



# An Overview of Wildlife Disease Surveillance in Pakistan

M. HAROON HAMED

AP ZOOLOGY UAF PAKISTAN

# Zoonotic Wildlife Diseases



Transmitted  
from wild  
animals to  
humans



Zoonosis may  
be viral,  
bacterial,  
parasitic or  
involve  
unconventional  
agents (fungi &  
protozoans)



About 60% of  
the 1,407  
human  
pathogen  
species are  
zoonotic



Of these 72 %  
originated in  
wildlife



Moreover, 75%  
of the 177  
emerging or re-  
emerging  
pathogens are  
zoonotic

# Zoonotic Diseases in Pakistan

Zoonotic Diseases	Reported
Anaplasmosis in domestic small ruminants At University of Agriculture, Pakistan	Razzaq et al, 2024
Leptospirosis	Ijaz et al., 2018; Sohail et al., 2018
Salmonellosis	Altaf Hussain et al., 2020; Petrin et al., 2020
Anthrax	Ahmad et al., 2004
Bovine TB	Awah Ndukum et al., 2010; Jafar et al., 2014
<i>Brucella</i>	Akram et al, 2021
<i>Mycobacterium</i> spp.	Akhter et al, 2023
Rift Valley Fever	Atif et al., 2012

# Zoonotic Diseases in Pakistan

Zoonotic Diseases	Reported
Newcastle, Avian Influenza	Shabeer et al, 2023 et al., 2021
Foot and Mouth Disease(FMD)	Ijaz et al, 2022
Chikungunya	Ali and Dasti, 2018
Crimean-Congo hemorrhagic fever	Yousaf et al., 2018; Hatami et al., 2019; Kasi et al., 2020
Gastrointestinal Parasitic	Safiur ullah et al, 2024
Leishmaniosis	Tiwananthagorn et al., 2012; Khan et al., 2016; Kämink et al., 2019
Parasitic in migratory birds	Ahmed et al , 2020

# Wildlife Law Enforcement in Pakistan

- ✓ **Wildlife management and conservation in Pakistan is a provincial subject i.e. all provinces have departments likewise**
- ✓ **Punjab Wildlife & Parks Department, Islamabad Wildlife Management Board**
- ✓ **Sindh Wildlife Department.**
- ✓ **Forest, Wildlife & Environment Department, Gilgit-Baltistan.**
- ✓ **Balochistan Forests & Wildlife Department.**
- ✓ **Climate Change, Forestry, Environment & Wildlife Department, Khyber Pakhtunkhwa**
  
- ✓ **Provincial Wildlife Departments, which conserve, protect and manage wildlife under their wildlife laws**
  
- ✓ **Ministry of Climate Change & Environmental Coordination deals with implementation of wildlife-related conventions (including import and export of wildlife), coordination with provincial/territorial wildlife departments and liaison at national and international level on wildlife issues**

# **Wildlife Disease Surveillance in Pakistan Departments**

- **Provincial/territorial wildlife departments**
- **VRI (VET RESEARCH INSTITUTE GOP)**
- **National Veterinary Laboratories, Islamabad**
- **Animal Health Research Laboratories, NARC**
- **V.O. IN ZOO/Captivity**
- **There is very limited role of National Veterinary Services in wildlife disease surveillance**
- **In case of disease outbreak, Animal Husbandry Commissioner Office carryout requisite reporting to WOAHA in coordination with MOCC&EC and Provincial/Territorial Wildlife Departments**

# Issues/Challenges in Wildlife Disease Surveillance

- **No structured disease wildlife disease surveillance system**
- **Capacity issues of provincial/territorial wildlife departments (in wildlife disease surveillance and management)**
- **Lack of trained wildlife veterinarian**
- **Lack of Laboratory capacity (in diagnosis, risk analysis, biohazard risk management)**
- **Data gaps**
- **Lack of coordination**
- **Financial constraints**

# WOAH Role in Wildlife Diseases Surveillance

- ✓ Zoonotic diseases pose a significant threat to global public health and the economy
- ✓ After COVID-19 outbreak as a zoonotic disease, the concept of One-Health has been widely accepted
- ✓ It is an integrated approach to recognize health of human, livestock and wildlife as interlinked and interdependent.
- ✓ The World Organization of Animal Health (WOAH) is working together with partners (FAO, WHO etc.) to increase capacity of the member countries in One-Health
- ✓ WOAH organized a training workshop on Wildlife disease investigation and mitigation of disease transmission risks, in Tsukuba, Japan from 9-11 December 2024.



## Way Forward

- ✓ To strengthen event-based disease surveillance systems for wildlife (captive & free-ranging) at national level
- ✓ To facilitate collection and quick transport of diagnostic specimens from wildlife
- ✓ To improve timely & accurate reporting of results from wildlife disease investigations.

**Development of a system like**

**Integrated Disease Surveillance & Response (IDSR) System**

**Center of Disease Control, NIH**

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