ABLV BAT STATS

Australian Bat Lyssavirus Report - June 2017

Cases of ABLV infection - January to June 2017

Seven cases of Australian bat lyssavirus (ABLV) infection were reported in bats in Australia between January and June 2017, from Queensland, New South Wales and Victoria (Table 1).

Queensland

Three flying-foxes from Queensland were found to be infected with ABLV. A little red flying-fox (*P. scapulatus*) was submitted due to potentially infectious contact with a pet dog. A spectacled flying-fox (*P. conspicillatus*) presented with neurological signs including unusual hanging posture, difficulty managing food in the mouth and protrusion of the tongue. A grey-headed flying-fox (*P. poliocephalus*) initially presented with a swollen foot and later developed severe aggression, stupor, and inability to eat and drink, and was euthanased. Histopathology findings for these bats included non-suppurative encephalitis with Negri-like bodies, and aspiration pneumonia.

(Continued overleaf)

Black flying-fox Photo: Duncan McCaskill / Flickr (CC)

Table 1: ABLV infection in Australian bats as confirmed by FAT, PCR, IHC and/or virus isolation^

YEAR	NSW	NT	QLD	VIC	WA	SA	Total
1995	0	0	1[#]	0	0	0	1
1996	1	0	9	1	0	0	11
1997	7	1	27[+]	0	0	0	35
1998	1	0	26[+]	0	0	0	27
1999	0	0	6	0	0	0	6
2000	1	0	14	0	0	0	15
2001	0	0	9	1	4	0	14
2002	4	0	10	2	1	0	17
2003	6	0	3	2	0	0	11
2004	5	0	6	1	0	0	12
2005	6	0	5	0	0	0	11
2006	2	0	4	0	0	0	6
2007	6	0	2	0	0	0	8
2008	0	0	0	0	0	0	0
2009	2	0	8[a]	0	0	0	10
2010	0	0	8	0	1	0	9
2011	0	0	4[a]	2	0	0	6
2012	1	0	3	0	0	1	5
2013	3[a]	0	11[a]	0	0	0	14
2014	5	1	14[a]	1	11[a]	0	32[a]
2015	10	1	11[a]	0	0	0	22
2016	5	1	8[a]	1	0	0	15[a]
2017 (to June)	2[a]	0	3	2	0	0	7[a]
Total	**67[a]**	**4**	**192[a]**	**13**	**17**	**1**	**294[a]**

Source: see page 6, 'Australian Bat Lyssavirus Report'.

^ ACT and TAS have not recorded any cases of ABLV infection that satisfy this case definition.

[#] ABLV was first recognised in 1996. A black flying-fox from Townsville, QLD that died in 1995 was subsequently diagnosed with ABLV.

[+] Higher numbers of ABLV infected bats were associated with peak years of testing in 1997-1998.

[a] For some bats, one equivocal and one negative result (FAT/PCR) was recorded. These bats are not included in these figures as they were not confirmed to be ABLV infected.

New South Wales

A grey-headed flying-fox and an unidentified flying-fox (*Pteropus* sp.) from NSW both presented with neurological signs and were found to be infected with ABLV.

Victoria

Two grey-headed flying-foxes infected with ABLV were found in the same location in Victoria. They presented with respiratory distress and were described as 'bloated'.

Human contact

Potentially infectious contact with humans was reported for two of the ABLV infected flying-foxes. In each case appropriate counselling and information were provided by an experienced public health official.

Grey-headed flying-fox Photo: Christopher Charles / flickr (CC)

Why are bats submitted for ABLV testing?

Bats are submitted for ABLV testing for a variety of reasons. A common reason is contact between the bat and a person with the potential for ABLV transmission (e.g. a bite or scratch). Bats are also regularly submitted following contact with a pet dog or cat (Figure 1). Bats displaying unusual or aggressive behaviour or other neurological signs may be tested; these signs can occur with ABLV infection but can also be due to a number of other diseases. Bats that show other clinical signs e.g. respiratory signs, bats that die or are euthanased due to trauma, and bats that are found dead may also be submitted for testing.

Figure 1: ABLV tested bats – Contact with people and pets

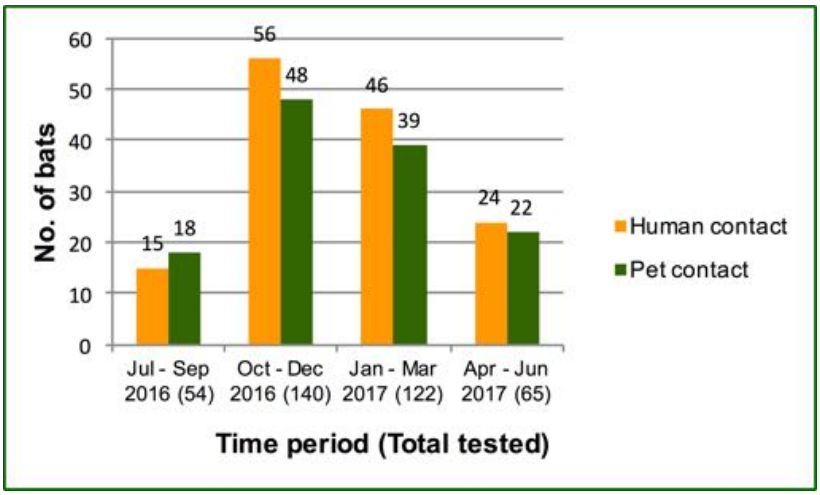

Figure 1 presents reported human-bat contacts which, based on Young & McCall 2010,[1] is an underestimate of the true contact frequency. Not all bat contact is reported, and for the majority of reports the bat is not available for testing. Some of the bats that had human contact also had contact with a pet (not shown in the graph).

ABLV prevalence in bats and public health significance

There are no recent surveys on the prevalence of ABLV in wild bats. Surveys of wild-caught bats in the early 2000s indicated an ABLV prevalence in the wild bat population of less than 1%.[2] ABLV infection is more common in sick, injured and orphaned bats, especially those with neurological signs.[3] People are more likely to have contact with bats that are unwell or debilitated, as these bats may be found on or near the ground.[4]

Gould's long-eared bat
Photo: DSE Victoria / flickr (CC)

ABLV infection causes a range of clinical signs in bats, which can include abnormal behaviour such as uncharacteristic aggression, paralysis or paresis, and seizures. The behavioural changes may increase the likelihood of a person or pet being bitten or scratched when coming in contact with the bat.[5] The likelihood of a person developing ABLV disease from contact with a bat is influenced by a number of factors including whether the bat was ABLV-infected, the type of contact e.g. bite or scratch, and the vaccination status of the person.

ABLV prevalence in bats submitted for testing

Some of the bats that come into contact with people or pets are tested for ABLV. The percentage of ABLV infection in bats submitted for testing is of interest as an indicator of public exposure, however it is also heavily influenced by factors affecting which bats are submitted for testing.

A total of 187 bats were tested for ABLV in Australia between January and June 2017 (Table 2). Seven cases of ABLV infection were reported in bats (3.7% of the bats submitted for testing) (Table 3). As described above, testing of unwell bats is not representative of the whole bat population; consequently these results over-estimate the level of ABLV infection in the wider bat population.

Table 2: ABLV testing by bat species (Jan - Jun 2017)

Species	No. tested	No. ABLV infected
Flying-foxes & blossom bats		
Grey-headed flying-fox (*Pteropus poliocephalus*)	55	4
Black flying-fox (*Pteropus alecto*)	49	0
Little red flying-fox (*Pteropus scapulatus*)	5	1
Spectacled flying-fox (*Pteropus conspicillatus*)	2	1
Flying-fox (*Pteropus* sp.); species not identified	18	1
Eastern tube-nosed bat (*Nyctimene robinsoni*)	1	0
Insectivorous bats (microbats)		
Gould's wattled bat (*Chalinolobus gouldii*)	9	0
Little forest bat (*Vespadelus vulturnus*)	7	0
Lesser long-eared bat (*Nyctophilus geoffroyi*)	7	0
Arnhem long-eared bat (*Nyctophilus arnhemensis*)	3	0
Gould's long-eared bat (*Nyctophilus gouldi*)	2	0
Nyctophilus sp.	2	0
Eastern long-eared bat (*Nyctophilus bifax*)	1	0
Pygmy long-eared bat (*Nyctophilus walkeri*)	1	0
Southern forest bat (*Vespadelus regulus*)	1	0
Eastern broad-nosed bat (*Scotorepens orion*)	1	0
Molossidae sp.	1	0
Vespadelus sp.	1	0
Scotorepens sp.	1	0
Miniopterus sp.	1	0
Microbat; species not identified	19	0
TOTAL	**187**	**7**

Spectacled flying-fox
Photo: Jurgen Otto / Flickr (CC)

Table 3: ABLV infection (%) in bats submitted for testing (Jan - Jun 2017)

	No. tested	No. infected	% infected*
Flying-foxes & blossom bats	130	7	5.4%
Microbats	57	0	0%
TOTAL	**187**	**7**	**3.7%**

* This figure represents the percentage of ABLV infection in the bats tested. The level of ABLV infection in the wider bat population is estimated to be significantly lower.

+ In two bats there was one equivocal and one negative result (FAT/PCR). These bats are not included in these figures as they were not confirmed to be ABLV infected.

Eastern long-eared bats
Photo: Greg Schechter / Flickr (CC)

Bat facts

- **ABLV is a virus** that infects Australian flying-foxes and insectivorous bats.
- **ABLV is closely related to**, but distinct from rabies virus.
- **ABLV can infect people and other mammals with a fatal outcome.** ABLV infection has led to the deaths of three people, two horses and many bats in Australia.
- **Community members should not handle bats.** If you find an injured or sick bat, contact a wildlife care organisation or your local veterinarian.
- People trained in the care of bats **should be vaccinated and always use appropriate protection** when interacting with bats.
- **ABLV is transmitted** by the saliva of an infected animal introduced via a bite or scratch, or by contamination of mucous membranes or broken skin. In the event of a bat bite, scratch or other significant contact, **seek medical attention URGENTLY**. **Bite or scratch wounds** should immediately be washed thoroughly with soap and copious water for approximately 5 minutes and a virucidal antiseptic applied.[+] Bat saliva in the eyes or mouth should be rinsed out immediately and thoroughly with water.
- **For more information** contact your local Public Health agency for advice.
- **ABLV can also be transmitted to other mammals.** Prevent pets and other animals from coming into contact with bats. If an animal might have been bitten or scratched by a bat, **seek urgent veterinary advice.**
- **If you suspect a bat is infected** with ABLV contact your biosecurity authority (department of agriculture or primary industries) for advice about testing.
- **Where to find more information:** See page 5 & 6.

[+] Department of Health. Rabies Virus and Other Lyssavirus (Including Australian Bat Lyssavirus) Exposures and Infections. CDNA National Guidelines for Public Health Units. Canberra. 2014. Available from www.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-abvl-rabies.htm

Clinical signs of ABLV

An ABLV infected bat may display any of these clinical signs:

- Abnormal behaviour such as excitation / agitation / aggression
- Paralysis or paresis
- Unprovoked attacks
- Unusual vocalisation
- Inability to fly
- Convulsions / seizures / tremors

APPARENTLY HEALTHY BATS WITH NORMAL BEHAVIOURS MAY STILL BE INFECTED WITH ABLV

DO NOT ATTEMPT TO HANDLE AN INJURED, UNWELL OR AGGRESSIVE BAT —

REPORT IT TO YOUR LOCAL WILDLIFE SERVICE, VET OR BAT CARER GROUP

Little red flying-fox Photo: John / Flickr (CC)

Recent news and publications

Wildlife rescuers warn public not to touch bats, as suburban sightings increase

2/02/2017 The Sydney Morning Herald

http://www.smh.com.au/nsw/wildlife-rescuers-warn-public-not-to-touch-bats-as-suburban-sightings-increase-20170202-gu3rln.html

"A shortage of food is driving hungry flying foxes into suburban Sydney yards, increasing their risk of injury and death and potentially exposing humans to a deadly virus. With a growing number of flying foxes in need of assistance, wildlife rescue organisation WIRES is urging members of the community not to touch the animals but to phone for help, to protect themselves as well as the flying foxes. A lack of flowering native trees and plants along the coasts of NSW and Victoria has increased the number of flying foxes foraging for food in people's yards and getting tangled in fruit tree netting, with wide-holed nets posing a particular threat. WIRES flying fox coordinator Storm Stanford said volunteers had rescued 160 bats in the past week - 10 times more than during the same period last year….."

Australian Bat Lyssavirus (ABLV) excluded in a grey-headed flying fox in east [Victoria]

30/03/2017 Agriculture Victoria Vet Watch

http://agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds/animal-diseases/vetsource/vetwatch/vet-watch-march-2017/australian-bat-lyssavirus-ablv-excluded-in-a-grey-headed-flying-fox-in-east

"Veterinarians, nurses, wildlife carers or others who anticipate handling bats/flying foxes are at risk of becoming infected with Australian Bat Lyssavirus (ABLV) and should consider pre-exposure vaccination. In November 2016, a male grey headed flying fox (Pteropus poliocephalus) from a colony of 6,000 at Bairnsdale, was presented to an East Gippsland wildlife shelter with hemiparesis (muscular weakness or partial paralysis restricted to one side of the body)…. The flying fox was euthanased and the carcass submitted to the laboratory for exclusion of Australian Bat Lyssavirus (ABLV). Necropsy revealed trauma to the caudal skull with discolouration of subcutaneous tissue and a cranial fracture…. Samples were negative for ABLV…"

Animal Health in Australia – ABLV report

https://www.animalhealthaustralia.com.au/our-publications/animal-health-in-australia-report/

The 2016 Animal Health in Australia report includes a section on Australian bat lyssavirus (2.4.4, p39), as well as a report of disease surveillance in bats in WHA's report on wildlife health surveillance (3.2.5, p70). The 2016 report can be downloaded from the Animal Health Australia website.

Are you interested in bat health?

Wildlife Health Australia collates recent media articles and publications relating to bat health into a monthly **'Bat News'** email. If you would like to receive the monthly email, please contact WHA: admin@wildlifehealthaustralia.com.au

Grey-headed flying-fox Photo: TheB@t / *Flickr* (CC)

Where to find information

Wildlife Health Australia (WHA)

www.wildlifehealthaustralia.com.au

- Wildlife disease fact sheets, including *ABLV* and *Zoonoses (Australian Bats)*
- Resources: News and information on specific diseases and hosts
- Links: Useful links to wildlife and animal health organisations and agencies in Australia and overseas

State/Territory departments of agriculture, health and environment

Visit the agency websites, or see WHA Resources for a summary of available information & links:
Queensland >>
New South Wales & ACT >>
Victoria >>
South Australia, Western Australia & Northern Territory >>

Commonwealth Department of Health

- For current Department of Health information regarding ABLV, see the Series of National Guidelines on Rabies & ABLV: www.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-abvl-rabies.htm
- For vaccination information contact your local or regional Public Health Unit, or see the immunisation handbook: http://www.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home

AUSVETPLAN

For current policy on surveillance and management consult AUSVETPLAN: https://www.animalhealthaustralia.com.au/our-publications/ausvetplan-manuals-and-documents/

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WHA Bat Health Focus Group

This document has been approved by the Wildlife Health Australia (WHA) Bat Health Focus Group. Using a collaborative One Health approach, the Bat Health Focus Group considers bat health issues in relation to the broader context of biosecurity, public health, livestock health and environmental impacts in Australia. Members come from organisations including Australian and State Government departments of agriculture, public health and environment; CSIRO Australian Animal Health Laboratory, universities, the Australasian Bat Society and the Australian Speleological Federation. Members include veterinarians, biologists, ecologists, virologists, epidemiologists and wildlife/bat carers.

For further information please contact WHA on admin@wildlifehealthaustralia.com.au

Australian Bat Lyssavirus Report

This report presents the latest information on Australian bat lyssavirus (ABLV) testing across Australia. Information has been made available by CSIRO Australian Animal Health Laboratory, Janine Barrett PhD thesis 2004 (with permission), QLD Health, Wildlife Health Australia subscribers, zoo & wildlife veterinarians, and State/ Territory WHA coordinators (representatives of Chief Veterinary Officers), and is collated by Wildlife Health Australia. More detailed information is available in the electronic Wildlife Health Information System (eWHIS): www.wildlifehealthaustralia.com.au

References

[1] Young MK & McCall BJ (2010). Potential exposure to Australian bat lyssavirus in South East Queensland: What has changed in 12 years? *Communicable Diseases Intelligence,* 34(3), 334-8

[2] Field HE (2005). "The Ecology of Hendra virus and Australian bat lyssavirus", PhD thesis, The University of Queensland

[3] Barrett J (2004). “Australian Bat Lyssavirus”, PhD thesis, The University of Queensland

[4] McCall B, Field HE, Smith GA, Storie GJ, Harrower BJ (2005). Defining the risk of human exposure to Australian bat lyssavirus through potential non-bat animal infection. *Communicable Diseases Intelligence,* 29(2), 200-203

[5] Animal Health Australia (2009). Disease strategy: Australian bat lyssavirus (Version 3.0). Australian Veterinary Emergency Plan (AUSVETPLAN), Edition 3, Primary Industries Ministerial Council, Canberra, ACT

State/Territory WHA Coordinators

If you would like information on ABLV testing or wish to report a suspected ABLV infected bat please contact your State/Territory Department of Primary Industries/Agriculture or local WHA Coordinator (below).

STATE	CONTACT	PHONE	EMAIL
ACT	Wendy Townsend	(02) 6205 3737	wendy.townsend@act.gov.au
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NT	Cathy Shilton	(08) 8999 2122	cathy.shilton@nt.gov.au
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SA	Celia Dickason	(08) 8389 8840	celia.dickason@sa.gov.au
TAS	Judy Clarke	(03) 6165 4301	judy.clarke@dpipwe.tas.gov.au
VIC	Mark Hawes	(03) 9032 7275	mark.hawes@ecodev.vic.gov.au
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