the national Risk Profiling Framework, PHF = potentially hazardous food, RTO= registered training organisation

Implementation: FSS

FSS certification would require successful completion of training that is competency verified (i.e. including formal assessment).

Through such training, FSSs would be qualified in recognising and preventing the risks associated with food handling in a food service and retail food business. FSANZ considers that FSS with specified competency training would be able to manage the overall food safety of the business, across staff.

The presence of a FSS at the business is not only an important point of contact for food handlers, but also food regulators. The authority and abilities of a FSS may be assessed by a regulator on site, through observing normal operating practices, or discussing daily operations, responsibilities and reporting lines. A FSS is expected to be 'reasonably available' to advise and supervise staff. What is considered reasonable may vary for different businesses, depending on their number of staff, volumes of food, and food handling activities.

4.4.2 Food handler training (FHT)

FSANZ has considered a regulatory tool where food handlers in some, or all, in-scope businesses would be required to complete food safety training before handling PHF. While not competency based, the proposed FHT specifies all of the following to be included:

- safe handling of food
- food contamination
- cleaning and sanitising of food premises and equipment
- personal hygiene.

The Code currently requires food businesses to ensure persons undertaking or supervising food handling have skills and knowledge in food safety and food hygiene matters, commensurate with their work activities (Standard 3.2.2 clause 3). There are no specific training requirements.

Evaluation: FHT

FSANZ assessed international literature on the impact of food safety training on food handler behaviour in food service businesses. Research from Australia was not available.

Specifically, we examined:

- whether FHT results in improved knowledge and behaviour
- what factors increase or limit the effectiveness (i.e. outcomes) of training.

Knowledge and behaviour improvements

The efficacy of food safety training on improving knowledge and behaviour are covered in two reviews (Medeiros et al., 2011; McFarland et al., 2019). Most, but not all, of the reviewed studies reported improved knowledge and behaviour after training.

In one review, five out of six studies²⁵ examining food handlers' training in commercial environments 2008–2018 reported that training increased their food safety knowledge (McFarland et al 2019). Similarly, a review of 14 studies²⁶ on training in food service businesses 2004–2008 found training resulted in improved knowledge and behaviour in most cases (Medeiros et al., 2011). The most common training topics of this review were employee personal hygiene and handwashing. Improved hygiene behaviours, such as hand washing, were directly observed. Some studies that included microbiological analyses also observed a reduction in microorganisms during food preparation and handling post-training.

Both these reviews included cases where training or knowledge acquired did not translate to food-safe behaviours in the workplace. One study found no difference in food handler knowledge or behaviour after training.

These findings indicate a gap between increasing food handler knowledge and improving their practices. The McFarland et al review (2019) considered some training methods (e.g. knowledge-based training alone) may not align with practical realities in the workplace, such as peak business periods. They also noted training (often knowledge-based) is commonly delivered only once without follow-up.

The reviews cited the following elements contributed to effective training:

- incorporating a mix of knowledge-based and practical components
- use of multimedia, videos and illustrations in addition to reading and writing
- outlining the commercial/business benefits of safe food handling.

Ongoing training, supervision or explicit workplace cues (e.g. signage) could also assist the transfer of knowledge into improved behaviours (McFarland et al. 2019).

Factors influencing food handler behaviour

Factors contributing to safe food handling in food service businesses are summarised in a review of 26 studies (Thaivalappil et al., 2018). The research mainly focuses on food handler interviews in the United States and United Kingdom.

Generally, the review found food handlers had good skills and knowledge in safe food handling. Most subjects perceived their training to be beneficial (the review authors also reported this replicated previous findings). While most food handlers are confident in their abilities, in some cases they appear to overestimate their abilities; for example, just using smell, touch or sight to gauge whether a food is spoiled or correctly cooked.

Food handlers reported having issues with being motivated to practise safe food handling. They reported wanting support and workplace cues to remind them of good practices.

²⁵ Four of the studies were in the United States, one in Malaysia and one in Korea.

²⁶ Four studies were in the United States, three in Italy, two in the UK, two in India, one in Thailand, one in Egypt and one in Turkey.

Situational and social factors reported as influencing safe food handling practices include:

- workplace policies
- space, time and accessibility to washing stations (e.g. poor accessibility was a barrier to handwashing)
- workplace hierarchies
- behaviours and tone of managers and supervisors.

Food handlers said these factors impacted their ability to safely handle food, regardless of how knowledgeable they were about safe practices.

FSANZ considers that, from the literature available, it appears food safety training generally leads to improved knowledge and hygiene/hand washing behaviours in food handlers. However, food safety knowledge does not always translate into good food safety practices. Follow-up training, education and reminders are likely to be beneficial. Given that food handlers can be influenced by workplace factors including the behaviour of managers and supervisors, a FSS could reinforce training and safe food practices.

FSANZ recognises that food safety culture more broadly is a key determinant of food safety behaviours. Food safety culture is how everyone in an organisation thinks and acts in their daily work in relation to food safety. Food businesses and regulators could both have a role in strengthening food safety culture, both in industry and across the regulatory system.

Gap analysis: FHT

A gap analysis of the differing training requirements in Australian states and territories is outlined in Table 4 below. To summarise, food handler training is not currently mandated and training topics are not specified. There is a small to medium gap between this status quo and the proposed measure requiring all in-scope food handlers to complete a training course covering specified topics.

Table 4: Gap analysis of food handler training requirements across jurisdictions

State/territory	Current requirements	Gap between current and proposed measure
National (FSC)	No legislative training requirement; however Standard 3.2.2 requires a food business to ensure persons undertaking food handling operations have skills and knowledge in food safety and food hygiene matters, commensurate with their work activities. In practice, this varies and is difficult to enforce. Applies to all food businesses, not just P1 and P2 catering.	Small to medium gap dependent on extent of training required. Proposed requirement is for food safety training course to be completed, covering specified topics: food handling, food contamination, cleaning and sanitising and personal hygiene.
ACT, NT	No legislative training requirement for all food handlers. Promotes voluntary training through I'm Alert ACT and I'm Alert NT course	Small to medium gap. Dependent on extent of training required compared to currently promoted voluntary training (<i>I'm Alert</i>).
NSW, Tasmania	No legislative training requirement for all food handlers.	Medium gap.
Queensland, Victoria, SA, WA	No legislative training requirement for all food handlers.	Small gap.

	Promotes voluntary training through DoFoodSafely course.	Dependent on extent of training required compared to currently promoted voluntary training (<i>DoFoodSafely</i>).
--	--	---

FSC = Food Standards Code, P1 and P2 = priority classifications under the national Risk Profiling Framework

Implementation: FHT

Training is available free online including I'M ALERT and DoFoodSafely.

FSANZ considers mandating food handler training with specified content should:

- ensure all food handlers receive information on the safe handling of PHF before commencing food handling activities, enhancing the requirements in clause 3 of Standard 3.2.2
- increase awareness of the importance of, and techniques for, safe food handling
- supplement information from supervisors or peers
- reduce the need for close supervision.

4.4.3 Evidence to substantiate food safety management (E)

Standard 3.2.2 outlines minimum food safety requirements at each step of the food handling process. This standard provides a food business with the basis for identifying key risks and activities that need to be managed to ensure food is safe. The standard’s requirements are based on scientific knowledge of the specific characteristics of pathogens most likely associated with particular PHF (pathogen:food pairs), and risks associated with different activities. Keeping documentation or other evidence is not mandated in Standard 3.2.2. Safe Food Australia guidance notes that businesses may find it useful to monitor and document control steps and recommends keeping certain records as best practice (e.g. that PHF is stored at 5°C, as checked at a specified time).

The current requirements of Standard 3.2.2 only provide final outcomes to be met. They do not ensure businesses actively manage the key risks, through monitoring the critical processes, identifying when they fail, and taking corrective actions.

Target processes for enhanced attention

It is internationally recognised, through the work of Codex, that key food handling activities (such as temperature control, cleaning and sanitising) require ‘enhanced’ attention. We use this term to mean above baseline good hygiene practices (GHP), but less stringent than a HACCP approach.

Ministers proposed there would be a significant impact on reducing foodborne illness if businesses kept evidence that key processes are managed. FSANZ was asked to consider this as a regulatory measure.

We have considered enhancing current requirements with a regulatory measure where some, or all, in-scope businesses keep a record, or can demonstrate (to authorised officers) in some other way, that activities essential to producing safe food have been managed. The proposed requirement is distinct from, and less stringent than, developing a food safety program (FSP). A FSP requires a business to implement HACCP principles to address all the food safety risks of its operations, and to keep documented records of how prescribed activities are managed.

FSANZ specifically targeted processes that are key contributors to foodborne illness outbreaks. These processes were identified from our risk profiling of in-scope business and food handling activities. They are also reported anecdotally by food regulators as common areas of non-compliance during audits.

The identified processes are temperature control, food processing and cleaning and sanitising. FSANZ considers these activities require close monitoring when preparing PHF in a food service setting. Ensuring food safety through these activities can be complex, depending on the nature of the food, the food handling activity and scale of operations. Because different food service businesses' practices vary widely, a flexible approach to monitoring and documentation is needed.

Evaluation: E

To assess the proposed E measure, FSANZ consulted with the ISFR IWG to develop hypothetical scenarios. These scenarios created situations where an enhancement to the current requirement of Standard 3.2.2 would be in place.

One scenario is making a bulk lasagne for service later in the day. Standard 3.2.2 has a specific cooling requirement, so that food handlers manage the cooling of cooked PHF to ensure pathogen spores in the food do not germinate and produce toxins. The enhanced requirement of E means the business would have to document, record or keep other evidence of the cooling process. This would enable the food handler to actively manage the key risks, through carefully monitoring the critical processes (temperature at different time intervals). If the food was not cooling correctly, this should signal that corrective actions are needed (e.g. dividing the lasagne into smaller portions), followed by further monitoring. Templates are available in Safe Food Australia (e.g. for cooling: Template 3 in Appendix 8) so businesses could record exact temperatures and times during this process.

Another example is preparing trays of sandwiches. Standard 3.2.2 requires the food business to make sure preparation time—which is time where the PHF is at ambient temperatures—is minimised, to prevent pathogen growth. Under the E requirement, the business might have standard operating procedures (SOPs) that food handlers must follow each time a sandwich batch is made. For example, the SOP may include instructions that a certain amount of ingredients is brought out of the fridge, and that each batch of sandwiches is prepared in a set time (e.g. 10 minutes), before the food is put back in the fridge. This SOP would then identify the system the business has in place to ensure sandwiches are safely prepared. Safe Food Australia includes a template for time and temperature control.

A third example is cleaning and sanitising. If surfaces are not cleaned properly before sanitising, or if incorrect concentrations of sanitiser are used, the surfaces could remain contaminated and make food unsafe. The E measure would assist businesses in making sure cleaning is properly completed (e.g. through a documented cleaning schedule, to be signed by the responsible person). Similarly for sanitising, E measures should assist businesses with correct protocols (e.g. to record the sanitiser dilution and date, to be sure it is the correct concentration and has not expired). Safe Food Australia includes templates for cleaning and sanitising activities.

Gap analysis: E

There is no national regulatory requirement for food service and retail businesses to keep evidence of monitoring/managing their critical food safety controls. However, some jurisdictions require certain in-scope businesses to make a record of specific processes. For example, particular businesses are required to have a FSP, or to document the safe handling of raw eggs.

FSANZ completed a gap analysis of the differing requirements in Australian states and territories, provided in Table 5. In summary, there is a medium to large gap in most

jurisdictions between current requirements and proposed measures. That is, for most jurisdictions, the E will be an extra requirement.

Table 5: Gap analysis of records required across jurisdictions

State/ territory	Current requirements	Gap between current and proposed measure
National (FSC)	No legislative requirement for in-scope businesses to keep records (unless those businesses are required by jurisdictional food act to have a food safety program under Standard 3.2.1).	Medium to large gap dependent on food handling activities. Proposed requirement is for businesses to have evidence to substantiate food safety management of key food handling processes.
ACT	No requirements for in-scope business sectors.	Large gap. All in-scope businesses to keep evidence substantiating the food safety management of key food handling processes.
NSW	Record requirements only for those handling raw egg – not all P1 and P2 businesses.	Medium to large gap depending on whether the business handles raw egg. All in-scope businesses to keep evidence substantiating the food safety management of key food handling processes.
NT	No requirements for in-scope business sectors.	Large gap. All in-scope businesses to keep evidence substantiating the food safety management of key food handling processes.
Queensland	Caterers are required to operate with a FSP, including record keeping requirements – not all P1 and P2 businesses.	Medium gap. All in-scope businesses to keep evidence substantiating the food safety management of key food handling processes. Gap for some P1 that don't meet caterer definition (frequency or number of people). Gap for P2 businesses.
SA	No requirements for in-scope business sectors.	Large gap. All in-scope businesses to keep evidence substantiating the food safety management of key food handling processes.
Tasmania	No requirements for in-scope business sectors.	Large gap. All in-scope businesses to keep evidence substantiating the food safety management of key food handling processes.
Victoria	Class 1 businesses and Class 2 businesses are required to operate under a food safety program – covers P1 and P2 in-scope businesses Class 3 ²⁷ businesses are required to keep minimum records.	Reduction in regulatory requirements likely Most class 2 food service and retail premises will not be required to have a FSP. Class 3 would not be required to keep minimum records, Instead these businesses could keep evidence substantiating the food safety management of key food handling processes.
WA	No requirements for in-scope business sectors.	Large gap. All in-scope P1 and P2 businesses would be required to have evidence to substantiate key processes are safely managed.

²⁷ Class 3 premises are those that sell prepackaged potentially hazardous food (food that needs temperature control to keep safe). Examples of businesses include fruit stalls selling cut fruit, wholesalers distributing prepackaged foods, most milk bars, convenience stores and coffee bars.

P1 and P2 = priority classifications under the national Risk Profiling Framework

Implementation: E

The proposed draft Standard 3.2.2A includes a clause (clause 12) on 'substantiating food safety management of prescribed activities', listing nine key processes (in subclause 4. 'a' to 'i'). FSANZ considers the key processes of temperature control, food processing, and cleaning and sanitising would be better managed by a business if they make a record, or keep other evidence that critical controls are correctly in place.

Current non-regulatory guidance (i.e. Safe Food Australia) has not been effective in reducing foodborne illness in the food service setting.

Guidance on record management is provided in the *Archives Act 1983* explanatory memorandum. It states: *Both documents and objects can be records. A record does not have to be in a concrete form—it can be in any form, including an electronic form. A record can include a photograph, film, map, plan, model or painting. It can also include a sound recording, coded storage device, magnetic tape or disc, microform, and more modern technologies such as digital video discs and compact discs. Other examples of records in electronic form are emails, Internet sites, case management systems, financial accounting systems, inventory management and procurement systems, personnel management and HR systems, building management and access control systems and geographical systems.*

FSANZ recognises there may be scenarios where making a record is not the most effective approach to enhance a business's food safety management and for example, staff demonstrating to regulators *in situ* how they implement SOPs may be another means of sufficient evidence (case studies and examples are provided in section 8). While we have identified the key processes – food safety management is multifaceted and needs to be tailored for each business. A flexible approach is needed, to facilitate risk based application within the context of the business.

The scale and nature of food handling, and existing systems within a business should be considered by an authorised officer when determining compliance with the proposed measure. Examples are given in the implementation guidance to provide context.

4.5 Cost and benefits

4.5.1 Introduction

To compare potential options, FSANZ completed a quantitative analysis, assessed where available, qualitative costs and benefits, and considered the appropriateness of each proposed regulatory tool. This analysis compares the direct benefits to the community that may be achieved from a reduction in foodborne illness, against the costs of the different options to industry and government.

The cost to governments to implement and enforce the legislative options has been only preliminarily assessed at this point, using the draft jurisdictional implementation guide. We will be able to more robustly assess these costings once the implementation guide has been finalised. The DRIS will include this fuller consideration of quantified costs and benefits. The assumption being used in this analysis is that overall impacts will be cost-neutral to government. These tools will assist government with risk-based regulatory inspection, ensuring that all information is available to an EHO to assess food handling activities within a business.

This CRIS has relied on the best available information at this point in time. However, data gaps remain and certain assumptions have been needed. These gaps and assumptions are clearly identified in the analysis and further feedback is being sought on them.

Any additional regulation is likely to impact food businesses, consumers and governments, as listed in Table 6.

Table 6: Major impacts of regulation, by social group

Social group	Notes on impacts
1. Food businesses	<ul style="list-style-type: none"> – Potentially increased operational costs – Cost savings from a reduced risk of a food safety incident – Improved capacity to effectively and efficiently manage and respond to a food safety incident, reducing costs – Potentially additional sales given higher quality food – Reduced risks of market damage caused by others – Harmonised national regulation reduces costs for businesses that operate across multiple jurisdictions.
2. Food consumers	<ul style="list-style-type: none"> – Improved safety of products reducing likelihood of illness – Potentially increased costs of purchase – Potentially higher quality food available
3. Government	<ul style="list-style-type: none"> – Potentially increased implementation and enforcement costs for new regulation – Improved capacity to effectively and efficiently manage a food safety incident, reducing costs – Savings in health care expenditure

These impacts have been considered in the analysis in Table 7 below. However, it is not always possible to quantify and compare all impacts.

Table 7: Quantified and unquantified impacts of increased food safety regulation

General cost or benefit	Social group	Specific cost or benefit
Quantified cost	Industry	– Increased production costs
	Government	– Implementation and enforcement costs
Unquantified costs	Industry and consumers	– Potential price increases (transferred to consumers by businesses having incurred increased costs*)
Quantified benefits	Consumers	– Avoided illness
	Government	– Avoided health care costs
Unquantified benefits	Industry	<ul style="list-style-type: none"> – Reduced risk of food safety incidents – Improved capacity to manage an incident – Reduced costs for businesses that operate across multiple jurisdictions – Reduced risks of market damage caused by others
	Government	– Improved capacity to manage an incident

*If these are passed on costs, we need to take care not to double count them. However, they could have second round behavioural impacts on consumers that may need to be examined, such as increased demand if they perceive food to be safer.

Stakeholders views are sought on the following:

6. Do you agree with the characterisation of costs or benefits in tables 6 and 7? Are there any costs or benefits that you would suggest we add or remove?
7. Can you provide of any data, information or studies that would assist us to quantify any of the costs or benefits in table 6 that we are presently indicating are likely to be unquantified?

4.5.2 Sub-options within option 3

In the cost–benefit analysis we consider the sub-options below:

- **Option 3.1:** Requiring a certified FSS and food handler staff to complete FHT
- **Option 3.2:** All three tools (FSS, FHT, E)

To simplify the analysis, only Category 1 and Category 2 businesses are presented in this section. Category 3 businesses have not been included as we have no foodborne illness data to link outbreaks to this setting. Therefore, there is no threshold to directly evaluate a benefit if applying any regulatory interventions in this category. Details of the assumption made in this analysis are provided in Appendix 1.

The net benefits of options 3.1 and 3.2 have been calculated over a ten year period for both Category 1 and Category 2 businesses (Table 8). In this calculation, we estimate the costs to businesses against the net benefit in reduced foodborne illness associated with food service and retail sectors. An annual discount rate of 7% has been applied as per the recommendation of the Office of Best Practice Regulation.

Table 8: Output of cost–benefit analysis

Option	Business category	Net benefit over 10 years at 7% discount
3.1	Category 1	\$660,995,996
	Category 2	\$59,767,276
3.2	Category 1	\$567,125,922
	Category 2	\$93,361,451

The modelling shows we can expect strong net benefits for both options.

This economic modelling is sensitive to several variables including the efficacy of the intervention, estimated number of illness cases and the cost of those illnesses. We note these variables each have a level of uncertainty but are the best estimate at this point in time.

The foodborne illness cost estimates represent a significant increase to those previously estimated circa 2010 (by Kirk et al., 2014). This is a result of an increase in the estimated number of illnesses due to several factors outlined in our cost benefit analysis (Appendix 1). We have taken a conservative approach to estimating efficacy of our interventions, it is likely that a greater reduction in foodborne illness could be achieved.

In addition to the cost–benefit analysis, the appropriateness of each tool was also considered rather than relying solely on the outputs of mathematical models.

Appropriateness considers whether the regulatory ‘tools’ are sustainable and effectively implemented in the relevant sectors. The option that appears to produce the largest net benefit may not be the most appropriate in the ‘real world’ where an alternative option exists that fits better with the capabilities and resources of industry and regulators. These broader factors are included in the multi-criteria analysis (see Table 9 below)²⁸.

For the unquantified impacts listed in Table 7, on balance, the majority of these impacts are estimated to likely further increase the net benefit. The expected benefits arising from less foodborne outbreaks attributed to businesses may also accrue not only to the businesses directly involved in an incident but the entire industry. Where consumers associate an

²⁸ This criteria was developed following feedback received to data requests as part of earlier consultations.

incident with a whole class of businesses, there is potential for those consumers to avoid purchasing food from across that sector temporarily.

Stakeholders views are sought on the following:

8. With reference to this section and Appendix 1 can you provide any information, data or studies to either support, change or replace any of the assumptions or estimates that have been used to create this analysis?
9. Can you provide of any other data, information, studies or comments to improve the quality of the cost benefit analysis for the DRIS?

Table 9: Multi-criteria analysis

Option	Strong net benefit result from modelling	Practical and readily implementable by industry	Able to be maintained over time	Well targeted to risk in setting	Preferred option
Category 1 business					
3.1 FSS, FHT	Yes	Yes	Yes	Yes	No
3.2 FSS, FHT, E	Yes	Yes	Yes	Yes	Yes
Category 2 business					
3.1 FSS, FHT	Yes	Yes	Yes	Yes	Yes
3.2 FSS, FHT, E	Yes	Uncertain	Uncertain	Uncertain	No

Stakeholders views are sought on the following:

10. Do you think the criteria (table 9) to assess the appropriateness of the intervention are suitable? Are there any criteria you would add or remove?

4.6 Comparison of options and conclusion

FSANZ categorised food businesses based on risk profiling their food handling activities and association with foodborne illness outbreaks. This approach allows for differential regulation, based on the risk the business potentially poses.

The analysis above indicates that the status quo and self-regulation are not the preferred options at this stage.

The preferred option for Category 1 businesses is option 3.2, and for Category 2 option 3.1 is preferred.

For category 1 businesses, both option 3.1 and 3.2 are individually well targeted in the setting. However, FSANZ considers that the package of all three tools provides a complementary effect that results in a more effective risk mitigation.

For category 2 businesses, while both options provide a strong net benefit, option 3.1 focusing on skills and knowledge of food handlers would be best targeted to mitigate risk in the setting. This recognises the different food handling activities and associated risk between category 1 and 2 businesses.

Information received through this consultation process may result in FSANZ arriving at a different preferred approach.

5. Who was consulted and how was their feedback incorporated?

Consultation is a key part of FSANZ's standards development process, and is underpinned by our statutory consultation process. We consult with stakeholders to ensure we understand their business, and to seek information and advice to inform our proposal assessment and standard development.

5.1 Who and how we consulted

A range of consultation activities on this project and the proposed tools have spanned many years, ensuring all viable options have been carefully considered. Consultations were held with over 400 stakeholders including local government, representatives of food businesses covered by the policy guideline (caterers, restaurants, clubs, cafes, supermarkets), industry bodies (i.e. Restaurant and Caterers' Australia, Australian Hotels Association, Clubs Australia), providers of afterschool care and registered training organisations. Workshops were held face to face, and stakeholder feedback was sought via online surveys.

The use of online surveys more recently addressed the challenges with stakeholder engagement during the COVID-19 pandemic, ensuring the effectiveness of any regulatory measures proposed. We received 328 responses to our targeted online survey. We reached out to small-to-medium enterprises and used existing mechanisms to engage with businesses in each jurisdiction.

5.2 Stakeholder views

Experiences and views have been sought on existing issues and tools, and which additional measures are likely to have the greatest impact on food safety outcomes. There was a strong and consistent view from all stakeholders that food safety remains a problem in the food service and related retail sectors. The main concern raised by both industry and government stakeholders during consultation was whether an all-for-all approach, where the regulatory measures apply to all in-scope businesses, was needed.

Generally, stakeholders have been supportive of mandating a package of regulatory measures in the Code, provided the following points are considered:

- Regulatory measures are justified and proportionate to risk.
- Training for food handlers and FSSs needs to be up-to-date, meet the intended purpose and take into account literacy, language and numeracy levels of the diverse staff working in food service businesses.
- A mechanism is needed to regulate and monitor the quality of training provided by registered training organisations.
- Flexible and simple templates need to be used to implement a tiered, activity-based, risk management approach to evidence-keeping measures.
- Non-regulatory tools need to be developed to support regulatory tools.

5.3 How we incorporated feedback

Stakeholder feedback has enabled FSANZ to further evaluate and refine options, to present a package of regulatory and non-regulatory food safety management measures.

We have targeted regulatory measures to our risk profiling of businesses, based on the relative risk of their food handling activities.

Industry's primary concern is minimising the burden and cost on businesses of introducing new regulatory tools. In response, FSANZ has proposed a 12-month commencement period. We have also ensured our preferred options (section 6) are appropriate to the regulatory context.

5.4 Future consultation

The call for submissions includes a (8/10) week consultation period. FSANZ will seek comment on the risk profiling, cost–benefit analysis and the risk management options, including the proposed standard. In our call for submissions report, we have asked stakeholders to specifically comment on the assumptions that underpin our costs and benefits, and to identify any further information available to inform our regulatory analysis.

Details for making a submission are included on the front page of the call for submissions report. Further details on making a submission are also available on our website. FSANZ welcomes and will consider all submissions as part of our proposal assessment process. Feedback will guide our final recommendations.

FSANZ's P1053 team will be available throughout the consultation period to provide advice and answer questions. If you would like our team to contact you, please email standards.management@foodstandards.gov.au.

6. What is the best option from those considered?

FSANZ's preferred option is a targeted regulatory approach that applies food safety management tools based on risk, cost–benefit and appropriateness. The options we are proposing are:

- Option 3.2 for Category 1 businesses
- Option 3.1 for Category 2 businesses
- No additional regulatory measures for Category 3, based on current evidence.

With this approach, regulatory obligations placed on a food business are proportionately matched to the risk of their activities, and provide a strong net benefit. They would be supported by non-regulatory tools that focus on food safety culture and education. Further details are provided below.

Category 1

Category 1 businesses are food service businesses, such as caterers (onsite and offsite), restaurants, takeaway; and retailers who make and serve potentially hazardous food.

Characteristically, these businesses undertake food handling activities that require close management to produce safe food. There is a strong evidence base for foodborne illness linked to these settings.

Option 3.2: Mandating all three additional food safety management tools (food safety supervisor, food handler training and evidence to substantiate food safety management) is considered appropriate for these businesses.

Category 2

Retailers of unpackaged RTE PHF are placed in Category 2. Retailers who only sell pre-packaged food, where the food is not unpackaged at any time during the control of the retailer – are excluded from this category.

Compared to Category 1, there are fewer critical food handling processes required to produce safe food, and less evidence that foodborne illness is caused by these settings.

Option 3.1: Mandating two regulatory food safety management tools (food safety supervisor and food handler training) is considered appropriate. Templates are available to assist these businesses with managing food temperature control, but would not be mandated.

Category 3

Retailers of pre-packaged RTE PHF are in Category 3.

In this category business are required to maintain safe food temperature during storage and display. Temperature affects growth of existing pathogens in the food. These businesses are handling pre-packaged food which they have not prepared. This means they would be relying on the food producer to have supplied safe food (i.e. that pathogen introduction/growth was controlled during production). Foodborne illness data does not directly link outbreaks to this setting.

Therefore, there is no threshold to directly evaluate a benefit if applying any regulatory interventions in these settings.

No regulatory measures: A targeted education campaign focusing on storage and display temperature of potentially hazardous foods in this setting is considered the most appropriate option. Templates are available to assist these businesses in managing temperature control, but would not be mandated.

7. How will the chosen option be implemented and evaluated?

Implementation of the proposed standard is the responsibility of the state and territory food regulation agencies. FSANZ has been working closely with an implementation working group of regulators from each jurisdiction consistent with the integrated model²⁹ for national implementation. This integrated approach assures ministers considering a new standard that the requirements can be implemented consistently across Australia, and that industry will be supported with guidance. If a new standard is approved, an implementation guide would be developed to identify to industry what the standard will look like in practical terms, and what will be expected of businesses to comply.

FSANZ provides a commencement period from the date standards are gazetted and registered as a legislative instrument. This period gives industry and government authorities time to put measures in place to meet the standard's requirements. For this standard, a 12-month commencement period is being proposed. State and territory governments are happy to work with industry to help prepare for the standard to come into effect. Training options and templates to support implementation are already readily available and broadly used.

²⁹<https://webarchive.nla.gov.au/awa/20151020103533/http://www.health.gov.au/internet/main/publishing.nsf/Content/foodsecretariat-isc-model.htm>

States and territories are responsible for any subsequent review of implementation and compliance materials. They are also typically responsible for initiating any substantive reviews of the Code through their ministers.

8. Case studies

The following scenarios are provided as guidance for food businesses on the proposed draft Standard 3.2.2A. They illustrate the intent of the standard, its differing requirements and the types of businesses to which it applies. The scenarios provide several examples, but there may be other business types also covered by the standard. Two 'A day in the life' examples are also provided, to explain the sorts of records or other evidence a business could make to substantiate that their key activities are properly managed.

8.1 Examples of businesses the standard would apply to

1. A restaurant

Milo's Sydney restaurant makes and serves a range of meat and vegetarian dishes, for customers to eat there or take away. Milo's restaurant is a **Category 1** business because it both makes and sells meals, which are ready to eat without any further preparation by consumers.

Milo needs to understand and manage many food safety risks before, during and after the restaurant meals are prepared. For example, meat, fish, dairy and egg products need to be received and stored cold. Cooked dishes need to be cooked properly at the right temperature for the right amount of time. Once a dish is ready to eat, it needs to be served within a short time or held at temperatures that keep it safe.

Milo checks the new standard and sees that:

- His business needs to have a qualified Food Safety Supervisor, but he already has one because NSW already required it.
- His staff that prepare the meals (e.g. kitchen hands) will all need to complete a food safety course that covers the specific topics in the standard (they can do this online).
- His business will also now have to have evidence that shows how they are keeping food safe. This includes the standard operating procedures he already has, as well as records of temperature checks (for food storage, cooking and cooling), and cleaning and sanitising. These will help Milo ensure his business is taking food safety seriously and doing things correctly. The evidence will also help him show regulators he is complying with the standard.

Costs: Milo work out the costs of putting the new measures in place.

FSS: he already has a FSS, so a cost won't be incurred until year 5 when his FSS needs refresher training.

FHT: his five food handlers can do their training free online and it will take about 90 minutes (costing him \$45 each for their time).

E: He already has a system in place including SOPs and templates to implement the evidence tool, but he will give refresher training to his staff costing approx. \$75. The evidence (for example filling out a template) the business needs to create and maintain each day of service will take about 15 minutes, this will cost him approximately \$1,555 a year including yearly review to make sure the system continues to meet the business needs and staff are up to date with training.

Overall, the costs to his business will be around \$1,855 for the first year and then about \$1,645 per year for the next 4 years.

2. A bakery that makes and retails its own products

Kim's bakery in South Australia makes and sells a range of goods on site, including Vietnamese rolls and pastries containing egg-custard and cream. Kim's bakery is a **Category 1** business because it both makes and retails these foods.

Because of the type of food she sells, Kim needs to manage many food safety risks, from receiving and storing ingredients, through processing steps, to displaying and serving the final products.

Kim speaks to SA Health to check what she needs to do. For Kim, the new standard means:

- She will have to have a Food Safety Supervisor (FSS). She decides to complete this training herself as she is the one who generally supervises the food handlers.
- The two food handlers she works with will need to complete food handler training.
- Her business will have to keep evidence to show how they manage their food safety risks. This will likely mean her staff need to make a record of the temperature of potentially hazardous food (e.g. meat, dairy, egg products) when it is received, stored, and displayed. They may also have to record how long it takes them to prepare some products, especially where ingredients are brought out of the fridge and processed on the bench (e.g. whipped cream, egg butter and custard, shredded salad). Using the 2-hour/4-hour rule for food brought out of the fridge is a proven safe practice.

Costs: Kim works out the costs of putting the new measures in place.

FSS: certificate from her local TAFE college (or through online study) will cost \$170 in course fees plus \$335 in wages for her time, and be valid for 5 years.

FHT: her two food handlers can do their training free online and it will take about 90 minutes (costing her \$45 each for their time).

E: Kim will need to implement a system for the evidence tool and her staff will need to be trained to use the system costing approx. \$323.

The temperature and time evidence her business needs to create and maintain will take about 15 minutes each day. This will cost approximately \$1,555 a year including yearly review to make sure the system continues to meet the business needs and staff are up to date with training.

Overall, the costs to her business will be around \$2,473 for the first year (including the FSS certificate) and then about \$1,651 per year for the next 4 years.

'A day in the life' – bakery making PHF sandwiches (for direct order – prepare/serve)

The proposed draft Standard 3.2.2A includes a clause (clause 12) on 'substantiating food safety management of prescribed activities', listing nine activities (in subclause 4. 'a' to 'i'). The example below sets out 'an average day', explaining how a bakery could use the evidence tool and demonstrate to a food regulator (e.g. environmental health officer, EHO) that the requirement is met.

A staff member arrives on site and before starting any preparation for the day, checks the temperature of the food in the fridge and/or checks the temperature of the fridge (if a calibrated gauge is used). The food in the freezer is also checked to make sure it is still hard frozen. These checks ensure that any potentially hazardous food (PHF) being used for the day has been stored correctly under temperature control overnight and the food is safe to use.

Food storage – the fridge or food temperature would be recorded on the business's daily temperature record sheet.

The staff member checks that the equipment being used for preparation and service is clean and has been stored to prevent contamination. The benches are sanitised before food preparation begins. This may be part of the cleaning instructions and schedule ([cleaning and sanitising](#)). The bain marie used for chilling is turned on, so it will be cold before placing food items in later that morning.

The staff member sees that the delivery driver has arrived and goes to accept a delivery of ordered food. They wash their hands and sanitise the temperature probe. The delivery contains both dry goods and PHF. The PHF is checked first for labelling and any damage to packaging or potential contamination, then the staff member takes the temperature to ensure it is received under temperature control. A temperature infra-red gun may be used to check surface temperature, or a probe placed between two packaged units (e.g. cryovac meat packets). A probe is used if the package or food needs to be pierced to check core temperature. Once the PHF has been checked, it is immediately placed into the cool room or fridge.

[Food receipt](#) – once the PHF is checked the temperature and product name are recorded on the daily temperature sheet.

If this staff member picks up food from the supermarket on the way to the café, they could either check the food temperature on arriving at the café (e.g. if transported in cooler bags with ice packs) or manage food safety using time as a control. A standard operating procedure (SOP) could describe this in relation to food being out of temperature control for less than 2 hours. This may or may not require evidence.

The staff member then stocks the bain marie with sandwich ingredients from the fridge. The temperature of the food in the bain marie is checked, to ensure the equipment is maintaining temperature control.

[Food storage](#) – the bain marie temperature will then be recorded on their daily temperature record sheet.

Alternatively, the time the food is put into the bain marie is noted, and either

- the food is checked at 2 hours to ensure it is still under temperature control, or
- the food is placed back into the fridge at 2 hours or
- the food is discarded at the end of 4 hours as per the 2-hour/ 4-hour rule.

[Minimising processing time](#) – The time that food is brought out of the fridge, and the time it is placed back into fridge or discarded can be recorded. Alternatively, a SOP can be used that shows the process for the bain marie with temperature checks or time that was prepared previously. An EHO can observe this process is in line with the SOP and ask questions to confirm understanding. Temperatures and time would then not need to be recorded routinely.

[Processing to achieve microbiological safety of food](#) – Raw chicken is cooked onsite to be cut up and used for sandwiches. The core temperature of the cooked food is checked and recorded. The café is also roasting vegetables and boiling quinoa for the sandwich fillings. Cooking temperatures for these processes would not need to be recorded as the food is either only edible once cooked, or it doesn't become PHF until after it is cooked. For example, a boiled egg in its shell is not considered PHF until it is peeled.

[Food cooling](#) – If the food cooked on the day is all consumed within 4 hours or discarded, then cooling does not have to be monitored. If some of the cooked chicken and roast vegetables is cooled for use later in the day, or for the next day, cooling must be monitored. Cooling temperatures can be checked and recorded, or a SOP can be used that shows the standard process for cooling with time/temperature checks that were prepared previously. The EHO can observe this process is in line with the SOP and ask questions to confirm understanding. Temperatures and time would then not need to be recorded routinely. The quinoa is cooled using ice water and a temperature record is not required, as this is a

standard process known to rapidly chill grains. The EHO may ask the staff member how it is cooled, to ensure it is meeting cooling requirements.

Reheating – If the café does not reheat any foods to hold hot, no record is needed. If this café uses a pie warmer to keep pastry items warm for service, reheating must be monitored. The products are reheated before placing in the pie warmer. The pie temperature is checked to make sure it is at least 60°C and recorded. As this is a very common practice, it can also be demonstrated by a SOP. The EHO can check the temperature of the pies in the pie warmer and observe this process is in line with procedure, or ask questions to confirm understanding. Temperatures would then not need to be recorded routinely.

If the business only reheats food for immediate service (e.g. takes the pie from the fridge and reheats it in an air fryer for 5 minutes), documenting the temperature is not required, as it is not being hot held.

Food display – For direct serve, temperature records would not be required, unless sandwiches were made in advance and food safety was not managed using time.

Food transport – This business does not transport food so does not require this clause to be monitored. If the business decided to become a caterer, or for example, sell food to the local school canteen, time or temperature would need to be monitored and recorded, or a SOP used.

Cleaning and sanitising – Evidence made for this may be a schedule with the important areas to clean that is ticked as the task is completed. It may also include instructions of the chemicals to be used and the process for cleaning and sanitising. This could also include recording a temperature of the dishwasher during operation once a week.

3. An off-site catering business

Alex runs a catering business and is making bulk lasagne for another company running a function later that day and the next day. Alex doesn't sell the lasagne direct to consumers (that is, the business is an off-site caterer). Alex's business is a **Category 1** business, because the lasagne is ready to eat and will be served to people to eat at the function.

Alex needs to manage critical food safety risks with bulk lasagne prepared in advance for the function. For example, raw meat, milk and cheese needs to be received cold and kept cold. The lasagne needs to be cooked properly and then cooled safely. Once prepared, the lasagne also needs to be both stored and transported at a temperature that keeps it safe.

As a Category 1 business, Alex will need to have a certified Food Safety Supervisor, and the team making the lasagnes will need to have completed food handler training. The business will also have to have evidence of, or be able to demonstrate, correct food safety controls are in place and monitored.

'A day in the life' – off-site caterer (preparing food in advance)

This example explains how a caterer could implement the evidence tool for key activities (listed (a) to (i) in the proposed draft standard).

Food receipt – The caterer either picks up food from the supermarket, has delivery by a supermarket, or receives food from a distributor the same as above for the café example. The same process applies as the above example for the café.

Food storage – The process is also the same as the café. The food or the cool room, fridge air temperature (or ideally the probe is in water) is checked for temperature control and recorded. If this caterer is quite large, they may also decide to have the cool room/fridge monitored by a data logger or alarm. They do not have to record the temperature monitoring

daily but should check that the readings are correct and can show this readout to the EHO upon request.

Achieving microbiological safety of food – The caterer cooks chicken and beef, sous vide in a water bath. The caterer must be able to demonstrate that they know the time and temperature requirements to ensure the food is safe (e.g. 65°C for 10 minutes + 150 minutes, the time taken to heat the 4 cm thickness of food to this temperature for cooking). The batch food thickness and heating + cooking time should be recorded.

The caterer cooks trays of chicken Kiev's in the oven. The largest Kiev should be checked to ensure that this is cooked thoroughly to the core and recorded.

Minimising processing time – The caterer prepares bulk sandwiches and also slices the sous vide meat to be used at the event the next day. The caterer has a process where they bring the sandwich ingredients and cooked meat out of the fridge for 1 hour, and after two trays have been filled, put that batch of sandwiches in the fridge before starting on the next two trays. They repeat this process until all the ingredients are used or the 1 hour is reached, and they place the ingredients back in the fridge. Alternatively, they have a chilled bain marie (as per the café requirements) to store their ingredients under temperature control. A SOP could be developed for this and confirmed by the EHO on site. Otherwise, the time the ingredients come out of the fridge, and the time they are used up, or put back in, could be recorded.

Food cooling – Food is cooked by this caterer the day before the event. Cooling requirements would be similar as for the café, with either the largest food volume monitored and recorded for each batch, or a SOP could be used where the size, food type and process is consistent and temperatures previously validated.

Food reheating – The caterer reheats the sliced sous vide chicken and places it in a hot bain marie for plating and service. The temperature of the chicken is checked to make sure it is 60°C or above. This food is all plated, served and consumed within 1.5 hours. If the food was not consumed within 2 hours, the temperature of the chicken would be rechecked and recorded to ensure it was being held under temperature control.

Food display – This caterer does not display food at every event, although on occasions will provide a self-serve option for the client, where bain marie equipment is available. Requirements are similar to 7(4) above. e.g. If the food was not consumed within 2 hours, the temperature of the chicken would be rechecked and recorded to ensure it was being held under temperature control.

Food transport – This caterer has a refrigerated delivery van to transport the food under temperature control. The caterer may monitor and record the temperature of the van cavity, or record the temperature of the food in the van. The caterer also uses a non-refrigerated van when they have large events. Food safety is maintained by packaging food in eskies or ensuring time out of temperature control is minimised. The temperature of the food on delivery to the event should be checked and recorded, or time recorded if the event was less than 2 hours' drive.

Cleaning and sanitising – Evidence kept for this may be a schedule with the important areas to clean, which is ticked as the task is completed. It may also include instructions of the chemicals to be used (contact time, dilution, rinse or no rinse, etc.) and the process for cleaning and sanitising. This could also include recording a temperature of the dishwasher during operation once a week. Cleaning and sanitising of equipment at the venue may also need to be considered for this caterer.

4. A delicatessen

Robbie owns a deli business in WA that sells cheeses, cured and cooked meats, and cooked seafood. He buys pre-packaged products in bulk, then he and his team open and

divide them into smaller portions or slices to sell to consumers. Robbie's business is a **Category 2** business because it doesn't make the deli food, it just minimally processes it (e.g. slices, weighs, wraps it in paper) to sell to consumers.

Robbie and his team need to understand and manage critical food safety risks with the unpackaged deli foods while they unwrap them, portion them out, display and serve them.

Under the new standard, Robbie will need to be or have a qualified Food Safety Supervisor, and his three staff who directly handle unpackaged deli foods will need to complete food handler training. Robbie will not have to keep records of food temperatures or cleaning and sanitising, although this is best practice and would help him to be sure things have been done properly.

Costs - Robbie checks with his local council about what he needs to do, so he can work out costs.

FSS: certificate from through an RTO online will cost \$170 in course fees plus \$335 in wages and be valid for 5 years.

FHT: the three food handlers can do their training free online and it will take about 90 minutes (costing her \$45 each for their time).

Overall, it will cost the business around \$640 in the first year. Robbie decides he will also have refresher training for his team once a year, and for any new staff that join his team, since it is available free online and doesn't take very long.

5. A café that serves pre-prepared snacks and lunches

Jess runs a small café alongside her art and craft gallery in Tasmania. She sells unpackaged sandwiches, quiches and pre-cut fruits and salads made by another company. Jess doesn't do any of the cooking or other food preparation herself; she just serves out portions to her customers. Jess's café is a **Category 2** business because it doesn't make the food, but minimally processes by taking the sandwich out of the package, or reheats the quiche, before serving.

Under the new standard, as Jess is the only food handler in the business, she will need to be a qualified Food Safety Supervisor. She doesn't have to do the additional food handler training because the Food Safety Supervisor qualifications cover the FH training content. Jess will not need to keep records of food temperatures or cleaning and sanitising, although this is best practice and would help make sure things have been done properly.

However, if Jess decides to start making her own food she would need to consider whether this food is a potentially hazardous food and would mean that her business becomes a Category 1 business, requiring her to keep evidence of the safe handling of that food.

Costs – Jess knows that the FSS qualifications will cost \$170 in course fees plus \$335 in wages. This will be the only extra cost to her business, until she needs to renew her FSS certification after 5 years.

8.2 Examples of where proposed Standard 3.2.2A would NOT apply:

1. Service station that sells pre-packaged foods

Jay's service station sells pre-made, pre-packaged sandwiches, sausage rolls and pies prepared by another business. Jay buys these foods in cartons of single-wrapped units and simply places them in a display fridge or hot oven unit ready to sell to consumers. The

proposed standard wouldn't apply to Jay's business, because it only sells food that's been kept in its original packaging.

Jay's food safety risks are lower than a Category 1 or 2 business because the food remains packaged. He mainly just needs to safely store and display the food. Jay will still need to comply with the general food safety requirements of Standard 3.2.2 and 3.2.3.

2. Ham manufacturer

A food manufacturer processes bulk raw pork into ham products, including bulk cured ham sold at delicatessens and packaged sliced sandwich ham sold in supermarkets. The proposed standard wouldn't apply to the manufacturer because:

- the business does not serve the food or sell it direct to consumers, and
- the ham products are not in a form that a consumer would normally buy to eat right away. The bulk ham supplied to a deli will be unwrapped and sliced before retail sale. The supermarket packaged ham will need to be unsealed by the consumer to use in sandwiches, salads, etc.

This business will still need to meet the general food safety requirements in Standards 3.2.2 and 3.2.3 and the meat primary production and processing Standard 4.2.3.

9. References

Abelson P, Forbes M P, Hall G (2006). The annual cost of foodborne illness in Australia. Report No.: 0642829063. Australian Government Department of Health and Ageing, Canberra.

Aik J, Turner RM, Kirk MD, Heywood AE, Newall AT (2020). Evaluating food safety management systems in Singapore: A controlled interrupted time-series analysis of foodborne disease outbreak reports. *Food Control* 117:107324.

Ashbolt, R, Bell R, Combs B, Crerar S, Dalton C, Dempsey K et al. (2003). Foodborne disease in Australia: incidence, notifications and outbreaks. Annual report of the OzFoodNet network, 2002. 27th ed. Australian Department of Health, Canberra.

<http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-pubs-annlrpt-ozfnetar.htm> accessed 4/1/2019.

Allen Consulting Group (2002). Food safety management systems: costs, benefits and alternatives: final report to the Commonwealth Department of Health and Ageing. Department of Health and Ageing, Canberra.

Bartsch SM, Asti L, Nyathi S, Spiker ML, Lee BY (2018). Estimated cost to a restaurant of a foodborne illness outbreak, *Public Health Reports*, 2018, 133(3): 274-286, Association of Schools and Programs of Public Health.

DoHA (2007). Business Sector Food Safety Risk Profiling Framework. Australian Department of Health and Ageing, Canberra.

<https://foodregulation.gov.au/internet/fr/publishing.nsf/Content/risk-profiling-framework> accessed 20 December 2019

Food Science Australia and Minter Ellison Consulting (2002). National Risk Validation Project: Final Report. NSW Department of Health, Sydney and the Commonwealth Department of Health and Ageing, Canberra.

Forum (2011). Policy Guideline on Food Safety Management for General Food Service and Closely Related Retail Sectors. Legislative and Governance Forum on Food Regulation, Canberra.

<https://foodregulation.gov.au/internet/fr/publishing.nsf/Content/publication-Food-Safety-Management-Policy-Guideline-for-the-retail-and-food-service-sectors> accessed December 2019.

FSANZ (2009). Safe food handling in Australian food businesses – knowledge and practices. An Interpretive Summary of the 2007 and 2001 National Food Handling Surveys. Food Standards Australia New Zealand, Canberra.

<https://www.foodstandards.gov.au/publications/documents/2007%20NFHS%20Interpretive%20Summary%20FINAL.pdf> accessed January 2021.

FSANZ (2016). *Safe Food Australia - A Guide to the Food Safety Standards*. Food Standards Australia New Zealand, Canberra.

<http://www.foodstandards.gov.au/foodsafety/standards/Pages/Safe-Food-Australia-%E2%80%93-A-guide-to-the-Food-Safety-Standards.aspx> accessed 10/1/2020.

Hedberg, Smith SJ, Kirkland E, Radke V, Jones TF, Selman CA, EHS-Net Working Group (2006). Systematic environmental evaluations to identify food safety differences between outbreak and nonoutbreak restaurants. *Journal of Food Protection* 69(11): 2697-702. doi: 10.4315/0362-028x-69.11.2697.

Hogan, Lindsay (2018). *Food demand in Australia: Trends and issues 2018*, ABARES Research Report 18.10, Canberra, August 2018.

http://agriculture.gov.au/abares/publications/display?url=http://143.188.17.20/anrdl/DAFFService/display.php?fid=pb_fdati9aat20180822.xml, accessed 26/8/2019.

Kassa H, Silverman G S and Baroudi K (2010). Effect of a manager training and certification program on food safety and hygiene in food service operations. *Environmental Health Insights* 2010(4): 1320.

Kirk M, Glass K, Ford L, Brown K, Hall G (2014). Foodborne illness in Australia: Annual incidence circa 2010. National Centre for Epidemiology and Population Health, Australian National University. Canberra, Australia.

<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwjLqK Pn0K3hAhWCfH0KHSC2Ce0QFjAAegQIARAC&url=https%3A%2F%2Fwww.health.gov.au%2Finternet%2Fmain%2Fpublishing.nsf%2FContent%2FE829FA59A59677C0CA257D6A007D2C97%2F%24File%2FFoodborne-Illness-Australia-circa-2010.pdf&usq=AOvVaw2kmoXJDtFMQmCRLUobKVZZ> accessed 4/1/2019.

McFarland P, Checinska Sielaf A, Rasco B and Smith S, (2019). Efficacy of Food Safety Training in Commercial Food Service. *Journal of Food Science*, 84(6):1239-1246.

Medeiros C, Cavalli S, Salay E and Proença R (2011). Assessment of the methodological strategies adopted by food safety training programmes for food service workers: A systematic review. *Food Control*, 22(8): 1136-1144.

NSW Food Authority 2005. Improving the Food Safety Framework in NSW – an SME Perspective: A Discussion Paper resulting from a NSW Food Safety Roundtable on 13 April 2005', New South Wales (NSW) Government Food Authority, December 2005. http://www.foodauthority.nsw.gov.au/Documents/corporate/food_safety_discussion_paper_final_Nov_2005, accessed 23/8/2019.

OzFoodNet 2010. Monitoring the incidence and causes of diseases potentially transmitted by food in Australia: Annual Report of the OzFoodnet Network, 2009. Australian Department of Health: OzFoodNet working group. Canberra, Australia, December 2010. <http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-pubs-annlrpt-ozfnetar.htm> accessed 26/8/2019.

OzFoodNet 2012. Monitoring the incidence and causes of diseases potentially transmitted by food in Australia: Annual Report of the OzFoodNet Network, 2010. Australian Department of Health: OzFoodNet working group. Canberra, Australia, November 2012.

<http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-pubs-annlrpt-ozfnetar.htm> accessed 26/8/2019.

OzFoodNet 2015. Monitoring the incidence and causes of diseases potentially transmitted by food in Australia: Annual Report of the OzFoodnet Network, 2011. Australian Department of Health: OzFoodNet working group. Canberra, Australia, July 2015.

<http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-pubs-annlrpt-ozfnetar.htm> accessed 26/8/2019.

OzFoodNet 2018. Monitoring the incidence and causes of diseases potentially transmitted by food in Australia: Annual Report of the OzFoodNet network, 2012. Australian Department of Health: OzFoodNet working group. Canberra, Australia, November 2018. Available online at <http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-pubs-annlrpt-ozfnetar.htm>, accessed 26/8/2019.

Ross T, Mellefont L, McQuestin O, Haines H, Smith J (2009), Risk Profiling Framework Example Classifications (Extracts), prepared for Department of Health and Ageing, Canberra

[https://foodregulation.gov.au/internet/fr/publishing.nsf/Content/37F08208FAC6F504CA2582A40027AA90/\\$File/FRSC-RPF-ECE.docx](https://foodregulation.gov.au/internet/fr/publishing.nsf/Content/37F08208FAC6F504CA2582A40027AA90/$File/FRSC-RPF-ECE.docx), accessed December 2019.

Thaivalappil A, Waddell L, Greig J, Meldrum R and Young I (2018), A systematic review and thematic synthesis of qualitative research studies on factors affecting safe food handling at retail and food service. *Food Control* 89: 97-107.

Todd E (2007) Outbreaks where food workers have been implicated in the spread of foodborne disease. Part 3. Factors contributing to outbreaks and description of outbreak categories. *Journal of Food Protection* 70(9): 2199–2217.

Treasury (2000). Industry Self-Regulation in Consumer Markets, Report prepared by the Taskforce on Industry Self-regulation. Commonwealth of Australia, Treasury.

https://treasury.gov.au/sites/default/files/2019-03/final_report.pdf, accessed 21/1/2021.

Yapp C and Fairman R (2006), Factors affecting food safety compliance within small and medium-sized enterprises: implications for regulatory and enforcement strategies. *Food Control*. 17(1): 42-51.

<https://www.sciencedirect.com/science/article/pii/S0956713504001975>, accessed 4/5/2021.

Appendix 1 – Cost–benefit analysis

Introduction

This appendix provides the underlying assumptions associated with the regulatory analysis provided in this CRIS. The economic modelling is sensitive to several variables, such as the potential efficacy of the intervention, estimated number of illness cases and the cost of those illnesses. These key variables each have a level of uncertainty.

FSANZ is considering two options in addition to the status quo and self-regulation. These are:

Option 3.1: Employment of a certified food safety supervisor (FSS) and requiring food handler staff to complete food handler training (FHT).

Option 3.2: A package of all three tools (FSS, FHT, E).

The following sections summarise the benefits and business costs associated with implementing a regulatory intervention for each tool. As noted above only Category 1 and Category 2 businesses have been considered in this analysis as the likely illnesses generated by Category 3 businesses is not sufficient to justify the cost of further regulation.

Cost of interventions

Costs associated with implementing food safety management tools occur upfront (such as initial certification fees, training and the development of system to keep evidence of food safety management) as well as ongoing (such as training, verification, certification renewal and creating and maintaining evidence).

Food Safety Supervisor

Implementing this tool involves training at least one staff member to be a qualified FSS. Qualifications must be renewed every five years.

There are three scenarios across Australia depending on the current requirements within jurisdictions:

Scenario 1: Those jurisdictions that do not currently mandate FSS (WA, SA, Tasmania, NT).

Scenario 2: Those jurisdictions that mandate FSS, but have no certification renewal requirements (Queensland, Victoria).

Scenario 3: Those jurisdictions that have mandated FSS that is similar to the proposed requirements (NSW and ACT).

Businesses in Scenario 1 jurisdictions will incur the highest costs (and highest benefits) with an upfront implementation and ongoing costs associated with training new staff to replace staff 'leakage' from industry. There is assumed to be a renewal of all FSS qualifications at year six.

Businesses in Scenario 2 jurisdictions will only incur renewal training costs at year six.

Businesses in Scenario 3 jurisdictions do not incur incremental costs for implementing this option.

The various assumptions used to calculate cost of implementing the FSS tool for businesses are shown in Table 1.

Table 1: Assumptions used to calculate cost of implementing the FSS tool for food businesses

FSS costs and assumptions – implementation

FSS wage	\$25.83 (from award)
Wage on costs	30%
FSS training fee	\$170 (from a RTO)
FSS training time	10 hours (from a RTO)
Leakage	10%
Renewal of FSS training	After 5 years

RTO = registered training organisation

FSANZ used the assumptions from Table 1 to produce cost estimates for implementing a FSS for each of the three 'status quo' scenarios. These estimates are provided in Table 2 and used in the regulatory analysis of the FSS intervention.

Table 2: Cost estimates of implementing the FSS tool by scenario

FSS per business	Upfront (\$) (year 1)	Ongoing (\$) year 2-5	year 6 (\$)	year 7-10 (\$)
Scenario 1: WA, SA, Tasmania, NT	506.00	51.00	253.00	102.40
Scenario 2: Queensland, Victoria	0.00	0.00	506.00	0.00
Scenario 3: ACT, NSW	0.00	0.00	0.00	0.00

Food handler training

Implementing this tool involves all food handler staff within a food business completing food safety training once. Food safety training is expected to take approximately an hour and a half to complete. Training packages are freely available on the internet through food regulatory agencies and are provided in multiple languages.

There is currently no regulatory requirement for mandatory food handler training in any Australian jurisdiction. However, several jurisdictions promote the free training available.

The status quo assumes that there are varying degrees in the uptake by food handlers of this free training. For the purposes of costing this intervention, FSANZ has assumed between 0–20% uptake. Businesses incurring the highest costs will also incur the highest benefits with upfront implementation of this tool.

The Allen Consulting Group's report (2002) estimated that there were, on average, eight food handler staff at food service venues and four at food retailers across Australia. To simplify the assumptions for the costing of this scenario, we assumed that on average there are six food handling staff for each food business. It is assumed that one of these food handlers will be a FSS; so excluded from the FHT costings.

The various assumptions used to calculate cost of implementing the FHT tool for businesses are shown in Table 3.

Table 3: Assumptions used to calculate cost of implementing the FHT tool for food businesses

FHT costs and assumptions – implementation	
Food handler wage	\$23 p/h (from award)
Wage on costs	30%
Number of food handlers	5 people
Food handler training time	1.5 hours
Food handler leakage	40%

FSANZ used the assumptions from Table 3 to produce cost estimates for implementing the FHT tool. However, businesses have already been encouraged to undertake this training voluntarily in a number of jurisdictions. Three different scenarios have been developed that reflect potential voluntary uptake of this training. These estimates are provided in Table 4 and used in the regulatory analysis of the intervention.

Table 4: FSANZ cost estimates of implementing the FHT tool, both upfront and ongoing

FHT per business	Upfront (\$)	Ongoing (\$ p.a)
Scenario 1: low uptake (0%)	224	90
Scenario 2: medium uptake (10%)	202	81
Scenario 3: high uptake (20%)	179	72

Evidence to substantiate food safety management (E)

Implementing this proposed tool involves: identifying processes that will require evidence to be kept, developing a system (such as a template - these are assumed to be freely available through food regulatory agencies), training staff, and ongoing labour/time costs to create the evidence.

Determining costs and benefits of implementing an E requirement is challenging, as it is a new approach. The proposed requirement is intended to be a tool that lies between the baseline GHPs in Standard 3.2.2 and the HACCP approach of a food safety program (FSP).

The costs and benefits of implementing FSPs have been investigated in two complementary studies. The National Risk Validation Project (2002) included a cost–benefit analysis of FSPs in five high-risk food business sectors, including the catering sector. In addition, the Department of Health and Aging commissioned an assessment of food safety management costs, benefits and alternatives in these sectors (Allen Consulting Group, [2002](#)).

Benefits

In effect, the Allen report (2002) examined where foodborne illness could be reduced if certain deficiencies in skills, knowledge and record keeping were addressed. While having a FSP would not avoid all problems, it was assumed to have a positive effect on businesses' food safety culture and food safety outcomes.

The Allen report recommended that behavioural changes by businesses be reinforced by a comprehensive enforcement strategy. Requirements for keeping evidence, such as a record, were an important component of an enforcement strategy. The report also states that without business documentation, it would be significantly more difficult to detect non-compliance and evaluate business performance. While the context referred to enforcement, FSANZ considers that keeping evidence of food safety management can also assist businesses with monitoring potential hazards in their operations and detecting if safety parameters are breached. It can also reinforce food handler awareness of potential risks, while verifying controls are working as intended.

FSANZ considers other noted benefits³⁰ would be experienced by businesses who make a record, or have other evidence of food safety management. Tangible benefits include production savings, reduced wastage and reduced maintenance. Intangible benefits include improved understanding of their business, better management practices and supplier standards, relationships with environmental health officers and reduced overall stress.

³⁰ noted in the Allen report (2002)

Costs

We estimated the costs of E by making reasonable estimates of the time it will take to develop a system, train staff to use the system and use that system in day to day operations.

Upfront implementation

Implementation costs are broadly time-based and calculated at a rate of \$16 per hour. Upfront costs include the development of the system and the training of staff.

Under the proposed E tool, businesses would not need to conduct a hazard analysis. They would instead need to identify if the business does any of the specified key food handling processes outlined in the draft standard. The critical control points and limits for these processes would be provided through the freely available templates.

The various assumptions used to calculate cost of implementing the E intervention for businesses are shown in Table 5.

Table 5: Assumptions used to calculate cost of E

E costs and assumptions – implementation	
FSS wage	\$25.83 p/h (from award)
Food handler wage	\$23 p/h (from award)
Wage on costs	30%
Number of food handler staff	5 people
Hours to develop documented system (category 1)	8
Hours to develop documented system (category 2)	6
Hours to train each staff member to use the system	0.5

Based on assumptions in Table 5 (e.g. current wage costs), FSANZ has estimated the cost of implementing the E tool as proposed by P1053 in Table 6.

Table 6: FSANZ cost estimates of implementing the E tool by business category

Category	Development (\$)	Training (\$)	Total per business (\$)
Category 1 business	248	75	323
Category 2 business	201	75	276

Ongoing requirements

The ongoing costs in a business reflect the additional labour time involved in creating the evidence, and the need for an annual review of the system. It is assumed that Category 1 businesses will spend between 10 and 12 minutes per day creating this evidence, depending on their handling activities (70–84 minutes per week, 60.6–72.8 hours per annum). Category 2 businesses are assumed to spend eight minutes per day (56 minutes per week, 48.5 hours per annum). This timing is based on the assumption that all businesses operate seven days per week, 52 weeks per annum.

The various assumptions used to calculate the cost of maintaining an E tool for businesses are shown in Table 7.

Table 7: Assumptions used to calculate the cost of maintaining E tool for food businesses

E costs and assumptions - ongoing	
Food handler wage	\$23 p/h (from award)
Wage on costs	30%
Category 1 business E hours per annum	52
Category 2 business E hours per annum	39

Using the assumptions in Table 7, FSANZ has estimated the cost of maintaining the proposed tool, shown in Table 8 below.

Table 8: FSANZ cost estimates for maintaining the E tool, per annum, by business category

Category	Ongoing (\$ p.a.)
Category 1 business	1,555
Category 2 business	1,166

Efficacy of interventions

The assumed efficacy of the tools used in FSANZ's regulatory analysis has been estimated based on:

- the causes of foodborne illness outbreaks as reported by OzFoodNet
- whether the tools are likely to help manage the causes of illness
- whether the tools have already been implemented in the jurisdiction
- the estimated likely efficacy for similar measures in the NSW Better Regulation Statement (NSW Food Authority, 2009), the Allen Report (2002), and the National Risk Validation Project (2002).

The base efficacy for each of the tools is estimated at: 10% for FSS, 5% for FHT, 10% for E, and an additional 5% where all three measures are implemented, to recognise their complementary nature.

These estimates have then been adjusted downwards, where appropriate, to take into account where measures are already in place in some jurisdictions—it is the incremental effect that is relevant to the analysis.

Number of businesses

Historically, FSANZ uses data from the Australian Bureau of Statistics when estimating business numbers. However, estimates of business numbers has been challenging in this project, as the categorisation of in-scope businesses do not align well with the ABS categorisation of food businesses. As an alternative, survey results have been used from South Australia on the number of businesses in their jurisdiction in the respective categories, and these then scaled according to the population of each state and territory. This approach produced slightly higher business numbers for each category than attempts to manipulate the ABS statistics, which means costs are also higher.

Table 9: Number of Category 1 and 2 businesses per jurisdiction and percentage, by Australian population

Jurisdictions	Population	% of Australia	Category 1 Business	Category 2 Business
NSW	8,172,505	31.8	45,154	3,648

Victoria	6,661,736	25.9	36,807	2,974
Queensland	5,194,879	20.2	28,702	2,319
South Australia	1,770,790	6.9	9,784	790
Western Australia	2,670,241	10.4	14,753	1,192
Tasmania	541,506	2.1	2,992	242
ACT	431,484	1.7	2,384	193
Northern Territory	246,561	1.0	1,362	110
Australia	25,689,702		141,938	11,467

Number of illnesses from in-scope food business settings

Avoiding cases of foodborne illness is the principal benefit that will arise from this project. The per cost case has been taken from preliminary estimates made by the Australian National University from cost modelling work they are presently doing for FSANZ to update, extend and increase the sophistication of current in-house modeling (with the exception of STEC). The existing FSANZ Cost of Foodborne Illness model has been used to estimate the cost of STEC.

These cost estimates are the best available estimates at this time. However, they will most likely be updated in our Decision RIS, when final estimates of costs are provided by the ANU (including STEC).

The number of cases of foodborne illness were estimated using the methodology described in Kirk et al. (2014). Model inputs were updated to circa 2020, using data from national and jurisdictional notifiable disease and population statistics. Attribution of cases to relevant food service settings was based on evidence from Australian outbreaks identified by OzFoodNet.

The cost estimates represent a significant increase to those previously estimated circa 2010 (by Kirk et al., 2014). This is a result of an increase in the estimated number of illnesses due to several factors, including an increase in population, increases in notifications in salmonellosis and campylobacteriosis, and inclusion of costs associated with sequela³¹.

Table 10: Estimated illness and cost for Category 1 food businesses, by pathogen

Pathogen	Number of cases	Average cost per case (\$)	Cost per annum (\$)
<i>Salmonella</i>	50,175	2240	112,392,000
<i>Campylobacter</i>	200,570	1391	278,992,870
Norovirus	2,728,789	394	1,075,142,866
<i>Listeria</i>	6	638,397	3,830,382
STEC	11,130	1,716	19,099,080
Total	2,990,670		1,489,457,198

Table 11: Estimated illness and cost for Category 2 food businesses, by pathogen

Pathogen	Number of cases	Average cost per case (\$)	Cost per annum (\$)
----------	-----------------	----------------------------	---------------------

³¹ This refers to longer term illness or conditions which occur as a consequence of an initial illness. For example, Immunologic conditions, such as reactive arthritis, can occur after salmonellosis, due to localized infiltration of Salmonella in joints, bones, organs, and tissues

<i>Salmonella</i>	2,116	2,240	4,739,840
<i>Campylobacter</i>	32,432	1,391	45,112,912
Norovirus	188,129	394	74,122,826
<i>Listeria</i>	0	638,397	-
STEC	4,637	1,716	7,957,092
Total	227,314		131,932,670

Net benefit of each option

The net benefits of Options 3.1 and 3.2 have been calculated over a ten-year period for both Category 1 and Category 2 businesses. A annual discount rate of 7% has been applied as per the recommendation of the Office of Best Practice Regulation.

Table 12: Output of cost–benefit analysis

Option	Business category	Net benefit over 10 years at 7% discount
3.1	Category 1	\$660,955,996
	Category 2	\$59,757,276
3.2	Category 1	\$567,125,922
	Category 2	\$93,361,451

References

Allen (2002). The Allen Consulting Group. Food Safety Management Systems; Costs, Benefits and Alternatives. Canberra: Commonwealth Department of Health and Aging.

Food Science Australia and Minter Ellison Consulting (2002). National Risk Validation Project Final Report. Canberra: NSW Department of Health & the Commonwealth Department of Health and Aging.

Kirk M, Ford L, Glass K, Hall G (2014). Foodborne Illness, Australia, Circa 2000 and Circa 2010. *Emerging Infectious Diseases*, 20(11): 1857-1864.

<https://doi.org/10.3201/eid2011.131315>

NSW Food Authority (2009). Better Regulation Statement; Food Handler Training Initiative - Food Safety Supervisor requirement for NSW hospitality businesses. Sydney: NSW Food Authority.

Office of Best Practice Regulation, *Guidance Note – Cost Benefit Analysis*, March 2020 p.7 [Cost-Benefit Analysis | OBPR \(pmc.gov.au\)](https://www.pmc.gov.au/cost-benefit-analysis) accessed 29/10/2021.

Appendix 2 – Food safety culture initiatives and education

Food safety culture in a food business is how everyone (owners, managers and employees) thinks and acts in their daily job to make sure the food they produce or serve is safe. A strong food safety culture is achieved when everyone understands the importance of making safe food and commits to doing the right thing every time.

A strong positive culture can significantly improve food safety and productivity performance. A proactive focus on food safety means issues can be identified and promptly rectified or prevented. Raised awareness and commitment to food safety across the business reduces its risk. Production of safe food means consumers are protected from foodborne illness. Businesses also benefit from preventing incidents that could cause reputational damage and financial loss.

Global, international and national focus on food safety culture

Food safety culture is being incorporated as a formal element or requirement in global and international standards, strategies and regulation including:

- the overarching General Principles of Food Hygiene of the Codex Alimentarius Commission, the global standard-setting body (September 2020)
- draft revised European regulation on food hygiene (EC Regulation No 852/2004)
- food safety strategies of the United Kingdom Food Safety Authority and the US Food and Drug Administration
- the Global Food Safety Initiative (GFSI) Benchmarking Requirements (Version 2020), setting a precedent for many other industry standards
- other global industry standards on food safety such as BRC and SQF.

A common element in each of these documents is management commitment to food safety.

Food safety culture initiatives in Australia

Australia's food regulation system has identified food safety culture as fundamental in the national *Foodborne Illness Reduction Strategy 2018-2021+*. Food regulators have been working with food businesses to promote and improve food safety culture, under Strategy activities. To date, this work has involved dairy manufacturers (see Dairy Food Safety Victoria website³²) and food service businesses. The role of authorised officers as educators is a key part of these initiatives. This work is ongoing.

Information and resources on food safety culture for use by industry and regulators are on the FSANZ website. Other national resources are being developed by FSANZ and Implementation Subcommittee for Food Regulation (ISFR).

Australian food industry schemes are adopting food safety culture requirements to reflect international benchmarks. Major retailers have also introduced requirements for management commitment to food safety. The Australian Institute of Food Science and Technology is developing a 'food safety governance guide' for food business owners and boards, to assist industry with strengthening food safety culture.

³² Available at <https://www.dairysafe.vic.gov.au/licensees/dairy-regtech/foodsafetyculture>

Appendix 3 – International approaches

Codex overarching principles

In our assessment of P1053, FSANZ has considered international best practice for food safety management arrangements based on the Codex General Principles for Food Hygiene (CXC1-1969). The General Principles document was recently reviewed to include:

- management commitment to food safety and a positive food safety culture – a section has been included in the final revision. It emphasises personnel’s awareness of the importance of food hygiene, clear roles and responsibilities, verifying controls and documentation are up to date, and appropriate training.
- the concept of additional food safety measures that are above general good hygienic practice (GHP) but are not considered critical control points (as defined within the Hazard Analysis and Critical Control Point [HACCP system]). Initially these measures were described as ‘enhanced food safety control measures’. In the final revision, the text refers to GHPs that ‘require more attention’:

Depending on the nature of the food, food process, and the potential for adverse health effects, to control hazards it may be sufficient to apply GHPs, including, as appropriate, some that **require more attention** than others, as they have a greater impact on food safety. When the application of GHPs alone is not sufficient, a combination of GHPs and additional control measures at CCPs [critical control points] should be applied. (Codex 2019 report from [CCFH51](#), Appendix IV)

In addition, the revised version includes some flexibility on the HACCP approach for small and/or less-developed food businesses. This flexibility enables a risk-based approach to determining food safety hazards and applying management measures that does not unnecessarily burden businesses.

Regulatory measures for food safety management

Internationally, there is considerable variation in food safety regulatory measures in different countries. Examples of approaches taken, particularly regarding food handler training and supervision are outlined below.

In New Zealand the Food Act 2014 focusses on the food production process rather than the premises on which the food is made. Food safety risk in New Zealand is managed through food control plans and, for lower risk food businesses, through national programs.

In the United States, the Food and Drug Administration (FDA) Food Safety Modernization Act (FSMA) is shifting the focus from responding to foodborne illness to preventing it. The FSMA requires mandatory accredited training for all food handlers, and recommends competency-based training for a certified food safety supervisor.

In Canada, the Safe Food for Canadians Act (SFCA) and Food and Drugs Act requires food businesses to employ staff that have obtained Food Handler Certification. For some managers/operators, training in a recognised food safety course may be mandatory depending on the local jurisdiction.

The European Community and the United Kingdom have both taken preliminary steps toward centralising their food safety efforts. The incentives for these efforts include enhancing efficiency and reducing costs by providing a single, consolidated focus for food safety. Currently, in the United Kingdom there is no legal requirement for food handlers to attend a formal training course or get a qualification. However, food business operators must ensure that food handlers receive appropriate supervision and training in food hygiene.

The Singapore Food Agency (SFA) has put in place an integrated food safety system to ensure that food is safe for consumption. Under this system, all food handlers who prepare and handle food need to be trained and registered with SFA. There is also a regulatory requirement that food hygiene officers assist licensees to ensure high standards of hygiene sanitation are maintained in the licensed premises.