



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

Faculty of  
Veterinary Science

Fakulteit Veeartsenykunde  
Lefapha la Disaense tša Bongakadiruiwa

100  
YEARS  
OF VETERINARY EDUCATION

# The role of pathology in One Health

18<sup>th</sup> November 2021

World One Health Day Symposium

Make today matter

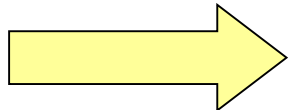


# Overview

## Wildlife pathology

Necropsy/histology

KEY COMPONENT

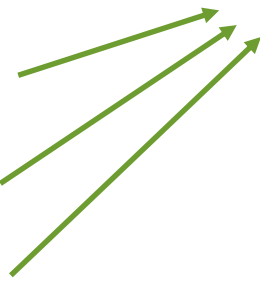


DIAGNOSIS

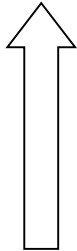
Other diagnosticians

Other diagnosticians

Other diagnosticians



Monitoring



Emerging diseases

Outbreaks

Sentinels

Plants

Endangered species

Human disease

Biodiversity

RESEARCH

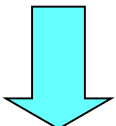
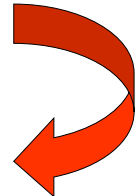
Causes

Drivers

Risk analysis

Monitoring

Biobanking



SOLUTIONS



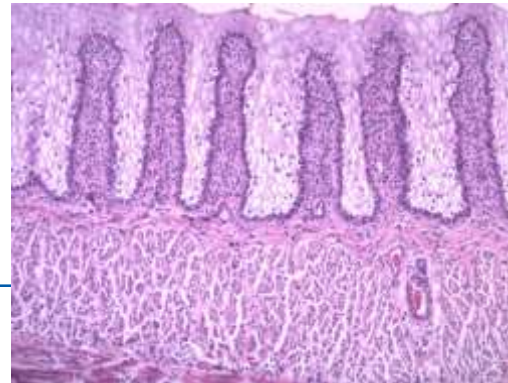
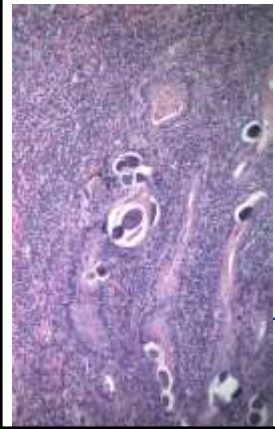
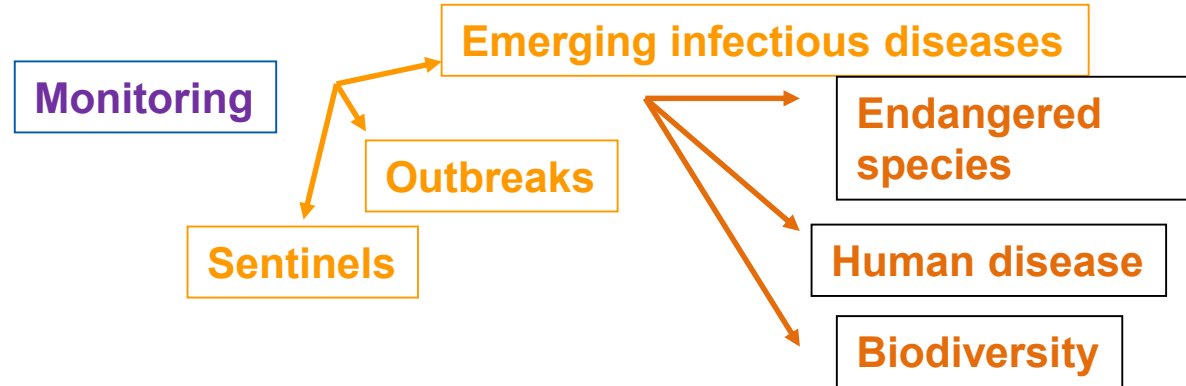
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# Role of pathology

## Wildlife pathology

Necropsy/histology

**KEY COMPONENT**



# Team work

## Wildlife pathology

Necropsy/histology

KEY COMPONENT



Monitoring

Emerging diseases

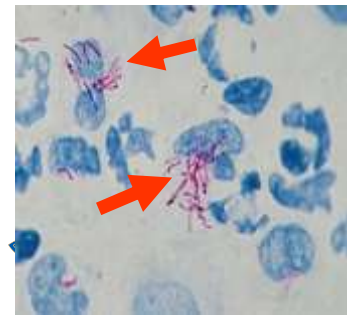
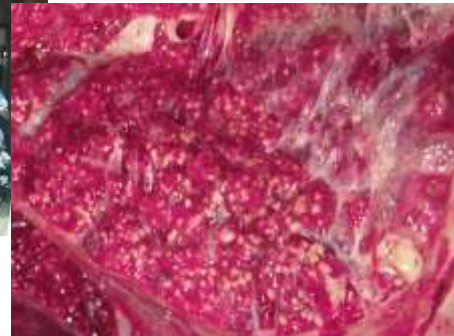
Outbreaks

Sentinels

Endangered species

Human disease

Biodiversity

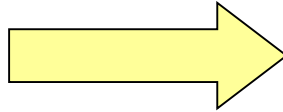


# Team work

## Wildlife pathology

Necropsy/histology

KEY COMPONENT



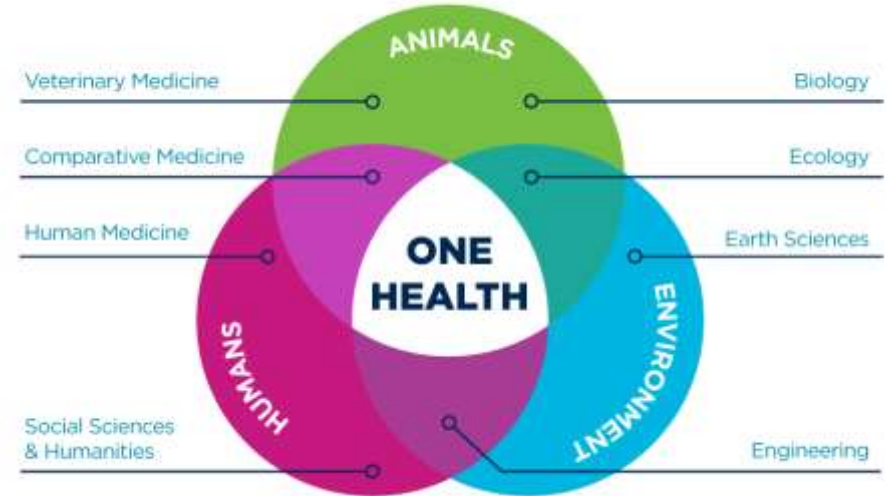
DIAGNOSIS

Microbiology

Parasitology

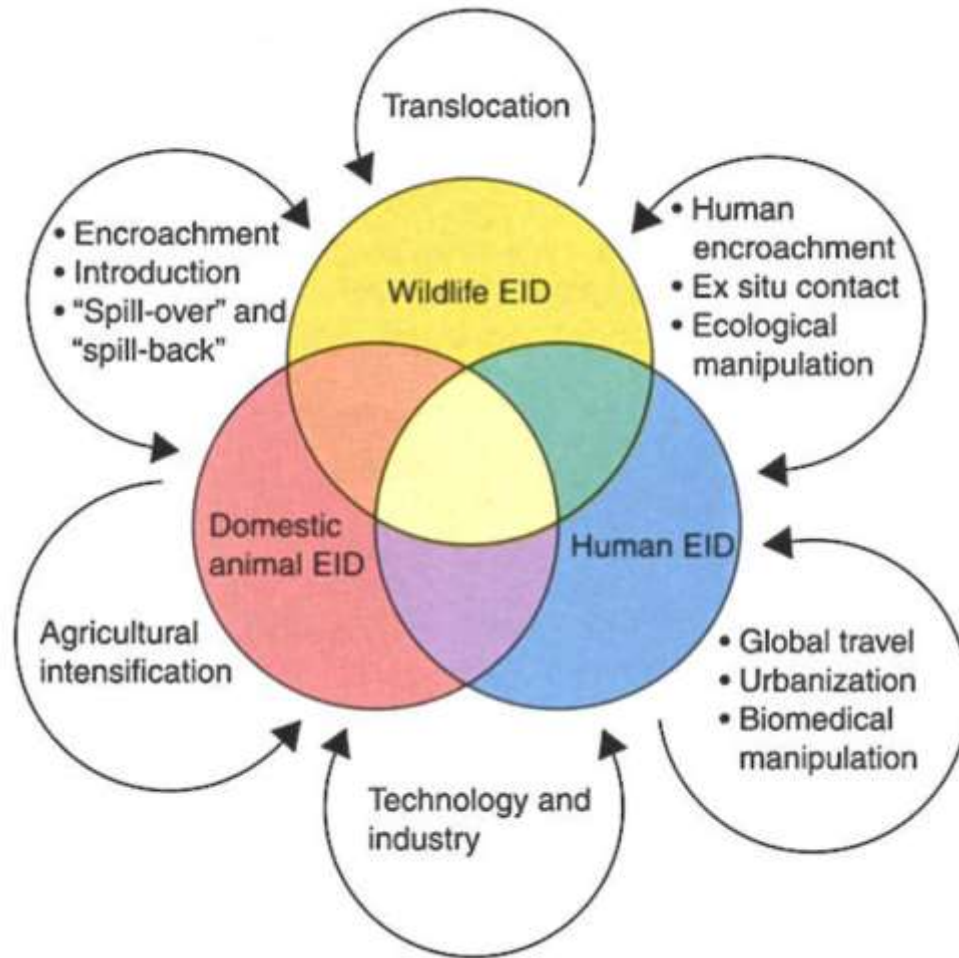
Electron microscopy

Toxicologists, nutritionists, geneticists



TEAM WORK







# Role of pathology

Wildlife pathology

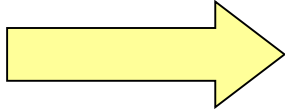
Necropsy/histology

Monitoring

KEY COMPONENT

PDate	Final
29-Apr-03	Myocarditis, myositis
30-Dec-03	Necrohaemorrhagic enteritis, C. perfringens
26-Jan-06	Acute heart failure, myocarditis
26-Jan-06	Suspected Clostridial enterotoxaemia; chronic myocarditis
26-Jan-06	Myocarditis, skeletal muscle myositis
03-Feb-06	Bacterial enterocolitis, myocarditis
13-Feb-06	Klebsiella enteritis, septicaemia
26-Apr-07	Bite wounds
10-May-07	Severe blunt trauma
07-Jan-08	Acute heart failure with hepatic lipidosis
14-Feb-08	Nasal deep dermatitis
14-Nov-08	Bite wounds
05-Dec-08	Complications of bite wounds
11-Mar-09	Septicaemia
07-Apr-09	Overeating
07-Apr-09	Fractured left femur with concurrent right osteosarcoma
09-Jun-09	Enteritis
07-Jul-09	Starvation
09-May-12	Suspected acute heart failure
29-Mar-13	Broken leg
08-Jul-13	Iron storage disease
24-Aug-15	Encephalitis
05-Oct-15	Possible Mycoplasma infection
30-Mar-16	Encephalomyocarditis virus infection
13-May-16	Anesthetic death while suffering from leishmaniosis
02-Dec-09	Acute interstitial pneumonia

**KEY COMPONENT**



**DIAGNOSIS**



Sentinels



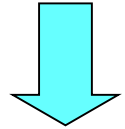
Olivia Carulei et al 2010  
D Zimmermann et al, 2011



**Monitoring**

Biobanking

**RESEARCH**  
Causes  
Drivers  
Risk analysis



**SOLUTIONS**

Daszak et al, 2004



**Little Swifts**



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# Wildlife disease surveillance programmes

- Reduce costs and risks of disease in wildlife
- International obligations to report disease in wildlife

“Surveillance for wild animal pathogens is the single most important component of a national wildlife health programme”

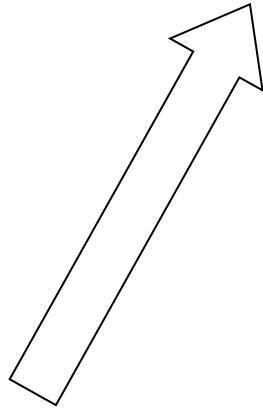
OIE, 2010



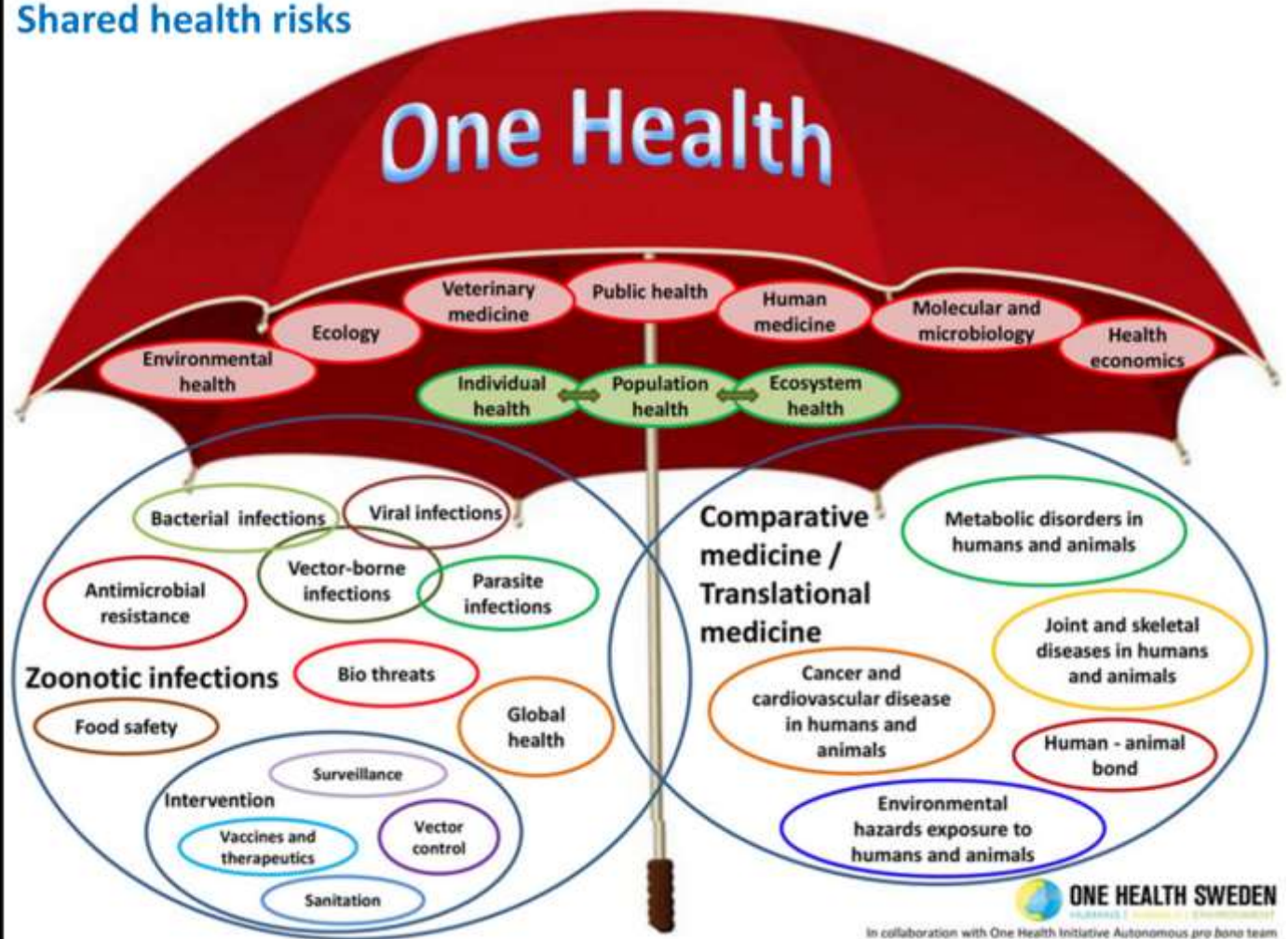
Shared health risks

# One Health

DIAGNOSIS



Pathologist



# Pathologists and One Health

- Teamwork to make the diagnosis
- Participate in disease monitoring
- Store disease data for research
- Store samples for research



# Thank You



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