

# NSW Zoonoses Annual Report 2015



**Health**  
Communicable  
Diseases

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## Overview

A zoonosis is any disease or infection that is naturally transmissible from vertebrate animals to humans. Worldwide, at least 61% of all human pathogens are zoonotic organisms, and during the past decade up to 75% of emerging pathogens were zoonoses.<sup>1</sup>

This report focuses on:

- Notifications of selected zoonoses in humans to NSW public health authorities during 2015
- Animal health events investigated in collaboration with the NSW Department of Primary Industries (DPI) and Local Land Services (LLS) requiring a public health response
- Post-exposure risk assessments and treatments delivered for the prevention of rabies and Australian Bat Lyssavirus (ABLV).

Beyond the scope of this report are numerous zoonoses transmitted through food, water or vectors – many of which are notifiable to NSW public health and animal health authorities ([Appendix 2](#)).

Surveillance findings on enteric and other zoonoses are routinely published in other reports available via the [NSW Health website](#). A wealth of further information and resources are also available ([Appendix 3](#)).

### 2015 Highlights

- We observed a substantial increase in Q fever and brucellosis notifications in people, continued low rates of leptospirosis, a continued decline in psittacosis, and no new anthrax, avian/animal influenza, Hendra virus or rabies/ABLV human infections (Table 1, overleaf)
- Sporadic cases of anthrax, brucellosis, Hendra virus and ABLV were reported in NSW animal populations, requiring a public health follow-up to investigate exposures and prevent human infections
- Slightly lower numbers of rabies and ABLV post-exposure assessments and prophylactic treatments were reported in 2015; however, the continued burden on the health system is highlighted by large exposure incidents and continued high numbers of overseas exposures.

**Table 1: Incidence of selected zoonotic diseases in humans notified in 2015 compared to the previous 5 years (2010–2014), by Local Health District (LHD), NSW<sup>1</sup>**

LHD	n (Rate per 100,000 <sup>2</sup> )							
	Brucellosis		Leptospirosis		Psittacosis		Q fever	
	5yr mean 2010-2014	2015	5yr mean 2010-2014	2015	5yr mean 2010-2014	2015	5yr mean 2010-2014	2015
Central Coast	0	0	<1 (0.12)	0	2 (0.49)	0	2 (0.55)	0
Far West	0	0	0	0	0	0	2 (6.43)	5 (16.21)
Hunter New England	2 (0.23)	4 (0.44)	4 (0.43)	4 (0.44)	2 (0.20)	0	44 (4.97)	59 (6.48)
Illawarra Shoalhaven	0	0	1 (0.26)	1 (0.25)	<1 (0.15)	0	11 (2.73)	7 (1.75)
Mid North Coast	0	0	1 (0.57)	2 (0.93)	<1 (0.10)	0	20 (9.48)	24 (11.17)
Murrumbidgee	0	0	5 (1.73)	0	<1 (0.28)	1 (0.34)	7 (2.43)	21 (7.19)
Nepean Blue Mountains	0	0	<1 (0.06)	1 (0.27)	4 (1.08)	0	1 (0.34)	0
Northern NSW	<1 (0.07)	1 (0.34)	5 (1.72)	1 (0.34)	<1 (0.21)	0	32 (11.11)	35 (11.79)
Northern Sydney	<1 (0.02)	0	<1 (0.07)	1 (0.11)	<1 (0.07)	0	2 (0.28)	4 (0.44)
South Eastern Sydney	0	1 (0.11)	2 (0.19)	2 (0.22)	<1 (0.09)	0	2 (0.19)	2 (0.22)
South Western Sydney	1 (0.11)	2 (0.21)	<1 (0.04)	1 (0.11)	1 (0.11)	0	4 (0.45)	5 (0.53)
Southern NSW	0	0	<1 (0.30)	0	<1 (0.10)	0	9 (4.64)	16 (7.81)
Sydney	0	1 (0.16)	<1 (0.07)	1 (0.16)	<1 (0.03)	0	<1 (0.13)	1 (0.16)
Western NSW	0	0	1 (0.51)	2 (0.72)	2 (0.58)	1 (0.36)	20 (7.16)	83 (29.78)
Western Sydney	<1 (0.09)	2 (0.22)	<1 (0.02)	1 (0.11)	2 (0.18)	0	1 (0.14)	0
<b>NSW total</b>	<b>4 (0.06)</b>	<b>11 (0.14)</b>	<b>22 (0.30)</b>	<b>17 (0.22)</b>	<b>15 (0.21)</b>	<b>2 (0.03)</b>	<b>158 (2.15)</b>	<b>262 (3.44)</b>

<sup>1</sup> There were no notifications of anthrax, avian or animal influenza, Hendra virus infections, or Rabies/ABLV virus infections in humans in NSW during this period.

<sup>2</sup> For population data source see [Appendix 1](#).

## Brucellosis

### Key points:

- 11 confirmed cases notified in 2015
- 6 locally acquired human infections, predominantly from pig hunting
- 5 overseas acquired from consuming unpasteurised dairy or animal exposures

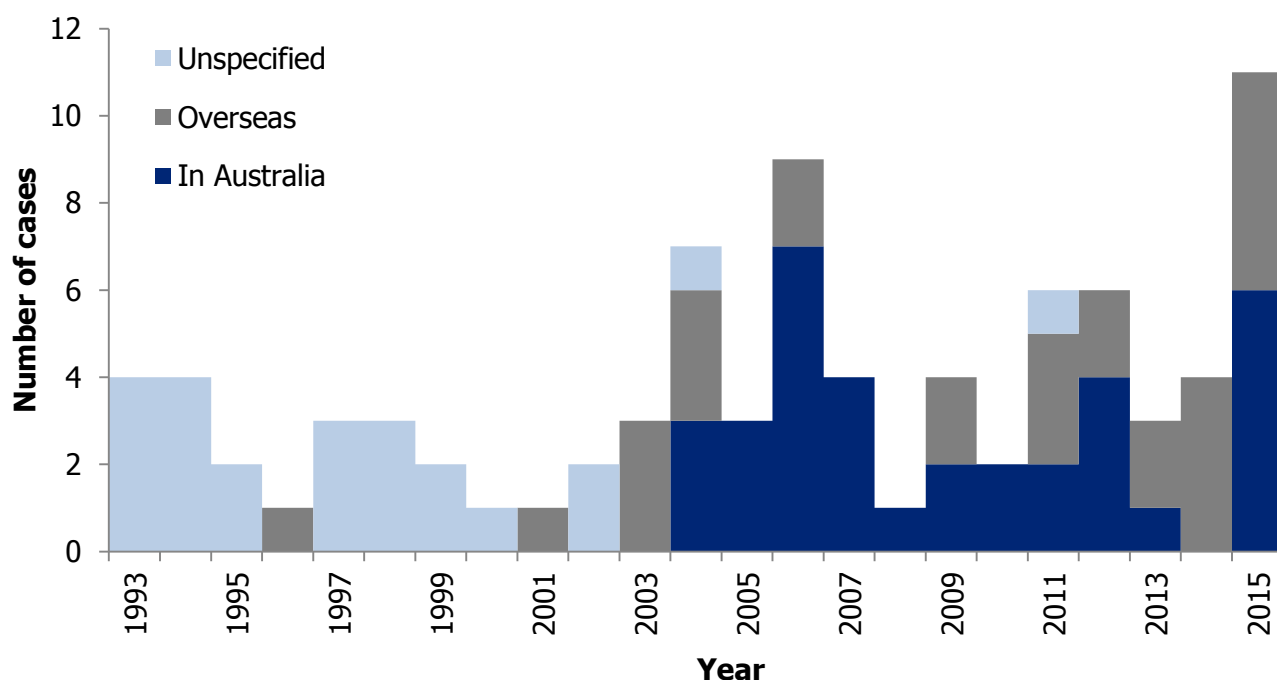
During 2015, 11 (0.14 per 100,000) confirmed cases of brucellosis were notified in NSW – the highest on record (Figure 1).

Of six cases acquired in NSW, all were adult males aged between 26–66 years (mean: 45.3 ± 17.4 years) of non-Aboriginal background. Four cases reported hunting feral pigs and having direct contact tissues and/or body fluids prior to onset – all within the Moree area, northern

Hunter New England LHD. The other two cases did not have immediately apparent exposure sources but reported animal exposure within the years prior to onset through work or recreational activities. Of two cases confirmed by culture, both were typed as *Brucella suis*.

Of five NSW residents who acquired the infection overseas during 2015, all were acquired in Middle Eastern countries, namely: Lebanon (n=2), Iraq (n=1), Jordan (n=1), and Saudi Arabia (n=1). Cases were aged between 15–57 years (mean: 38 ± 20 years), and three were male. Exposure history was available for four cases, of which two reported consuming unpasteurised dairy products (milk and cheese), and two reported direct contact with animals prior to illness onset. *Brucella melitensis* was isolated in all five cases.

**Figure 1: Trends in brucellosis notifications by place of acquisition, NSW, 1993–2015**



# Leptospirosis

## Key points:

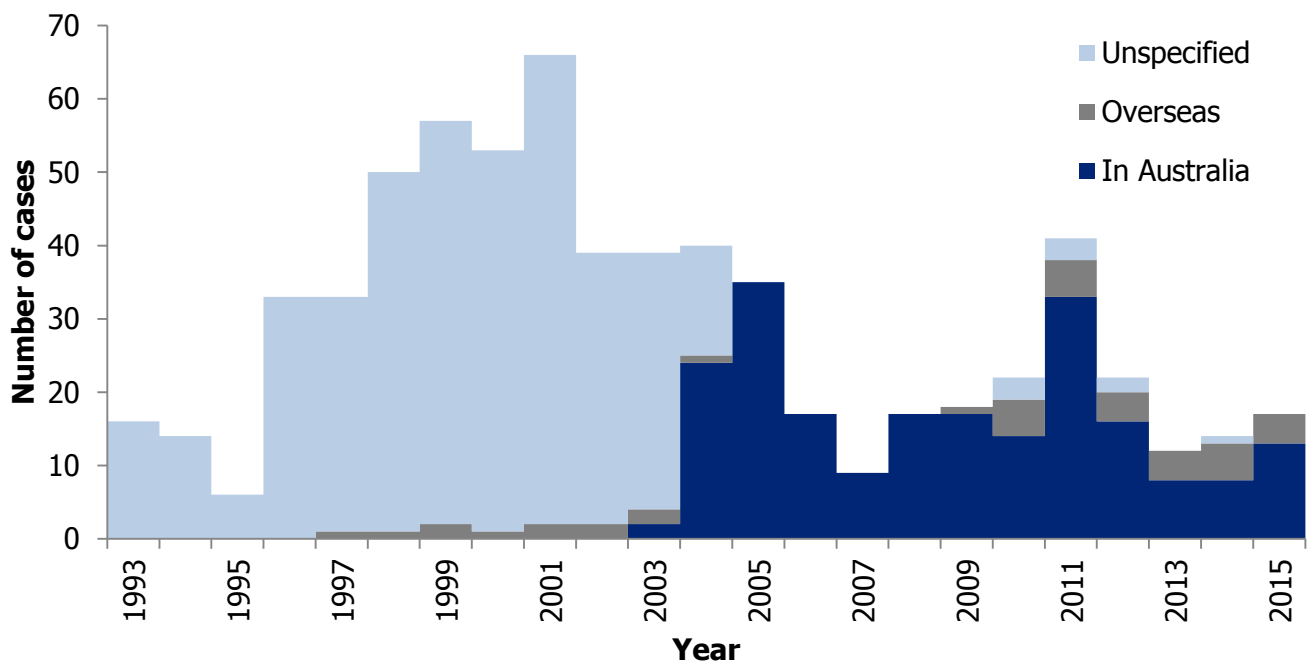
- 17 confirmed cases notified in 2015
- 13 infections acquired in NSW following direct or indirect exposure with urine or other body fluids from infected farm animals or rodents
- 4 infections acquired during overseas travel

During 2015, 17 (0.22 per 100,000) confirmed cases of leptospirosis were notified in NSW. This is comparable to rates observed during recent years, but substantially lower than 2011 and prior to 2006 (Figure 2). Cases were predominately male (88%, n=15), ranging in age from 17–79 years (mean: 45 ± 17 years). No cases identified as Aboriginal.

Of 13 cases that acquired infection within NSW, interviews to identify exposures were completed for 12 cases. Exposures recalled by cases included: working or living on a farm (n=10), contact with farm animals (n=9), contact with potentially contaminated soil (n=5) or water (n=2), contact with rodents or environments potentially soiled by urine from rodents (n=4), and ingesting water from potentially contaminated sources such as tank/bore water (n=3).

All four travel-related cases notified during 2015 were acquired in a developing country and reported contact with water potentially contaminated with urine from infected animals; one case additionally reported direct contact with wild animals.

**Figure 2: Trends in leptospirosis notifications by place of acquisition, NSW, 1993–2015**



## Psittacosis (Ornithosis)

### Key points:

- Notification rates declining
- 2 confirmed cases notified in 2015 – one exposed to racing pigeons and the other only incidental exposures to dead parrots

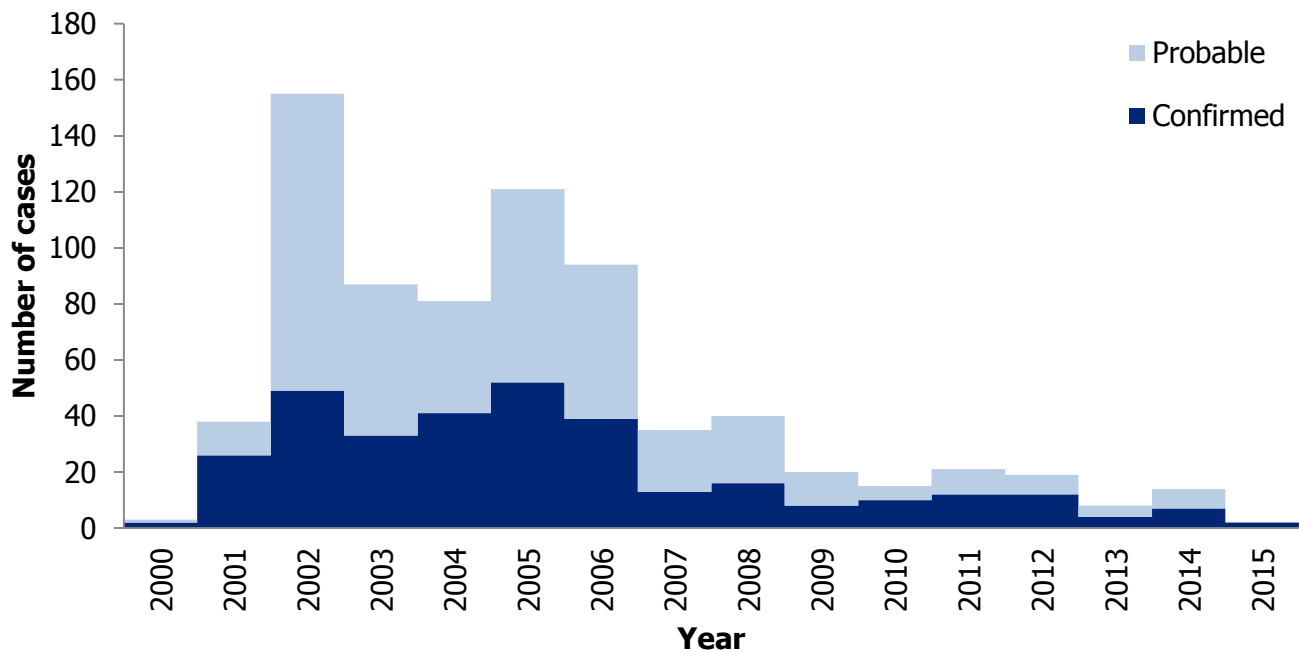
Since surveillance began in 2000, relatively high case incidence rates and sporadic outbreaks were observed from 2002–2006 in NSW, followed by a steady decline (Figure 3).

During 2015, two confirmed cases of psittacosis were notified in NSW (overall rate: 0.04 per 100,000). Both cases were non-

Aboriginal, adult males who reported exposure to birds prior to onset. The first cases reported contact with asymptomatic pet racing pigeons but reported only handling the birds while using personal protective equipment.

The second case reported a number of dead wild parrots on his property within the months preceding onset with no direct contact with the birds; however, may have had incidental exposures during lawn mowing and garden maintenance.

**Figure 3: Trends in psittacosis notifications by case classification, NSW, 2000\*–2015**



\*Psittacosis notifications are not available prior to 2000.



# Q fever

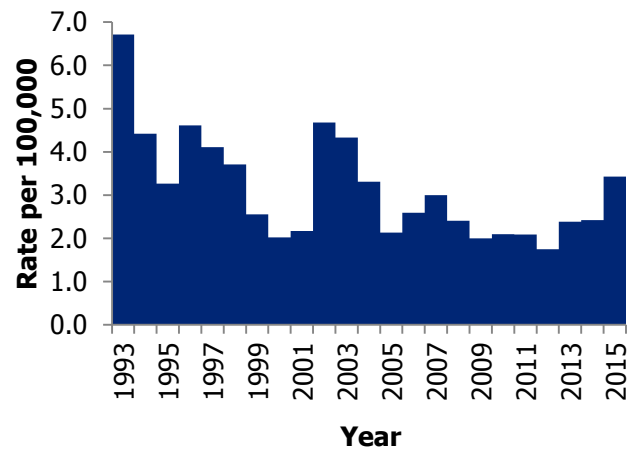
## Key points:

- 262 confirmed cases notified during 2015; a significant increase on previous years
- Adult males, Aboriginal people and populations in regional/remote areas were disproportionately affected
- 12 cases were reported in children aged <16 years
- Most adult cases (63%) worked in a known high-risk occupation
- Most cases (84%) were exposed to animals or animal products, tissues or discharges

During 2015, 262 (3.4 cases per 100,000) confirmed cases of Q fever were notified in NSW. This was significantly higher than the previous five years (annual mean: 158 cases, 2.2 cases per 100,000), and comparable to the rate observed in 2004 during the National Q fever Management Program (NQFMP) (Figure 4).

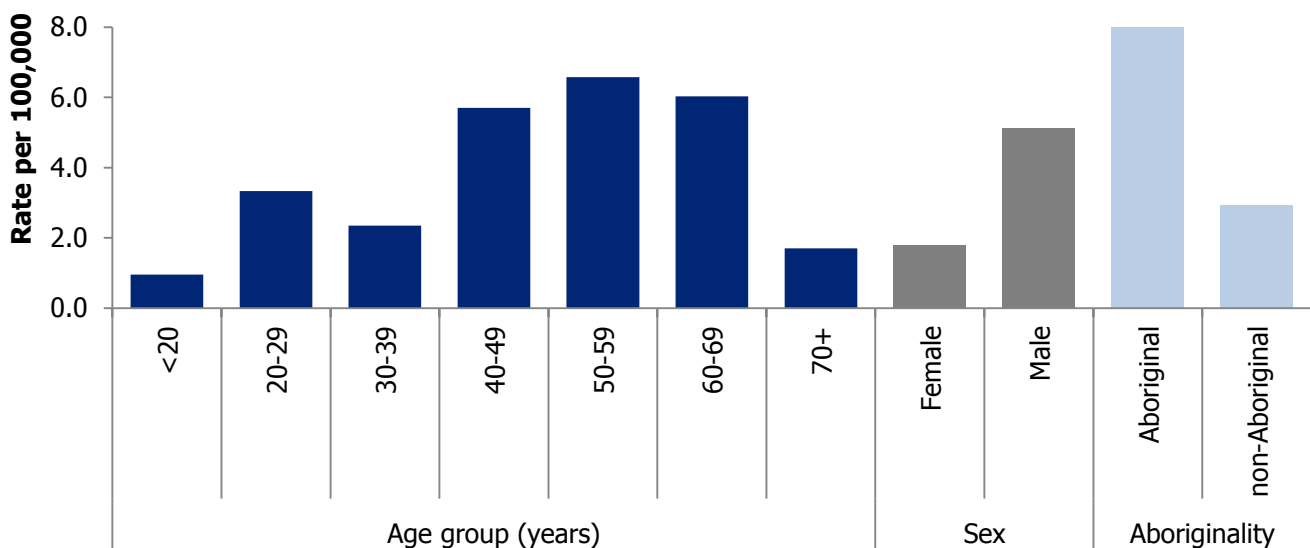
The majority of cases notified in 2015 were males (n=193, 74%), ranging in age from 7–85 years (mean: 46 ± 16 years) (Figure 5).

**Figure 4: Trends in Q fever notifications, NSW, 1993–2015**

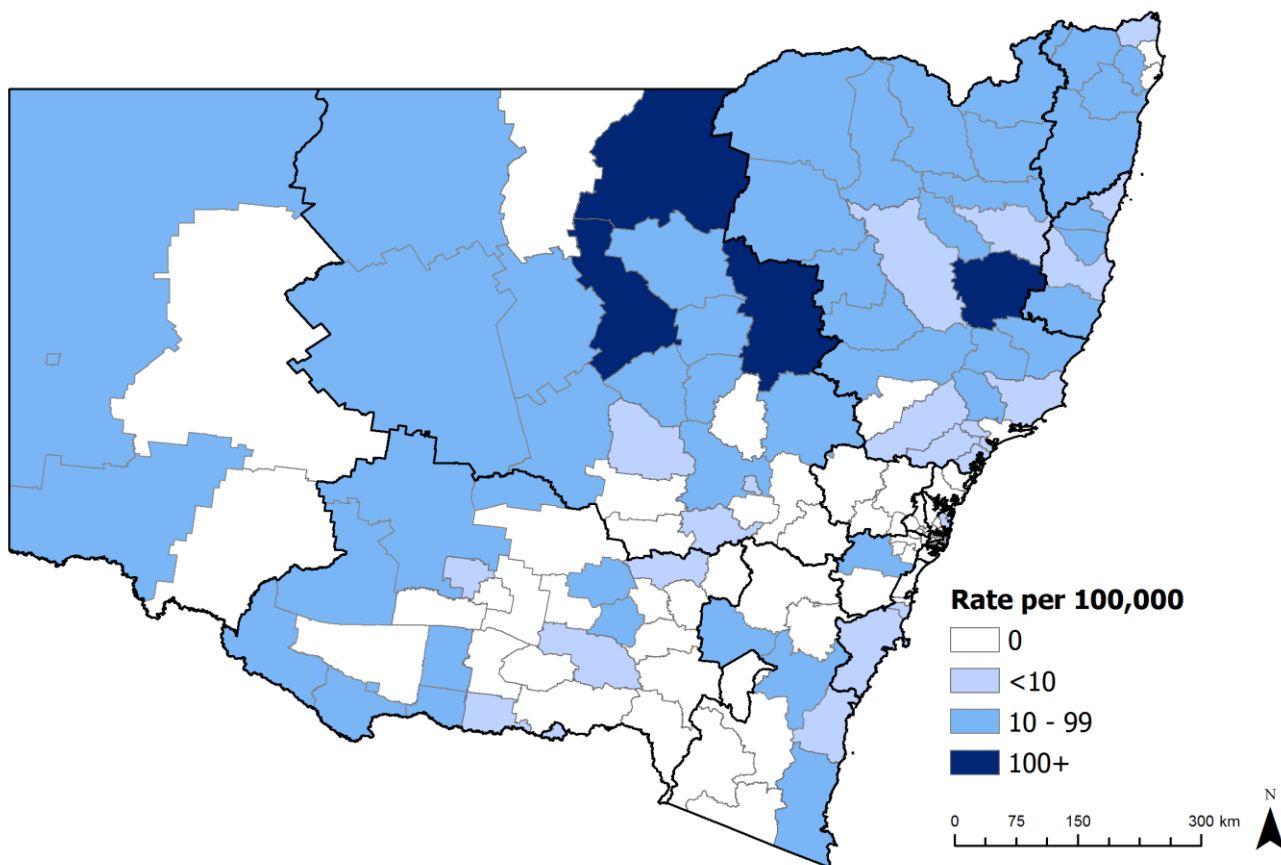


Aboriginal status was reported for 89% (n=233) of cases, with a higher rate of disease observed in Aboriginal NSW residents (n=18, 7.99 cases per 100,000) when compared to non-Aboriginal residents (n=215, 2.91 cases per 100,000).

**Figure 5: Q fever incidence rate by age, gender and Aboriginality, NSW, 2015**



**Figure 6: Q fever population incidence rate by Local Government Area (LGA), NSW, 2015**



The highest incidence of disease was observed in regional or remote areas of the state (Figure 6) – particularly the Local Government Areas of Walgett Shire (n=17, 250 per 100,000) and Warrumbungle Shire (n=22, 225 per 100,000), which both experienced clusters in 2015.

Occupations were reported for 219 cases aged  $\geq 16$  years in 2015. Of these 63% (n=138) worked in high-risk occupations, including: farmers or adults resident on a farm (n=91), abattoir and other meat industry workers (n=19), stockyard worker or stock transporters (n=12), shearers or wool classers (n=11), veterinary or wildlife workers (n=4), and hunters (n=1). The remainder of adult cases (37%,

n=81) were retired, unemployed or worked in a non-animal related occupation. Twelve infections were reported in children under 16 years-old, including four children resident on a farm.

Exposure history was available for 229 cases in 2015. Of these, most (84%, n=193) reported one or more types of exposure to animals or animal products, including: direct contact with animal tissues or discharges (n=87), and/or other or unspecified exposures to livestock or their products (n=106). The remainder reported only incidental exposures to native wildlife (9%, n=20), or no discernible exposure to livestock or wildlife (7%, n=16).

## Rabies and other lyssaviruses (including ABLV)

### Key points:

- No new human cases
- 497 exposures were assessed in 2015
- 303 (62%) exposures occurred overseas, of which 76% were in Southeast Asia and 49% were from monkey bites/scratches
- Of 188 (38%) local exposures to bats, 30% occurred in persons who worked with (or cared for) bats, 78% were from flying-foxes, and ABLV was detected in 10 bats
- 1,543 doses of vaccine and 1,548 vials of HRIG were distributed in 2015

During 2015, while there were no human infections of classical rabies or ABLV, a total of 497 potential exposures to lyssaviruses were notified to public health units. A decline in reported exposure events has been observed since 2013 (Figure 7).

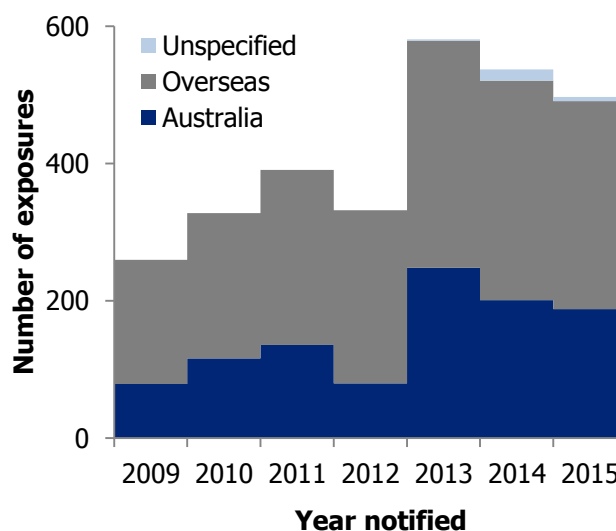
**Table 3: Potential overseas exposures to rabies and other lyssaviruses by location, NSW, 2015**

Location	n	%
Southeast Asia:	230	76
Indonesia (incl. Bali)	134	44
Thailand	65	21
Other*	31	10
India, Nepal, Sri Lanka, Bangladesh	29	10
China or Taiwan	16	5
Americas	9	3
Middle East	8	3
Africa	7	2
Papua New Guinea or New Caledonia	3	1
Eastern Europe	1	0
<b>Total</b>	<b>303</b>	<b>100</b>

\* Cambodia, Laos, Malaysia, Myanmar, Philippines or Vietnam

Most exposures occurred overseas (n=303, 62%). Of these, a slightly higher proportion of these were in females (n=163, 54%) and travellers aged 16–39 years accounted for the greatest proportion (n=175, 58%) – mean age: 32 ± 16 years. The vast majority of overseas exposures occurred in Southeast Asia (n=230, 76%); predominantly Indonesia or Thailand (Table 3). Most incidents involved bites or scratches from monkeys (n=146, 49%), followed by dogs (n=108, 36%) and cats (n=27, 9%).

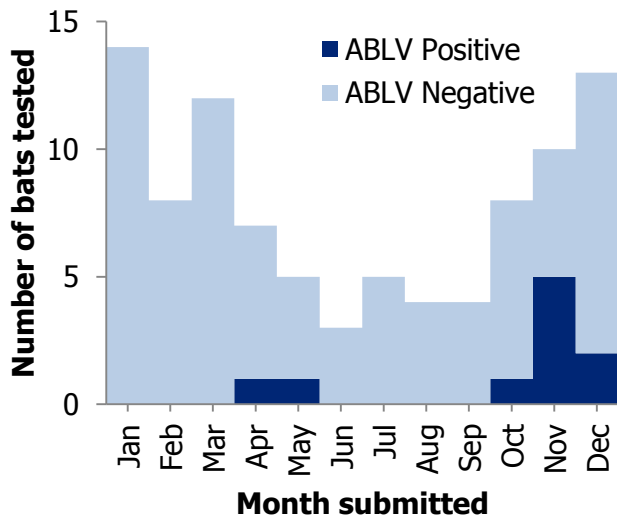
**Figure 7: Trends in local and overseas rabies and other lyssaviruses exposures, NSW, 2009–2015**



Of 188 local exposures reported during 2015, almost half (46%, n=87) occurred in persons aged 40–69 years – mean age: 46 ± 21 years. Males and females were equally affected. Occupation was reported for 169 exposures, of which 30% (n=50) were considered high risk (incl. wild life workers/volunteers, veterinarians, etc.) and the remainder were members of the general public. All local exposures were from bats or their saliva – the majority were megabats or flying-foxes (n=146, 78%).

Of 93 bats submitted for testing during 2015, ten tested positive for ABLV. Submissions for testing peaked during the warmer months of 2015 (Figure 8). Eight of the ten ABLV positive bats were reported during October–December 2015, corresponding to bat birthing season (typically October–November each year).

**Figure 8: Number of bats tested for ABLV by month, NSW, 2015**

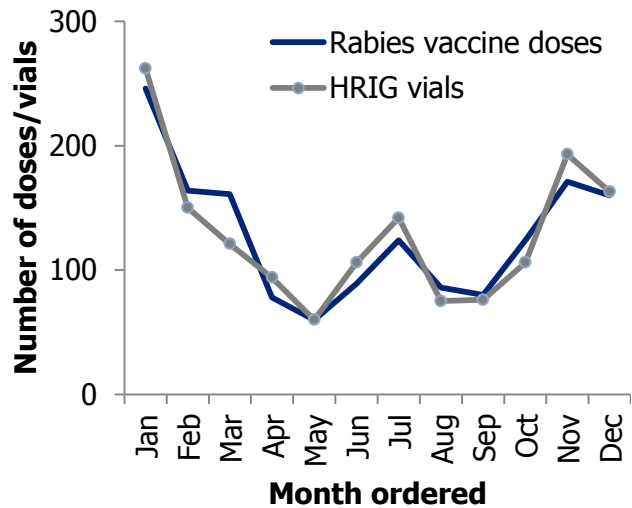


During November 2015, a large public health response ensued when a bat carer brought a juvenile flying-fox to a function, and allowed several attendees (including children) to play with the animal. This and other bats under their care subsequently died, prompting testing which confirmed ABLV infection. Public health units followed-up over 100 individuals who may have

been exposure to the infected animals, of which 21 had high risk exposures and were provided with post-exposure treatment.

Overall during 2015, NSW Health authorities distributed 1,543 doses of rabies vaccine and 1,548 vials of human rabies immunoglobulin (HRIG) to prevent infections, at a cost of approximately AUD 456,000. Distribution rates peaked in January, July and November 2015; corresponding with peak periods of overseas travel and bat birthing seasons (Figure 9).

**Figure 9: Distribution of rabies vaccine and human rabies immunoglobulin (HRIG) by month, NSW, 2015**



## Outbreaks

Four clusters of Q fever were notified and investigated during 2015:

**Lightning Ridge, Western NSW LHD:** 14 confirmed cases between December 2014 and March 2015. The majority of cases were town residents, who did not work in a high-risk occupation, and did not participate in any high-risk activities prior to their illness onset. A source of this outbreak could not be confirmed. Investigations suggest infections may have occurred via inhalation of aerosols or dust contaminated by *Coxiella burnetii*, dispersed through the town from either an unidentified animal facility or from excreta of native wildlife or feral animals. Other possible routes of transmission considered included transmission from companion animals or from tick vectors.

**Baradine, Western NSW LHD:** Four confirmed cases from the same family, who were likely to have been exposed to contaminated

shearing equipment and clothing belonging to a non-vaccinated sibling who worked as a shearer, or from contaminated equipment stored or transported in the family car.

**Coolah, Western NSW LHD:** Two confirmed cases: a veterinarian (reportedly previously exposed to Q fever with reactive skin test during pre-vaccination screening) and a farmer (not vaccinated) both exposed during calf birthing.

**Picton, South Western Sydney LHD:** Eight suspected cases in non-vaccinated workers at an abattoir, of which seven were confirmed. Illness onsets occurred in three separate clusters during November 2014 (n=3), January 2015 (n=1), and July–September 2015 (n=4). Q fever vaccination and preventive measures in the facility were addressed in collaboration with SafeWork NSW.

## Animal health events notified to NSW Health

### Key points:

- Sporadic cases of ABLV, anthrax, brucellosis and Hendra virus infection were reported in animal populations in 2015

Notifications of selected animal health events to DPI or LLS are rapidly communicated to NSW public health authorities. Depending on the disease and nature of the event, public health units (in collaboration with DPI, LLS and other relevant parties) will investigate human exposures and advise appropriate actions; which may include monitoring for symptoms and referral for laboratory testing and treatment. While animal health authorities work to confirm the diagnosis through laboratory tests at the Elizabeth Macarthur Agriculture Institute (EMAI) and the Australian Animal Health Laboratory (AAHL) and control spread in animal populations, public health authorities will take steps to prevent human infections, such as providing education to reduce risk and post-exposure treatment, where indicated.

During 2015, NSW authorities collectively responded the following animal health events:

**ABLV** – 93 bats were submitted for testing following one or more reasons: human exposures, exposure of a pet, or signs suggestive of infection. ABLV infection was detected in ten flying foxes, of which three were submitted following known significant human exposures. All the infected flying foxes were either unwell or moribund with seven showing aggression or neurological signs (see also [Rabies and other lyssaviruses](#)).

**Anthrax** – was investigated on 114 occasions as the cause of death of stock, of which three outbreaks were confirmed; all

involving cattle deaths. The first outbreak occurred in March 2016 near Rankin Springs and included one cattle death. The other two outbreaks occurred in November near Cumnock and Cookamidgera, and resulted in nine and 19 cattle deaths, respectively. Vaccination of all susceptible stock was undertaken shortly after infection was confirmed. In all three events, public health units determined all potential human exposures to be low-risk and did not require prophylactic treatment.

**Brucellosis** – samples from 301 dogs were submitted for testing during 2015 (a six-fold increase compared to 2014). Of these, 33 were serologically positive and another 19 were inconclusive; sero-positivity rate similar to the previous year. The majority of positive cases originated from the north west of NSW and had been used in pig hunting activities. Euthanasia was recommended for all positive dogs. Where owners do not elect to euthanase infected dogs, private veterinarians provide advice on infection control to prevent transmission to humans and other animals.

**Hendra virus infection** – Of 348 reports of sick or dead horses in NSW during 2015, Hendra virus infection was confirmed twice; each involving a single adult horse. The first occurred near Murwillumbah in June 2015, and the second near Lismore in September 2015. Neither horse was vaccinated against Hendra virus. In both instances, dead horses were buried, the property was placed into quarantine, and there was minimal human contact with the affected animal.

There were no incidents or clusters of avian influenza, leptospirosis, psittacosis or terrestrial rabies reported in NSW animal populations during 2015.

# Appendices

## Appendix 1: Methods

**Human disease notifications:** Under authority of the *NSW Public Health Act 2010*, NSW Health receives notifications of communicable diseases from laboratories, doctors, and hospitals. Cases are recorded on the NSW Notifiable Conditions Information Management System (NCIMS) – a confidential, internet based system used by NSW public health units – and categorised based on the agreed [national cases definitions](#).<sup>2</sup>

This report reflects notifications of anthrax, avian and other animal influenza virus infections, brucellosis, Hendra virus infections, leptospirosis, psittacosis, Q fever, and rabies and other lyssaviruses (including ABLV), recorded in NCIMS on or shortly after 24 April 2016. Unless specified otherwise, cases were categorised by calendar year based on calculated onset date (i.e. the date of symptoms onset, or whichever occurred first between dates of specimen collection and notification).

Incidence rates were calculated using mid-year estimated resident population (ERP) projections published by the Secure Analytics for Population Health Research and Intelligence (SAPHaRI) group, NSW Ministry of Health. This includes LGA based ERPs derived from estimates published by the NSW Department of Planning and Environment (prior to 2015)<sup>3</sup> with projections from 2015 produced by using cubic spline interpolation, and Aboriginal/non-Aboriginal ERPs derived from estimates published by the Australian Bureau of Statistics.<sup>4</sup>

The degree to which notification data reflect the true incidence of disease varies between conditions, as many people with infectious disease will not be diagnosed with the disease or notified. For some conditions (e.g. Q fever),

where infections maybe asymptomatic or are not diagnosed, notifications likely underestimate the true incidence of disease. Notification data are also subject to retrospective changes – data are only accurate at the time of extraction.

**Animal disease notifications:** Members of the public, veterinarians or animal owners or managers are legally obligated to notify certain suspected animal diseases under [legislation](#). This report reflects selected conditions prone to infect humans, notified to the DPI during 2015, and conveyed to public health authorities. This information is not intended to be an accurate reflection of overall incidence of disease in the animal population, but rather an indication of the scope of diseases upon which the DPI and NSW Health collaborate to prevent transmission to the public.

**Rabies post-exposure treatment:** Doctors contact public health units for advice on the management of potential exposures to lyssaviruses. Where indicated, public health units arrange for the ordering, urgent delivery and administration of rabies vaccine and HRIG to prevent infection – a service provided free of charge to NSW residents. These events are routinely captured in NCIMS, and records of rabies vaccine and HRIG distribution are maintained by the Immunisation Unit.

Costs estimates provided in this report were based on the total number and costs of treatments distributed and courier distribution costs. This does not take into account any salaries, consumables, consultation costs, other incidental costs borne by NSW Health or costs associated with testing bats.

## Appendix 2: Zoonoses notifiable to NSW human and/or animal health authorities

Disease	Status in NSW	Human health notification	Animal health notification	Emergency animal disease
Anaplasmosis	endemic		✓	
Anthrax	sporadic	✓	✓	✓
Arboviral infections	varies by virus	✓	some	some
Babesiosis	sporadic		✓	
Borna disease	exotic		✓	
Brucellosis - <i>Brucella suis</i>	sporadic	✓	✓	
Brucellosis - NEC	exotic	✓	✓	✓
Camelpox	exotic		✓	
Campylobacteriosis	endemic	*		
Crimean-Congo haemorrhagic fever	exotic	✓	✓	
Cryptosporidiosis	endemic	✓	✓	
Cysticercosis – porcine, bovine	exotic/sporadic		✓	
Encephalitides (tick-borne)	exotic		✓	✓
<i>Escherichia coli</i> - STEC and HUS	endemic	✓		
Getah virus infection	exotic		✓	
Giardiasis	endemic	✓		
Glanders	exotic		✓	
Hendra virus infection	sporadic	✓	✓	✓
Hepatitis E	sporadic	✓		
Influenza - avian influenza	exotic	✓	✓	✓
Influenza - swine/equine influenza	sporadic	✓	✓	✓
Johne's disease (Paratuberculosis)	sporadic		✓	
Leishmaniasis	exotic		✓	
Leptospirosis	endemic	✓		
Listeriosis	endemic	✓		
Louping ill	exotic		✓	
Lyssavirus - ABLV	endemic	✓	✓	✓
Lyssavirus - Rabies	exotic	✓	✓	✓
Menangle virus infection	exotic		✓	✓
Nairobi sheep disease virus	exotic		✓	✓
Newcastle disease	exotic		✓	✓
Nipah virus infection	exotic	✓	✓	✓
Pigeon paramyxovirus	sporadic		✓	
Plague	exotic	✓		
Psittacosis (Ornithosis) / Chlamydiosis in birds	endemic	✓	✓	
Q Fever	endemic	✓		
Rift Valley fever	exotic	✓	✓	✓
Salmonellosis - NEC	endemic	✓		
Salmonellosis - <i>Salmonella</i> Enteritidis	sporadic	✓	✓	✓
SARS CoV	exotic	✓		
Transmissible spongiform encephalopathy	exotic	✓	✓	✓
Trichinellosis	exotic		✓	✓
Trypanosomiasis / Chagas disease	exotic		✓	
Tuberculosis - Bovine ( <i>Mycobacterium bovis</i> )	exotic		✓	✓
Tuberculosis - other mammal or avian	sporadic		✓	✓
Tularaemia	exotic	✓	✓	✓
Turkey rhinotracheitis (avian metapneumovirus)	exotic		✓	
Vesicular stomatitis	exotic		✓	✓
Viral haemorrhagic fever, human – NEC	exotic	✓		
Warble-fly myiasis	exotic		✓	✓
Wesselsbron disease	exotic		✓	

NEC: Not elsewhere classified. \* *Campylobacter* notifications anticipated to commence in NSW late-2016.



## Appendix 3: Additional sources of information

See NSW Health's [Infectious Diseases website](#) for further information for the general public and health professionals on all human health conditions presented in this report, as well as other notifiable conditions. This includes NSW-specific data and information, factsheets and control guidelines on:

- [Anthrax](#)
- [Avian influenza](#)
- [Brucellosis](#)

- [Hendra virus](#)
- [Leptospirosis](#)
- [Psittacosis](#)
- [Q fever](#)
- [Rabies and ABLV](#).

See the DPI's [Animal health and diseases](#) and [Animal Biosecurity Zoonoses](#) websites for further information for general public, veterinarians and animal health authorities about zoonoses in animals.

## Contributors and acknowledgements

This report was developed by staff of the Enteric and Zoonotic Diseases Unit and the Immunisation Unit, Communicable Diseases Branch, Health Protection NSW in collaboration with the NSW DPI.

Protecting the health of the community is a collaborative effort, involving public health units, clinicians, laboratory scientists, affected communities, and other government and community-based organisations. We sincerely thank all those involved for the role they played in NSW in 2015.

## References

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