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THE AUSTRALIAN NATIONAL UNIVERSITY



# **Beware of pigs near wings: piggeries, bats, birds, human health**



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**National Centre for Epidemiology and Population Health**  
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## Outline

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can we learn from the past?

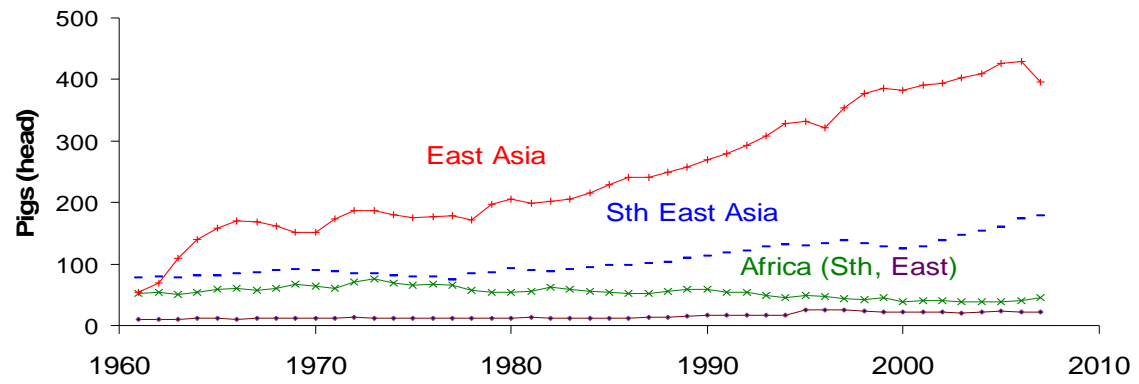
pigs, bats, people: SE Asia, Australia

extensive pig farming Sub Saharan Africa: known risks

intensification to come? foreseeable risks

research suggestions

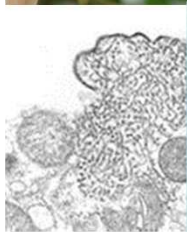
pigs slaughtered per 1000 people per annum



Raw data: FAOstat

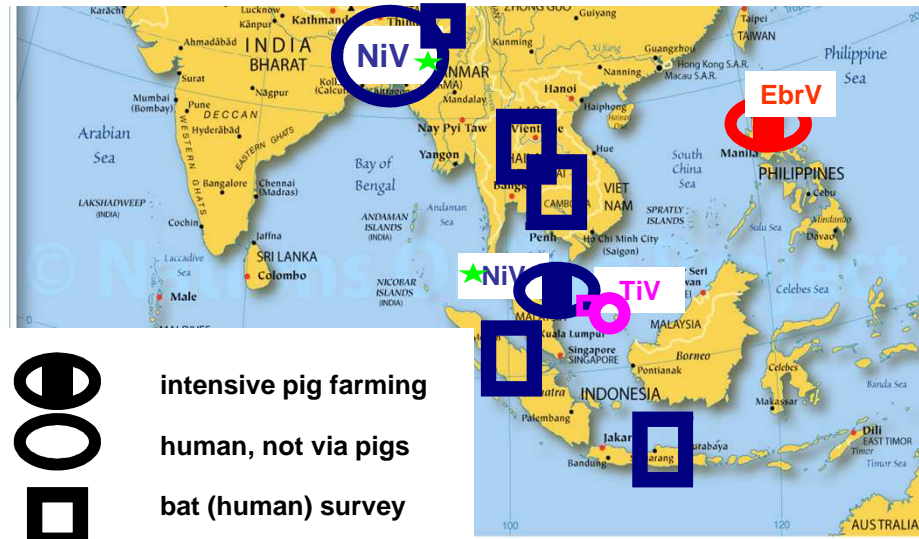


Nipah outbreak  
Malaysia 1998



Apologies to photographers

Important bat associated viruses with evidence of human and pig exposure, in Sth East Asia, Sth Asia, Australia



Sources: Sendow et al, Breed et al, Drexler et al

★ human mortality



intensive pig farming  
 human, not via pigs  
 bat (human) survey

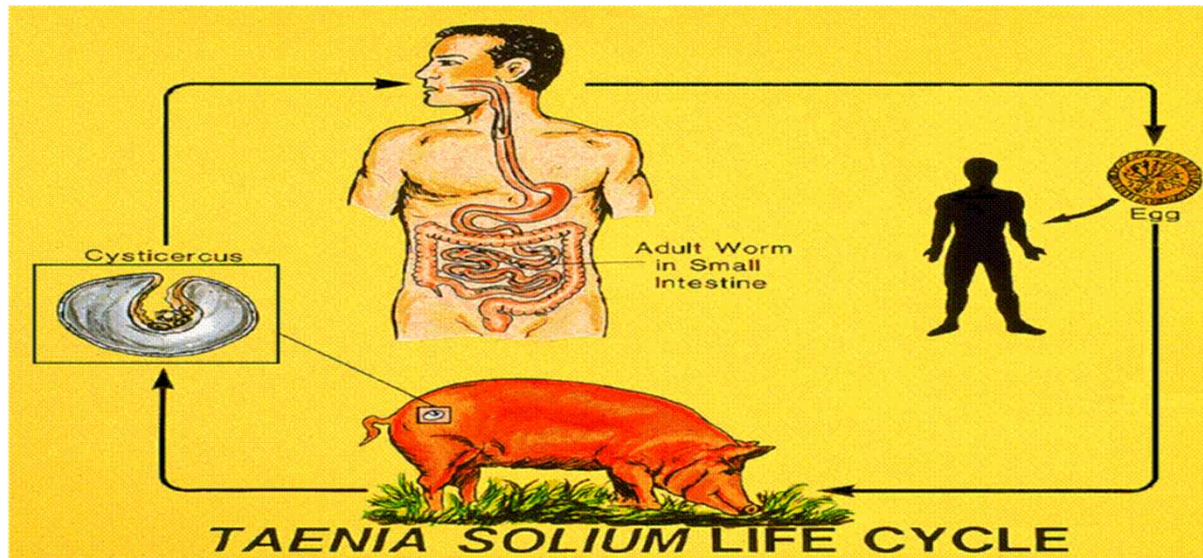


Menangle





Slide courtesy: Dr Lee Willingham



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**Neurocysticercosis - the most common preventable cause of epilepsy!**

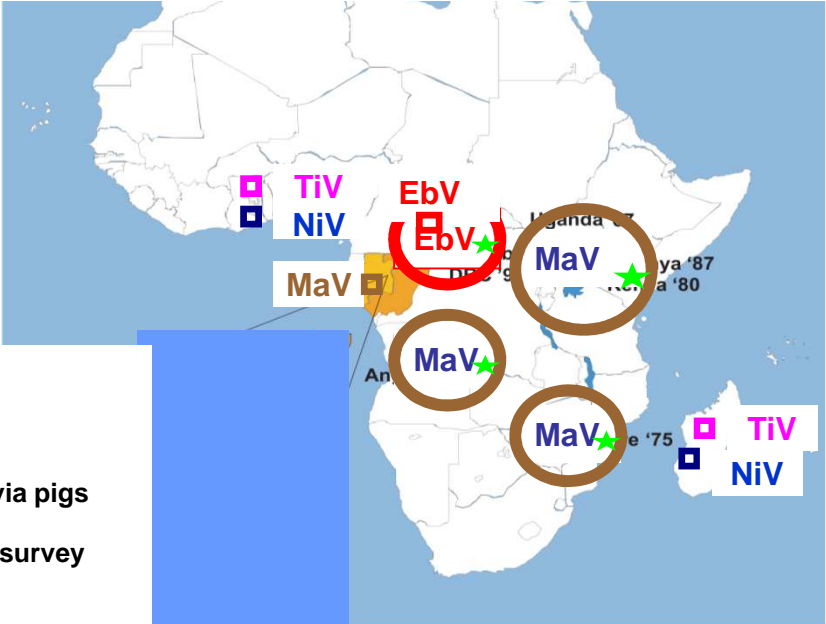
**Slide courtesy: Dr Lee Willingham**

### Some potential bat/pig associated viruses in Africa

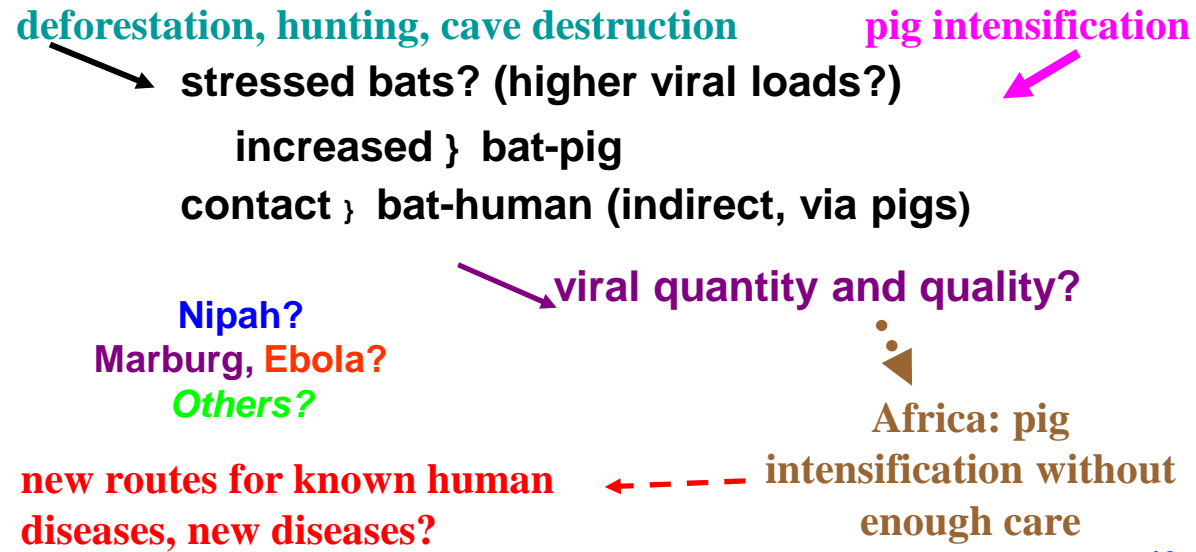
Sources: Iehlé et al; Hayman et al; Towner et al, Leroy et al

★ human mortality

○ human, not via pigs  
 ◻ bat (human) survey



## Bats, viruses, pigs, people - Africa



## Conclusions

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cost benefits: war on bats harmful (ecol. benefits, ethics); placement and management of more intensive pig farms; management of bat (and bird) stress? (pig and fowl stress?)

risk mapping: bats, viruses, pigs, other species

can lessons learned be applied in Africa (and elsewhere)?

## Research questions

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how important is bat stress?

does intensive farming change the quality as well as quantity of viral exposure? How?

is there a hierarchy of potential for viruses to be “passaged” from wildlife via intensively farmed species (pigs, birds, civets etc) to humans with high transmission & lethality?

# Acknowledgements

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Dr Haylee Weaver (ANU)