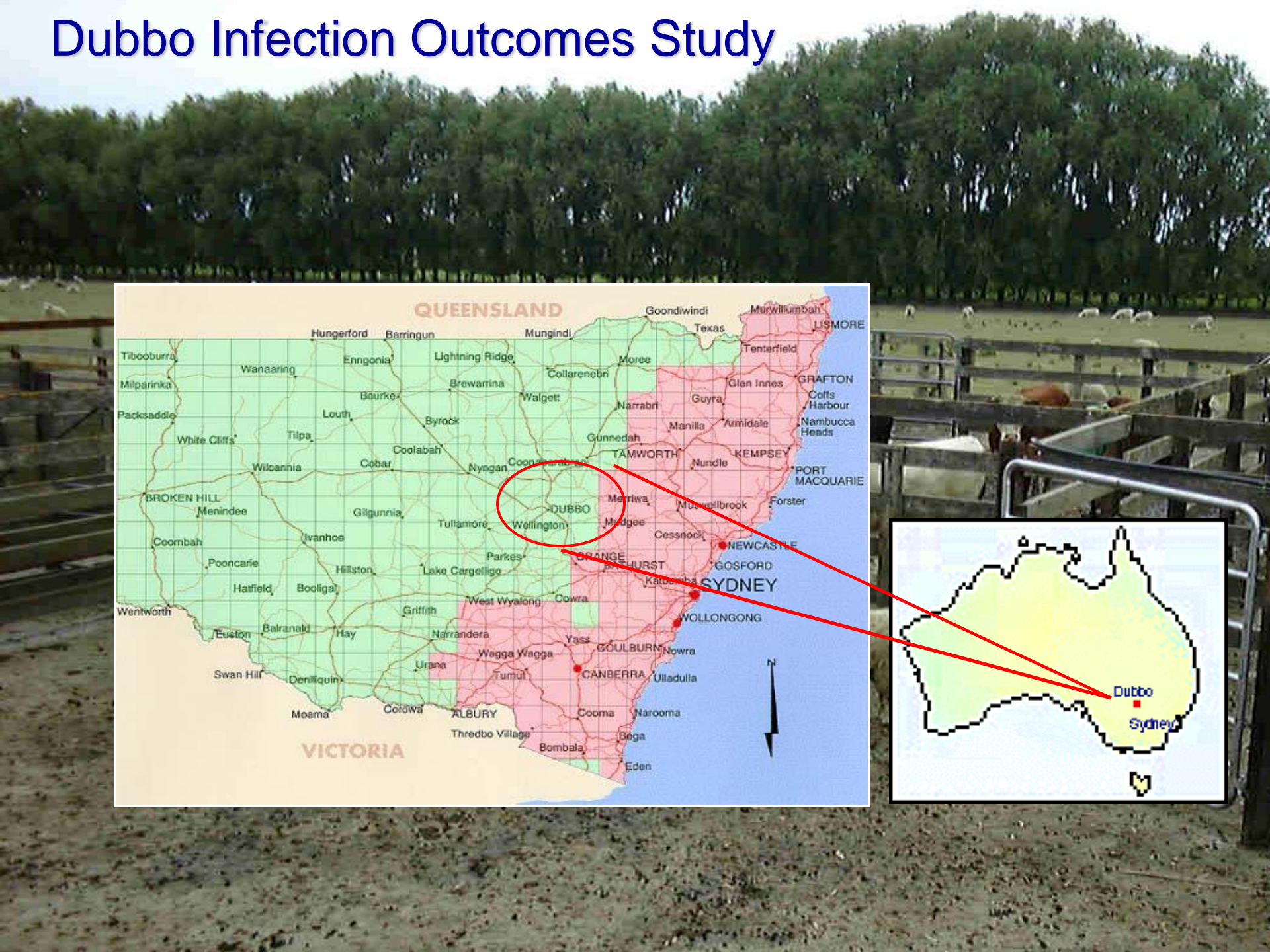


# Dubbo Infection Outcomes Study



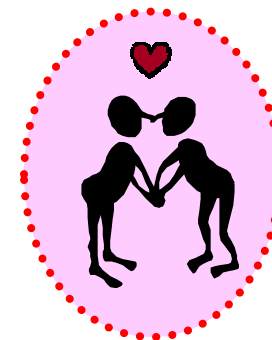
# Dubbo Infection Outcomes Study (n=515)



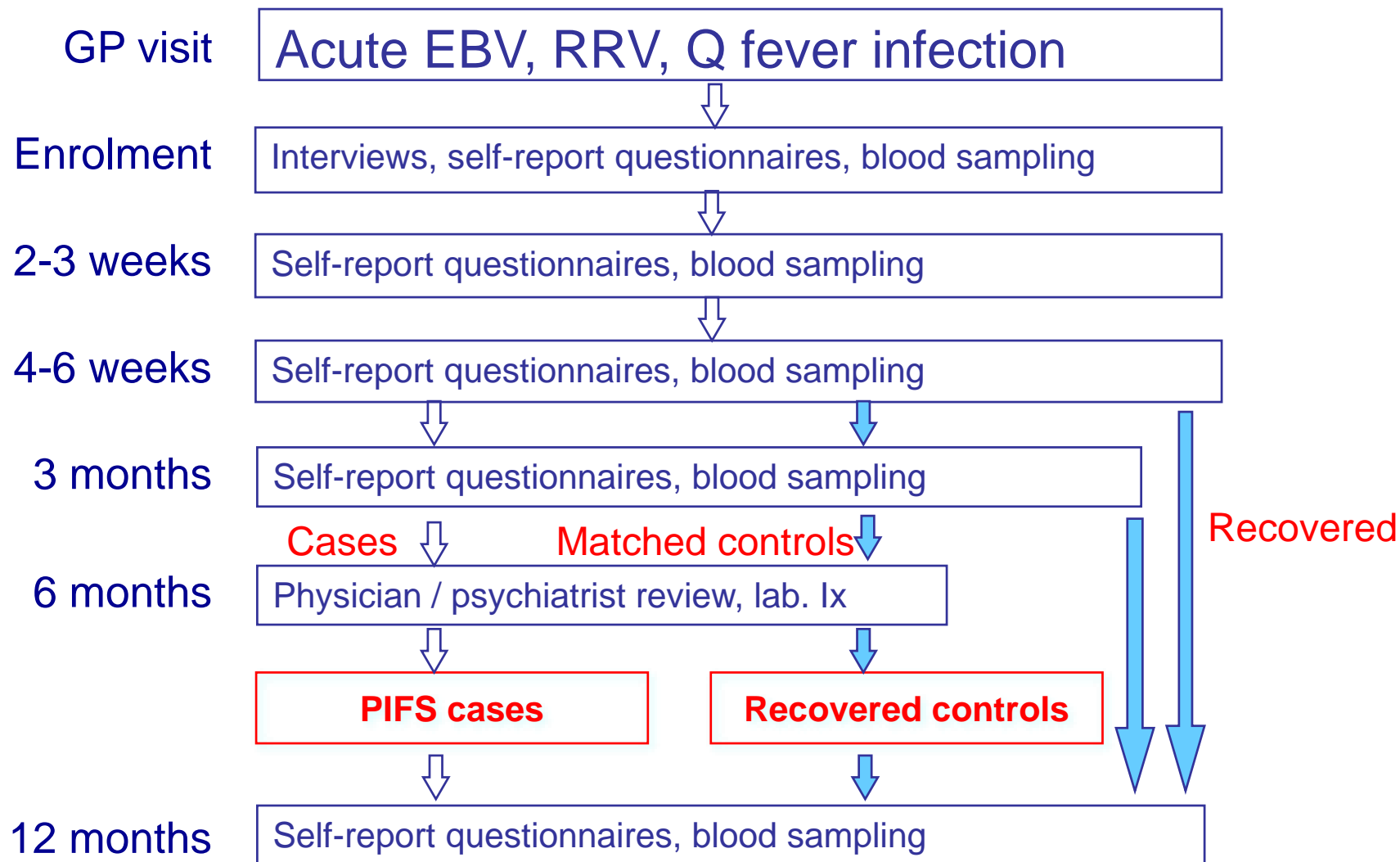
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## 1998-2010

- Epstein-Barr virus:
  - DNA virus
  - infectious mononucleosis in young adults
  - fever, pharyngitis, lymphadenopathy
- Ross River virus:
  - RNA virus
  - mosquito-borne seasonal infection
  - rash and arthritis
- Q fever:
  - *Coxiella burnetii*
  - zoonotic infection
  - severe acute illness with hepatitis and pneumonia

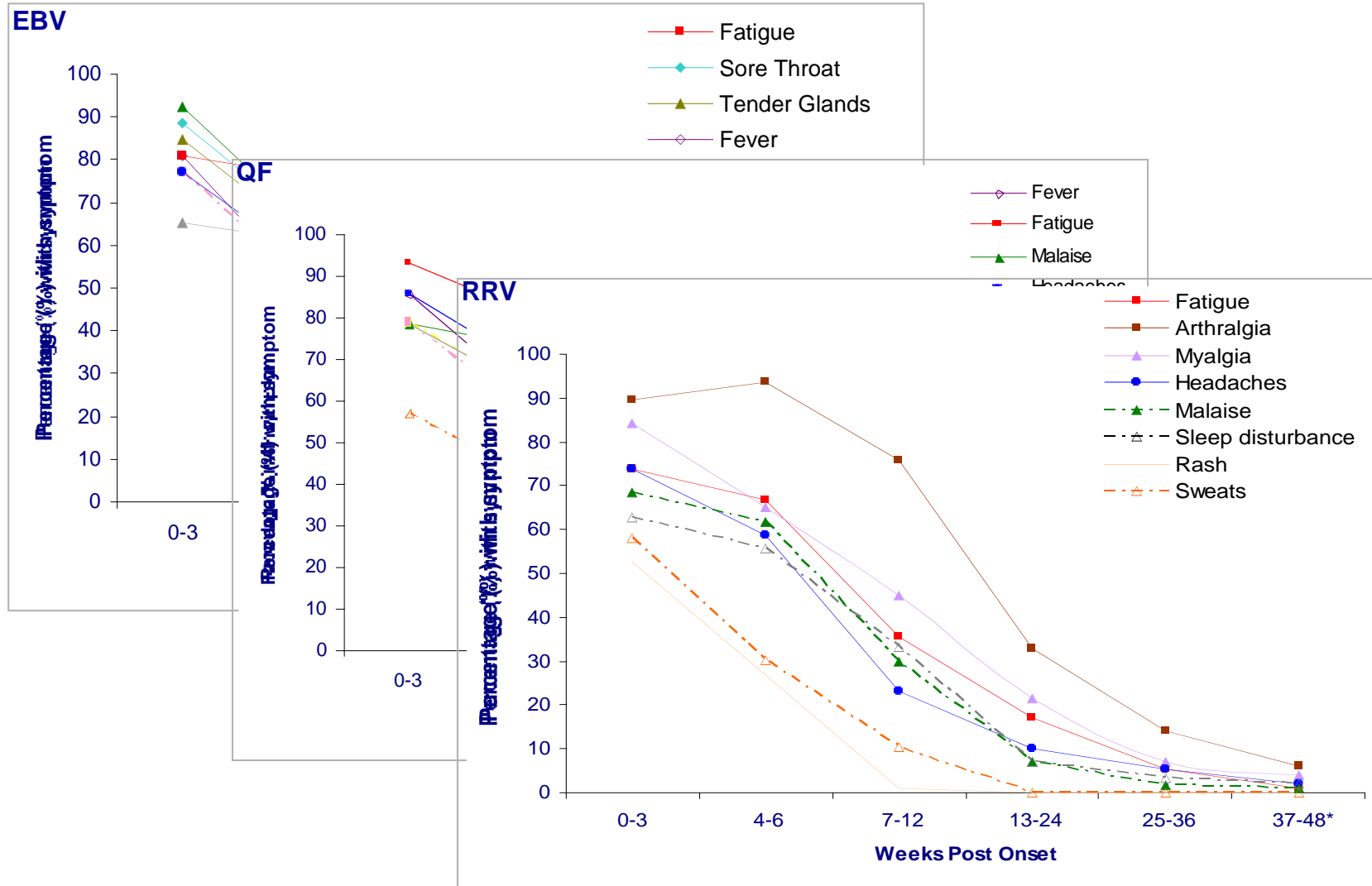


# Study design - DIOS





# DIOS - Natural history of illness





# Post-infective fatigue (PIFS) outcomes

PIFS (% of subjects who are cases)

## Cohort

	Baseline	3 months	6 months*	12 months
EBV (n=68)	59	19	10	6
RRV (n=60)	58	23	15	5
QF (n=43)	78	16	13	5
Unconfirmed (n=82)	62	16	10	6

\*Also met diagnostic criteria for CFS



# DIOS – case-control studies for pathophysiology

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- Pathogen persistence
- Cytokine levels and production
- Pathogen-specific immune responses
- Transcriptomics
- Candidate gene association studies

# Sydney Infection Outcomes Study

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## 2012-

- Acute, febrile (viral) illnesses with systemic features
- Early enrolment
- Characterisation of the acute sickness response
- Fatigue and mood disorder outcomes
- Nested case-control series for in vivo investigations

# Sydney Infection Outcomes Study



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**ED / GP visit**

**Acute infection (>38° C, systemic features, viral)**

**Enrolment**

MINI / SCIN, questionnaires, blood / saliva, autonomic testing

**2 weeks**

MINI, questionnaires, blood / saliva, autonomic testing

**1 month**

MINI, questionnaires, blood / saliva, autonomic testing

**3 months**

MINI, questionnaires, blood / saliva, autonomic testing

**6 months**

**Cases**

**Matched controls**

MINI / SCIN, questionnaires; blood/saliva, autonomic testing

**PIFS cases**

**Recovered controls**





# Current and future directions

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- Sydney Infection Outcomes Study
  - Autonomic function studies (Ute Vollmer-Conna)
  - Circadian rhythm and bioassay studies (Steven Brown, Zurich)
  - PET imaging of activated microglia (Richard Banati, ANSTO)
- Genetic studies (DIOS & SIOS)
  - candidate gene associations (immunological and neurobehavioural)
  - genome wide association study
- Challenge studies – post-exertional exacerbation of fatigue
  - Physical exercise challenge (cycle ergometry)
  - Cognitive challenge (driving simulation)

# Acknowledgements

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- Ute Vollmer-Conna (School of Psychiatry, UNSW)
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