



Guidelines for the Investigation of Foodborne Disease for Local Government Environmental Health Officers





Government of South Australia
Department of Health

Guidelines for the Investigation of Foodborne Disease for Local Government Environmental Health Officers



Australian
Institute of
Environmental
Health

PLEASE READ BEFORE USING GUIDELINES

These guidelines are intended as a guide only when investigating foodborne disease. They are not intended to be used as a manual in a prescriptive manner and on all occasions, professional judgment should be used when investigating foodborne disease. If you have any questions on foodborne disease and investigations or wish to clarify the information provided in the guidelines please contact the Food Section of Environmental Health Services and/or the Communicable Disease Control Branch.

November 2006

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Local Government Environmental Health Officers

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These guidelines have been developed in collaboration with Australian Institute of Environmental Health (AEIH), Local Government Environmental Health Officers (LG), the Food Policy and Programs Branch (FP) and Communicable Disease Control Branch (CDCB).

If you require any further clarification or have questions regarding the guidelines please phone the FP or the CDCB. The guidelines can also be obtained from the web address www.dh.sa.gov.au/pehs (click on Food Safety).

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Contents

DEFINITIONS	5
ABBREVIATIONS	6
SECTION 1: HOW TO USE THE GUIDELINES	7
1.1 Aim of the guidelines	7
1.2 An Overview	7
SECTION 2: BACKGROUND INFORMATION ON FOODBORNE DISEASE	8
2.1 Gastroenteritis	8
2.2 Levels of foodborne disease in Australia	8
SECTION 3: ROLES AND RESPONSIBILITIES IN FOODBORNE DISEASE INVESTIGATIONS	10
3.1 Introduction	10
3.2 Determination of the lead agency in an environmental investigation	10
SECTION 4: PROCEDURE FOR INVESTIGATING FOODBORNE DISEASE	12
4.1 Introduction	12
4.2 Recording tools ~ Questionnaires	12
4.3 Flow Chart A - Instructions	13
4.4 Flow Chart B - Instructions	15
4.5 Communication during an investigation	17
4.6 Foodborne disease flow chart. Part A - Department of Health calls Local Government	18
4.7 Foodborne disease flow chart. Part B - Member of public calls Local Government	19
SECTION 5: CHECKLIST FOR ASSESSING PREMISES AS PART OF A FOODBORNE DISEASE INVESTIGATION	20
5.1 Introduction	20
5.2 Checklist	20
SECTION 6: CONTROL OF FOODBORNE GASTROENTERITIS OUTBREAKS	23
6.1 Key Points for Guidance of Local Government	23
6.2 Hand washing fact sheet	24
SECTION 7: FOOD SAMPLES AND SWABBING DURING AN INVESTIGATION	25
7.1 Collection of food samples	25
7.2 Environmental swabbing procedure	26
7.3 Sampling and swabbing equipment	26
7.4 Recording of sampling information and labeling of samples	27
7.5 Storage and transport of samples	28
7.6 Use of gloves for screening food handlers for hand carriage of foodborne pathogens	28
SECTION 8: CONTACT DETAILS	29
8.1 Food Policy and Programs Branch, Department of Health	29
8.2 The Communicable Disease Control Branch, Department of Health	29
8.3 Pathology Laboratories - faecal samples can be delivered to any of the collection centres of South Australian pathology laboratories	30

8.4 Laboratories for food samples	32
8.6 Map of Institute of Medical and Veterinary Science	33
SECTION 9: GUIDELINES FOR LG INVESTIGATION OF GASTRO- INTESTINAL ILLNESS IN AGED CARE FACILITIES	34
9.1 Introduction	34
9.2 Investigation guidelines	34
SECTION 10: DETAILED DESCRIPTIONS OF FOODBORNE DISEASE PATHOGENS	36
Definitions	36
10.1 Summary of causes of gastrointestinal illness	37
<i>Bacillus cereus</i> gastroenteritis	39
Botulism	40
<i>Campylobacter</i> infection	41
<i>Clostridium perfringens</i> gastroenteritis	42
Cryptosporidiosis	43
Fish poisoning	44
Food poisoning	46
Giardiasis	47
Haemolytic uraemic syndrome (HUS) and shiga toxin- producing <i>Escherichia coli</i>	48
Hepatitis A	49
Listeriosis	51
<i>Salmonella</i> gastroenteritis	52
<i>Shigella</i> infection	53
Staphylococcal gastroenteritis	54
<i>Vibrio parahaemolyticus</i> gastroenteritis	55
Viral gastroenteritis	56
Yersiniosis	57
General recommendations for the treatment of gastroenteritis	58
SECTION 11: QUESTIONNAIRES AND OTHER USEFUL INFORMATION	59
11.1 Staff Questionnaire	59
11.2 Hypothesis Generating Questionnaire	61
11.3 Instructions for using the Hypothesis Generating Questionnaire	69
11.4 Instructions for a person filling out the Hypothesis Generating Questionnaire without the assistance of an interviewer	71
11.5 Prompts for obtaining further information	72
11.6 Report of a food poisoning complaint	73
11.7 Collection of faecal/stool specimen - this can be handed out to the ill person	75
11.8 Guidelines for exclusion of food handlers with infectious gastroenteritis from handling food.	78
11.9 Microbiological food and environmental sampling form	79
11.10 Other useful information, websites and references	80
References	80

Definitions

Aerosol	Tiny airborne droplets that are exhaled during coughing, sneezing or vomiting and can remain suspended in air or on dust particles. The droplets in the air may be breathed in directly by another person, or ingested indirectly by a person touching contaminated surfaces and objects then touching the mouth.
Cluster	A cluster is a small group of cases of one disease that may be linked by time and geography. After an investigation of a cluster, cases may be linked by a common food or food premise and may be described as an outbreak.
Epidemic	The occurrence in a community or region, cases of an illness in excess of normal expectancy.
Faecal-oral route	The infecting organism is spread when microscopic amounts of faeces from an infected person with symptoms, or an infected person without symptoms (a carrier), are taken in by another person by mouth. The faeces may be passed directly from soiled hands to mouth or indirectly by way of objects, surfaces, food or water contaminated with faeces.
Gastroenteritis	Describes a group of conditions usually caused by infection with a microorganism or ingestion of chemical toxins. Gastroenteritis usually consists of mild to severe diarrhoea that may be accompanied by loss of appetite, nausea, vomiting, cramps and discomfort in the abdomen.
HACCP	Hazard analysis and critical control points.
Incubation period	Is the interval from the ingestion of the micro-organism or toxin to the time clinical illness begins.
Infection	The process by which organisms capable of causing disease gain entry to the body and multiply.
Infectious Gastroenteritis	Gastroenteritis caused by an infection with a microorganism. In aged care facilities, a large range of microorganisms have been reported to cause gastroenteritis including norovirus, rotavirus, <i>Salmonella</i> and <i>Clostridium perfringens</i> .
Infectious period	The period of time that the infected person can transmit the disease.
Outbreak	An epidemic limited to localized increase in the incidence of a disease, for example, in a town or closed institution.
Sporadic case	Cases of possible foodborne disease that have not been linked to other cases of similar illness. Individual cases may have acquired the infection from a range of food exposures that has been contaminated from independent sources.

Abbreviations

AIEH (SA)	Australian Institute of Environmental Health (SA Branch)
CDCB	Communicable Disease Control Branch of the Department of Health
DH	Department of Health
LG	Local Government Environmental Health Officer
FP	Food Policy and Programs Branch, Public Health, of the Department of Health
IMVS	Institute of Medical and Veterinary Science
PIRSA	Primary Industry and Resources South Australia

Section 1: How to use the guidelines

1.1 Aim of the guidelines

As mentioned on the front page, these guidelines have been developed by AEIH, CDCB, FP and LG to provide information and guidelines to assist Environmental Health Officers in Local Government to investigate foodborne disease. The guidelines are of a general nature and should be used only as a guide when investigating foodborne disease. Overall, professional judgment plays a large part in assessing each situation and how the guidelines are used.

1.2 An Overview

The main section of the guidelines is designed to provide information on types of foodborne disease, suggestions for investigating premises, descriptions of pathogens that cause foodborne disease and how to use questionnaires designed to capture information about the person who is ill.

The attachments include specific information, templates and questionnaires that can be used during the investigation of foodborne disease, such as sampling of food from implicated premises and the Hypothesis Generating Questionnaire.

Section 2: Background information on foodborne disease

2.1 Gastroenteritis

Gastroenteritis is a term used for irritation or infection of the digestive tract. Major symptoms include diarrhoea, vomiting, nausea and abdominal cramps. Sometimes these symptoms may be accompanied by fever, headache and overall weakness.

There are many causes of gastroenteritis. The commonest causes are infecting organisms such as certain bacteria, viruses and parasites. There are many vehicles for transmission including food, water, faeces, contaminated surfaces and aerosols. Person to person transmission can occur via the faecal-oral route or by aerosols generated after a person has vomited.

Bacterial gastroenteritis, such as *Salmonella* and *Campylobacter* infections, commonly present with diarrhoea (that may contain blood, mucus or pus), abdominal cramps and vomiting. Bacterial gastroenteritis is usually self-limiting. The incubation period, that is the period from the time the person ingests the microorganism or toxin to developing the symptoms, may range from a few hours to several days.

Specific treatment is not usually required for infective gastroenteritis. Infective gastroenteritis generally subsides without further complications but symptoms can be serious in the very young and the elderly and can sometimes result in hospitalisation. The most common complication is dehydration, so maintaining good fluid intake is important.

People with gastroenteritis are potentially infectious. Strict personal hygiene should be observed to avoid infecting other people. Viral gastroenteritis is highly infectious.

2.2 Levels of foodborne disease in Australia

2.2.1 Introduction

Foodborne disease continues to be an important cause of illness worldwide and in Australia. It has been estimated that approximately 5.4 million (credible interval 4.0-6.9 million) people in Australia experience foodborne disease each year (OzFoodNet¹). However, it is often difficult to determine if gastrointestinal illness is due to contaminated food or due to other sources (as mentioned above), as many cases of gastrointestinal illness are not diagnosed and if diagnosed, no apparent link is found between cases that would lead to an investigation. Most people with gastrointestinal illness are considered sporadic cases, possibly infected from a number of independent sources of contamination.

The pathogens that are thought to be the main causes of foodborne illness are *Campylobacter*, *Salmonella*, Shiga toxin producing *Escherichia coli* (STEC), *Yersinia* and *Listeria*. In SA, the level of notification in 2005 was 2113 notifications for *Campylobacter* infections, 586 notifications for *Salmonella* infections, 35 notifications for STEC infections, 7 notifications for *Yersinia* infections, and 6 notifications for *Listeria* infections. The magnitude of notifications for each of these diseases does not change substantially from year to year. For its population size, South Australia has similar levels of these pathogens to other regions of Australia. The Department of Health website (www.dh.sa.gov.au/pehs/notifiable-diseases-summary/introduction-to-summary.htm) has up-to-date summaries of these pathogens and other notifiable diseases.

2.2.2 Outbreaks in South Australia

In South Australia for the period 2000-2004, there were 53, 41, 5, 2 and 2 gastroenteritis outbreaks associated with Norovirus, *Salmonella*, *Campylobacter*, STEC and *Shigella* respectively. During this period there were also 28 outbreaks of gastroenteritis with no identified pathogen. (For further information see website www.dh.sa.gov.au/pehs/notifiable-diseases-summary/introduction-to-summary.htm). Norovirus outbreaks, which are mainly due to person-to-person transmission are also the main cause of outbreaks in other jurisdictions. The location of the gastroenteritis outbreaks during this period in South Australia were Aged Care/Health facilities (81 outbreaks), community (27 outbreaks), restaurants/hotels (19 outbreaks), conference/private function (14 outbreaks), school/childcare (5 outbreaks) and bakeries (3 outbreaks) and other settings (2 outbreaks). In Aged Care/Health facilities the majority of the outbreaks are due to Norovirus and the transmission is believed to be person-to-person. Even so, Norovirus outbreaks have been attributed to contaminated food and so foodborne transmission should not be ruled out during investigations in Aged Care Facilities.

Section 3: Roles and responsibilities in foodborne disease investigations

PLEASE NOTE: Guidelines in this section and the whole document are of a general nature and should not be considered legal advice. Good communication between parties is essential during an outbreak investigation and if required, legal advice should be sought from the agencies' respective legal representatives.

3.1 Introduction

When an outbreak of foodborne disease is identified, the CDCB, LG and/or the FP work in partnership in investigating and controlling the outbreak. The CDCB will undertake the epidemiological investigation and LG and/or the FP may conduct environmental investigations. In addition, expert advice and assistance can also be obtained from the Food and Environmental Laboratory (Frome Road), Institute of Medical and Veterinary Science (IMVS) and Primary Industry and Resources South Australia (PIRSA).

Outbreak investigations are complex multitask processes requiring the cooperation and teamwork of many government agencies. This team of agencies need to work together effectively to find the source of an outbreak, control the outbreak and implement strategies to prevent future foodborne disease.

3.2 Determination of the lead agency in an environmental investigation

When an environmental investigation at a food premises is required, either the LG where the food premises is located or the FP will be the lead agency to conduct the food premises investigation.

3.2.1 Initial outbreak response

When CDCB declares an outbreak and contacts the LG involved, initially the LG will lead the food aspects of the investigation with the assistance and advice of the FP. However there may be circumstances where the LG might request, or agree to a request from the DH, that the FP undertake the lead agency role. These circumstances could include:

- the LG does not have appropriate staff available;
- the investigation is of serious public health concern;
- the investigation may have, or be likely to acquire, a significant public profile and be of interest to the Minister for Health; and
- the investigation could spread across LG boundaries.

Where the FP is the lead agency, this should be acknowledged by the Principal Investigator of the FP verbally to the LG, which may be confirmed in writing.

3.2.2 Role of lead agency in the environmental investigation

The role of the lead agency is to manage the investigation of the premises so that:

- the risk to the public is eliminated;
- the cause of the outbreak is understood as much as possible, which will often require the collection of relevant samples of food and the taking of swabs;
- a decision is made on the appropriateness of a fine or prosecution against the business;

- a decision is made on any enforcement action deemed appropriate, such as prosecution for sale of unsafe food. When the FP has the lead role but takes no direct legal action regarding the outbreak, the LG may wish to pursue general legal issues such as action on inadequate hand washing facilities; and
- a report is written by the lead agency of the environmental inspection that outlines the conduct and outcomes of the investigation. The report may be provided to the CDCB, LG and the FP.

3.2.3 Food sampling

When food and/or environmental samples are taken either by the LG or FP, the results from these samples can normally be used by either party for legal action. Should any special concerns arise, please consult your legal representative for clarification on this food sampling issue.

Section 4: Procedure for investigating foodborne disease

4.1 Introduction

This section contains 2 flow charts, **Flow Chart A** and **Flow Chart B** for use by Local Government (LG) outlining the steps and lines of communication and recording tools in an investigation of foodborne disease.

4.2 Recording tools ~ Questionnaires

4.2.1 Introduction to the use of Questionnaires

There are 2 questionnaires designed to be used when investigating foodborne disease.

- Do not alter or modify these questionnaires.
- Do not use outdated or any other hypothesis generating questionnaire other than those shown in Section 11.2 and 11.6 of this document.
- Copies of these 2 questionnaires can be obtained by contacting the CDCB or from the web address www.dh.sa.gov.au/pehs (click on Food Safety).

4.2.2 Questionnaire 1 ~ “Hypothesis generating questionnaire”

- This questionnaire is designed to help generate a hypothesis on the possible causes of the foodborne illness under investigation and to find links between cases. It is a recording tool used primarily by CDCB.
- There may be instances where CDCB request LG to administer the questionnaire. (See Flow Chart A, step 6A.). Completed questionnaires should be forwarded to CDCB.

4.2.3 Questionnaire 2 ~ “Report of a food poisoning complaint”

- This questionnaire can be used by LG to obtain and record information. This may be in response to a member of the public contacting LG wanting to report a case of foodborne disease.
- The information collected with this questionnaire guides LG as to whether they need to contact CDCB/FP.
- This questionnaire is designed to be used for:
 - ♦ An isolated case reporting his/her own illness.
 - ♦ An isolated case reporting someone else’s illness (for example; a mother reporting the illness of her child).
 - ♦ A caller reporting cases in one household.
 - ♦ A caller reporting cases in more than one household.
- Record the details using the questionnaire and if the case has symptoms of gastroenteritis advise them to see a doctor to arrange faecal testing.
- If there is more than one case in different households linked to a food, food business or catered functions, call CDCB immediately.
- The questionnaire asks the caller about faecal samples. If a person is experiencing bloody diarrhoea, they should be strongly advised to see a doctor.
- For information on collection of a faecal/stool specimen see Section 11.7.

4.3 Flow Chart A - Instructions

The Department of Health (DH) contacts LG about foodborne disease – when to investigate

These steps only refer to when DH contacts the LG. If the LG is contacted by a member of the public go to Section 4.4.

The following guide should be read with **Flow Chart A**.

NOTE: Dot points outlined below are labeled according to steps in the flow chart. For example, Step 1A. refers to Step 1A. on the flow chart.

Step 1A. The DH (FP or CDCB) calls LG about foodborne disease.

Step 2A. More than one case in different households linked to a food or food business/function.

- DH would normally make a decision regarding where it is a cluster/outbreak or an isolated foodborne disease case before contacting the LG. Go to **Step 6A**. If there is one isolated case or two or more in the same household, go to **Step 3A**.

Step 3A. One isolated case, or two or more cases in the same household. CDCB may report case(s) to LG.

Examples of when CDCB refers out cases to the LG includes:

- CDCB refers cases of foodborne disease to LG if they are employed in sensitive occupations such as commercial food handlers, child care workers or health care workers. In these instances LG may need to provide information on hygiene, prevention of transmission and any exclusion periods from work. In the instance where a commercial food handler has been referred to LG, LG may need to inspect the work site of the food handler.
- CDCB also informs LG in instances where a food premise has been named by the case and recorded by the doctor on the medical notification form. CDCB contacts the LG responsible for the food premises rather than contacting the LG where the case resides. LG can use professional judgment in the decision to further investigate the food premises. It is possible that the LG has received other reports about the food premises or the premises may be due for routine inspection.

Step 4A. The LG decides how to proceed and if they need to investigate.

- The LG records the information and decides if they need to investigate.

Step 5A. If LG decides to investigate and there is evidence of foodborne transmission, forward relevant information to CDCB.

- Please forward any information to CDCB regarding gastrointestinal illness among people from different households linked to a common food or food business/function.

Step 6A. Possible cluster or outbreak and DH notifies LG. CDCB conducts epidemiological investigation.

- The CDCB conducts an epidemiological investigation to determine any possible links in a cluster of cases and to determine the possible cause of the outbreak.

- When the CDCB becomes aware of a cluster or outbreak of foodborne disease the FP is informed. Likewise the FP informs CDCB of all clusters of foodborne disease reports that they may have received.
- **CDCB may ask the LG to administer Questionnaire 1.** CDCB may need to know certain details about a reported case such as *Salmonella*, that is currently peripheral to an investigation. Further information from the case on food items, food premises and/or functions attended may aid the direction of the investigation.

Step 7A. Is a food business/function implicated?

- Results of the preliminary investigations by DH become available. If a food business or catered function has been implicated go to **Step 8A**.
- However, if a food business or catered function has not been implicated, forward any completed questionnaires and any other relevant information to CDCB.

Step 8A. LG/FP discuss inspection of food business/function premises and who has the lead role. CDCB continues epidemiological investigation.

- When a commercial food premises is likely to be the cause of an outbreak or cluster of cases, an inspection of the premises may be required.
- The FP and LG will discuss who will take the lead role in investigation of the premises. Refer to Section 3 for more information on roles.
- CDCB will conduct an epidemiological investigation.

Step 9A. Food premises inspected and an appropriate public health response is initiated.

- Commercial Food premises are inspected. The team inspecting the premises may include a representative from either the FP (preferably someone with the powers to officially sample food) and/or the LG where the premise is located. At any time during the investigation a public health response may be required to control the outbreak.

Step 10A. Reporting procedure.

- Apart from legal reasons, reports are required to be written to allow consolidation of the investigation and inspection results, which can be used for future development of control and prevention strategies.
- **If the FP has a lead role in inspection/investigation of the food premises,** the FP writes a report about the inspection in consultation with the LG. CDCB provides relevant epidemiological details. The FP will send a copy of the report to LG and other stake holders as required.
- **If the LG has the lead role in inspection/investigation of the food premises,** the LG writes a report and sends a copy to DH. The DH may review some aspects of the report. The LG sends the report to other stake holders as required.

4.4 Flow Chart B - Instructions

A member of the public contacts LG – when to investigate

The following guide should be read with **Flow Chart B**.

NOTE: Bullet points outlined below are labeled according to steps in the flow chart. For example, Step 1B refers to Step 1B on the flow chart.

Step 1B. A member of the public calls LG to report suspected foodborne disease.

Step 2B. If case has significant symptoms, LG advises person(s) to see doctor to arrange faecal testing. LG may administer Questionnaire 2.

- If the caller is reporting symptoms of gastrointestinal illness such as vomiting and diarrhoea and/or the symptoms are significant, the LG should advise the person who has symptoms to see a doctor and arrange faecal testing. The LG may consider interviewing the caller using Questionnaire 2.
- If symptoms are minor such as stomach pain only, the LG may record this and decide if an investigation is required.

Step 3B. More than one case in different households linked to a food or food business/function.

- The decision to how to investigate is often based on how many cases are being reported. If there is an isolated case or two or more from the same household go to **Step 4B**. If there is more than one case and in different households linked to a food or food business/function then go to **Step 6B**.

Step 4B. One isolated case, or two or more cases in the same household. LG decides how to proceed and if they need to investigate.

- There is a strong possibility that they may have made themselves and others ill due to person-to-person transmission, cross contamination and/or poor personal hygiene in their home and food preparation areas.
- The LG will need to use their professional judgment to determine how to investigate the reported case(s). In this situation, the CDCB would not normally investigate as it is difficult to establish the cause of illness among members of household due to the limited number of people being ill and everyone in the household normally eating the same foods.
- The LG does not need to call the CDCB or the FP unless the LG thinks that there is a link with other cases in different households or suspect the illness is foodborne (for example people in same household ate a meal of fish and soon afterwards developed symptoms of ciguatera or scombroid poisoning)

Step 5B. If LG decided to investigate and there was evidence of foodborne illness or links with other isolated cases contact CDCB immediately. (Go to flow chart section 6B). Otherwise there is no need to contact CDCB.

- If the LG gathers information and there is no evidence of foodborne illness, the LG may record the information for future reference.

- If LG gathers information that may suggest there is a link with other isolated cases in different households, forward any relevant information about linked cases to CDCB immediately. **Go to Step 6B.**

Step 6B. LG calls CDCB immediately and provides details. DH/LG determines type and extent of investigation. CDCB may ask LG to administer Questionnaire 1. CDCB conducts epidemiological investigation.

- The LG should call CDCB immediately and provide as much detail as possible. The CDCB together with the FP communicates with LG. The type and extent of the investigation will usually be determined during the initial stages. CDCB may ask the LG to administer Questionnaire 1 to people reporting illness.

Step 7B. Is a food business implicated?

- Results of the preliminary investigations become available and a decision needs to be made. If a food business or catered function has been implicated go to **Step 8B.**
- If a food business or catered function has not been implicated, forward any completed questionnaires and any other relevant information to CDCB as per **Step 5B.**

Step 8B. LG/FP discuss inspection of food business premises and who has lead role. CDCB continues epidemiology investigation.

- When a commercial food premises is likely to be the cause of an outbreak or cluster of cases, an inspection of the premises may be required.
- The FP and LG will discuss who will take the lead role in investigation of the premises. Refer to Section 3 for more information on roles.
- CDCB will continue with an epidemiological investigation.

Step 9B. Food premises inspected and an appropriate public health response is initiated.

- Commercial food premises are inspected. The team inspecting the premises may include a representative from either the FP (preferably someone with the powers to officially sample food) and/or the LG where the premise is located.
- At any time during the investigation a public health response may be required to control the outbreak.

Step 10B. Reporting procedures.

- Apart from legal reasons, reports are required to be written to allow consolidation of the investigation and inspection results, which can be used for future development of control and prevention strategies.
- **If the FP has a lead role in inspection/investigation of the food premises,** the FP writes a report about the inspection in consultation with the LG. CDCB provides relevant epidemiological details. The FP will send a copy of the report to LG and other stake holders as required.
- **If the LG has the lead role in inspection/investigation of the food premises,** the LG writes a report and sends a copy to DH. The DH may review some aspects of the report. The LG sends report to other stake holders as required.

4.5 Communication during an investigation

4.5.1 General

- Although the investigative roles of CDCB, FP and LG vary with each scenario, communication between the agencies is essential for a systematic and thorough investigation.
- At the commencement of the investigation, agencies may need to appoint a key contact person and a back-up contact person.

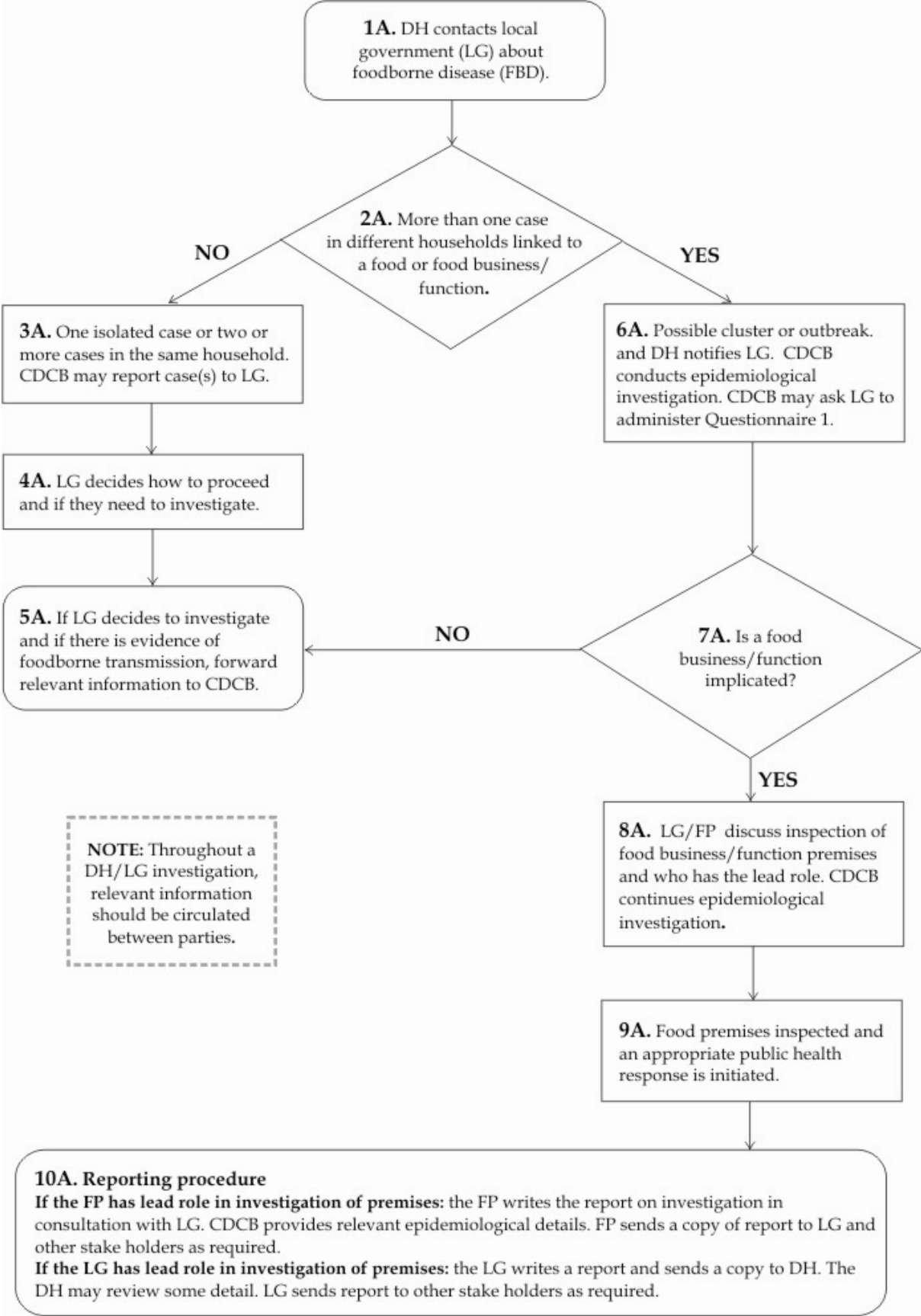
4.5.2 CDCB and the FP are available for advice or assistance

Examples of situations where LG may seek advice are:

- In a scenario where a food-related problem crosses council boundaries.
- Information about communicable diseases.
- What action to take about unfit food or condition of a food premise.
- Clarification regarding issues around the Food Act.
- Development of a political situation around a food related matter. For example, a Minister/politician seeking advice/information concerning a food related matter.
- Media involvement in a food related matter. For example the media may be seeking information and/or clarification concerning a food related matter.

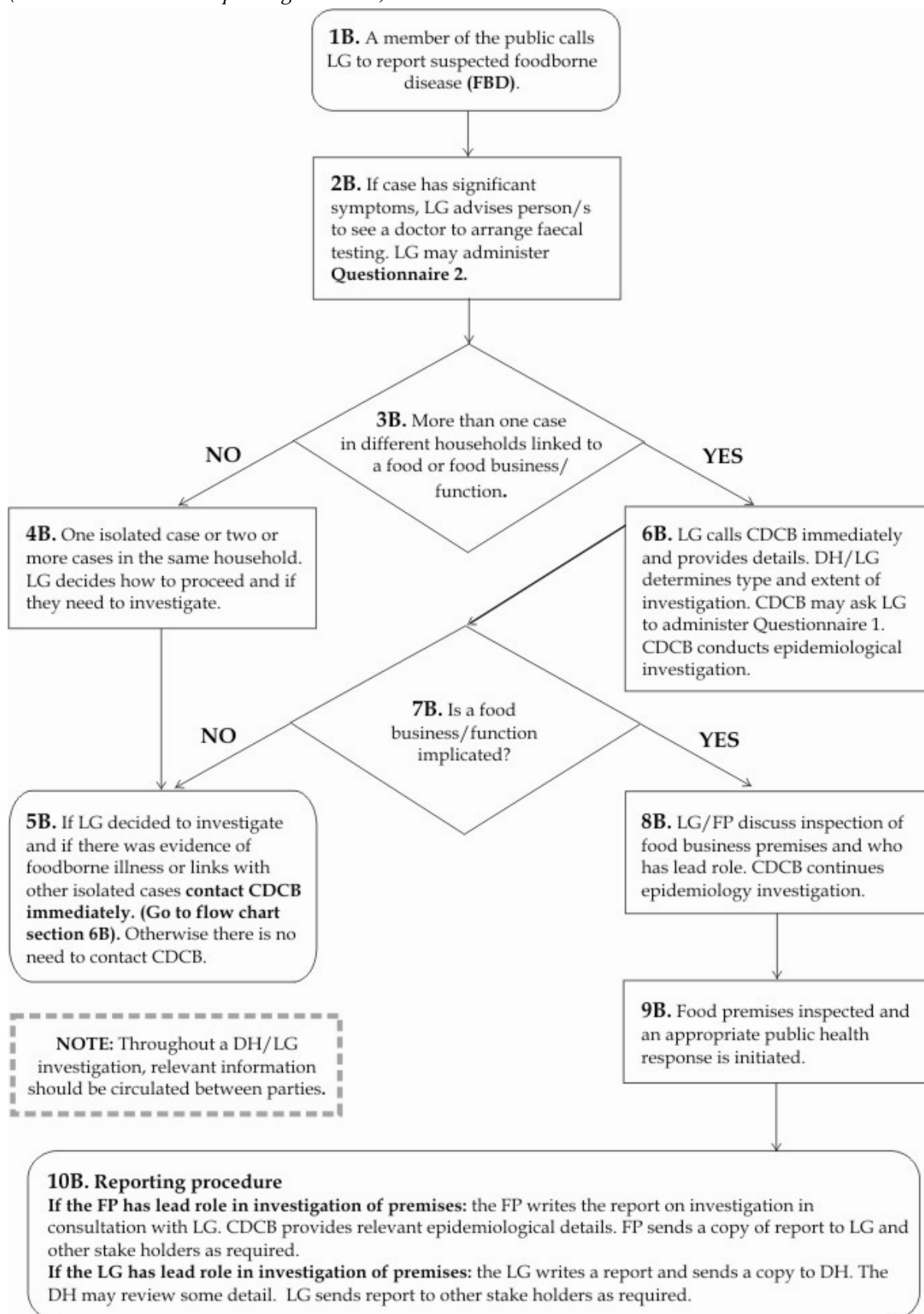
4.6 Foodborne disease flow chart. Part A - Department of Health calls Local Government

(See section 4.3 for text explaining flow chart)



4.7 Foodborne disease flow chart. Part B - Member of public calls Local Government

(See section 4.4 for text explaining flow chart)



Section 5: Checklist for assessing premises as part of a foodborne disease investigation

5.1 Introduction

The following checklist can be used in an investigation of a cluster or outbreak of foodborne disease, where a food premises is implicated.

It is a comprehensive list. Many points may not be relevant to some businesses – for example, food packaging may not be undertaken by a café. In making use of the list, professional judgement will need to be exercised.

To illustrate, information that is already known about the outbreak can be useful in planning the investigation. If for example, *Salmonella* is the suspected contaminant, then consider the possibility of cross contamination from raw chicken or the use of cracked or dirty eggs. If the attack rate is known to be high (that is, there are significant numbers of people ill in a short space of time) then the numbers of *Salmonella* in a food are likely to be high, in which case temperature controls/abuse becomes of particular interest.

Conversely, if there is a short onset, then consider foods such as fried rice that can be contaminated with bacterial toxins as a consequence of factors listed under *Temperature Controls/Abuse*.

This checklist may also be used as a convenient guide for routine inspections of food premises.

5.2 Checklist

5.2.1 Background

- Date and time of inspection.
- The names of the authorised officers present and the council they represent.
- Note the time.

5.2.2 Premises

- The full name, address and phone number of the premises (include registered name and trading name).
- Notification number.
- The name of the owner.
- The name of the manager, if different to the owner.
- The type of building, its size, layout and design.
- The sort of food that is prepared and/or sold.
- Core business or activities.
- Trading hours.
- Does the premises have a documented food safety plan such as:
 - ♦ HACCP approach;
 - ♦ Quality assurance.
- If the premises has a food safety plan, examine details such as the type of plan, date of accreditation, when last inspection occurred, etc.
- Licensed by a department such as the Meat Hygiene Authority.

5.2.3 Patrons

- How many patrons it serves in general?
- If a particular function is implicated, the number of people at that function.

5.2.4 Staff

- How many staff work there?
- Do staff have appropriate skills and knowledge for their position?
- If a particular function is implicated.
 - ♦ The number of staff working at that function.
 - ♦ The names of the staff working at the time.
- Whether the premises were adequate / crowded / understaffed.
- Has any staff member recently been ill with gastroenteritis or skin infection?
- Speak to the ill staff member (See Section 11.1, *Staff Illness Questionnaire*) regarding:
 - ♦ What were their symptoms?
 - ♦ Date of onset.
 - ♦ Duration of illness.
 - ♦ Did the staff member continue to work whilst still experiencing symptoms?
 - ♦ After the staff member's symptoms had ceased, how many days was it before they returned to work?
 - ♦ Encourage ill staff members to submit a faecal sample.

5.2.5 Premise facilities and practices - determine if they are adequate including:

- Toilet facilities.
- Hand washing facilities (such as paper, towels, air dryer) and practices that could include if relevant.
- Rodent and pest control.

NOTE: Again, when starting your investigation, keep in mind the possible cause of illness.

5.2.6 Food safety practices including

- Food receipt.
- Food processing.
- Food display.
- Food packaging.
- Food disposal.
- Food transportation.
- Food recall.
- Storage practices, including:
 - ♦ Stock rotation – look for expired/spoilt food.
 - ♦ Protection from contamination.

- Cross contamination from raw meats (especially chicken) through cutting boards, plates, hands, utensils, etc.
- Transport of foodstuffs to the premises.
- Salad bars with servers for each salad and suitably protected from possible contamination such as sneezing, coughing, etc.

5.2.7 Temperature controls / abuse (keeping perishable foods in the danger temperature zone for too long), including:

- Check temperature control on foods - 2hr / 4hr rule (www.dh.sa.gov.au/pehs/Food/2hour-4hour-rule.pdf).
- Check and record the temperatures of refrigerators, freezers, warmers, bain maries, etc.
- Check whether there is adequate heating of foods before they are put into food warmers, such as pie warmers, bain maries, etc.
- Thawing practices and whether they are adequate.
- Chilling practices and whether they are done quickly enough (refer to Food Standards Australia New Zealand website, www.foodstandards.gov.au).
- Hot foods served steaming hot (i.e. >60 degrees celsius).
- Cold foods served cold.
- Sandwiches and rolls kept refrigerated (i.e. <5 degrees celsius) - or 2hr/4hr rule applied.
- Thorough cooking of cut or minced meat products such as mince, kebabs, sausages, hamburger patties, rolled roasts, yiros, shashliks, etc.

5.2.8 Obtain details of foods implicated, including (if appropriate to the situation):

- When foods were made.
- How foods were made and subsequently handled.
- A list of ingredients used and where they came from.
- Details of how the food was made to highlight possible cross contamination points.
- Sauces - details of how these are made.
- Eggs - supplier's details.
- For an implicated packaged food, manufacturer details, distribution lists, date marks on packages and batch code.
- Obtain copy of menu and specials of the day.

5.2.9 Cleaning

- Condition and cleanliness of machines, equipment and working surfaces.
- Appropriate use of disinfectants/sanitiser.

5.2.10 Foods sampled

Record details on what foods were sampled and what environmental swabs were taken and from where. Refer to Section 7, *Food samples and swabbing during an investigation*.

Section 6: Control of foodborne gastroenteritis outbreaks

6.1 Key Points for Guidance of Local Government

- It is fundamentally important to ensure that no further illness occurs after Government intervention.
- Ensure the food business stops serving/selling any suspect food.
- It may be appropriate for the business to close if the investigating officers have reasonable grounds for considering that public health will be at risk if the business continues to trade.
- Consider the need to recall any suspect food that has been distributed – discuss with the FP if necessary.
- Retain any implicated or suspect food for food sampling purposes.
- Determine whether any staff have been ill and encourage them to submit a faecal specimen if diarrhea has been a recent symptom.
- Send ill staff home and inform them they should not return to work for at least 48hrs after their symptoms have completely ceased.
- Prepare a list of all suppliers of suspect food items (note that in some cases, there may be more than 1 supplier for a single ingredient).
- Provide CDCB with relevant menus, including ‘specials boards’, if the business is a food service establishment.
- If a particular food is suspected, work systematically through the steps in its production to attempt to identify the food handling problem.
- Ensure all implicated food is disposed of adequately after appropriate samples have been taken. In some situations, supervision of disposal may be appropriate. Discuss with the FP if necessary.
- Ensure all implicated equipment and surfaces are thoroughly cleaned. Equipment and surfaces in contact with ready-to-eat foods should be sanitized with heat or chemicals.
- Guidance on effective sanitation is contained in Safe Food Australia - www.foodstandards.gov.au
- For viral outbreaks, it may be necessary to wash down floors and benches in kitchen and in any other suspected contaminated areas. This should also include the toilet, in particular, the toilet bowl and hand wash basins paying particular attention to the toilet flush button/handle, tap handles and door handles.

6.2 Hand washing fact sheet

Hand washing is generally considered to be the most important way to stop the spread of infection.

How to wash your hands properly

1. Use soap and running water. Warm to hot water is best.
2. Wet hands thoroughly and lather with soap.
3. Rub hands vigorously for at least 10-15 seconds as you wash them.
4. Pay attention to the backs of hands, wrists, between fingers, and under fingernails.
5. Rinse hands well under running water.
6. Dry hands with a disposable paper towel or a clean towel. To minimise chapping (reddening, roughening or cracking of skin) of hands, pat dry rather than rub them. Electric hand driers may be used. If cloth towels are used, select a fresh towel each time, or if a roller towel is used, select a fresh portion of towel.
7. Turn off the tap with the used towel.
8. Use skin lotion, if necessary, to prevent dry cracked skin.
9. If you use skin lotion, it should be rinsed off before preparing or handling food.
10. Hands should be washed before eating, smoking, or preparing food, and after going to the toilet, touching animals, gardening or handling objects soiled with blood or other body substances.
11. Cuts and abrasions should be covered with a water-resistant dressing which should be changed as necessary or when the dressing becomes soiled.

Hand soap

A bar of soap or liquid soap may be used for hand washing. If reusable containers are used for liquid soap, they must be cleaned and dried before refilling with fresh soap. The type of soap does not matter provided it is well tolerated by the user.

Section 7: Food samples and swabbing during an investigation

7.1 Collection of food samples

7.1.1 Introduction

Some foodborne illness investigations may require the collection of food samples for analysis.

Food samples may need to be collected from the homes of people taken ill or from food premises such as restaurants, manufacturers or retail outlets.

Phone the IMVS Food and Environmental Laboratory on 8222-3363 before you deliver samples. A map of where to find the Food and Environmental Laboratory is in Section 8.6.

7.1.2 Legal requirements for the collection of samples

To ensure their admissibility in court, samples need to be taken in accordance with Part 6, Division 1 of the Food Act 2001. In the first instance refer to the Food Act 2001.

The Act requires:

- The proprietor of the business, the person-in-charge or the person from whom the sample was obtained to be notified that the sample is to be analysed. This generally occurs in the normal events of conducting the investigation.
- The officer should carefully document the chain of evidence that records the sampling procedure and details of interview through to the delivery of the sample to the analyst.

7.1.3 Method of sampling-collecting the sample

- For micro analysis, 100g is the preferred minimum sampling size for solid foods. For water the preferred minimum is 500mls.
- If sealed packages cannot be collected, use utensils to transfer a portion of the food to the container. Do not touch the sample or the food contact surfaces of the container with hands or equipment that has been in contact with hands. Use full aseptic handling if necessary – see following section.
- Seal the container to prevent leakage.
- Label the body of the container (not the lid) with a non-water soluble marker to identify the sample with a unique identifying number/mark which matches the unique identifying number/mark on the analysis form. See section following.

7.1.4 Method of sampling when aseptic sampling is required

As a general rule, it is acceptable when sampling to use new clean packaging, such as take-away containers or plastic bags, provided by the food business. Clean sampling equipment, such as metal spoons and knives, can also be provided by the business. In the unlikely event that the equipment is contaminated with the organism of concern, the business would still be the source. Officers should nonetheless use aseptic handling techniques and ensure they do not touch the food contact surfaces of sampling equipment or containers.

There may however be situations when full aseptic sampling is required and sterile sampling equipment and containers are needed. Such situations could include sampling for *Listeria*, which is relatively prevalent in the environment compared to the principal pathogens *Campylobacter* and *Salmonella*. *Listeria* is more likely to be found on non-sterile

packaging or equipment supplied by the business. A second situation could occur when a sample is collected with the intent of making the result available to a court; the use of a fully aseptic technique could be useful in this circumstance.

Contact the FP of the DH or the Food and Environmental Laboratory if advice is required on the need for aseptic sampling or the use of sterile containers and equipment.

7.2 Environmental swabbing procedure

The conduct of a food poisoning investigation can require the taking of swabs from food contact surfaces in an attempt to confirm the presence of the organism of concern.

Sampling sites

The objective is to sample surfaces that may have come into direct contact with an implicated food. Such surfaces can include cutting boards, bench tops, sinks and equipment such as mixers. Especially look for surfaces that are moist or greasy. For *Listeria*, the swabbing process may need to include drains and damp areas on floors.

Area to sample

Each swab can be wiped over a reasonably sized area. For example one swab can be wiped across the drainage board of a sink, another can be wiped across, say, a square metre of bench in, say, four strokes.

Type of Swabs

For general purposes plain sterile cotton swabs are satisfactory. The tips of the swabs need to be moistened and sterile saline solution is generally used. However, should saline not be available tap water can suffice when the organism of concern is not expected to be found in the water, such as *Salmonella*.

'Enviroswabs' are pre-moistened with a special medium that supports the growth of *Listeria*. They can also be used for sampling for other organisms.

7.3 Sampling and swabbing equipment

It is recommended that LG maintain a supply of sterile swabs.

Additionally an 'esky' and ice-blocks might be needed if chilled or frozen foods are to be transported for any length of time.

The need for LG to maintain sterile containers and sampling equipment is not clear cut, as in most cases the use of sterile sampling equipment is not essential. See section 7.1.4 on the need for aseptic sampling. When sterile equipment is needed it could be collected from the Food and Environmental Laboratory or provided by the FP. Larger LGs, with a history of involvement in food sampling, might consider equipping themselves with a full sampling kit.

7.3.1 Examples of a sampling kits

Minimum

Esky for transporting chilled or frozen samples to the Food and Environmental Laboratory. Freezer blocks if transportation for longer periods anticipated.

Pack of 6 'Enviroswabs'

Full Kit with Sterile Sampling Equipment

1. Pack of sterile plastic bags – approx 30x15 cms.
2. Sterile 500 ml plastic wide-mouth containers with screw lids.
3. Sterile swabs.
4. Sterile disposable scalpels.
5. Sterile disposable sets of forceps.
6. Alcohol wipes.
7. Supplies of sterile containers/swabs can be obtained from the Food and Environmental Laboratory.

7.4 Recording of sampling information and labeling of samples

It is important to be able to clearly and unambiguously identify the nature and the origin of the sample.

Below is a form layout that can be used to assist with recording sample information at the time of collection. It provides for information about the premises, the sampling officers and a nominated contact. It also provides for a sample number that identifies, by their initials, the officers who collected the samples. The sample number detail is particularly important should the investigation proceed to court. Once the sample form and sample have been delivered to the Food and Environmental Laboratory, the laboratory can also record information on the sampling form. See Section 11.9 for a form layout which may be photocopied and used as required.

The table below illustrates how the form could be used.

Microbiological food and environmental sampling form

Name of Premises:	Bill's Restaurant
Date:	23.2.05
Investigating Council:	Harper Valley
Name of Investigating Officer for Contact (if necessary):	T. Wynette
Contact phone:	8123 4567 or 0401 234 567
Names of other officers who have taken samples:	Robert Jones
Organism of Concern (if known):	<i>Salmonella</i>

<i>Sample No & Initials of Sampling Officer</i>	<i>For IMVS Use</i>	<i>Sample Description</i>
1-TW		Batter, taken from 10L tub in cool room, made last Saturday
2-TW		Restaurant prepared mayo, taken from stainless-steel container used in preparation area
3-TW		Spring roll – taken immediately after frying-internal temp of 64°C
4-RJ		Swab from red cutting board used for vegetables

7.5 Storage and transport of samples

7.5.1 General

Where perishable foods are collected it is important to minimise further opportunity for bacterial growth. If the samples are to be transported immediately to the laboratory, say no more than 30 minutes at ambient temperature, a cold storage environment may not be essential. However, if the transport time is longer the samples should be placed in an esky chilled with freezer blocks.

If practical reasons, such as the time of sampling or distance, require the samples to be stored overnight they should be stored in a fridge. Freezing is not advisable as it can have a destructive effect on bacteria, particularly *Campylobacter*.

7.5.2 Sampling of Seafood for Non-Micro Reasons

Rarely, it may be necessary to sample seafood for the presence of algal toxins, histamine or determination of species. The latter may be required if fish is suspected of being escolar, which is often sold as 'rudderfish' in South Australia.

The Food and Environmental Laboratory does not perform these forms of testing. The FP can provide advice about the collection and transport of seafood that requires non-micro testing.

7.6 Use of gloves for screening food handlers for hand carriage of foodborne pathogens

7.6.1 Rationale

When a person is a faecal carrier of foodborne pathogens, hands are the means of transfer to foods.

While collection of faecal samples is the preferred option, this may present some obstacles including:

- dealing with resistance
- arranging for individuals to collect their own faecal sample at next bowel movement
- retrieving samples for individuals and submission to laboratories

When it is considered desirable to test a number of food handlers for potential transmission of *Salmonella* to foods during handling, testing of gloves is an alternative to faecal examination.

7.6.2 Method

Testing of gloves that have been used for food preparation is not advisable as the glove will reflect the microbiological flora of the food as well as the handler.

Use new disposable gloves that are in general use within the food premises or else provide these.

Instruct each person:

- to put one of these gloves onto each hand.
- firmly rub both hands together including interlinking fingers
- remove the gloves by grasping the top of the glove and removing by turning inside out and placing the gloves directly into a sterile plastic bag (available from the laboratory).
- Label the outside of the bag with a suitable identifier for each person.
- Submit glove samples to the Food and Environmental Laboratory for testing.

Section 8: Contact details

8.1 Food Policy and Programs Branch, Department of Health

Contact FP for advice and information on:

- Food that may result in an illness;
- Food that has resulted in an illness;
- Food that may have public health significance;
- Food recalls;
- How to take a food sample;
- Safety of food in the community;
- The Food Act;
- Food regulation; and
- Expiation notices or prosecution under the Food Act.

Address:

Level 2, Commercial Union Building,

150 Grenfell Street, Adelaide SA 5000

PO Box 6, Rundle Mall SA 5000

Telephone (08) 8226-7100

Fax: (08) 8226-7102

8.2 The Communicable Disease Control Branch, Department of Health

Contact CDCB for information and advice on:

- Epidemiological investigation procedures;
- Disease descriptions;
- Clinical matters;
- How to take samples of faeces or vomit;
- Epidemiology; and
- Medical and epidemiological follow-up of cases.

Address:

1st Floor, 162 Grenfell Street, Adelaide SA 5000

PO Box 6, Rundle Mall SA 5000

Telephone: (08) 8226-7177

Fax: (08) 8226-7187

8.3 Pathology Laboratories - faecal samples can be delivered to any of the collection centres of South Australian pathology laboratories

Abbott Pathology

Cnr South Road & Sir Donald Bradman Drive, Mile End SA 5031.

Telephone: (08) 8159-7900

Clinpath Laboratories

19 Fullarton Road, Kent Town SA 5067.

Telephone: (08) 8366-2000. Collection sites can be found at:

www.sonichealthcare.com/clinpath/

Gribbles Pathology

1 Goodwood Road, Wayville SA 5034.

Telephone: (08) 8205-5655.

Collection sites can be found at www.gribbles.com.au/collectioncenterSA.htm

SouthPath

Level 6, FMC, Flinders Drive, Bedford Park SA 5042.

Telephone: (08) 8204-4395.

Collection sites can be found at www.southpath.health.on.net/specimen_collection.htm

IMVS (Institute of Medical and Veterinary Science) Collection Centres - www.imvs.sa.gov.au

Metropolitan Area - IMVS

<i>Opening hours</i>				
	<i>Address</i>	<i>Weekdays</i>	<i>Saturdays</i>	<i>Telephone</i>
Adelaide	Frome Road (Best place to take food and faecal specimens during an outbreak)	0800 – 1700	0800 – 1200	(08) 8222-3000
Blackwood	Blackwood Magnet Shopping Centre Shop 2a 10 Coromandel Pde	0830 – 1700	0900 – 1200	(08) 8178-0930
Burnside	Burnside Shop 9, 8 Sydney St	0830 – 1700	0900 – 1200	(08) 8379-0644
Elizabeth Vale	Lyell McEwin Health Service Haydown Rd	0800 – 1700	0800 – 1100	(08) 8182-9118
Gawler	Gawler East Health Service Hutchinson Rd	0830 – 1700	0900 – 1100	(08) 8521-2170
Glenelg	99a Jetty Rd.	0830 – 1700	0900 – 1200	(08) 8376-3218
Highbury	1009 Lower North East Rd	0900 – 1700	-	(08) 8395-0650
Marion	207D Sturt Rd	0830 – 1700	0900 – 1200	(08) 8358-1182
Morphett Vale	1 Doctors Rd	0900 – 1700	-	(08) 8382-3801

Opening hours

	<i>Address</i>	<i>Weekdays</i>	<i>Saturdays</i>	<i>Telephone</i>
Noarlunga	Noarlunga Hospital Alexander Kelly Drive Noarlunga Centre	0800 – 2030	0900 – 1200	(08) 8384-9340
North Adelaide	163 Archer St	0830 – 1700	-	(08) 8267-4374
Port Adelaide	Port Adelaide Port Canal Shopping Centre Shop 16 Commercial Rd	0830 – 1700	0900 – 1200	(08) 8447-6915
Salisbury	North West Specialist Centre 1 Park Terrace	0830 – 1800	0830 – 1200	(08) 8285-3599
Salisbury North	Salisbury North Trinity Medical Centre 31 Bagster Rd	0800 – 1230	-	(08) 8182-5822
Taperoo	365 Victoria Rd	-	-	(08) 8248-5406
Unley	Cremorne Plaza, Shop 4, 248 Unley Rd	0830 – 1700	0900 – 1200	(08) 8271-9462
Windsor Gardens	Windsor Gardens, Shop 4, 1 Longview Rd.	0800 – 1230	-	(08) 8266-6849
Woodville South	The Queen Elizabeth Hospital 28 Woodville Rd, Outpatients Area, Ground Floor	0730 – 1700	-	(08) 8222-6383

Country Areas - IMVS*Opening hours*

<i>Name</i>	<i>Weekdays</i>	<i>Saturdays</i>	<i>Telephone</i>
Berri Hospital	0900 –1800	1000 – 1200	(08) 8580-2400
Loxton Hospital	0830-10.30	-	(08) 8584-8555
Mt Gambier Hospital	0800 – 1800	0845 – 1200	(08) 8721-1200
Murray Bridge Hospital	0830 – 1700	1000 – 1200	(08) 8535-6833
Pt Augusta Hospital	0830-1900	0900-0930	(08) 8648-5800
Pt Lincoln Hospital	0845 – 1715	0900 – 1130	(08) 8683-2200
Pt Pirie Hospital	0845 – 1715	0845 – 1100	(08) 8638-4500
Renmark Medical Clinic	0830 – 1715	0900 – 1130	(08) 8580-4100
Victor Harbor Hospital	0830-1230	-	(08) 8552-0500
Wallaroo Hospital	0900 – 1700	0900 – 1130	(08) 8823-0237
Whyalla Hospital	0845 – 1700	0900 – 1100	(08) 8648-8300

8.4 Laboratories for food samples

<i>Institution</i>	<i>Laboratory</i>	<i>When to use the lab</i>	<i>Contact details</i>
IMVS Frome Rd, Adelaide	Food and Environmental Lab Also Australian Salmonella Reference Lab	To take food samples or environmental swabs for testing. (Call laboratory before sending them.) For information and advice about: <ul style="list-style-type: none"> • How to take food samples or environmental swabs (see Section 7 first); • The tests done on these; • Microbiology results from: <ul style="list-style-type: none"> - The Food and Environmental Laboratory, - The Human Enteric Lab. 	Media Building, IMVS, Frome Rd, Adelaide (see map) Ph (08) 8222-3363 Ph (08) 8222-3509
IMVS Frome Rd, Adelaide	Microbiology	To take faecal samples for testing. For information and advice about: <ul style="list-style-type: none"> • Type of sample required, eg faeces or blood; • How to take samples of faeces (see Section 11.7 first); • The tests done on faeces or blood to diagnose foodborne disease; • Disease descriptions; • Clinical matters. 	Main Building, IMVS, Frome Rd, Adelaide (see map) Specimen Reception Ph (08) 8222-3000 Microbiology Medical Officer on duty Ph (08) 8222-3123
National Measurement Institute	Chemistry Lab	For information and advice about: <ul style="list-style-type: none"> • Food composition analysis; • Chemical contaminants of food or water; • Chemical analyses on food or water; • Food sampling surveys (discuss with them first). 	51-65 Clarke St South Melbourne VIC 2105 Ph (03) 9542-4000 www.measurement.gov.au
Chemistry Centre WA	Chemistry Lab	For testing of suspected rudderfish or escolar fish.	125 Hay St East Perth, WA 6004. Ph (08) 9222-3177 Fax (08) 9325-7767 Email: chemistry@ccwa.wa.gov.au

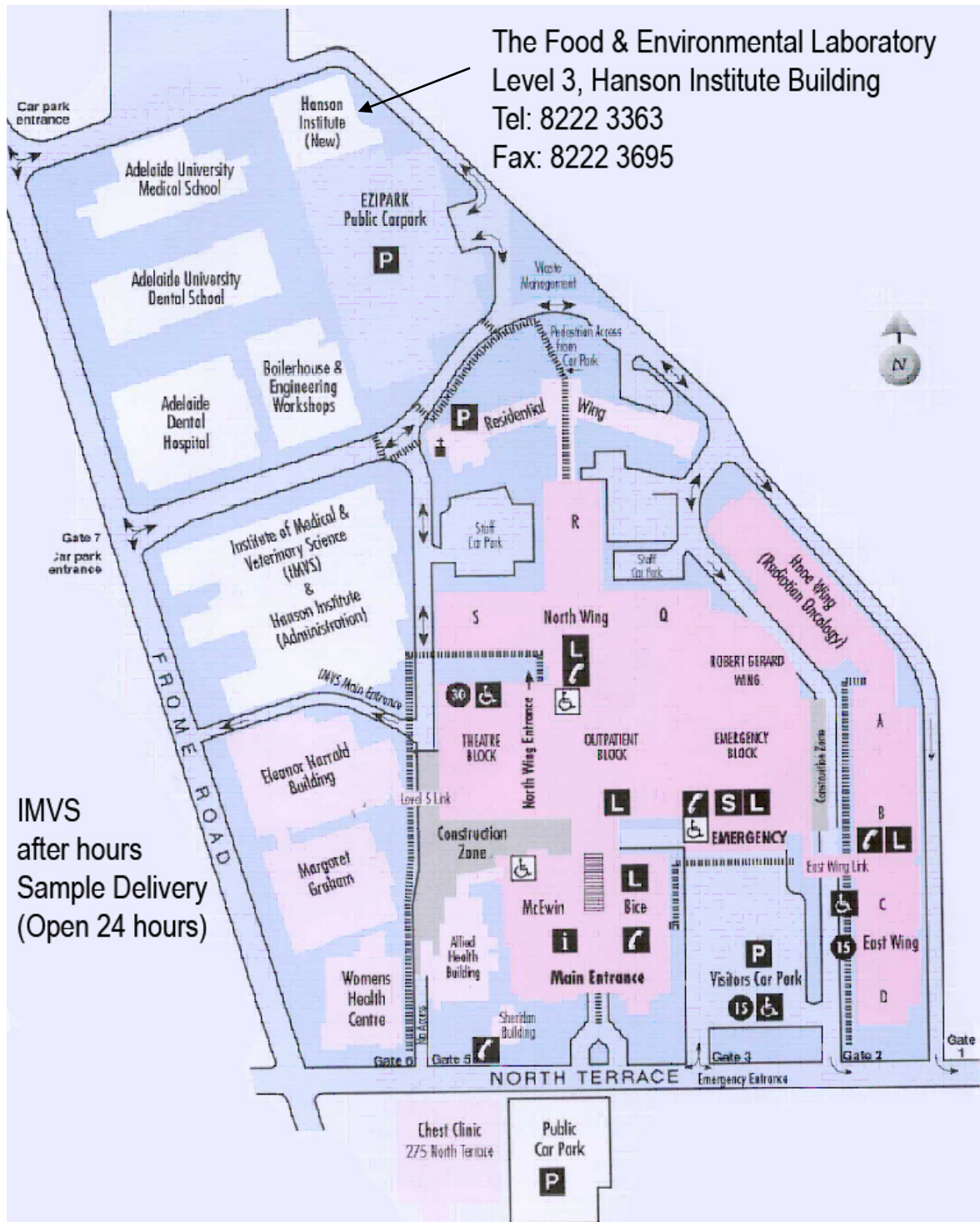
8.6 Map of Institute of Medical and Veterinary Science



MEDVET SCIENCE Pty Ltd

Address: Frome Road, Adelaide, South Australia
 Postal Address: PO Box 14, Rundle Mall, South Australia 5000
 Telephone: (08) 8222-3363 Fax: (08) 8222-3695

Food and Environmental Laboratory



Section 9: Guidelines for LG investigation of gastro-intestinal illness in Aged Care Facilities

Further information can found in *Guidelines for the management of infectious gastroenteritis in Aged Care Facilities in South Australia* - Web address: www.dh.sa.gov.au/pehs/publications/gastro-aged-care-jan05new.pdf. These guidelines were developed to assist Aged Care Facilities in infection control procedures.

9.1 Introduction

Aged Care facility outbreaks of gastrointestinal illness are mainly the result of person-to-person transmission due to Norovirus, but investigations are conducted to ensure that the outbreak is not foodborne.

- As part of the investigation of these outbreaks, LG play a crucial role in determining the source of the gastrointestinal illness. Detailed below are guidelines for LG to assist with the investigation process.
- Please send the completed form and any other applicable information to CDCB, either by post or facsimile.

9.2 Investigation guidelines

INVESTIGATION FORM

1. Notify the CDCB of the outbreak if not already in communication with the Branch.
2. Conduct a routine investigation of kitchen and other food preparation areas.

Please comment below:

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3. Was there a special function prior to the outbreak? Yes No

- If **YES**, please give the date of the function and describe the function.

Date: / / .

Description:

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.....
.....
.....
.....

4. If required, submit food samples to the Food and Environmental Laboratory for testing.
- If necessary discuss food sampling with the Food and Environmental Laboratory, Telephone: 8222-3363

5. Were there were any food handlers ill (vomiting/ diarrhea) at the time of the outbreak?

Yes No

- If **YES**, please inform food handlers that they should not return to work until 48 hrs after symptoms have resolved.

6. Conduct general environmental investigation of the premises.

Please comment below:

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7. Please reinforce food and hygiene practices directed in particular to staff who prepare or handle food and staff returning to work should be scrupulous about hygiene.

Please expand on any relevant issues:

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Section 10: Detailed descriptions of foodborne disease pathogens

Notes

Some of the infectious diseases are described as “notifiable”. This means that the doctor (or laboratory) diagnosing this disease are required by law, under the Public and Environmental Health Act, to notify the South Australian Department of Health of all cases. Notification ensures that steps are taken, where necessary, to prevent the spread of an infectious disease to other people in the community.

Comparisons between this section and the Third edition of “You’ve Got What?” (2005).

- Most descriptions here are almost identical to “You’ve Got What?” www.dh.sa.gov.au/pehs/Youve-got-what/introduction.htm.
- *Bacillus cereus* gastroenteritis, botulism, *Clostridium perfringens* gastroenteritis, fish poisoning, staphylococcal intoxication, and *Vibrio parahaemolyticus* gastroenteritis are not yet present in “You’ve Got What?”.
- Diseases not covered here can be found in the Third edition of “You’ve Got What?”

References for disease descriptions:

“You’ve Got What?”, third edition, 2005 www.dh.sa.gov.au/pehs/Youve-got-what/introduction.htm.

Heymann, D. L. ‘Control of Communicable Diseases Manual’, 18th edition, 2004, American Public Health Association, Washington, ISBN 0-87553-034-6

Definitions

Incubation period: Is the interval from the ingestion of the micro-organism or toxin (for gastroenteritis) to the time clinical illness begins.

Infectious period: The period of time that the infected person can transmit the disease.

10.1 Summary of causes of gastrointestinal illness

(Main causes of foodborne illness are in bold)

Causative organism	¹Incubation Period	Signs and Symptoms	Typical duration of illness	²Foods commonly associated with pathogen
<i>Bacillus cereus</i>	1-24 hrs	Vomiting, diarrhoea, fever or all symptoms	24-48 hrs	Cooked rice
Botulism	2-14 days	Vomiting, constipation or diarrhoea and leads to weakness, blurred vision, difficulty in swallowing and paralysis	Recovery may take months	Home canned/ bottled veggies and fruit
<i>Campylobacter</i> spp.	2-5 days	Diarrhoea, cramps, fever, and vomiting; diarrhoea may be bloody	2-10 days	Raw poultry, unpasteurised dairy foods
<i>Clostridium perfringens</i> toxin	6-24 hrs	Watery diarrhoea, nausea, abdominal cramps; vomiting and fever is rare	24-48 hrs	Stews, gravies, meat pies
<i>Cryptosporidium</i>	1-12 days	Major symptom is watery diarrhoea and abdominal cramps. Fever and vomiting less common	Up to 30 days	Unpasteurised dairy foods
Fish poisoning-Ciguatera	1-24 hrs	Diarrhoea, vomiting and abdominal cramps. Pain and weakness in lower extremities may follow	Normally within 2 weeks but may last for months	Eating tropical fish
Fish poisoning-Histamine	2-4 hrs	Tingling & burning sensations around the mouth, sweating, nausea, vomiting, headache and rash	Within 12 hrs	Eating tropical fish
Fish poisoning-shell fish-neurological	Within minutes to a few hours	Three types of shellfish poisoning. Includes tingling of mouth, face and extremities. Paralysis may occur. Other types include vomiting and diarrhoea which may be associated with amnesia	Normally several days to permanent disability if suffering from amnesia.	Shellfish such as mussel and oysters
Fish poisoning-rudder fish	Normally 2 hours but range from 1-90 hours	Watery and oily diarrhoea, abdominal cramps, nausea, headache	Normally 24 hrs	Rudderfish/ escolar fish
Food poisoning General	Several hrs to 10 days	Normally diarrhoea, vomiting, abdominal cramps and/or fever. Stool samples need to be tested for confirmation	Normally 12 hrs to 7 days	
<i>Giardia</i>	3-25 days	May be a variety of symptoms including Abdominal cramps, diarrhoea, excessive gas, fatigue	Long periods of time if not treated.	Any faecal contaminated food

Causative organism	¹Incubation Period	Signs and Symptoms	Typical duration of illness	²Foods commonly associated with pathogen
Hepatitis A	15-50 days	Stomach ache, nausea, slight fever sometimes followed by jaundice	Mild disease 1-2 weeks to severe diseases lasting several months	Shellfish and any faecal contaminated food
<i>Listeria</i>	3-70 days	Symptoms vary from fever, headache, nausea, vomiting and neck stiffness. Foetal infections can be severe and child may be stillborn	Depends on type of illness	Unpasteurised dairy food, soft cheeses, raw vegetables
Norovirus (viral gastroenteritis)	24-48 hrs	Nausea, vomiting, watery, large-volume diarrhoea, fever rare	24-60 hrs	Any faecally contaminated food
Rotavirus	1-3 days	Vomiting, watery diarrhoea, low-grade fever. Infants and children, elderly, and immunocompromised are especially vulnerable	4-8 days	Any faecally contaminated food
<i>Salmonella</i> spp.	6-72 hours	Diarrhoea, fever, abdominal cramps, sometimes vomiting. Diarrhoea may be bloody	4-7 days	Undercooked chicken and other meat. Any contaminated food
<i>Shigella</i> spp.	24-48 hrs	Abdominal cramps, fever, and diarrhoea. Stools may contain blood and mucus	4-7 days	Any faecally contaminated food
Shiga toxin producing <i>E. coli</i>	2-8 days	Diarrhoea, abdominal cramps. Diarrhoea may be bloody. Vomiting can occur but fever is rare. Young children and the elderly are especially vulnerable	2-7 days	Undercooked beef and sheep mince, unpasteurised meat products
<i>Staphylococcus aureus</i> (toxin)	1-6 hrs	Sudden onset of severe nausea and vomiting, abdominal cramps. Diarrhoea and fever may be present	24-48 hrs	Salad dressings, unpasteurised milk, sliced meats, custards
<i>Vibrio parahaemolyticus</i>	4 to 30 hrs	Watery diarrhoea, abdominal cramps and vomiting and fever is less common	1-7 days	Fish and shellfish
<i>Yersinia</i>	3-7 days	Fever and bloody diarrhoea (especially in young children) and symptoms may be similar to appendicitis	2-3 weeks	Undercooked pork

¹ Incubation Period - time between becoming infected & developing symptoms.

² Foods associated with specific pathogens should only be seen as a very brief guide as pathogens such as *Salmonella* and STEC have been found in a very large range of foods that have caused outbreaks.

Bacillus cereus gastroenteritis

Description:

Bacillus cereus gastroenteritis is caused by the bacterium *Bacillus cereus*. These bacteria are often present in the environment as spores which can survive boiling. If the cooked food is then left out of refrigeration after cooking, the spores can germinate, multiply and produce a toxin in the gut, which causes the illness.

Illness often starts suddenly, usually lasts only 24 hours and is rarely fatal.

There are two distinct forms, caused by two different toxins. The first may not be destroyed by heating and causes nausea and vomiting. The other can be destroyed by heat and causes stomach pains and diarrhoea. Outbreaks of vomiting have often been associated with cooked rice that was not refrigerated before reheating.

Symptoms:

Characterised by sudden onset of nausea and vomiting and in others by colic and diarrhoea

Incubation period

From 1 to 6 hours where vomiting is the main symptom, to 6 to 12 hours where diarrhoea is the main symptom.

Infectious period

This illness cannot be passed from one person to another, so there is no infectious period.

Control of spread:

Food should be kept steaming hot (above 60°C) after cooking until it is eaten, or put in a refrigerator or freezer immediately after cooking. Reheated food should be reheated quickly and thoroughly to prevent bacteria from multiplying. Throw out any suspect food.

Treatment:

Antibiotics are not recommended. There are several treatments which are useful for gastroenteritis of any cause - see section, *General recommendations for the treatment of gastroenteritis*.

Diagnosis:

Confirmed by performing enumeration cultures of food to estimate the number of organisms in food. Generally $> 10^5$ cfu/gram are needed to cause illness. Can also be confirmed by the isolation of organisms from the stool of two or more ill people and not from the stools of controls.

Food poisoning is a notifiable disease.

Botulism

Description:

Foodborne botulism is a severe illness resulting from eating toxins produced in food by the bacterium *Clostridium botulinum*. Tiny amounts of the toxin can cause illness.

Toxin can be produced in improperly preserved foods, often improperly home-canned or home-bottled vegetables and fruits, particularly if the food has air-tight packaging. High salt concentrations or an acidic environment, as in pickles or chutney, can stop the toxin from being produced. The toxin can be destroyed by boiling for 10-15 minutes.

Symptoms:

The illness may start with vomiting, constipation or diarrhoea but results in weakness, tiredness, blurred or double vision, dry mouth, difficulty in swallowing and a symmetrical weakness or paralysis that starts at the top of the body and spreads downwards.

Incubation period:

Neurological symptoms of foodborne botulism usually appear within 12-36 hrs, but may take several days.

Infectious period:

This illness does not seem to be passed from one person to another, so there is no infectious period.

Control of spread:

Make sure that home-preserved, home-canned or home-bottled foods are properly heated or processed. Such foods that are also low in acid should be boiled for 10-15 minutes before eating. Honey is an identified source for infants and therefore should not be fed to them.

Treatment:

This illness is serious and all cases need to go to hospital for treatment. Recovery may take months.

Diagnosis:

Detection of botulinum toxin in the serum, stool or gastric aspirate or incriminated food; or by culture of *C. botulinum* from a gastric aspirate or stool.

Botulism is a notifiable disease.

Campylobacter infection

Description:

Campylobacter infection is a bacterial infection of the bowel (bacterial gastroenteritis). The most severe infections occur in the very young, the elderly, malnourished or immunocompromised people.

Spread takes place when hands, objects, food or water become contaminated with faeces and the bacteria are then taken in by mouth. *Campylobacter* is common on raw poultry and may be present in unpasteurised (raw) dairy foods. Infected pets, especially puppies and kittens, and various domestic stock can also cause infection.

Symptoms:

Symptoms may include diarrhoea (sometimes bloody), fever and stomach cramps. Vomiting is not common.

Incubation period:

Usually 2-5 days, with a range of 1-10 days.

Infectious period:

For as long as the *Campylobacter* bacteria are in the faeces of the patient, which may be for a few days, or weeks after symptoms are gone. The risk of infecting others decreases when symptoms are no longer present.

Control of spread:

Once diarrhoea has stopped, the person no longer needs to be excluded from child-care, pre-school, school or work. See section 11.8, *Exclusion of food handlers*.

Good food handling, hand washing and cleaning procedures should be followed.

Treatment:

A doctor may prescribe antibiotic treatment if the infected person is severely unwell. Otherwise, antibiotic treatment is not recommended. Recovery from symptoms usually occurs within 2-5 days. Though antibiotic treatment is seldom recommended, there are several treatments which are useful for gastroenteritis of any cause - see section, *General recommendations for the treatment of gastroenteritis*.

Diagnosis:

The infection is diagnosed by growing the bacteria from a specimen of faeces sent to a laboratory.

***Campylobacter* infection is a notifiable disease.**

***Clostridium perfringens* gastroenteritis**

Description:

Clostridium perfringens gastroenteritis is an illness caused by toxins produced by the bacterium *Clostridium perfringens*. This bacterium can multiply during slow cooling, storage at room temperatures or inadequate reheating. Illness often starts suddenly, usually lasts only 24 hours and is rarely fatal. Illness generally results from eating contaminated meat that has not been properly heated or reheated. Stews, meat pies and gravies have usually been the cause.

Symptoms:

Symptoms include abdominal pain and diarrhoea. Nausea is common, but vomiting and fever are usually absent.

Incubation period:

From 6-24 hours, usually 10-12 hours.

Infectious period:

This illness is not passed from one person to another, so there is no infectious period.

Control of spread:

Cook food properly, and keep it steaming hot (above 60°C) after cooking until it is eaten, or put in a refrigerator or freezer immediately after cooking. This is particularly important for stews, meat pies and gravies. Reheated food should be reheated quickly and thoroughly to prevent bacteria from multiplying. Throw out any suspect food. Meat and poultry should not be partially cooked one day and reheated the next. In particular, food-handlers for large functions should be made aware of the risks of this bacterium.

Treatment:

Antibiotics are not recommended. There are several treatments which are useful for gastroenteritis of any cause - see section, *General recommendations for the treatment of gastroenteritis*.

Diagnosis:

Confirmed by the demonstration of *C. perfringens* in semiquantitative anaerobic cultures of food ($\geq 10^5$ /g) or patients stool ($\geq 10^6$ /g) in addition to clinical and epidemiologic evidence. Detection of enterotoxin in the stool of ill persons also confirms the diagnosis.

Food poisoning is a notifiable disease.

Cryptosporidiosis

Description:

Cryptosporidiosis is an infection of the bowel caused by the parasite, *Cryptosporidium*. Spread takes place when hands, objects, food or water become contaminated with faeces and the parasites are then taken in by mouth. Swimming in contaminated water, unpasteurised (raw) dairy foods and contact with infected cows and other domestic animals can also cause infection.

Symptoms:

The main symptom is watery diarrhoea which occurs with stomach cramps. Fever, vomiting and loss of appetite occur less commonly. People with normal immune systems may have no symptoms at all or a brief episode of diarrhoea. People with immune suppression, particularly AIDS, are likely to have severe, prolonged diarrhoea.

Incubation period:

1-12 days.

Infectious period:

As soon as the infected person develops symptoms and for several weeks after the disappearance of symptoms.

Control of spread:

Exclude from child care, pre-school, school or work until diarrhoea has stopped. See section 11.8, *Exclusion of food handlers*.

People who have diarrhoea should not use public swimming pools.

Be sure good hand washing and cleaning procedures are followed.

Cryptosporidium is highly resistant to chemical disinfectants used to purify drinking water. People with immune suppression, particularly AIDS patients, should consider additional strategies to avoid infection. These include boiling or additionally filtering drinking water and avoiding public swimming pools.

Treatment:

For those with normal immune systems, specific treatment is not required. If large volumes of diarrhoea are produced, increased fluid intake is important. See section, *General recommendations for the treatment of gastroenteritis*.

For those with immune suppression, no currently available treatment has been found to be effective in reducing diarrhoea. These patients must therefore take special care in avoiding infection.

Diagnosis:

The infection is diagnosed by examining a specimen of faeces under a microscope.

Cryptosporidiosis is a notifiable disease.

Fish poisoning

The four most common are:

Ciguatera Fish Poisoning

It is caused by the organism, *Gambierdiscus toxicus* and other algae that produce a toxin. The organism grows on reefs and is eaten by fish which accumulate the toxin in their muscles. Large predatory fish are the most toxic.

Symptoms occur within 1-24 hours of eating tropical reef fish and include vomiting, diarrhoea, low blood pressure, pain and weakness in the lower limbs, tingling around the mouth, fingers and toes, cold foods feeling hot and hot foods feeling cold, and aching teeth. In severe cases, affected people may go into a coma. Diagnosis by the detection of ciguatoxin in epidemiologically implicated fish.

Eating large predatory reef fish should be avoided.

Scombroid Fish Poisoning (Histamine Poisoning)

It is caused by fish containing high levels of the biochemical, histidine. If fish are caught in warm areas and are not refrigerated properly, this biochemical can breakdown to histamine, which causes the problem. Diagnosis confirmed by detection of histamine in epidemiologically implicated fish.

Symptoms occur within a few hours of eating the fish and include tingling and burning around the mouth, facial flushing and sweating, nausea and vomiting, headache, palpitations, dizziness and a rash. Symptoms usually go away within 12 hours and there are no long-term effects. In severe cases, antihistamines may be effective.

After fish are caught, they should be quickly and properly refrigerated.

Shellfish Poisoning (paralytic, neurotoxic or amnesic shellfish poisoning)

Organisms, present in seawater, are 'eaten' by shellfish and produce a toxin. The organisms are particularly numerous during algal blooms or 'red tides'.

Symptoms occur minutes to hours after eating the shellfish. Diagnosis confirmed by detection of toxins in implicated shellfish.

Paralytic shellfish poisoning symptoms include tingling around the mouth, face, fingers and toes. Symptoms usually stop within a few days. In severe cases, affected people may stagger and may not be able to talk, swallow, move or breathe and may die.

Neurotoxic shellfish poisoning has similar symptoms to paralytic shellfish poisoning, but paralysis does not occur.

Amnesic shellfish poisoning symptoms include vomiting, abdominal cramps and diarrhoea. Confusion, amnesia and coma may follow in severe cases. The amnesia may be permanent.

Shellfish should not be eaten during algal blooms or caught during warnings not to fish for shellfish.

Rudderfish/Escolar diarrhoea

It is caused by the consumption of fish from members of the escolar (*Lepidocybium flavobrunneum*, *Ruvettus pretiosus*) and rudderfish (*Centrolophus niger* and *Tubia* species) marketing groups. Escolar is also sold as "rudderfish" and "butterfish". These fish have a high wax ester content, and humans are unable to digest this type of oil. In humans, wax esters accumulate in the rectum causing oily diarrhoea.

Diagnosis has been confirmed by testing the implicated fish for oil types, concentration, and by identification of the fish.

Symptoms normally include sudden onset of watery and oily diarrhoea, but also abdominal cramps. Nausea, headache and vomiting have also been reported.

The median incubation period is 2-2.5 hrs but can range from 1-90 hrs. The median duration of illness is 22-24 with a range of 5-78 hours.

Seafood retailers have been advised to display signs advising that rudderfish might cause these problems.

Food poisoning is a notifiable disease.

Food poisoning

Description:

Food poisoning is an illness caused by eating contaminated food. Contamination occurs as a result of poor preparation, handling or storage of food. The most common sources of contamination are bacteria or toxic substances produced by bacteria. Some viruses can also cause food poisoning. The illness can last from hours to weeks, depending on which organism caused the problem. Occasional severe cases can require hospitalisation. Ill people are encouraged to go to their doctor for advice, particularly if they have diarrhoea with blood in it, as this may be potentially serious. A test on a faecal specimen can often identify the organism that caused the illness. If food is left-over for testing, a link can then be made between the food and the ill person. On most occasions where a cause has been determined, several people from different households have become ill after eating a common food.

Symptoms:

Typical symptoms include one or more of the following; nausea, vomiting, stomach cramps or diarrhoea.

Incubation period:

From hours to days, depending on the cause. Although many ill people blame a food they ate before they got ill, experience indicates that that food is usually not the cause of the illness.

Infectious period:

Depends on the organism that caused the illness. Some illnesses are not spread from person to person. Others are.

Control of spread:

If the organism is not known, it should be assumed that the organism may be able to be spread from one person to another. Therefore:

Exclude from child care, pre-school, school or work until diarrhoea has stopped. Exclude from work for 48 hours after symptoms has stopped if the ill person is a food handler. If the person is a health care worker or child care worker it is also recommended that they exclude themselves from work until 48 hrs after symptoms have stopped.

People who have diarrhoea should not use public or private swimming pools.

Be sure good hand washing and cleaning procedures are followed.

Diagnosis:

It is very important to recommend to any ill persons to seek medical attention and have their stool sample tested for microbiological pathogens. The testing of stool samples will assist with treatment and greatly help the investigation of possible foodborne illness.

Food poisoning is a notifiable disease.

Giardiasis

Description:

An infection of the bowel caused by the parasite, *Giardia*. Spread takes place when hands, objects or food become contaminated with the faeces of infected people or animals. The parasites are then taken in by mouth. Infection may also result from drinking water contaminated by infected humans or animals. In institutions and pre-school centres, person-to-person transmission may be a significant means of spreading the illness.

Symptoms:

Stomach cramps, excessive gas or bloating, diarrhoea, frequent loose and pale greasy stools, fatigue and weight loss. Fever and bloody diarrhoea are not usually seen with *Giardia* infections. Many infected people have no symptoms.

Incubation Period

3-25 days or longer (usually 7-10 days).

Infectious Period

For as long as the organism is present in the faeces (often months), whether or not the person is ill. A person with diarrhoea is more likely to spread the infection than a well person. However, a well person is still potentially infectious to others.

Control of Spread:

Exclude from child care, pre-school, school or work until diarrhoea has stopped - see section 11.8, *Exclusion of food handlers*.

Be sure good hand washing and cleaning procedures are followed.

If water is contaminated, it should be boiled before drinking.

Treatment of infected people reduces spread.

Treatment:

Treatment of an ill person with appropriate antibiotic medication relieves symptoms and usually makes the person non-infectious within a few days.

Diagnosis:

The infection is diagnosed by examining the faeces under a microscope.

Haemolytic uraemic syndrome (HUS) and shiga toxin-producing *Escherichia coli*

Description:

Escherichia coli (*E. coli*) is a bacterium commonly found in the faeces of humans and many other animals. Most *E. coli* found in the gut are harmless but some may produce toxins which can cause disease. Children and the elderly are especially susceptible to shiga toxin-carrying *E. coli*. Shiga toxin-carrying *E. coli* usually cause sporadic disease but occasionally outbreaks occur. The common sources of such outbreaks have included uncooked, undercooked or unpasteurised animal products (eg mettwurst), and vegetables and fruit juices contaminated with animal faeces, contact with farm animals and swimming pools.

Symptoms:

Diarrhoea, diarrhoea with blood and abdominal cramps. Vomiting and fever is less common. Occasionally, shiga toxin-carrying *E. coli* gut infections cause haemolytic uraemic syndrome (HUS) which can lead to kidney disease and damage to other organs, including the pancreas and brain.

Incubation period:

Usually ranges from 3 to 8 days but may be longer.

Infectious period:

This may be as long as 3 weeks.

Control of spread:

Once diarrhoea has stopped, the person no longer needs to be excluded from childcare, preschool, school or work - see section 11.8, *Exclusion of food handlers*.

All animal products, particularly from cattle and sheep, which are not thoroughly cooked or pasteurised may harbour shiga toxin-carrying *E. coli*.

All vegetables and fruits, especially if consumed raw, should be protected from contamination from uncooked, unpasteurised animal products and should be washed before consumption.

Handwashing will prevent most person-to-person transmission. Hands should be washed after contact with animals, especially farm animals.

Toddlers who are not toilet trained should not use swimming pools and when faecal accidents occur, swimming pools should be properly disinfected.

Treatment:

Treatment for complications such as dehydration and kidney failure may require hospitalisation, sometimes in intensive care. As a rule, antibiotics should not be used.

Diagnosis:

In SA, diagnosis is carried out by PCR detection of toxin genes in bloody stool specimens. Culture and detection of toxin by ELISA can also be used to assist diagnosis.

See section, *Food poisoning*.

Shiga toxin-producing *E. coli* and HUS are notifiable diseases.

Hepatitis A

Description:

An infection of the liver by the hepatitis A virus. Older children and adults are more likely to have symptoms, usually lasting one to two weeks, or in severe cases, up to several months. Children under age three rarely have symptoms. Spread takes place faecal-orally when hands, objects, food or water become contaminated with the faeces of infected people. In Australia, most cases are associated with non-toilet-trained children in child care centres, sexual and household contacts of infected people and overseas travel to high risk countries.

Symptoms:

Stomach ache, loss of appetite, nausea, slight fever and tiredness, sometimes followed by yellow skin and eyes (jaundice), dark urine, and pale faeces.

Incubation period:

15-50 days, usually 28-30 days.

Infectious period:

A person is most infectious in the two weeks before symptoms occur, and is slightly infectious during the first week of symptoms.

Control of spread:

Follow good personal hygiene practices, especially thorough hand washing.

Report hepatitis A infection in a child (or in a family member of a child) attending a child care centre to the director.

An infected person should be excluded from child care, preschool, school or work for seven days after the onset of jaundice or illness - see section 11.8, *Exclusion of food handlers*.

Immunoglobulin is offered to all non-immune household contacts of a case of hepatitis A. Under certain circumstances, immunoglobulin (available from GPs or hospitals) may also be offered to child care contacts, food handlers and restaurant patrons. In contacts of a case of hepatitis A, immunoglobulin will prevent or decrease the severity of symptoms of hepatitis A if given within 7-10 days after exposure. Contacts (including those given immunoglobulin) may remain infectious to others even if they do not develop symptoms themselves and should therefore continue to follow good personal hygiene practices.

A hepatitis A vaccine provides protection within 2 weeks of administration and long term protection (>10 years) if a booster dose is administered. Vaccination is recommended in the following groups:

- Travellers to areas where hepatitis A is common.
- Those at occupational risk of exposure to hepatitis A, such as:
 - ♦ Those caring for young children in day care centres, particularly where children are not yet toilet trained.
 - ♦ Teachers and other close contacts of the intellectually disabled.
 - ♦ Staff and residents of residences for the intellectually disabled.
 - ♦ Health workers and teachers in remote Aboriginal and Torres Strait Islander communities.

- ♦ Nurses and other health care workers in certain hospital wards.
- ♦ Sewerage workers.
- ♦ Men who have sex with men.
- ♦ People with chronic liver disease or a liver transplant.
- ♦ People who require treatment with blood products such as haemophiliacs.
- ♦ Food handlers.

Treatment:

There is no specific antiviral treatment for hepatitis A. Rest, good fluid intake and alteration in diet may decrease symptoms. Severely ill people require admission to hospital.

Diagnosis:

A single blood test for demonstration of specific IgM antibodies but may require repeat tests to detect sero conversion.

Hepatitis A is a notifiable disease.

Listeriosis

Description:

A bacterial infection caused by *Listeria monocytogenes*. The people who are most at risk of infection which can be serious, are new-born babies, the elderly, immune suppressed people and pregnant women. Pregnant women have relatively mild symptoms (fever, and aches) and make a quick recovery. However, they may transfer the infection to their unborn child who may then be stillborn or born very ill. The case-fatality rate among non-pregnant adults can be as high as 35%. The main way in which *Listeria* infection is spread is by eating contaminated foods. Foods associated with the spread of *Listeria* include: unpasteurised (raw) dairy products (eg milk, yogurt and cheese), soft cheese (eg brie), raw vegetables, shellfish, raw fish and processed meats such as pate. Contact with infected farm animals, particularly stillborn animals, can also spread the infection.

Symptoms:

Symptoms vary from a sudden onset of fever, headache, nausea, vomiting and neck stiffness to a gradual onset of confusion and decreased alertness. Foetal infections can be severe and may result in stillbirth, or with postnatal septicaemia or meningitis.

Incubation period:

Varies from 3-70 days. Average 3 weeks.

Infectious period:

Infected people may carry *Listeria* in their faeces for several months after infection.

Control of spread

Pregnant women and immune suppressed people should take special care to avoid foods which may be contaminated with *Listeria*. All meat should be properly cooked and only pasteurized dairy products eaten. Raw vegetables should be thoroughly washed before eating. Pate should be avoided.

Pregnant women and immune suppressed people should avoid contact with sick or stillborn farm animals.

Treatment:

Hospitalisation is usually necessary and antibiotic therapy is given.

Diagnosis:

Culture of the bacteria from a sample of CSF (fluid from around the spinal cord), blood and in pregnant women and babies, samples can also be taken from amniotic fluid, meconium, lochia, gastric washings and other sites of infection.

Listeriosis is a notifiable disease.

Salmonella gastroenteritis

Description:

An infection of the bowel (bacterial gastroenteritis) caused by *Salmonella* bacteria. The illness may be particularly severe in young children, the elderly and people with immune suppression. Infection often results from eating contaminated food, usually of animal origin, eg raw or undercooked eggs, milk, meat or poultry. Spread can also take place when hands, objects, food or water become contaminated with faeces and the bacteria are then taken in by mouth. Infected pets and domestic stock can also cause infection.

Symptoms:

Symptoms may include fever, diarrhoea, nausea and vomiting, stomach cramps and occasionally blood or mucus in the faeces. Dehydration is a serious complication.

Incubation period:

6-72 hours, usually 12-36 hours.

Infectious period:

The faeces of person are always infectious when symptoms are present. Some people continue to carry *Salmonella* bacteria in the bowel and shed them in the faeces for months after recovering.

Control of spread:

Exclude from child care, pre-school, school and work until diarrhoea has ceased - see section 11.8, *Exclusion of food handlers*.

Good food handling, hand washing and cleaning procedures should be followed, particularly for those who have symptoms or who are still infected without having symptoms (carriers).

Treatment:

Recovery from *Salmonella* infection usually occurs within a few days and without antibiotic treatment. However, infants, the elderly and people with immune suppression may require antibiotics. Though antibiotic treatment is seldom recommended, there are several treatments which are useful for gastroenteritis - see section, *General recommendations for the treatment of gastroenteritis*.

Diagnosis:

Diagnosis is made by growing *Salmonella* bacteria from a faecal specimen.

***Salmonella* infection is a notifiable disease.**

Shigella infection

Description:

A bowel infection (gastroenteritis) caused by *Shigella* bacteria. Recovery usually occurs after 4-7 days. Mild infections or infections without symptoms may occur. The most severe infections occur in the very young, the elderly and the malnourished. Spread takes place when hands, objects or food become contaminated with faeces of people who are infected and the bacteria are then taken in by mouth. Small numbers of *Shigella* bacteria are sufficient to cause an infection and stringent control measures are required.

Symptoms:

Symptoms may include diarrhoea (sometimes with blood or mucus), fever, vomiting and stomach cramps.

Incubation period:

1-7 days, usually 1-3 days.

Infectious period:

During symptoms and until *Shigella* are no longer in the faeces (usually within 4 weeks after illness). On rare occasions people who have recovered and without symptoms can shed *Shigella* in their faeces for many months. After appropriate antibiotics, *Shigella* stop being shed in the faeces within a few days.

Control of spread:

Exclude person from child care, pre-school, school or work until diarrhoea has stopped - see section 11.8, *Exclusion of food handlers*.

Be sure that good hand washing and cleaning procedures are followed.

When several people in one group are ill with *Shigella*, the local health authority may review sanitary and hygienic aspects of the areas shared by affected people.

Treatment:

Specific antibiotic therapy is available which will reduce symptoms and spread of infection. There are several other treatments which are useful for gastroenteritis - see section, *General recommendations for the treatment of gastroenteritis*.

Diagnosis:

The infection is diagnosed by growth of *Shigella* from a faecal specimen.

***Shigella* infection is a notifiable disease.**

Staphylococcal gastroenteritis

Description:

Staphylococcal gastroenteritis is an illness caused by toxins produced in food by the bacterium *Staphylococcus aureus*. Food can be contaminated when discharges from an infected finger or eye, abscesses, acne, nose or throat get onto food. *Staphylococcus* may be in healthy skin and hair, milk and milk products, which may be a source of food contamination leading to illness. If contaminated food is not refrigerated, bacteria multiply in the food and produce the toxin. Heating the food may then kill the bacteria, but won't destroy the toxin. Foods that most often cause illness are those that come into contact with food-handlers' hands, such as custards, salad dressings, sandwiches, unpasteurised milk, sliced meats and meat products. The illness usually lasts a day or two and death is rare, but the severity of the symptoms often causes cases to be hospitalised.

Symptoms:

The illness is often sudden and violent with severe abdominal cramps, nausea and vomiting, often with diarrhoea and sometimes with lowered body temperature and blood pressure. Cases may collapse.

Incubation period:

30 minutes to 8 hours, usually 2-4 hours.

Infectious period:

The illness cannot be passed from one person to another, so there is no infectious period.

Control of spread:

Educate food handlers in the preparation of food, prompt refrigeration of food, the danger of working with exposed skin, nose and eye infections and the need to cover wounds. Reduce food-handling time so that food is kept out of the fridge for an absolute minimum time, and no more than 4 hours. People with boils, abscesses and other skin infections on their hands should have those infections covered, eg with a bandaid, and wear gloves. Such infections on other parts of the body, such as the face, should also be covered, such as with a bandaid.

Treatment:

Antibiotics are not recommended. There are several treatments which are useful for gastroenteritis of any cause - see section, *General recommendations for the treatment of gastroenteritis*.

Diagnosis:

Isolation of Staphylococci ($\geq 10^5$ organisms/gram) or detection of enterotoxin from implicated food confirms the diagnosis. If staphylococci are not isolated the bacteria may have been killed by heating and enterotoxin testing may need to be carried out,

Food poisoning is a notifiable disease.

***Vibrio parahaemolyticus* gastroenteritis**

Description:

The illness is caused by the organism *Vibrio parahaemolyticus*. This organism is found in coastal seawater, where it can contaminate fish and shellfish. If contaminated seafood is left at room temperature, the organism multiplies, thereby increasing the risk of illness, if the seafood is then eaten without being cooked. Allowing cooked seafood to come into contact with contaminated, uncooked seafood (cross-contamination) or by rinsing seafood with contaminated seawater can also cause illness. The illness usually lasts 1-7 days and is rarely fatal.

Symptoms:

The illness is characterised by watery diarrhoea and abdominal cramps in most cases, sometimes with nausea, vomiting, fever and headache and occasionally bloody diarrhoea.

Incubation period:

Usually 12-24 hours, but it can range from 4-30 hours.

Infectious period:

This illness cannot be passed from one person to another, so there is no infectious period.

Control of spread:

Consumers need to be educated about the risks of eating raw seafood. Seafood should be cooked to a temperature of 70°C for 15 minutes to kill the organism. Seafood needs to be kept properly refrigerated and not cross-contaminated.

Treatment:

Antibiotics are not recommended. There are several treatments which are useful for gastroenteritis of any cause - see section, *General recommendations for the treatment of gastroenteritis*.

Diagnosis:

Isolation of *V. parahaemolyticus* from the patient's stool or identifying $\geq 10^5$ organisms/gram of implicated food.

Food poisoning is a notifiable disease.

Viral gastroenteritis

Description:

An infection of the bowel caused by one of a number of viruses including rotavirus and norovirus. Diagnosis is based on clinical examination and microbial detection in faeces. Spread through contamination of hands, objects, or food with infected faeces. The virus is then taken in by the mouth. Viral gastroenteritis may also be spread through coughing and sneezing.

Symptoms:

Symptoms are usually mild fever, nausea, vomiting, stomach cramps and diarrhoea lasting one or two days. Rotavirus symptoms can last for up to 8 days.

Incubation period:

24-72 hours.

Infectious period:

During illness and for 48 hours after symptoms have disappeared.

Control of spread:

Exclude a person from child care, pre-school, school or work until diarrhoea and vomiting have stopped - see section 11.8, *Exclusion of food handlers*.

Be sure good hand washing techniques and cleaning procedures are practised.

Treatment:

Though specific antiviral therapy is not available, there are several treatments which are useful for gastroenteritis of any cause - see section, *General recommendations for the treatment of gastroenteritis*.

Diagnosis:

Rotavirus is detected in stool samples by immunologic techniques including ELISA. Norovirus can be detected by immunologic techniques or amplification of norovirus genes by PCR but these tests are not routinely used.

Food poisoning is a notifiable disease.

Yersiniosis

Description:

A bacterial infection of the bowel caused by *Yersinia enterocolitica*. Many birds and animals carry *Yersinia* in their bowel. Spread to humans occurs by eating food or water contaminated by infected human or animal faeces. Yersiniosis is particularly associated with eating raw or undercooked pork but can be spread from other foods or from person to person occasionally. Infected pets and domestic stock may also cause infection.

Symptoms:

Symptoms vary with age and include: fever and bloody diarrhoea in young children and symptoms similar to appendicitis in older children and adults. Joint pain occurs in half of affected adults.

Incubation period:

3-7 days, generally under 10 days.

Infectious period:

Usually 2-3 weeks. If not treated with antibiotics, the organism may be shed in the faeces for 2-3 months.

Control of spread:

Exclude from child care, pre-school, school or work until diarrhoea has stopped - see section 11.8, *Exclusion of food handlers*.

Good food handling, hand washing and cleaning procedures should be followed.

Avoid eating raw or undercooked pork.

Treatment:

Effective antibiotic treatment is available.

Diagnosis:

The diagnosis is usually made by growing *Yersinia* from a faecal specimen.

Yersiniosis is a notifiable disease.

General recommendations for the treatment of gastroenteritis

Seek medical advice if any of the following symptoms occur:

- **Adults:** Fever, severe abdominal pain or bloody diarrhoea. Signs of dehydration such as thirst and decreased urination, lethargy, dry mouth, feeling faint on standing.
- **Children:** Fever, abdominal pain, bloody diarrhoea, or any symptoms in a child less than 12 months of age. Signs of dehydration such as thirst and decreased urination, lethargy, dry mouth, sunken eyes.

Treatment:

- Give plenty of fluids. Oral rehydration solution is highly recommended. It is available at pharmacies and should be administered as per instructions on the packaging. For mildly unwell children, diluted juice or carbonated (fizzy) drinks (one part to three parts water) or cordial (even more diluted) can be given.
- Medicines to prevent vomiting or diarrhoea should not be given (especially in children) except where specifically advised by a doctor.
- Breast fed babies should continue to be breast fed with extra fluids between feeds.
- Children on formula or solid diets should not have food withheld for more than 24 hours.

Section 11: Questionnaires and other useful information

11.1 Staff Questionnaire

The Communicable Disease Control Branch (CDCB) is seeking your assistance with our investigation. To do this we ask you to complete this short questionnaire. The questionnaire will take about 5 minutes.

Under the Public and Environmental Health Act 1987, your responses to questions asked are confidential within legal limits.

If you require any assistance with the questionnaire, please telephone CDCB on (08) 8226-7177 and ask for a public health nurse.

DEMOGRAPHIC DETAILS

Can you please tell me your:

1. Name.....
2. Address.....
3. Telephone number
4. Date of birth

TRAVEL DETAILS

Have you travelled overseas recently? Yes No

If *YES*, where did you travel and when?

.....
.....
.....
.....
.....

Have you travelled interstate recently? Yes No

If *YES*, where did you travel and when?

.....
.....
.....
.....
.....

EMPLOYMENT DETAILS

1. What is your full-time occupation?

.....

2. What is the name and address of your place of employment?

.....
.....

3. What is your role in the food premises?

.....

4. What is your part-time occupation (if applicable)?

.....

5. What is the name and address of your other place of employment?

.....
.....

6. What is your role in this other food premises?

.....

ILLNESS DETAILS

1. In the last month have you experienced any gastrointestinal illness? Yes No

If **YES**, please answer the following questions.

2. What date was this?

3. What time did you become ill?..... (am/pm)

4. Are you still ill? Yes No

5. How long did this illness last?

6. What were the symptoms of this illness?

Please tick ✓ the appropriate box

- Nausea Abdominal pain Fever/chills
- Diarrhoea (3 or more loose stools or bowel motions in a 24 hour period) Bloody diarrhoea
- Other symptoms?

7. Did you see a doctor about this illness? Yes No

If **YES**, was a stool sample obtained? Yes No

8. Were you working at the food premises while you were ill or within 48 hrs of your illness symptoms finishing? Yes No

If **YES**, what dates and times of shifts were you working?

.....
.....
.....
.....

Thank you for your co-operation and assistance with this investigation

NDDMS Notification No......

11.2 Hypothesis Generating Questionnaire

Version to be administered by CDCB or LG

Interviewer's name

Council.....Date of interview.....

The illness you have been diagnosed with is

Information for the person being interviewed

The information that you give us in this questionnaire may help us find out the cause of your illness, so please be as accurate as possible.

The questionnaire will take about half an hour to fill in.

The information that you give us will be treated in confidence.

Section 1: Details of the person being interviewed

Q 1.1 What is your name?

.....

Q 1.2 What are your telephone number or contact details?

..... No phone

Q 1.3 What is your relationship to the ill person? Parent Guardian

Other:.....

Section 2: Details of the ill person (Case details)

Q 2.1 What is the name of the case?

Q 2.2 What is the case's address?

.....

Q 2.3 What is the case's telephone number?

Q 2.4 What is the case's date of birth?.....

Q 2.5 What is the case's gender? Male Female

Q 2.6 Does the case regard himself/herself as an Aborigine? Yes No

Q 2.7 What is his or her country of birth?

Q 2.8 What is the occupation of the case?.....

Q 2.9 Where does the case work?

Q 2.10 Does the case attend a child care centre or school? Yes No

Q 2.11 If the cases attends child care, how many days/ hours per week does the child attend?

.....

Q 2.12 What is the name of the child care centre or school?

.....

Section 3: Details of the illness (Case details)

- Q 3.1 What date did the case get ill?
- Q 3.2 What time?..... am pm
- Q 3.3 Is the case still ill? Yes No
- Q 3.4 If *NO*, how long did this illness last? days OR hours
- Q 3.5 What are/were the symptoms of this illness?
(Tick all the symptoms present)
- Diarrhoea Bloody diarrhoea Nausea
- Vomiting Stomach cramps Fever/chills
- Other:
- Q 3.6 Was the case hospitalised? Yes No
- Q 3.7 If *YES*, what hospital?.....
- Q 3.8 Did the case travel INTERSTATE in the 2 weeks before the illness started?
 Yes No
- Q 3.9 If *YES*, where did the case travel?
- Q 3.10 Did the case travel OVERSEAS in the 2 weeks before the illness started?
 Yes No
- Q 3.11 If *YES*, where did the case travel?
- Q 3.12 Has anybody else you know of been ill with a similar illness? Yes No
- Q 3.13 For each person who has been ill, please tell me their name, age, symptoms:

<i>Name</i>	<i>DOB</i>	<i>Contact Phone No.</i>	<i>Relationship to the case</i>	<i>Date of onset</i>	<i>Symptoms</i>
Given Name: Surname:					<input type="checkbox"/> Diarrhoea <input type="checkbox"/> Blood in diarrhoea <input type="checkbox"/> Nausea <input type="checkbox"/> Vomiting <input type="checkbox"/> Stomach cramps <input type="checkbox"/> Fever/chills <input type="checkbox"/> Other, describe:
Given Name: Surname:					<input type="checkbox"/> Diarrhoea <input type="checkbox"/> Blood in diarrhoea <input type="checkbox"/> Nausea <input type="checkbox"/> Vomiting <input type="checkbox"/> Stomach cramps <input type="checkbox"/> Fever/chills <input type="checkbox"/> Other, describe:
Given Name: Surname					<input type="checkbox"/> Diarrhoea <input type="checkbox"/> Blood in diarrhoea <input type="checkbox"/> Nausea <input type="checkbox"/> Vomiting <input type="checkbox"/> Stomach cramps <input type="checkbox"/> Fever/chills <input type="checkbox"/> Other, describe:
Given Name Surname:					<input type="checkbox"/> Diarrhoea <input type="checkbox"/> Blood in diarrhoea <input type="checkbox"/> Nausea <input type="checkbox"/> Vomiting <input type="checkbox"/> Stomach cramps <input type="checkbox"/> Fever/chills <input type="checkbox"/> Other, describe:

Section 4: Exposure details

Q 4.1 Where does the case (or case household) normally obtain the following food items?

<i>Name of premises</i>	<i>Suburb</i>
Meat and small goods	
Chicken and other poultry	
Groceries	
Fruit and vegetables (include roadside stalls or home grown)	
Fish/Seafood	
Food samples	

Q 4.2 Has the case eaten or drunk any unpasteurised or 'raw' dairy foods in the week before they got ill, such as raw milk, or yoghurt or cheese made from unpasteurised milk? Yes No

Please fill in the following table

<i>What type of product was eaten?</i>	<i>What was the brand?</i>	<i>Where was it bought?</i>

Q 4.3 Has the case eaten any raw or undercooked meat or seafood (including chicken, mince or oysters) in the week before they got ill? Yes No

Please fill in the following table

<i>What type of product was eaten?</i>	<i>What was the brand?</i>	<i>Where was it purchased?</i>

	What did the case eat for breakfast? (Be specific: eg: OJ, milk, cornflakes, vegemite on toast, eggs, bacon, the brand of the food item and the place of purchase)	What did the case eat between breakfast and lunch? (Be specific: eg: OJ, an apple, chicken crisps, the brand of the food item and the place of purchase)	What did the case eat for lunch? (Be specific: eg hot chips, ham sandwich, formula, the brand of the food item and the place of purchase)	What did the case eat between lunch and dinner? (Be specific: eg: yoghurt, biscuits, apple, the brand of the food item and the place of purchase)	What did the case eat for dinner? (Be specific: eg hot chips, steak with frozen peas, pumpkin, the brand of the food and the place purchase)	What did the case eat after dinner? (Be specific: chocolate, cake, milk, the brand of food, and the place of purchase)
<p>Day got ill</p> <p>This day was _____day (eg Monday)</p> <p>That day, the person went to/did:</p>						
<p>One day before got ill</p> <p>This day was _____day (eg Monday)</p> <p>That day, the person went to/did:</p>						

Guidelines for Investigation of Foodborne Disease for Local Government EHOs

	What did the case eat for breakfast? (Be specific)	What did the case eat between breakfast and lunch? (Be specific)	What did the case eat for lunch? (Be specific)	What did the case eat between lunch and dinner? (Be specific)	What did the case eat for dinner? (Be specific)	What did the case eat after dinner? (Be specific)
<p>Two days before got ill</p> <p>This day was _____ day (eg Monday)</p> <p>That day, the person went to/did:</p>						
<p>Three days before got ill</p> <p>This day was _____ day (eg Monday)</p> <p>That day, the person went to/did:</p>						

	What did the case eat for breakfast? (Be specific)	What did the case eat between breakfast and lunch? (Be specific)	What did the case eat for lunch? (Be specific)	What did the case eat between lunch and dinner? (Be specific)	What did the case eat for dinner? (Be specific)	What did the case eat after dinner? (Be specific)
<p>Four days before got ill</p> <p>This day was _____ day (eg Monday)</p> <p>That day, the person went to/did:</p>						
<p>Five days before got ill</p> <p>This day was _____ day (eg Monday)</p> <p>That day, the person went to/did:</p>						

Guidelines for Investigation of Foodborne Disease for Local Government EHOs

<p>Six days before got ill</p> <p>This day was _____ day (eg Monday)</p> <p>That day, the person went to/did:</p>						
---	--	--	--	--	--	--

Q 4.4 Did the case attend a function such as a wedding, engagement, christening, birthday party etc?

Yes No Don't know

Q 4.5 What type of function was it?

Q 4.6 Estimate how many people were there

Q 4.7 What was the date of the function?

Q 4.8 What is the name of the place where the function was held?

.....

Q 4.9 What is the address of the place where the function was held?

.....

.....

Q 4.10 Do you know of any other people who were at this function who are now also sick with a similar illness?

Yes No

Section 5: Animal Contact

Q 5.1 Has the case been in contact with animals in the week before the illness began, such as pets (including dogs, cats, mice, rats, birds, snakes, lizards, etc) or zoo or farm animals (including backyard poultry)?

Yes No

Q 5.2 Which animals?

.....

Q 5.3 Have any of these animals been ill with diarrhoea or vomiting in the week before this illness?

Yes No Don't know

Q 5.4 Which animals?

.....

Section 6: Conclusion

Q 10.1 "Thank you for your time. Someone may need to call you back to clarify some details or to follow up this report."

NOTE: If anyone in the household has blood in their diarrhoea, we strongly advise them to go to their doctor. This is because some diseases that can cause bloody diarrhoea are potentially serious. Tell the doctor about all the symptoms that are present, particularly about any bloody diarrhoea.

If you notice apparent links in foods or eating premises then inform CDCB.

Ph (08) 8226-7177 or Fax (08) 8226-7187

Otherwise, post or fax this questionnaire to:
Communicable Disease Control Branch
Department of Health,
PO Box 6 Rundle Mall, Adelaide SA 5000.

11.3 Instructions for using the Hypothesis Generating Questionnaire

11.3.1 Introduction

It has been reported that after exposure to a foodborne pathogen (food consumed or environmental contact) it can be up to 7 days before the person will start to show gastrointestinal symptoms such as diarrhoea and/or vomiting (please refer to the disease descriptions for further details). Therefore the questionnaire is designed to help identify exposures such as foods eaten, and other environmental contact in a 7 day period prior to illness. The *Hypothesis Generating Questionnaire* is normally used during an outbreak investigation.

It is often difficult to identify the source of the pathogen from one person's food history and so food histories (results of this Questionnaire) from a number of people are compared to determine if there is a common food or environmental exposure.

It usually takes about 20-40 minutes to complete the *Hypothesis Generating Questionnaire*.

11.3.2 Guide for using the questionnaire

- Use only the *Hypothesis Generating Questionnaire*. Do not modify or delete questions. It is difficult to compare people's food histories if a different tool has been used.
- Please explain to the person who has been ill the reason they are being interviewed, how all the information will remain confidential and how the information will be used to investigate foodborne disease. Also explain to them the importance of obtaining detailed accurate information.
- Please explain that there are different parts to the questionnaire which ask for details about
 - ♦ The person.
 - ♦ The illness including symptoms.
 - ♦ Where they normally purchase their food and food items
 - ♦ A seven days food history beginning on the day of onset of illness.
 - ♦ Any social functions they have attended including restaurant, parties, BBQ or picnics.
 - ♦ Contact with animals
- Before beginning the questionnaire please ask them if they can look at a calendar while they are being asked questions regarding the 7 days prior to illness, as this often assists the person in recalling information.
- Please ask them the exact date their illness began as this will be the date used to determine which 7 day period will be examined. To help recalling the date of onset, it sometimes helps to ask the date they visited the doctor and work back from that day.
- If the person indicates that they are a food handler - see section 11.8, *Exclusion of food handlers*. Please also provide them with information on food preparation and hygiene practices (see You've Got What? www.dh.sa.gov.au/pehs/Youve-got-what/introduction.htm).
- When the person mentions a specific food item please ask for the brand of the food item.
- If the person has eaten food from a restaurant, takeaway, café, bakery, caterer or other food supplier, please detail the name and address of the premises.

- If the person is being interviewed because they reported food poisoning after eating at a food premises, please ask them for as much detail as possible regarding the meal they ate, who also ate food with them and whether they know of any other people who are ill with similar symptoms.
- When a person mentions a dish such as a salad or chicken stirfry prepared at home or outside the home (ie restaurant), ask them for the individual ingredients of the dish and brand names.
- If the person's recall is poor please ask them for a typical diet (food they would normally eat during a one week period including weekends).
- Once the person has answered their food history for 7 days or provided a typical diet, please go through the prompt sheet (see prompt sheet - Section 11.5) and ask about other foods or activities that they have not already mentioned.
- If the person has indicated that they have attended a social function please ask them if they know of any other people who attended the function and subsequently became ill.
- If the person has a dog or cat, enquire about feeding habits and if raw meat is given, what type.
- Ask the person if in the future they can remember any further details regarding their possible exposures to please phone the interviewer (provide contact telephone number) or contact Communicable Disease Control Branch: telephone 8226-7177.
- If the person can not be contacted and the decision is made to leave the questionnaire at the person's residence for them to fill in, please give them the brief sheet of instructions - Section 11.4.

11.4 Instructions for a person filling out the Hypothesis Generating Questionnaire without the assistance of an interviewer

11.4.1 Details

Name of Environmental Health Officer who delivered the questionnaire

.....

Name of Council

Contact phone number of Environmental Health Officer

11.4.2 Instructions

Thank you for filling out this questionnaire as this will greatly assist in determining how you contracted gastrointestinal illness. All the information that you provide will be kept confidential. This information will be used to determine if other people in the community with a similar illness have eaten the same food or attended the same social activity.

If you would like assistance in filling in the questionnaire please phone the specified Environmental Health Officer.

Listed below are some pointers to successfully completing the questionnaire:

- Fill out all sections of the questionnaire and return to the specified Environmental Health Officer at your local council.
- Have a calendar handy. This often assists you to remember what happened 7 days before your illness started.
- Try to remember the exact date your illness began. It is likely that you were infected in the 7 days prior to your date of onset of illness. To help recall when you first became ill, it sometimes helps to remember when you visited the doctor and work back from that day.
- Answer all questions. The food history questions start on page 4. It includes all of the food/beverages you would have consumed on the day your illness started and for six days prior. It also includes social activities you attended in that time.
- Include brand names and any other detail about the food item.
- Give details of any restaurants, takeaway outlets, cafés, bakery, caterer or other food supplier. Detail the name and address of the premises.
- If you are filling out the questionnaire because you reported food poisoning after eating at a food premises, please write as much detail as possible regarding the meal eaten, the time of consumption, other persons who ate at the same time and whether any other people are ill with gastroenteritis.

Thankyou for taking the time to fill out the questionnaire. This information will greatly assist in finding out the possible causes of your illness. Please return this sheet of paper with the questionnaire to the Environmental Health Officer.

11.5 Prompts for obtaining further information

After the completion of the “Hypothesis generating questionnaire” please use prompts below to assist in obtaining further information.

(Record all details on the Hypothesis Generating Questionnaire)

ILLNESS AND HOUSEHOLD CHARACTERISTICS

- Illness characteristics of other household members;
- Occupation for every household member;
- Clarify day of onset of illness, time and symptoms.

SOCIAL EXPOSURES

- Visits to other households, shopping centres, work, restaurants, festivals, picnics, fairs, sausage sizzles, weddings, takeaway and barbecues;
- List all foods consumed during these social excursions.

FOOD EXPOSURES

For every food item described, detail the type of food (boutique or iceberg lettuce), brand and place of purchase.

- Vegetables and fruit. Include herbs, dried beans and sprouts
- Any nuts eaten
- Sliced meats (specify type eg chicken, ham, beef)
- Any meat eaten, was it pink in the middle?
- Salami, mettwurst, pate, sausage
- Eggs, free range, barn or battery eggs
- Fruit and vegetables provided by friends or relatives
- Home grown fruit and vegetables
- Unpasteurised or freshly squeezed fruit and vegetable juices
- Other drinks including water
- Condiments such as sauces, spices, ginger, garlic used in cooking
- Any takeaway food
- Any snacks
- Any bakery products such as cakes, cream buns
- Food samples from supermarkets

ENVIRONMENTAL EXPOSURES

- Animal contact. These include, household pets, farm animals, native Australian animals, wild animals (exotic and imported species), reptiles and birds.
- Food eaten by pets
- Use of animal manures in the garden
- Visits to farms, hobby farms, zoos, petting zoos, wildlife parks
- Other leisure activities, hobbies

NDDMS Notification No.....

11.6 Report of a food poisoning complaint

(This questionnaire can be used if a person reports a gastrointestinal illness and implicates a food or food premise).

Demographics of reporting person

Name.....

Address.....

Occupation..... Sex Age

Phone (hm)..... Phone (wk)

E-mail address

Report of suspect premises

Premises Name.....

Address/Location of premises.....

Suspect meal eaten.....

Date suspect meal eaten..... Time suspect meal eaten

Is there food remaining? Yes No

Symptoms suffered by reporting person?

(Tick all the symptoms present)

Diarrhoea Bloody diarrhoea Nausea

Vomiting Stomach cramps Fever/chills

Other: Duration of Symptoms:

Has the case had a stool sample tested? Yes No

Other people ill?

Name.....

Address.....

Phone (hm)..... Phone (wk)

E-mail address

Symptoms of other people?

(Tick all the symptoms present)

Diarrhoea Bloody diarrhoea Nausea

Vomiting Stomach cramps Fever/chills

Other Duration of Symptoms

Other relevant information

Consider doing a short food history

.....

.....

.....

.....

.....

.....

.....

.....

EHO use

If multiple cases who live in different houses, or if the person is implicating a large function, then contact CDCB immediately.

Telephone: (08) 8226-7177 or (08) 8226-7189 or Fax: (08) 8226-7187).

Otherwise, the council may wish to investigate, and does not need to inform CDCB.

If you notice apparent links in foods or eating premises, between cases living in different houses, then inform CDCB.

Telephone: (08) 8226-7177 or (08) 8226-7189 or Fax: (08) 8226-7187).

11.7 Collection of faecal/stool specimen - this can be handed out to the ill person

IMPORTANT: Collection of faecal/stool specimens plays an important part in investigation of foodborne disease. It is difficult to determine what has caused the illness or to make a proper link between food and an illness without a test on a faecal specimen.

11.7.1 Methods

Described below are three methods of collecting a faecal/stool specimen. The aim is to obtain the best quality faecal/stool specimen and therefore the best chance of finding the microorganism/toxin that is causing the illness.

With each method of collection please adhere to the following:

1. Label the specimen pot with your name, date of birth and date and time of collection. (Specimen pots may be obtained from your doctor, laboratory collection centre, local Environmental Health Officer or the Communicable Disease Control Branch).
2. The specimen pot should contain at least a cherry size amount of fresh faecal matter. If there is any blood or mucus present in the specimen it should be included in the collection sent to the laboratory.
3. Deliver the specimen as soon as possible to your doctor or laboratory collection centre. Addresses for laboratory collection centres and phone numbers are listed in section 8.3. If immediate dispatch is not possible then specimens should be refrigerated.
4. Avoid contaminating the faecal specimen with urine.
5. Remember to always wash your hands thoroughly after collecting a faecal/stool specimen.

Method using clean disposable plastic container

1. Hold a clean, disposable plastic container underneath you for collection. You may like to sit the plastic container into the toilet bowl. An item such as a two litre ice-cream container fits perfectly. This method works particularly well for fluid stools.
2. Use the scoop inside the lid of the specimen container or a clean disposable spoon to transfer some faeces (a cherry size amount) into the specimen container. Flush the remaining faeces into the toilet.
3. Wrap the ice-cream container in newspaper and place it into a bin immediately after you have obtained the specimen.
4. Wash hands thoroughly.

Method using clean plastic bag

1. Hold a clean plastic bag underneath you for collection, eg a shopping bag.
2. Use the scoop inside the lid of the specimen container or a clean disposable spoon to transfer some faeces (a cherry size amount) into the specimen container. Flush the remaining faeces contained in the shopping bag down the toilet.
3. Wrap the shopping bag in newspaper and place it into a bin immediately after you have obtained the specimen.
4. Wash hands thoroughly.

Method using clean new plastic cling-wrap

1. Stretch a length of clean, new plastic cling-wrap across the toilet seat so that it sags in the middle.
2. Use the scoop inside the lid of the specimen container or a clean disposable spoon to transfer some of the faeces (a cherry size amount) into the specimen container. Take care not to puncture the cling wrap! Flush remaining faeces into the toilet.
3. Wrap the cling wrap in newspaper and place it into a bin immediately after you have obtained the specimen.
4. Wash your hands thoroughly.

NOTE: Vomitus is not a suitable specimen to send to the laboratory. Testing for microorganisms in vomitus is difficult and unlikely to detect the microorganism causing the illness.

Collecting a faecal sample

1. Use one of these methods to collect your faeces to obtain a sample for testing at the laboratory.

Hold a clean disposable plastic container underneath.

OR

Hold a clean plastic bag underneath.

OR

Stretch clean new cling-wrap across the toilet so it sags in the middle.

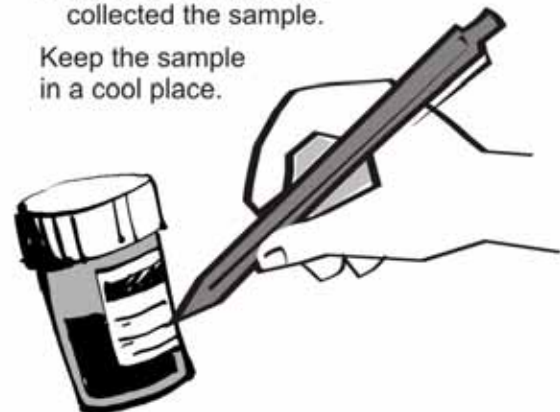


2. Use the scoop inside the lid of the container or a clean disposable spatula to transfer a small sample (cherry size) of faeces to the container. Screw on the lid and wash your hands.



3. Write on the label:
 - your name
 - your date of birth
 - the date and time you collected the sample.

Keep the sample in a cool place.



IMPORTANT

- Keep the faecal sample free from urine if possible.
- If blood or mucus are present in the faeces, some should be included in the sample.
- When you have transferred the sample to the container, dispose of the materials you used to collect it by wrapping in newspaper and putting in the rubbish immediately.
- Wash your hands.
- Deliver the sample as soon as possible to the doctor, laboratory or collection centre.
- If the sample cannot be delivered immediately, it should be refrigerated.

11.8 Guidelines for exclusion of food handlers with infectious gastroenteritis from handling food.

Australia and New Zealand Food Safety Standards 2002, Standard 3.2.2 Clause 14.

11.8.1 Health of food handlers

1. A food handler who has a symptom that indicates the handler may be suffering from a food-borne disease, or knows he or she is suffering from a food-borne disease, or is a carrier of a food-borne disease, must, if at work:
 - ♦ report that he or she is or may be suffering from the disease to his or her supervisor;
 - ♦ not engage in any handling of food where there is a reasonable likelihood of food contamination as a result of the disease; and
 - ♦ if continuing to engage in other work (other than food related tasks) on the food premises, take all practicable measures to prevent food from being contaminated as a result of the disease.
2. A food handler must notify his or her supervisor if the food handler knows or suspects that he or she may have contaminated food whilst handling food.

The section of the Food Act that covers this requirement is Section 21 - Compliance with Food Standards Code.

Maximum Penalties **a) if the offender is a body corporate - \$250,000**
 b) if the offender is a natural person - \$50,000

NOTE:

- A food handler who has symptoms of infectious gastroenteritis should be excluded from work until well and for 48 hours after the diarrhoea has ceased.
- As many infectious agents can still be present in the bowel even though the person is well, handling unpackaged food may result in food contamination. Repeat testing of faecal specimens to determine clearance is not necessary. The exception to this is if the infection is caused by *Salmonella* Typhi (Typhoid) or *Salmonella* Paratyphi (Paratyphoid). Both these conditions require the case to have microbiological clearance before resuming work as a food handler.
- All food handlers who have been diagnosed with infectious gastroenteritis should be given information about the disease and its transmission. Thorough personal hygiene should be encouraged.

11.9 Microbiological food and environmental sampling form

Name of Premises

Date

Investigating Council.....

Name of Authorised Officer

Contact Number Mobile

Names of other Authorised Officers who have taken samples:

1.

2.

Organism of Concern.....

<i>Sample Number & Initials of Authorised Officer</i>	<i>For IMVS Use</i>	<i>Sample Description</i>
1 - KA		Restaurant prepared mayo – taken from stainless steel container used in preparation area

11.10 Other useful information, websites and references

Further information for handing out to the public and food manufacturers.

1. "You've Got What" <http://www.dh.sa.gov.au/pehs/Youve-got-what-index.htm> published by the CDCB has useful information including:
 - ♦ Preventing food poisoning in the home.
 - ♦ The ways infectious diseases spread.
 - ♦ Handwashing.
 - ♦ Keeping areas clean.
 - ♦ Exclusion from childcare, preschool and school.
2. Additional information can be found at Food Safety. Department of Health. <http://www.dh.sa.gov.au/pehs/food-index.htm> which includes:
 - ♦ Food Standards.
 - ♦ Food Act 2001.
 - ♦ Food Safety Programs.
 - ♦ Fact Sheets including 'Two hour, Four hour rule'.
3. Foodborne pathogen notification information and outbreak investigations can be found at the Communicable Disease Control Branch web address. <http://www.dh.sa.gov.au/pehs/communicable-diseases-index.htm>.
4. "Guidelines for the management of infectious gastroenteritis in Aged Care Facilities in South Australia" (web address www.dh.sa.gov.au/pehs/publications/gastro-aged-care-jan05new.pdf)
5. Communicable Diseases Intelligence <http://www.health.gov.au/internet/wcms/publishing.nsf/Content/cda-pubs-cdipubs.htm>.

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