

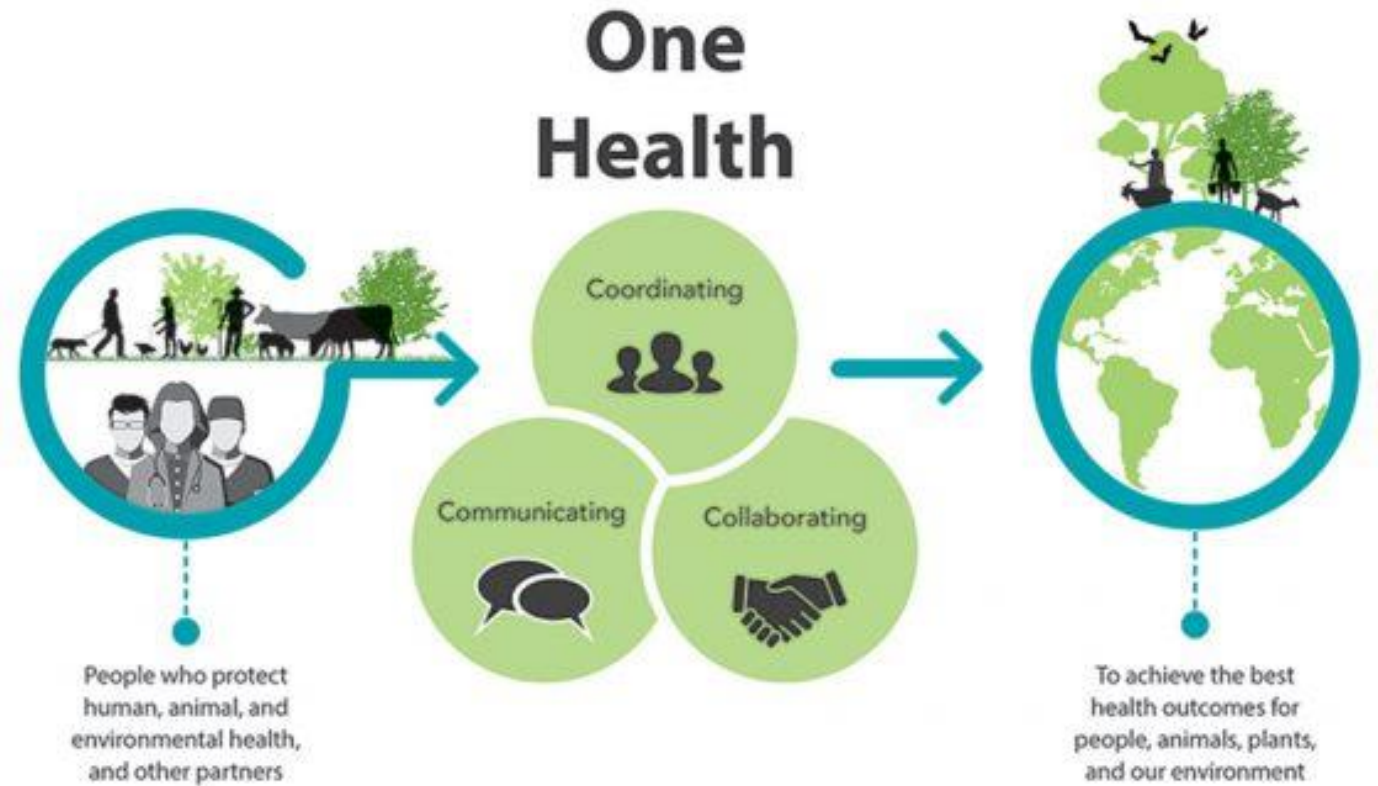


WildHealthNet: An Approach to Operationalizing Wildlife Health Surveillance by Building and Linking National Wildlife Health Surveillance Networks

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Operationalizing a One Health Network in Cambodia, Lao PDR, and Viet Nam



Goal: To establish and enhance a **wildlife bio-surveillance networks** to support the ability of partner nations to safely **detect, monitor, trace, and report** especially dangerous pathogens (EDPs) and diseases caused by them

- Policy Development
- Operationalize Surveillance
- Standardize Reporting & Data Management
- Capacity Building Trainings
- Timeline: October 1, 2018 to June 30, 2022

Operationalizing a One Health Network in Cambodia, Lao PDR, and Viet Nam



	Partners
CAMBODIA	Department of Wildlife and Biodiversity, Forestry Administration, Ministry of Agriculture, Forestry, and Fisheries (MAFF); General Directorate of Animal Health and Production, MAFF; General Department of Administration for Nature Conservation and Protection; Ministry of Environment; Institut Pasteur du Cambodge, Food and Agriculture Organization (FAO) of the UN
LAO PDR	Department of Livestock and Fisheries, Ministry of Agriculture and Forestry (MAF); National Animal Health Laboratory, MAF; Department of Forestry, MAF; Department of Forestry Inspection, MAF; Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit (LOMWRU); Lao Conservation Trust for Wildlife
VIET NAM	Department of Animal Health, Ministry of Agriculture and Rural Development (MARD); Regional Animal Health Offices 6 and 7, Ministry of Agriculture and Rural Development (MARD); National Institute of Hygiene and Epidemiology, Ministry of Health; Vietnam National University of Agriculture; Hanoi Medical University; Institute of Ecology and Biological Resources; Vietnam Academy of Science and Technology; Food and Agriculture Organization (FAO) of the UN





Policy Development

Engaged with national agencies and international partners to clarify roles and responsibilities for wildlife pathogen detection, steps, and communication in disease outbreak response

- Co-developed national strategies with government partners
- District, provincial, and national levels
- Sample collection to data management to disease outbreak response
- Integrates with existing national surveillance and One Health platforms



Standard Operating Procedure development meetings in Lao PDR (above) and Cambodia (right) in 2021.





Active and Passive Surveillance

Identified priority pathogens with government partners and conducted surveillance activities in key protected areas and high-risk areas for **Especially Dangerous Pathogen (EDP)** transmission

	Active Surveillance Activities for EDPs
CAMBODIA	Avian Influenza Virus, African Swine Fever Virus, Nipah Virus
LAO PDR	Avian Influenza Virus, African Swine Fever Virus, Rickettsia
VIET NAM	Avian Influenza Virus, African Swine Fever Virus, Rickettsia, Hantaviruses, SARS-like Corona Viruses

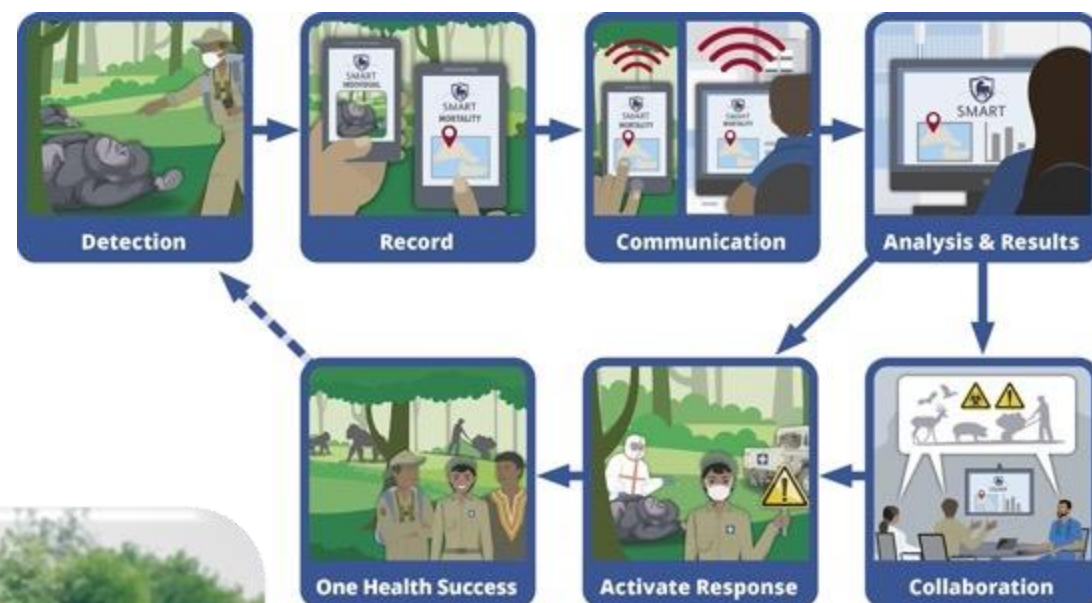




Standardize Reporting & Data Management

Developed a harmonized platform for data collection and management applicable in low and middle income countries

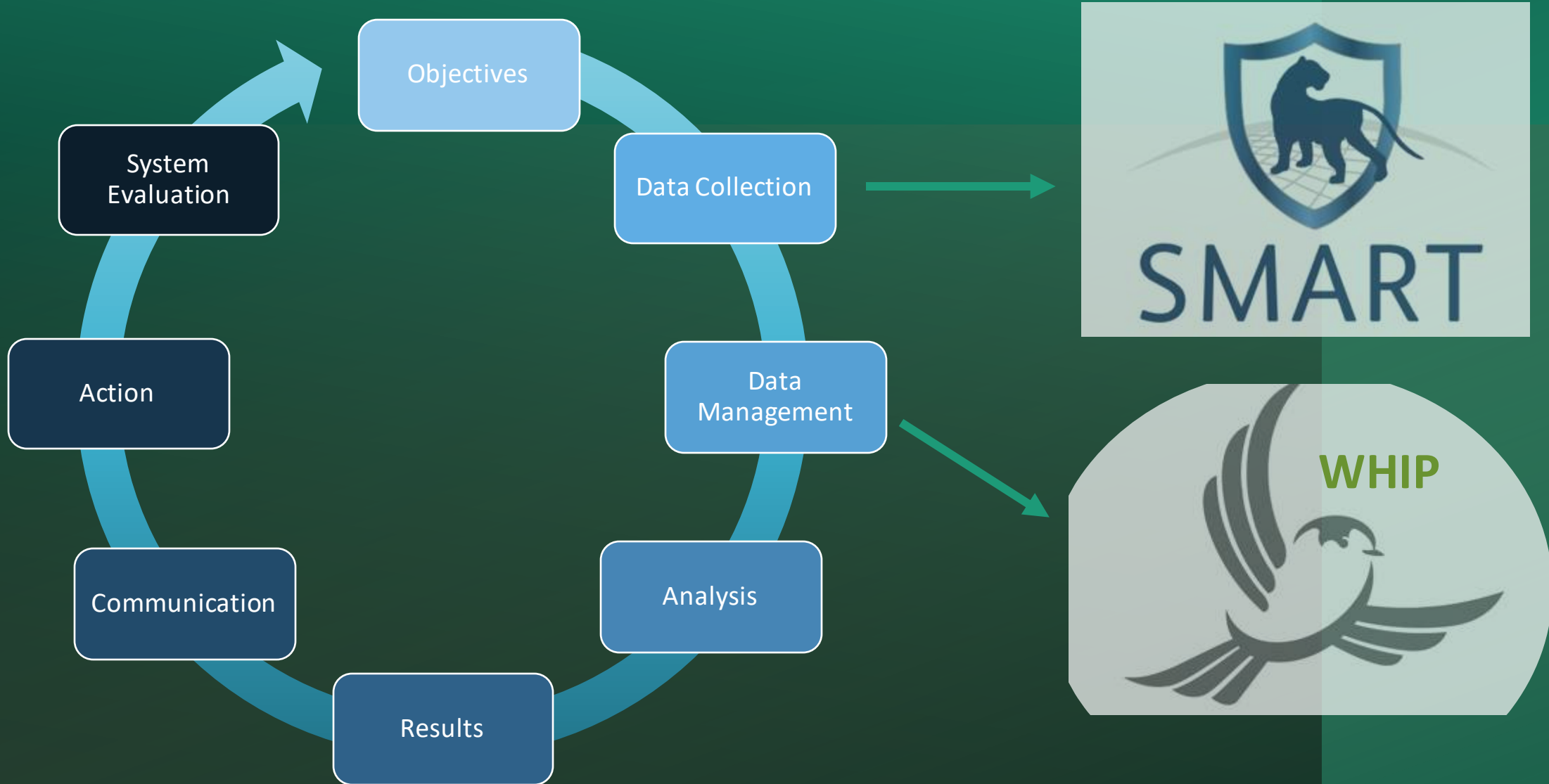
- Adapted existing technologies for data collection (SMART for Health) and management (Wildlife Health Intelligence Platform)
- Wildlife health focused data collection and disease reporting
- Integrates with existing national data models/platforms

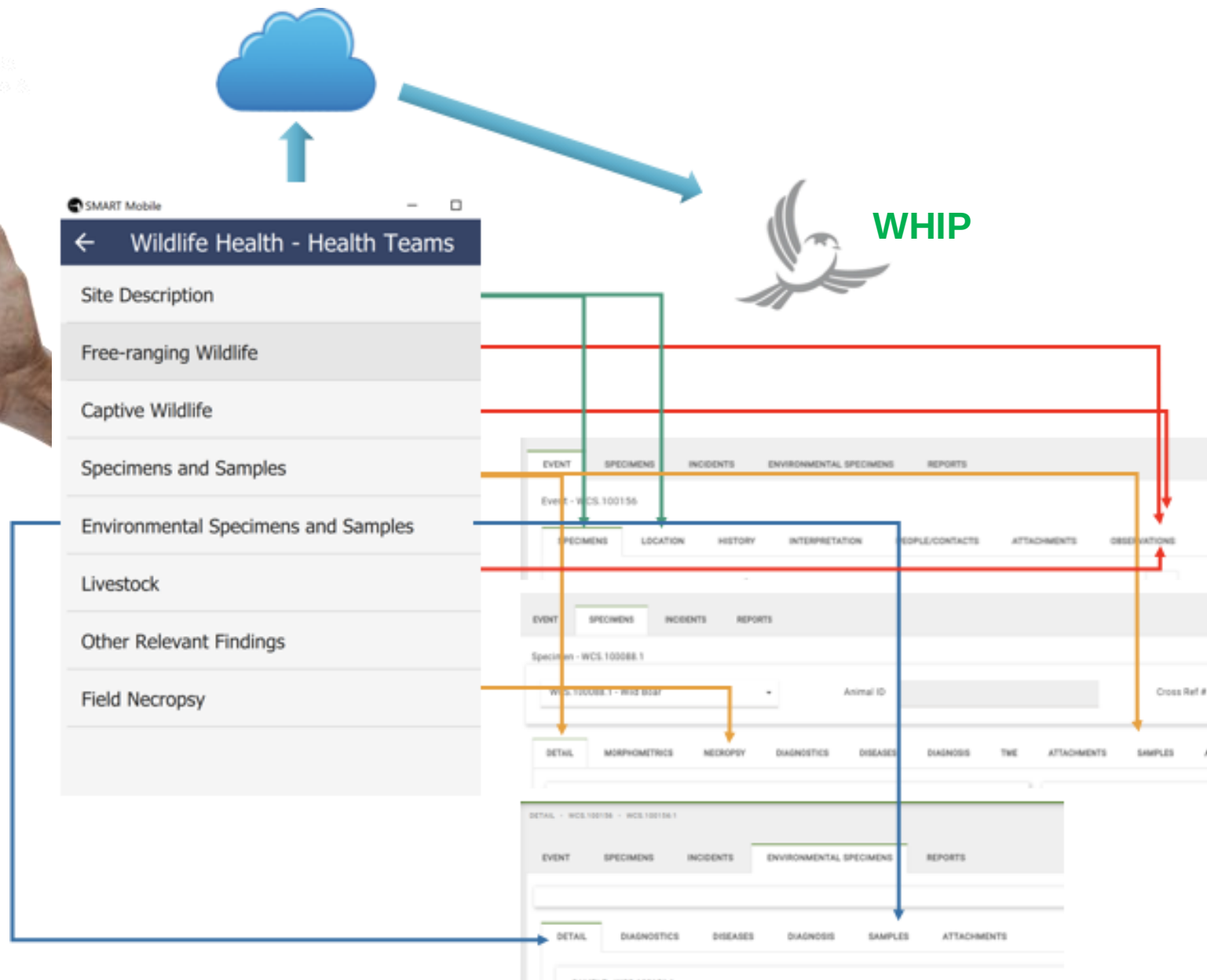


Above: Overview of how technology contributes to wildlife health surveillance data collection and management.

Left: Wildlife health practitioners in Vietnam using SMART mobile technology to collect standardized field observations that integrate with other One Health data platforms to support a comprehensive approach to wildlife health surveillance.

Wildlife Health Surveillance and SMART - WHIP







Capacity Building Trainings

Train actors in wildlife bio-surveillance networks with skills needed to contribute wildlife data to disease surveillance systems in the domestic animal and public health sectors

- Stakeholder specific trainings
- Multi-lingual training packages
- Core competencies and evaluation tools





Case Studies



WildHealthNet facilitated the **first detection of Highly Pathogenic Avian Influenza (HPAI H5N1) in free-ranging wild birds** in Cambodia. In early 2021, government rangers and community members in SE Cambodia detected a wild bird mass mortality event of over 2000 wild birds. With support from WildHealthNet, a multisectoral joint investigation was conducted by environment and animal health government agencies, conservation organizations, and local authorities to determine the cause of the mortality event. **HPAI H5N1 was ultimately detected by the national laboratory and relevant stakeholders were notified.** At the same time, WildHealthNet also supported avian influenza investigations in Viet Nam in collaboration with the Dong Thap Provincial Department of Animal Health. Bird populations in Dong Thap Province, southern Viet Nam, were surveyed during a **joint investigation** and HPAI H5N1 was detected in sick and dead free-ranging wild birds in Tram Chim National Park. Investigations were also conducted in Lao PDR.



Meeting with local communities in Laos at the frontlines of an African Swine Fever outbreak and conducting participatory mapping interviews to better understand the impacts on wild boar and their potential role as a reservoir host.



African Swine Fever (ASF) is a highly contagious and fatal viral disease that affects both domestic and wild pigs. Predominantly a disease of sub-Saharan Africa, ASF was introduced to China in 2018 and rapidly spread throughout the region, decimating pig populations and causing significant economic losses. ASF spread to domestic pigs in Vietnam, Cambodia, and Lao PDR in 2019, and WildHealthNet **helped facilitate the first detection of African Swine Fever Virus (ASFV) in free ranging wild boar** in these countries. This rapid first detection enabled the scaling up of reporting of affected wild boar detected by rural communities, and opportunities for communication with these communities on how to prevent the spread, highlighting the huge value of surveillance at the wildlife-livestock interface. WildHealthNet is **supporting passive participatory surveillance and reporting of wild boar carcasses** by villagers, hunters, rangers, and animal health workers through community outreach and educational posters.



WildHealth**Build**
WildHealth**Skills**
WildHealth**Analytics**
WildHealth**Response**



WildHealthBuild

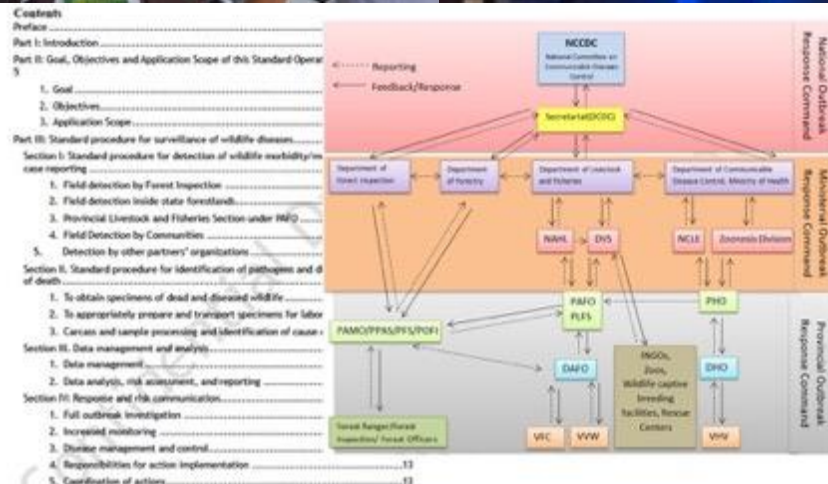
WildHealthSkills

WildHealthAnalytics

WildHealthResponse



WildHealthBuild: process of iteratively identifying, connecting, and integrating actors into an operational surveillance structure and formalizing their responsibilities. This requires mapping of communication between actors and sectors while building durable relationships among network members and between different levels of the network.





WildHealthBuild

WildHealthSkills

WildHealthAnalytics

WildHealthResponse



WildHealthSkills: process to identify existing capacity, knowledge gaps, and available human resources across different roles and levels within the network. The approach will deliver targeted, context specific capacity building material for stakeholders that goes beyond one-size-fits-all training.





WildHealth**Build**

WildHealth**Skills**

WildHealth**Analytics**

WildHealth**Response**



WildHealthAnalytics: process to identify and deploy appropriate and sustainable technology to support accurate data generation, smooth field data collection, and efficient data management with standardization, access, sharing, and communication of information that supports decision making





WildHealth**Build**

WildHealth**Skills**

WildHealth**Analytics**

WildHealth**Response**



WildHealthResponse: continuous process of building a community of practice around wildlife health surveillance and response across local to global scales. This network of individual to institutional practitioners engages a broader One Health community, provides access to technical support on study design, data, diagnostics, pathology, analytics, and any other surveillance or response related activity; connects members with knowledge resources, new approaches, novel technologies, and experiences of other members in managing wildlife health

Thank You

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