



Australian Government

Department of Health

Abrin and Ricin Emergency Management Plan

Domestic health emergency response plan for a deliberate release of abrin or ricin



Certificate of Amendment

The Department of Health (Health) will review the Domestic Health Response Plan for the Deliberate Release of Abrin or Ricin (Abrin and Ricin Plan) as appropriate. Recommendations for amendments or suggestions for improvement may be made at any time to:

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Information on the current version can be obtained from the [Department of Health Website](#).

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Authority

The Domestic Health Response Plan for the Deliberate Release of Abrin or Ricin (Abrin and Ricin Plan) was developed by the Department of Health, in collaboration with the National Health Emergency Management Standing Committee (NHEMS) of the Australian Health Protection Principal Committee (AHPPC). The Abrin and Ricin Plan was endorsed by the AHPPC on 05 April 2019.

The Abrin and Ricin Plan has been developed under the auspices of the *National Health Emergency Response Arrangements* (NatHealth Arrangements 2009).

The Abrin and Ricin Plan is **Annex B** of the Health CBRN Plan (the Domestic Health Response Plan for Chemical, Biological, Radiological or Nuclear Incidents of National Significance) and as such should be read in conjunction with the plan.

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1 Context

1.1 Overview

The production or use of abrin and ricin to poison humans is the focus of this plan. Accidental exposure in the environment is highly unlikely.

The Abrin and Ricin Plan sets out the agreed mechanisms through which coordination of the national health response to a deliberate release of either abrin or ricin will occur.

The Abrin and Ricin Plan is an annex of the Health Chemical Biological Radiological or Nuclear Incidents of National Significance Plan (Health CBRN Plan). The Health CBRN Plan provides the overarching advice on the coordination of a national health response to a CBRN incident of national significance (CBRNINS) and should be read alongside the Abrin and Ricin Plan.

1.2 Aim

This plan aims to promote more effective planning, better preparedness, and a more rapid, integrated and consistent health response to a release of abrin or ricin.

Increased preparedness and coordinated support will also help to minimise the impact on the health system of the affected jurisdiction(s), support scaling up of the jurisdictional response, when needed, and ensure individuals affected by the event have access to optimal medical care.

1.3 In scope

This plan is confined to the domestic release of abrin or ricin and is focused on the activities of the health sector.

For the purposes of this plan, an incident is defined as the release of either abrin or ricin that results in poisoning. The intent to harm may relate to political, ideological, criminal or revenge activities.

For a deliberate release of abrin or ricin to require a nationally coordinated response it will involve one or more of the following characteristics:

- capacity of the jurisdiction to respond is exceeded;
- require coordination of inter-jurisdictional assistance;
- require assistance from the Australian Government;
- involve multiple jurisdictions;
- the scale and complexity of the incident are likely to require development of a consistent national approach;
- threaten Australian Government personnel, assets, resources or interests;
- require a nationally coordinated approach to public messaging; or
- have a community expectation of national leadership.

1.4 Out of scope

The following are outside the scope of this plan:

- incidents which can be managed at a jurisdictional level;
- deployment, command, control or coordination of the affected jurisdiction's own resources;
- medical care or coordination of resources at the incident site;
- forensic investigation or crime prevention activities related to the incident;
- notification processes involving jurisdictional police, emergency services or support agencies;
- movement of resources, personnel and equipment provided under this plan after arrival at a jurisdictional reception centre;
- rehabilitation of the incident site and community recovery activities; and
- overseas incidents.

1.5 Activation authority

The Chief Medical Officer (CMO), as Chair of the AHPPC (or nominated delegate), has the authority to activate the Abrin and Ricin Plan.

A request for assistance by a state or territory under this plan must come from either the jurisdictional Chief Health Officer (CHO) or their nominated delegate.

1.6 Target audience

The Abrin and Ricin Plan is intended for use by Australian, and state and territory, government health agencies, involved in managing or supporting a response to a threatened or deliberate release of either abrin or ricin. This includes health authorities, ambulance services and the Department of Health. This plan may also be a useful guide for health pathology and laboratory activities during a response to a deliberate release of abrin or ricin or for other agencies involved in the overall response.

2 Background

Abrin is an extremely toxic natural poison that is found in the seeds of the rosary pea or jequirity pea (*Abrus precatorius*). Ricin is a poison found in castor beans (*Ricinus communis*).

2.1 Potential for abrin/ricin as a biological weapon

The manner in which biological agents are used or released is classified into four categories:

- **Biowarfare** refers to the military use of biological agents;
- **Bioterrorism** is the use, or threatened use, of biological agents to intimidate or coerce a government, civilian populations or persons, to further political or social objectives;
- **Biocrime** refers to the use, or threatened use, of biological agents to further individual objectives. Examples of biocrimes include acts such as the deliberate infection or intoxication of individuals with intent to harm, incapacitate or intimidate; and
- **Bioaccident**, which is the unintentional release of a biological agent. The policing response to a release of a biological weapon may differ depending on the manner in which it is used. For example, a coordinated bioterrorist event may evoke a coordinated police response across multiple jurisdictions, whereas an isolated biocrime event may only require a localised response.

Ricin's significance as a potential biological warfare agent relates to its availability worldwide, its ease of production, its low cost to produce and its extreme pulmonary toxicity when inhaled.

The US War Department considered ricin for chemical warfare as early as 1918 and ricin was tested as an inhalational agent in the 1940s. Ricin was also part of Iraq's weapon of mass destruction program between 1985 and 1991 which concluded ricin was not suited to a mass population attack by a State, but rather on small groups or individuals. The most well known scenario of use of ricin was in 1978, where Georgi Markov, a Bulgarian writer and journalist who was living in London, died after he was attacked by a man with an umbrella. The umbrella had been rigged to inject a poison ricin pellet under Markov's skin. In 2003 and 2004, ricin was found in the Senate mail room in Capitol Hill in Washington DC. Similar events occurred in 2013 when letters containing ricin were sent to US Senators and Judges. No one became ill from these exposures.

There are numerous additional reports of ricin being used for terrorist or criminal purposes and suicides.

Abrin is not known to have been used in any state warfare programs or terrorist plots. It has been used for criminal purposes, the most notable being the attempted poisoning of a Magistrate in the UK in 2014. There are a number of documented cases of suicides and attempted suicides using abrin, including a Canberra man in 2013 who allegedly ground and ingested abrus seeds he purchased on the internet.

Abrin and Ricin are Tier 1 Security Sensitive Biological Agents (SSBA) regulated under the *National Health Security Act 2007* (NHS Act 2007). Ricin is also listed as a Schedule 1 Chemical Warfare Agent under the Chemical Weapons Convention (CWC) and is monitored by the Australian Government under its obligations as a signatory of the CWC. Abrin and

ricin are also listed as Biological Agents under Article 3 of the Biological and Toxins Weapons Convention of which Australia is a signatory.

2.2 Routes of dissemination of abrin and ricin

Abrin and ricin can be prepared as a crude impure plant extract, purified crystals or powder forms, or solubilised in liquids. Deliberate dissemination may occur as an aerosol, through addition to food or water, or by direct parenteral injection. Neither abrin nor ricin are likely to be persistent in the environment for extended periods (weeks), but low micron-sized particles may stay suspended in undisturbed air for many hours and re-suspension of settled low-micron particles from disturbed surfaces could occur.

Ricin poisoning can also occur following accidental ingestion of castor beans. Abrin poisoning can also occur following ingestion of rosary peas; however, symptoms are generally mild if the seeds are swallowed whole.

Poisoning is not contagious and does not spread from person to person.

2.3 Surveillance for the deliberate release of abrin/ricin

There is no active surveillance for abrin or ricin. In suspected situations, where abrin or ricin may have been disseminated, environmental testing of powders or materials released into the immediate environment can be undertaken, using polymerase chain reaction tests (PCR) or time-resolved immunofluorescence assays. Field immunoassays (so-called Hand-Held-Assays or 'smart tickets') are also available.

Where highly sensitive and specific diagnostic assays are not available, syndromic surveillance may be employed which requires the participation of the entire health care community. Government at all levels (federal, state and local) can aid in efforts to protect the public's health by ensuring that the necessary infrastructure is well-prepared for dealing with toxin attacks.

Background on availability and physical and chemical characteristics can be found in Annex 1.

3 Clinical aspects of abrin or ricin poisoning

The clinical picture seen depends on the route of exposure and the amount of poison received. Mild intoxication may take 1-2 days to manifest but severe toxicity usually occurs within hours (refer 4.3 page 14).

The range of toxicity varies by the route of exposure:

Route of exposure	Ricin	Abrin
Ingestion	There is poor bioavailability due to the large size of the molecule Minimum lethality for an adult is 1 mg/kg or 8-10 seeds	There is poor bioavailability due to the large size of the molecule Minimum lethality 1 seed
Inhalation	3 µg/kg	No data
Injection	5-10 µg/kg	No data

3.1 Route of exposure

Ingestion

The majority of patients who ingest damaged castor bean seeds or rosary peas recover with supportive care. However, there have been reports of severe toxicity. Nausea, vomiting and profuse bloody diarrhoea generally develop within hours of severe overdose of the toxin, and may lead to volume depletion and hypotension. Severe irritation of the oropharyngeal and gastrointestinal mucosa may develop, which may result in gastrointestinal haemorrhage and sloughing of tissue. Electrolyte abnormalities may occur. Fever may develop early. Severe exposures may ultimately result in death, reflecting the severe cytotoxic effects of the toxins to the liver, central nervous system, and kidneys.

All reported serious or fatal cases of castor bean or rosary pea ingestion have taken approximately the same course: latent period of three to 20 hours, rapid onset of nausea, vomiting, abdominal cramps and severe diarrhoea with vascular collapse; death has occurred on the third day or later. Hepatic enzyme tests, such as alanine aminotransferase test (ALT), total bilirubin, aspartate aminotransferase test (AST), alkaline phosphatase, and gamma-glutamyl transferase test (GGT), may be increased. Disturbances in carbohydrate metabolism may occur if liver function deteriorates.

Inhalation

Inhalation exposure with either toxin is generally mild. Castor beans do contain an allergen protein that may cause an asthma-like reaction in susceptible individuals. Poisoning by inhalation of ricin can, in rare cases, cause systemic symptoms such as fever, cough, chest

tightness, profuse sweating and arthralgias, and can proceed to respiratory distress and death.

Lung deposition and lethality is significantly influenced by particle size. Particles of low micron size can deposit deeper into the respiratory tract resulting in higher mortality. There is no significant systemic absorption after inhalational exposure. Toxicity is primarily limited to the respiratory tract. Following inhalation, patients may exhibit respiratory symptoms as soon as 4–6 hours, but delays in the onset of serious symptoms are considered possible up to 24 hours after exposure. High doses by inhalation appear to produce severe enough pulmonary damage, including pulmonary oedema, to cause death, and respiratory failure is likely to be the primary cause of morbidity and mortality.

Injection

Parenteral exposures are very rare and usually intentional. In one case, local tissue necrosis from a ricin injection may have potentiated a bacterial infection. Clandestine injection of a pellet filled with ricin causes immediate pain at the injection site, a high fever within a few hours, an elevated white cell count (leucocytosis), hypotension and hypothermia, and death 3 days after the original injury.

The onset of nonspecific signs and symptoms, with a similar picture to overwhelming sepsis, can be delayed for up to 10–12 hours with the clinical course progressing to multisystem organ failure. Laboratory abnormalities may include elevated transaminases, amylase and creatinine kinase, hyperbilirubinaemia, renal insufficiency and myoglobinuria.

Dermatologic/ophthalmic

Dermal exposures are generally mild and are due to allergens in the parent plants rather than toxalbumins. Both miosis and mydriasis have been reported. Retinal haemorrhages may be seen in poisoning. Eye exposure may result in mild irritation.

An urticarial, IgE mediated allergic reaction may occur after handling of the intact castor bean plant or exposure of the castor bean dust or pomace.

Abrin and ricin are not absorbed through intact skin.

Cardiovascular

Fast, weak pulse is common. Hypotension may also be observed. No direct cardiotoxic effects are generally seen. Shock due to fluid and electrolyte loss may occur.

Genitourinary

Haematuria is often seen. Serum creatinine may be elevated.

Hematologic

Toxalbumins are haemagglutinins in vitro. However, effects in poisoning are minimal.

Reproductive

No specific toxicities have been noted in pregnancy of humans. Birth defects and seizures were reported in an infant born to a young mother who had taken castor oil seed orally as a

contraceptive for 8 weeks after conception. In unconventional medical practice, the products of *Abrus precatorius* have been used orally to quicken labour, induce abortion and as an oral contraceptive.

3.2 Diagnosis of exposure/intoxication

Clinical samples

There are no widely available commercial assays for abrin or ricin in biological samples.

Immunologically based methods, such as ELISA (for blood, or nasal or throat swabs) or immunohistochemical techniques (for direct analysis of tissues) may be useful in confirming ricin intoxication but these methods have not been clinically validated.

Matrix-assisted laser desorption-ionisation mass spectrometry (MALDI-MS) holds promise as a definitive method for identification in biological specimens.

A urine assay for detecting the alkaloid ricinine holds potential for diagnosing ricin exposure. Detection of ricinine up to 48 hours after exposure may be possible with newer methods now available.

In suspected cases, clinicians should collect urine and serum samples and contact their state public health department for further guidance.

Post mortem pathologic change is route specific: inhalation results in airways lesions; ingestion causes gastrointestinal haemorrhage with necrosis of liver, spleen and kidneys; and intramuscular intoxication causes severe local muscle and regional lymph node necrosis with moderate involvement of visceral organs.

Ricin is extremely immunogenic; sera should be obtained from survivors for measurement of antibody response.

Abrin

Condition

Intoxication with abrin toxin

Definitive criteria

- a. Detection of *Abrus precatorius* DNA in extracted plant/seed material or powder by PCR from environmental samples

Suggestive criteria

- a. Positive immunoassay for abrin toxin in powders or extracts of rosary pea seed material (e.g. Tetracore® immunoassay) from environmental samples

Ricin

Condition

Intoxication with ricin toxin

Definitive criteria

- a. Detection of *Ricinus communis* DNA in extracted plant/seed material or powder by PCR
- b. Detection of *Ricinus communis* toxin by Time Resolved Fluorescence (TRF) from environmental samples

Suggestive criteria

- a. Positive immunoassay for ricin toxin on powders or extract of castor bean seed material (RAMP® immunoassay or Tetracore® immunoassay) from environmental samples

Suspected

A case in which a potentially exposed person is being evaluated for poisoning, but no specific credible threat exists.

Probable

A clinically compatible case in which a high index of suspicion (credible threat or patient history regarding location and time) exists for ricin exposure or an epidemiologic link exists between this case and a laboratory-confirmed case.

Confirmed

A clinically compatible case in which laboratory tests on environmental samples have confirmed exposure.

Clinical criteria

- *Ingestion*: profuse vomiting and diarrhoea, which might be bloody, followed by hypovolemic shock and multisystem organ dysfunction.
- *Inhalation*: cough and respiratory distress followed by pulmonary oedema, respiratory failure, and multi-system organ dysfunction. Weakness and influenza-like symptoms of fever, myalgia, and arthralgia might also be reported.

Tests

Polymerase chain reaction (PCR)

Australian Bioterrorism Laboratory Network (ABLN) laboratories have developed in-house PCRs for both abrin and ricin DNA. The ricin PCR previously offered by the Laboratory Response Network (LRN) has been withdrawn. These assays have been developed for use on extracted plant material and seed extracts. They have not been validated for use on clinical samples. Whilst a positive PCR does not necessarily indicate the presence of the toxin, it provides evidence of an association with the relevant plant and the patient's symptoms.

BioFire FilmArray instruments and BioThreat Panels have been made available to Public Health Laboratories in each state and territory by the Department of Health. The instrument is a multiplex PCR system that uses panels designed to test environmental samples simultaneously to detect the presence of pathogens including ricin.

Immunoassays

Tetracore® markets an abrin immunoassay but these have a relatively short shelf-life and are very expensive. These assays have been developed for use on extracted plant material and seed extracts. They have not been validated for use on clinical samples.

Time Resolved Fluorescence (TRF)

TRF is only available in a few ABLN laboratories and is dependent on sourcing reagents from the LRN.

4 Response actions

4.1 Personal Protective Equipment (PPE)

No evidence exists regarding the level of respiratory protection necessary to prevent **inhalational** toxicity. In a response setting during which information is limited and a credible threat exists, conservative precautions should be taken.

First responders (where aerosolised abrin or ricin is suspected)

- PPE should be self-contained breathing apparatus (SCBA) with a Level A encapsulated gas-tight suit when entering an area with an unknown contaminant or when entering an area where the concentration of the contaminant is unknown.
- Use disposable Tyvek suits coated with chemical to prevent penetration. These suits repel water-based liquids and aerosols.
- If the concentration and type of airborne substance are known, and the criteria for using air-purifying respirators are met (i.e. they can be removed by an air-purifying respirator), then Level C protection with a full-face air-purifying respirator should be used.
- Follow agency procedures for responder decontamination.
- Soak equipment (including non-disposable PPE) in a 0.1% sodium hypochlorite solution for 30 minutes then rinse with soap and water and air dry.
- Decontaminate patients with soap and water away from the site of release.
- Patients who have only been exposed through ingestion do not require decontamination.

Hospital and health care workers

- Decontaminate any contaminated patients outside the hospital.
- Follow standard precautions for treating decontaminated patients.

4.2 Decontamination

Exposure to abrin or ricin is unlikely to be acutely life-threatening, with deterioration occurring over hours and days. Hence a patient is likely to present sick but not dying. Health professionals should protect themselves by wearing chemically protective splash suits and air-purifying respirators fitted with P100 filters before undertaking decontamination of patients.

Data and experience are limited regarding approaches to **skin or gut** decontamination of victims following an abrin or ricin release. Current recommendations are as follows:

Exposed skin

Protected health professionals should decontaminate the patient including.

- stabilising life-threatening conditions;

- removing contaminated clothing and jewellery;
- washing the exposed skin with soap and copious amounts of water; and
- double bagging and labelling belongings as contaminated.

Note: the low volatility of abrin or ricin and negligible absorption through intact skin poses minimal risk of toxicity to the exposed patient or to a health care worker. However, a theoretical inhalation risk exists where fomites are disturbed.

Oral/ingestion

- Administer a gastric lavage or cathartics if the patient is fully conscious and seizure free and is not vomiting.
- There is no need to perform skin decontamination for patients exposed to abrin or ricin through ingestion only.

Inhalation

- Remove the patient from the exposure and decontaminate exposed skin as described above.

Environmental decontamination of exposed areas

- Clean surfaces and fomites with a 0.1% solution of sodium hypochlorite solution for 30 minutes (this will inactivate more than 99% of abrin or ricin).
- Clean carpets with steam and HEPA filtering (or remove the carpet).

The chemical and physical properties of abrin or ricin suggest that, after decontamination is completed, patients and health care workers are not at risk of abrin or ricin poisoning from secondary contamination (i.e. from exposure to body fluids).

4.3 Clinical management

Management is supportive and should include maintenance of intravascular volume. Standard management for poison ingestion should be employed if intoxication is by the oral route. There is presently no antitoxin available for treatment. Neither abrin nor ricin is amenable to dialysis.

Ingestion

Gastric lavage or cathartics should be considered for non-vomiting patients. Once the patient begins to vomit, gut decontamination is unlikely to be beneficial. Subsequent treatment consists of aggressive fluid resuscitation, vasopressor therapy and electrolyte replacement. Patients should be monitored for evidence of myoglobinuria and renal failure.

Inhalation

General supportive therapy may include oxygen, bronchodilators, endotracheal intubation and supplemental positive end-expiratory pressure, and treatment for pulmonary oedema, as needed. It may be necessary to establish a surgical airway.

4.4 Immunity

Animal studies have demonstrated the possibility of protection against inhalational and parenteral abrin or ricin poisoning through passive or active immunisation. Definitive human studies have not been completed.

There is some promising research being conducted on the development of a vaccine for abrin but these are still very early in the research stage (e.g. Zhang, et al, 2014). A ricin Vaccine (RiVax- Soligenix Inc.) is also undergoing trials in the United States.

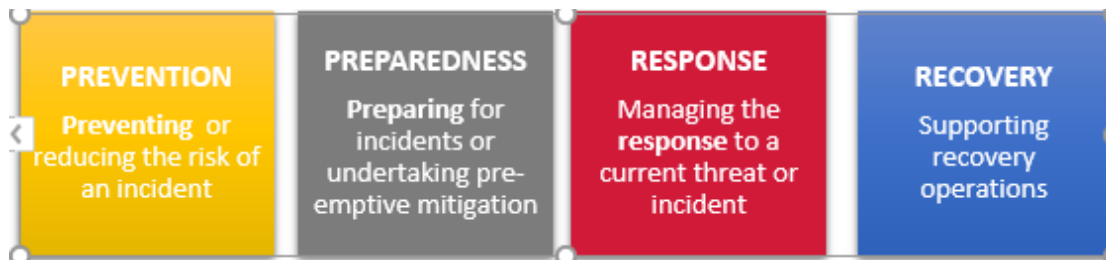
5 Governance

Governance mechanisms to manage a deliberate or potentially deliberate release of abrin or ricin in order to cause harm to people will be the same as outlined in the Health CBRN Plan.

Operational Responsibility: If a deliberate release of abrin or ricin occurs, the primary operational responsibility, either for a criminal or a terrorist incident, will lie with state and territory governments and their agencies. Command and control of the response will be determined by the jurisdictions' legislative arrangements and are usually the responsibility of the police agency.

Health sector response: The health sector activities related to the incident at a jurisdictional level will be managed by jurisdictional health agencies in collaboration with other emergency response agencies.

5.1 Stages



To assist planning, management of an abrin or ricin incident will be a staged process. Australian Governments follow the comprehensive approach to emergency management and look at emergencies as part of an ongoing cycle of activities in the four areas of:

- Prevention;
- Preparedness;
- Response; and
- Recovery.

Management of an abrin or ricin incident under this plan will comply with this approach. To facilitate the more detailed planning required, response activities are divided into three stages:

- Standby;
- Action; and
- Standdown.

The Health National Incident Room (NIR) will advise relevant Australian Government and state and territory health authorities of changes in stages.

5.2 Prevention

At the Australian Government level, to limit opportunities for acts of bioterrorism or biocrime using harmful biological agents such as abrin or ricin, Health manages the SSBA Regulatory

Scheme under the *NHSA 2007*, and the *National Health Security Regulations 2008*. This scheme includes standards for the handling and transport of samples from affected animals or persons. The scheme serves to limit access to biological agents of security concern.

5.3 Preparedness, response and recovery

A range of preparedness, response and recovery activities may be enacted under this plan. Tables 1–5 provide a summary of priority activities in each stage.

It is possible that an affected jurisdiction, which has managed an incident without external support for the acute response, may require health support during the recovery phase. This may be accessible through the Abrin and Ricin Plan.

Management of a deliberate release of either abrin or ricin will be consistent with the response outlined in the Health CBRN Plan however the following consideration is given to an abrin or ricin specific response.

Table 1: PRIORITY HEALTH ACTIVITIES BY STAGE – PREPAREDNESS

Preparedness	
Ongoing	
State/territory health authority	<ul style="list-style-type: none"> • Develop and maintain plans to manage the health response to deliberate release of abrin or ricin; • Develop and review health specific jurisdictional counterterrorism plans (or health aspects of broader terrorism plans) in consultation with police. • Establish and maintain hospital decontamination and protective equipment resources and procedures; • Establish and maintain laboratory capacity to detect and identify biological threat agents; • Maintain a list of health facilities/resources and their bioterrorism response capabilities.
Ambulance Service	<ul style="list-style-type: none"> • Establish and maintain plans/ SOPs to support engagement in a response; • Develop and implement bioterrorism response training programs.
Australian Government Department of Health	<ul style="list-style-type: none"> • Encourage national consistency and interoperability of key national level incident capabilities; • Ensure availability of capacity/capability to detect biological agents of public health/security concern; • Develop databases for registration of exposed or symptomatic patients, clinical presentation of

Preparedness	
Ongoing	
	<p>patients or therapy administered and adverse reactions to these, and mortality or recovery.</p> <ul style="list-style-type: none"> • Review and update frequently asked question (FAQ) sheets for the public on the signs, symptoms, treatment, and preventative measures including personal hygiene measures; • Develop the logistics for distribution of FAQ sheets. Do not distribute at this stage; • Prepare summary information on case detection, diagnostic testing, clinical management; and decontamination control for hospitals and doctors' surgeries. Do not distribute at this stage. • Provide public health laboratories with rapid biothreat testing capability through the supply of the BioFire FilmArray instrument, BioThreat Test Panels and abrin Tetracore kits.
Public Health Laboratory Network (PHLN)	<ul style="list-style-type: none"> • Develop guidance on testing methodologies, containment methods, transport and packaging for agents of security concern. • Develop decontamination protocols and protocols for validation of test kits as required.
Australian (Counter) Bioterrorism Laboratory Network (ABLN)	<ul style="list-style-type: none"> • Develop and maintain nationally-consistent guidelines for the detection, characterisation and surveillance of biological threat agents; • Advise on funding and resources needed to address capacity and capability related to biological threat agents. • Provide laboratory capacity.
NHEMS	<ul style="list-style-type: none"> • Prepare content of educational materials; • Prepare content for posters to be displayed in hospitals and doctors' surgeries concerning procedures for decontamination if a patient presents without prior decontamination. Do not distribute at this stage.

Table 2: **PRIORITY HEALTH ACTIVITIES BY STAGE – STANDBY**

<p>Standby</p> <p>Trigger: Notification of a major incident/threat or the likelihood of a request for assistance</p> <p><i>(noting that during standby for the CBRN plan it is likely the affected jurisdiction will already be actively responding to the incident)</i></p>	
<p>State/territory health (affected jurisdiction)</p>	<ul style="list-style-type: none"> • Manage health aspects of the incident; • Liaise with other jurisdictional agencies; • Prepare communications materials, including ministerial briefing; • Monitor health system capacity; • Provide a report on the situation at AHPPC teleconference; • Activate health emergency operations centre; • Activate logistical support for surveillance and contact tracing; • Participate in AHPPC, CDNA, NHEMS, Jurisdictional Executive Group (JEG) and PHLN teleconferences.
<p>Ambulance separate</p>	<ul style="list-style-type: none"> • Establish ambulance EOC; • Manage pre-hospital response.
<p>State/territory health (non-affected jurisdiction)</p>	<ul style="list-style-type: none"> • Consider availability of resources, including staff and equipment; • Participate in AHPPC teleconferences to provide resource information and coordinate cross-jurisdictional assistance.
<p>Australian Government Department of Health</p>	<ul style="list-style-type: none"> • Liaise with the affected jurisdiction; • Place NIR workforce on standby; • Alert AHPPC members to the potential need to respond; • Convene an AHPPC, NHEMS, CDNA and PHLN teleconferences to provide briefing on the situation, consider potential needs and determine resource availability;

<p>Standby</p> <p>Trigger: Notification of a major incident/threat or the likelihood of a request for assistance</p> <p><i>(noting that during standby for the CBRN plan it is likely the affected jurisdiction will already be actively responding to the incident)</i></p>	
	<ul style="list-style-type: none"> • Activate CBRN Plan and Abrin and Ricin Plan, on advice from AHPPC; • Liaise with other Australian Government agencies; • Develop and distribute Situation Reports (SitReps) and ministerial briefing and disseminate to other agencies as appropriate; • Commence operational planning; • Review and update the summary information on case detection, diagnostic testing, clinical management, and infection control; • Notify relevant reference laboratories; • Review content of educational materials. Disseminate; • Review content for posters to be displayed in hospitals and doctors' surgeries concerning procedures for decontamination if a patient presents without prior decontamination. Disseminate; • Review summary information on case detection, diagnostic testing, clinical management, and decontamination control for hospitals and doctors 'surgeries; • Advise the National Health Emergency Media Response Network (NHEMRN) of the current situation; • Advise the Ministers Office of the current situation. • Provide training and jurisdictional access to national surveillance database.
<p>AHPPC</p>	<ul style="list-style-type: none"> • Advise on activation of the Health CBRN plan; • Identify jurisdictional capacity.
<p>Communicable Disease Network Australia (CDNA)</p>	<ul style="list-style-type: none"> • For biological toxins incidents, convene teleconferences to share and evaluate the latest

<p>Standby</p> <p>Trigger: Notification of a major incident/threat or the likelihood of a request for assistance</p> <p><i>(noting that during standby for the CBRN plan it is likely the affected jurisdiction will already be actively responding to the incident)</i></p>	
	<p>developments in communicable disease surveillance;</p> <ul style="list-style-type: none"> • Provide technical, public health and policy advice to AHPPC concerning communicable disease management.
NHEMS	<ul style="list-style-type: none"> • For biological toxin incidents, convene teleconferences to share and evaluate the latest developments in surveillance; • Provide advice on the health-related aspects of operational response to AHPPC.
PHLN	<ul style="list-style-type: none"> • Consider levels and locations of existing laboratory testing capacity to advise AHPPC; • Confirm appropriateness of current laboratory testing guidelines; • Notify clinical laboratories.
Clinical and reference laboratories	<ul style="list-style-type: none"> • Review ability to respond.

Table 3: **PRIORITY HEALTH ACTIVITIES BY STAGE – ACTION**

<p>Action</p> <p>Trigger: Request for assistance; incidents in multiple jurisdictions; a high level of public concern/ media involvement requiring national public messaging.</p>	
<p>State/territory health authority (affected jurisdiction)</p>	<ul style="list-style-type: none"> • Coordinate jurisdictional planning and operational health activities; • Manage clinical care of casualties; • Integrate health activities into the broader jurisdictional response; • Identify and define the need for Australian Government assistance and provide request to Health NIR (the State Emergency Controller will make any requests for assistance from the broader Australian Government through EMA); • Establish jurisdictional reception area(s) to receive national assistance; • Manage receipt, deployment and ongoing welfare of incoming health resources; • Provide regular situation updates to the NIR/ AHPPC; • Manage jurisdictional briefing requirements, such as MO; • Manage communication with public/media related to jurisdictional health matters; • Manage surge capacity in health care system; • Consider the use of forensic officers to coordinate/manage evidence collection in health facilities; • Implement staff rosters for reference laboratories to deal with toxin identification and additional workload; • Initiate logging of data on the national database of exposed or symptomatic patients, clinical presentation of patients, nature of PEP or therapy administered and adverse reactions to these, and mortality or recovery. Particular attention to be paid to adverse reactions in pregnant women and children in respect to off-label indications;

Action	
Trigger: Request for assistance; incidents in multiple jurisdictions; a high level of public concern/ media involvement requiring national public messaging.	
	<ul style="list-style-type: none"> • Distribute FAQ sheets for the public concerning signs, symptoms, and treatment and preventative measures as required. • Notify the local police and Department of Health of new cases where criminal activity is suspected.
Ambulance Service	<ul style="list-style-type: none"> • Provide initial triage, on site pre hospital treatment and transportation of casualties within the jurisdiction; • Support on scene integration of additional health services, if required.
State/territory health (non-affected jurisdiction)	<ul style="list-style-type: none"> • Deploy staff and equipment to affected jurisdiction if required; • Maintain own jurisdictional health services in the context of a national emergency.
Australian Government Department of Health	<ul style="list-style-type: none"> • Convene AHPPC teleconferences to provide situational updates, coordinate inter-jurisdictional health resources and determine key public messages; • Implement AHHPC decisions; • Activate NIR Incident Coordination Team (ICT); • Manage communication, through the NHEMRN, with public/media related to national health matters; • Advise stakeholders of move to Action stage of the Abrin or Ricin Plan and Health CBRN Plan; • Maintain situational awareness and produce Sitreps for distribution to health sector and WoG counterparts; • Coordinate input to WoG SitReps if required; • Liaise with other Australian Government agencies regarding use/ deployment/ integration of assets; • Collate national data; • Analyse data and advise on national or unusual trends;

<p>Action</p> <p>Trigger: Request for assistance; incidents in multiple jurisdictions; a high level of public concern/ media involvement requiring national public messaging.</p>	<ul style="list-style-type: none"> • Participate in WoG committees; • Provide briefing as required, including to MO; • Communicate the national status of an event to the media and general public; • In a national terrorist situation, work closely with the National Security and Crisis Media Section of Home Affairs which, under current National Security Public Information Guidelines, must approve all communications activities; • Connect the health sector to the security intelligence framework by ensuring there is appropriate health representation on relevant committees.
<p>AHPPC</p>	<ul style="list-style-type: none"> • Coordinate health sector resources across the Australian Government and jurisdictions such as: <ul style="list-style-type: none"> • hospital bed capacity; • health workforce capacity; • health equipment and supplies. • Develop a consistent national approach to: <ul style="list-style-type: none"> • surge and shift arrangements; and • specialist, critical care management. • Provide advice on: <ul style="list-style-type: none"> • decontamination and use of personal protective equipment; • specific treatments e.g. antibiotics and antidotes; • mental health support. • Provide high level strategic advice to WoG committees on the coordination of national health response to a deliberate release of abrin or ricin; and • Plan for an ongoing demand for medical services late in the response and into the recovery stage.

Action	
Trigger: Request for assistance; incidents in multiple jurisdictions; a high level of public concern/ media involvement requiring national public messaging.	
CDNA	<ul style="list-style-type: none"> • Convene teleconferences to provide specialist assistance and coordinate public health actions; • Provide technical, public health and policy advice to AHPPC.
NHEMS	<ul style="list-style-type: none"> • Convene teleconferences to provide specialist assistance and coordinate public health actions; • Provide technical, public health and policy advice to AHPPC.
PHLN	<ul style="list-style-type: none"> • Undertake laboratory testing for the detection of agents of security concern; • Support smaller jurisdictional laboratories as needed; • Share information regarding the situation and issues relevant to laboratory testing for the incident.

Table 4: PRIORITY HEALTH ACTIVITIES BY STAGE – STANDDOWN

Standdown	
Trigger: All consequence management actions requiring national coordination have been completed	
AHPPC	<ul style="list-style-type: none"> • Authorise the stand down of the health response when all consequence management actions requiring national coordination have been completed (acknowledging recovery efforts will be occurring and potentially ongoing) and there is no likelihood of any additional immediate tasking. • Debrief health authorities and disseminate post activation report and recommendations.
State/territory health authority	<ul style="list-style-type: none"> • Facilitate support to ongoing governmental coronial and criminal investigations. • Continue management of jurisdictional response activities, according to jurisdictional assessment.

Standdown	
Trigger: All consequence management actions requiring national coordination have been completed	
Australian Government Department of Health	<ul style="list-style-type: none"> • Communicate change of stage to stakeholders; • Transition Health assets and arrangements to business as usual.

Table 5: PRIORITY HEALTH ACTIVITIES BY STAGE – RECOVERY

Recovery	
Trigger: Commences with Action stage	
Recovery following an abrin or ricin incident is a shared national and jurisdictional responsibility, with the bulk of activities being delivered by jurisdictions.	
State/territory health authority	<ul style="list-style-type: none"> • Identify resources deployed or consumed in the response (on replenishment of cache); • Coordinate repatriation of deployed medical teams and their equipment (EMA if deployed under COMDISPLAN); • Provide health support for site decontamination; • Undertake operational debriefing and development of post activation report and recommendations; • Coordinate the delivery of mental health services.
Australian Government Department of Health	<ul style="list-style-type: none"> • Coordinate support for ongoing health recovery processes as needed; • Identify resources deployed or consumed in the response (on replenishment of cache); • Provide health support for site decontamination; • Undertake operational debriefing and development of post activation report and recommendations.
AHPPC	<ul style="list-style-type: none"> • Coordinate support for ongoing health recovery processes as needed; • Debrief health authorities on use of the Abrin and Ricin Plan; • Disseminate post activation report and recommendations and seek comment;

Recovery

Trigger: Commences with Action stage

Recovery following an abrin or ricin incident is a shared national and jurisdictional responsibility, with the bulk of activities being delivered by jurisdictions.

- Make changes to plans and arrangements as required.

6 Communications

Communications will be an important component of managing the deliberate release of either abrin or ricin as release is likely to cause considerable public concern.

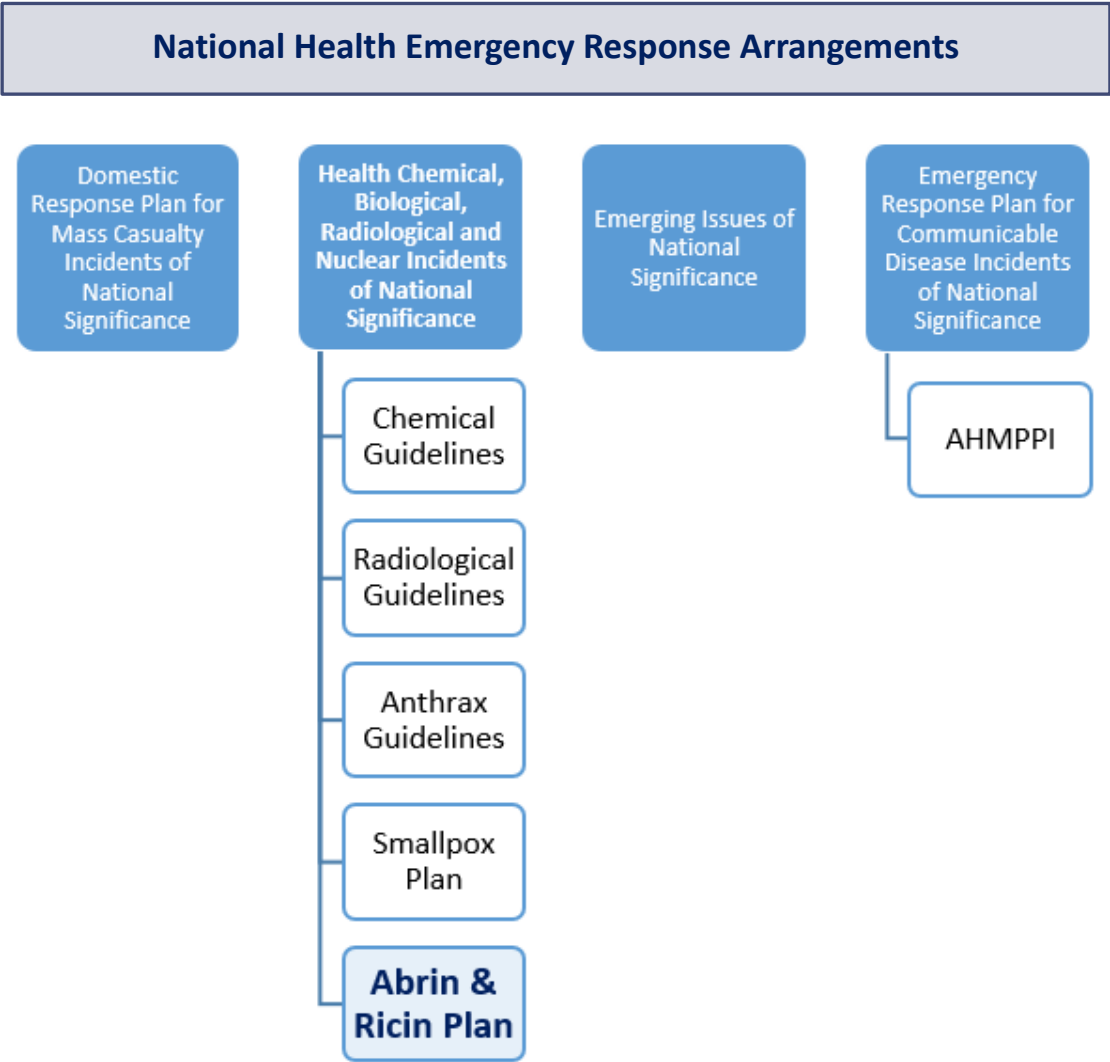
Like other aspects of the response, communications related to health activities or issues are likely to be only one part of the government communications message. As such they must be carefully coordinated and consistent with WoG communications.

Please refer to the Health CBRN Plan for the overarching communication response.

7 Using this plan

7.1 Relationships with other plans

The highest level health sector emergency plan is the *National Health Emergency Response Arrangements 2009* (NatHealth Arrangements), which broadly set out how the Australian Government and State and Territory Governments will work together to manage health emergencies. The NatHealth Arrangements set out four plans, which have been developed to manage health emergencies of different types. The Health CBRN Plan and the Abrin and Ricin Plan sit under the NatHealth Arrangements.



The Abrin and Ricin Plan may operate independently of other national plans. For example, a criminal act might result in a request for inter-jurisdictional health sector assistance. This might be coordinated under this plan. The activities undertaken would be coordinated with the jurisdictional response, but may not operate in conjunction with a broader national plan.

It is likely, however, that the Abrin and Ricin Plan will operate concurrently with other national level plans. The most likely of these are COMDISPLAN and the National Counter Terrorism Plan (NCTP).

The Australian Government Crisis Management Framework (AGCMF) outlines the arrangements enabling the Australian Government's 'all hazards' crisis management approach, along a continuum of prevention, preparedness, response and recovery. In a national terrorist incident, the Australian Government response will be led by the Department of Home Affairs (Home Affairs). If health aspects are prominent, Health may act as co-lead.

In a large-scale response to a deliberate release of abrin or ricin, the Australian Government may coordinate strategies across Australian Government agencies through the Australian Government Crisis Committee AGCC. Coordination between the Australian Government and States and Territories will be conducted through the National Crisis Committee (NCC).

7.2 Authority to request assistance

A request for assistance by a state or territory under this plan must come from either the jurisdictional Chief Health Officer (CHO) or their nominated delegate.

7.3 Plan administration

Plan testing

Health will coordinate testing of the Abrin and Ricin Plan via:

- inclusion in national exercises; and
- inclusion in AHPPC exercises and drills.

Abrin and Ricin Plan exercises will have the following aims:

- to educate participating agencies and stakeholders about the response and Abrin and Ricin Plan processes, their roles and the roles of other agencies; and
- to refine and improve the Abrin and Ricin Plan processes.

Plan review

Health will coordinate periodic reviews and evaluation of the Abrin and Ricin Plan through the AHPPC. A major review will be conducted every five years. It will also be reviewed, if required, following activation of the plan or learnings from capability audits, exercise outcomes, and operations.

8 Annexes

Annex 1: Abrin summary

What is abrin?

- Abrin is an extremely toxic natural poison that is found in the seeds of the rosary pea or jequirity pea (*Abrus precatorius*). Exposure to even a small amount of abrin
- may be fatal.
- Abrin is similar to ricin, a toxin that is found in the seeds of the castor bean plant.
- Abrin is used in medical research because of its potential as a treatment to kill cancer cells.
- Abrin can be made in the form of a powder, a mist or a pellet, or it can be dissolved in water.
- Abrin is a stable substance, meaning that it can last for a long time in the environment despite extreme conditions such as very hot or very cold temperatures.

Appearance

- Powdered abrin is yellowish-white in colour.
- The seeds are red with a black spot covering one end.

How abrin works

- Abrin causes illness by getting inside the cells of a person's body and preventing the cells from making the proteins they need. Without the proteins, cells die. Eventually this harms the whole body and death may occur.
- The effects of abrin poisoning are dependent on whether the abrin was breathed in, swallowed or injected.

Exposure

- Aerosol: abrin can be inhaled in the form of a mist or powder.
- Ingestion: abrin can be swallowed if it is in food or water.
- Absorption: abrin can be absorbed into the body through the broken skin or wounds, by inhalation or via the eyes.
- Injection: Pellets of abrin, or abrin dissolved in liquid, could be injected into a person's body.

Signs and symptoms of abrin exposure

- The major signs and symptoms of abrin poisoning depend on how someone was exposed and how much they were exposed to. Severe cases may affect multiple organs.

- Initial signs and symptoms of abrin poisoning by inhalation or swallowing are likely to occur within 8 hours of exposure. However, symptoms may be delayed by 1 to 3 days.

Inhalation

- Within a few hours of inhaling significant amounts of abrin: respiratory distress; fever; cough; nausea; and tightness in the chest.

Ingestion

- Someone who has swallowed a significant amount of abrin would develop: vomiting and diarrhoea that may become bloody; severe dehydration; low blood pressure; hallucinations; seizures; and blood in the urine.

Treatment

- No antidote exists for abrin. The most important factor is avoiding abrin in the first place. If exposed, the most important factor is getting the abrin off or out of the body as quickly as possible.
- Symptomatic abrin poisoning is treated by giving victims supportive medical care to minimise the effects of the poisoning.

Annex 2: Ricin summary

What is ricin?

- Ricin is a poison found in castor beans (*Ricinus communis*). If castor beans are chewed and swallowed, the released ricin can cause injury. Ricin is made from the waste material left over from processing castor beans.
- Ricin is similar to abrin, a toxin that is found in the seeds of the rosary pea plant.
- Ricin has been used experimentally in medicine because of its potential to kill cancer cells.
- Ricin can be made in the form of a powder, a mist or a pellet, or it can be dissolved in water or weak acid.
- Ricin is a stable substance, meaning that it can last for a long time in the environment despite extreme conditions such as very hot or very cold temperatures.

Appearance

- Powdered ricin is white in colour and can be prepared in liquid or crystalline form.

How ricin works

- Ricin causes illness by getting inside the cells of a person's body and preventing the cells from making the proteins they need. Without the proteins, cells die. Eventually this harms the whole body and death may occur.
- The effects of ricin poisoning are dependent on whether it was inhaled, swallowed or injected.

Exposure

- Aerosol: ricin can be inhaled in the form of a mist or powder.
- Ingestion: ricin can be swallowed if it is in food or water.
- Absorption: ricin is not absorbed through intact skin but may be absorbed through wounds, inhalation or eyes.
- Injection: Pellets of ricin, or ricin dissolved in liquid, could be injected into a person's body.

Signs and symptoms of ricin exposure

- The major signs and symptoms of ricin poisoning depend on how someone was exposed and how much they were exposed to. Severe cases may affect multiple organs.
- Initial signs and symptoms of ricin poisoning by inhalation or swallowing are likely to occur within 4-8 hours of exposure. However, symptoms may be delayed by 24 hours.

Inhalation

- Within a few hours of inhaling significant amounts of ricin: respiratory distress; fever; cough; nausea; and tightness in the chest.

Ingestion

- Someone who has swallowed a significant amount of ricin would develop: vomiting and diarrhoea that may become bloody; severe dehydration; low blood pressure; seizures; and blood in the urine.

Treatment

- No antidote exists for ricin. The most important factor is avoiding ricin in the first place. If exposed, the most important factor is getting the ricin off or out of the body as quickly as possible.
- Symptomatic ricin poisoning is treated by giving victims supportive medical care to minimise the effects of the poisoning.

Annex 3: Foodborne release

If ingestion of either abrin or ricin occurs through the contamination of food products, the CMO, as chair of AHPPC, will consult with the Chief Executive Officer of Food Standards Australia New Zealand (FSANZ), who may recommend activation of the National Food Incident Response Protocol. All states/territories should then make urgent inquiries as to the incidence and aetiology of recent cases of gastrointestinal disturbance presenting to emergency departments of hospitals in their jurisdictions.

Consideration should be given to implementing a nationwide recall of the contaminated food, using the usual FSANZ procedures. The recall should be given the widest possible publicity by FSANZ, and through media releases and interviews/media conferences coordinated by the NHEMRN. The WHO will also be advised promptly by the Australian Government. Epidemiological evidence can be gathered and analysed through the Australian Government OzFoodNet.

If the implicated food has been exported to foreign countries, the operational response to the recall will be coordinated through the Department of Agriculture. The countries involved should be advised of the recall as a matter of urgency, through DFAT, on advice from FSANZ.

If the implicated food has been otherwise exported (e.g. in meals provided to passengers on international airlines or cargo or cruise ships), the Australian Government will urgently advise WHO and the countries served by those airlines and vessels of the food recall, together with relevant epidemiological information, such as the dates on which the food may have been consumed.

Annex 4: Key aspects of biological agents

Table 6: **KEY ASPECTS OF BIOLOGICAL AGENTS**

Biological

Biological materials for the purposes of this plan include toxins of natural origin or pathogens that cause disease in humans. This includes dangerous bacteria, viruses, fungi and biological toxins. Several biological agents/diseases could be adapted and used as terrorist weapons, including smallpox, anthrax, tularaemia, plague, abrin, ricin and botulinum toxin.

Health impact

Management of biological organisms which cause harm to humans, and the treatment of those affected is the essence of much of our health system. The difference in an INS will be their deliberate use. Many of the systems used to detect, assess and contain the natural spread of organisms will be the same, however intelligence regarding the intent of the perpetrators may also be important to identify source, route of transmission and changes to the organism itself.

Existing surveillance systems may need to be adapted to look for specific patterns, symptoms or exposures in order to identify affected individuals, such as large groups of unexplained cases or unexpected, unusual or unseasonal incidents of disease. As smallpox has been eradicated as a naturally occurring infectious illness, capacity to recognise signs and symptoms of the disease will be low. Consideration of smallpox as a potential cause of illness will also be unlikely. If a threat is received or a case identified, communication activities will be important to raise awareness within the health sector.

There will be a delay before individuals show symptoms related to exposure to most biological agents. This may lead to considerable spread of the organism before identification and containment.

Dispersal method

Deliberate dispersal of a biological agent could involve the release of the agent, or the intentional infection of one or more persons.

Deliberate release may produce different epidemiologic patterns to natural outbreaks. Well planned aerosolised release of an agent may produce large numbers of cases with clustered onsets, even in the absence of person-to-person transmission. Establishing epidemiologic association amongst these cases could be problematic, depending on the site and extent of biological agent dispersion. Unlike other incidents there may be no defined incident site.

If introduced through infected persons, the origin of the biological agent (index case) and the extent of the outbreak could probably be tracked using standard epidemiologic and laboratory methods.

Key documents

- Health CBRN Plan
- Smallpox Plan

- Smallpox Laboratory Case Definitions (LCD) Smallpox Series of National Guidelines (SoNGs) - clinical and public health management.
- Guidelines for Epidemiological Investigation of multi-jurisdictional outbreaks that are potentially foodborne.

Annex 5: Legislation and international obligations

International Health Regulations 2005 (IHR)

As a signatory to the IHR, Australia is expected to establish systems to effectively manage public health threats and strengthen and maintain the capacity to detect, report and respond to public health events. The aim of these preparations is to help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide.

Under the IHR each country has a designated National Focal Point which can be used to share information about significant public health issues and provides the central point of coordination with WHO on all matters related to the IHR.

National Health Security Act 2007

Australia implements the requirements of the IHR through the *NHSA 2007* and the *National Health Security Regulations 2008*. This supports the sharing of public health information between the Australian and State and Territory Governments, establishes the SSBA Scheme and ties Australia into a global system of reporting and notification of incidents.

National Health Security Regulations 2008

The National Health Security Agreement provides the mechanisms to enable cooperation at all levels of Australian government to achieve enhanced surveillance and information exchange to support this objective. Health is the nationally competent authority under the IHR.

Biosecurity Act 2015

The *Biosecurity Act 2015* commenced on 16 June 2016 and fully replaced the *Quarantine Act 1908* in managing human biosecurity risks at Australia's international borders. This Act provides a modern, flexible framework to manage biosecurity risks posed by international movements of people, goods and conveyances.

Australian Counter-terrorism laws

The key legislation relating to counter-terrorism powers includes the:

- Constitution (section 51 – Powers of the Parliament)
- *Criminal Code Act 1995* (Cth)
- *Crimes Act 1914* (Cth)
- *Australian Security Intelligence Organisation Act 1979* (Cth)
- *Defence Act 1903* (Cth)

Each state and territory has enacted its own legislation regarding counter-terrorism powers within that jurisdiction.

Information on Australia's counter-terrorism laws can be found at [National Security](#).

Biological and Toxin Weapons Convention

The SSBA Regulatory Scheme contributes to fulfilment of Australia's obligations under the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction and UN Security Council Resolution 1540.

Annex 6: Glossary and definitions

Term	Definition
Abrin or ricin incident	An incident which involves the deliberate or threatened release of the biological agents abrin or ricin with the potential or actual harm to people.
Australian (Counter) Bioterrorism Laboratory Network (ABLN)	The ABLN brings together laboratory experts from public health and law enforcement sectors to strengthen national capacity and enhance coordination of detection, identification and response to biological agents of security concern. The ABLN has representatives from key public health laboratories in Victoria, Queensland, Western Australia and New South Wales (NSW). Also represented are the AFP Forensic Operations, NSW Police Force Forensic Counter-terrorism Laboratory, AAHL, DSTO, Weapons Technical Intelligence, AFP.
Affected jurisdiction	A state or territory where an incident has occurred (or is expected to occur).
Australian Health Protection Principal Committee (AHPPC)	The peak national health emergency management committee, with the authority to plan, prepare and coordinate the national Health response to significant incidents.
Biological Agent	A microorganism which causes disease in man, plants, or animals or causes the deterioration of material.
Bioavailability	The proportion of a drug or other substance which enters the circulation when introduced into the body and so is able to have an active effect.
Casualties	The human impact of a disaster or emergency presented in the form of numbers of people killed, injured, sick, missing or homeless.
CBRN	Chemical, Biological, Radiological or Nuclear

Term	Definition
Command	Refers to the direction of members and resources of an agency/organisation in the performance of the agency/organisation's roles and tasks. Authority to command is established by legislation or by agreement within the agency/organisation. Command relates to agencies/organisations only, and operates vertically within the agency/organisation.
Communicable Disease Network of Australia (CDNA)	A standing-committee of AHPPC responsible for national public health coordination of communicable disease surveillance, prevention and control. CDNA provides policy advice on the control of communicable disease and liaises with other regional communicable disease agencies and programs.
Consequence Management	Measures taken to alleviate suffering, damage, loss and hardship, protect public health and safety, restore essential government services and provide emergency relief to governments, businesses and individuals affected.
Control	Refers to the overall direction of the activities, agencies or individuals concerned. Control operates horizontally across all agencies/organisations, functions and individuals. Situations or incidents are controlled. The NatHealth Arrangements do not relate to the concept of control of the Australian health sector, nor is it intended to direct or replace incident management arrangements by individual jurisdictions or health authorities.
Coordination	Coordination is the act of managing inter-dependencies between activities. In emergency management, coordination involves the bringing together of many organisations to pursue a common goal and to share resources, information, expertise and decision making.
Emergency	An event, actual or imminent, which endangers or threatens to endanger, life, property or the environment, and which requires a significant or coordinated response.

Term	Definition
Emergency Operations Centre	A site established to collocate agencies working together to respond to an emergency. There is usually one in overall control with response sectors, such as health, establishing subordinate operations centres to coordinate their activities.
Hazard	A condition that may cause harm to people or damage to property or the environment.
Logistics	The range of operational activities concerned with supply, handling, transportation, and distribution of materials. Also applicable to the transportation and support of people.
National Health Emergency Management Subcommittee (NHEMS)	A standing-committee of AHPPC that addresses the operational aspects of disaster medicine and health emergency management in an all hazards context.
National Health Emergency Response Arrangements (NatHealth Arrangements)	The principal response document of the AHPPC that outlines the strategic authorities, responsibilities, arrangements and mechanisms that enable a coordinated national health sector response to emergencies of national consequence.
National Incident Room (NIR)	An operational response capability located within Health. The NIR acts a conduit for national coordination of response and recovery operations within Health and between state and territory health authorities, other Australian Government operations centres and the international Health community.
Preparedness	Arrangements to ensure that, should an emergency occur, all those resources and services which are needed to cope with the effects can be efficiently mobilised and deployed. In relation to an emergency, includes arrangements or plans to deal with an emergency or the effects of an emergency. This may include establishing the plans, training, exercises, and resources necessary to achieve readiness for all hazards.
Prevention	Measures to eliminate or reduce the incidence or severity of emergencies by preventing events from occurring or, where this is not possible, by putting in place arrangements to mitigate their effects.

Term	Definition
Public Health Laboratory Network (PHLN)	A standing-committee of AHPPC. A collaborative group of laboratories which have expertise, and provide services, in public health microbiology, including veterinary microbiology with a human health impact. PHLN develops nationally consistent guidelines for the laboratory based detection and monitoring of notifiable infectious diseases.
Recovery	In relation to an emergency, the coordinated process of supporting affected communities in reconstruction of the physical infrastructure and restoration of emotional, social, economic and physical wellbeing.
Response	In relation to an emergency, includes the process of combating an emergency and of providing immediate relief for persons affected by an emergency. Executing the plan and resources identified to perform those duties and services to preserve and protect life and property.
Risk	A concept used to describe the likelihood of harmful consequences arising from the interaction of hazards, communities and the environment.
Security Sensitive Biological Agent (SSBA) Regulatory Scheme	The SSBA Regulatory Scheme is administered by Health. The Scheme aims to limit opportunities for acts of bioterrorism or biocrime to occur using harmful biological agents. It also provides standards for the handling and transport of samples from affected animals or persons. The Scheme builds on Australia's obligations under the Biological and Toxins Weapons Convention and UN Security Council Resolution 1540.
Whole of Government (WoG)	Including state, territory and Australian government agencies.