Background

- Zoonoses are diseases that spread from animals to people e.g. bird flu and rabies
- Poor people in developing countries are the worst affected, with livestock owners and abattoir workers at particularly high risk
- The People, Animals and their Zoonoses (PAZ) project investigates zoonoses in western Kenya

Objectives
Determine exposure to zoonoses in people and animals

Methods

Study population
- 416 households
- 2113 people
- 983 cattle
- 99 pigs
- 129 bats and rodents
- 824 hospital cases
- 738 abattoir workers

Sampling procedure
- Questionnaire
  - Demographics
  - Socioeconomic status
  - Health and nutrition

Biological samples
- Blood, faeces
- Land cover mapping

Sample analysis
- Blood and intestinal parasites
- Milk fever (brucellosis)
- Pig tapeworm (cysticercosis)
- Sleeping sickness (trypanosomiasis)
- Rift Valley Fever
- Q fever

Data analysis
- Estimate percentage of people/animals affected (prevalence)
- Risk behaviours for disease
- Spatial relationships
- Food borne risk
- Compare new test to "gold standard"

Partners and roles

COORDINATING PARTNERS
- University of Edinburgh
- International Livestock Research Institute
- Kenya Medical Research Institute
- Department of Veterinary Services Kenya

DATA ANALYSIS PARTNERS
- Uni of Wisconsin
- Uni of Southampton
- Uni of Liverpool

DIAGNOSTIC PARTNERS
- Friedrich Loeffler Institute, Germany
- University of Florida
- Universidad de Navarra, Spain
- Children’s Hospital Oakland Research Institute
- Association for Strengthening Agricultural Research in East and Central Africa
- Institute of Tropical Medicine, Belgium

SAMPLING PARTNERS
- National Museums of Kenya
- University of Nairobi
- Makerere University, Uganda

POLICY PARTNERS
- Zoonotic Disease Unit

FUNDING
Wellcome Trust, Biotechnology and Biological Sciences Research Council, MRC, Consultative Group on International Agricultural Research

Outcomes

Key Results | Significance
---|---
Brucellosis data | Used in national control policy
Cysticercosis data | Develop new diagnostic test (Fig A)
Trypanosomiasis | Atlas of human African trypanosomiasis
Rift Valley Fever | First time identified in this area
New bat parasite | First time identified (Fig B)
Abattoir standards | Contribution to national standards

Additional benefits resulting from project
- BIOBANK – 25,000 samples stored for future projects
- Capacity building – 13 national and 12 international undergraduate and graduate students
- Treatment provided to 3000+ participants
- Some diagnostic tests validated in African setting for first time
- Collaboration with WHO to develop global eradication program for cysticercosis

Conclusion

- Holistic approach to zoonotic disease investigation – first project to study animals and people concurrently
- Multidiscipline cross cultural team allows integrated approach to understanding zoonoses in this setting
- Outcomes of this project will allow development of evidence driven interventions for the prevention and control of zoonoses