Transmission area

The transmission area (TA) is a declared area option that could be implemented by the affected jurisdiction's chief veterinary officer (CVO). It is an area within the declared RA where there may be a need to implement specific control measures. A TA would be located around IPs and be subject to enhanced surveillance and movement controls. The TA would not need to be circular but could have an irregular perimeter, provided that the boundary is initially an appropriate distance from the nearest IP, DCP, SP or TP.

Control area

The CA is a buffer zone between the RA and the noninfected area.

The CA will be a larger declared area around the RA(s). The CA is subject to lesser surveillance than the RA. Movement controls may be less restrictive, and animals in the CA may be subject to a vaccination program. Initially, it may be the entire state or territory, to limit the risk of disease spreading from the RA(s). The boundary of the CA will be adjusted as confidence about the extent of the outbreak increases.

4.2 Movement controls for rabies

4.2.1 Declared premises

Movement of live, susceptible animals (eg dogs, cats, ferrets) from declared premises is prohibited until quarantine is lifted. (Note: the species directly affected will depend on the specific virus biotype of the outbreak.) Other movements will be subject to permit.

Products or byproducts from rabid animals will not be permitted into the food chain, but will be destroyed. Semen and embryos collected within 14 days before the onset of clinical signs may be destroyed.

Movement of people, vehicles and equipment is unrestricted.

4.2.2 Permit conditions

A specific permit (SpP) is jointly completed by the premises owner or farmer, and the relevant government veterinarian or inspector. A printed version must accompany the movement of the relevant animal(s). It may impose preconditions or restrictions on movements.

An SpP will contain the following:

- ownership or agent details;
- place of origin, place of destination and contact details for both;
- the planned route of travel;
- number, species, and identification or description of animals being moved;
- rabies vaccination status (if vaccinated, details provided, including dates of vaccination); and
- owner or agent declaration that

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- the animal(s) is healthy, with normal appearance and behaviour
- the premises from which the animal is moved is not under quarantine during the movement, which must be direct to the destination
- the animal(s) will be under the direct control of the person making the declaration and to whom the permit is issued, and isolated from contact with other animals.

A general permit (GP) is completed via a web page by the premises owner or farmer, or their agent. A printed version must accompany the movement of the relevant animal(s). It may impose preconditions or restrictions on movements.

A GP will contain the following:

- ownership or agent details;
- place of origin, place of destination and contact details for both;
- the planned route of travel;
- number, species, and identification or description of animals being moved;
- rabies vaccination status (if vaccinated, details provided, including dates of vaccination); and
- owner or agent declaration that
 - the animal(s) is healthy, with normal appearance and behaviour
 - the premises is not under quarantine
 - during the movement, the animal(s) will be under the direct control of the person making the declaration and to whom the permit is issued, and isolated from contact with other animals.

Note: Where a susceptible animal has moved from the CA to the RA, it will not be permitted to return to the CA or to the outside area while restrictions are in place.

For animals transiting declared permises, permit conditions will include the stipulation that the shipment is not permitted to stop, load or unload anything within the declared premises until the final destination. If travel is from one RA to another RA, the animal(s) must not have been moved within the previous 14 days. Conditions on movement are described in Tables 4.1, 4.2 and 4.3.

Table 4.1 Movement controls for live susceptible animals^a

To From	Restricted area	Control area	Outside area
Restricted area	SpP1	Prohibited	Prohibited
Control area	SpP2	GP1	Prohibited
Outside area	Prohibited	GP2	Unrestricted

a Refer to Table 4.3 for conditions on movement for each permit type

Table 4.2 Movement controls for vaccinated animals^a

To From	Restricted area	Control area	Outside area
Restricted area	SpP2	SpP2	Prohibited
Control area	SpP2	Unrestricted	Unrestricted
Outside area	Prohibited	GP3	Unrestricted

a Refer to Table 4.3 for conditions on movement for each permit type

Note: The vaccinated animal(s) must demonstrate an adequate serological response as an indication that the animal has responded to vaccination.

Table 4.3 Specific and general permit conditions

Permit	Conditions	
Specific permit 1 (SpP1)	Travel to be direct to destination and not through a control area or an outside area.	
	Must not stop, load or unload anything during transit.	
Specific permit 2 (SpP2)	Travel to be direct to destination and not through an outside area.	
General permit 1 (GP1)	Must not stop, load or unload anything during transit.	
	No travel through a restricted area is permitted.	
General permit 2 (GP2)	No travel through a restricted area is permitted.	
General permit 3 (GP3)	Travel to be direct to destination.	

Appendix 1 Key features of rabies

Disease and cause

Rabies is a viral encephalitis (brain inflammation) of mammals (including humans), which is almost invariably fatal. It is usually transmitted by bites and has a variable incubation period of days to years. Globally, the disease is of great public health and animal health significance.

Rabies is caused by infection with any of the viruses of the genus *Lyssavirus*, family *Rhabdoviridae*. The genus *Lyssavirus* is classified phylogenetically into seven genotypes, one of which is called rabies virus (genotype 1). Although endemic lyssaviruses are present in bats in Australia and can cause a fatal encephalitis, which is indistinguishable from rabies in humans, Australia is free from rabies virus.

Distribution

Rabies virus occurs throughout most of the rest of the world except New Zealand, Papua New Guinea, Japan, Great Britain and Ireland, and most of the smaller islands of the world. Recently, there has been an outbreak of rabies in the Indonesian islands of Bali and Flores, which previously had been considered free from the disease.

Species affected

Although most, if not all, warm-blooded animals are susceptible to infection with rabies virus, the susceptibility of Australian native animals to rabies virus is unknown. Note that birds, although warm blooded, are not considered an important species in the rabies cycle.

Rabies disease is maintained in various hosts — such as dogs, foxes and other canines, skunks and bats — that are present in most of the world. Rabies virus biotypes are adapted to specific maintenance hosts such as foxes (fox biotype) and dogs (dog biotype). The maintenance host is highly susceptible to its own biotype but not to other biotypes. Therefore, the probability of establishing infection in a different maintenance host is lower and spread is less effective. For example, a fox biotype will spread more easily among foxes than to other animals.

Domestic dogs are a major maintenance host in much of the world, as they were in Europe and North America before the early decades of the 20th century. Dogs still cause the majority of human rabies in the world.

Spread

Rabies virus is transmitted by contamination of a fresh wound with infected saliva. This is usually from the bite of a rabid animal, but can also result from scratches, or licking of abraded skin or mucous membranes. The virus cannot penetrate intact skin.

The incubation period in animals and humans is highly variable. This is generally of the order of 3–8 weeks, but can vary from 2 days to 6 months or even longer.

Key signs

The clinical syndrome can also be highly variable. The clinical signs of rabies can, in many instances, be subtle and even unremarkable. Clinical signs may change as the disease progresses and may be intermittent. Clinical signs can include excitation; paralysis; loss of normal social and behavioural responses (eg domestic animals will often undergo a personality change and wild animals will often lose their natural fear of humans); unusual vocalisation, chewing and eating abnormal objects (eg dirt and stones); and coma leading to death. Unprovoked aggression leading to biting is a significant factor in transmission to people and other animals.

Specific laboratory diagnostic tests are necessary to confirm rabies infection, as neither clinical signs, nor gross or histological pathology are pathognomonic.

Safe and efficacious vaccines are available for human and animal use, both for preexposure and postexposure prophylaxis. Oral vaccination is an important tool to control the spread of rabies in wildlife populations.

Control strategy

Australia's policy is to eradicate rabies in animals and to prevent spread of infection to humans. Destruction of infected animals is necessary because infected animals are the source of spread. Rabies vaccination is an essential part of an eradication program and will be implemented early.

The eradication of an outbreak of rabies will require the collaborative efforts of animal and human health services. Wildlife and other relevant authorities will also be involved in the response.

Summary of policy

Rabies is a notifiable disease in all states and territories of Australia, and is listed by the World Organisation for Animal Health (OIE). The detection of rabies in terrestrial (including bat) hosts in Australia would have significant public health and social impacts, particularly if the disease became widespread, or established in stray or wild animal populations. There may also be ecological and conservation concerns.

Rabies is a Category 1 disease under the government-industry Emergency Animal Disease Response Agreement (EADRA) for cost-sharing arrangements. Category 1 diseases are those for which response costs will be borne 100% by governments.

The default policy is to quickly eradicate rabies to prevent spread to domestic and wild animals, and humans through a combination of strategies including:

- quarantine and movement controls on susceptible animals in declared areas to minimise the spread of infection;
- destruction of infected animals to remove the most dangerous source of viruses;
- quarantine, vaccination or destruction of exposed animals;
- movement control, vaccination or quarantine of suspect animals until their rabies status has been clarified;
- vaccination of domesticated carnivores (eg dogs, cats, ferrets), other selected species and targeted animal groups in declared areas to protect animals against infection and reduce exposure of humans;
- *monitoring* of wild animals and, if disease establishes in those populations, consideration of implementing a vaccination program;
- tracing and surveillance to determine the source and extent of infection, and to provide proof of freedom from the disease;
- *linkage and coordination* of public health and environmental authorities so that they are co-responders; and
- a public awareness campaign to facilitate public cooperation from animal owners and the community, including other government and nongovernment authorities.

Successful implementation of the policy will depend on community cooperation and compliance with all control and eradication measures. Advice about immunisation of humans would be provided by public health authorities.

Population reduction of susceptible species is not appropriate.

Appendix 2 Procedures for surveillance and proof of freedom

Surveillance

Surveillance will be necessary:

- when there is suspicion that rabies has entered Australia;
- during an outbreak to determine the extent of the affected area; and
- when the outbreak has been contained, to ensure freedom from further disease and associated quarantine restrictions.

Sampling to detect the limits of rabies is a very difficult matter. Because rabies is fatal within days of clinical onset, the number of detectably rabid animals in a wild population is always low. The best animals to acquire are those that have recently died or become sick. Road-killed and trapped animals are usually not a good source.

To help monitor the disease, members of the public should be encouraged and assisted to report the following:

- unusual behaviour in wildlife or feral animals;
- any animal bite incidents with details of the offending animal; and
- any deaths of dogs, cats and wildlife.

Wildlife experts must be engaged in the planning, monitoring and surveillance programs. The initial concern is to identify the respective hosts related to the specific biotype. This information will inform movement controls, vaccination strategies and surveillance.

Proof of freedom

Proof of freedom from rabies is not as important for trade as it is for many other emergency animal diseases. However, it does have very important social implications. In the case of urban rabies, declaration of freedom one year after the last case was identified would be reasonable.

With wildlife rabies, a longer period would be required because of the limited sampling ability, which essentially consists of examining dead animals or those with clinical signs. In this case, the time for declaration of freedom would depend on the vaccination regime used during the outbreak. Sufficient time must be allowed for vaccinal antibodies to wane and the designed surveillance to detect residual infection.

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Glossary

Animal byproducts Products of animal origin that are not for consumption but

are destined for industrial use (eg hides and skins, fur,

wool, hair, feathers, hooves, bones, fertiliser).

Animal Health A committee comprising the CVOs of Australia and New Committee Zealand, Australian state and territory CVOs, Animal

Zealand, Australian state and territory CVOs, Animal Health Australia, and a CSIRO representative. The committee provides advice to PIMC on animal health matters, focusing on technical issues and regulatory policy

(formerly called the Veterinary Committee).

See also Chief veterinary officer (CVO), Primary Industries

Ministerial Council (PIMC)

Animal products Meat, meat products and other products of animal origin

(eg eggs, milk) for human consumption or for use in

animal feedstuff.

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The nominated senior veterinarian in the Australian Government Department of Agriculture, Fisheries and Forestry who manages international animal health commitments and the Australian Government's response

to an animal disease outbreak.

See also Chief veterinary officer (CVO)

AUSVETPLAN Australian Veterinary Emergency Plan. A series of technical

response plans that describe the proposed Australian approach to an emergency animal disease incident. The documents provide guidance based on sound analysis, linking policy, strategies, implementation, coordination

and emergency-management plans.

Biotype A designation of viral type, according to the principal

maintenance-host species. There may be multiple variants within a biotype that affect a single species — for example, a skunk rabies biotype, which has three variants, and is

found in skunks.

Chief veterinary officer

Australian Chief

Veterinary Officer

(CVO)

The senior veterinarian of the animal health authority in each jurisdiction (national, state or territory) who has

responsibility for animal disease control in that

jurisdiction.

See also Australian Chief Veterinary Officer

Compensation The sum of money paid by government to an owner for

stock that are destroyed and property that is compulsorily destroyed because of an emergency animal disease. *See also* Cost-sharing arrangements, Emergency Animal

Disease Response Agreement.

Confirmed case A laboratory-confirmed rabies-positive animal.

Consultative Committee on Emergency Animal Diseases (CCEAD) A committee of state and territory CVOs, representatives of CSIRO Livestock Industries and the relevant industries, and chaired by the Australian CVO. CCEAD convenes and consults when there is an animal disease emergency due to the introduction of an emergency animal disease of livestock or other serious epizootic of Australian origin.

Control area

A declared area in which the conditions applying are of lesser intensity than those in a restricted area (the limits of a control area and the conditions applying to it can be varied during an outbreak according to need).

See Section 4.1 for further details

Cost-sharing arrangements

Arrangements agreed between governments (national and states and territories) and livestock industries for sharing the costs of emergency animal disease responses.

See also Compensation, Emergency Animal Disease Response Agreement.

Dangerous contact

animal

A susceptible animal that has been designated as being exposed to other infected animals or potentially infectious products following tracing and epidemiological

investigation.

Dangerous contact premises

A premises that contains a susceptible animal(s) not showing clinical signs but, following a risk assessment, is considered highly likely to contain an infected animal(s) and presents an unacceptable risk to the response if not addressed.

See Section 4.1 for further details

Dead-end host

An infected animal that does not transmit the pathogen to susceptible hosts.

Declared area

A defined tract of land that is subjected to disease control restrictions under emergency animal disease legislation. Types of declared areas include restricted area, control area, infected premises, dangerous contact premises and suspect premises.

See Section 4.1 for further details

Decontamination

Includes all stages of cleaning and disinfection.

Depopulation

The removal of a host population from a particular area to control or prevent the spread of disease.

Destroy (animals)

To kill animals humanely.

Disease agent

A general term for a transmissible organism or other factor that causes an infectious disease.

Disease Watch Hotline

A 24-hour toll-free service for reporting suspected incidences of exotic diseases - 1800 675 888.

Disinfectant A chemical used to destroy disease agents outside a living

animal.

Disinfection The application, after thorough cleansing, of procedures

> intended to destroy the infectious or parasitic agents of animal diseases, including zoonoses; applies to premises, vehicles and different objects that may have been directly

or indirectly contaminated.

Disposal Sanitary removal of animal carcasses, animal products,

materials and wastes by burial, burning or some other

process so as to prevent the spread of disease.

Emergency animal

disease

A disease that is: (a) exotic to Australia, or (b) a variant of an endemic disease, or (c) a serious infectious disease of unknown or uncertain cause, or (d) a severe outbreak of a known endemic disease, and that is considered to be of national significance with serious social or trade

implications.

See also Endemic animal disease, Exotic animal disease

Emergency Animal Disease Response Agreement

Agreement between the Australian and state/territory governments and livestock industries on the management of emergency animal disease responses. Provisions include funding mechanisms, the use of appropriately trained personnel and existing standards such as AUSVETPLAN. See also Compensation, Cost-sharing arrangements

Endemic animal disease

A disease affecting animals (which may include humans)

that is known to occur in Australia.

See also Emergency animal disease, Exotic animal disease

Enterprise See Risk enterprise

Enzyme-linked immunosorbent assay

A serological test designed to detect and measure the presence of antibody or antigen in a sample. The test uses an enzyme reaction with a substrate to produce a colour

change when antigen-antibody binding occurs.

Epidemiological investigation

An investigation to identify and qualify the risk factors associated with the disease.

See also Veterinary investigation

Exotic animal disease

A disease affecting animals (which may include humans)

that does not normally occur in Australia.

See also Emergency animal disease, Endemic animal

disease

Exotic fauna/feral animals

See Wild animals

Fomites

Inanimate objects (eg boots, clothing, equipment, instruments, vehicles, crates, packaging) that can carry an

infectious disease agent and may spread the disease

through mechanical transmission.

General permit (GP) A movement permit completed via a web page by the

premises owner or farmer, or their agent. A printed version must accompany the movement of the relevant animal(s). It may impose preconditions or restrictions on

movements.

Genotype Designation of viral species according to gene sequence, as

agreed by the International Committee on Taxonomy of

Viruses (ICTV).

Incubation period The period that elapses between the introduction of the

pathogen into the animal and the first clinical signs of the

disease.

Index case The first or original case of the disease to be diagnosed in a

disease outbreak on the index property.

See also Index property

Index property The property on which the first or original case (index

case) in a disease outbreak is found to have occurred.

See also Index case

Infected animal A live animal that develops clinical signs consistent with

the disease and is known to have an epidemiological link (eg in a known infected area or area of epidemiological

interest).

Infected premises A defined area (which may be all or part of a property) in

which rabies exists or is believed to exist, or in which the

rabies virus exists or is believed to exist.

See Section 4.1 for further details

Local disease control

centre (LDCC)

An emergency operations centre responsible for the command and control of field operations in a defined area.

Maintenance host The species that principally sustains the virus cycle; it is

highly susceptible to its biotype but less susceptible to other biotypes. Successful control of rabies in the

maintenance host will lead to eradication of the virus cycle

in the ecological community.

Monitoring Routine collection of data for assessing the health status of

a population.

See also Surveillance

Movement control Restrictions placed on the movement of animals, people

and other things to prevent the spread of disease.

National management

group (NMG)

A group established to direct and coordinate an animal disease emergency. NMGs may include the chief executive

officers of the Australian Government, and state or territory governments where the emergency occurs, industry representatives, the Australian CVO (and chief medical officer, if applicable) and the chairman of Animal

Health Australia.

Native wildlife

See Wild animals

Negri bodies

Intracytoplasmic inclusion bodies (intracellular structures that are formed by cells in response to viral infection) that are unique to lyssaviruses. They are found mainly in neurons and occur in 50–70% of rabies-infected brains.

OIE Terrestrial Code

OIE Terrestrial Animal Health Code. Reviewed annually at the OIE meeting in May and published on the internet at: www.oie.int/eng/normes/mcode/a_summry.htm

OIE Terrestrial Manual

OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals. Describes standards for laboratory diagnostic tests, and the production and control of biological products (principally vaccines). The current edition is published on the internet at:

www.oie.int/eng/normes/mmanual/a_summry.htm

Operational procedures

Detailed instructions for carrying out specific disease control activities, such as disposal, destruction,

decontamination and valuation.

Owner

Person responsible for a premises (includes an agent of the owner, such as a manager or other controlling officer).

Premises

A tract of land including its buildings, or a separate farm or facility that is maintained by a single set of services and

personnel.

Prevalence

The proportion (or percentage) of animals in a particular population affected by a particular disease (or infection or positive antibody titre) at a given point in time.

Primary Industries Ministerial Council

(PIMC)

The council of Australian national, state and territory, and New Zealand ministers of agriculture that sets Australian and New Zealand agricultural policy (formerly the Agriculture and Resource Management Council of

Australia and New Zealand). See also Animal Health Committee

Prodrome

An early sign of developing a disease. The prodrome usually starts before any of the usual symptoms of the disease start. An early or premonitory manifestation of impending disease before the specific symptoms begin.

Quarantine

Legal restrictions imposed on a place or a tract of land by the serving of a notice limiting access or egress of specified

animals, persons or things.

Restricted area

A relatively small declared area (compared with a control area) around an infected premises that is subject to intense

surveillance and movement controls. *See* Section 4.1 for further details

Risk enterprise A defined livestock or related enterprise, which is

potentially a major source of infection for many other premises. Includes intensive piggeries, feedlots, abattoirs, knackeries, saleyards, calf scales, milk factories, tanneries, skin sheds, game meat establishments, cold stores,

artificial-insemination centres, veterinary laboratories and hospitals, road and rail freight depots, showgrounds, field

days, weighbridges, and garbage depots.

Sensitivity The proportion of affected individuals in the tested

population that are correctly identified as positive by a

diagnostic test (true positive rate).

See also Specificity

Designation of viral species according to serological Serotype

> reaction against reference lyssavirus antisera. Serotyping as a system of classification for lyssaviruses has been

superseded by genotyping.

Specificity The proportion of nonaffected individuals in the tested

population that are correctly identified as negative by a

diagnostic test (true negative rate).

See also Sensitivity

Specific permit (SpP) A movement permit jointly completed by the premises

> owner or farmer, and the relevant government veterinarian or inspector. A printed version must accompany the movement of the relevant animal(s). It may impose

preconditions or restrictions on movements.

Spillover host Infected hosts that belong to a species that do not normally

> maintain the virus biotype in question (eg a host that is not a maintenance host). Note that spillover host is not synonymous with dead-end host, as spillover hosts may transmit infection to other hosts (although such events are

relatively uncommon). See also Dead-end host

Stamping out The strategy of eliminating infection from premises

> through the destruction of animals in accordance with the particular AUSVETPLAN manual, and in a manner that

permits appropriate disposal of carcasses and

decontamination of the site.

State or territory disease

control headquarters

The emergency operations centre that directs the disease control operations to be undertaken in that state or

territory.

Strain Designation for a virus type derived from a single isolate.

This definition is usually only applied to laboratory

propagated viruses (eg Pasteur strain).

Surveillance A systematic program of investigation designed to

> establish the presence, extent of or absence of a disease, or of infection or contamination with the causative organism. It includes the examination of animals for clinical signs,

antibodies or the causative organism.

Susceptible animals Animals that can be infected with a particular disease.

Suspect animal An animal not known to have been exposed to a disease

agent but showing clinical signs requiring differential

diagnosis.

Suspect premises Temporary classification of premises that contain a

> susceptible animal(s) not known to have been exposed to an infected animal(s), but showing clinical signs that

require an investigation(s). See Section 4.1 for further details

Trace animal An animal not showing clinical signs, but with an

epidemiological link to the disease.

Trace premises Temporary classification of a premises that contains a

> susceptible animal(s), which tracing indicates may have been exposed to an infected animal(s), and requires an

investigation(s).

See Section 4 for further details

Tracing The process of locating animals, persons or other items that

may be implicated in the spread of disease, so that

appropriate action can be taken.

Vaccination Inoculation of healthy individuals with weakened or

attenuated strains of disease-causing agents to provide

protection from disease.

Vaccine Modified strains of disease-causing agents that, when

inoculated, stimulate an immune response and provide

protection from disease.

- attenuated A vaccine prepared from infective or 'live' microbes that

have lost their virulence but have retained their ability to

induce protective immunity.

- inactivated A vaccine prepared from a virus that has been inactivated

('killed') by chemical or physical treatment.

A vaccine produced from virus that has been genetically - recombinant

engineered to contain only selected genes, including those

causing the immunogenic effect.

Variant A distinct taxonomic entity, as applied to a virus. Vector A living organism (frequently an arthropod) that transmits

an infectious agent from one host to another. A biological vector is one in which the infectious agent must develop or multiply before becoming infective to a recipient host. A mechanical vector is one that transmits an infectious agent from one host to another, but is not essential to the life

cycle of the agent.

Veterinary investigation An investigation of the diagnosis, pathology and

epidemiology of the disease.

See also Epidemiological investigation

Viraemia The presence of viruses in the blood.

Virion A single individual particle of a virus.

Wild animals

– native wildlife Animals that are indigenous to Australia and may be

susceptible to emergency animal diseases (eg bats, dingoes,

marsupials).

– feral animals Domestic animals that have become wild (eg cats, horses,

pigs).

- exotic fauna Nondomestic animal species that are not indigenous to

Australia (eg foxes).

Zoning The process of defining disease-free and infected areas in

accord with OIE guidelines, based on geopolitical boundaries and surveillance, in order to facilitate trade.

Zoonosis A disease of animals that can be transmitted to humans.

Abbreviations

AAHL Australian Animal Health Laboratory

AUSVETPLAN Australian Veterinary Emergency Plan

CA control area

CCEAD Consultative Committee on Emergency Animal Diseases

CNS central nervous system

CSIRO Commonwealth Scientific and Industrial Research Organisation

CVO chief veterinary officer

DCP dangerous contact premises

DNA deoxyribonucleic acid

EAD emergency animal disease FAT fluorescent antibody test

GP general permit

IP infected premises

IU international unit

OIE World Organisation for Animal Health

PCR polymerase chain reaction
PEP postexposure prophylaxis

PPE personal protective equipment

RA restricted area
RNA ribonucleic acid
SP suspect premises
SpP specific permit
TA transmission area
TP trace premises

TVR trap-vaccinate-release

UV ultraviolet

WHO World Health Organization

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Video and training resources

See the Summary Document for a full list of training resources.