

AUSTRALIA

June 2002

REPORT BY AUSTRALIA IN ACCORDANCE WITH THE FINAL DECLARATION OF THE THIRD REVIEW CONFERENCE OF THE PARTIES TO THE CONVENTION ON THE PROHIBITION OF THE DEVELOPMENT, PRODUCTION AND STOCKPILING OF BACTERIOLOGICAL (BIOLOGICAL) AND TOXIN WEAPONS AND ON THEIR DESTRUCTION.

The Final Declaration of the Third Review Conference of the parties to the Convention contained a number of measures designed to strengthen the authority of the Convention and to enhance confidence in the implementation of its provisions. These included the introduction of new Confidence Building Measures.

Australia reports the following information in accordance with the Final Declaration, with the Annex to the Final Declaration on Confidence Building Measures, and with the recommendations of the Ad Hoc Meeting of Scientific and Technical experts from States Parties to the Convention.

1. Declaration Form on Nothing to Declare or Nothing New to Declare

Measure	Nothing to Declare	Nothing New to Declare
A, part I	<input type="checkbox"/>	<input type="checkbox"/>
A, part 2 (i)	<input type="checkbox"/>	<input type="checkbox"/>
A, part 2 (ii)	<input type="checkbox"/>	<input type="checkbox"/>
A, part 2 (iii)	<input type="checkbox"/>	<input type="checkbox"/>
B (i)	<input type="checkbox"/>	<input type="checkbox"/>
B (ii)	<input type="checkbox"/>	<input type="checkbox"/>
C	<input type="checkbox"/>	<input type="checkbox"/>
D	<input type="checkbox"/>	<input type="checkbox"/>
E	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F	<input type="checkbox"/>	<input checked="" type="checkbox"/>
G	<input type="checkbox"/>	<input type="checkbox"/>

Date: **June 2002**

State Party to the Convention: **Australia**

2. Confidence Building Measure "A"

Part 1: Exchange of Data on Research Centres and Laboratories

Australia has five maximum containment units which meet the criteria for a "maximum containment laboratory" as specified in the 1983 WHO Laboratory Biosafety Manual.

They are:

- The Australian Animal Health Laboratory
- CSL Limited
- The National High Security Quarantine Laboratory
- The Australian Neuromuscular Research Institute
- The Queensland Health Scientific Services Virology Laboratory

Data on these facilities is provided below in accordance with the Annex to the Final Declaration on Confidence Building Measures.

The National High Security Quarantine Laboratory (NHSQL) operates under the auspices of the Victorian Infectious Diseases Reference Laboratory (VIDRL) at Parkville, Melbourne. Also, some Australian hospitals and university departments have containment units where diagnostic and research work is conducted.

Exchange of Data on Research Centres and Laboratories¹

1. Name(s) of facility

Australian Animal Health Laboratory

2. Responsible public or private organisation/ company

Commonwealth Scientific and Industrial Research Organisation (Federal Government) and the Department of Agriculture, Fisheries and Forestry (Federal Government). Note: Australia has a two-tiered system of Government, with the Federal Government and, to a lesser extent, the six respective State Governments all involved in the formulation and implementation of Government policy.

3. Location and postal address

5 Port Arlington Road
GEELONG VICTORIA

PO Bag 24
GEELONG VIC 3220
AUSTRALIA

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

No Department of Defence funding. Joint funding by the Commonwealth Scientific and Industrial Research Organisation (Federal Government) and the Department of Agriculture, Fisheries and Forestry (Federal Government). Minor funding by private rural industry organisations.

5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m²)

One maximum containment system and enclosure. Total floor space 11,000m² comprised of three main parts: a large-animal accommodation area, total floor area about 3,500 m² made up of 29 rooms – each of these with a floor area of about 6 m²– and with a service area, incinerator, and autopsy area.

A lab complex of total floor area about 3,500 m² made up of three functional laboratory suites – each of these with a floor area of about 1,100 m²– and each comprised of six laboratories and four attached small-animal rooms. The laboratory suites are for diagnosis, pathology and virology. There are attached service areas.

A common support area for glass washing, tissue culture, laundry and other services.

6. If no maximum containment unit, indicate highest level of protection

N/A

7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate.

The high security laboratory works on research and diagnosis of animal diseases caused by organisms which are largely exotic to Australia, of which some may present a risk to laboratory workers. Organisms under investigation are pseudo-rabies (Aujeszky's Disease), bluetongue virus (attenuated vaccine strains), avian influenza virus (fowl plague), Newcastle disease virus (low to high virulence strains), rabies virus, hog cholera virus, *Mycoplasma mycoides* (bovine pleuropneumonia), *Burcella melitensis* and a range of other brucella strains, swine vesicular disease, vesicular exanthema virus, vesicular stomatitis virus (a range of isolates), transmissible gastroenteritis virus, African swine fever, rabbit haemorrhagic disease virus, porcine respiratory and reproductive syndrome virus, Japanese encephalitis virus, Hendra virus, Nipah virus, Australian bat lyssavirus, a wide range of fish pathogens (both bacterial and viral), and the scrapie agent. All agents are of Risk Groups 2 and 3 (under WHO classification scheme) except Hendra virus and Nipah virus (Henipahviruses in the family *Paramyxoviridae*), which has been classified as a biological Risk Group 4 agent (by Standards Australia, AS/NZS 2243:3:2002).

Exchange of Data on Research Centres and Laboratories

1. Name(s) of facility

CSL Limited.

2. Responsible public or private organisation/company:

CSL Limited.

3. Location and postal address:

45 Poplar Road
PARKVILLE VIC 3025
AUSTRALIA

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

No Department of Defence funding. Financed through trading operations.

5. Number of maximum containment units⁶ within the research centre and/or laboratory, with an indication of their respective size (m²)

CSL has two high containment facilities. The first consists of two laboratories, one of 70m² and the other of 50m². The second facility is a single laboratory of approximately 60m².

6. If no maximum containment unit, indicate highest level of protection

N/A.

7. Scope and general description of activities, including type(s) of micro-organism and/or toxins as appropriate

The work of CSL is directed chiefly to the production of human plasma fractions and the production of vaccines for the prevention of disease in humans and in domestic animals. Some bacterial toxins are produced in order to make toxoids for prophylactic purposes. The diseases involved are cholera, brucellosis, tuberculosis, influenza, plague and typhus. Toxins are produced from a number of organisms such as tetanus, botulinum, perfringens and chauviae. The high containment laboratories are used for experiments to determine the efficacy of such vaccines and to produce Q-Fever vaccine.

Exchange of Data on Research Centres and Laboratories

1. Name(s) of facility

National High Security Quarantine Laboratory.

2. Responsible public or private organisation/company:

Department of Health and Ageing (Commonwealth government), Department of Human Services (State government).

3. Location and postal address:

c/o
Victorian Infectious Diseases Reference Laboratory
Locked Bag 815
Carlton South
Victoria 3053
AUSTRALIA

4. Source(s) of financing, of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

No Department of Defence funding. Commonwealth and State (health) government funding only.

5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m²)

One high security laboratory, containing two portable isolation units. Total area 90m².

6. If no maximum containment unit, indicate highest level of protection

N/A.

7. Scope and general description of activities, including type(s) of micro-organism and/or toxins as appropriate

The diagnosis of possible imported cases of viral haemorrhagic fever or other quarantinable viral diseases such as yellow fever.

Exchange of Data on Research Centres and Laboratories

1. Name(s) of facility

Australian Neuromuscular Research Institute.

2. Responsible public or private organisation/company:

Australian Neuromuscular Research Institute.

3. Location and postal address:

Australian Neuromuscular Research Institute
4th Floor, 'A' Block
QEII Medical Centre
Verdun Street
Nedlands WA 6009

4. Source(s) of financing, of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

No Department of Defence funding. All funding is derived from national and international medical research funding organisations, including the Commonwealth government's National Health & Medical Research Council.

5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m²)

One. Total area 44m².

6. If no maximum containment unit, indicate highest level of protection

N/A.

7. Scope and general description of activities, including type(s) of micro-organism and/or toxins as appropriate

The facility is designed for research investigating neuromuscular and neurological disorders including the effects of infectious agents on the development and maintenance of the nervous system.

Exchange of Data on Research Centres and Laboratories

1. Name(s) of facility

Queensland Health Scientific Services.

2. Responsible public or private organisation/company:

Queensland Department of Health (State government).

3. Location and postal address:

39 Kessels Road
Coopers Plains
Queensland 4108
Australia

4. Source(s) of financing, of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

No Department of Defence funding. State (health) government funding only.

5. Number of maximum containment units within the research centre and/or laboratory, with an indication of their respective size (m²)

Two. Total area 150m².

7. If no maximum containment unit, indicate highest level of protection

N/A.

7. Scope and general description of activities, including type(s) of micro-organism and/or toxins as appropriate

The maximum containment facilities service a state government public health virology laboratory which has both a diagnostic and a research function. The laboratory is a WHO Centre for Arbovirus Reference and Research. The maximum containment facilities are used for the development and performance of diagnostic tests on patients with suspected exotic or endemic viral illness requiring such containment facilities, such as Hendra virus or exotic haemorrhagic fever viruses. The laboratory has a research program on Hendra virus and works actively with this virus. The laboratory currently has no other PC4 pathogens. The laboratory intends to introduce reagents useful for the diagnosis of a number of exotic viral diseases including Ebola, Lassa, Junin, Rift Valley fevers and Hantavirus among others. These reagents will consist of either inactivated diagnostic reagents, cloned viral subunits or live virus.

Part 2 : Exchange of Information on National Biological Defence Research and Development Programs

1. Is there a national program to conduct biological defence research and development within the territory of the State Party, under its jurisdiction or control anywhere?

Yes. Australia has a modest research and development program in biological defence and arms control, which is detailed below.

[Form A, part 2(ii)]

National Biological Defence Research and Development Program

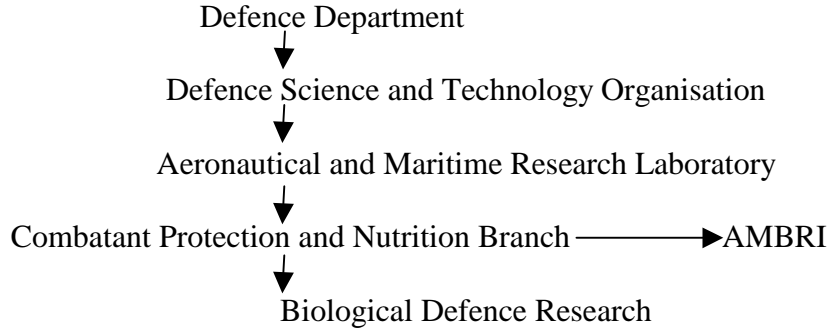
Description

1. The objective of the program is to provide the Australian Government with an appropriate understanding of the issues pertinent to defence and protection against biological weapons. The program also aids to assist in the provision of a defensive capability for the Australian Defence Force (ADF) and to contribute to the Defence support to the civil power, in the management of biological threats to the community. The program will enhance the ability of the ADF, to operate in support of the United Nations, in parts of the world where biological weapons may be used. It will also enhance Australia's ability to contribute to arms control verification measures in this field. The principal research activities are concerned with the detection of biological species that have been identified as potential biological warfare agents, and the characterisation of toxins that are threats in terms of both the Biological and Chemical Weapons Conventions. It includes studies on mechanisms of actions of toxins, and on the detection, identification analysis of toxins and organisms. The Australian program is concerned with diagnostic techniques, detection, treatment, toxicology, physical protection (in conjunction with chemical protection) and decontamination.
2. The program is funded solely by the Australian Department of Defence, with an allocation for the current financial year (July 2001-June 2002) of \$310 000.
3. Yes, work is contracted to non-defence facilities.
4. For the Financial Year (00/01), the following payments were made;
 - \$227 000 to Australian Membrane and Biotechnology Research Institute (AMBRI)
 - \$60 000 to the Cooperative Research Centre (CRC) for Diagnostics
5. The program includes collaborative projects with AMBRI to develop a biosensor technology for rapid detection of BW agents. The national program funds AMBRI for a project related to bioaerosol monitoring. DSTO also collaborates with AMBRI for development of a capability for rapid identification of biological agents. The Queensland University of Technology (QUT) performs work under contract to assess the application of physical methods to the Detection of bio-aerosols.

The program includes an association with the CRC - Diagnostics, that aims to produce high affinity reagents that can be used in the treatment or detection of biological agents. This interaction is through the funding of two PhD students, one located at the Commonwealth Scientific and Industrial Research Organisation

(CSIRO) - Health Science and Nutrition, Parkville, Victoria, and the other at LaTrobe, University, Bundoora, Victoria.

6. The organisational structure is as follows. There is a single active research cell operating within the Department of Defence within the hierarchy represented below.



7. A declaration in accord with Form A, part 2 (iii) follows.

[Form A, part 2 (iii)]

Facilities

There is one facility

1. **Name** Combatant Protection and Nutrition Branch

2. **Location**

Address Aeronautical and Maritime Research Laboratory
 PO Box 4331
 Melbourne, 3001 Australia

Physical Location Cordite Avenue
 Maribyrnong
 Victoria, Australia

3. **Floor Area**

BL2	50 square metres
BL3	nil
BL4	nil

4. **Personnel**

- (i) Total of 11.5 staff years effort for the combined biological defence and arms control programs, with contributions from 10 personnel.
- (ii) All are civilian.
- (iii) 8 scientists, 1 technician, nil engineers, shared administrative and support staff.
- (iv) Biochemistry, molecular biology, microbiology, immunology, chemistry, pharmacology.

- (v) No—there are no contractor staff working on this program at the facility.
- (vi) Wholly financed by the Department of Defence.
- (vii) Research funded at ca. \$310 000 per annum.
- (viii) Publication in scientific journals is encouraged, and staff are expected to maintain their professional status by such publication.
- (ix) The publications are listed in Attachment 1.

5. Description of Biological Defence Work

Detection of biological entities recognised as potential biological warfare agents

Immunological and gene probe techniques for rapid identification of BW agents are being investigated. Antibodies are being developed for incorporation in ELISA and biosensor tests. Antibodies are being developed to a number of agents including ricin, *Yersinia pestis*, *Coxiella burnetii* and *Bacillus anthracis*. Human or animal vaccines are used to raise antibodies against the micro-organisms. Gene probes and primers for use in PCR identification of BW agents are being developed. The pathogenic micro-organisms are used in the investigations, e.g. *Burkholderia pseudomallei*.

DSTO has a program to develop a field bio-aerosol detector, for which AMBRI receives funding.

Physical methods for rapid detection of bio-aerosols

Methods of particle characterisation for provision of rapid warning of a bio-aerosol are being assessed. This work involves the QUT.

Treatment/Toxicology

Cultured human lung cells are being developed as a test bed for examining potential therapeutic compounds against toxin agents. Compounds for treatment of ricin intoxication are currently being examined.

A program for the development of DNA vaccines against selected agents has been initiated.

Detection of biological material using physico-chemical methods

Studies on detection of biological material using mass spectrometry and other physico-chemical methods are being conducted to determine their utility for field detection of biological agents and BWC verification procedures.

Attachment 1 - Publications

Alderton, M.R., Gray, P.J. and Proll, D.F.

Genetic vaccination: can plasmid DNA deliver its expectations?

Australian Military Medicine, (2001), **10(2)**, 59-65.

Gauci, P.J. and Alderton, M.R.

Pepsin Digestion of Antibodies to Produce Functional Antigen-Binding Fragments (Fab): A Scientific Fantasy?

Technical Report, (2001), DSTO-TR-1189, AR-011-961.

3. CONFIDENCE BUILDING MEASURE 'B'

Exchange of Information on Outbreaks of Infectious Diseases and Similar Occurrences caused by Toxins

Australia has had no outbreaks of infectious diseases and similar occurrences caused by toxins, that deviate from the normal pattern. For that reason there is a Form B (i), but no Form B (ii), attached under this confidence building measure.

Human diseases

The Australian Department of Health and Ageing has overall responsibility for national disease surveillance. The Department's Communicable Diseases and Health Protection Branch routinely receives diagnostic data from key medical laboratories throughout Australia.

Each Australian State and Territory has legislation which requires doctors, hospitals and/or laboratories to report the occurrence of certain diseases, known as "notifiable diseases". Under the auspices of the Communicable Diseases Network of Australia (the Network), the State and Territory health authorities provide data on an agreed set of notifiable diseases to the Australian Department of Health and Ageing. The data are collated by the Department and published monthly in the *Communicable Diseases Intelligence* and includes 'notifiable diseases' statistics. *Communicable Diseases Intelligence* is sent to the World Health Organization, and is distributed to approximately 3,400 health professionals and researchers both nationally and internationally.

The Network meets fortnightly by teleconference. It provides a forum for information exchange on communicable disease activity in Australia and New Zealand and enables Federal and State health authorities to cooperate in taking prompt action to control outbreaks.

Animal diseases

The Commonwealth Department of Agriculture, Fisheries and Forestry is responsible for national coordination on animal health matters and for providing reports on Australia's animal health status, including a joint annual return to the Office International des Epizooties (OIE), the Food and Agriculture Organization (FAO) and the World Health Organization.

Plant diseases

The Commonwealth Department of Agriculture, Fisheries and Forestry, through the Office of the Chief Plant Protection Officer, is the peak organisation that gathers information on pests and diseases of plants. The Department is notified of exotic incursions through State Government agricultural, forestry and natural resource agencies. It also provides national leadership in responding to incursions of exotic pests and diseases of plants.

Background Information on Outbreaks of Reportable Infectious Diseases

In accordance with the new requirements agreed at the Third Review Conference, a summary table of notifiable diseases for Australia for the years 1996 to 2001 is attached as Form B (i).

Background Information on Outbreaks of Reportable Infectious Diseases

(A) Human diseases

Nationally Notifiable Communicable Diseases in Humans 1996 - 2001

Number of cases per year

Diseases	1996	1997	1998	1999	2000	2001 ^P
AIDS	641	311	265	139	177	158
HIV	926	787	721	660	694	721
Anthrax	NN	NN	NN	NN	NN	0
Ross River virus infection	7782	6683	3079	4386	4288	3372
Barmah Forest virus infection	789	704	556	629	633	1162
Dengue	43	210	560	124	231	183
Australian encephalitis	2	0	0	0	0	3
Arbovirus (NEC)	99	122	84	67	65	38
Botulism	0	0	1	0	2	2
Brucellosis	38	41	45	52	26	21
Campylobacter infection	11883	11848	12997	12745	13516	16068
Chancroid	1	1	1	0	0	0
Chlamydial infection	7319	9126	11272	13897	17906	20258
Cholera	4	3	5	4	1	3
Diphtheria	0	0	0	0	0	1
Donovanosis	46	45	36	16	13	37
Gonococcal infection	3823	4689	5293	5528	6118	6461
<i>Haemophilus influenzae</i> type b	52	53	35	41	31	27
Hepatitis A	2150	3076	2530	1537	838	526
Hepatitis B (incident)*-	194	247	265	311	425	419
Hepatitis B (unspecified)	6136	7114	6715	7210	8909	8701
Hepatitis C (incident)*	40	81	348	345	504	601
Hepatitis C (unspecified)	9060	19689	19661	20754	20765	16209
Hepatitis (NEC)	18	6	4	0	1	91
Hydatid disease**	46	61	46	30	28	NN

NA - not available

NN - not notifiable

NEC - not elsewhere classified

*Prior to 1994 the incident and other cases are not distinguished

** Not notifiable in all States and Territories

2001^P provisional figures only

Nationally Notifiable Communicable Diseases in Humans 1996 - 2001 (cont)

Number of cases per year

Diseases	1996	1997	1998	1999	2000	2001^P
Legionellosis	185	161	268	247	474	299
Leprosy	9	14	3	6	5	3
Leptospirosis	226	126	192	318	244	249
Malaria	848	746	698	708	975	717
Measles	499	852	327	230	110	135
Meningococcal infections	426	499	466	563	603	671
Ornithosis**	79	46	56	88	104	136
Pertussis (whooping cough)	4335	10668	6054	4373	5886	9329
Plague	0	0	0	0	0	0
Poliomyelitis	0	0	0	0	0	0
Q fever	540	593	581	513	533	743
Rabies	0	0	0	0	0	0
Rubella	2755	1446	782	374	315	266
Salmonellosis	5767	7004	7892	7096	6142	7168
Shigellosis	661	799	609	539	488	572
Syphilis	1460	1293	1032	1876	2015	1390
Tetanus	2	8	7	3	9	3
Tuberculosis	1097	1008	1303	848	1047	955
Typhoid	82	77	75	69	68	85
Viral haemorrhagic fever	0	0	0	0	0	0
Yellow fever	0	0	0	0	0	0
Yersiniosis	268	245	208	145	74	57

NA - not available

NN - not notifiable

NEC - not elsewhere classified

** Not notifiable in all States and Territories

2001^P provisional figures only

In 1996, the first case of human infection with a novel lyssavirus was reported. The patient died after developing encephalitis and was shown to have been infected with the lyssavirus, which had recently been discovered in several species of bat native to Australia. In 1998, a further fatality was reported as a result of infection with the new lyssavirus following a bite from a native bat. It should be noted that, although data are limited at this stage, available evidence is that this virus has probably been present in Australia for many years.

Animal Diseases – 2001

(ii) Information on Outbreaks of Infectious Diseases in 2001

The following sections contain information on significant animal disease events/issues in 2001. There were no animal disease incidents requiring an emergency response in 2001. However animal health expertise was deployed to assist with emergencies in other sectors including a fire ant incursion in metropolitan Brisbane.

1. Comments on selected Office International des Epizooties (OIE) List A diseases

Bluetongue

Although bluetongue virus occurs in Australia, there is no evidence of clinical disease in the field. The National Arbovirus Monitoring Program is an integrated national program jointly funded by industry and governments to monitor the distribution of economically important insect-borne viruses of livestock and their vectors. Transmission of bluetongue viruses occurred throughout the endemic areas of far northern Australia, coastal Queensland and the far north coast of New South Wales. Nationally, the areas free of bluetongue virus were slightly larger than in the previous year, with all regions in southern Australia and most pastoral regions in eastern Australia remaining free. The patterns of bluetongue serology in 2001 and genetic analyses of viruses isolated again showed no evidence that more pathogenic viruses were moving out of the far north of the Northern Territory and Western Australia. There was also no evidence of the incursion of any new serotypes of virus into Australia, nor of bluetongue viruses cycling in proximity to major sheep populations. However, bluetongue disease was detected in a small Northern Territory sheep flock in 2001. The few animals affected quickly recovered or died, and the disease has not recurred.

Newcastle Disease

There were no outbreaks of Newcastle disease (ND) in Australia during 2001. Surveillance in New South Wales (NSW) has not detected ND or virulent virus since February 2000. Slaughter of all flocks in which virulent ND virus was detected in 2000 was completed by 21 March 2001, with quarantine restrictions being lifted in June 2001. OIE was advised on 5 October 2001 that Australia was once again a Newcastle disease free country according to the provisions of the OIE International Animal Health Code. Biosecurity on poultry farms was generally improved and vaccination with live V4 vaccine and killed vaccine continued on a voluntary basis in NSW.

2. Comments on selected Office International des Epizooties (OIE) List B diseases

Johne's disease

Australia has relatively low levels of Johne's disease (JD). Large areas of Australia and a high proportion of its livestock population have no known infection. There are a number of initiatives to protect this situation. Through the National JD Control Program, livestock industries, governments and the veterinary profession work to limit the spread of JD and reduce the impact of infection where it occurs. During the year, advances were made in all areas of the program: market assurance, disease control and surveillance, diagnostic methods, research and communication.

Bovine Tuberculosis

Australia declared freedom from bovine tuberculosis in December 1997, but due to the nature of the disease occasional cases may still be reported. Subsequently, the Tuberculosis Freedom Assurance Program (TFAP) was instituted. TFAP is designed to detect any resurgence of TB in Australia and to quickly eradicate any detected cases. TFAP's main role is to maintain Australia's 'free area' status by conducting active abattoir surveillance through the National Granuloma Submission Program (NGSP), and by effectively eradicating any detected residual cases of TB in the Australian cattle population.

No cases of tuberculosis were found during 2001 despite extensive on-farm and abattoir surveillance (5,300 NGSP samples). An eradication program is continuing on a property in Queensland which was linked to two tuberculosis positive animals detected in 2000.

White Spot Syndrome Virus

In November 2000, PCR signals indicative of white spot virus (WSV) infection were detected in crabs and tiger prawns in two aquaculture research facilities in Darwin, Northern Territory. The source of the infection was traced to imported green prawns that had been used as feed. Both facilities were immediately slaughtered out and disinfected. During 2001 a national WSV survey of wild crustaceans was undertaken that was designed to be compatible with OIE protocols. Over 3000 samples were tested Australia-wide, with no WSV confirmed. In addition, further laboratory testing of original samples from the Darwin incident have not demonstrated viable WSV.

3. Comments on Other Diseases

Australia's response to foot-and-mouth disease and bovine spongiform encephalopathy

During 2001, the spread of bovine spongiform encephalopathy (BSE) to previously unaffected European countries, the detection of BSE in Japan, the epidemic of foot-and-mouth disease (FMD) in the United Kingdom and its resurgence in South America, demonstrated the impact that animal diseases can have on societies and national economies. In light of these events, in early 2001 Australia initiated a process to reassess national emergency animal disease prevention and response arrangements, which have already been internationally recognised as among the best in the world.

During 2001, detailed risk management frameworks were developed for both diseases using the quarantine continuum of *pre border*, *border* and *post border* as a template. Strategies designed to enhance Australia's animal health emergency management arrangements were developed and implemented. Planning commenced for a major, national, whole-of-government simulation of an FMD outbreak to be held during September 2002, as well as drafting amendments to the *Quarantine Act 1908* to strengthen exotic animal disease emergency response provisions.

Rickettsia-like organisms

Rickettsia-like organisms were detected by histology in January 2001 in Atlantic salmon in south-eastern Tasmania from a sea cage, which had experienced elevated but low-level mortality for approximately two weeks. Similar organisms, sometimes associated with typical gross and histological lesions of piscirickettsiosis, were subsequently seen in several cages within the same limited area. Overall mortality has been low and further testing is being conducted to determine the exact identity of the organisms.

Table: Status of internationally reportable diseases that occur in Australia

Disease	OIE Code	Species	Occurrence
Foot and mouth disease	A010	***	last occurrence 1872
Vesicular stomatitis	A020	***	never occurred
Swine vesicular disease	A030	sui	never occurred
Rinderpest	A040	***	last occurrence 1923
Peste des petits ruminants	A050	***	never occurred
Contagious bovine pleuropneumonia	A060	bov	last occurrence 1967
Contagious bovine pleuropneumonia	A060	buf	never occurred
Lumpy skin disease	A070	***	never occurred
Rift Valley fever	A080	***	never occurred
Bluetongue	A090	***	serological evidence in cattle; limited range; no clinical disease
Sheep pox and goat pox	A100	***	never occurred
African horse sickness	A110	***	never occurred
African swine fever	A120	***	never occurred
Classical swine fever	A130	***	last occurrence 1961
Highly pathogenic avian influenza	A150	avi	last occurrence 1997
Newcastle disease	A160	avi	last occurrence 2000
Anthrax	B051	***	last occurrence 2001; limited range
Aujeszky's disease	B052	***	never occurred
Echinococcosis/hydatidosis	B053	***	present
Heartwater	B055	***	never occurred
Leptospirosis	B056	***	present

Q fever	B057	***	serological evidence only
Rabies	B058	***	last occurrence 1867
Paratuberculosis	B059	***	present ; limited range
New world screwworm (<i>C. hominivorax</i>)	B060	***	never occurred
Old world screwworm (<i>C. bezziana</i>)	B061	***	never occurred
Bovine anaplasmosis	B101	***	present ; limited range
Bovine babesiosis	B102	***	last occurrence; limited range
Bovine brucellosis	B103	***	last occurrence 1989
Bovine genital campylobacteriosis	B104	***	present
Bovine tuberculosis	B105	***	last occurrence 2000; limited range
Bovine cysticercosis	B106	bov	present
Dermatophilosis	B107	***	present
Enzootic bovine leukosis	B108	bov	present; limited range
Haemorrhagic septicaemia	B109	bov	never occurred
Haemorrhagic septicaemia	B109	buf	never occurred
Infectious bov.rhinotracheitis (IBR/IPV)	B110	bov	present
Theileriosis	B111	bov	serological evidence only; limited range; non-pathogenic strains - T mutans and T parva not present.
Trichomonosis	B112	bov	present ; limited range
Trypanosomosis (tsetse-borne)	B113	***	never occurred
Malignant catarrhal fever	B114	bov	present
Bovine spongiform encephalopathy	B115	bov	never occurred
Ovine epididymitis (<i>Brucella ovis</i>)	B151	ovi	present
Cap/ovi brucel. (excluding <i>B. ovis</i>)	B152	cap	never occurred
Cap/ovi brucel. (excluding <i>B. ovis</i>)	B152	ovi	never occurred
Caprine arthritis/encephalitis	B153	cap	present
Contagious agalactia	B154	***	Present; <i>Mycoplasma agalactiae</i> has been isolated in Australia, but the Australian strains do not produce agalactia in sheep.
Contagious caprine pleuropneumonia	B155	cap	never occurred
Enzootic abortion (ovine chlamydiosis)	B156	ovi	present
Ovine pulmonary adenomatosis	B157	***	never occurred
Nairobi sheep disease	B158	***	never occurred
Salmonellosis (<i>S. abortusovis</i>)	B159	ovi	never occurred
Scrapie	B160	cap	never occurred
Scrapie	B160	ovi	last occurrence 1952
Maedi-visna	B161	ovi	never occurred
Contagious equine metritis	B201	equ	last occurrence 1980
Dourine	B202	equ	never occurred
Epizootic lymphangitis	B203	equ	never occurred
Encephalomyelitis (Eastern and Western)	B204	equ	never occurred
Equine infectious anaemia	B205	equ	present; limited range
Equine influenza	B206	equ	never occurred
Equine piroplasmiasis	B207	equ	last occurrence 1976
Equine rhinopneumonitis	B208	equ	present
Glanders	B209	equ	last occurrence 1891
Horse pox	B210	equ	never occurred
Equine viral arteritis	B211	equ	serological evidence only
Japanese encephalitis	B212	sui	serological evidence only; limited range: seroconversion in sentinel pigs in Torres Strait
Horse mange	B213	equ	never occurred
Surra (<i>Trypanosoma evansi</i>)	B215	equ	never occurred
Venezuelan equine encephalomyelitis	B216	equ	never occurred
Atrophic rhinitis of swine	B251	sui	present
Porcine cysticercosis	B252	sui	never occurred

Porcine brucellosis	B253	sui	present; limited range
Transmissible gastroenteritis	B254	sui	never occurred
Trichinellosis	B255	***	T pseudospiralis in native fauna only. T spiralis not present
Enterovirus encephalomyelitis	B256	sui	never occurred
Reproductive and respiratory syndrome	B257	sui	never occurred
Avian infectious bronchitis	B301	avi	present
Avian infectious laryngotracheitis	B302	avi	present
Avian tuberculosis	B303	avi	present
Duck virus hepatitis	B304	avi	never occurred
Duck virus enteritis	B305	avi	never occurred
Fowl cholera	B306	avi	present
Fowl pox	B307	avi	present
Fowl typhoid	B308	avi	last occurrence 1952
Infect. bursal disease (Gumboro disease)	B309	avi	present
Marek's disease	B310	avi	present
Mycoplasmosis (M. gallisepticum)	B311	avi	present
Avian chlamydiosis	B312	avi	present
Pullorum disease	B313	avi	present; limited range
Myxomatosis	B351	lep	present
Tularemia	B352	lep	never occurred
Rabbit haemorrhagic disease	B353	lep	present
Viral haemorrhagic septicaemia	B401	pis	never occurred
Spring viraemia of carp	B404	pis	never occurred
Infectious haematopoietic necrosis	B405	pis	never occurred
Epizootic haematopoietic necrosis	B413	pis	present; limited range
Oncorhynchus masou virus disease	B415	pis	never occurred
Bonamiosis	B431	mol	last occurrence 2000; limited range
Haplosporidiosis	B432	mol	never occurred
Perkinsosis	B433	mol	last occurrence 1997; limited range
Marteiliosis	B434	mol	last occurrence 1999; limited range
Mikrocytosis (Mikrocytos mackini)	B436	mol	never occurred
Taura syndrome	B445	cru	never occurred
White spot disease	B446	cru	never occurred
Yellowhead disease	B447	cru	never occurred
Acariosis of bees	B451	api	never occurred
American foulbrood	B452	api	present
European foulbrood	B453	api	present
Nosemosis of bees	B454	api	present
Varroosis	B455	api	present; limited range
Leishmaniosis	B501	can	never occurred
Listeriosis	C611	***	present
Toxoplasmosis	C612	***	present
Melioidosis	C613	ovi	present; limited range
Blackleg	C614	bov	present
Botulism	C615	***	present
Other clostridial infections	C616	***	present
Other pasteurelloses	C617	***	present
Actinomycosis	C618	***	present
Intestinal Salmonella infections	C619	***	present
Coccidiosis	C620	***	present
Distomatosis (liver fluke)	C621	***	present; limited range
Filariosis	C622	can	present
Mucosal disease/Bovine virus diarrhoea	C652	bov	present
Vibrionic dysentery	C653	***	present
Warble infestation	C654	***	never occurred
Contagious pustular dermatitis	C701	cap	present
Contagious pustular dermatitis	C701	ovi	present
Foot-rot	C702	ovi	present ; limited range

Contagious ophthalmia	C703	***	present
Enterotoxaemia	C704	***	present
Caseous lymphadenitis	C705	ovi	present
Sheep mange	C706	ovi	last occurrence 1896
Equine coital exanthema	C751	equ	never occurred
Ulcerative lymphangitis	C752	equ	never occurred
Strangles	C753	equ	present
Salmonellosis (<i>S. abortusequi</i>)	C754	equ	never occurred
Swine erysipelas	C801	sui	present
Infectious coryza	C851	avi	present
Avian encephalomyelitis	C853	avi	present
Avian spirochaetosis	C854	avi	present
Avian salmonellosis	C855	avi	present
Avian leukosis	C856	avi	present

Codes for species

*** multiple species; api bees; avi birds; bov cattle; buf buffalo; can dogs; cap goats; cru crustaceans; equ horses
fau fauna; lep rabbits; mol molluscs; ovi sheep; o/c sheep and goats; pis fish; sui pigs.

[Form B(i)]

Plant Diseases 2001

The following new plant diseases were recorded for 2001.

Full name	First detection	Taxon Name	Entry type	Status	Place
Insolibasidium deformans (C.J. Gould) Oberwinkler & Bandoni	22-Oct-01	Fungi	Ornamental	Eradication not possible	Dandenong Range, Victoria
Pestalotiopsis psidii (Pat.) Mordue	17-Nov-01	Fungi	Unknown	Some doubt about its identification.	Northern Territory
Phakopsora euvitis Ono	17-Jul-01	Fungi	Windblown		Darwin, Northern Territory
Potato spindle tuber viroid	5-Jun-01	Viroid	Legal Import	One positive result for Potato spindle tuber viroid. National Consultative Committee Convened. National delimiting surveys being conducted - to date no other positives. SCARM cost sharing program developed.	Perth, Western Australia
Puccinia hemerocallidis Thuem.	28-Nov-01	Fungi	Ornamental	Eradication not possible. Being dealt with by Interstate Plant Health Regulatory Working Group.	Malaney, Queensland
Pucciniastrum vaccinii (G. Winter) Jorst.	27-Nov-01	Fungi	Contamination	Eradication not possible. Being dealt with by Interstate Plant Health Regulatory Working Group.	New South Wales

4. CONFIDENCE BUILDING MEASURE “C”

Policy on Publication of Results

The policy of the Defence Science and Technology Organisation is to publish results of a general scientific value in the open literature in scientific journals. Information that is more specialised and relevant particularly to defence is published in laboratory reports, which are unclassified and available to the public, unless they contain information that might prejudice the security of Australia or information that is commercial-in-confidence. It is envisaged that all results of the biological research will be either unclassified or “commercial-in-confidence”.

The Defence Health Service Branch (DHSB) encourages the publication of scientific reviews of the literature in the biological defence area. Over the past 12 months, several articles have been published or accepted for publishing in the Australian and international scientific literature. These include:

- Alderton MR, Gray PJ, Proll DF. Genetic vaccination: can plasmid DNA deliver its expectations? *Australian Military Medicine* 2001;10(2), 59-65.
- Dawson RM, Alderton MR, Paddle BM. Potential applications of dendrimers in biological defence – A literature review. *DSTO General Document* 2002. In press.
- Paddle BM. Therapy and prophylaxis of inhaled biological toxins. *Journal of Applied Toxicology* 2002. Being submitted.

5. CONFIDENCE BUILDING MEASURE "D"

Promotion of Professional Contacts

Australia welcomes *bona fide* professional contact with other researchers in matters directly related to the Convention. Contact should be made with the facility described in Form A, part 2 (iii).

Active Promotion of Contacts

1. Planned international forums of exchange

- a. The Technical Cooperation Program (TTCP) CBD Group, Technical Panel 4 - Medical countermeasures against biological agents.
- b. United States Army Medical Research Institute of Infectious Diseases (USAMRIID).
- c. January 2002
- d. United States
- e. TTCP Biological Defence programs, collaborative research, advances in biotechnology
- f. Membership of TTCP CBD Group
- g. Dr D. Proll, Aeronautical and Maritime Research Laboratory, PO Box 4331, Melbourne 3001, Australia. Phone (03) 9626 8470, Fax (03) 9626 8410

- a. The Technical Cooperation Program (TTCP) CBD Group, Action Group 47 - BWC Related Analytical Methodologies
- b. Aeronautical and Maritime Research Laboratory (AMRL).
- c. January 2002
- d. United States
- e. TTCP Biological Defence programs, collaborative research, advances in biotechnology
- f. Membership of TTCP CBD Group
- g. Mr R J Mathews, Aeronautical and Maritime Research Laboratory, PO Box 4331, Melbourne 3001, Australia. Phone (03) 9626 8460, Fax (03) 9626 8999

6. CONFIDENCE BUILDING MEASURE "E"

Declaration of Legislation, Regulations and Other Measures

Australia has the following Australian Government legislation, regulations and other measures to declare under this confidence-building measure.

Crimes (Biological Weapons) Act 1976

The Act, which is administered by the Attorney-General, makes it unlawful for Australians to develop, produce stockpile or otherwise acquire or retain microbial or other biological agents or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes; or weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.

The Act extends to the acts of Australian citizens outside Australia. Contravention of the Act is an indictable offence.

Crimes (Biological Weapons) Regulations 1980

The Regulations specify the way in which substances acquired under the Act should be stored, disposed of and analysed.

Customs Act 1901 and Customs (Prohibited Exports) Regulations

Under the Customs (Prohibited Export) Regulations the Minister for Defence controls, through a system of export licenses, the export of defence and related goods from Australia. These Regulations were amended in December 1996 to bring all export licensing requirements for defence and related goods under a single regulation - Regulation 13E. No substantial change was made to the regulations relating to the export licensing requirement for biological agents, toxins or equipment which could be used to assist a biological weapons program.

The Regulations require exporters to obtain a licence before proceeding to export certain listed items. These goods are listed in the "Defence and Strategic Goods List". Part 1 of this list includes biological agents designed or adapted to produce casualties in human beings; equipment designed or adapted for disseminating biological agents; goods designed or adapted for the detection, identification or defence against biological agents; and goods including software designed or adapted for the purposes of producing any of the previous items. Part 3 of the list includes human pathogens and toxins, animal pathogens, plant pathogens and equipment capable of being used to develop biological weapons.

Quarantine Act 1908 and Regulations

The Act is designed to prevent the introduction into Australia of serious pests and diseases affecting humans, plants and animals. Accordingly, in conjunction with the Biological Control Act (see below), it controls rather than prohibits the import into Australia of all biological material.

The Act is administered by the Australian Quarantine and Inspection Service (AQIS) within the framework of the Federal Government's quarantine policy. All biological agents require prior permission to import. Under the provisions of Section 13 of the Act, goods of biological origin, including human pathogenic micro-organisms and toxins, may only be imported into Australia if approval has been given by the Director of Human Quarantine. In giving approval, the Director may require that the importer adhere to certain conditions or requirements, including, but not limited to, the storage, transportation, distribution and disposal of the goods, the use to which the goods may be put, and the personnel authorised to handle or use the goods.

Import conditions vary depending on the nature of the organisms, and on the risks involved. High risk organisms such as serious pathogens of humans, animals and plants which might be considered as potential biological weapons would only be permitted under the most stringent, high security conditions. Very few such imports are approved, and generally those would be for diagnostic research in preparation for emergency responses to specific serious exotic disease incursions.

Penalties for the importation of controlled goods without a permit, and for breaches of permit requirements, are severe and may include a fine, imprisonment or both.

Biological Control Act 1984 and Regulations

This Act is administered jointly by the Bureau of Rural Sciences and the Agriculture Industry Division of the Department of Agriculture, Fisheries and Forestry within the framework of the Federal Government's quarantine policy. It provides powers additional to those of the Quarantine Act in order to regulate the release of biological agents for the control of pests, diseases and weeds. It primarily covers issues of compensation for the release of a biological control agent.

Therapeutic Goods Act 1989 and Regulations

The Therapeutic Goods Administration of the Department of Human Services and Health regulates therapeutic goods for human use under this Act. The Act covers the import and export of therapeutic goods and would include pathogenic micro-organisms where these are included in vaccines for human use.

Prior to initial supply for human use products must be entered in the Australian Register of Therapeutic Goods. Vaccines are registrable products and undergo evaluation by the Therapeutic Goods Administration prior to entry in the Register.

Weapons of Mass Destruction (Prevention of Proliferation) Act 1995 and Regulations

The Act is administered by the Department of Defence and complements the existing barriers contained in the Customs Act 1901 and the Customs (Prohibited Exports) Regulations. It prohibits the supply or export of goods, not otherwise controlled by the Customs Act 1901, or to provide services, in circumstances where the goods, or the services, will or may be used in, or assist the development, production, acquisition or stockpiling of biological weapons or their delivery systems. The prohibitions under the legislation apply where the person involved knows or suspects the connection with a biological weapons program.

The Act applies extraterritorially as well as within Australia, covering the activities of Australian citizens or residents, as well as bodies incorporated in Australia. It provides a mechanism for

exporters to obtain written guidance from the Government on the risk of a particular planned transaction contributing to a biological weapons program.

Guidelines to prevent the inadvertent supply of biological weapons applicable plant, equipment, source cultures and expertise.

The Guidelines are a non-statutory, non-proliferation measure, developed by the Department of Foreign Affairs and Trade, to raise the awareness of industry and researchers about the risk of inadvertent involvement in the biological weapons programs of other countries. The Guidelines have been circulated to the biological industry, universities, relevant professional associations and government agencies.

Declaration of Legislation, Regulations and other Measures

Relating to	Legislation	Regulations	Other Measures	Amended Since Last Year
(a) Article 1	Yes	Yes	No	No
(b) Exports of micro-organisms* and toxins	Yes	Yes	Yes	No
(c) Imports of micro-organisms* and toxins	Yes	Yes	No	No

*Micro-organisms pathogenic to man, animals and plants in accordance with the Convention.

7. CONFIDENCE BUILDING MEASURE "F"

Declaration of Past Activities in Offensive and/or Defensive Biological Research and Development Programs

1. Date of Entry into force of the Convention for Australia
5 October 1977
2. Past offensive biological R & D program
No
3. Past defensive biological R & D Program
No, but see the explanatory statement attached.

Attachment to Form F

EXPLANATORY STATEMENT RESEARCH AND DEVELOPMENT PROGRAMS RELATED TO BIOLOGICAL WARFARE AND DEFENCE IN AUSTRALIA SINCE 1 JANUARY 1946

Between 1946 and 1994, Australia had no R&D program specifically aimed at defence against biological and toxin weapons. However, some methods for protection against chemical warfare agents could also be used to protect against biological agents. As Australia has had a longstanding R&D program to develop protection against chemical agents, it had, though only incidentally, also been involved in the development of means capable of offering some protection from biological weapons.

The Position at the end of World War II

During World War II, Australia acquired a protective capability against chemical and biological warfare (CBW), which included the equipping of military units with protective clothing, respirators, detection apparatus and decontamination equipment. This capability was associated with the threat of chemical warfare, as almost all of the major combatants possessed chemical weapons.

Australia had no biological weapons and knew little about them. While a need for some defence against them was generally perceived, no major specific steps were taken to achieve this. The tendency was to regard chemical and biological weapons as a single category of threat, with biological weapons treated as the lesser element.

The Situation from 1945 to the 1970s

In the late 1940s and 1950s Defence committees assessed the need for defence against biological agents. The view adopted was that if biological threat arose, Defence authorities would co-opt staff from public health facilities who were trained in microbiology and biological sciences.

In this Australia received limited information on biological defence from the United States of America, the United Kingdom and Canada through the Technical Cooperation Program (TTCP).

Under TTCP, there is provision for collaborative research on biological defence, but Australia never participated in that research.

During the 1960s and 1970s some research was conducted in an Australian Defence laboratory on toxins and venoms from Australian animals and plants. The research had no biological warfare focus, and was undertaken solely for the purpose of developing expertise in toxicology. The results of the research were published in scientific journals, contributing to the open scientific literature.

The Situation from 1970 to 1994

During this period the policy was to maintain a watching brief on developments in biological warfare defence research so that a competency could be maintained to advise on policy and to give direction to training for the Australian Defence Force. This competency was derived from open literature and from Australia's partners under The Technical Cooperation Program (TTCP). No research on defence against toxins (or other biological warfare agents) was undertaken during this period.

Australia did, however, maintain an R&D program into chemical defence and the protective aspects of this program and some incidental common utility in biological defence.

1994 – Present

In 1994, it was recognised that Australia's knowledge of toxins as warfare agents needed to be strengthened if appropriate advice on defensive measures was to be given to the Australian Defence Force and in support of the country's arms control objectives. Consequently, the Government gave approval to commence a modest program of Research into defence against toxins as warfare agents.

It was also recognised that the Government needed advice on defence against biological weapons if it was to pursue its aims of strengthening the Biological Weapons Convention. Consequently, the policy of maintaining only a watching brief on BW defence research was modified to allow research in BW defence that did not involve pathogenic reproducing organisms. Such activities as epidemiological studies, computer simulations and studies of the detection of toxins could then be undertaken.

In 1998, government approval was given for DSTO to undertake biological defence work with reproducing organisms up to Risk Group 3, with interdepartmental oversight of all such activities. This research allows Australia to play a larger part in those TTCP Panels that deal with BW defence research and obtain access to more information held by our cooperative partners. Australia still maintains its active program into researching protective aspects of defence against chemical agents which could have some incidental common utility in defence against biological weapons.

Australia's most recent statement on Defence policy appeared in November 2000 in the Defence White Paper, *Defence 2000: Our Future Defence Force*. The necessity of BW defence research is contained in the statement:

“Weapons of mass destruction remain a concern for the region's strategic stability. Nuclear, chemical and biological weapons, and their chief means of delivery - ballistic missiles - are all aspects of weapons of mass destruction over which we need to remain vigilant. The trend towards proliferation of weapons of mass destruction globally will require our continued focus.”

8. CONFIDENCE BUILDING MEASURE “G”

Declaration of Vaccine Production Facilities

The only manufacturer licensed by the Australian government to produce vaccines for the protection of humans, (that is, licensed pursuant to the Therapeutic Goods Act 1989), is CSL Limited. The license requires the manufacturer to comply with principles of Good Manufacturing Practice.

Declaration of Vaccine Production Facilities

1. Name of facility

CSL Limited

2. Location (mailing address)

45 Poplar Road, Parkville, Victoria, 3052, Australia.

3. General description of the types of diseases covered

Vaccine products must be entered in the Australian Register of Therapeutic Goods prior to supply of the products for human use. CSL Limited manufactured products which are registered are:

Diphtheria vaccine
Diphtheria & tetanus vaccine
Influenza vaccine
Plague vaccine
Q fever vaccine
Tetanus toxoid vaccine
Triple antigen (diphtheria, tetanus, pertussis)
Cholera Vaccine
Typhoid Vaccine
Malarial Vaccine

Note that Section 3, General Description of the Types of Diseases Covered, CSL Limited **sponsor** the following vaccines according to the Australian Register of Therapeutic Goods (ARTG):

BCG Vaccine
Cholera Vaccine
Diphtheria and Tetanus Vaccine
Diphtheria Vaccine
Influenza Vaccine
Meningococcal Vaccine
Poliomyelitis Vaccine
Tetanus Toxoid Vaccine
Triple Antigen (diphtheria, tetanus, pertussis)
Typhoid Vaccine
Q Fever Vaccine
Plague Vaccine
Yellow Fever Vaccine

Japanese Encephalitis Vaccine
Rabies Vaccine

A sponsor does not necessarily manufacture or have the capability to manufacture the products.