

ABLV BAT STATS



Australian Bat Lyssavirus Report - December 2017

Cases of ABLV infection - January to December 2017

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

Queensland

Nineteen flying-foxes from Queensland were found to be infected with ABLV in 2017. Eleven of these were from two events where young spectacled flying-foxes (*Pteropus conspicillatus*) were found together in a group and taken into care, and were later diagnosed with ABLV infection.

A female black flying-fox (*P. alecto*) was found hanging low in a tree in the middle of the day and had watery eyes and mild trauma to the wing membranes. A spectacled flying-fox pup brought into care had a wound on its leg and its condition subsequently deteriorated. Three black flying-foxes were submitted for testing due to potentially infectious contact with a person or a pet, with abnormal behaviour reported in one of these cases.

The three cases prior to July (see *ABLV Bat Stats June 2017* for details) were a little red flying-fox (*P. scapulatus*) submitted due to potentially infectious contact with a pet dog, a spectacled flying-fox with neurological signs and a grey-headed flying-fox (*P. poliocephalus*) with a swollen foot that later developed aggression and other neurological signs. (Continued overleaf)



Spectacled flying-fox
Photo: Jurgen Otto / 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	4 ^a	0	19 ^a	3	2	0	28 ^a
Total	69^a	4	208^a	14	19	1	315^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

Four flying-foxes from NSW were found to be infected with ABLV in 2017. One flying-fox (*Pteropus* sp.), found hanging low in a tree, showed neurological signs and was dehydrated. A grey-headed flying-fox and an unidentified flying-fox presented with neurological signs, and a black flying-fox was found dead under a roost as part of a mass mortality event.

Victoria

A grey-headed flying-fox from Victoria was described as angry, had raspy breathing and a suspected miscarriage following trauma. It failed to respond to treatment and was euthanased, and was found to be infected with ABLV. Earlier in the year, two grey-headed flying-foxes infected with ABLV were found in the one location. They presented with respiratory distress and were described as 'bloated'.

Western Australia

Two flying-foxes from Western Australia were infected with ABLV. One was a little red flying-fox that was aggressive and subsequently died. The other flying-fox was found dead and submitted for testing.

Human contact

Potentially infectious contact with humans was reported for nine of the ABLV infected flying-foxes in six separate events. In each case clinical advice was provided by an experienced public health official.



Grey-headed flying-foxes Photo: Shaindlin / 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

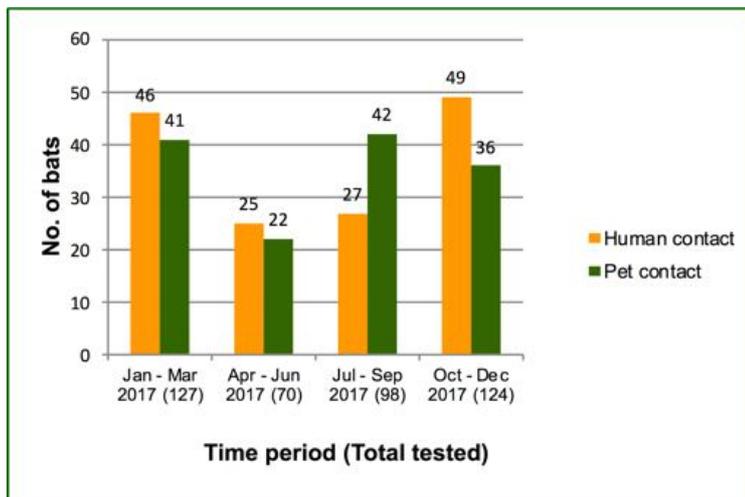
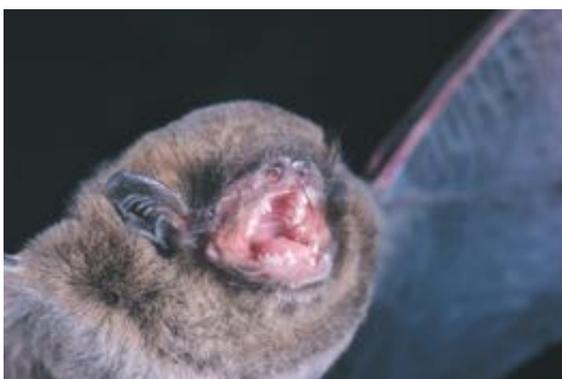


Figure 1 presents reported human-bat contacts which, based on Young & McCall 2010,¹ is an underestimate of the true contact frequency. Not all bat contact is reported, and for the majority of reports the bat is not available for testing. Some of the bats that had human contact also had contact with a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



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, the vaccination status of the person, and whether the person sought medical attention.

Chocolate wattled bat
Photo: R & A Williams © Australian Museum

ABLV prevalence in bats submitted for testing

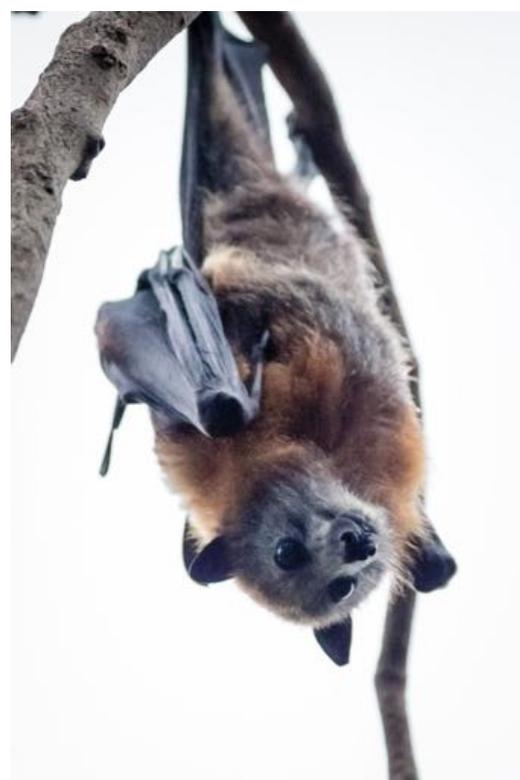
Some of the bats that come into contact with people or pets are tested for ABLV. The percentage of ABLV infection in bats submitted for testing is of interest as an indicator of public exposure, however it is also heavily influenced by factors affecting which bats are submitted for testing.

A total of 419 bats were tested for ABLV in Australia between January and December 2017 (Table 2). This includes twelve insectivorous bats submitted by bat carers as part of an ongoing surveillance project conducted by the Queensland Department of Agriculture and Fisheries. Twenty-eight cases of ABLV infection were reported in bats (6.7% 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 - Dec 2017)

Species	No. tested	No. ABLV infected
Flying-foxes and blossom bats		
<i>Pteropus alecto</i> /Black flying-fox	117	6
<i>Pteropus poliocephalus</i> /Grey-headed flying-fox	91	5
<i>Pteropus conspicillatus</i> /Spectacled flying-fox	32	13
<i>Pteropus scapulatus</i> /Little red flying-fox	18	2
<i>Pteropus</i> sp./Flying-fox; species not identified	50	2
<i>Syconycteris australis</i> /Blossom bat	1	0
<i>Nyctimene robinsoni</i> /Eastern tube-nosed bat	1	0
Insectivorous bats (microbats)		
<i>Chalinolobus gouldii</i> /Gould's wattled bat	15	0
<i>Nyctophilus geoffroyi</i> /Lesser long-eared bat	12	0
<i>Vespadelus vulturnus</i> /Little forest bat	8	0
<i>Scotorepens greyii</i> /Little broad-nosed bat	6	0
<i>Ozimops lumsdenae</i> /Northern free-tailed bat	5	0
<i>Nyctophilus</i> sp.	5	0
<i>Nyctophilus arnhemensis</i> /Arnhem long-eared bat	4	0
<i>Nyctophilus gouldi</i> /Gould's long-eared bat	4	0
<i>Miniopterus australis</i> /Little bent-wing bat	2	0
<i>Scotorepens orion</i> /South-eastern broad-nosed bat	2	0
<i>Vespadelus darlingtoni</i> /Large forest bat	2	0
<i>Chalinolobus morio</i> /Chocolate wattled bat	1	0
<i>Macroderma gigas</i> /Ghost bat	1	0
<i>Miniopterus</i> sp.	1	0
<i>Molossidae</i> sp.	1	0
<i>Nyctophilus bifax</i> /Eastern long-eared bat	1	0
<i>Nyctophilus walkeri</i> /Pygmy long-eared bat	1	0
<i>Scotorepens</i> sp.	1	0
<i>Vespadelus pumilus</i> /Eastern forest bat	1	0
<i>Vespadelus regulus</i> /Southern forest bat	1	0
<i>Vespadelus</i> sp.	1	0
Microbat; species not identified	33	0
Bat - unidentified	1	0
TOTAL	419	28

In addition, 31 oral swabs from live bats were tested for ABLV for research purposes during 2017, and a further 268 were tested during 2016 and retrospectively reported. All tested negative. Testing of live bats is not reliable for ruling out ABLV infection.



Grey-headed flying-fox
Photo: Russell Charters / Flickr (CC)

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

	No. tested	No. infected*	% infected*
Flying-foxes & blossom bats	310	28	9.0%
Microbats	108	0	0%
Bats - unidentified	1	0	0%
TOTAL	419	28	6.7%

* 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 five 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 horseshoe bat
Photo: GB Baker © Australian Museum

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-foxes Photo: Paislie Hadley / Flickr (CC)

Recent news and publications

Australian Immunisation Handbook - Updates to the 10th Edition

List of updated advice: <http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home~handbook10-updates~handbook10-updates-01-08-2017-1>

Chapter 4.16 Rabies and other lyssaviruses (including Australian bat lyssavirus): <http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home~handbook10part4~handbook10-4-16>

"Updates to the 10th edition of The Australian Immunisation Handbook were published on 1 August 2017, including Chapter 4.16 Rabies and other lyssaviruses (including Australian Bat Lyssavirus)."

NSW Health warning on disease risk from bats

6/01/2017 NSW Health

http://www.health.nsw.gov.au/news/Pages/20171106_00.aspx

"With the start of the local bat breeding season, NSW Health is urging people to avoid contact with bats that could carry serious diseases... "Lyssavirus infected bats have been found in most parts of NSW, including in metropolitan Sydney. During the bat birthing season in October and November, we find people are more likely to come in contact with bats, as young and miscarried pups may be on the ground, prompting people to pick them up or attempt to rescue them...."

NSW Zoonoses Annual Report 2016 - ABLV

NSW Health: "...This report focuses on notifications of selected zoonoses in humans to NSW public health authorities, animal health events investigated in collaboration with the NSW Department of Primary Industries, and post-exposure treatments delivered for the prevention of Australian Bat Lyssavirus."

<http://www.health.nsw.gov.au/Infectious/reports/Pages/zoonoses-reports.aspx>

"Rabies and other lyssaviruses (including Australian Bat Lyssavirus)": page 7

ABLV in "Animal health events notified to NSW Health": page 10

Potential exposure to Australian bat lyssavirus is unlikely to prevent future bat handling among adults in South East Queensland

Young MK et al (2017). Potential exposure to Australian bat lyssavirus is unlikely to prevent future bat handling among adults in South East Queensland. *Zoonoses and Public Health*, 65(1), e237-42

<http://onlinelibrary.wiley.com/doi/10.1111/zph.12437/abstract>

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/>

ABLV BAT STATS



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
NSW	Claire Harrison	(02) 6391 3490	claire.harrison@dpi.nsw.gov.au
NT	Cathy Shilton	(08) 8999 2122	cathy.shilton@nt.gov.au
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SA	Allison Crawley	(08) 8429 0866	Allison.Crawley@sa.gov.au
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