

The One Health Approach in Public Health Surveillance and Disease Outbreak Response: Precepts & Collaborations from Sub Saharan Africa

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Learning Objectives: At end of the lecture, participants will be able to;

- Define the One Health (OH) concept & approach
- State the rationale and priorities of OH Approach
- List key historical OH milestones & personalities
- Mention core OH principles and stakeholders
- Outline some OH precepts & collaborations
- Illustrate OH application in public health surveillance and outbreak response

Presentation Outline

- Definition of the One Health (OH) Concept & Approach
- Rationale and Priorities of OH Approach
- OH Historical Perspectives
- OH approach in Public Health Surveillance & Outbreak Response
- One Health Precepts & Collaborations in Africa
 - West Africa OH Technical Report Recommendations
- Conclusion and Next Steps

One Health Concept: The What?

- The collaborative efforts of multiple disciplines, working locally, nationally and globally, to attain optimal health for people, animals and the environment (AVMA, 2008)
- A global strategy for expanding interdisciplinary collaborations and communications in all aspects of health care for humans, animals and the environment

One Health Approach: The How?

- Innovative strategy to promote multi sectoral and interdisciplinary application of knowledge and skills of medical, public health, veterinary and environmental experts by working

One Health Approach:

Why

Priority Public Health Threats needing One Health Approach

- Priority public health threats addressed using the One Health Approach include:
 - Emerging and re emerging zoonotic and infectious diseases of epidemic and pandemic potential
 - Antimicrobial resistance (AMR)
 - Pollutants and environmental contaminants
 - Food safety and dietary health risks
 - Bio

Historical Perspectives: Animal Disease Control Measures .. 1762 education about mgt. mgt.dse ①

Historical Perspectives: One Health in the 19th Century .. Coined the term 'Zoonosis'

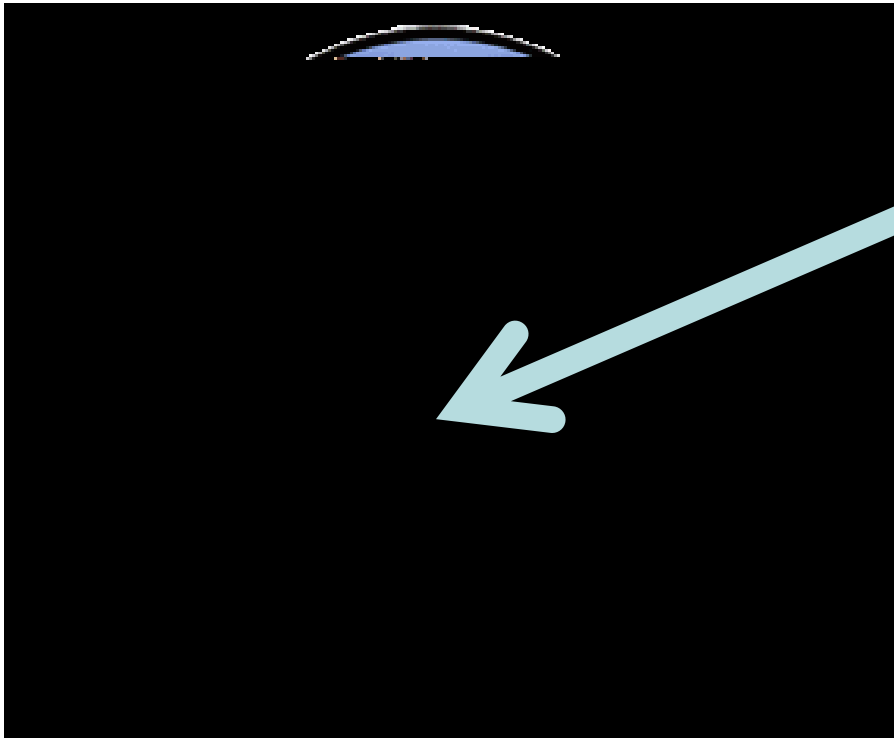
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Historical Perspective: Zoonosis

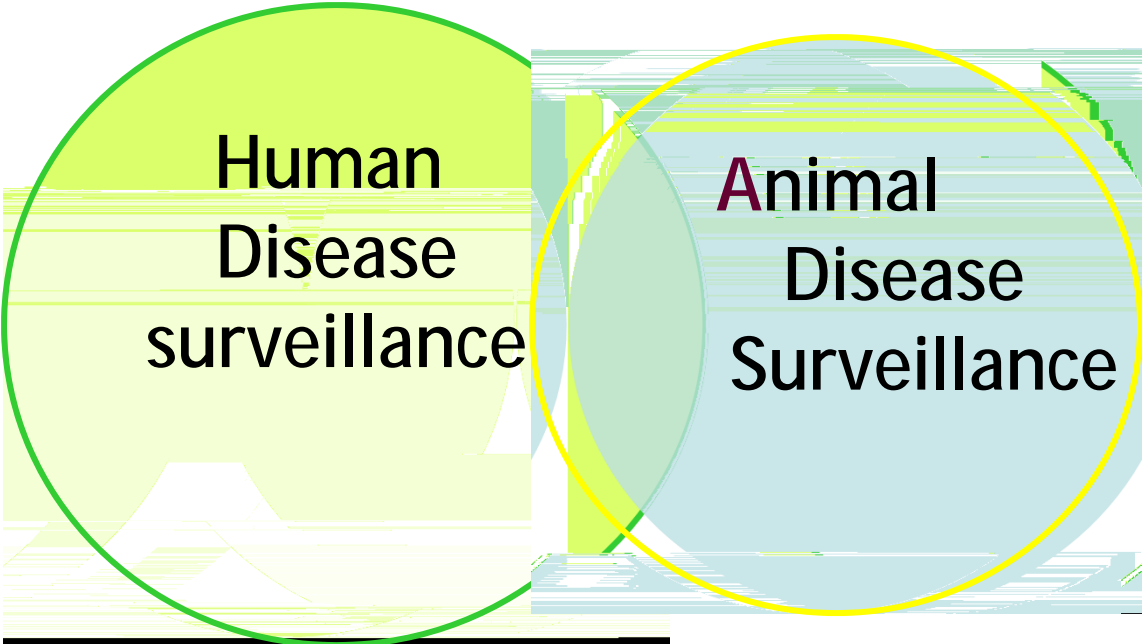
- 1980's, epidemiologist Calvin Schwabe called for a unified human and veterinary approach to combat zoonotic diseases, providing the modern foundation for One Health
- Concept waned in 20th Century but resurfaced in the 21

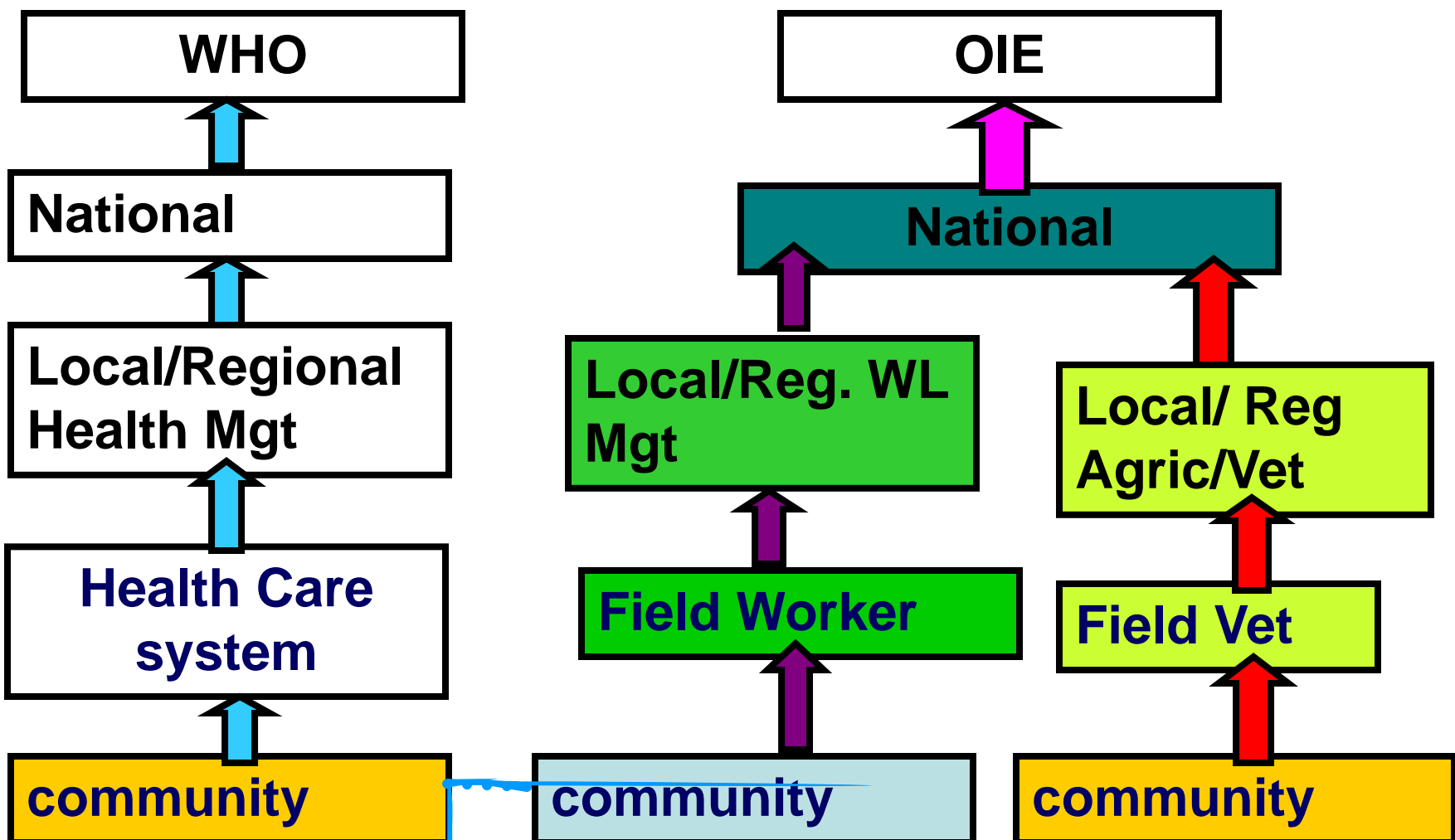
One Health Surveillance

- The concept seeks to detect potential or existing risks that originate at the “human animal environmental” interface



Current Human & Animal Disease Surveillance

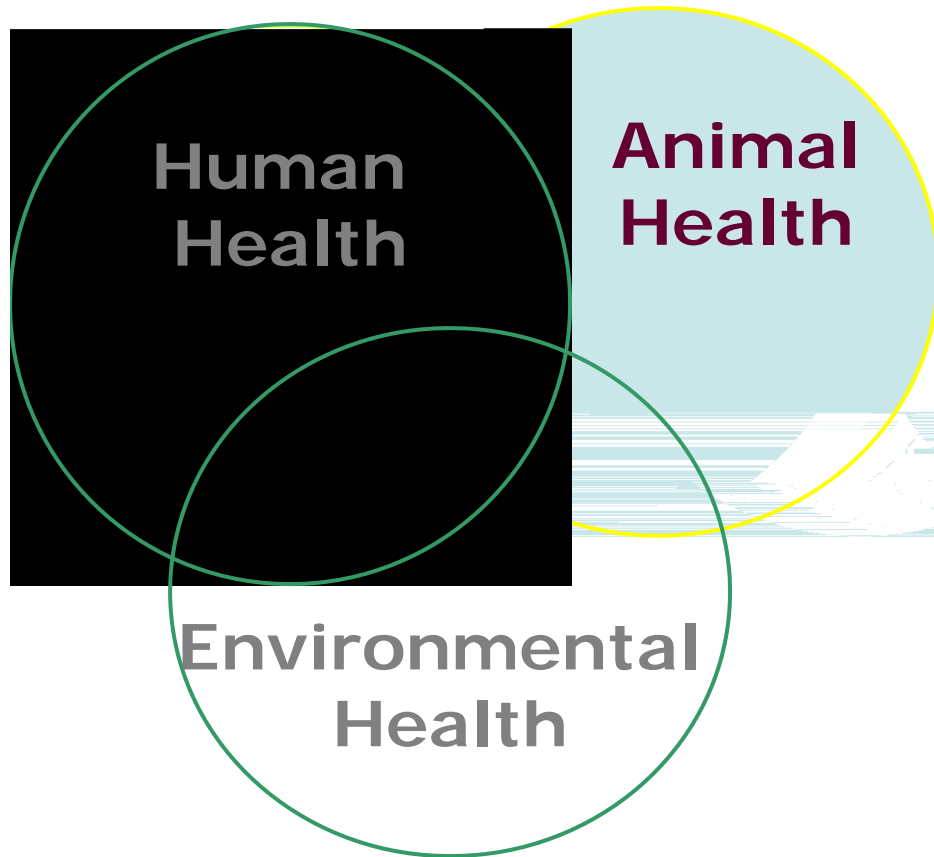




Disease Surveillance in Companion Animals

- Approximately 63% of all U.S. households own at least one pet
- Most commonly owned animals include:
 - Cats (90.5 million)
 - Dogs (73.9 million)
 - Small mammals (18.2 million)
 - Birds (16.6 million)
 - Aquarium Fish (140 million freshwater/9 million saltwater)
- Pet surveillance should be part of public health surveillance
- Animals as sentinels: infections, poisoning Pb, Hg

Epidemiological and Human Resource Triads





Stakeholders in One Health

- Global, regional and local agencies involved in animal, human and environmental health include:
 - World Health Organization (WHO),

AFENET OH Workshops: WA FELTPs & Vet Services, Accra May 2009

Accra Declaration on Zoonosis Control signed

Countries and agencies represented – Senegal, Burkina Faso, Togo, Mali, Niger, Nigeria, Ghana, WHO AFRO, WHO Ghana, CDC Ghana, USAID West Africa, USAID Africa Bureau, CDC Atlanta, AFENET K Becker, C Ohuabunwo, Y Ndjakani, P Nguku, P Nsubuga, D Mukanga, F Wurapa. Field epidemiology and laboratory training  Pi  Na 

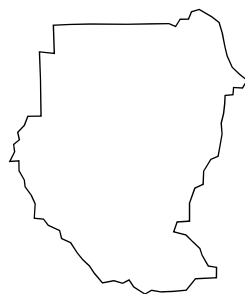
One Health Workforce Capacity Development

1. Capacity building for One Health

- Aims at building leadership and advanced technical skills
- Tiered training
 - i. Short course on surveillance, Outbreak investigation and response Frontline workers
 - ii. Field Epidemiology and Laboratory Training Programs (FELTP) Graduate
 - iii. Vet Epidemiology training Program Graduate
 - iv. One Health Fellowship Post FELTP

One Health Short Courses

1. Zoonotic Disease Surveillance, Outbreak Investigation and Management
2. Participatory Epidemiology



One Health Fellowship...1

- Started with support from USAID Emerging Pandemic Threats EPT project & US CDC
- To enhance One Health knowledge and skills of field epidemiology graduates
- Strengthen the implementation of IDSR and IHR
- Upon completion, fellows provide technical expertise to their respective sectors in;
 - disease surveillance
 - outbreak investigation and response
 - control and prevention of zoonoses

One

OH Brucellosis Mubende district blood

Applied Vet Epidemiology Training Program

- Started in 2010 a grant from USAID RESPOND project
- 2 yr 75% field & 25% didactic training in applied vet epi
- Hosted at Makerere University College of Vet Med

- Objective: Train holistic veterinary epidemiologists who will lead and contribute to significant disease control, prevention and outbreak response in public health system at district and national levels

- 1st cohort – Five trainees drawn from Uganda districts
- 2nd cohort expanded to other east & central African countries

Applied Vet Epidemiology Training FETPv: OB Investigation & Predictive Surveillance

Avian Influenza & other Zoonotic Infections Project (AIZIP)

- Launched in 2008 with support from USAID
- Objective to strengthen capacity for Avian and pandemic influenza preparedness and response
- Premised on the “One World One Health” concept

Outbreak

Ebola Outbreak Contact Tracing, Uganda 2012

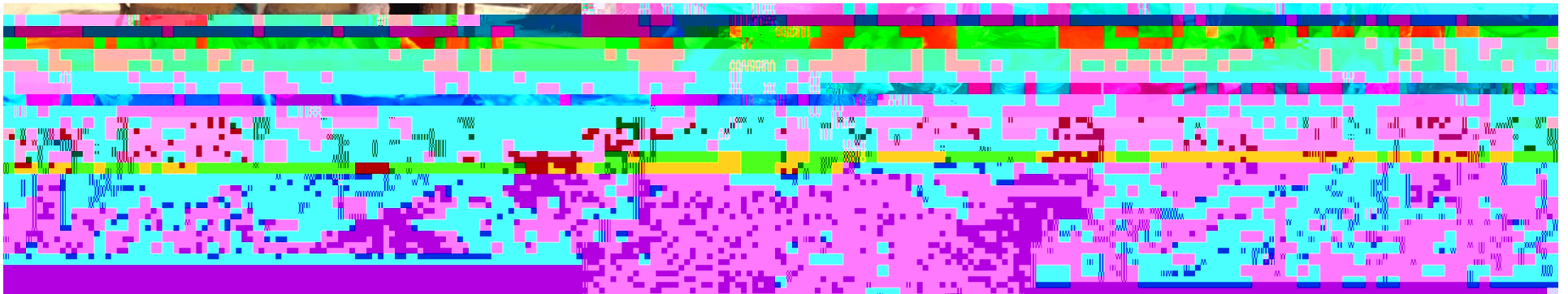


EVD Outbreak Contact Tracing, Case Investigation, & Surveillance Mbandaka – DRC, May June 2018

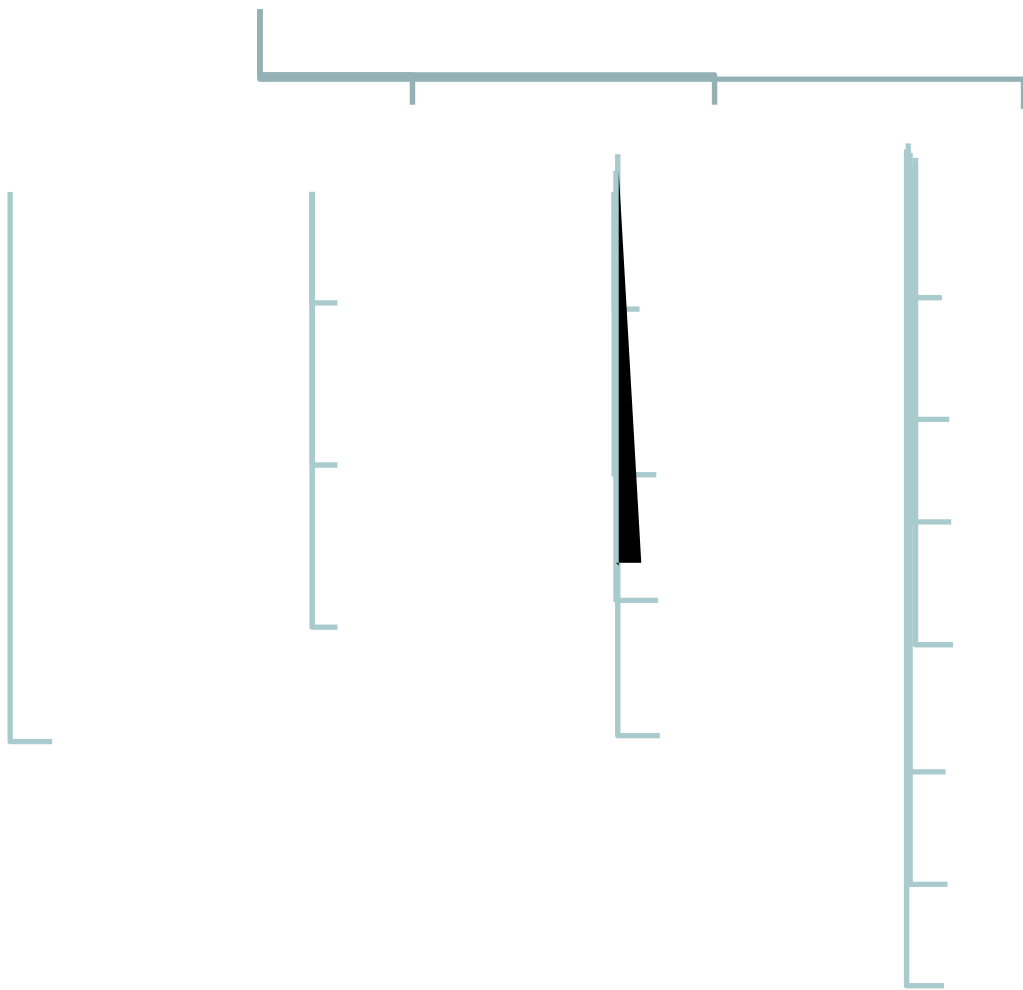
DRC 2018 EVD OBR: ACoDD and MoH Teams

Team Work for Success: ACoDD teams and partners on the field in DRC – EOC, ETU, Surveillance, ERM, Data/report

FETP One Health Teams Respond to Disease Outbreaks across Africa



Liberia, Ghana, Tanzania, Nigeria, Uganda



One Health Teams Respond to COVID19 Outbreak across Africa: Preparedness

One Health Teams Respond to COVID19 Outbreak across Africa: PUI interview

One Health Teams Respond to COVID19 Outbreak across Africa: Contact tracing

One Health Teams Respond to COVID19 Outbreak across Africa: HCW Survey

Establishing National One Health Platforms: USAID P&R Project, 2015 – 2019

USAID DAI AFENET: Uganda, Kenya, Tanzania, Rwanda, and the Democratic Republic of the Congo

One Health Technical Report, West African States, Senegal 2016 ...1

- Demonstrate commitment and ownership of the One Health approach by an internal budgetary allocation dedicated to this approach and planned activities;
- Systematically enlarge FELTP to animal health and environmental health professionals and embark on a coordinated capacity building programme
- Establish integrated surveillance systems with due consideration for human health and animal health
- Establish ICT based platforms (cyber surveillance) with emphasis on community surveillance to strengthen information systems within and between the human and animal sectors

One Health Technical Report, West African States, Senegal 2016 ...2

- Establish obligatory mechanism for the maintenance of infrastructure and equipment to ensure that public health and animal health laboratories function on a permanent basis
- Institute common mechanisms in agriculture, public health and animal health sectors to jointly assess risks, regularly plan, monitor Antimicrobial resistance and apply corrective measures
- Implement One Health approach at all levels, particularly community level, placing emphasis on strengthening the technical and community engagement capacities of staff
- Promote the multi sectoral approach with effective involvement of private sector, civil society, defence, security forces, technical and financial partners, academic institutions in OH Governance

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