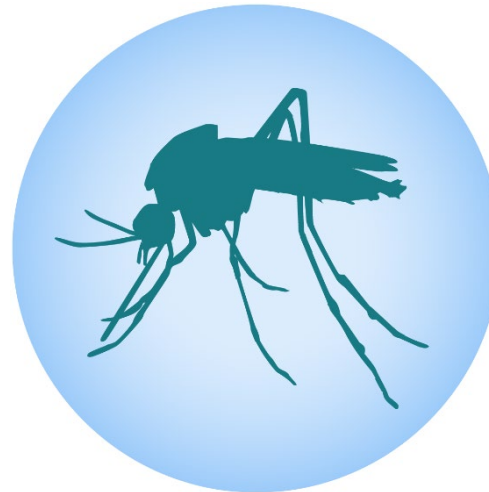
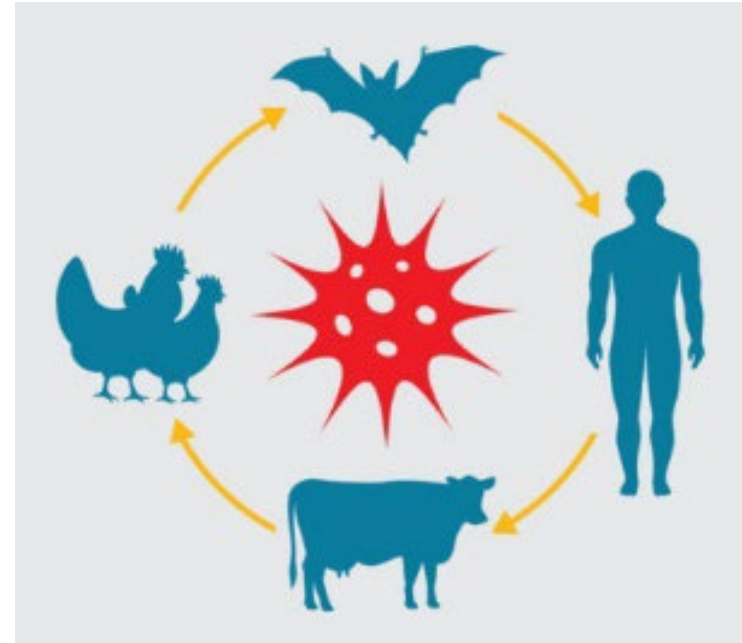




# Zoonotic Risks and their Management

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Dr Kirsten Williamson  
Public Health Physician  
Hunter New England Population Health



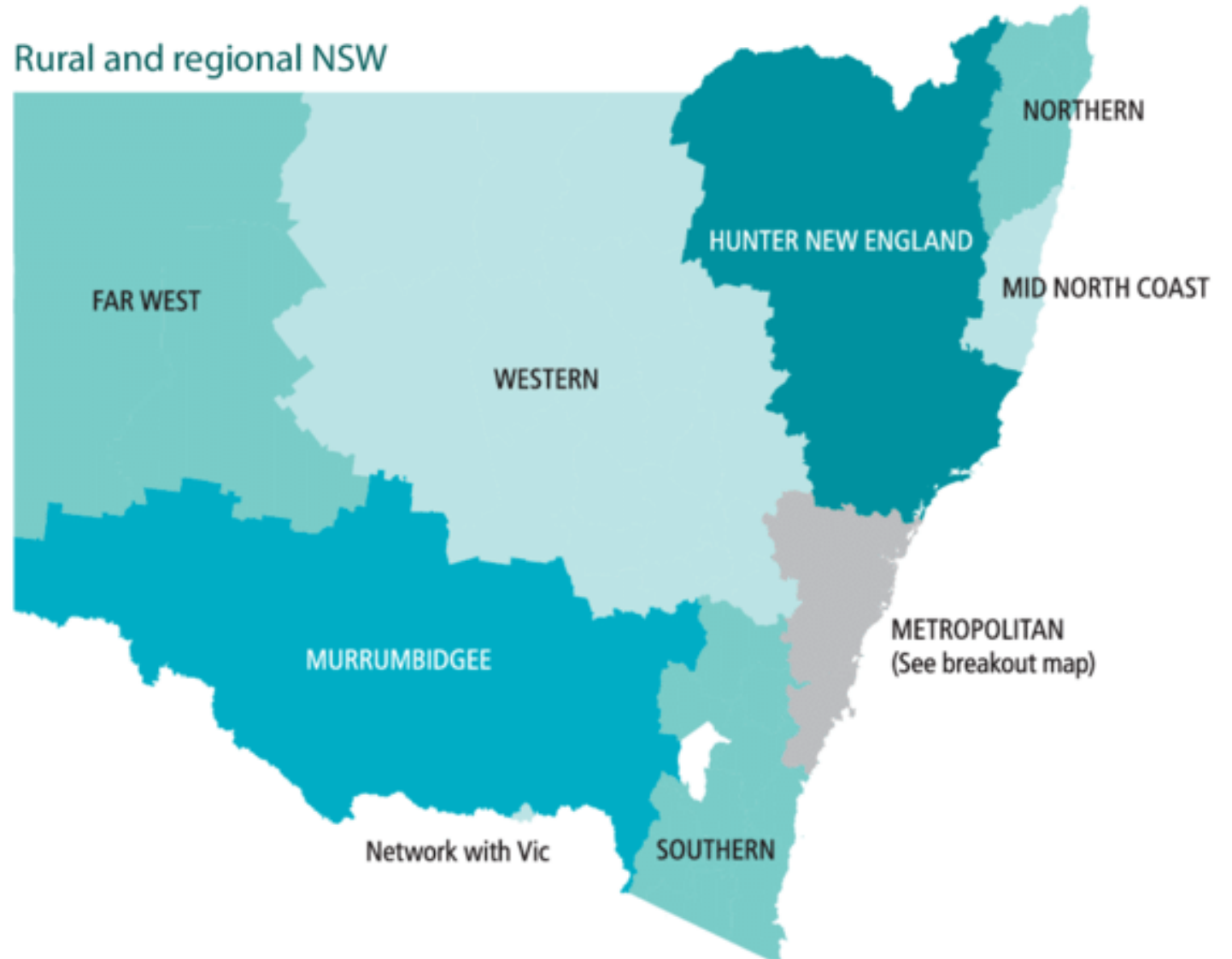
# What is the Public Health Unit?

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Protecting & improving the health of people & communities

Detecting, preventing & controlling diseases, outbreaks & threats to human health

Notifiable conditions & environmental health issues under public health legislation & regulations



# What are Zoonoses?

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Infectious diseases transmitted from animals to humans

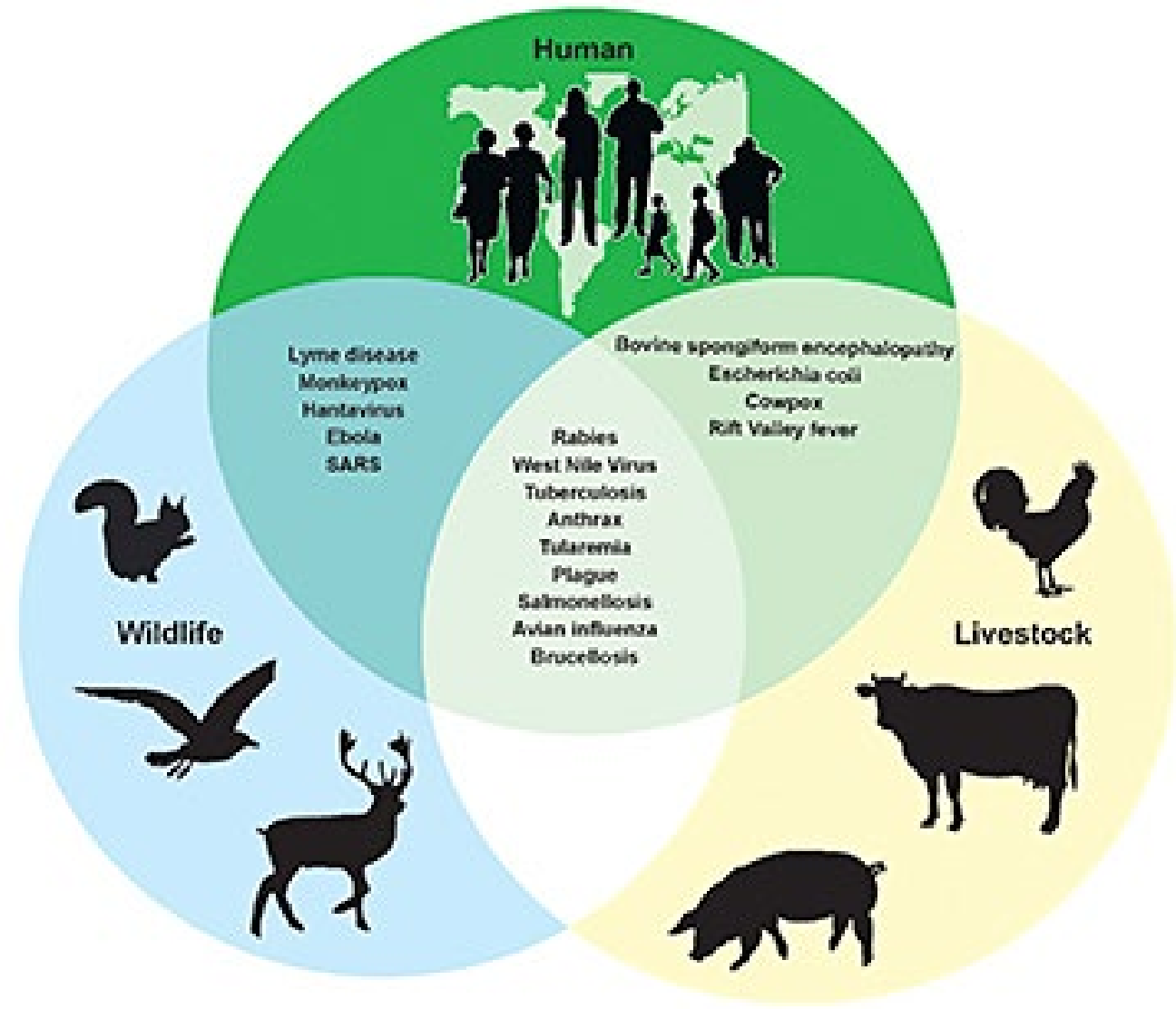
75% of new human diseases

Disrupt production and trade

Often Biosecurity issue

Difficult to eradicate

Needs 'One Health' approach



# Hendra virus

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First identified in Hendra, 1994

88 confirmed, 20 probable equine cases to date

7 human cases, 4 of which were fatal

All cases had high level exposure to infected horse secretions or tissues

Vaccine available for horses

Monoclonal antibody as PEP for humans with high level exposure

**Deadly equine virus in farmer's body: experts**



**KILLER BUG STOPS RACES**

ALL race meetings in south-east Queensland have been cancelled until at least next Thursday and horse owners ordered not to move their animals as authorities try to track down the mystery disease which has killed 11 thoroughbreds at two Brisbane stables.

At least \$3 million would have been bet on the 16 meetings cancelled, by Racing Minister Bob Gibbs yesterday.

Mr Gibbs ordered the tough quarantine restrictions in a bid to limit the spread of what is believed to be a highly-infectious virus.

The sudden deaths of 10 racehorses at trainer Vic Rail's inner Brisbane stable at Hendra and one at neighbouring trainer John Fitzgerald's stable sent south-east Queensland's racing community into panic yesterday.

# Hendra virus transmission

## SPECIES-TO-SPECIES TRANSMISSION



# Hendra virus

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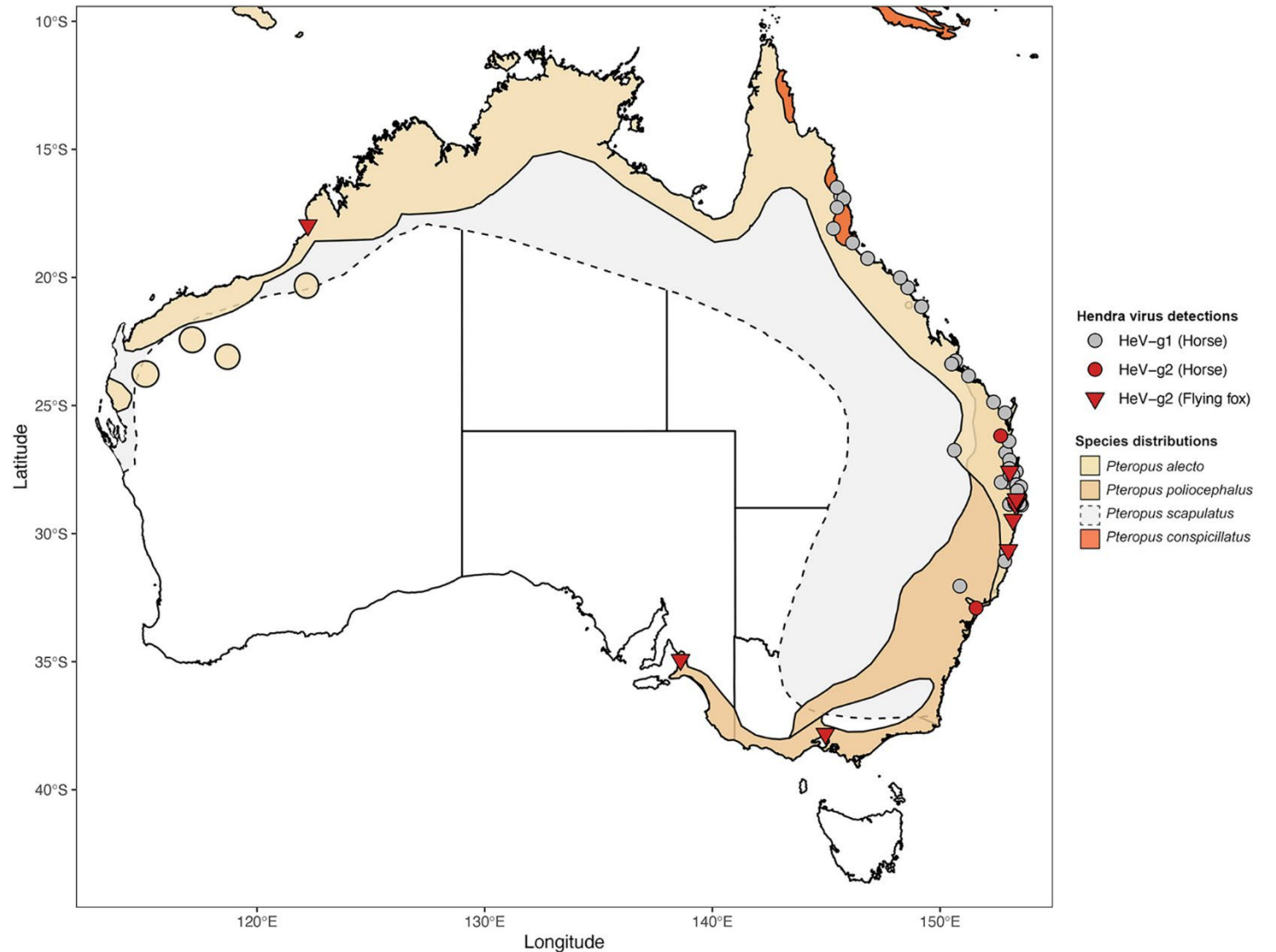
## TAKE HOME POINTS

Avoid contact with ill horses

Contact LLS or Emergency  
Animal Disease Hotline

Managed under Biosecurity  
Act by DPI, LLS & Health

Restrict access & full PPE





# Q Fever

Flu-like illness from *Coxiella burnetii*

Hepatitis, pneumonia, chronic infection

Cattle, sheep, goats plus others

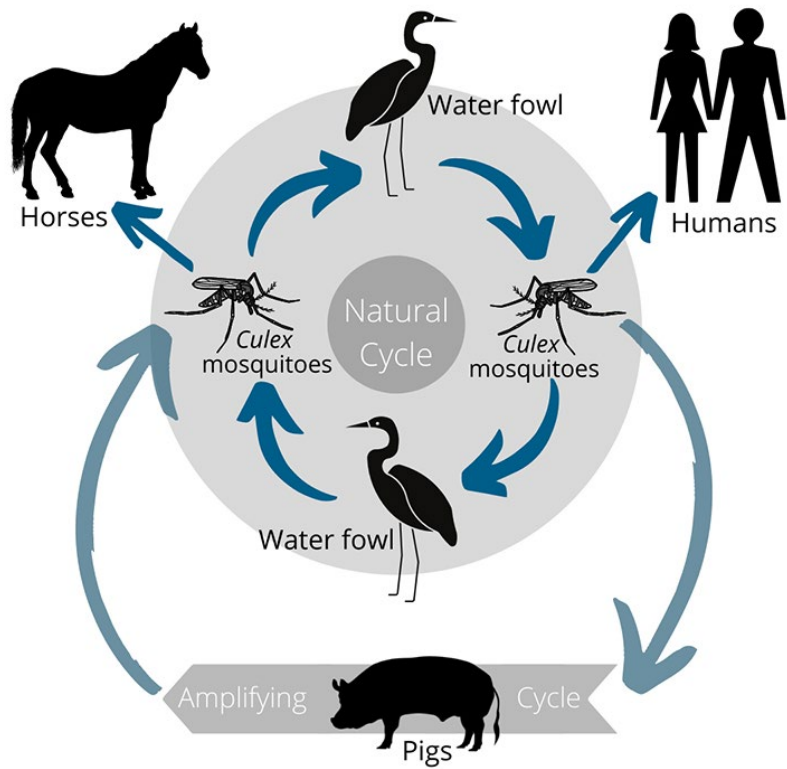
Infection by inhalation of infectious particles or direct contact on broken skin

## TAKE HOME POINTS

Vaccine recommended for high risk occupations or exposures

Hand hygiene, P2 mask, gloves, clothing





# Japanese Encephalitis

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Arbovirus endemic to Asia and Torres Strait  
 Emerged in southern Australia in Feb 2022  
 Transmitted by freshwater *Culex* mosquitoes  
 Most human infection asymptomatic or mild  
 1 / 250 develop encephalitis

## TAKE HOME POINTS

Prevent mosquito bites  
 Free vaccination for high risk occupations & LGAs



# Murray Valley Encephalitis

Arbovirus closely related to JEV

Endemic to northern Australia and PNG

Re-emergence in NSW & VIC in 2023

Transmitted by *Culex* mosquitoes

Water birds are primary hosts

Most human infection asymptomatic or mild but 1 / 800 develop encephalitis

## TAKE HOME POINTS

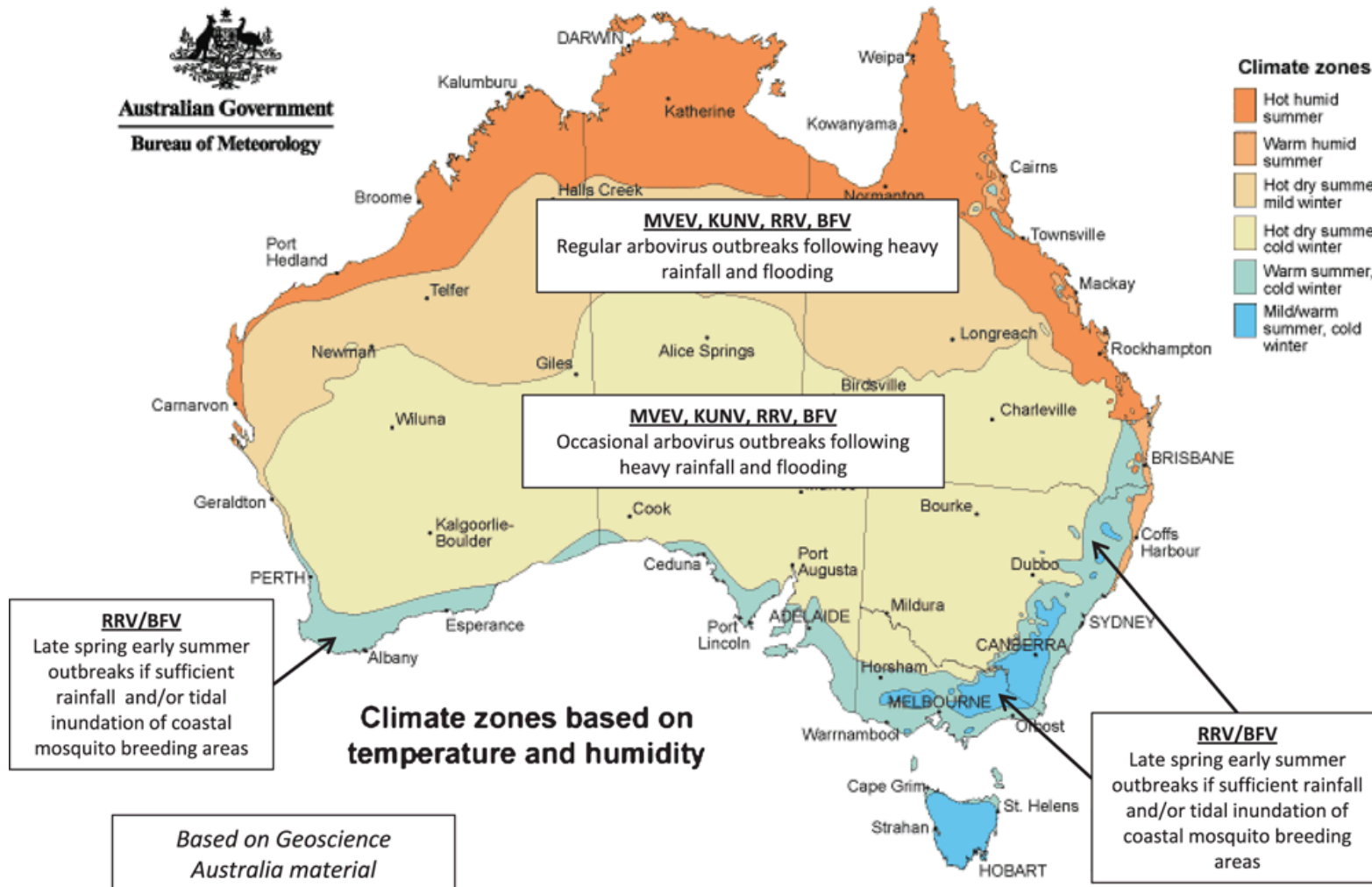
Prevent mosquito bites

# SYMPTOMS OF MURRAY VALLEY ENCEPHALITIS

- > fever
- > drowsiness  
(excessive sleepiness)
- > confusion
- > headache
- > neck stiffness
- > nausea and vomiting
- > tremors
- > seizures (fits)
- > additionally in infants,  
irritability and floppiness.



# Other Arboviruses



Smith (2018) Microbiology Australia <https://doi.org/10.1071/MA18024>





# Leptospirosis

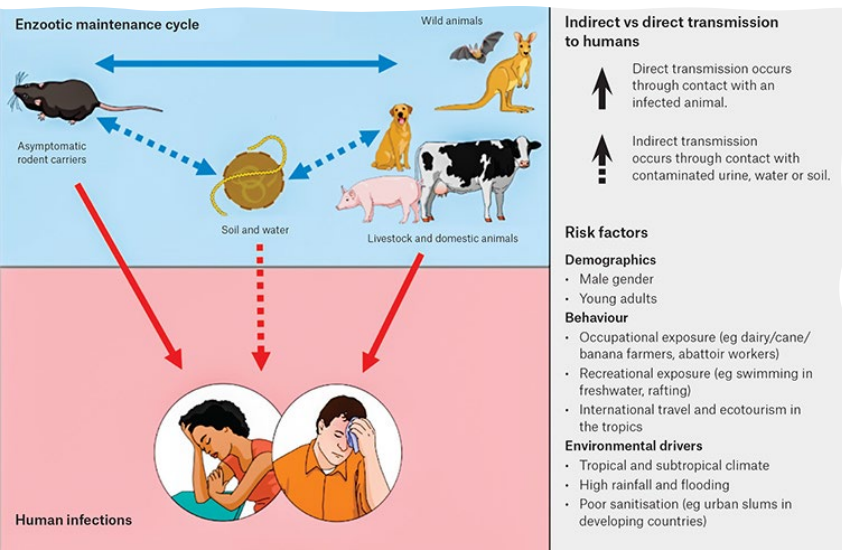
Bacteria excreted in urine from infected animals

Mice, rats, cattle, pigs, dogs

Transmitted via contact with broken skin, mucous membrane

Causes “Flu-like” illness; Rarely renal, hepatitis, meningitis

High risk for outdoor or animal workers



## TAKE HOME POINTS

Avoid flood waters

Cover abrasions/wounds

Wear protective clothing if working outdoors or with animals



# Australian Bat Lyssavirus

Rabies-like illness

1% bats & 5-20% 'sick/injured' bats

3 cases in humans after bite or scratch

Fatal without post-exposure prophylaxis

Most exposures initiated by people

## TAKE HOME POINTS

Do not handle bats

Call local wildlife services

Go to hospital ASAP if bitten/scratched

MANNING RIVER  
**Times**

Avoid deadly infection:  
do not handle bats



Two bats from the Wingham-Taree area have tested positive for Australian Bat Lyssavirus



# Take Home Points

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If concerned that animal is unwell, await animal health expert advice

Follow Combat Agency in Biosecurity events

PPE & Hand Hygiene

Vaccination if eligible

Prevent mosquito bites

Don't handle bats

If concerned, seek medical advice

**KEEP MOZZIES AWAY**

**Take the steps to protect**

SPRAY UP • COVER UP • SCREEN UP



# References

NSW Department of Primary Industries – Biosecurity & Zoonoses:

[www.dpi.nsw.gov.au/biosecurity/animal/humans](http://www.dpi.nsw.gov.au/biosecurity/animal/humans)

NSW Health - Infectious Diseases Fact Sheets:

[www.health.nsw.gov.au/Infectious/factsheets/Pages/default.aspx](http://www.health.nsw.gov.au/Infectious/factsheets/Pages/default.aspx)

US Centers for Disease Control and Prevention – One Health Portal:

[www.cdc.gov/onehealth/index.html](http://www.cdc.gov/onehealth/index.html)

World Health Organisation Newsroom - Zoonoses:

[www.who.int/news-room/fact-sheets/detail/zoonoses](http://www.who.int/news-room/fact-sheets/detail/zoonoses)