

EXPLANATORY STATEMENT

PROPOSAL P282

PRIMARY PRODUCTION & PROCESSING STANDARD FOR POULTRY MEAT

For Information on matters relating to this Assessment Report or the assessment process generally, please refer to <http://www.foodstandards.gov.au/foodstandards/changingthecode/>

Executive Summary

Purpose

FSANZ has prepared this Final Assessment Report¹ on Proposal P282 which includes draft variations to the *Australia New Zealand Food Standards Code* (the Code).

This Report is prepared in accordance with the principles of best practice regulation recommended by the Council of Australian Governments: identifying the problem that has prompted government action; the objectives of such action and possible options for achieving the objectives. An impact analysis of the risk management options has been conducted and a preferred option recommended.

FSANZ's decision is to vary the Code by introducing a primary production and processing standard for poultry meat and to introduce a preliminary Standard (Standard 4.1.1) to augment the Chapter 4 standards. Minor amendments are also recommended to Standard 1.6.2 - Processing Requirements, Standard 2.2.1 - Meat and Meat Products and Standard 4.2.3 - Production and Processing Standard for Meat.

Introduction

This Final Assessment Report represents the final stage in addressing food safety within the poultry meat supply chain. The work has progressed with the advice and guidance of a Standard Development Committee comprising representatives from the poultry industry, government regulators and consumers.

The Problem

FSANZ undertook a scientific risk assessment of the public health and safety of poultry meat in Australia (FSANZ, 2005). This assessment concluded that the main microbiological hazards associated with poultry meat are contamination with *Salmonella* and *Campylobacter*.

In Australia, raw poultry meat purchased by the consumer is very likely to be contaminated with *Campylobacter* (90%) and to a lesser extent, *Salmonella* (43%, with 13% being non-Sofia *Salmonella* serovars²). The higher the prevalence and concentration of these two bacteria being present on raw poultry, the greater the likelihood these pathogens could be present at the point of consumption and therefore a greater likelihood of illness occurring.

Campylobacteriosis is the most commonly notified food-borne illness in Australia and it is estimated that approximately 30% of cases (or 83,100 cases per year³) can be attributed to contaminated poultry (Stafford et al, 2007). Similar data are not available for *Salmonella* but a proportion of the estimated 81,000 food-borne cases of salmonellosis in Australia per year could be reasonably expected to come from contaminated chicken.

¹ This Report has been prepared according to the FSANZ standard development process as was in force prior to 1 July 2007.

² *Salmonella* Sofia is the most commonly isolated serovar in chicken in Australia and it is not normally pathogenic to humans.

³ This is 30% of the estimated 277,000 total cases of campylobacteriosis that occurs each year in Australia (Hall et al, 2005).

Chicken meat has been identified internationally as one of the most important food vehicles for these two organisms (FAO and WHO, 2009).

Raw poultry contaminated with *Salmonella* or *Campylobacter* can cause illness if the poultry meat consumed is undercooked or contamination from the raw poultry is transferred to cooked poultry or other food that is ready-to-eat. Cross contamination between raw and ready-to-eat food is a particular concern with *Campylobacter*, as only small numbers of the bacteria are needed to cause human illness.

There are regulatory measures in place for the primary processing of poultry within an Australian Standard (AS 4465-2005), which require poultry processors to develop and implement Hazard Analysis Critical Control Point (HACCP) programs. A properly developed and implemented HACCP program should be sufficient to ensure the likelihood of poultry being contaminated with *Salmonella* and *Campylobacter* during the slaughtering process is kept to a minimum.

Industry reports that the majority of poultry growers comply with industry developed biosecurity manuals such as the *National Biosecurity Manual for Contract Meat Chicken Farming*. This manual specifies the biosecurity measures necessary to prevent the introduction of infectious diseases to poultry and the spread of disease from an infected area to an uninfected area. These measures include controls needed to minimise flock infection with *Campylobacter* and *Salmonella*.

FSANZ coordinated a national study to obtain information on the likelihood of live chickens being contaminated with *Salmonella* and *Campylobacter* and also the likelihood of the chicken being contaminated after it has been slaughtered (FSANZ, 2010). Overall, the results indicated that a large percentage of live chickens entering processing plants are infected with *Campylobacter* (84%) and, to a much lesser extent, *Salmonella* (13% with 7.5% positive for non-Sofia serovars). Samples taken at the end of primary processing gave a similar prevalence for *Campylobacter* (84%). However, the samples tested were higher for the prevalence of *Salmonella* at the end of processing (37% with 22% positive for non-Sofia serovars). The levels of *Campylobacter* on the carcass were reasonably high (~500 per 100 cm²) and for *Salmonella*, low (~1 per 100 cm²).

Overseas studies show that steps can be taken to lower both the prevalence and concentration of *Salmonella* and *Campylobacter* on-farm and at primary processing. New Zealand has been able to demonstrate a 50% reduction in cases of *Campylobacter* infection caused by food, as a result of its intervention strategy (NZFSA, 2009). This reduction has been achieved partly by improving biosecurity measures on-farm and, in particular, controls during primary processing.

Objective

The objective of this Proposal was to reduce the incidence of food-borne illness from *Campylobacter* and *Salmonella* by minimising the prevalence and concentration of these two pathogens in poultry.

Options

In order to decide the most cost-effective approach for achieving the objective, FSANZ proposed risk management options. These options included the *status quo* as a comparative measure against which appropriate non-regulatory and regulatory approaches can be assessed. Four options were proposed.

Option 1 – Status quo

No change made to the existing regulatory regime.

Option 2 – consumer education

A specific education campaign developed with the aim of improving consumer handling and cooking of poultry.

Option 3 – industry self-regulation

Poultry growers would be encouraged to follow control measures that specifically address food safety issues at the primary production level. Processors would continue to comply with the current regulatory requirements.

Option 4 – through chain food safety management consisting of regulatory elements on farm and on processors

Poultry growers and processors would be required to comply with regulatory requirements for the primary production and processing of poultry by way of an amendment to the Code.

Impact analysis

All Australian Government departments and agencies need to demonstrate that their proposals deliver net benefits to the community. This includes an analysis of the impact of each proposed risk management option on different affected parties. The parties likely to be affected by the proposed options are consumers of poultry meat and poultry products, businesses involved in the production, distribution and sale of poultry meat and poultry products and state and territory agencies.

Option 1 (*status quo*) does not introduce any new measures to lower the likelihood of the community contracting campylobacteriosis and salmonellosis from the consumption of poultry. The adoption of the *status quo* option is estimated to cost the community a figure in the range of \$AUD 14 m⁴ to \$74 m annually, which is the estimated current cost burden associated with illness from poultry contaminated with *Campylobacter* or *Salmonella*. Option 2 could reduce poultry associated illness from *Campylobacter* and *Salmonella* by 3%, according to a Dutch Government study (Havelaar et al, 2007). This option is estimated to provide a maximum benefit to the community of around \$2 m with a sensitivity analysis indicating a benefit of \$0 to \$3.4 m⁵. However, any such benefit could be short lived as the impact of the education campaign is expected to lessen over time.

⁴ Unless otherwise stated, all dollar amounts are in Australian dollars.

⁵ Sensitivity analysis involves estimating a range of outcomes (high, low and medium case) depending on the uncertainty in data and assumptions.

Option 3 (industry self-regulation), as per option 4, has the potential to reduce flock prevalence of poultry with *Campylobacter* and *Salmonella* over that possible under the *status quo*. This is achieved by encouraging poultry growers to have improved biosecurity systems in place and for industry to report to government on compliance levels. However the benefits of this option are not expected to be as high as those for option 4. Higher compliance levels are expected under option 4 because poultry growers are legally obligated to comply with biosecurity measures and penalties will apply for non-compliance.

Option 4 is the preferred option as it represents the most cost effective way of reducing the likelihood of food-borne illness occurring from the consumption of poultry. It provides a greater incentive to poultry growers to comply with biosecurity measures by legally obligating them to have these measures in place. It also introduces independent oversight by government and penalties for non-compliance. Poultry growers and transporters would be required to put in place measures to reduce flock infection with *Campylobacter* and *Salmonella*. This lowers the likelihood, and degree to which, raw poultry will be contaminated with *Campylobacter* and *Salmonella* and hence the likelihood that illness will occur.

Data provided by the Australian Chicken Meat Federation indicate compliance with a Standard for Poultry Meat will result in the industry incurring an initial cost of \$11 m in the first year and \$4 m each year thereafter. Allowing for the fact that the benefits of initial infrastructure investments will be realised over a number of years, to achieve a positive net benefit over five years would require at least a 14.5% reduction in illness or 13% if considered over 10 years (based on net present value calculations at a 7% discount rate). International experience, while not directly comparable, would suggest that reductions in excess of these percentages might be achievable.

Decision

To approve draft Standards 4.1.1 – Primary Production and Processing Standards Preliminary Provisions and 4.2.2 – Primary Production and Processing Standard for Poultry Meat and make consequential amendments to Standards 1.6.2 – Processing Requirements, 2.2.1 – Meat and Meat Products and 4.2.3 – Production and Processing Standard for Meat.

Reasons for Decision

At Final Assessment, FSANZ has approved draft variations to the Code. The amendments:

- address public health and safety concerns raised in the Scientific Assessment of the Public Health and Safety of Poultry Meat in Australia
- are consistent with the section 18 objectives of the FSANZ Act to protect public health and safety
- provide a nationally consistent legislative framework for a whole-of-chain approach to poultry and poultry product safety

- take into account existing state and territory requirements, providing a consolidated set of requirements based on scientific assessment
- provide measures that are outcome-based and would not impose any unwarranted overall additional costs to industry over existing requirements.

Implementation and review

Implementation is the responsibility of the States and Territories. The Implementation Sub-Committee (ISC) is facilitating the consistent national implementation of the Standard for Poultry Meat.

A two-year implementation timeframe has been adopted, from the date the Primary Production and Processing Standard for Poultry Meat is gazetted.

FSANZ coordinated a baseline survey on the prevalence and concentration of *Salmonella* and *Campylobacter* in chicken meat on-farm and at primary processing (FSANZ, 2010). FSANZ proposes that a follow up survey be undertaken, two to three years after the implementation of the Standard, to determine whether the Standard has been successful in lowering the prevalence and concentration of *Salmonella* and *Campylobacter* in poultry.

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SUPPORTING DOCUMENTS

The following material, which was used in the preparation of this Final Assessment Report, is available on the FSANZ website at

<http://www.foodstandards.gov.au/foodstandards/proposals/proposalp282primaryp2442.cfm>.

SD1: Cost benefit scenarios for P282 – Primary Production & Processing Standard for Poultry Meat

1. INTRODUCTION

The Australian Government has agreed that Food Standards Australia New Zealand (FSANZ) should consider food safety throughout all parts of the food supply chain for all industry sectors. FSANZ has been developing primary production and processing standards for identified industry sectors for inclusion in the *Australia New Zealand Food Standards Code* (the Code).

A primary production and processing standard, incorporated into Chapter 4 of the Code and applicable in Australia, is a set of obligations on primary producers and processors of food commodities. These obligations include measures to control food safety hazards that could occur during the production and processing of food. Development and application of primary production and processing standards to industry sectors is dependent on analysis of the public health and safety risks, economic and social factors and current regulatory and industry practices.

To date, FSANZ has developed primary production and processing standards for the seafood and dairy sectors and is currently assessing the development of standards for the egg, raw milk products, meat and seed sprouts sectors.

This Final Assessment Report represents the last stage in the development of P282 – Primary Production & Processing Standard for Poultry Meat. A Standard Development Committee (SDC) consisting of representatives from the industry, government regulators and consumers was established by FSANZ to assist and advise with this Proposal. The Draft Assessment Report⁶, released in December 2005 included a scientific assessment of the risk to public health and safety from the consumption of poultry meat products and proposed risk management options, and their analysis, for consultation.

This Report summarises the submissions from the second round of public consultation and details the response to those submissions (Attachment 3). In addition, this Report includes the proposed amendments to the Code.

1.1 Poultry meat

1.1.1 Scope

Following advice from the SDC, this Proposal examined major avian species consumed in Australia – including chickens, ducks, turkeys, geese, pigeons, quail, pheasants and guinea fowls. Wild caught birds (e.g. magpie geese and mutton birds) where processed in a registered establishment were also considered. However, ratites (emus and ostriches) were not included as they are processed using different methods and the vast majority are processed in export-registered premises which are already regulated. Ratite meat and eggs, and products thereof, will be considered under a separate Proposal at a later date.

⁶ <http://www.foodstandards.gov.au/foodstandards/proposals/proposalp282primaryp2442.cfm>

1.2.1 The production chain

Primary production of poultry includes all steps from the importation of fertilised eggs to the transport of live birds to the slaughter facility⁷ (Figure 1). Differences in primary production between chicken meat and other poultry meat species are often observed in the type of housing/facilities used, composition of feed and age at which poultry are slaughtered⁸. There are also different requirements for the importation of fertile eggs, with only chicken, duck and turkey eggs permitted to be imported into Australia.

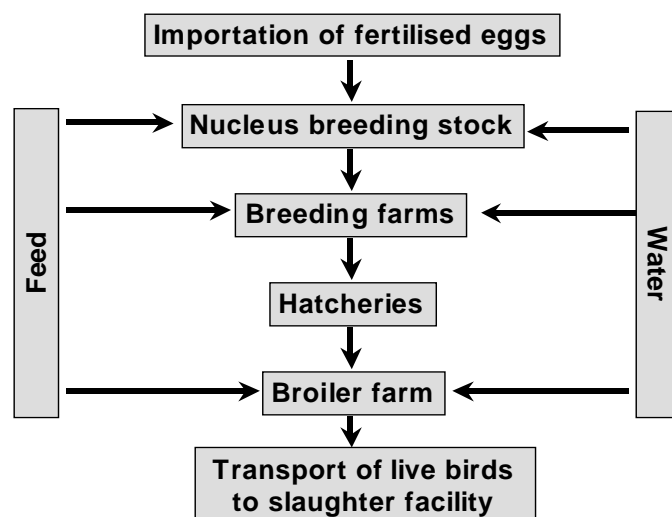


Figure 1: Stages in the primary production of poultry for human consumption

Processing of poultry includes the slaughtering of live poultry, portioning and any value adding such as crumbing and marinating (Figure 2). Poultry processing establishments vary in size from highly automated, large poultry processing establishments processing 4000-9000 poultry per hour to smaller, mainly manual or semi-automated establishments processing less than 1000 poultry per day.

Increasingly, dressed poultry carcasses undergo further processing through portioning and value-adding which may occur at the initial processing establishment, other further processing establishments or at poultry retail establishments.

⁷ Further detail of the poultry meat industry can be found in the Initial Assessment Report for Proposal P282. The report is available on the FSANZ website at http://www.foodstandards.gov.au/srcfiles/P282_Poultry_PPPS_IAR_Final.pdf.

⁸ A summary of processes involved in the production of a number of different non-chicken poultry species is included in a report from the Rural Research and Development Corporation, RIRDC Report Number 03/023. <http://www.rirdc.gov.au>

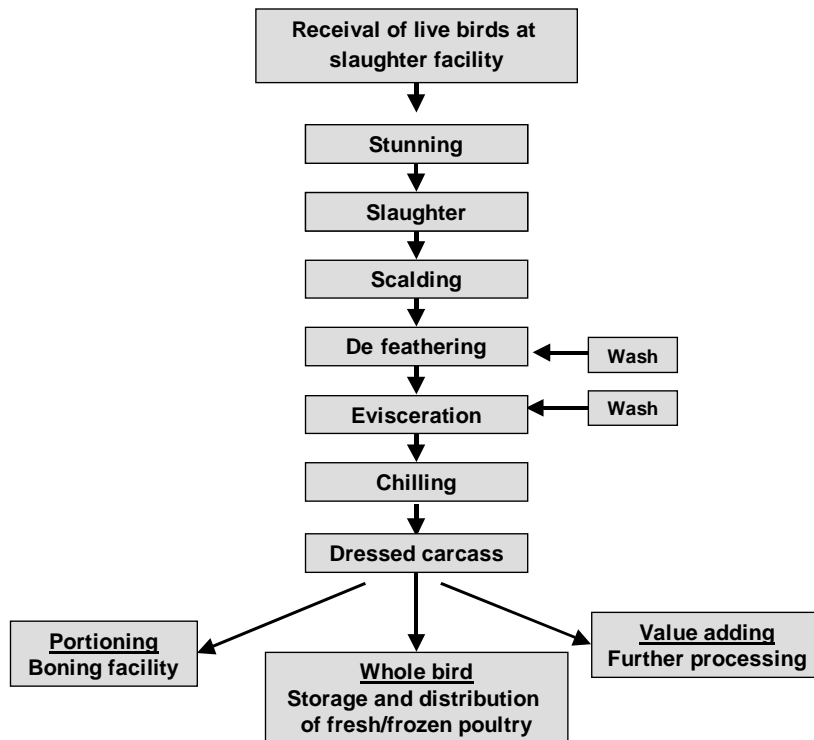


Figure 2: Stages in the processing of poultry for human consumption

1.2 The Problem

In Australia there is an unacceptably high number of food-borne illness cases occurring as a result of the high likelihood of raw poultry being contaminated with *Campylobacter* and, to a lesser extent, *Salmonella*. The higher the prevalence and concentration of these two bacteria on raw poultry, the more likely it is that illness will occur.

1.2.1 Public health risk

FSANZ undertook a scientific risk assessment of the public health and safety of poultry meat in Australia (FSANZ, 2005). This assessment concluded that the main microbiological hazards associated with poultry meat are contamination with *Salmonella* and *Campylobacter*. Commercial chicken meat has been identified as one of the most important food vehicles for these organisms (FAO and WHO, 2009).

Raw poultry contaminated with *Salmonella* or *Campylobacter* can cause illness if the poultry meat consumed is undercooked or contamination from raw poultry is transferred to cooked poultry or other food that is ready-to-eat. Cross contamination between raw and ready-to-eat food is a particular concern with *Campylobacter*, as ingestion of only small numbers of the bacteria are likely to cause illness.

The symptoms of *Salmonella* and *Campylobacter* infection are similar and generally consist of self-limiting gastroenteritis, sometimes requiring hospitalisation. In a small proportion of cases, infection can lead to more severe, long term illness such as septicaemia, reactive arthritis or Guillain-Barré syndrome, a potentially life-threatening neurological disorder.

Campylobacteriosis is the most commonly report notified disease in Australia, followed by salmonellosis. In the 2007 Annual Report of the OzFoodNet Network, campylobacteriosis was the most frequently notified illness with 16,984 notifications, or 120 cases per 100,000 population (The OzFoodNet Working Group, 2008). Salmonellosis was the second most frequently notified illness at 9,484 notifications or 45 cases per 100,000 population (The OzFoodNet Working Group, 2008). These figures represent the number of notified cases and not the numbers of actual cases. Many cases of campylobacteriosis and salmonellosis are not reported as they are not confirmed by microbiological testing.

OzFoodNet, the food-borne disease surveillance network operating in Australia, undertook a study to estimate the amount of food-borne gastroenteritis in a typical year. This study estimated that in a typical year (around the year 2000) there were approximately 277,000 **total** cases of campylobacteriosis (95% credible interval 89,800-463,000) and 92,000 **total** cases of salmonellosis (95% credible interval 26,000-158,000) (Hall et al, 2005). The report also estimated that proportion of the total cases that could be attributed to food. For *Campylobacter* this was estimated to be 75%⁹ or 208, 000 (95% credible interval 67,000 – 350,000) and for *Salmonella* 87%¹⁰ or 81,000 (95% credible interval 23,000-138,000).

It is difficult to estimate what proportion of *Campylobacter* and *Salmonella* cases can be attributed to contaminated poultry. However, it has been estimated that poultry meat may account for ~30% of the **total** number of *Campylobacter* cases that occur each year in Australia (Stafford et al, 2007), which, if the estimates from the OzFoodNet study discussed above are used, would equate to 83,100 cases per year i.e. 30% of the estimated 277,000 **total** *Campylobacter* cases. No similar data are available for *Salmonella*. However, poultry is one of the implicated foods in *Salmonella* outbreaks. In a review of reported salmonellosis outbreaks in Australia during 1995-2000, poultry meat was associated with 13% of the identified salmonellosis outbreaks and 8% of the total outbreak cases (Dalton et al, 2004).

1.2.2 Factors contributing to risk

Poultry become infected with *Salmonella* and *Campylobacter* on-farm. With *Salmonella*, day old chicks can be infected if they are sourced from contaminated breeder flocks. Poultry can also become infected with both *Salmonella* and *Campylobacter* horizontally, that is by contamination being introduced into a broiler shed.

Research was conducted by the Rural Industries Research and Development Corporation (RIRDC) on risk factors for *Campylobacter* in broilers (Miflin, 2001). Potential sources of *Campylobacter* were shown to be external to the shed. Wild birds, sheep, cattle and mice were all shown to be potential carriers of *Campylobacter*. However, one of the greatest risks to flocks being colonised with *Campylobacter* was shown to be depopulation¹¹. In particular, this study found that crates, in which caught poultry are placed, introduce *Campylobacter* into the shed and thereby infect the remaining poultry. While crates are normally cleaned daily, they are not routinely cleaned and disinfected between sheds and farms being depopulated on the same day. Once introduced into a shed, *Campylobacter* spreads rapidly and will infect the majority of remaining poultry within 3-6 days (Miflin, 2001).

⁹ 95% credible interval of 67%-83%.

¹⁰ 95% credible interval of 81%-93%.

¹¹ Depopulation is the practice of removing part of a broiler flock for slaughter. This means one flock can supply broilers of different ages (and therefore sizes) to meet market demands.

This rapid spread of *Campylobacter* throughout the flock is a result of high levels of shedding and faecal-oral transmission, assisted by shared water and feed (Lee and Newell, 2006). While day old chicks can be infected with *Salmonella* from infected breeder flocks, the major avenue by which *Salmonella* is introduced into poultry flocks is considered to be poultry feed (FSANZ, 2005). While heat-treatment of feed will lower the risk of *Salmonella* being present, contamination can still occur post processing. Birds and rodents can contaminate the raw ingredients of poultry feed as well as the heat-treated feed. As with *Campylobacter*, once poultry within a flock are infected, the *Salmonella* infection spreads rapidly to the remaining poultry in the flock.

Both *Salmonella* and *Campylobacter* colonise the gastrointestinal tract of poultry and infected birds can shed large numbers of the organism in their faeces without the birds being affected. Contamination of the poultry carcass can occur when the poultry are slaughtered, particularly during the scalding, plucking and evisceration processes (FAO and WHO, 2009). During evisceration, the content of the intestines can be spilt over onto the carcass. External faecal contamination on skin and feathers will also contribute to contamination of the carcass. Poultry carcasses are also normally chilled in a large water bath, referred to as 'spin chilling', which can further spread contamination if the spin chillers are not correctly maintained.

FSANZ coordinated a national study to obtain information on the likelihood of live chickens being contaminated on-farm with *Salmonella* and *Campylobacter* and also the likelihood of the chicken being contaminated after it has been slaughtered¹² (FSANZ, 2010). Samples were taken in 2007-2008. Overall, the results indicated that a large percentage of the live chickens entering the processing plants are infected with *Campylobacter* (84%) and to a much lesser extent, *Salmonella* (13% with 7.5% positive for non-Sofia serovars). Samples taken at the end of primary processing gave a similar prevalence for *Campylobacter* (84%). However, the samples tested were higher for the prevalence of *Salmonella* at the end of processing (37% with 22% positive for non-Sofia serovars). The levels of *Campylobacter* on the carcass were reasonably high (~500 per 100 cm²) and for *Salmonella*, low (~1 per 100 cm²).

These results are similar to the results from a retail baseline microbiological survey carried out in 2005-2006 in South Australia and New South Wales, which looked at contamination levels in raw chicken meat, purchased at retail outlets (Pointon et al, 2008). The study found that raw chicken is likely to be contaminated with *Campylobacter* (90%) and to a lesser extent *Salmonella* (43% with 13% being non-Sofia serovars).

1.2.3 How is the risk addressed under current regulatory and non-regulatory measures?

1.2.3.1 Regulatory measures

On-farm

There are currently no regulatory measures in place for poultry growers to minimise the likelihood of poultry being contaminated with *Salmonella* and *Campylobacter* on-farm.

¹² Live chickens and chicken meat were tested as chicken meat is consumed in far greater quantities than other poultry. Per capita consumption of chicken meat was estimated to have reached 37 kg/person in 2007-2008, compared to other poultry being 2.2 kg/person (ACMF, 2009).

Primary processing

In March 1995, the (then) Agriculture and Resource Management Council of Australia and New Zealand¹³ determined that aspects of all existing national meat industry codes relevant to human health would be mandated by amendment of legislation in all States and Territories. This decision was given effect by appointment of a Steering Group¹⁴, which reviewed existing codes of hygienic practices (in relation to meat) to express mandatory national standards in outcome terms. The mandatory requirements were specified within Australian Standards and require process control to be achieved through the application of HACCP¹⁵ methodology as defined by the Codex Alimentarius Commission.

The Australian Standard, AS 4465-2005 *Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption*, requires poultry processors to develop and implement HACCP programs and also includes specific requirements relating to the design and construction of the premises, the processing of poultry, health and hygiene requirements and cleaning and sanitising. A properly-developed and implemented HACCP program should be sufficient to ensure the likelihood of poultry being contaminated with *Salmonella* and *Campylobacter* during the slaughtering process is kept to a minimum.

Retail/Food Service

All food businesses in Australia are required to comply with the Food Safety Standards within the Code. Standard 3.2.2 – Food Safety Practices and General Requirements specifies what steps food businesses must take to ensure food is handled safely. With respect to poultry, this includes cooking it thoroughly and ensuring that contamination from raw poultry is not transferred to cooked poultry or other ready-to-eat food.

1.2.3.2 Non-regulatory measures

On-farm

Currently, the majority of chicken and turkey growers comply with an industry manual, *National Biosecurity Manual for Contract Meat Chicken Farming*. This manual was developed by the Australian Chicken Meat Federation in 2002 and forms part of, or is directly or indirectly referred to, in most contracts governing the farming of chicken on behalf of chicken processors. This manual specifies the biosecurity measures necessary to prevent the introduction of infectious diseases to poultry and the spread of disease from an infected area to an uninfected area. This includes controls needed to minimise flock infection with *Campylobacter* and *Salmonella*. Duck growers also follow a similar manual.

¹³ This Council has been replaced by the Primary Industries Ministerial Council and consists of the Australian/State/Territory and New Zealand government ministers responsible for agriculture, food, fibre, forestry, fisheries and aquaculture industries/production and rural adjustment policy.

¹⁴ The Steering Group comprised Chairmen and Chief Executives of State and Territory meat hygiene authorities, the Australian Quarantine Inspection Service, meat industry organisations, food safety technical advisers and the (then) Australia New Zealand Food Authority.

¹⁵ The Hazard Analysis and Critical Control Point (HACCP) system ensures the safety of food by requiring potential food safety hazards to be controlled at every step of a food's production and to keep records to demonstrate this is occurring.

A new National Biosecurity Manual for Poultry Production has been written, in part, to assist poultry growers meet their legal obligations under the proposed Standard for Poultry Meat. The new Biosecurity Manual was developed by a consultative group with representatives from the poultry industry and relevant state and commonwealth government departments. It was published by the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) in May 2009 (DAFF, 2009) and applies to meat chickens, the egg industry and growers of ducks, turkeys, game birds, emus and ostriches. It recognises the importance that biosecurity plays in minimising the incidence and spread of microorganisms of public health significance.

This new Biosecurity Manual is similar to the current biosecurity manuals in place within the poultry industry but is clearer to follow and more detailed, see section 4.3. It includes requirements for staff training and more information on water treatment, rodent control, pick-up and transport and movement of personnel and equipment.

The intention is that each part of the poultry industry adapts the generic poultry biosecurity manual to reflect the requirements as they apply to their industry. For example, the Australian Chicken Meat Federation has updated its 2002 biosecurity manual in line with the new Biosecurity Manual and is seeking approval of the revised manual with the Animal Health Committee¹⁶. Once the revised manual is approved, the new manual is likely to be referred to directly or indirectly in most contracts governing the farming of chickens, when new contracts are agreed to with chicken growers (contracts are normally in place for five years).

Consumers

The food safety management strategies for consumers of poultry meat and poultry meat products are primarily education and information dissemination. The messages include cooking poultry thoroughly until it appears cooked and juices run clear. They also include advice on separating raw and cooked foods.

1.2.3.1 International measures

The Codex Alimentarius Commission is currently developing guidelines for the control of *Salmonella* and *Campylobacter* in poultry from ‘primary production-to-consumption’, with potential control measures being considered at each step in the process. The draft guidelines consist of three sections: one addressing good hygiene practices; another covering hazard-based control measures; and a third focusing on risk-based control measures. These guidelines were considered at the Fort-first session of the Codex Committee on Food Hygiene in November 2009 and were returned to the working group for re-drafting¹⁷.

To ensure the development of the above guidelines was underpinned with the most robust scientific data, the 40th Session of CCFH requested the Food and Agricultural Organization of the United Nations (FAO) and the World Health Organization (WHO) to provide them with the necessary scientific advice.

¹⁶ The Animal Health Committee (AHC) is a committee that sits under the National Biosecurity Committee and reports to the Primary Industries Standing Committee. The AHC comprises of the Chief Veterinary Officers of the Commonwealth, states and territories and New Zealand along with representatives from the Australian Animal Health Laboratory (CSIRO), Animal Health Australia and Biosecurity Australia.

¹⁷ Further information is available from the Codex Alimentarius Commission’s website www.codexalimentarius.net.

In response to this request, FAO and WHO convened an *ad hoc* Technical Meeting from 4-8 May 2009 in Rome Italy. A report from this meeting has been published¹⁸. This report is an independent assessment and review of all available scientific information on control of *Campylobacter* and *Salmonella* at relevant stages of the broiler supply chain and has been referenced in this Final Assessment Report, where appropriate.

1.2.4 Do the current regulatory and non-regulatory measures adequately address the risk?

The FSANZ coordinated national chicken meat survey on the prevalence and concentration of *Salmonella* and *Campylobacter* on-farm and at primary processing found that chickens are contaminated at the on-farm stage of the chicken meat supply chain and this contamination is carried through to the chicken carcasses at the end of the slaughtering process. In an earlier, retail study, similar contamination levels were found on chicken meat at retail outlets. This indicates that the contamination originating from infected flocks on-farm is carried through to the chicken meat being purchased by the consumer.

During the slaughtering of poultry, steps can be taken to minimise the likelihood of poultry carcasses being contaminated with *Salmonella* and *Campylobacter*. As evidenced by the survey results, the likelihood of poultry carcasses remaining contaminated following the slaughtering process is also high, particularly with *Campylobacter*.

The RIRDC study illustrates the importance of biosecurity measures being in place on farm to minimise contamination being introduced into poultry flocks (Miflin, 2001). While most poultry growers are obligated, under contract, to have biosecurity measures in place, this approach has not proven successful in lowering flock prevalence with *Campylobacter*.

Countries that have improved practices and procedures on-farm and at slaughtering facilities have successfully reduced the amount of *Salmonella* and *Campylobacter* in raw chicken and consequently human illness from these pathogens. Countries that have interventions in place on-farm to lower the prevalence of either *Campylobacter* or *Salmonella* include New Zealand, the United Kingdom, Sweden, Netherlands, Iceland and Norway. The majority also have a regulatory backing and require biosecurity to be improved on-farm. With the exception of the UK, where the interventions growers are voluntary, these interventions have resulted in significant reductions in the flock prevalence of *Campylobacter*. See section 4.4 for further detail.

For example, in New Zealand a *Campylobacter* reduction strategy was implemented in 2006 and specific poultry processing targets set in 2008 (NZFSA, Dec 2008). Poultry processors must ensure that at the end of processing, their poultry carcasses meet the specified microbiological criteria¹⁹ (NZFSA, Jan 2008). This strategy has seen cases of *Campylobacter* infection caused by food being reduced by 50% (NZFSA, 2009).

Food-borne illness data show that the mishandling of poultry must be occurring relatively often both in the home and in food service and retail outlets as an estimated 83,100 cases of *Campylobacter* can be attributed to poultry each year (see section 1.2.1).

¹⁸ The report is available from the FAO website. <ftp://ftp.fao.org/ag/agn/jemra/MRA1911Nov09.pdf>

¹⁹ Standard (sized) processors must sample three poultry carcasses per day and are required to achieve microbiological criteria for *Campylobacter* of an 80th percentile of 1200 CFU/carcass, 3.08 log₁₀CFU/carcass.

If raw poultry is heavily contaminated, the contamination can be spread more easily from the raw poultry to the cooked poultry or other ready-to-eat foods and cause illness (see section 1.2.2).

The FSANZ, *Scientific Assessment of the Public Health and Safety of Poultry Meat in Australia*, found that measures to reduce prevalence and levels of *Salmonella* and *Campylobacter* on carcasses reduced the estimated number of cases of human illness (FSANZ, 2005). If cases of campylobacteriosis and salmonellosis are to be reduced, stronger measures further back in the poultry meat supply chain are needed to reduce the prevalence and concentration of these two pathogens on raw poultry.

1.2.5 Summary of the Problem

In Australia, raw poultry purchased by the consumer is very likely to be contaminated with *Campylobacter* (90%) and to a lesser extent, *Salmonella* (43% with 13% being non-Sofia). Campylobacteriosis is the most commonly notified food-borne illness in Australia and it is estimated that approximately 30% of cases can be attributed to contaminated poultry. This equates to 83,100 cases per year. *Campylobacter* and *Salmonella* cause gastroenteritis, which in some cases results in more serious illness.

Poultry mainly become infected with *Salmonella* and *Campylobacter* as a result of these bacteria contaminating the growing sheds. Once poultry become infected, the majority of the flock can become infected rapidly. There are many possible sources of contamination in Australia, including contaminated feed for *Salmonella*, and for *Campylobacter*, the process of depopulating poultry and in particular, the crates used to hold and transport poultry to processing facilities. Poultry infected by *Salmonella* and *Campylobacter* still appear healthy and therefore flock yields are not affected. Therefore, unless tested, there is no way of differentiating between infected and non-infected flocks.

The findings from both the FSANZ baseline survey and the retail study show that poultry are infected on-farm and this contamination is carried through to the processing plant and then to the retail product. The poultry may then be mishandled, causing illness.

Overseas studies show that steps can be taken to lower both the prevalence and concentration of *Salmonella* and *Campylobacter* on-farm and at primary processing in poultry, thereby reducing the likelihood of illness occurring.

While Australia has comprehensive regulatory measures in place for the primary processing of poultry, there are no regulatory measures for the growing of poultry on-farms. If cases of campylobacteriosis and salmonellosis are to be reduced, stronger measures are needed earlier in the poultry meat supply chain.

2. OBJECTIVES

2.1 Objective of the Proposal

The objective of this Proposal is to reduce the incidence of food-borne illness from *Campylobacter* and *Salmonella* by minimising the prevalence and concentration of these two pathogens in poultry.

2.2 Statutory considerations

There are specific legislative constraints on FSANZ as a standard setting body. These constraints will be considered in any analysis of risk management options.

2.2.1 Food Standards Australia New Zealand Act 1991

Where regulatory interventions are required (e.g. by developing or varying a food standard), FSANZ is required by its legislation to meet three primary objectives which are set out in section 18 of the *Food Standards Australia New Zealand Act 1991* (FSANZ Act). These are

- the protection of public health and safety; and
- the provision of adequate information relating to food to enable consumers to make informed choices; and
- the prevention of misleading or deceptive conduct.

In developing and varying food regulatory measures, FSANZ must also have regard to

- the need for standards to be based on risk analysis using the best available scientific evidence;
- the promotion of consistency between domestic and international food standards;
- the desirability of an efficient and internationally competitive food industry;
- the promotion of fair trading in food; and
- any written policy guidelines formulated by the Ministerial Council.

2.2.2 Policy guidelines

The Australia and New Zealand Food Regulation Ministerial Council (Ministerial Council) *Overarching Policy Guideline on Primary Production and Processing Standards* specifies a number of high order principles that must be considered where a standard is developed. These principles state that standards will be outcomes-based, address food safety across the entire food chain where appropriate, ensure the cost of the overall system should be commensurate with the assessed level of risk and provide a regulatory framework that only applies to the extent justified by market failure.

3. RISK MANAGEMENT OPTIONS

In order to determine the most effective and efficient approach for achieving the objective, FSANZ has considered various risk management options. These options include the *status quo* (the situation if no action is taken) as a comparative measure against appropriate non-regulatory (consumer education), self regulatory (industry) and regulatory (government) approaches.

The preferred option at Draft Assessment was for a regulatory approach for both the primary production and primary processing stages. At the primary production stage, the preferred option was to require poultry growers to control food safety hazards. At the primary processing stage, the preferred option was to continue to require poultry processors to control their hazards through a HACCP-based food safety management system, as currently required under State/Territory legislation.

The preferred option was generally supported by the Australian Chicken Growers Council²⁰, the Australian Food and Grocery Council, the Department of Agriculture, Fisheries and Forestry, the then Australian Consumers' Association (ACA now CHOICE), Coles Myer Ltd, the Food Technology Association of Victoria and the state enforcement agencies, with the exception of South Australia.

The South Australian Department of Health, the Department of Primary Industries and Resources South Australia and the South Australian Research and Development Institute, in a joint submission, did not support the proposed Standard for Poultry Meat. They are concerned that it will entrench current industry practice that currently results in frequent supply of contaminated poultry to consumers.

The Australian Chicken Meat Federation and Bartter Enterprises supported a non-regulatory approach on-farm and strengthening critical controls during the poultry processing phase.

We have refined the options, taking into consideration the comments and issues raised during the public consultation on the Draft Assessment Report. At Final Assessment, we have included an education campaign as an option and removed the option that obligated processors to ensure growers supplying them are controlling their food safety hazards.

3.1 Option 1 – *status quo*

Option 1, the *status quo*, retains the current situation i.e. FSANZ would not make any changes to the Code or propose any other regulatory changes for broiler farms, poultry transport operators and processors to address food safety.

In maintaining the *status quo*, there would be no regulatory requirements for poultry growers to address food safety. However, these businesses could choose to follow industry-based codes and, if a contract grower, would also be subject to any contractual obligations placed on them by poultry processors²¹.

Poultry processors would continue to comply with the *Australian Standard for the Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption* (AS 4465-2005). This Standard has been adopted under all state and territory regulations to manage poultry meat safety during the processing phase of the poultry meat supply chain.

²⁰ The Australian Chicken Growers Council provided its support with the reservation that there did not appear to be a clear understanding in the proposed Standard for Poultry Meat of which factors in producing poultry that growers, processors and contractors have control over. The Council's support was also conditional on the Standard being consistently implemented by the jurisdictions.

²¹ The major poultry processors contract poultry growers to supply poultry. As part of this contract of supply, the poultry growers are required to meet certain food safety obligations and the processor will audit the farms to ensure they are meeting these contractual obligations.

3.2 Option 2 – consumer education

Under this option, a specific education campaign would be developed with the aim to improve consumer handling and cooking of poultry. No new regulation would be introduced for poultry growers, transporters or processors i.e. as per the *status quo*.

3.3 Option 3 – industry self regulation

Under this option, poultry growers would be encouraged to follow control measures that specifically address food safety issues at the primary production level. Compliance could be promoted by industry associations and the state regulatory agencies. Industry would be expected to report on compliance rates with these food safety measures and the procedures in place to rectify areas of non-compliance.

For processing, the *status quo* would continue i.e. poultry processors complying with AS 4465-2005 as currently required under state and territory regulation.

3.4 Option 4 – through-chain food safety management consisting of regulatory elements on farm and on processors

Under this option, a primary production and processing standard for poultry is adopted into the Code. This standard would specify food safety obligations for growing poultry and the processing of poultry, poultry meat carcasses and poultry meat products for human consumption. It would also include the implementation of measures to control the food safety hazards and the responsibility to demonstrate compliance.

At the primary production stage, poultry producers would be required to identify and control the food safety hazards associated with the growing of poultry. Specific requirements have also been included for:

- the control of inputs
- waste disposal
- health and hygiene
- ensuring poultry handlers have the necessary food safety skills and knowledge
- the design, construction and maintenance of premises, equipment and transportation vehicles
- traceability of poultry
- sale or supply of unsuitable poultry.

At primary processing, poultry processors would be required to identify and control the food safety hazards associated with the processing of poultry and verify the effectiveness of the control measures. Specific requirements have also been included for:

- prohibition on processing unsuitable poultry
- control of inputs
- waste disposal
- ensuring persons engaged in poultry processing have the necessary food safety skills and knowledge
- traceability of poultry

- sale or supply of unsuitable poultry.

For primary processing, these requirements reflect what is already required under AS 4465 - 2005 (see section 1.2.3).

The approved draft Standard is at Attachment 1 and an explanation of the provisions is at Attachment 2.

Following is a table summarising the options.

Table 1: Summary of the options to manage poultry meat safety

Option	On-farm	Processing
Option 1 - <i>Status quo</i>	<p>No regulatory requirements on poultry growers to implement biosecurity measures on-farm.</p> <p>Currently the majority of growers implement biosecurity measures as part of contractual arrangements to supply live poultry to poultry processors.</p> <p>Industry regulated.</p>	<p>Regulatory requirements in state and territory legislation.</p> <p>Poultry processors must comply with the <i>Australian Standard for Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption</i> AS 4465-2005. This Standard includes a requirement for processing to be controlled through a HACCP program.</p> <p>Government regulated.</p>
Option 2 - Consumer education	<p>No regulatory requirements i.e. <i>status quo</i> (above)</p> <p>A specific education campaign is developed with the aim of improving consumer handling and cooking of poultry meat.</p>	<p>Regulatory requirements in state and territory legislation i.e. the <i>status quo</i> (above).</p>
Option 3 - Industry self regulation	<p>No regulatory requirements</p> <p>Poultry growers would be actively encouraged to improve biosecurity measures to control <i>Salmonella</i> and <i>Campylobacter</i> on-farm and the industry encouraged to report on compliance levels.</p> <p>Industry regulated.</p>	<p>Regulatory requirements in state and territory legislation i.e. the <i>status quo</i> (above).</p> <p>Government regulated.</p>
Option 4 - Regulatory requirements in the Code – on farm and on processors	<p>Regulatory requirements in the Food Standards Code</p> <p>Poultry growers legally obligated to identify and control the food safety hazards associated with the growing of poultry.</p> <p>Government regulated.</p>	<p>Regulatory requirements in the Food Standards Code.</p> <p>Poultry processors legally obligated to identify and control the food safety hazards associated with the processing of poultry. This would include a HACCP-based food safety program as in the <i>status quo</i>.</p> <p>Government regulated.</p>

4. IMPACT ANALYSIS

4.1 Option 1 – *status quo*

The major advantage of this option is that it imposes no additional costs. However, the disadvantages are that the outbreaks of poultry-related illnesses and the associated cost burden, not only on those who contract these illnesses and their families, but also on their employers and the community's medical services, remain unchanged. In addition, there is the continuing cost to government of investigation of food-borne illnesses.

4.1.1 Primary Production

In maintaining the *status quo*, there would be no regulatory requirements for poultry growers or poultry transport operators to address the food safety hazards associated with their operations. Poultry growers and transporters could voluntarily comply with industry codes and may also be required to meet contractual requirements relating to biosecurity that includes food safety matters.

While there is currently no regulatory requirement for biosecurity measures to ensure good animal health and food safety outcomes, there is a binding agreement in place between the governments (all states and federal) and the chicken meat and the duck industry which governs arrangements to minimise the likelihood of exotic diseases occurring and spreading. The agreement also establishes cost sharing principles in case of an outbreak of exotic diseases. This agreement, known under the name of Emergency Animal Disease Response Agreement (EADRA), requires under section 14 (“Biosecurity”) that each industry party to the agreement develop, maintain and implement a biosecurity program which is reviewed by Animal Health Australia on an annual basis. Further information on this agreement is available from the Animal Health Australia website²².

This agreement means the majority of poultry growers are already obligated to have biosecurity measures in place. This obligation is achieved through the processors entering into contracts with poultry growers that require compliance with biosecurity measures. The chicken meat industry has advised that chickens which may not be grown under contract i.e. where the processor is not also the owner of the chickens, is likely to be less than 1% of growers. The game bird industry has also advised that growers are usually contracted to processors for the provision of birds. While the focus of these biosecurity measures is minimising the occurrence and spread of exotic diseases, the measures necessary to minimise flock infection with *Salmonella* and *Campylobacter* are similar.

Processors audit their own growers to ensure these contractual obligations are being met. Therefore the extent to which growers comply with biosecurity measures is assessed by the industry itself. There is no independent assessment on whether the interventions are successful and the results of the FSANZ baseline survey would indicate that they are not reducing contamination.

Currently most chicken growers comply with the *National Biosecurity Manual for Contract Meat Chicken Farming*, which was developed by the Australian Chicken Meat Federation and published in 2002 (see section 1.2.3).

²² <http://www.animalhealthaustralia.com.au/programs/eadp/eadra.cfm>

The results of a benchmark survey study conducted on behalf of FSANZ found that approximately 65% of poultry primary production businesses complied with this Biosecurity Manual²³. This figure is consistent with data collected from an industry survey, undertaken earlier this year and provided to FSANZ by the Australian Chicken Meat Federation. The industry survey found that 65% of all meat chickens are grown on farms that are fully compliant with the current National Biosecurity Manual, 28% of farms are largely compliant and 7% comply to a limited degree. The areas of non-compliance included baiting programs that were insufficient, livestock not kept away from sheds and lack of fences or lockable gates. These areas of non-compliance could impact on flock infection with *Salmonella* and *Campylobacter* noting that the level of on farm compliance was not independently verified.

The ability of the current approach²⁴ to lower flock prevalence with *Salmonella* and *Campylobacter* is uncertain. Recent survey data indicates that live chickens are very likely to be contaminated with *Campylobacter*, and, to a lesser extent *Salmonella*, and this contamination is likely to be carried through to the raw chicken that is purchased by the consumer (see section 1.2.2).

It is estimated that chicken meat may account for ~30% of *Campylobacter* cases that occur each year in Australia (Stafford et al, 2007) or 83,100 cases per year. Similar data is not available for *Salmonella* but a proportion of the estimated 81,000 food-borne cases of salmonellosis per year could be reasonably expected to come from contaminated chicken.

The current measures alone do not seem to be effective in ensuring all growers work towards reducing the likelihood of live poultry being contaminated with *Salmonella* and *Campylobacter* spp. This may be because:

- the yield of poultry infected with these pathogens is not greatly affected
- while poultry processors check that their growers are complying with biosecurity measures, there is no immediate penalty for non-compliance – industry advises that continued non-compliance may result in a loss of contract for further supply of birds
- there is no independent assessment of whether the poultry growers are complying with biosecurity measures – this assessment is made by the processor the grower is contracted to supply live poultry
- growers are not offered higher premiums for supplying poultry that is free of *Campylobacter* or *Salmonella* infections, nor offered specific incentives to lower their infection rates.

Poultry processors could provide more incentive to poultry growers by paying a higher price for poultry with lower prevalence rates. Danish growers are paid a premium for supplying *Campylobacter*-free poultry to the major processor Danpo (Miflin, 2001). Danpo then sell a *Campylobacter*-free chicken²⁵, for which Danish consumers are prepared to pay a price premium (UK Advisory Committee on the Microbiological Safety of Food, March 2005).

²³ Colmar Brunton Social Research (2005) Benchmark Research on the Poultry Meat industry – Full Report prepared for Food Standards Australia New Zealand.

²⁴ Poultry growers are contracted to poultry processors to supply live poultry. Part of this contract is to comply with biosecurity measures. The processor determines compliance.

²⁵ Danish legislation covering *Campylobacter*-free status requires that there is 95% certainty that the prevalence of *Campylobacter* is below 1%. The *Campylobacter* status of the chickens must be tested prior to slaughter. See www.danpo.dk.

To date, poultry processors in Australia have not initiated any incentive system to promote the growing of poultry that has a lower incidence of *Campylobacter* and/or *Salmonella*. As contaminated raw poultry cannot be differentiated by the consumer from uncontaminated raw poultry, the consumer is unable to make this choice without poultry processors marketing and labelling potentially safer products, as has occurred in Denmark.

While responsible operators may not need additional incentives, the lack of incentives for the industry as a whole means the levels of live poultry contaminated with *Salmonella* and *Campylobacter* being supplied to poultry processors is likely to continue to be high. The higher the prevalence of *Campylobacter* and *Salmonella* on the incoming poultry, the more difficult it is for the processor to control the levels of these pathogens during processing. Contamination present after processing is likely to be carried through to the raw poultry purchased by the consumer. While the consumer could address the hazard of contaminated raw poultry through adequate cooking and correct handling, the current illness data indicates this does not always occur.

4.1.2 Primary processing

Primary processors would continue to comply with their legal obligations under AS4465-2005, which is mandated through State and Territory regulation and is enforced by the government agencies responsible for poultry processing within each State and Territory. The Meat Standards Committee²⁶ was responsible for maintaining AS4465-2005 until it was disbanded in 2007. Currently, there is no mechanism to review, update or change the Australian Standard.

Poultry processors who meet their legal obligations under AS4465-2005 should be ensuring that the contamination of poultry with *Salmonella* and *Campylobacter* is minimised during slaughtering and processing. During slaughtering and processing, poultry meat becomes contaminated, particularly during the evisceration process, when the content of the intestines can be spilt over onto the carcass. External faecal contamination on skin and feathers will also contribute to contamination of the meat. Poultry carcasses are also normally chilled in a large water bath, referred to as 'spin chilling', which can spread contamination between carcasses if free chlorine levels are not maintained in the chilling tanks.

The higher the flock prevalence of the live poultry entering the processing facility with *Campylobacter* and *Salmonella*, the more difficult it is for the processor to minimise contamination of the raw poultry with these pathogens. More stringent requirements are needed at the primary production stage, to effectively lower the prevalence and concentration of *Campylobacter* and *Salmonella* post processing.

4.1.3 Regulatory impact – industry

The *status quo* option does not impose any new costs on industry, nor does it provide any new benefits to them.

²⁶ The Meat Standards Committee was formed in 1995 to review existing codes of hygienic practice relating to meat and mandate national meat hygiene standards in outcome terms. The Committee comprised representatives from states and territory meat hygiene authorities, the Australian Quarantine and Inspection Service, FSANZ, meat industry organisations and food safety technical advisers. The Committee reported to the Primary Industries Ministerial Council.

4.1.4 Regulatory impact – government

There would be no new enforcement costs or new benefits for government. The State and Territory enforcement agencies would continue to enforce the Australian Standard for poultry. There would be no government food safety inspection of poultry primary production businesses. Government would incur the continuing cost of investigating food-borne illness.

4.1.5 Regulatory impact – consumers/community

The estimated number of cases of campylobacteriosis from poultry in Australia each year is 83,100. It is not known what percentage of the estimated number of food-borne cases of salmonellosis (81,000) can be attributed to poultry. However, an estimate can be made based on the fact that poultry meat has been associated with 13% of identified salmonellosis outbreaks and 8% of the total cases from these outbreaks (Dalton et al, 2004). This would, amount to 6480²⁷ cases per year.

However, the element of uncertainty indicated by current studies (Hall et al 2004) makes it necessary to view the incidence of poultry-meat related illness as a range rather than a finite figure.

	<u>Lower bound estimate</u>	<u>Mid point estimate</u>	<u>Upper bound estimate</u>
Salmonellosis	1,840	6,480	11,040
Campylobacteriosis	26,040	83,100	138,900
Total number of cases per annum	27,880	89,580	149,940

The severity of poultry-meat related illness is not uniform. It is estimated that 22% of food-borne gastroenteritis cases require outpatient treatment – a visit to a General Practitioner or Hospital Emergency Department – while 2.6% require hospitalisation (Abelson et al 2006). Salmonellosis and Campylobacteriosis resulting from the consumption of poultry-meat would result in a more severe illness than general food-borne gastroenteritis. However, we have used the more conservative data pertaining to the latter, to estimate health costs.

Health costs

On the basis of the above evidence (Abelson et al 2006) the following patient management assumptions are made:

Treatment	%
Self-care	0.753318
Outpatient	0.220000
Hospitalisation	0.026667
Deaths	0.000015

It is possible to estimate the number of poultry-meat related patients in each of the above categories. For self care, the lower bound estimate will be 21,003 (27,880 x 0.753318).

²⁷ This is 8% of the estimated 81 000 food-borne cases of salmonellosis that occur each year.

	<u>Lower bound estimate</u>	<u>Mid point estimate</u>	<u>Upper bound estimate</u>
Self care	21,003	67,482	112,953
Outpatient	6,134	19,708	32,987
Hospitalisation	743	2,389	3,998
Deaths	0.315	1.34	2.24
Total number of cases per annum	27,880	89,580	149,940

The most recent figures with regards the cost of medical treatment can be derived from data provided by the Australian Institute of Health and Welfare (AIHW: Refined Diagnosis Related Group 1998-99 to 2007-08). For gastroenteritis the figures for patients in different age groups and with different degrees of severity are:

	<u>2006/07(\$)</u>	<u>2007/08(\$)</u>	<u>Average (\$)</u>
<u>With complications</u>			
Over 10 years	4,872	5,229	5,051
Under 10 years	4,220	4,677	4,449
Average costs	4,546	4,953	4,750
<u>Without complications</u>			
Over 10 years	1,551	1,739	1,645
Under 10 years	1,852	2,067	1,960
Average costs	1,702	1,903	1,802
Total Average cost	3,124	3,428	3,276

For the purpose of calculation, the medical costs arising out of a case of poultry-meat related illness, is taken as the final average i.e. \$3276.

Welfare costs

It is possible to attribute a cost to the loss of health and welfare. This can be described in monetary terms as the Willingness To Pay (WTP) to avert a food-borne illness (Mathers et. al. 1999). This is derived from the monetary value \$442 ascribed to a day of good health.

Using data available at OzFoodNet the WTP is calculated as follows:

	<u>Disability weight</u>	<u>Days with illness</u>	<u>WTP (\$)</u>
Self care	0.056	3	74
Outpatient	0.094	4	166
<u>Hospitalisation case</u>			
Time in hospital	0.402	2	355
Out of hospitals	0.056	7	173
WTP for hospital case			529

From the above, it is possible to arrive at the total cost, in terms of willingness to pay, that the community bears on account of poultry meat-related illness:

	<u>Lower bound estimate</u>	<u>Mid point estimate</u>	<u>Upper bound estimate</u>
Self care	1,554,222	4,993,668	8,358,522
Outpatient	1,018,244	3,271,528	5,475,842
Hospitalisation	393,047	1,263,781	2,114,942
Total	2,965,513	9,528,977	15,949,306

Premature mortality

It is also possible to compute the cost to the community of death on account of poultry-meat related illness. This is done by taking the value of a statistical life year (VSLY) and discounting it for projection over 40 years, which is the average period of productivity for the individual (Abelson et al 2006).

VSLY	\$108,000
Discount rate	0.03
Time period	40 years

Cost of premature mortality **\$2,496,395**

Productivity costs

To determine the economic costs in terms of loss of productivity due to patients being unable to work, the following assumptions are made. It is assumed that on average a person affected by a poultry-meat related illness loses two days of work. The forgone earning is \$250 per day, derived from the ABS's Average Weekly Earnings table for August 2009 which is reproduced below. This figure is multiplied by 0.53, the proportion of the population in the workforce, to arrive at the productivity loss.

Private sector

Full-time adult ordinary time earnings	1 179.40
Full-time adult total earnings	1 228.30

Public sector

Full-time adult ordinary time earnings	1 279.40
Full-time adult total earnings	1 320.10

Total costs

It is now possible to sum up the above and arrive at a total cost under the *status quo* for poultry-meat related illness in Australia. The health care costs are derived from the \$3,276 above, the average the medical costs arising out of a case of poultry-meat related illness.

	<u>Lower bound estimate</u>	<u>Mid point estimate</u>	<u>Upper bound estimate</u>
Health care	2,435,504	7,825,410	13,098,259
WTP	2,965,513	9,528,977	15,949,306
Premature mortality	1,043,993	3,354,406	5,614,643
Productivity loss	7,388,200	23,693,910	39,734,100
Total Cost	13,833,210	44,402,703	74,396,308

4.1.6 Conclusion

Currently, the cost to consumers from food-borne illness associated with poultry contaminated with *Campylobacter* and *Salmonella* is estimated to be in the range of \$14- \$74 m annually.

The results from the FSANZ coordinated chicken meat baseline survey and the retail study indicate that contamination from chicken flocks infected with *Salmonella* and *Campylobacter* will be present after slaughtering and processing and then carried through to the raw chicken purchased by the consumer. The source of the *Campylobacter* and *Salmonella* contamination is from live chicken being infected during the growing stage. The *status quo* does not appear to provide sufficient incentives, given the present rates of contamination, for poultry growers to continuously implement the control measures necessary to consistently produce poultry flocks that have a lower infection rate of *Campylobacter* and *Salmonella*. Scope exists, on the scientific evidence available, to decrease the rates of contamination and human illness.

4.2 Option 2 – consumer education

Under this option, a specific education campaign would be developed with the aim of improving consumer handling and cooking of poultry. No new regulation would be introduced for poultry growers, transporters or processors i.e. as per the *status quo*.

Raw poultry contaminated with *Campylobacter* and/or *Salmonella* can cause illness in two ways, the pathogens can be transferred to the cooked poultry or other ready-to-eat food and be ingested or they may survive an inadequate cooking process.

Campylobacter is readily inactivated by heat and therefore will not survive normal cooking. However, illness can occur after exposure to low numbers of *Campylobacter* cells (<500 bacterial cells) (UK Advisory Committee on the Microbiological Safety of Food, 2005). Therefore cross contamination from the raw poultry via utensils and hands to ready-to-eat food is considered the most important risk factor for *Campylobacter*. For example, if after cooking, chicken is placed on the same plate the raw chicken was on, illness may occur. Illness could also occur if a chopping board used to cut raw chicken, is used to cut salad items, without being adequately cleaned and sanitised between these two tasks.

Most strains of *Salmonella* will die off at temperatures of 60°C and above (Hocking, 2003). However, the heat resistance of *Salmonella* in foods depends on the composition, the pH and the type of acidulant, and the water activity (Hocking, 2003). The US Food Code recommends poultry is cooked to at least 74°C for 15 seconds (US Public Health Service, 2009) to destroy *Salmonella*. The infective dose for *Salmonella* in food is generally higher than *Campylobacter* though varies with the strain, the food vehicle, and the age and health status of the patient.

If *Salmonella* is present in foods with a high fat content, the infectious dose is much lower as the fat content appears to protect *Salmonella* from the lethal effects of stomach acids (Hocking, 2003). Therefore, poultry contaminated with *Salmonella* could cause illness if the cooking process is inadequate and to a lesser extent, via cross contamination.

Currently, the main national avenue in Australia for dissemination of food safety information is the Food Safety Information Council (FSIC)²⁸. The FSIC is a non-profit entity supported by the Australian Government Department of Health and Ageing, FSANZ, State and Territory health and food safety agencies, local government, and leading professional, industry and community organisations. Each year, FSIC actively promotes food safety through the distribution of information directly to requesting individuals and organisations, and at food safety, educational, health and general safety conferences, exhibitions and expos. A major part of the FSIC's campaign is Food Safety Week each November which aims to pass on simple messages to improve consumer knowledge of how to handle, store and cook food safely.

The food safety messages of the FSIC tend to be general in nature and do not normally target specific foods. With respect to cooking poultry, the FSIC recommends:

- poultry is cooked until well done, right through to the centre and no pink is visible.

To prevent cross contamination, the FSIC recommends

- using a clean plate and clean utensils for the cooked meat
- washing hands, chopping boards, knives and anything else which will come into contact with the food before starting food preparation and between preparing raw and ready-to-eat foods
- storing raw meat and poultry in a leak-proof container in the refrigerator and below ready-to-eat food so that raw juices can't contaminate it.

The FSIC food safety campaign employs community media and other low cost measures to get its message across. Its annual budget is about \$150,000 and its reach and efficacy is limited. In the Netherlands, the cost of an information campaign was estimated at €1 m per year (Havelaar et al, 2007). Extrapolating for Australia on the basis of population, a comparable campaign is estimated to cost \$2.26 m. An effective media campaign would require an on-going evaluation program which would survey public opinion prior to the introduction of the media campaign and review public opinion on a periodic basis. It is estimated that an ongoing evaluation program would require around 5%, that is, \$133,000 per annum, of the cost of the media campaign. The total cost of a media campaign would therefore be about \$2.4 m per annum.

Evidence from a consumer survey conducted in 2004-05 on poultry meat food handling practices in the home undertaken for FSANZ suggests that most consumers report to be adhering to these practices²⁹.

²⁸ Information on the Food Safety Information Council is available from the Council's website, www.foodsafety.asn.au

²⁹ In 2004, FSANZ commissioned Colmar Brunton Social Research to obtain benchmark data on awareness, knowledge and behaviour of poultry meat businesses, government enforcement officers and consumers in relation to poultry food safety issues.

Consumers are careful to avoid practices that may lead to cross-contamination of raw poultry meat and other food items, and also report a good understanding of how to determine when chicken is cooked (FSANZ, 2005).

In summary, the results relevant to handling and cooking were

- almost all respondents (98%) indicated that they do not use the same plate or surface to store cooked and uncooked poultry meat
- almost all consumers wash the utensils that they use with raw poultry (96%), wash their hands both before (94%) and after (95%) handling raw poultry, and also dry their hands after washing them (93%)
- consumers usually determine when chicken pieces are cooked when the chicken meat is no longer pink (30%), or had turned white (28%)
- consumers usually determine that a whole chicken is cooked by inserting a skewer or fork into the meat (32%), following a set recipe (28%), or waiting until the juices run clear (21%).

In this survey, consumers were also asked where they currently get information about safe handling and cooking of poultry meat. Around one-quarter of consumers said that they currently obtain information on safe food handling practices. Of these respondents, one-quarter (26%) obtain this information from their family or friends, 22% obtain this information from television and 16% find it in magazines or cookbooks. However, when prompted with options for information sources, up to 69% of consumers say that they will consider looking for information on safe food handling practices from magazines/cooking books (69%), television (67%), butcher/retailer (53%), government health department (36%), FSIC (32%) and the Internet (30%). Multiple responses were permitted.

The Colmar Brunton Social Research indicates that the majority of consumers already know how to handle and cook poultry safely and *report* that they follow the recommended safe practices. Therefore, it is questionable how successful additional consumer education will be. It is well recognised that consumers already seem to possess adequate knowledge about domestic food hygiene practices, but that this knowledge is not necessarily translated into consumer behaviours (Redmond, Griffith 2003; Fischer et al, 2007).

In its submission, the then ACA agreed that further 'generic' food safety messages will do little to improve consumer handling of poultry and that consumer education specific to poultry was needed, in conjunction with regulatory measures. In their joint submission, the South Australian Department of Health, the Department of Primary Industries and Resources South Australia and the South Australian Research and Development Institute queried whether there should be a legal requirement for raw poultry products to be labelled with handling/cooking instructions.

The Dutch Government commissioned research to investigate the potential costs and benefits of interventions to reduce the exposure of the Dutch population to *Campylobacter* from broiler chicken. A series of interventions was considered along the broiler chicken meat supply chain, including consumer education. The view was that consumer education by an 'information campaign' was not likely to be a promising strategy, mainly because the potential effect of such a campaign in terms of modified consumer behaviour is generally considered low (Havelaar et al, 2007).

Based on the limited literature, it was estimated that after an information campaign 3% (with a margin between 0 and 7%) of all non-hygienic food preparers would improve their behaviour (Havelaar et al, 2007). The decrease in the risk to consumers was calculated at 3% (with a margin of 0-5%), leading to approximately 500 prevented cases of gastroenteritis. Additionally, the cost of an information campaign was estimated at €1 m per year (~\$AUD 1.7 million) and was therefore not considered cost effective.

A study in the Netherlands investigated various methods of improving food safety in the domestic kitchen with respect to handling poultry contaminated with *Campylobacter* (Nauta et al, 2008). Some web-based information interventions were designed and tested on participant motivation and intentions to cook more safely. The most promising information intervention was tested by recruiting a set of participants who prepared a salad with chicken breast fillet carrying a known amount of tracer bacteria. The amount of tracer bacteria that could be recovered from the salad was used as a measure of hygiene. However, when the effect of this information intervention was tested, it alone had no measurable effect on the health risk. For the risk to decrease sharply, a behavioural cue needed to be embedded within the instructions for the salad preparation relevant to the prevention of cross-contamination.

The study concluded that consumer food safety interventions should focus on activation of the knowledge that consumers already possess at the moment of food preparation, rather than general food safety education (Nauta et al, 2008). However, how this could be achieved in practice at a community wide-level was not discussed and it was recommended that this be investigated in future research.

To have any chance of success, a consumer information campaign would need to be developed that was targeted at improving consumer handling and cooking of poultry, with an emphasis on minimising cross contamination. The messages would need to be delivered through television, magazine/books and at butchers/supermarkets and other retailers where poultry is sold. Based on the Nauta study, the education campaign could be enhanced by also including more specific handling instructions on the packaging of raw poultry.

4.2.1 Regulatory impact – industry

There is no direct impact on poultry growers, transporters or processors under this option, as no new regulation is recommended. However, the industry generally, through the representative industry bodies, could be encouraged to contribute to the development and cost of the education campaign. The cost to industry would also rise significantly if handling instructions were recommended for inclusion on packaged poultry.

This could best be achieved by the voluntary adoption of a label, containing handling/cooking instructions, on packaged poultry meat. In a study commissioned by FSANZ, the cost of labelling has been calculated to be \$19,424 per poultry processing unit (Cost Schedule for Food Labelling Changes by PricewaterhouseCoopers March 2008). This is the cost attributed to the setting up of a labelling facility, for a product marketed in a flexible bag or pouch. It assumes a standard label that could be incorporated in all poultry meat products leaving the processing unit, regardless of size/weight.

The poultry meat industry in Australia is centralised in ownership and organisation. The Australian Chicken Meat Federation has indicated that there are two large integrated companies supplying 70% of broiler meat consumed and approximately 20 major chicken meat processing plants. This industry structure could facilitate a voluntary labelling option.

From the above, it is calculated that for an estimated 25³⁰ poultry processing plants at a cost of \$19,424 per unit, voluntary labelling would cost \$485,600.

4.2.2 Regulatory impact – government

The government may be called upon to bear the cost of the education campaign amounting to about \$2.4 m per annum, or it may share this cost burden with industry.

In return, the government will benefit from the reduced costs in the area of health and medical care as a result of a reduction in poultry meat-related illness.

For effectiveness, any education campaign would need to be ongoing. As part of the strategy to lower the incidence of food-borne illness in the United Kingdom, and in particular *Campylobacter*, a food hygiene campaign was undertaken by the UK Food Standards Agency in June 2004 and July 2005 to coincide with the peak incidence of *Campylobacter* in human (spring/summer). It aimed to promote an increase in awareness of cross-contamination in the home. The raised awareness of cross contamination was followed by a reduction in the number of cases of *Campylobacter* in humans, although the level of decrease was short term (UK Advisory Committee on the Microbiological Safety of Food, March 2008).

4.2.3 Regulatory impact – consumers/community

Consumers would encounter no additional costs if a wholly government funded campaign is undertaken. However, consumers of poultry meat products may incur costs if industry contributes to the funding of a campaign and passes some or all of these costs on to the consumer. The cost of poultry would also increase, if labelling were to be included on poultry packages, as industry would seek to recover the costs of this labelling.

The percentage of additional industry costs passed on to the consumer is not shown separately, as these costs have already been reflected in full under in section 4.2.1 Regulatory impact – industry.

Consumers would benefit from this option because of a reduction in illness.

4.2.4 Conclusion

The cost of an education campaign, specific to the safe handling and cooking of poultry, is estimated to be approximately \$2.39 m per annum. The voluntary adoption of a warning label, containing handling/cooking instructions, on packaged poultry meat, could cost about \$485,600. The total cost of Option 2 would be around \$2.87 m in its first year.

³⁰ This includes an estimate of the total number of processing plants i.e. 20 major plants and five minor plants.

On the basis of the Dutch study cited above (Havelaar et al, 2007), a 3% decrease in the prevalence of poultry meat-related illness, both with respect to *Campylobacter* and *Salmonella*, can be expected. This would reduce the number of persons affected by poultry-meat related illness in any given year by the following figures, broken down according to the severity of such cases:

	<u>Lower bound estimate</u>	<u>Mid point estimate</u>	<u>Upper bound estimate</u>
Self care	630	2,024	3,389
Outpatient	184	591	990
Hospitalisation	22	72	120
Deaths	Nil	Nil	Nil
Total number of cases per annum	836	2,687	4,499

The reduced number of cases would result in a fall in the welfare costs calculated as Willingness To Pay:

	<u>Lower bound estimate</u>	<u>Mid point estimate</u>	<u>Upper bound estimate</u>
Self care	46,620	149,776	250,786
Outpatient	30,544	98,106	164,340
Hospitalisation	11,638	38,088	63,480
Total cost	88,802	285,970	478,606

Consequently the total costs of illness under this option will be reduced as follows:

	<u>Lower bound estimate</u>	<u>Mid point estimate</u>	<u>Upper bound estimate</u>
Health care	72,072	235,872	393,120
WTP	88,802	285,970	478,606
Productivity loss	221,540	712,055	1,192,235
Total Cost	382,414	1,233,897	2,063,961

The benefit derived from a 3% reduction in illness equates to a range of \$0.38-2.06 m.

Based on the above costs and mid-point estimate of benefits, this option is likely to involve a net cost over 10 years of \$8.6 m (calculated as the net present value using a 7% discount rate). Noting that there is significant uncertainty around the costs of illness, the net cost over 10 years could range from \$2.8-14.6 m, using the above upper and lower bound estimates of benefits.

To break even this option would need to produce around a 6% reduction in illness over a 10-year period. This would be double what was achieved in the overseas example identified above.

4.3 Option 3 – industry self regulation

Under this option, poultry growers would be encouraged to follow control measures that specifically address food safety issues at the primary production level. Compliance with the control measures could be promoted by industry associations and the state regulatory agencies. Industry would be expected to report on compliance rates and the procedures in place to rectify areas of non-compliance.

For processing, the *status quo* would continue i.e. poultry processors complying with the Australian Standard for poultry (AS 4465-2005) as currently required under state and territory regulation.

The control measures for poultry growers would need to include those identified within the Poultry Scientific Assessment as having the most impact on the infection of poultry flocks with *Campylobacter* and *Salmonella*. These were:

- measures on-farm to minimise environmental contamination of poultry from *Salmonella* and *Campylobacter*
- measures to minimise *Salmonella* contaminated feed being fed to poultry
- measures to minimise contamination of live poultry during transport.

As discussed in section 1.2.3, a revised Poultry Biosecurity Manual has already been developed and was published by DAFF in May 2009. This revised Biosecurity Manual addresses the areas highlighted within the Poultry Scientific Assessment as necessary to minimise flock infection with *Salmonella* and *Campylobacter* such as:

- the use of footbaths or dedicated footwear for each shed
- hand sanitation at the entry to each shed
- controlling access to wild birds and vermin into sheds
- keeping shed surrounds free from debris and minimising vegetation
- using potable or treated drinking water
- using closed feeding systems and protecting feed from contamination by wild birds and rodents
- clean protective clothing for personnel
- controlling contamination from visitors
- minimising contamination during pick up and transport.

While the revised Biosecurity Manual is similar to the current biosecurity manuals in place within the poultry industry it is clearer to follow and more detailed. It includes new requirements for staff training and more detail on control measures for water treatment, rodent control, pick-up and transport and movement of personnel and equipment.

The intention is that each part of the poultry industry adapts the revised Biosecurity Manual to reflect the requirements as they apply to their industry. The Australian Chicken Meat Federation has already done this for the chicken growers and once approved, compliance with the new National Farm Biosecurity Manual for Chicken Growers will become part of any new contract with growers.

Implementation and enforcement of these new biosecurity manuals, by the poultry industry, would therefore meet the criteria for a self-regulatory approach.

There would need to be a high level of compliance with the new biosecurity manuals (for each poultry sector) for this option to be effective at lowering flock infection with *Salmonella* and *Campylobacter*. FSANZ and industry surveys discussed under option 1 found that compliance rates were reasonably high with the current chicken meat manual. However, there were areas of non-compliance which could impact on flock infection with *Salmonella* and *Campylobacter*.

Poultry processors would be responsible for assessing compliance and putting in place sanctions for poultry growers who are found to be non-compliant. Currently, this approach is used for the existing chicken meat biosecurity manual. To potentially achieve higher compliance levels, over that achieved under the *status quo*, industry will need an additional incentive to comply. Therefore, this option recommends industry agrees to report to government on overall compliance levels (with respect to biosecurity measures affecting food safety) and actions being taken by industry against non compliant growers. An obligation on poultry processors to report on compliance levels may provide a greater incentive, over the *status quo*, to ensure their growers comply with the revised biosecurity manuals. This could result in greater compliance levels than the *status quo*.

4.3.1 Regulatory impact – industry

For poultry growers who are obligated (under contract) to follow revised biosecurity measures, there may be costs associated with modifying procedures/practices. While the revised biosecurity manuals will be similar to the previous ones, there is a new requirement for staff training. More detail will also be included on control measures, which may require changes to procedures. There may also be costs associated with upgrading facilities such as sheds and equipment. The extent of these costs will depend on the degree to which an individual business needs to modify procedures/practices and upgrade facilities.

There may be benefits for growers who fully comply with the biosecurity measures in the revised biosecurity manuals as they may be preferentially contracted to supply poultry to processors.

There are likely to be costs to the poultry industry to report on compliance rates with the revised biosecurity manuals and follow up on non-compliance. The industry associations, who represent each poultry sector, will have costs associated with compiling compliance data and supplying this to government.

4.3.2 Regulatory impact – government

There would be no new enforcement costs to the government.

There may be some costs to government to assess the adequacy of industry self-regulating poultry growers and transporters. Government would need to encourage the poultry industry to report to government on compliance levels with the revised biosecurity manuals and the systems in place to follow up on areas of non-compliance. Further microbiological surveys on prevalence of flocks with *Salmonella* and *Campylobacter* could also be conducted to assess whether improvements are occurring.

However, there would be costs associated with conducting these surveys.

There may be benefits to government from reduced illness rates from *Salmonella* and *Campylobacter* if biosecurity measures improve when the new biosecurity manuals across the poultry industry are implemented.

4.3.3 Regulatory impact – consumers/community

The combination of improved biosecurity measures and higher compliance rates across the poultry industry has the potential to reduce flock prevalence of poultry with *Salmonella* and *Campylobacter* over that possible under the *status quo* and thereby reduced illness rates from these pathogens.

However, as discussed under the *status quo*, an obligation to meet biosecurity measures as part of a contract with a grower may not offer sufficient incentive for poultry growers to continuously implement the biosecurity measures necessary to minimise flock infection with *Campylobacter* and *Salmonella*. While poultry growers may risk loss of contract if their biosecurity measures do not meet the processor's expected standards, this industry driven system has not resulted in low infection rates of live poultry with *Campylobacter* and *Salmonella*. As discussed under the *status quo*, this may be because there are not sufficient incentives (positive or negative) to lower flock infection rates with *Campylobacter* and *Salmonella*. Any benefit, therefore, may be minimal.

4.3.4 Conclusion

This option potentially has higher costs to industry and government than the *status quo*. Poultry growers may incur the costs to improve biosecurity measures where they are currently inadequate and the poultry industry generally will incur costs reporting to government on compliance levels. Government will incur the costs of assessing the adequacy of this industry self-regulatory system. However, this option may be more effective in lowering flock prevalence of poultry with *Salmonella* and *Campylobacter* than the *status quo* because of:

- implementation of improved biosecurity measures
- improved compliance levels as there is more incentive on poultry processors to ensure their growers are implementing the necessary biosecurity measures.

4.4 Option 4 - through-chain food safety management consisting of regulatory elements on farm and on processors

Under this option, a primary production and processing Standard for poultry is adopted into the Code (see attachment 1 for the draft Standard). This Standard would specify food safety obligations from animal production to the processing of poultry, poultry meat carcasses and poultry meat products for human consumption. It would also include the implementation of measures to control the food safety hazards and the responsibility to demonstrate compliance.

The majority of countries that have improved practices and procedures on-farm and at slaughtering facilities have successfully reduced the amount of *Salmonella* and *Campylobacter* in raw chicken.

Countries that have interventions in place to lower the prevalence of either *Campylobacter* or *Salmonella* include New Zealand, the United Kingdom (UK), Sweden, Netherlands and Denmark. The majority of these interventions are for *Campylobacter* as contaminated poultry is considered to be the main cause of campylobacteriosis.

In New Zealand the *Campylobacter* Risk Management Strategy was formally implemented in late 2006 to achieve a sustainable reduction in *Campylobacter* levels on chicken meat. In 2008, the Strategy was updated and specific poultry processing targets were set. Poultry processors must ensure that at the end of primary processing, their poultry carcasses meet the specified microbiological criteria (NZFSA, Jan 2008). When results are higher than the criteria, the processor is required to take corrective action. Details of the requirements can be found on the NZFSA website³¹. The Strategy in its entirety has seen the mean prevalence of *Campylobacter* being reduced by nearly half (from 57% in 2007 to 30.6% in 2008) and the mean levels reduce from 3.07 log₁₀CFU/carcass (1175 CFU/carcass) to 2.41 log₁₀CFU/carcass (257 CFU/carcass). This strategy has seen cases of *Campylobacter* infection caused by food, being reduced by 50% (NZFSA, 2009).

These reductions in New Zealand have been predominantly achieved by processors improving their good hygienic practices during slaughter and dressing. The increased use of processing aids has undoubtedly been a significant contribution. Further activities have included broiler growers improving control measures on farm³², improvements in packaging and providing safe food messages to food distributors, retailers and consumers.

In 2005, the UK Food Standards Agency set a strategic target of achieving a 50% reduction in the incidence of UK produced chicken testing positive for *Campylobacter* by 2010 (UK Food Standards Agency, 2009a). The baseline, against which this target was to be measured, was set at 70% based on the surveillance data available at the time (UKFSA, 2009a). A key part of the strategy to achieve the 50% reduction is the 'Cleaner Farms, Better Flocks' program which aims to improve hygiene measures on broiler farms and ensure that best practices are followed at all times (UK Food Standards Agency, 2009b). The key messages are:

- keep livestock away from poultry houses
- only allow essential visitors onto the farm
- use dedicated boots for each poultry house
- eliminate vermin
- wash and sanitise hands before and after visiting the poultry shed

In October 2009, the UK Food Standards Agency published its findings on a recent survey testing for *Campylobacter* and *Salmonella* in chicken on sale in the UK (UKFSA, 2009a). The survey was undertaken between May 2007 and September 2008. The prevalence of *Campylobacter* in chicken meat at retail (overall) was 65.2% for the 927 samples tested. *Salmonella* prevalence in chicken at retail remained low at 6.6%. This survey demonstrated that a significant proportion of chicken on sale in the UK remains contaminated and that to date, the strategy to achieve a 50% reduction in the prevalence of *Campylobacter* in retail chicken meat i.e. from 70% to 35%, has not yet been successful.

³¹ <http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/nmd/nmd-09-schedule-1-technical-procedures.pdf>

³² At the farm level, generic aspects of biosecurity have been improved but currently it is accepted that this only results in a limited reduction in the level of contamination of slaughtered birds

The UK Food Standards Agency has not publically speculated why the implementation of the Cleaner Farms, Better Flocks campaign has not achieved the decline in flock prevalence of chickens with *Campylobacter* that was expected. The Agency has advised that there was an initial decrease in cases of campylobacteriosis following the commencement of the campaign. However, this decrease was not sustained. Compliance with this campaign is not mandatory and there is no publicly available information on the level of compliance with the recommended biosecurity measures.

A *Campylobacter* monitoring program in broiler chickens was carried out in Sweden from 2001 through to 2005. The objective was to reduce the occurrence of *Campylobacter* in the food chain through preventive measures, starting with primary production. The annual incidence of *Campylobacter*-positive slaughter batches progressively decreased from 20% in 2002 to 13% in 2005 (Hansson et al, 2007). When *Campylobacter* spp. are found in a flock, the farm of origin is advised to implement more stringent biosecurity measures to prevent subsequent flocks from being infected with *Campylobacter*. There are no statutory sanctions or penalties, but when the program started in 2001, eight of nine slaughterhouses were paying a premium for *Campylobacter*-free flocks (Hansson et al, 2007).

In the Netherlands, the *Salmonella* flock prevalence dropped from 20% in 1999 to 11% in 2002. During this period, the *Campylobacter* flock prevalence remained fairly stable at 20%. In 1997, the Dutch Products Boards for Livestock, Meat and Eggs implemented monitoring and control programs to reduce *Salmonella* and *Campylobacter* contamination of poultry meat. These programs include, amongst others, microbiological examination of flocks at each stage of the production chain, application of strict hygiene measures throughout the production chain and a logistic slaughtering procedure for broiler flocks (Van de Giessen et al, 2006).

In 2003, the Danish voluntary strategy to control *Campylobacter* was intensified. The focus was on biosecurity, allocation of meat from *Campylobacter*-negative broiler to the production of chilled products and consumer information campaigns. While it was not possible to identify the effect of each single initiative at the farm, the implementation of the control strategy did coincide with a decrease in the number of positive flocks. From 2002 to 2007, the percentage of *Campylobacter*-positive broiler flocks at slaughter decreased from 43% to 27%. The number of reported cases of campylobacteriosis also decreased by 12%. While higher decreases were expected, the market share of imported broiler meat doubled from 20% in 2002 to 40% in 2006 and *Campylobacter* is found more frequently in imported broiler meat compared to domestically produced broiler meat (Rosenquist et al, 2009).

Iceland has experienced a dramatic decrease in human cases of campylobacteriosis following implementation of control measures in broiler production (Rosenquist et al, 2009). Since strict control measures were implemented along the whole food chain (birds to humans) in 2000, campylobacteriosis cases fell from 116 cases/100 000 population to <10 cases/100 000 population (Stern NJ et al, 2003; Callicott KA et al, 2008).

The control measures in Iceland comprised biosecurity at farm, freezing of meat from *Campylobacter*-positive flocks and intensive consumer education campaigns (Rosenquist et al, 2009). The interventions in Iceland have been more effective than in other Northern European countries because only domestically produced broiler meat is consumed in Iceland (Rosenquist et al, 2009).

With the exception of the UK, the information above indicates that countries have achieved reductions in flock prevalence of poultry infected with *Campylobacter* and *Salmonella*, following targeted interventions. However, the exact level that could be achieved in Australia is difficult to estimate.

4.4.1 Primary production

The draft Standard for poultry meat requires a poultry producer (poultry grower or transporter) to:

- examine all of its processing operations to identify potential hazards and implement control measures to address those hazards
- have evidence to show that a systematic examination has been undertaken and that control measures for those identified hazards have been implemented.

The poultry producer must operate according to a food safety management statement that sets out how the requirements of the Standard will be complied with. Other requirements have been specified for poultry producers in relation to:

- controlling inputs
- waste disposal
- health and hygiene
- ensuring persons engaged in poultry growing or transporting have the necessary skills and knowledge in food safety and food hygiene commensurate with their work
- design, construction and maintenance of premises, equipment and transportation vehicles
- traceability
- not selling or supplying poultry that is unsuitable.

4.4.1.1 Regulatory impact at primary production – industry (poultry growers and transporters)

The specific practices a poultry primary production business would be expected to implement to fulfil the above requirements that could entail costs include:

- protecting poultry from wild birds and rodents - this would require sheds to be wild bird and rodent proofed to an extent that is practicable to achieve the required outcome and for pest control management to be in place
 - providing clean continuous drinking water for the birds
 - providing feed that has been treated to minimise *Salmonella* and stored so that it is protected from contamination introduced by pests, wild birds and other livestock
 - cleaning and disinfecting sheds in between each flock
 - cleaning pickup equipment, crates and trailers
 - providing clean and treated litter for each new flock and litter storage that protects litter from contamination introduced by birds, pests and other livestock
 - providing protective boots and clothing for personnel and visitors
 - providing appropriate facilities to dispose of dead birds
 - providing toilet and hand washing facilities for staff and visitors
 - providing adequate facilities for waste disposal including waste water disposal
- stocking density management.

There would also be costs associated with keeping records to demonstrate compliance. These would be:

- pest control
- vendor declarations in relation to feed and litter
- chemical use
- water treatment (where applicable)
- cleaning and disinfection of sheds and equipment
- waste disposal
- staff health and hygiene i.e. hand washing, foot washing and protective clothing
- staff training
- staff declarations in relation to contact with other poultry, pigs etc
- visitor log including visitor declarations and conditions
- procedures relating to pick up.

There are other practices a poultry primary production business would need to follow that would have no or minimal costs associated with them such as:

- withdrawing feed at an appropriate time prior to harvest to minimise faeces during transport and holding times
- cleaning up feed spills promptly
- minimising stress of birds during transport to minimise shedding of faeces - this includes not overcrowding and handling birds with care during loading and unloading;
- maintaining the farm in a clean and tidy condition
- separating sick or dead birds from the main flock
- ensuring poultry handlers wear protective cloth and maintain personal hygiene when working in the sheds – e.g. farm staff do not have contact with other poultry or other avian species and minimise contact with domestic and wild animals
- limiting access to sheds
- storing chemicals separately (away from feed, litter and poultry)
- maintaining appropriate records of fertile eggs and/or hatched poultry live poultry and live poultry supplied to processors.

Industry has advised that there will be costs to non-compliant poultry growers to meet the proposed Standard under this option. With a transition period of two years recommended for the proposed Standard for Poultry, compliance costs for the poultry primary production sector can be spread to minimise the impact.

One off costs

The Australian Chicken Meat Federation (ACMF) assesses that approximately 80 farms would each need to spend \$20,000 on structural improvements covering gates, fences, bird proofing, rodent stations, hand sanitizers, change facilities etc to meet their legal obligations under the proposed Standard. This totals \$1.6 m.

ACMF also assess that a maximum of 500 other farms would have to spend \$5000 on structural improvements which totals \$2.5 m.

The cost of developing and implementing a food safety management statement, estimated at \$3000 per farm, will amount to \$2.4 m for the 800 farms.

ACMF estimates that total one off costs for all poultry farms will be \$6.5 m nationally.

On-going costs

ACMF estimates that monitoring, record keeping and reporting would entail \$4.4 m nationally in personnel costs each year for farms.

Poultry growers may also incur licence and inspection/audit costs (see details below). These costs range from zero for poultry growers in Victoria, Western Australia and Tasmania to \$740 per annum in Queensland for compliant farms. New South Wales is proposing a cost of \$323 per annum for poultry growers³³ and in SA \$250/annum. Farms that do not comply will incur additional inspection/audit costs.

According to Safe Food Production Queensland, there are 70 broiler farms within this State. In Queensland, these 70 farms will incur a licence fee of \$740 per annum; a total of \$51,800 per annum.

According to available data, (Department of Agriculture, Fisheries and Forestry, November 2008) the proportion of the national chicken meat production for each State and Territory approximately reflects their respective shares of the Australian population. The number of poultry farms in the other states is calculated on this basis. Extrapolating, there would be 301 farms in New South Wales (33% of the population) where the licensing will be \$323; a total of \$97,223. In South Australia (8%) 73 farms will pay \$250 each; a total of \$18,250.

Out of an estimated 800 poultry farms Australia-wide, there are 356 in States where the governments will either bear the inspection/auditing costs or have still to determine the level of fees to be charged. By considering an average of the fees prescribed by the three states where information is available, namely Queensland, New South Wales and South Australia, we have assumed a licensing fee of \$437 for the remaining 356 farms; a total of 155,809.

In addition to the \$167,273 that State Governments in Queensland, New South Wales and South Australia will incur, we estimate that nationally, licensing/inspection/auditing costs will total \$323,082.

The on-going costs for farms in complying with the Poultry Standard will be \$4.72 m annually.

These costs are summarised below.

³³ This is an estimate only. NSW is still to consult with the poultry industry and make a final decision on licensing and inspection/audit costs.

Primary Production

Initial one off costs	Costs
Structures & Facilities	
80 non-compliant farms	\$1,600,000
500 partial compliant farms	\$2,500,000
Food Safety Management	\$ 2,400,000
Total Initial Costs	\$ 6,500,000
Ongoing / Annual Costs	
Monitoring & Record keeping	\$4,400,000
Licensing	\$323,082
Total Ongoing Costs	\$4,723,000
TOTAL COSTS	\$11,223,000

Taking the median \$44 m (see 4.1.5 above) as the cost of illness, in order to be cost-effective this option should provide a 13% reduction in poultry-meat related illness over 10 years (based on a 7% discount rate) or 14.5% over five years.

Alternatively, if a 20% reduction in illness were achieved the net benefit over five years (in present value terms using a 7% discount rate) would be \$10.5 m. If only a 10% reduction in illness were achieved there would be a net cost over five years of \$7.7 m.

Industry has also provided costs which the industry believes will be faced by feedmills if there was a requirement for *Salmonella*-free feed. The proposed Standard for Poultry Meat requires a poultry producer to take all reasonable measures to ensure inputs (such as feed) do not make the poultry unsuitable. The specific practices a poultry primary production business would be expected to implement to fulfil this requirement include providing feed that has been treated to reduce *Salmonella* and stored so that it is protected from contamination introduced by pests, wild birds and other livestock. There is no requirement for *Salmonella*-free feed.

There are also costs provided by industry based on the assumption that segregation of eggs from *Salmonella*-positive breeder flocks will be required. However hatcheries are not within the scope of the draft Standard and therefore the Standard does not require eggs to be segregated.

These costs, which are listed below, are therefore not taken into consideration in calculating the cost to industry of complying with the proposed Standard for Poultry Meat, because they are based on assumptions which FSANZ does not consider will be correct when the Standard is implemented.

FEEDMILLS

Initial one off costs	\$
Breeder feed delivery vehicle	650,000
Feed storage bins	3,500,000
Double conditioning	250,000
Air filters	125,000
TOTAL INITIAL COSTS	\$ 5,025,000
Initial Cost for 30 feedmills	\$150,750,000
Ongoing / Annual Costs	
Breeder feed delivery costs	100,000
Cleaning	83,000
Organic acid treatment	500,000
TOTAL ONGOING COSTS	\$683,000
FIRST YEAR COST FOR EACH MILL	\$5,708,333
FOR THIRTY FEEDMILLS	\$171,250,000

HATCHERIES

Ongoing / Annual Costs	\$
Streaming of eggs	52,000
Streaming of chick placements	31,000
TOTAL	\$83,000
FOR TWENTY HATCHERIES	\$1,664,000

4.4.1.2 Regulatory impact at primary production – government

Governments may charge the costs associated with licensing/enforcing/implementing the proposed new requirements for poultry producers on the respective farms; or they may choose to bear some part or all of these costs themselves. These practices may vary from state to state and over time. For the purposes of this cost analysis all such fees, real or notional, have been shown above as industry costs.

Jurisdictions will inspect/audit poultry primary production operations to assess whether the businesses are controlling their food safety hazards according to the requirements set out in the proposed Standard for poultry meat. The frequency and extent of inspections will be determined by the respective jurisdictions. Feedback from the Poultry SDC indicates that controlling authorities will limit their inspection of poultry primary production businesses to those occasions where there is concern that a poultry primary production business may not be controlling food safety hazards. This could occur when

- a poultry primary production business is supplying a poultry processor without a contract or the existing contract does not require adequate food safety controls to be in place at the farm
- information indicates that a poultry primary production business is not satisfactorily controlling its food safety hazards
- investigation is required following a suspected food-borne illness outbreak or a complaint.

With respect to licensing and inspection costs, the State and Territory enforcement agencies with responsibility for poultry growers have provided the information below. A table summarising this information follows.

- The New South Wales Food Authority licenses dairy farms (with an annual licence fee in the order of \$323 – no GST applicable) and may propose a similar licence fee for poultry farms. Currently, the dairy farm licence fee includes the cost of one audit per year. Audits are conducted on dairy farms at 1-24 month intervals, dependent on the audit outcome and resultant rating. Audit costs are \$163.50/hr (including GST) plus a flat travel component of \$40.86 (including GST). If a farm requires additional follow up audits/inspections because non-conformances are identified during a failed audit, these would be invoiced at the rate above.
- In Queensland, the preferred method for monitoring poultry growers' compliance with the proposed Standard for poultry meat is via the Preferred Supplier Arrangement. Under this arrangement, farms would be required to operate in accordance with the processor's food safety program (the processor who owns the farm). Farms would not pay accreditation fees and no audit fees would be charged for compliance audits. However, if non-conformances are detected, follow-up audits on farm would be charged at \$225/hr plus GST. Consultation is still to be undertaken with the poultry industry in Queensland and therefore this may change.
- In Victoria, the requirements will be enforced through the auditing of processors. Inspections on farm will occur where there is concern with the arrangement between the processor and the farm. Costs related to farm inspections will be absorbed by PrimeSafe³⁴ as part of compliance management.
- Western Australia is not anticipating inspecting or auditing farms on a routine basis, but will rely on the processors ensuring that suppliers comply with the proposed Standard for Poultry Meat. Farms may be assessed when evidence held by a processor indicates that there is an issue on farm that is not being adequately addressed or as part of a verification program. The *Food Act 2008* currently being implemented allows for the setting of fees for registration and fee for service, but current thought is that fees may not be applied immediately. However, this may change in the future.
- In South Australia, farms may need to be accredited (or licensed), with the charge being approximately \$250/year. South Australia could restrict auditing of farms depending on the verification model adopted. It may be decided to rely on audits of the processors system to verify farm compliance or, alternatively, to audit where corrective action by the processor has been unsuccessful. The current rate for auditing is \$160/hr. The length of the audit would depend on the nature of the program and the level of compliance.
- Tasmania is not proposing to charge licence fees on farms. It proposes to enforce this requirement through the auditing of the poultry processor and if it is necessary to go back on farm, it would recoup the costs from the poultry processor. The audit fee would be approximately \$250/hr.

³⁴ PrimeSafe is the Victorian government authority responsible for the regulation of meat, poultry and seafood within this State.

The Northern Territory and the Australian Capital Territory do not have any farming operations growing poultry for sale for human consumption.

Table 2: Summary of proposed licensing/inspections costs for poultry growers by State enforcement agencies

State	Summary of proposed approach	Proposed licensing/ accreditation fees	Proposed auditing/inspection fees	Approx cost to poultry grower
NSW	Licence and audit at least yearly	\$323/annum	Cost of one audit included in licence fee. Additional costs apply if follow up audits needed.	\$323/annum if compliant
Qld	Accreditation of farms under a preferred supplier arrangement with an accredited processor.	None	None unless non-conformances require follow up audit at \$225/hr plus GST	None if fully compliant
Vic	Enforced through auditing of processors. Farms will be inspected if there are concerns.	None	None	None
WA	Enforced through auditing of processors. Farms will be inspected if there are concerns.	None	None	None
SA	May license each farm and audit if there are concerns.	\$250/annum	Audit farm where evidence of ongoing non-conformances at \$160/hr.	\$250/annum if compliant
Tas	Enforced through auditing of processors. Farms will be inspected if there are concerns at a cost to the processor.	None	None	None

4.4.1.3 Regulatory impact – consumers

The regulatory component of this option provides for greater public accountability and scrutiny than options 1 and 3 for poultry growers. In options 1 and 3, the degree to which poultry growers are meeting biosecurity measures is assessed by the poultry processor to which the grower is contracted to sell live poultry. The poultry processor owns the farms and the chickens but contracts the management of these farms. This contract includes an obligation to follow biosecurity measures. As argued under options 1 and 3, this industry arrangement may not provide enough incentive to poultry growers to continuously implement the biosecurity measures necessary to lower flock prevalence of *Salmonella* and *Campylobacter*. There are no immediate rewards or penalties within this system. Growers that meet contractual arrangements are more likely to obtain new contracts than those that do not. However, growers are normally contracted for 5 years to supply birds to processors.

This option introduces a legal obligation on the grower to implement biosecurity measures. The enforcement of this requirement will be the responsibility of government and the state enforcement agencies will need to be satisfied that these legal obligations are being met. If they are not being met, penalties will apply.

The combination of the legal obligation and penalties for non-compliance should provide more incentive than under options 1 and 3 for poultry growers to continuously implement the necessary biosecurity measures. Therefore, it is expected that this option has a greater potential to reduce the likelihood of poultry being infected with *Salmonella* and *Campylobacter* during the growing stage than options 1 to 3. If the likelihood of poultry being contaminated with *Salmonella* and *Campylobacter* is reduced, it follows that the incidence of food-borne illness occurring from these pathogens will also be reduced. This will directly benefit consumers.

Given that growers will experience higher costs when complying with a proposed Standard for poultry meat, and given that they will pass some part of these costs on to consumers in the form of higher prices, consumers could end up paying higher prices for their poultry meat products. This cost increase has already been reflected in the cost burden for industry and is therefore not repeated here. However, the benefit of safer poultry should compensate for any price rise.

4.4.2 Primary processing

For processing, the existing state and territory poultry meat safety requirements, embodied in AS4465-2005, would be implemented through a national outcome-based standard, which is not overly-prescriptive, incorporated into the Code.

The development of a national standard for poultry primary production and processing will enable the food safety hazards associated with the entire poultry meat supply chain (from the farm to the consumer) to be addressed within the one regulatory document i.e. the Code. The draft Standard for poultry meat will require a poultry processor to:

- examine all of its processing operations to identify potential hazards and implement control measures to address those hazards
- have evidence to show that a systematic examination has been undertaken and that control measures for those identified hazards have been implemented
- verify that the control measures in place are effective.

A processor must operate according to a food safety management statement that sets out how the requirements of the Standard will be complied with. This is effectively a HACCP program, as currently required under State/Territory legislation. Other requirements have been included in the Standard for Poultry Meat in relation to:

- not processing poultry product that is, or may be, unsuitable
- controlling inputs
- waste disposal
- ensuring persons engaged in poultry processing have the necessary skills and knowledge in food safety and food hygiene
- traceability
- not selling poultry product that is, or may be, unsuitable.

These requirements are already included in AS4465-2005.

Given that processors are already required to control their processes through the application of a HACCP system, no new regulatory requirements are recommended at the primary processing stage.

4.4.2.1 Regulatory impact – industry (primary processors)

Under this option, no new costs are anticipated for primary processors as the regulatory requirements are essentially the same.

4.4.2.2 Regulatory impact – government

For primary processing, the enforcement costs are expected to be similar to option 1 as the regulatory requirements of the proposed Standard for Poultry Meat and AS4465 are essentially the same, with the main component being a HACCP-based system to control food safety hazards during processing.

4.4.2.3 Regulatory impact – consumers/community

There is no regulatory impact on consumers as the requirements on primary processors will essentially be the same.

4.4.3 Conclusion

The total cost to the community of food-borne illness associated with poultry contaminated with *Campylobacter* and *Salmonella* is estimated to be in the range of \$14 to \$74 m annually, with a median of \$44 m (see 4.1.5 above).

The adoption of Option 4 will impose additional costs on poultry growers as it introduces new regulatory requirements at the primary production stage of the poultry meat supply chain. It is estimated that industry will incur an initial cost of \$11.2 m in the first year and \$4.7 m each year thereafter (Data provided to FSANZ by the Australian Chicken Meat Federation in September 2009).

It is difficult to predict how much this option will lower flock prevalence with *Campylobacter* and *Salmonella*. Overseas examples do not provide a perfect predictive tool as there are many differences between countries with respect to the conditions under which poultry are grown such as climate which impact on the ability of poultry growers to maintain biosecurity. The interventions described in the countries above also do not perfectly parallel what is being recommended in Australia. However, all examples provided include improvements in biosecurity as part of the intervention.

As indicated in 4.4.1 above, if illness is reduced by 14.5% over five years or 13% over 10 years, the regulatory option will be cost effective.

4.5 Preferred option

The implementation of the Biosecurity Manual by poultry growers represents, on the best available scientific evidence, the most effective way to reduce flock infection with *Campylobacter* and *Salmonella*.

However, because consumers are not in a position to identify whether or not the poultry is contaminated due to the nature of the contamination, there is little incentive for poultry growers and producers to act. Therefore, an apparent market failure exists.

Option 4 is the preferred option to address this market failure as it is the most cost effective of the identified options for reducing the likelihood of food-borne illness occurring from the consumption of poultry. It provides a greater incentive to poultry growers to comply with biosecurity measures by legally obligating them to have these measures in place. It also introduces independent oversight by government and penalties for non-compliance. Poultry growers and transporters would be required to put in place measures to reduce flock infection with *Campylobacter* and *Salmonella*. This lowers the likelihood, and degree to which, raw poultry will be contaminated with *Campylobacter* and *Salmonella* and hence the likelihood that illness will occur.

It is uncertain what level of reduction of illness is likely to occur, but it is possible, given the calculations (see Attachment 4 for details), to identify the level of effectiveness this option needs to achieve in order to make it cost effective. Allowing for the fact that the benefits of initial infrastructure investments will be realised over a number of years, to achieve a positive net benefit over five years would require at least a 14.5% reduction in illness or 13% if considered over 10 years. International experience, while not directly comparable, would suggest that reductions in excess of these percentages might be achievable.

Option 1 (status quo) does not introduce any new measures to lower the likelihood of the community contracting food-borne illness from the consumption of poultry. Currently, it is estimated that consumption of contaminated chicken meat accounts for on average 83,100 cases of campylobacteriosis each year and 6480 cases of salmonellosis, at an annual cost to the community in the range of \$14 m to \$74 m.

Option 2 (consumer education) potentially lowers the likelihood of consumers contracting campylobacteriosis and salmonellosis through a targeted education campaign aimed at improving consumer handling and cooking of poultry. It is estimated that such a campaign would cost approximately \$3 m but could only reduce poultry-associated illness from *Campylobacter* and *Salmonella* by 3%, in financial terms a maximum of \$2.1 m, that is there would be a net cost. Applying sensitivity analysis using a margin of 0-5% effectiveness, the benefit could be in the range of \$0-\$3.4 m. Consequently, there would only be a net benefit if relatively extreme assumptions about the cost of illness and effectiveness of the option are applied. Using the mid-point estimate of cost of illness, this option would need to achieve at least a 6% reduction in illness over a period of 10 years before a positive net benefit is achieved. However, any benefit could be short lived as the impact of the education campaign is expected to lessen over time. As supported by the then ACA, it is recommended that any targeted education campaign be in conjunction with regulatory measures and not instead of them.

Option 3 (industry self-regulation), as per option 4, has the potential to reduce flock prevalence of poultry with *Campylobacter* and *Salmonella* over that possible under the *status quo*. This is achieved by encouraging poultry growers to have improved biosecurity systems in place and for industry to report to government on compliance levels. The benefits of this option are uncertain, but are not expected to be as high as those for option 4. Higher compliance levels are expected under option 4 because poultry growers are legally obligated to comply with biosecurity measures and penalties will apply for non-compliance.

5. A REVIEW OF TWO EXISTING REQUIREMENTS ON POULTRY IN THE CODE

As part of this Proposal, an evaluation of standards in the Code specifically related to poultry meat was undertaken. Requirements in two Standards, 1.6.2 – Processing Requirements and 2.2.1 – Meat and Meat Products, specific to poultry are being proposed for deletion.

The requirement in Standard 1.6.2 permits an eviscerated carcass to contain specified viscera and prohibits the freezing of uneviscerated poultry. The requirement in Standard 2.2.1 specifies the maximum amount of fluid that can be lost when frozen poultry is thawed.

5.1 Eviscerated poultry

5.1.1 Statement of the problem

Evisceration is the process of removing the crop, intestines and other internal organs from the poultry carcass. Some of these organs removed during the evisceration process can be highly contaminated. For example, the poultry digestive system i.e. the gizzard, and intestines, may contain *Campylobacter* and *Salmonella* that are pathogenic to humans.

The risk assessment concluded that evisceration could significantly contribute to carcass contamination. Because of the risk, it is undesirable for viscera to be attached to the poultry carcass. The significance of evisceration is recognised under State and Territory requirements where the processing of poultry must include evisceration. The Code, however, currently allows viscera to remain in the carcass. The Code also requires that uneviscerated poultry must not be frozen.

Clause 4 of Standard 1.6.2 states that:

- poultry in the form of an eviscerated carcass may include the gizzard, heart, liver, neck or a combination thereof; and
- uneviscerated poultry must not be frozen.

The clause applies in Australia only and does not apply in New Zealand.

5.1.2 Proposed amendment to the Code

5.1.2.1 Proposed amendment at Draft Assessment

AS 4465 requires the evisceration of poultry. The food safety elements of AS 4465 have been included in the draft standard and therefore it was proposed at Draft Assessment that clause 4 of Standard 1.6.2 be deleted. It was stated at Draft Assessment that deleting clause 4 would not impact on industry as it must currently comply with AS 4465 or impact on the jurisdictions as deletion brings the Code into alignment with requirements jurisdictions currently enforce.

No objections were received from stakeholders to this proposal and one submission supported the proposed deletion of clause 4.

5.1.2.2 Proposed amendment at Final Assessment

FSANZ has considered the approach proposed at Draft Assessment and approves the approach at Final Assessment.

The deletion of clause 4 of Standard 1.6.2 removes an inconsistency regarding eviscerated poultry between the current Code and the draft Standard and aligns the Code with the practice of the poultry processing sector and State and Territory requirements.

This amendment will have minimal economic implications for the poultry processing industry, the government and consumers because it reflects current industry practices.

5.2 Limit on fluid loss from thawed poultry

5.2.1 Statement of the problem

In poultry processing, water is used for scalding and washing carcasses and also for most businesses, chilling carcasses. This results in the absorption and uptake of water by the skin and muscle tissue of the poultry carcasses. When frozen poultry is thawed, a loss of fluid occurs, partly because of this absorption and uptake of water.

A limit on the amount of fluid that can be lost when frozen poultry is thawed is stipulated in clause 2 of Standard 2.2.1. This has the effect of limiting the amount of water that can be absorbed by poultry during processing and thereby preventing the selling of poultry that has been bulked with water. Clause 2 states that frozen poultry when thawed must yield no more than 60 g/kg of fluid as determined by the method prescribed in the schedule to Standard 2.2.1 and applies in Australia and New Zealand.

The limit of 60 g/kg (6%) of thawed poultry was set by the then Australia New Zealand Food Authority, predecessor of FSANZ, in 2000 to assist in preventing deceptive or misleading practices. Further background information about how the limit was established is available in section 9.2.1 of the Draft Assessment Report³⁵.

During the Draft Assessment stage of this Proposal, the Australian poultry industry raised concerns that it may not be feasible to consistently comply with the current fluid loss limit of 60 g/kg for thawed poultry. Several reasons were cited to support these concerns:

- The poultry industry has increased the number of washing steps used in poultry processing since the implementation of Hazard Analysis Critical Control Programs. This increase in washing steps is aimed at reducing microbial contamination, however, it also promotes increased water uptake. Therefore, the amount of water loss during thawing may exceed the limit of 60 g/kg.
- There was a belief that frozen poultry was being unfairly targeted because there is no such limit on water loss specified for frozen beef, pork, lamb or fresh poultry.

³⁵ http://www.foodstandards.gov.au/_srcfiles/P282_Poultry_%20DAR_Attachments%20except_Attach3.pdf. Accessed 22 February 2010.

- The frozen poultry market has diminished to approximately 1% of the poultry currently sold, in comparison with 20 or 30 years ago when frozen poultry had a larger share of the poultry market.

FSANZ agreed to include this issue in this Proposal.

5.2.2 Statement of Options

5.2.2.1 Proposed options at draft assessment

FSANZ released a discussion paper entitled ‘Limit on fluid loss from thawed poultry’ for public consultation in October 2005. Fifteen submissions were received in response to the discussion paper. A summary of the submissions received has been presented in the Draft Assessment Report. Issues raised in these submissions were considered in the preparation of the Draft Assessment Report, and in the development of five options to address the issues raised about the limit on fluid loss in thawed poultry.

The five possible options and their regulatory impact analysis were presented in the Draft Assessment Report. Option 4 was the preferred option.

Option 1 – Maintain the *status quo*

Option 2 – Retain a limit but allow this limit to be calculated as an average over a number of birds

Option 3 – Delete the requirement and defer to Fair Trading /Food Act in case of offences

Option 4 – Delete the requirement and reinforce obligation to minimise water uptake under Standard 1.3.3 – Processing Aids

Option 5 – Require the percentage of water uptake to be declared on the label

5.2.2.2 Issues raised after the release of the Draft Assessment Report

Four submissions provided comment on the limit of fluid loss in thawed poultry. The details of these submissions are provided in Attachment 3 to this Report.

Of the four submissions, three supported the preferred option (option 4). One submission supported a combination of options 1 and 2, recommending the limit of 60 g/kg be retained and calculated as an average over a number of birds.

5.2.2.3 Proposed options at final assessment

FSANZ has considered the approach at Draft Assessment and has decided not to amend the options.

5.2.3 Impact analysis

The impact analysis was discussed in detail in the Draft Assessment Report. The main points are below.

5.2.3.1 *Option 1 – Maintain the status quo*

If the *status quo* was maintained the present limit of 60 g/kg, and the method of analysis, would be retained.

Maintaining the *status quo* has the greatest impact on poultry processors, particularly those that chill using water. The poultry industry has indicated that it is not always possible to meet this limit, due to increased use of water during processing to meet regulatory requirements. Therefore if the limit is retained, retailers could be penalised for selling non-complying frozen poultry. This has the effect of the retailers refusing to purchase non-complying frozen product from the processors and was threatened by the major supermarket chains when this issue arose. Processors that chill using air may then have an unfair advantage as they process poultry using less water and can therefore more easily comply with the limit.

Maintaining the *status quo* may impact on enforcement agencies. Increased enforcement may be necessary if it is suspected frozen poultry is not meeting the legal fluid loss limit.

Maintaining the *status quo* is not expected to have any impact on consumers.

5.2.3.2 *Option 2 – Retain a limit but allow this limit to be calculated over an average number of birds*

There is conflicting evidence as to whether a 60 g/kg or 80 g/kg limit is appropriate. The poultry processing industry favours applying the 80 g/kg limit, calculated as an average over 20 birds. However, there is evidence to suggest that poultry processors can meet the 60 g/kg limit.

If a limit was retained, that was calculated as an average over a number of birds, industry would be more able to comply with the specified limit as it would account for the variabilities that occur during processing. This benefits poultry processors, particularly those that chill using water, as they would have a greater chance of producing complying product that they can sell to retailers.

However, if a limit is retained for frozen birds, it only addresses the issue of water uptake in these birds. No limit would apply to fresh poultry, which also absorbs water during the slaughtering process. Fresh poultry also represents 99% of raw poultry sold. This unfairly targets frozen poultry.

This option is not expected to impact on enforcement agencies as a limit is still being maintained – only the way it is calculated is being changed. This option is also not expected to impact on consumers when compared to the *status quo* as a limit is still being maintained.

5.2.3.3 *Option 3 – Delete the requirement and defer to Fair Trading/Food Act offences*

Several jurisdictions in Australia supported deleting the fluid loss limit and deferring the matter to Fair Trading legislation. The Australian Competition and Consumer Commission advised that if the fluid loss limit were to be deleted, there is nothing specific in the State/Territory Fair Trading legislation that would stop excess water being added to poultry carcasses.

In the case that poultry was bulked with water, with no labelling that water had been added, consumers would be misled as they would be unknowingly paying for water instead of poultry.

Option 3 is the least costly for both industry and government, as there would be no requirement to comply with or enforce. However, it offers the least assurance to consumers.

5.2.3.4 Option 4 – Delete fluid loss limit and reinforce obligation to minimise water uptake in poultry processing under Standard 1.3.3 – Processing Aids

With this option the limit on fluid loss for thawed frozen poultry would be deleted. Poultry processors would then refer to the requirements of Standard 1.3.3 with respect to the use of water as a processing aid during poultry processing.

There is no regulatory impact for either industry or government with this option as it is a reinforcement of the current obligations. Poultry processors are permitted to use water for processing purposes provided it is used at the lowest level necessary to perform the processing function (see Standard 1.3.3). Where water is used in excess of what is necessary to meet the processing needs, it is no longer considered a ‘processing aid’ and would therefore need to be declared if it constitutes 5% or more of the final food (see Standard 1.2.4 – Labelling of Ingredients).

This option potentially benefits poultry processors as it ensures a level playing field for all processors, regardless of whether they chill using water or air – the same legal obligations apply.

Deleting the fluid loss option should have little impact on consumers. The frozen poultry market now represents <1% of current chicken production. The poultry market is now dominated by fresh chicken to which the current fluid loss requirement does not apply.

5.2.3.5 Option 5 – Require the percentage of water uptake to be declared on the label

Under this option, poultry processors would need to declare the amount of water that has been absorbed by poultry during processing. This would need to be declared as an average due to variation in the amount of water uptake by different types and sizes of poultry.

If an average were required to be included in the label, it is uncertain whether this would be effective in ensuring poultry processors minimise the amount of water absorbed by poultry during processing. It could provide an incentive to minimise water uptake, if a lower stated average percentage water pickup gave a poultry producer a competitive edge. For this to be effective, consumers would need to understand that the lower the stated percentage, the less retained water is present in the poultry and hence it represents better value for money.

This option could unduly penalise those poultry processors that exclusively use water for chilling as processors that use a combination of air and water or air only would have less water absorption occurring. The chicken meat industry has advised that approximately 75% of chicken carcasses are chilled using water only, with the remainder being chilled using a combination of water and air and a very small percentage air only.

Labelling of percentage water uptake is anticipated to be expensive to the poultry processing industry as it would have to calculate the average water uptake and print this value on the label.

There would also be costs associated with the enforcement of the requirement. State and Territory Governments would need to ensure the average percentage was stated on the label accurately.

This option could potentially benefit consumers if they were able to compare similarly processed poultry on the basis of the amount of water that is absorbed - the poultry with less absorbed water offering better value for money. However, industry has advised that similar percentages are likely to be specified on the label. The poultry industry is dominated by two major processors, supplying approximately 70% of the market.

5.2.3.6 Preferred option

Maintaining the *status quo* is not preferred as poultry processors who chill using water are unable to consistently meet the fluid loss limit, providing an unfair advantage to processors who air chill, thus using less water.

Option 2 overcomes the compliance difficulties of the *status quo*, by enabling the limit to be calculated as an average over a number of birds. However, it would still only apply to frozen poultry, which represents less than 1% of the raw poultry market.

Option 3 does not address the regulatory problem as there are no specific provisions in fair trading law to prevent excess water uptake during the processing of poultry.

Option 5 provides the same benefit as option 4 but at a higher cost.

Option 4 is the preferred option as it minimises the uptake of water during the processing of poultry at the least cost. Under this option, the current fluid loss limit for frozen poultry is deleted and processors of frozen poultry will need to ensure they meet the same obligations for the use of water during processing, as all other processors of poultry products. Water may be used for processing, provided it is used at the lowest level necessary to perform the processing function. Where water is used in excess of what is necessary to meet the processing needs, it is no longer considered a 'processing aid' and would therefore need to be declared if it constitutes 5% or more of the final food (see Standard 1.2.4).

To ensure the poultry industry is aware of their legal obligations under Standards 1.3.3 and 1.2.4, the following Editorial notes have been inserted into the draft Standard.

Editorial note:

See Standard 1.3.3 for requirements relating to the use of water as a processing aid.

See Standard 1.2.4 for labelling requirements where water is an ingredient in the final poultry product at a level of 5% or more.

6. COMMUNICATION AND CONSULTATION STRATEGY

6.1 Communication

The FSANZ process involves a consultative and transparent process that reaches the industry concerned, State and Territory Government agencies, as well as consumers. The SDC contributed a broad spectrum of knowledge and expertise covering industry, government, research and consumers. In addition, targeted consultations have been undertaken through on-site visits to glean, first hand, perspectives and information from poultry producers and processors.

FSANZ has reported on its progress on the Proposal on the FSANZ website, media releases and other communication channels to advise the community of opportunities to comment. Organisations and individuals have included their names on the 'interested parties list to receive information.

6.2 Consultation

Table 1 outlines the development of this Proposal in regard to the consideration by the FSANZ Board, the development and subsequent public release of assessment reports, the issues raised during public consultation and the formation and discussions of the SDC.

The development process relied on the advice received from the SDC which assisted FSANZ in resolving the scope, definition and proposed requirements for businesses covered under the proposed Standard for poultry meat.

Table 3: Outline of the development of P282 – Primary Production and Processing Standard for Poultry Meat.

	ASSESSMENT REPORTS	STANDARD DEVELOPMENT COMMITTEE	PUBLIC CONSULTATION
INITIAL ASSESSMENT	<p>The Initial Assessment Report detailed the regulatory framework for the development of PPP Standards and the current state of knowledge regarding the poultry meat industry and existing food safety management strategies.</p> <p>The Initial Assessment Report sought comment on:</p> <ul style="list-style-type: none"> • the regulatory framework for the development of PPP Standards; • the current operation of the poultry meat industry; • the existing regulatory and non-regulatory food safety management strategies; • the hazards potentially present in poultry meat that could result in food-borne illness; • the stage of the poultry meat supply chain where hazards could be introduced; and • poultry meat consumption and human disease in Australia. 	<p>An SDC was established to advise and assist FSANZ with this work.</p> <p>The 1st SDC meeting was held in February 2004 and involved discussion of the scope of the risk assessment and the proposed scope of the standard.</p> <p>The 2nd SDC meeting was convened by teleconference in August 2004 and discussed the issues raised during public consultation on the Initial Assessment Report.</p> <p>The 3rd SDC meeting was held in November 2004 discussed:</p> <ul style="list-style-type: none"> • the risk assessment findings • proposed risk management options • development of an interpretive guide to the standard <p>The 4th SDC meeting was held in March 2005 discussed:</p> <ul style="list-style-type: none"> • the peer review of the poultry meat risk assessment • existing food safety management strategies • proposed on-farm risk management options <p>The 5th SDC meeting in August 2005 discussed:</p> <ul style="list-style-type: none"> • four options for managing food safety risks on-farm • requirements for food safety programs for poultry processing • issues surrounding the implementation of the standard (i.e. the interpretive guide) • Communication strategy • preparing the Draft Assessment Report 	<p>The Initial Assessment Report was released for public consultation for a 6-week period.</p> <p>Eleven submissions were received.</p> <p>The main issues raised in this round of public consultation were regarding:</p> <ul style="list-style-type: none"> • the definition of poultry should include all avian species including ratites and wild-caught birds; • the scope of the Standard and relationship with the activities covered by Chapter 3 standards; • the responsibility of all sections of the poultry meat supply chain for reducing the pathogen load of poultry meat products; and • the value of a consumer education program to accompany the standard. <p>The response to the issues raised in this round of public consultation was discussed in the Draft Assessment Report.</p>

	ASSESSMENT REPORTS	STANDARD DEVELOPMENT COMMITTEE	PUBLIC CONSULTATION
DRAFT ASSESSMENT	<p>The Draft Assessment Report proposed risk management options based on the scientific assessment and an assessment of the economic, social and political risks. The report included a brief overview of the poultry meat industry, the current food safety management strategies in place, and the findings of the risk assessment.</p>	<p>The 6th SDC meeting in March 2006 discussed issues raised during public consultation on the Draft Assessment Report, concerns with the draft standard, particularly the need for on-farm regulation, and the development of a code of practice to support the standard.</p> <p>The 7th SDC meeting in June 2007 consider proposed drafting changes to the Standard for Poultry Meat and proposed changes to the draft Code of Practice.</p> <p>The 8th SDC meeting in June 2008 considered:</p> <ul style="list-style-type: none"> • a further re-drafted poultry meat standard; • the development of the code of practice as a guidance document rather than under the FSANZ process involving a formal round of public consultation; and • the development of an explanatory memorandum for the standard as an attachment to the Final Assessment Report. 	<p>The Draft Assessment Report was released for public consultation for an 8-week period.</p> <p>The main issues raised in this round of public consultation were regarding:</p> <ul style="list-style-type: none"> • the definition of manufactured and fermented meats; • the proposed drafting of the standard; • the development of tools to aid the implementation of the standard (i.e. an interpretive guide); • the recognition of equivalence; • the scientific justification for mandating standard 3.2.1; • auditing; and • the potential impact of any standard on stakeholders. <p>The response to the issues raised in this round of public consultation is discussed in Attachment 3.</p>

6.2.1 Summary of submissions received

Seventeen submissions were received in response to the Draft Assessment Report mainly from the poultry industry, state enforcement agencies and commonwealth health and agriculture departments. For a full list of submitters, see Attachment 3.

Generally the submissions were in support of the proposed regulatory measures for the primary production and processing of poultry meat specified within the draft standard for poultry meat. Few comments were received with respect to the recommendations on fluid loss in poultry and partly eviscerated poultry. The main issues raised are summarised below. A full summary of the issues, and response to these issues, is at Attachment 3.

6.2.1.1 Primary production

- the use of guidelines, codes of practice and training for poultry growers should be considered instead of regulatory requirements
- given the high risk nature of poultry farms, some concerns with contractual arrangements between growers and processors being the key mechanism to ensure food safety practices are being followed and suggests ongoing and rigorous monitoring to assess adequacy of this arrangement
- queries whether it is necessary to regulate farming activities prior to the growing operations
- the Standard needs to be clear as to the legal responsibility (with respect to controlling hazards) between growers and processors
- concerns about costs for growers and processors to comply with the standards. Specific concerns raised in relation to costs for poultry growers, particularly cleaning out sheds between batches, minimising partial depopulation and building new sheds

6.2.1.2 Primary Processing

- the Standard should provide a level of detail regarding what is required by the poultry food business in order to enable it to comply with the Standard and ensure that the scope of activities covered within the documented food safety management system are consistent with AS 4465. Standard must also recognise equivalent measures to achieve the same outcomes.
- clause 6 of the draft Standard should also recognise a food safety program as set out in Standard 3.2.1 – Food Safety Programs as an equivalent means of complying with the Standard.
- a validated CCP is needed somewhere along the supply chain otherwise the Standard will have a limited impact on reducing food-borne illness.

6.2.1.3 Implementation of Standard

A uniform approach to legislation is essential to reduce compliance costs for industry. Industry must not be restricted into how the food safety outcomes are met. There must be flexibility to allow industry to adopt the best means to achieve safe food.

6.2.1.4 Food Safety objectives, Acceptable Level of Protection, Performance Objectives and microbiological criteria

- national pathogen targets should be set, based on agreed food safety objectives. The Standard should then require poultry to be tested for Salmonella and possibly Campylobacter (at a later stage) to assess whether these targets are being met, with results reported to the proper authority
- has an Acceptable Level of Protection been determined for consumers in respect of Campylobacter attributable to consumption of chicken meat?
- is it considered useful to set microbiological Performance Objectives for retail product for industry to meet over a prescribed period?

6.2.1.5 Comments on Scientific Assessment

New data from the NSW/SA retail poultry baselines study should be considered to enable recalculation of risk

6.2.1.6 Consideration of additional management strategies

Should there be a requirement for labelling of raw poultry products?

6.2.1.7 Comments on risk management of other identified hazards

Queries how risks from arsenic and fluoride have been managed.

6.2.1.8 Limit on fluid loss in thawed poultry

With respect to the limit on fluid loss, only four of the seventeen submissions received, provided comment on this issue. Of these four, three supported the deletion of the fluid loss limit and referring poultry processors to their legal obligations under Standard 1.3.3 – Processing Aids. The other submission, from the then Australian Consumers' Association supports retaining the limit but would accept allowing the limit to be measured (as an average) over a number of birds.

6.2.1.9 Partly eviscerated poultry

No issues were raised with respect to deleting the permission in clause 4 of Standard 1.6.2 to sell partly eviscerated poultry.

6.2.2 World Trade Organization (WTO)

As members of the World Trade Organization (WTO), Australia and New Zealand are obligated to notify WTO member nations where proposed mandatory regulatory measures are inconsistent with any existing or imminent international standards and the proposed measure may have a significant effect on trade.

Australia notified the WTO of the draft standard on 19 December 2008 (G/SPS/N/AUS/228) with an initial comment period closing on 6 February 2009. The comment period was extended until 24 February 2009 (G/SPS/N/AUS/228/Add1) and no comment was received on the notification.

7. CONCLUSION

The main food-borne pathogens of concerns with poultry are *Campylobacter* and *Salmonella*. Raw poultry that is purchased by consumers is very likely to be heavily contaminated with *Campylobacter* and to a lesser extent, *Salmonella*. Poultry become infected with *Campylobacter* and *Salmonella* during the growing stage, on-farm. During slaughtering and processing, contamination from the infected poultry is transferred to the carcass and subsequently other raw poultry cuts and products. If consumers do not handle or cook this poultry correctly, illness can occur.

Campylobacteriosis is the most notified food-borne illness in Australia, followed by salmonellosis. It has been estimated that contaminated poultry is responsible for approximately 30% of all cases of campylobacteriosis (83,100 cases/year) and a lower percentage of salmonellosis.

To reduce illness occurring from contaminated raw poultry, it is recommended that measures be taken at the growing stage, to minimise the likelihood of poultry being infected with *Campylobacter* and *Salmonella*. The lower the prevalence and concentration of these two pathogens on poultry meat, the lower the likelihood of illness occurring.

While consumers have a part to play in ensuring they handle and cook poultry safely, this is made more difficult if the poultry is heavily contaminated, particularly with *Campylobacter*, as only relatively small numbers of this bacteria are needed for illness to occur.

Australia already has comprehensive regulatory requirements in place for the primary processing of poultry. Poultry processors are required to implement HACCP programs to control the hazards associated with the slaughter and processing of poultry.

At the primary production stage, there are no regulatory requirements. However, there are industry initiated measures in place. The majority of poultry growers are contracted to poultry processors and part of this contract of supply is compliance with biosecurity measures including having practices and procedures in place to minimise the likelihood of poultry being infected with *Campylobacter* and *Salmonella*.

The findings from both the FSANZ baseline survey and the retail study show that poultry are infected on-farm and this contamination is carried through to the processing plant and then to the retail product. Overseas studies show that steps can be taken to lower both the prevalence and concentration of *Salmonella* and *Campylobacter* on-farm and at primary processing.

This reduction has been achieved by measures including improving biosecurity measures on farm and, in particular, controls during processing.

To reduce the incidence of food-borne illness occurring from the consumption of poultry and poultry products, four options were considered:

1. *Status quo*
2. Consumer education
3. Industry self regulation
4. Through-chain food safety management consisting of regulatory elements on farm and on processors

Option 4 is the preferred option as it is the most cost effective of the identified options for reducing the likelihood of food-borne illness occurring from the consumption of poultry. This is achieved by legally obligating poultry growers and transporters to put in place measures to reduce flock infection with *Campylobacter* and *Salmonella*. This is expected to lower the likelihood, and degree to which, raw poultry will be contaminated with *Campylobacter* and *Salmonella* and hence the likelihood that illness will occur. The extent to which illness will be reduced is uncertain; however, a reduction of at least 14.5% a year over five years is needed to achieve a net benefit. This is thought to be achievable based on overseas experience, although this is not directly comparable.

It has also been recommended that two other amendments be made to existing requirements relating to poultry in the Code. These are:

- the deletion of clause 4 of Standard 1.6.2-Processing Requirements which permitted poultry to be sold that was not completely eviscerated - this requirement was not consistent with existing requirements in state and territory legislation and can be adequately covered under the proposed Standard for Poultry Meat; and
- the deletion of clause 2 of Standard 2.2.1-Meat and Meat Products, which specified a fluid loss limit for frozen poultry – this limit only applied to a small percentage of poultry products sold and can be adequately addressed by existing provisions in the code relating to the use of water as processing aid and the declaration of water as an ingredient.

Decision

To approve draft Standards 4.1.1 – Primary Production and Processing Standards Preliminary Provisions and 4.2.2 – Primary Production and Processing Standard for Poultry Meat and make consequential amendments to Standards 1.6.2 – Processing Requirements, 2.2.1 – Meat and Meat Products and 4.2.3 – Production and Processing Standard for Meat.

Reasons for Decision

At Final Assessment, FSANZ has approved draft variations to the Code. The amendments:

- address public health and safety concerns raised in the Scientific Assessment of the Public Health and Safety of Poultry Meat in Australia

- are consistent with the section 18 objectives of the FSANZ Act to protect public health and safety
- provide a nationally consistent legislative framework for a whole-of-chain approach to poultry and poultry product safety
- take into account existing state and territory requirements, providing a consolidated set of requirements based on scientific assessment
- provide measures that are outcome-based and would not impose any unwarranted overall additional costs to industry over existing requirements.

8. IMPLEMENTATION AND REVIEW

8.1 Implementation

Implementation is the responsibility of the states and territories. ISC is facilitating the consistent national implementation of the Standard. It is charged with the responsibility for overseeing cross-jurisdictional agreement on consistent approaches to implementing and ensuring compliance with food standards. ISC also has a major role in encouraging cost-effective approaches to compliance and enforcement.

ISC is currently developing an implementation package for the poultry primary production and processing standard. The intent is to ensure that information on implementation is available as early as possible during the implementation timeframe. As part of the implementation package ISC is considering the role of suitable reference materials such as templates, guidelines and codes of practice.

FSANZ had originally proposed to develop a separate document that provided guidance on the intent of the requirements and on means of compliance. FSANZ has prepared an Explanatory Memorandum which accompanies the draft standard to explain the intent of each clause (Attachment 2) but guidance on means of compliance is the role of the jurisdictions and within ISC's development of the implementation package. FSANZ is providing assistance to ISC in the development of the implementation package.

A two-year implementation timeframe has been recommended, from the date the Primary Production and Processing Standard for Poultry Meat is gazetted.

8.2 Review

FSANZ is committed to undertaking evaluation of the impact of implementing key new food regulatory measures and outlines the program for evaluation activities in its Evaluation Strategy documents available on the website. FSANZ is currently developing its evaluation strategy with the jurisdictions and will consider the Standard for Poultry Meat for inclusion.

FSANZ has already coordinated two baseline surveys on poultry, which provide data on the food safety practices in the poultry industry and the degree to which poultry was contaminated, prior to the introduction of the proposed Standard for Poultry Meat.

In 2005, FSANZ commissioned Colmar Brunton Social Research to undertake research on the knowledge and awareness of safe food handling of poultry meat within the poultry meat industry, enforcement officers and consumers (FSANZ, 2005).

FSANZ also coordinated a baseline survey on the prevalence and concentration of *Salmonella* and *Campylobacter* in chicken meat on-farm and at primary processing (FSANZ, 2010). This survey measured both the prevalence and where appropriate, concentration, of *Salmonella* and *Campylobacter* at three points along the poultry supply chain, on-farm, just prior to processing and at the end of primary processing. A summary of the results of this survey have been discussed in section 2.2 of this report.

FSANZ proposes that a follow up survey be undertaken, two to three years after the implementation of the Standard, to determine whether the Standard for poultry meat has been successful in lowering the amount of *Salmonella* and *Campylobacter* in poultry.

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ATTACHMENTS

1. Draft variations to the *Australia New Zealand Food Standards Code*
2. Explanatory Memorandum
3. Summary of, and responses to, submissions received at Draft Assessment
4. Cost Benefit Scenarios

Draft variations to the *Australia New Zealand Food Standards Code*

Standards or variations to standards are considered to be legislative instruments for the purposes of the Legislative Instruments Act 2003 and are not subject to disallowance or sunseting.

To commence: 24 months from gazettal

[1] *Standard 1.6.2 of the Australia New Zealand Food Standards Code is varied by deleting clause 4, substituting –*

4 Deleted

[2] *Standard 2.2.1 of the Australia New Zealand Food Standards Code is varied by deleting clause 2, substituting –*

2 Deleted

[3] *Standard 2.2.1 of the Australia New Zealand Food Standards Code is varied by deleting the Schedule.*

[4] *The Australia New Zealand Food Standards Code is varied by inserting –*

STANDARD 4.1.1

PRIMARY PRODUCTION AND PROCESSING STANDARDS – PRELIMINARY PROVISIONS

(Australia only)

Purpose and commentary

This Standard sets out preliminary provisions which apply to the Primary Production and Processing Standards contained in Chapter 4 of the Code.

Table of Provisions

- 1 Interpretation
- 2 Application

1 Interpretation

Unless the contrary intention appears, in this Chapter –

Authority means the State, Territory or Commonwealth agency or agencies having the legal authority to implement and enforce primary production and processing Standards.

control measure means a measure that prevents, eliminates or reduces to an acceptable level, a food safety hazard.

handling of food includes the producing (including growing, cultivation, picking, harvesting, or catching), collecting, extracting, processing, manufacturing, storing, transporting, delivering, preparing, treating, preserving, packing, cooking, thawing, serving or displaying of food.

hazard means a biological, chemical or physical agent in, or condition of, food that has the potential to cause an adverse health effect in humans.

inputs includes any feed, litter, water, chemicals or other substances used in, or in connection with the primary production or processing activity.

supply includes intra company transfer of produce.

verification means the application of methods, procedures, tests and other tools for evaluation to determine compliance with the relevant requirement.

2 Application

(1) Unless the contrary intention appears, this Standard applies to Primary Production and Processing Standards in Chapter 4 of this Code.

(2) Standards in Chapter 4 of this Code do not apply in New Zealand.

[5] *The Australia New Zealand Food Standards Code is varied by omitting Standard 4.2.2 substituting –*

STANDARD 4.2.2

PRIMARY PRODUCTION AND PROCESSING STANDARD FOR POULTRY MEAT

(Australia only)

Purpose and commentary

This Standard sets out a number of food safety requirements for the primary production and processing of poultry, and poultry carcasses and poultry meat for human consumption. At the primary production stage, businesses that produce poultry must implement measures to control the food safety hazards and must be able to trace their products. Businesses that process poultry must control their food safety hazards and must be able to trace their products.

It is the responsibility of these businesses not only to comply with this Standard but also to be able to demonstrate compliance. This Standard is, in part, intended to reduce the contamination of poultry, poultry carcasses and poultry meat by pathogenic *Campylobacter* and *Salmonella*.

Table of Provisions

Division 1 – Preliminary

- 1 Interpretation
- 2 Application

Division 2 – Primary production of poultry

- 3 General food safety management
- 4 Inputs
- 5 Waste disposal
- 6 Health and hygiene requirements
- 7 Skills and knowledge
- 8 Design, construction and maintenance of premises, equipment and transportation vehicles
- 9 Traceability
- 10 Sale or supply

Division 3 – Processing of poultry

- 11 Application
- 12 General food safety management
- 13 Receiving birds for processing
- 14 Inputs
- 15 Waste disposal
- 16 Skills and knowledge
- 17 Traceability
- 18 Sale or supply
- 19 Requirements for producers of ready-to-eat poultry meat

Clauses

Division 1 – Preliminary

1 Interpretation

- (1) Unless the contrary intention appears, and subject to Standard 4.1.1, the definitions in Chapter 3 of this Code apply in this Standard.
- (2) The definition of ‘condition’ in Standard 3.2.2 does not apply in this Standard.
- (3) In this Standard –

carcass means the whole dressed body of slaughtered poultry, but excludes any part that has been removed from the dressed body, for example, the head, feathers, viscera and blood.

food safety management statement means a statement, which at a minimum, has been approved or recognised by the relevant authority and subjected to ongoing verification activities by a poultry producer or poultry processor and the relevant authority.

Editorial note:

‘Authority’ is defined in draft Standard 4.1.1 as –

the State, Territory or Commonwealth agency or agencies having the legal authority to implement and enforce primary production and processing Standards.

poultry means chicken, turkey, duck, squab (pigeons), geese, pheasants, quail, guinea fowl, muttonbirds and other avian species (except ratites).

poultry handler means a person who handles or supervises the handling of poultry.

poultry meat means the parts of the poultry carcass intended for human consumption.

poultry producer means a business, enterprise or activity that involves –

- (a) growing; or
- (b) live transporting;

of poultry for human consumption.

poultry processor means a business, enterprise or activity that involves the processing or transporting of poultry product for human consumption.

poultry product means the carcass of poultry, poultry meat or poultry meat product, as the case may be.

premises means a poultry primary production or processing premises.

processing of poultry or poultry product includes the –

- (a) holding before stunning; or
- (b) stunning; or
- (c) bleeding; or
- (d) scalding; or
- (e) defeathering; or
- (f) removing of head or feet; or
- (g) processing of feet; or
- (h) removing of viscera; or
- (i) processing of offal; or
- (j) trimming; or
- (k) washing; or
- (l) chilling; or
- (m) spin chilling; or

- (n) freezing; or
- (o) thawing; or
- (p) deboning or portioning; or
- (q) mincing or dicing; or
- (r) marinating; or
- (s) injecting or massaging; or
- (t) partial cooking; or
- (u) crumbing; or
- (v) packaging; or
- (w) storage, associated with processing;

of poultry or poultry product, as the case may be, for human consumption.

unsuitable means unsuitable as defined in Standard 3.1.1, but includes poultry or poultry product that is in a condition, or contains a substance a person would ordinarily regard as making the poultry, after processing, or poultry product unfit for human consumption.

Editorial note:

‘Suitable’ are defined in Standard 3.1.1. Clause 2 of Standard 3.1.1 provides:

Food is not suitable if it –

- (a) is damaged, deteriorated or perished to an extent that affects its reasonable intended use; or
- (b) contains any damaged, deteriorated or perished substance that affects its reasonable intended use; or
- (c) is the product of a diseased animal or an animal that has died otherwise than by slaughter, and has not been declared by or under another Act to be safe for human consumption; or
- (d) contains a biological or chemical agent, or other matter or substance, that is foreign to the nature of the food.

However, food is not unsuitable for the purposes of the Food Safety Standards merely because –

- (a) it contains an agricultural or veterinary chemical in an amount that does not contravene the *Australia New Zealand Food Standards Code*; or
- (b) it contains a metal or non-metal contaminant (within the meaning of the *Australia New Zealand Food Standards Code*) in an amount that does not contravene the permitted level for the contaminant as specified in the *Australia New Zealand Food Standards Code*; or
- (c) it contains any matter or substance that is permitted by the *Australia New Zealand Food Standards Code*.

2 Application

This Standard does not apply to poultry retail sale activities or poultry product retail sale activities.

Division 2 – Primary production of poultry

3 General food safety management

- (1) A poultry producer must systematically examine all of its primary production operations to identify potential hazards and implement control measures to address those hazards.
- (2) A poultry producer must also have evidence to show that a systematic examination has been undertaken and that control measures for those identified hazards have been implemented.
- (3) A poultry producer must operate according to a food safety management statement that sets out how the requirements of this Division are to be or are being complied with.

4 Inputs

A poultry producer must take all reasonable measures to ensure inputs do not make the poultry unsuitable.

Editorial note:

See the definition of ‘inputs’ in Standard 4.1.1 which includes feed, litter, water and chemicals used in or in connection with the primary production activity.

5 Waste disposal

- (1) A poultry producer must store, handle or dispose of waste in a manner that will not make the poultry unsuitable.
- (2) For subclause 5(1), waste includes sewage, waste water, litter, dead poultry and garbage.

6 Health and hygiene requirements

- (1) A poultry handler must exercise personal hygiene and health practices that do not make the poultry unsuitable.
- (2) A poultry producer must take all reasonable measures to ensure that poultry handlers, personnel and visitors exercise personal hygiene and health practices that do not make the poultry unsuitable.

7 Skills and knowledge

A poultry producer must ensure that poultry handlers have –

- (a) skills in food safety and food hygiene; and
- (b) knowledge of food safety and food hygiene matters;

commensurate with their work.

8 Design, construction and maintenance of premises, equipment and transportation vehicles

A poultry producer must –

- (a) ensure that premises, equipment and transportation vehicles are designed and constructed in a way that minimises the contamination of poultry, allows for effective cleaning and sanitisation and minimises the harbourage of pests and vermin; and
- (b) keep premises, equipment and transportation vehicles effectively cleaned, sanitised and in good repair to ensure poultry is not made unsuitable.

9 Traceability

A poultry producer must be able to identify the immediate recipient of the poultry handled by the poultry producer.

10 Sale or supply of poultry

A poultry producer must not sell or supply poultry for human consumption if the producer ought reasonably know or ought reasonably suspect that the poultry is unsuitable.

Editorial note:

‘Supply’ is defined in Standard 4.1.1 as including intra company transfers of product.
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Division 3 – Processing of poultry

11 Application

- (1) Subject to subclause (2), and to avoid doubt, Standards 3.2.2 and 3.2.3 apply to a poultry processor.
- (2) In areas where poultry is slaughtered –
 - (a) paragraph 17(1)(d) of Standard 3.2.2 does not apply; and
 - (b) paragraph 24(1)(a) of Standard 3.2.2 does not apply in relation to the poultry intended for slaughter.

12 General food safety management

- (1) A poultry processor must systematically examine all of its processing operations to identify potential hazards and implement control measures to address those hazards.
- (2) A poultry processor must also have evidence to show that a systematic examination has been undertaken and that control measures for those identified hazards have been implemented.
- (3) A poultry processor must verify the effectiveness of the control measures.

(4) A poultry processor must operate according to a food safety management statement that sets out how the requirements of this Division are to be or are being complied with.

13 Receiving

A poultry processor must not process poultry product for human consumption if the processor ought reasonably know or ought reasonably suspect that the poultry product is unsuitable.

14 Inputs

A poultry processor must take all reasonable measures to ensure inputs do not make the poultry product unsuitable.

Editorial note:

See Standard 4.1.1 for the definition of ‘inputs’.

For guidance on what constitutes acceptable water in processing see the *Australian Drinking Water Guidelines 2004* of the National Health and Medical Research Council of Australia.

15 Waste disposal

(1) A poultry processor must store, handle or dispose of waste in a manner that will not make the poultry product unsuitable.

(2) For subclause 15(1), waste includes unsuitable poultry and unsuitable poultry product, sewage, waste water and garbage.

16 Skills and knowledge

A poultry processor must ensure that persons engaged in poultry processing have –

- (a) skills in food safety and food hygiene; and
- (b) knowledge of food safety and food hygiene matters; and
- (c) skills and knowledge to detect a condition that would render poultry or poultry product unsuitable;

commensurate with their work.

17 Traceability

A poultry processor must ensure that it can identify the immediate supplier and immediate recipient of poultry product handled by the poultry processing business.

18 Sale or supply

A poultry processor must not sell or supply poultry product for human consumption if the processor ought reasonably know or ought reasonably suspect that the poultry product is unsuitable.

Editorial note:

See Standard 1.3.3 for requirements relating to the use of water as a processing aid.

See Standard 1.2.4 for labelling requirements where water is an ingredient in the final poultry product at a level of 5% or more.

19 Requirements for producers of ready-to-eat poultry meat

Division 3 of Standard 4.2.3 applies to the producers of ready-to-eat poultry meat.

Explanatory Memorandum

September 2009

FOOD STANDARDS AUSTRALIA NEW ZEALAND

PRIMARY PRODUCTION AND PROCESSING STANDARD FOR POULTRY MEAT

EXPLANATORY MEMORANDUM

OUTLINE

Standard 4.1.1

Consistent with good drafting practice, Item 5 inserts a general application and interpretation Standard (Standard 4.1.1) at the beginning of Chapter 4. The application and interpretation provisions in new Standard 4.1.1 will apply to all primary production and processing standards (PPP standards) unless the individual standard states otherwise.

This drafting approach reflects the intent of Standard 3.1.1 in Chapter 3. Standard 3.1.1 provides for general application and interpretation provisions across the Chapter 3 Standards.

Standard 4.2.2

Standard 4.2.2 proposes to introduce through-chain measures in the poultry production chain with the aim of reducing the microbiological hazards associated with the production and processing of poultry and poultry meat products.

This standard applies to all businesses that produce and process poultry or poultry meat products intended for human consumption.

Standard 4.2.2 does not apply to New Zealand. While there is an agreement between Australia and New Zealand to establish one joint food standard-setting system for the two countries, the agreement specifically excludes food hygiene provisions (Chapter 3 and Chapter 4). New Zealand maintains and develops its own food safety regulatory measures.

Standard 4.2.2 has three Divisions. Division 1- Preliminary, contains definitions specific to the Standard; Division 2 sets out the requirements that a poultry primary production business must comply with to ensure suitability of the product. Further, Division 3 sets out the requirements that a poultry processing business must comply with to ensure suitability of the product.

In this Explanatory Memorandum:

- The text of the standard is included in bold Times New Roman type and clause, subclause and paragraph numbering and lettering are the same as those in the Standard.
- The meaning of the definitions used in the Standard are explained where it is thought that more explanation may be necessary.
- The intent behind every requirement in the Standard is explained.

The Explanatory Memorandum does not specify ways in which poultry producers or processors can comply with the requirements in the standard. When incorporated or adopted into law in the jurisdictions an implementation model may need to be developed to consistently implement Standard 4.2.2 across the jurisdictions.

To commence: 24 months from gazettal

The amendments in this instrument are to commence 24 months from gazettal to provide jurisdictions and industry with the ability to develop consistent implementation of the Standards.

[1] *Standard 1.6.2 of the Australia New Zealand Food Standards Code is varied by deleting clause 4, substituting –*

Deleted

Clause 4 of Standard 1.6.2 provides that eviscerated poultry may include gizzards and other parts of the bird and requires that uneviscerated poultry must not be frozen. Clause 4 is being deleted as it is considered to be no longer necessary. The food safety hazards are now addressed through general outcome based requirements in Division 3 of proposed Standard 4.2.2.

[2] *Standard 2.2.1 of the Australia New Zealand Food Standards Code is varied by deleting clause 2, substituting –*

Deleted

Clause 2 of Standard 2.2.1 provides a limit for fluid loss from thawed poultry. This provision is no longer considered necessary. However an editorial note at the end of proposed Standard 4.2.2 references Standard 1.3.3 as it is relevant to the use of water as a processing aid.

[3] *Standard 2.2.1 of the Australia New Zealand Food Standards Code is varied by deleting the Schedule*

The Schedule to Standard 2.2.1 provides the method for determining fluid loss. With the deletion of clause 2 of Standard 2.2.1, this Schedule is no longer necessary and is also being repealed.

[4] *The Australia New Zealand Food Standards Code is varied by inserting –*

STANDARD 4.1.1

**PRIMARY PRODUCTION AND PROCESSING STANDARDS
PRELIMINARY PROVISIONS**

(Australia only)

Purpose and commentary

This Standard sets out preliminary provisions which apply to the Primary Production and Processing Standards contained in Chapter 4 of the Code.

Table of Provisions

1 Interpretation

2 Application

1 Interpretation

Unless the contrary intention appears, in this Chapter -

Authority means the State, Territory or Commonwealth agency or agencies having the legal authority to implement and enforce primary production and processing Standards.

control measure means a measure that prevents, eliminates or reduces to an acceptable level, a food safety hazard.

handling of food includes the producing (including growing, cultivation, picking harvesting, or catching), collecting, extracting, processing, manufacturing, storing, transporting, delivering, preparing, treating, preserving, packing, cooking, thawing, serving or displaying of food.

The definition of ‘handling’ in Standard 3.1.1 has been expanded on for this Standard to clearly encompass all steps in the food supply chain including primary food production type activities – a concept which was considered by the Primary Production and Processing Working Group (PPPWG) when investigating the definition of ‘handling’ in the Model Food provisions.

hazard means a biological, chemical or physical agent in, or condition of, food that has the potential to cause an adverse health effect in humans.

inputs includes any feed, litter, water, chemicals or other substances used in, or in connection with the primary production or processing activity.

supply includes intra company transfer of produce.

verification means the application of methods, procedures, tests and other tools for evaluation to determine compliance with the relevant requirement.

The definitions proposed in clause 1 are used in Standard 4.2.2, but have also been used in other primary production and processing standards such as the seafood primary production and processing standard. These definitions are included as general definitions across Chapter 4 to avoid the need to repeat them in each vertical standard.

The term ‘verification’ has been introduced in Standard 4.2.2 and is defined in this general 4.1.1 standard as it is likely to be used in other primary production and processing standards.

2 Application

(1) Unless the contrary intention appears, this Standard applies to Primary Production and Processing Standards in Chapter 4 of this Code.

(2) Standards in Chapter 4 of this Code do not apply in New Zealand.

The inclusion of this application clause avoids the need to repeat the general application provision in each of the Chapter 4 standards.

[5] *The Australia New Zealand Food Standards Code is varied by omitting Standard 4.2.2 substituting –*

STANDARD 4.2.2

PRIMARY PRODUCTION AND PROCESSING STANDARD FOR POULTRY MEAT

(Australia only)

Purpose and commentary

This Standard sets out a number of food safety requirements for the primary production and processing of poultry, and poultry carcasses and poultry meat for human consumption. At the primary production stage, businesses that produce poultry must implement measures to control the food safety hazards and must be able to trace their products. Businesses that process poultry must control their food safety hazards and must be able to trace their products. It is the responsibility of these businesses not only to comply with this Standard but also to be able to demonstrate compliance. This Standard is, in part, intended to reduce the contamination of poultry, poultry carcasses and poultry meat by pathogenic *Campylobacter* and *Salmonella*.

Table of Provisions

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- 2 Application**

Division 2 – Primary production of poultry

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- 4 Inputs**
- 5 Waste disposal**
- 6 Health and hygiene requirements**
- 7 Skills and knowledge**
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Division 3 – Processing of poultry

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- 15 **Waste disposal**
- 16 **Skills and knowledge**
- 17 **Traceability**
- 18 **Sale or supply**
- 19 **Requirements for producers of ready-to-eat poultry meat**

Clauses

Division 1 – Preliminary

1 Interpretation

(1) Unless the contrary intention appears, and subject to Standard 4.1.1, the definitions in Chapter 3 of this Code apply in this Standard.

This subclause carries over definitions from Chapter 3 standards, unless Standard 4.1.1 specifically defines the term.

(2) The definition of ‘condition’ in Standard 3.2.2 does not apply in this Standard.

Standard 3.2.2 has a specific definition of ‘condition’ as it relates to processing. The term ‘condition’ as used in Standard 4.2.2 should be read according to the ordinary dictionary meaning of the term.

(3) In this Standard –

carcass means the whole dressed body of slaughtered poultry, but excludes any part that has been removed from the dressed body, for example, the head, feathers, viscera and blood.

food safety management statement means a statement, which at a minimum, has been approved or recognised by the relevant authority and subjected to ongoing verification activities by a poultry producer or poultry processor and the relevant authority.

Editorial note:

‘Authority’ is defined in draft Standard 4.1.1 as –

the State, Territory or Commonwealth agency or agencies having the legal authority to implement and enforce primary production and processing Standards.

poultry means chicken, turkey, duck, squab (pigeons), geese, pheasants, quail, guinea fowl, muttonbirds and other avian species (except ratites).

poultry handler means a person who handles or supervises the handling of poultry.

poultry meat means the parts of the poultry carcass intended for human consumption.

a poultry producer means a business, enterprise or activity that involves –

- (a) growing; or**
- (b) live transporting;**

of poultry for human consumption.

a poultry processor means a business, enterprise or activity that involves the processing or transporting of poultry product for human consumption.

poultry product means the carcass of poultry, poultry meat or poultry meat product, as the case may be.

premises means a poultry primary production or processing premises.

processing of poultry or poultry product includes the –

- (a) holding before stunning; or**
- (b) stunning; or**
- (c) bleeding; or**
- (d) scalding; or**
- (e) defeathering; or**
- (f) removing of head or feet; or**
- (g) processing of feet; or**
- (h) removing of viscera; or**
- (i) processing of offal; or**
- (j) trimming; or**
- (k) washing; or**
- (l) chilling; or**
- (m) spin chilling; or**
- (n) freezing; or**
- (o) thawing; or**
- (p) deboning or portioning; or**
- (q) mincing or dicing; or**
- (r) marinating; or**
- (s) injecting or massaging; or**
- (t) partial cooking; or**
- (u) crumbing; or**
- (v) packaging; or**
- (w) storage, associated with processing;**

of poultry or poultry product, as the case may be, for human consumption.

unsuitable means unsuitable as defined in Standard 3.1.1, but includes poultry or poultry product that is in a condition, or contains a substance a person would ordinarily regard as making the poultry, after processing, or poultry product unfit for human consumption.

Editorial note:

‘Suitable’ are defined in Standard 3.1.1. Clause 2 of Standard 3.1.1 provides:

Food is not suitable if it –

- (a) is damaged, deteriorated or perished to an extent that affects its reasonable intended use; or**
- (b) contains any damaged, deteriorated or perished substance that affects its reasonable intended use; or**
- (c) is the product of a diseased animal or an animal that has died otherwise than by slaughter, and has not been declared by or under another Act to be safe for human consumption; or**
- (d) contains a biological or chemical agent, or other matter or substance, that is foreign to the nature of the food.**

However, food is not unsuitable for the purposes of the Food Safety Standards merely because –

- (a) it contains an agricultural or veterinary chemical in an amount that does not contravene the *Australia New Zealand Food Standards Code*; or**
- (b) it contains a metal or non-metal contaminant (within the meaning of the *Australia New Zealand Food Standards Code*) in an amount that does not contravene the permitted level for the contaminant as specified in the *Australia New Zealand Food Standards Code*; or**
- (c) it contains any matter or substance that is permitted by the *Australia New Zealand Food Standards Code*.**

Subclause 1(3) sets out definitions which are exclusively used in Standard 4.2.2 and introduces new concepts, namely, ‘food safety management statement’ as well as extending the definition of ‘unsuitable’ defined in Standard 3.1.1, by introducing the concept of ‘unfit’.

The definition of ‘food safety management statement’ has been added to provide clarity around the meaning of clauses 3 and 12 regarding general food safety management requirements.

The inclusion of ‘unsuitable’ (rather than reliance on the words ‘unsafe/unsuitable’ as defined in Standard 3.1.1) provides greater scope in the practical application for jurisdictions and industry in determining whether or not the product is unfit for human consumption. The concept of ‘unfit for human consumption’ has been used in other statutory instruments both in Australia and elsewhere and has been subject to judicial and parliamentary counsel scrutiny.

2 Application

This Standard does not apply to poultry retail sale activities or poultry product retail sale activities.

The scope of this Standard applies through chain up to the point of entry into the retail and service sector. Chapters 2 and 3 apply to these retail and service sectors.

Division 2 – Primary production of poultry

3 General food safety management

- (1) A poultry producer must systematically examine all of its primary production operations to identify potential hazards and implement control measures to address those hazards.**
- (2) A poultry producer must also have evidence to show that a systematic examination has been undertaken and that control measures for those identified hazards have been implemented.**
- (3) A poultry producer must operate according to a food safety management statement that sets out how the requirements of this Division are to be or are being complied with.**

Subclauses (1) and (2) set out the elements that a primary production business must develop and incorporate in a food safety management statement (subclause (3)). This statement becomes the vehicle whereby poultry producers demonstrate compliance with the elements of the standard as well as allowing the jurisdictions to monitor the businesses' compliance.

The poultry producer will need to prepare a food safety management statement setting out how the requirements of this Division are being complied with. This statement must be approved or endorsed by the state, territory or commonwealth agency which legally enforces or implements primary production and processing Standards.

4 Inputs

A poultry producer must take all reasonable measures to ensure inputs do not make the poultry unsuitable.

Editorial note:

See the definition of 'inputs' in Standard 4.1.1 which includes feed, litter, water and chemicals used in or in connection with the primary production activity.

When preparing the food safety management statement, producers are required to examine and show how they are managing the inputs into their production system, for example how they deal with water used in production of live poultry intended for poultry meat.

5 Waste disposal

- (1) A poultry producer must store, handle or dispose of waste in a manner that will not make the poultry unsuitable.**
- (2) For subclause 5(1), waste includes sewage, waste water, litter, dead poultry and garbage.**

6 Health and hygiene requirements

- (1) A poultry handler must exercise personal hygiene and health practices that do not make the poultry unsuitable.**
- (2) A poultry producer must take all reasonable measures to ensure that poultry handlers, personnel and visitors exercise personal hygiene and health practices that do not make the poultry unsuitable.**

7 Skills and knowledge

A poultry producer must ensure that poultry handlers have –

- (a) skills in food safety and food hygiene; and**
- (b) knowledge of food safety and food hygiene matters;**

commensurate with their work.

8 Design, construction and maintenance of premises, equipment and transportation vehicles

A poultry producer must –

- (a) ensure that premises, equipment and transportation vehicles are designed and constructed in a way that minimises the contamination of poultry, allows for effective cleaning and sanitisation and minimises the harbourage of pests and vermin; and**
- (b) keep premises, equipment and transportation vehicles effectively cleaned, sanitised and in good repair to ensure poultry is not made unsuitable.**

Clauses 5, 6, 7, and 8 are general requirements similar to those set out in Chapter 3 but have been tailored to on farm poultry production activities. These requirements, amongst others in this Standard, must be addressed by the production business when developing their management statement under clause 3.

9 Traceability

A poultry producer must be able to identify the immediate recipient of the poultry handled by the poultry producer.

This clause needs to be addressed in the management statement. Essentially producers need evidence to show to whom they have supplied their product for processing.

10 Sale or supply of poultry

A poultry producer must not sell or supply poultry for human consumption if the producer ought reasonably know or ought reasonably suspect that the poultry is unsuitable.

Editorial note:

‘Supply’ is defined in Standard 4.1.1 as including intra company transfers of product.

The intent of this clause is to prevent the transfer of product from the producer to the processor where the product is ‘unsuitable’ as defined in this Standard. This provision is complemented by clause 13 whereby the processor must not accept unsuitable poultry. The intent is to remove unsuitable product from the supply chain.

Division 3 – Processing of poultry

11 Application

- (1) Subject to subclause (2), and to avoid doubt, Standards 3.2.2 and 3.2.3 apply to a poultry processor.**
- (2) In areas where poultry is slaughtered –**
 - (a) paragraph 17(1)(d) of Standard 3.2.2 does not apply; and**
 - (b) paragraph 24(1)(a) of Standard 3.2.2 does not apply in relation to the poultry intended for slaughter.**

As a poultry processor is a ‘food business’ under Standard 3.1.1 Standards 3.2.2 and 3.2.3 automatically apply to the processor. However, the provisions in Standard 3.2.2 mentioned in paragraphs (2)(a) and (b) cannot practically be applied to areas where poultry processing is undertaken. Accordingly, poultry processing establishments have been exempted from those provisions.

12 General food safety management

- (1) A poultry processor must systematically examine all of its processing operations to identify potential hazards and implement control measures to address those hazards.**
- (2) A poultry processor must also have evidence to show that a systematic examination has been undertaken and that control measures for those identified hazards have been implemented.**
- (3) A poultry processor must verify the effectiveness of the control measures.**
- (4) A poultry processor must operate according to a food safety management statement that sets out how the requirements of this Division are to be or are being complied with.**

Subclauses (1), (2), and (3) set out the elements that a poultry processor must include in a food safety management statement (subclause (4)). This statement becomes the vehicle whereby poultry processors demonstrate compliance with the elements of the standard as well as allowing the jurisdictions to monitor the businesses’ compliance.

Subclause 12(3) introduces the concept of verification. This means that a processor must have verifiable evidence to show that their systems are operating in accordance with their management statement and in particular the control measures implemented are monitored regularly and are effective. One example of verifiable evidence that a control measure is effective in achieving the stated outcome is microbiological testing of specific pathogens and retention of the results for verification by all parties concerned.

The poultry processor must prepare a food safety management statement setting out how the requirements of this Division are being complied with and verified. This statement must be approved or endorsed by the State, Territory or Commonwealth agency which legally enforces or implements primary production and processing Standards.

13 Receiving

A poultry processor must not process poultry product for human consumption if the processor ought reasonably know or ought reasonably suspect that the poultry product is unsuitable.

The intent of this clause is to prevent the transfer of product from the producer to the processor where the product is 'unsuitable' as defined in this Standard. This provision is complemented by clause 10 whereby the producer must not supply unsuitable poultry. The intent is to remove unsuitable product from the supply chain.

14 Inputs

A poultry processor must take all reasonable measures to ensure inputs do not make the poultry product unsuitable.

Editorial note:

See Standard 4.1.1 for the definition of 'inputs'.

For guidance on what constitutes acceptable water in processing see the *Australian Drinking Water Guidelines 2004* of the National Health and Medical Research Council of Australia.

When preparing the food safety management statement, processors are required to examine and show how they are managing the inputs into their processing system, for example, how they deal with water used in processing of poultry product intended for human consumption.

15 Waste disposal

(1) A poultry processor must store, handle or dispose of waste in a manner that will not make the poultry product unsuitable.

(2) For subclause 15(1), waste includes unsuitable poultry and unsuitable poultry product, sewage, waste water and garbage.

16 Skills and knowledge

A poultry processor must ensure that persons engaged in poultry processing have –

- (a) skills in food safety and food hygiene; and**
- (b) knowledge of food safety and food hygiene matters; and**
- (c) skills and knowledge to detect a condition that would render poultry or poultry product unsuitable;**

commensurate with their work.

Clauses 15 and 16 are specific requirements similar to those set out in Chapter 3 but have been tailored to poultry processing activities. These requirements, amongst others in this Standard, must be addressed by the processing business when developing their management statement under clause 12.

As clauses 15 and 16 are specific provisions for poultry processing they would override any similar general provisions in Chapter 3 where there is an inconsistency between the specific and the general provisions.

17 Traceability

A poultry processor must ensure that it can identify the immediate supplier and immediate recipient of poultry product handled by the poultry processing business.

This clause needs to be addressed in the management statement. Essentially, processors need to have evidence (via a system) to show from whom they have received poultry and to whom they have supplied their poultry meat and poultry meat products.

18 Sale or supply

A poultry processor must not sell or supply poultry product for human consumption if the processor ought reasonably know or ought reasonably suspect that the poultry product is unsuitable.

The intent of this clause is to prevent the transfer of product from the processor to other parts of the supply chain, for example, retail sale or catering where the product is ‘unsuitable’ as defined in this Standard.

This clause, together with clauses 10 and 13 are designed to ensure that unsuitable product is not introduced into the human consumption chain. The intent is to remove unsuitable product from the supply chain.

Editorial notes:

See Standard 1.3.3 for requirements relating to the use of water as a processing aid.

See Standard 1.2.4 for labelling requirements where water is an ingredient in the final poultry product at a level of 5% or more.

19 Requirements for producers of ready-to-eat poultry meat

Division 3 of Standard 4.2.3 applies to the producers of ready-to-eat poultry meat.

Standard 4.2.3 (Primary Production and Processing of Meat) is currently a skeleton standard but contains Division 3 which provides requirements for the production of ready-to-eat meat. Clause 19 clarifies that Division 3 of Standard 4.2.3 also applies to producers of ready-to-eat poultry meat.

Summary of, and responses to, submissions received at Draft Assessment

The following is a summary by issue of the submissions received in response to the release of the Draft Assessment Report and the draft Primary Production and Processing Standard for Poultry Meat provided in the Draft Assessment Report. FSANZ responses are in italics. The references to ‘options’ in the submissions are to the options as they were described in the Draft Assessment Report.

Seventeen submissions were received from:

1. Australian Chicken Growers Council Ltd (ACGC)
2. Australian Chicken Meat Federation Inc (ACMF)
3. Australian Consumers’ Association (ACA) (now CHOICE)
4. Australian Food and Grocery Council (AFGC)
5. Bartter Enterprises (Bartter)
6. Coles Myer Ltd (Coles)
7. Department of Agriculture, Fisheries and Forestry (DAFF)
8. Department of Health, WA (DoH, WA)
9. Department of Human Services, Victoria (DoH, Vic)
10. Food Technology Association of Victoria (FTA, Vic) (Now Food Technology Association of Australia)
11. NSW Farmers’ Association (Contract Poultry Group) (NSW Farmers’ Assoc Poultry Group)
12. NSW Food Authority (NSWFA)
13. New Zealand Food Safety Authority (NZFSA)
14. Poultry Industry Association of NZ (PIANZ)
15. Safe Food Queensland (SFQ)
16. SA Department of Health, Department of Primary Industries and Resources SA and the SA Research and Development Institute (DoH SA/PIRSA/SARDI)
17. WaterCulture

At Draft Assessment, four risk management options to reduce public health risks posed by contaminated poultry meat were proposed. The options were:

Option 1: maintain the *status quo*

Option 2: encourage compliance with a voluntary code-of-practice

Option 3: require poultry growers to control food safety hazards and obligate poultry processors to ensure growers supplying them are meeting this requirement

Option 4: require poultry growers to implement a documented HACCP based food safety management system.

Option 3 was the preferred option of FSANZ. The draft Standard required poultry growers to control food safety hazards and obligated poultry processors to ensure growers supplying them were meeting this requirement.

Summary by issue

General comments and support for a regulatory approach

The AFGC supported a through-chain, outcome-based approach which includes a standard at farm level where current management is not otherwise satisfactory. DAFF also supported the development of a standard as it would ensure a nationally consistent approach to poultry meat safety management in Australia. DAFF stated that the Standard should be based on minimum effective outcomes based regulation, should apply consistent regulation to import, export and domestic markets and be consistent with section 18 of the FSANZ Act. The Standard should also be consistent with the Codex *Code of Hygienic Practice for Meat* relevant to Australian conditions and consider the recommendations of the National Competition Policy review of Export legislation. The Standard should not duplicate any existing regulation within the Code.

The requirements proposed in the standard are consistent with the general principles of meat hygiene recommended by the Codex Code of Hygienic Practice for Meat. The proposed primary production and processing Standard for poultry meat does not duplicate other requirements in the Code.

There was support for a poultry primary production and processing standard from several organisations. The ACGC supported option 3 with the reservation that there does not appear to be a clear understanding in the proposed Standard of which factors in producing poultry that growers, processors and contractors have control over. This support was also conditional on the Standard being implemented consistently by the jurisdictions. Documented HACCP for poultry growers was not seen as viable either in terms of costs or outcomes. The ACA supported requirements for poultry growers to address their hazards either through option 3 or option 4. The ACA considered that documented HACCP-based food safety management systems for primary production of poultry would provide the greatest benefit for consumers with respect to lowering poultry contamination. The AFGC, Coles, DoH WA, DoH Vic, SFQ, the NZFSA and the FTA, Vic also supported the proposed draft standard.

The NSW Famers' Assoc Poultry Group supported a standard stating that there would be economic benefits for the industry by ensuring that poultry meat could be marketed as a quality product. Also, it reduced variability in chick and feed quality and the quality of the growing and transport environments which minimised fluctuations in costs and efficiency for processors and contracted growers. The NSWFA supported the Standard whereby the processors managed compliance by the individual growers as this enabled government to scrutinise arrangements and intervene only where necessary.

The proposed draft Standard identifies those factors which are the responsibility of growers and which are responsibilities of processors. Growers under contract may have to ensure these matters are addressed through their contracts.

Non-support for the proposed Standard.

DoH SA/PIRSA/SARDI, in a joint submission, did not support the proposed draft Standard; concerned that it would entrench current industry practice that currently resulted in frequent supply of contaminated poultry to consumers.

Support for a non-regulatory approach

The ACMF and Bartter supported a non-regulatory approach for the poultry production sector and considered that real progress on food safety outcomes with poultry meat could be achieved by strengthening critical controls during poultry processing phase, but not regulating the poultry production phase.

Issues on standard development, implementation and cost of compliance

The ACMF was concerned about costs to growers and processors to comply with the Standard and stated that it was crucial to ensure legislation did not impose duplications and restrict the operational means by which the industry could achieve the desirable food safety outcomes. Also, it stated that a uniform and outcome based approach to the implementation of the Standard would enable the compliance costs to be kept at a reasonable level

The ACGC commented (in response to evidence suggesting partial depopulation was associated with the spread of *Campylobacter* infection in poultry flocks) that a move to single age flocks would impose significant costs on growers and processors and significant logistical problems due to the size of the industry. There would be a major under utilisation of grow out facilities which could make farms unviable. The ACMF also considered that keeping partial depopulation to a minimum, suggested at Draft Assessment, could not be implemented at no or minimal cost to industry. Restricting partial depopulation would reduce production for a given production surface and lead to an increase in the cost of meat. Bartter supported the need for partial depopulation and the NSW Farmers' Assoc Poultry Group stated that the evidence that it increased contamination was not addressed in the risk management.

The ACGC stated that a fully equipped shed cost around \$12-15 per bird, with new sheds having a capacity of around 40,000 birds. The ACMF said that the cost of a standard new shed is substantially underestimated in the Draft Assessment Report; the cost of a small shed (24,000 birds) was around \$300,000, not \$60,000. The cost of poultry shed quoted in the Draft Assessment Report was misleading. Bartter stated that a tunnel ventilated controlled environment shed cost from \$500,000 to \$700,000.

FSANZ is liaising with the jurisdictions regarding implementation and information for the impact (cost:benefit) analysis and specific information from industry such as costs of sheds is very helpful. The specific reference to partial depopulation has been deleted in this Report.

Bartter supported the comments made by the ACMF. In addition, it stated that any bird management recommendations should be in the context of the poultry welfare code.

This is a matter for the implementation of the Standard and will be drawn to the attention of ISC.

The ACGC stated that growers implementing the National Biosecurity Manual requirements would probably not incur much additional cost unless there are significant changes. However, it noted that it is important to recognise that the Manual related only to matters that the grower had control over.

The NSW Farmers' Assoc Poultry Group stated that the auditing by third parties of processors activities in monitoring breach of contract by growers is the most cost-effective way of ensuring compliance of growers in the management of food safety. This Group also stated that the cost of production will increase and this is unlikely to be recouped from the consumer.

The impact analysis at Final Assessment will address the costs and benefits of the risk management options.

DAFF stated that the Standard should provide a level of detail regarding what was required by the poultry food business in order to enable it to comply with the Standard and ensure that the scope of activities covered within the documented food safety management system were consistent with AS 4465. It was recommended this detail be provided in a schedule to the Standard. Also, State regulations and codes of practice should be considered in developing the Standard to reduce impost on industry in complying.

Food safety requirements on poultry processing businesses in the proposed standard are consistent with those in AS 4465. Relevant State and Territory regulations and codes of practices have been considered in the development of the Standard.

Scientific assessment

DoH SA/PIRSA/SARDI suggested that new data from the NSW/SA retail poultry meat baseline study should be considered and the risk assessment conducted as part of the Draft Assessment Report should be updated to reflect the outcome of the retail survey. They also asked whether the scientific assessment had appropriately assessed chemical hazards like processing aids, food additives and leachate from packaging

Outcomes of the NSW/SA retail poultry meat survey, and later surveys, have been taken into account at Final Assessment. Processing aids, additive and leachate from packaging were specifically addressed in the Scientist Assessment of Public Health and Safety of Poultry Meat in Australia.

Food Safety Objectives, Acceptable Level of Protection, Performance Objectives and microbiological criteria

The NSWFA stated that a *Salmonella* testing requirement needed to be incorporated into the Standard with results reported to the proper authority. The possibility of testing for *Campylobacter* at a later stage should also be considered. Also, national pathogen targets should be set, based on agreed food safety objectives.

The proposed standard requires poultry processors to verify the effectiveness of their control measures.

DoH SA/PIRSA/SARDI asked whether an Acceptable Level of Protection had been determined for consumers in respect of *Campylobacter* attributable to consumption of chicken meat.

The Scientific Assessment concluded that any reduction in the prevalence and levels of Campylobacter and Salmonella on raw poultry meat is likely to reduce food-borne illness from these pathogens.

The South Australian joint submission also queried whether consideration had been given to:

- selecting a standard product form to use in a national program to monitor whether improvement are achieved by industry

This would be a matter for jurisdictions.

- setting microbiological performance objectives for retail products for industry to meet over a prescribed period?

The ISC-coordinated national survey on Campylobacter and Salmonella in poultry and poultry meat has provided baseline data to enable comparison and assessment of levels after the introduction of the Standard. This information would assist in the setting of target levels.

Clear delineation of responsibility

The ACGC stated that there must be a clear understanding in the Standard of what growers actually had control over and what was in the control of the processors or their other contractors. The NSW Farmers' Assoc Poultry Group also commented on the role of contractors stating that for some processors transport and feed milling was carried out by contractors; therefore a similar auditing mechanism for these contractors as for growers would be needed (auditing for breach of contract is suggested)

The NSWFA suggested the need for clarification of legal responsibility – records should separately indicate the farm inputs controlled by the processor and the grower.

DAFF raised some concerns with contractual arrangements between growers and processors being the key mechanism to ensure food safety practices were being followed and suggested ongoing and rigorous monitoring to assess adequacy of this arrangement.

The Standard places obligations on the various parties. The monitoring of compliance is a matter for the jurisdictions.

Consumer education and labelling product

The ACA stated it supported consumer education that referred specifically to poultry in conjunction with regulatory measures. This was needed to achieve further behaviour change among consumers. If consumer handling of poultry meat was considered to be contributing to food-borne illness, further 'generic' food safety messages would do little to address this. The PIANZ also made a comment regarding education; FSIC provided adequate advice to consumers on food safety. Control methods were the same for all meats. Singling out poultry might lead the consumer to have an irrational fear.

Education as an option to achieve the objective was one of the options assessed at Final Assessment and the above comments taken into account.

DoH SA/PIRSA/SARDI queried whether there should be a requirement for labelling of raw poultry products. For example, ‘this is a raw/partially cooked poultry meat product that may contain harmful organisms that must be handled carefully so as not to cross contaminate ready-to-eat foods and is required to be fully cooked before consumption’.

Standard 1.2.6 – Directions for Use and Storage already requires packaged food to include appropriate directions for the use and storage of food, where the food is of a nature as to warrant such directions for reasons of health and safety. This could apply to raw poultry, except where the poultry is ‘made and packaged on the premises from which it is sold’.

Drafting issues

Several issues were raised in respect of the requirements in the draft Standard included.

NZFSA sought to include muttonbirds in the definition of ‘poultry’.

Muttonbirds are now included in the definition of poultry in the Standard

NZFSA suggested the definition of ‘poultry primary production business’ needed clarification to avoid different interpretations.

The definition now reads:

a poultry producer means a business, enterprise or activity that involves –

- (a) growing; or*
- (b) live transporting;*

of poultry for human consumption.

DoH SA/PIRSA/SARDI suggested including ‘processing of offal and feet for human consumption’ and ‘mincing/dicing or altering the form of the meat’ in the definition of ‘processing of poultry’.

Processing of offal and mincing and dicing have been included.

NZFSA suggested

- more explicit coverage of extra vectors associated with a hatchery such as handling of dirty eggs, packaging material used for transportation of chicks etc
- an indication that chemical hazards from incorrect use of agricultural compounds and veterinary medicines are a safety hazard by adding another clause or include in guidance documents
- a clause be added to the effect that ‘only apparently visibly healthy birds are sent for processing’.

These issues are either no longer applicable because the proposed Standard has been substantially revised, or have been addressed in the revised Standard.

NZFSA sought clarification as to whether end-of-lay hens and end of production breeders that had not been subject to the requirements of the Standard can be accepted for processing.

The proposed Standard prohibits a poultry processing business processing poultry for human consumption if the business knows or ought reasonably suspects that the poultry is unacceptable’.

DoH SA/PIRSA/SARDI asked whether the requirements on poultry processing business applied to ‘custom processing’. (‘Custom processing’ refers to where people grow poultry for their own consumption and these poultry are slaughtered at processing plants).

The proposed Standard applies to poultry for sale for human consumption.

DAFF and SFQ suggested permitting compliance with a food safety program set out in Standard 3.2.1 to be one option for compliance. DAFF suggested providing a Schedule to cover the detailed requirements in a food safety management system.

The Standard requires an approved food safety management statement and does not specify details (other than it address the requirements of the standard) or means of compliance.

Deletion of the fluid loss limit

The AFGC and NZFSA supported deletion of fluid loss limit. Coles also supported the deletion of the limit, but supported water uptake guidance limits and suggested limits could be calculated over an average of 20 birds.

The ACA did not support the deletion of the fluid loss limit, nor raising the level of acceptable fluid loss to 8%. It supported its retention, but would accept allowing the limit to be measured (as an average) over a number of birds.

Deletion of requirement for eviscerated poultry

Coles supported the deletion of clause 4 of Standard 1.6.2.

Other issues

Several submitters mentioned specific issues in addition to those above. These have been taken into account in the final assessment.

The ACGC stated that mandating full cleanouts between batches was a problem as there were difficulties with obtaining new litter and disposal of spent litter. Past experience showed no benefit. In the USA where cleanout occurred only after 2 or 3 years or more, there were lower *Salmonella* and *Campylobacter* levels.

The draft Standard requires the producer to manage hazards from litter but does not prescribe full cleanouts.

WaterCulture described a water disinfection system which utilised electrochemical activation.

The PIANZ stated that traceability was inherently difficult in the poultry processing situation as there were many thousands of carcasses from each farm processed each day and inevitably there was some mixing

The revised Standard requires a poultry processing business to ensure that it can identify the immediate supplier and immediate recipient of poultry product handled.

The AFGC supported broadening processing aid permissions to give poultry processors greater flexibility to control bacterial contamination on poultry. It noted that the European Food Safety Authority considered that the treatment of poultry carcasses with trisodium phosphate, acidified sodium chlorite, chlorine dioxide, or peroxyacid solutions, under the described conditions of use, would be of no safety concern.

Chlorine dioxide is a generally permitted processing aid under the Code. The poultry industry can apply to FSANZ for approval to use these processing aids.

The NSW Farmers' Assoc Poultry Group stated that processor HACCP programs should include chick and feed quality, transport of chicks and pick up of marketable live poultry. These areas would also require third party auditing

The Standard requires the processor to address hazards associated with all of its processing activities – which may include the provision of feed and chicks to growers if this is part of their activities.

DoH SA/PIRSA/SARDI stated that a validated CCP was needed somewhere along the supply chain, otherwise the Standard would have a limited impact on reducing food-borne illness. The Standard should define what is meant by a CCP and preferably replace CCP by defined explicitly, non-critical control points and the principle of continuing quality management to constantly reduce hazards.

The Standard requires businesses to develop control measures for the hazards. Specific CCPs are not specified.

The PIANZ stated that The OzFoodNet unpublished data referred to in the Draft Assessment Report indicated the food service/retail sector was a significant problem of food-borne disease outbreaks. Rather than indicating this sector was adequately controlled, this pointed to that sector being a significant problem.

The food service/retail sector is already regulated under Chapter 3 of the Code and there are separate processes underway through FRSC examining risk management in these sectors. The Scientific Assessment concluded that reducing the levels of Campylobacter and Salmonella contamination on raw poultry would lead to reduction of human illness from these pathogens. Hence, if the food service/retail sector receives less contaminated poultry, there is less chance of this poultry causing illness.

DoH SA/PIRSA/SARDI commented that arsenic was likely to be present in poultry meat from the use of Roxarsone, an anti-coccidiosis treatment. However, as there was no residue limit specified in Standard 1.4.2 – Maximum Residue Limits for arsenic, the use of Roxarsone is in breach of the Code.

The APVMA has advised that an MRL is not required for the presence of arsenic in poultry from the use of Roxarsone. Arsenic levels are not expected to be above background if Roxarsone is used in accordance to the label instructions.

The same submission also raised that, as the presence of fluoride in mechanically separated meat (MSM) from poultry was identified as a potential public health safety issue for children in the Scientific Assessment, this risk needed to be managed. The submission suggested that use of MSM be prohibited in products predominantly eaten by children until information regarding safety is presented by industry.

This issue has been raised with the poultry industry. A more thorough assessment of the risk this fluoride may present to young children, having regard to other exposures, would need to be conducted before proposing a risk management strategy.