

WOAH Collaborative Centre Reports Activities 2023

Activities in 2023

This report has been submitted : 28 juin 2024 20:20

Centre Information

Title of WOA Collaborating Centre	Emerging and Re-emerging Zoonotic Diseases
Address of WOA Collaborating Centre	1600 Clifton Road, MS H16-5, Atlanta, Georgia 30333
Tel.:	001 (404) 639-0367
E-mail address:	CBartonBehraves@cdc.gov and OneHealth@cdc.gov
Website:	www.cdc.gov/ncezid and www.cdc.gov/onehealth
Name Director of Institute (Responsible Official):	Daniel B. Jernigan, MD, MPH, Director, NCEZID, CDC
Name (including Title and Position) of Head of the Collaborating Centre (WOAH Contact Point):	Casey Barton Behraves MS, DVM, DrPH, DACVPM Director, CDC One Health Office
Name of the writer:	Natalie M. Wendling, DVM, MPH, DACVPM, Veterinary Medical Officer, CDC One Health Office

TOR1 AND 2: SERVICES PROVIDED

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by WOA

Category	Title of activity	Scope
Disease control (true)	United States One Health Coordination Unite (U.S. OHCU)	As part of the 2023 Consolidated Appropriations Act, Congress directed CDC to collaborate with interagency partners to lead th formalized multisectoral, One Health coordination mechanism for the federal government. In January 2024, CDC coordinatc inaugural U.S. OHCU meeting, bringing together representatives from 24 agencies from multiple federal departments to coor federal government on zoonotic diseases and other One Health related issues. This meeting marked the first formalized fede coordination mechanism in the United States. The 2023 Consolidated Appropriations act is linked here: https://www.congress.gov/bills/118/2617/text
Epidemiology, surveillance, risk assessment, (true)	One Health Surveillance and Investigation of SARS-CoV-2 at the human-animal-environment interface in Southeast Asia	CDC, in collaboration with the Health Security Partners, is supporting One Health SARS-CoV-2 surveillance project at the h environment interface. The objectives of this project are to collaborate with countries in the region to identify gaps across the rec activities for SARS-CoV-2; characterize risks in environments where humans and animals come into contact; conduct SARS-CoV- human-animal-environment interface within the region; build surveillance capacity across One Health sectors within countrie practices and lessons learned within the region. Four partners across Thailand, Indonesia, and Vietnam have been funded to conc These sites are conducting surveillance for SARS-CoV-2 in hospitals/clinics for people and exotic pets, zoological parks, live anir rescue centers, bat roosts and caves, confiscation sites, farms, and garbage dump sites. The Thailand sites have completed thei working to publish and share results. Collection of samples, testing, and data analysis is ongoing in Indonesia and Vi
		CDC works with partners to conduct OHZDP workshops to bring together human, animal, and environmental health sectors a partners to prioritize zoonotic diseases of greatest concern in a country, region, or other area and develop next steps and action p

<p>Training, capacity building (true)</p>	<p>One Health Zoonotic Disease Prioritization (OHZDP) Workshops</p>	<p>priority zoonotic diseases in collaboration with One Health partners. The OHZDP Process uses a transparent, collaborative approach that incorporates equal input from all represented One Health sectors. The OHZDP helps strengthen multisectoral, One Health coordination, and communication, supports the creation or strengthening of multisectoral, One Health coordination mechanisms, and capacity for identified priorities, and is adaptable to local context. Zoonoses most commonly prioritized globally include rabies, brucellosis, anthrax, viral hemorrhagic fevers such as Ebola virus, Marburg, Crimean Congo hemorrhagic fever, and Rift Valley fever and tuberculosis. In 2023, seven national OHZDP workshops were conducted for El Salvador, Honduras, Peru, Sierra Leone, Singapore, and Zambia. Additional details can be found at: https://www.cdc.gov/onehealth/what-we-do/zoonotic-disease-prioritization</p>
<p>Zoonoses (true)</p>	<p>Preventing, Detecting, and Responding to Emerging and Reemerging Zoonotic Diseases in Multiple Countries</p>	<p>Details on multiple zoonotic disease activities around the globe are cross reported in other sections of this document.</p>
<p>Diagnosis, biotechnology and laboratory (true)</p>	<p>Laboratory Persistence Study on Sporothrix spp.</p>	<p>CDC is conducting a study to evaluate the persistence of Sporothrix spp., a zoonotic fungal pathogen, in the environment, on surfaces. The objective is to demonstrate viability of Sporothrix spp. in veterinary healthcare facilities and fomites, e.g., stainless steel clippers and stethoscopes.</p>
<p>Vaccines (true)</p>	<p>CDC's Antimicrobial Resistance (AMR) Exchange Series</p>	<p>On Tuesday, August 29, 2023, CDC held its seventh installment of the AMR Exchange focused on Vaccines: A Critical Tool in the Fight Against Antimicrobial Resistance. The webinar highlighted how vaccines are an effective tool to prevent antimicrobial resistance and protect public health. Nearly 3,600 global partners registered, with over 1,600 attending. Watch the recording of this AMR Exchange webinar to learn more and how CDC and its partners are collaborating across a One Health approach to address the role of vaccines to decrease the spread of antimicrobial resistance and the overall burden of disease globally. https://event.catmedia.com/vaccines-a-critical-tool-in-the-fight-against-antimicrobial-resistance https://youtu.be/8qta5gB48ME?si=Zw6cOxJOu13jIJP</p>
<p>Disease control (true)</p>	<p>The One Health Federal Interagency Coordination Committee (OH-FICC), a federal level One Health coordination mechanism</p>	<p>The United States continues to collaborate across public health, agriculture, wildlife, and environment sectors and with other One Health partners to address zoonotic diseases. CDC coordinates the One Health Federal Interagency Coordination Committee (OH-FICC) to bring together representatives from 23 key federal agencies representing multiple departments across the United States (U.S.) government to coordinate and collaborate related to prevention, detection, control, and response to zoonotic diseases and related One Health issues across the country. Focus areas over the past year included emerging infectious and zoonotic diseases like COVID-19, mpox, and zoonotic influenza. Partners from other WOAHC collaborating centres located in the U.S. are invited to participate.</p>
<p>Disease control (true)</p>	<p>Provided One Health Coordination between OH-FICC and variety of One Health partners on COVID-19, zoonotic influenza, mpox, and other related One Health issues</p>	<p>1. CDC coordinates a monthly One Health State Federal Update Call to bring together state, tribal, local, territorial, and federal public health, animal health, and environment sectors on the One Health aspects of priority zoonotic diseases to share timely updates, information, and address concerns. Invitees included state, local, and territorial public health officials, animal health officials, and OH-FICC members. 2. CDC coordinates a quarterly One Health Partners Webinar to present news and key updates on the One Health emerging zoonotic diseases and other One Health issues, as well as guidance and resources and to provide a platform for non-governmental partners to ask questions. Attendees include variety of non-governmental partners including organizations, academic, industry, and community groups from other WOAHC collaborating centres located in the U.S. are invited.</p>
<p>Disease control (true)</p>	<p>Influenza and Zoonoses Education for Youth in Agriculture in</p>	<p>CDC has worked with the Council of State and Territorial Epidemiologists (CSTE) to promote a One Health collaboration between local public health and animal health authorities and state youth agriculture groups through a program called Influenza and Zoonoses Among Youth in Agriculture. This innovative program educates youth about zoonotic diseases shared between animals and humans (including emerging zoonoses), delivers disease prevention messages, and strengthens One Health networks among state human and animal health partners.</p>

	the United States	departments and agricultural communities across rural America. For more information and to access globally available preventic visit www.cdc.gov/onehealth/pdfs/youth-in-ag-508.pdf and www.cdc.gov/onehealth/domestic-activities/index.f
Disease control (true)	Healthy Pets, Healthy People	CDC manages the Healthy Pets, Healthy People website. This website provides up-to-date information on zoonotic diseases rel interactions with pets, livestock, and wildlife, including U.S. outbreaks linked to animals and animal products. The website also for public health and animal health officials (domestic and wildlife), as well as veterinarians and human healthcare providers; ed on staying healthy around animals; guidelines for preventing zoonoses in high-risk people, and in public settings such as petting for pet owners on how to prepare pets for disasters. This website is used globally by >50 countries annually. In 2023, the website 3 million views. www.cdc.gov/healthypets
Disease control (true)	PulseNet	PulseNet is a national laboratory network that connects foodborne, waterborne, and One Health–related illness cases to detect c uses DNA fingerprinting of bacteria making people sick, to detect thousands of local and multistate outbreaks. Since the netw PulseNet has improved our food safety systems through identifying outbreaks early. This allows investigators to find the sourc sooner, and identify gaps in our food safety systems that would not otherwise be recognized. PulseNet International performs foodborne illnesses globally.
Disease control (true)	National Antimicrobial Resistance Monitoring System (NARMS)	NARMS is a collaboration among state and local public health departments, CDC, the U.S. Food and Drug Administration (FC Department of Agriculture (USDA). This national public health surveillance system tracks changes in antimicrobial susceptibility (intestinal) bacteria found in ill people (CDC), retail meats (FDA), and food animals (USDA) in the United States. The NARMS pro protect public health by providing information about emerging bacterial resistance, the ways in which resistance is spread, ar infections differ from susceptible infections. https://www.cdc.gov/narms/index.html
Disease control (true)	Animal Contact Surveillance System (ACOSS)	CDC’s Animal Contact Outbreak Surveillance System (ACOSS) collects information from state and local health departments at human enteric illness linked to contact with animals or their environments. Animal contact outbreaks provide important insig pathogens spread from animals to people. They also help us understand which pathogens are linked commonly to which anir might prevent illnesses. https://www.cdc.gov/acoss/index.html
Disease control (true)	Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2023	Opportunities for the public to interact with animals in public settings such as petting zoos, fairs, and farm visits can be valua entertainment experiences. However, zoonotic disease transmission from healthy animals on exhibit and their environments, as other health problems, may result from these interactions if steps are not taken to minimize risks. The 2023 Compendium of M Disease Associated with Animals in Public Settings provides background about these potential risks and updates recommenda those risks. https://avmajournals.avma.org/view/journals/javma/261/12/javma.23.05.0280.xml
Disease control (true)	Collaborative Development of a National Veterinary Accreditation Program Module on “The Veterinarian’s Role in Microbial Preharvest Food Safety”	Providing safe food for consumers is a common goal shared by partners in public and animal health, food animal production, i egg, and dairy food industries. Recent food safety challenges prompted representatives of industry associations, veterinary assc federal agencies, and other allied entities to form a private-public workgroup to develop a veterinary training module for the US Veterinary Accreditation Program (NVAP). The goals of the module are to increase awareness among accredited veterinarians the can affect food safety and to promote on-farm strategies to reduce pathogens causing human foodborne illness, thereby prote food supply. This module will provide valuable resources and education for accredited veterinarians to help producers continu animals. Improving the health of food animals leads to safer food and protects public health. The private-public partnerships dev can be leveraged for future collaborative projects to promote One Health.
Disease control (true)	Technical assistance for Viral Hemorrhagic Fever (VHF) outbreak response and preparedness, multiple countries	In 2023, CDC provided technical assistance for VHF outbreak response and preparedness and laboratory diagnostic support to a r globally, including for Ebola (Sudan virus), Crimean-Congo hemorrhagic fever (CCHF) and Rift Valley fever in Uganda; Marburg i and Tanzania; Chapare virus and hantavirus in Bolivia, Panama and Argentina; Ebola in Democratic Republic of the Congo; CCHI Georgia, Kazakhstan, Iraq and Pakistan; Lassa fever in Ghana and Sierra Leone; and Nipah virus in Bangladesh.
Disease	Mpox outbreak response &	CDC continues to work closely with partners in Cameroon, Democratic Republic of Congo, and Nigeria to support laboratory-ba

control (true)	surveillance capacity	disease and technical input on outbreak investigations of mpox.
Disease control (true)	Zoonotic mpox transmission and the human-animal interface	CDC continues to work closely with colleagues to better understand and characterize the interactions between humans and wild animals in endemic areas. · CDC trained teams in Nigeria, Cameroon, DRC, and Sierra Leone to capture, sample, and test animals for mpox. These studies will provide information about which types of animals are naturally infected with mpox virus in the environment and how they are transmitting the virus to human populations. · CDC is working with in country partners to use mixed methods (qualitative and quantitative) interviews to examine mpox risk factors for human mpox cases at the human-animal interface. These studies will provide insight into how people in Nigeria and DRC are being exposed to infected animals. CDC is collaborating to assess the activity patterns and relationships between suspected mpox reservoirs in disturbed and undisturbed environments in rural DRC. This will provide information on how the activities of these animals may increase the risk of human mpox infections at the human-animal-environment interface.
Disease control (true)	Anthrax outbreak response, Zambia	CDC provided remote consultative support for an ongoing anthrax outbreak in Zambia. CDC stands ready to provide further assistance and on-the-ground support; to date an invitation from the country has not yet been received.
Epidemiology, surveillance, risk assessment, (true)	Investigation of Cache Valley virus (CVV) distribution and health risk among humans and animals in Arkansas	CVV is a mosquito-borne disease that can cause reproductive losses in sheep and other ruminants, and rarely severe neurological disease in humans. CDC collaborated with the AR Department of Health, AR Department of Agriculture, AR Game and Fish Commission, USDA, and Arkansas Medical Sciences, to (1) assess and characterize animal data and archived sera from an impacted sheep flock; (2) investigate CVV circulation in Arkansas; and (3) evaluate the impact of CVV on human health by assessing encephalitis and meningitis cases and their etiology.
Epidemiology, surveillance, risk assessment (true)	Multistate investigations of Salmonella illnesses linked to backyard poultry, small turtles, and dry dog food	CDC and public health officials in multiple states investigated outbreaks of Salmonella infections linked to contact with a variety of backyard sources including backyard poultry, small turtles, and dry dog and cat food. More details at: - https://www.cdc.gov/salmonella/backyard-poultry-08-23/index.html - https://www.cdc.gov/salmonella/turtles-08-23/index.html - https://www.cdc.gov/salmonella/kiambu-11-17/index.html
Epidemiology, surveillance, risk assessment (true)	Reoccurring, Emerging, and Persisting Enteric Bacterial Strains	Some enteric bacterial strains cause acute outbreaks linked to specific sources. Other strains, referred to as reoccurring, emerging, and persisting, can reoccur and periodically cause acute outbreaks. They can also emerge and increase in frequency or persist and cause outbreaks over periods of months or years, despite investigation and prevention efforts. https://www.cdc.gov/ncezid/dfwed/outbreak-response/rep-strains/reptdk01.html - https://www.cdc.gov/ncezid/dfwed/outbreak-response/rep-strains/repjhp01.html - https://www.cdc.gov/ncezid/dfwed/outbreak-response/rep-strains/repjpx01.html
Epidemiology, surveillance, risk assessment (true)	Support for Zoonotic Fungal Disease Outbreaks	CDC provided epidemiological technical support for a sporotrichosis cluster in two domestic cats and a veterinary technician in Wisconsin. CDC also provided technical and on-the-ground support for a cluster of blastomycosis cases among humans in a Wisconsin neighborhood.
Epidemiology, surveillance, risk assessment (true)	U.S. Port of Entry Surveillance for Feline Sporotrichosis	CDC has conducted initial visits in preparation for piloting surveillance of feline sporotrichosis caused at ports of entry at U.S. airports. Surveillance is expected to begin in the first half of 2024.
Epidemiology, surveillance, risk assessment (true)	Washington Integrated Surveillance for Antibiotic Resistance (WISAR)	CDC supports the Washington Food Safety Center of Excellence to evaluate and improve the Washington Integrated Surveillance for Antibiotic Resistance (WISAR) surveillance database. WISAR is a database maintained by the University of Washington that combines clinical and environmental bacterial isolate antibiotic susceptibility test results for humans, animals, and the environment from the National Antimicrobial Monitoring System (NARMS) (data on humans, animals, and food), Washington Department of Health Public Health Laboratory, including a large medical laboratory database, and veterinary clinical data from a regional veterinary diagnostic laboratory, the Washington State Disease Diagnostic Laboratory. The database is used to generate community antibiograms for human and veterinary antibiotic resistance surveillance. A periodic summary is distributed between human, animal, and environmental health agencies, stakeholders, and the public. https://deohs.washington.edu/cohr/washington-integrated-surveillance-antibiotic-resistance-project#:~:text=One%20Health

		,The%20Washington%20Integrated%20Surveillance%20for%20Antibiotic%20Resistance%20project,for%20Disease%20Control%20
Epidemiology, surveillance, risk assessment (true)	The Antibiotic Resistance in Communities and Hospitals (ARCH) consortium	The Antibiotic Resistance in Communities and Hospitals (ARCH) consortium is a part of CDC's Global Antimicrobial Resistance Response Network. ARCH is a network of research partners tracking the amount and spread of AR colonization, including animal exposures, in hospitals and communities in six countries and studying predictors and outcomes of colonization. The data from th help us understand the source of new resistance threats, how widespread the threats are, and how we can tailor prevention strat impact. https://www.cdc.gov/drugresistance/ar-lab-networks/global-projects.html
Epidemiology, surveillance, risk assessment (true)	Evaluating the risk of colonization with antimicrobial-resistant gut bacteria in Guatemala	In December 2021, CDC established the Global Antimicrobial Resistance Laboratory and Response Network (Global AR Lab & Res broad-reaching, One Health approach to improve the detection of antimicrobial-resistant threats and prevent their spread c collaborating with Washington State University and Universidad del Valle de Guatemala on a One Health surveillance study in G CDC's Global AR Lab & Response Network. The project aims to increase understanding of transmission and characterize risk fac spectrum cephalosporin resistant Enterobacterales (ESCrE) and carbapenem-resistant Enterobacterales (CRE) colonization in h consumption of certain foods, drinking water, and contact with livestock and companion animals. The project is complementar; Antibiotic Resistance in Communities and Healthcare (ARCH) project that is evaluating risk factors for colonization in humans re exposure. Together, the projects will enhance understanding of the molecular epidemiology and community transmission dy antimicrobial-resistant organisms.
Epidemiology, surveillance, risk assessment (true)	Emerging/re-emerging zoonotic Viral Hemorrhagic Fever (VHF) surveillance activities in Uganda	Since 2010, CDC has supported the Uganda Ministry of Health (MOH) and Uganda Virus Research Institute (UVRI) with Ugand Hemorrhagic Fever Surveillance Program. This program includes routine surveillance of ebolaviruses, Marburg viruses, CCHF, a and animals in Uganda. Of note, in September 2022, Uganda MOH declared an outbreak of Ebola (Sudan virus) that began in M Central Uganda. CDC provided technical support to Uganda MOH with surveillance, laboratory, and ecological investigations, ar outbreak response. Additionally in 2023, CDC, in collaboration with the Uganda MOH and UVRI, continued longitudinal surveil CCHF in livestock and humans associated with livestock in multiple districts in Uganda. This data is used to validate a predic determine environmental factors associated with high seropositivity and transmission. CDC continued work with Uganda Wildli 2007) performing surveillance for filoviruses in bats and tracking nightly and seasonal movements of known filovirus reservoir supporting a survivor monitoring program implemented by Baylor University in Uganda after the latest Sudan ebolavirus outbr technical assistance and funding.
Epidemiology, surveillance, risk assessment (true)	Crimean-Congo hemorrhagic fever (CCHF) surveillance and risk modeling in the Republic of Georgia and Iraq	CDC provided technical consultation and analysis support for CCHF in the Republic of Georgia and Iraq by analyzing previous environmental and ecological variables to help determine the cause for higher-than-expected numbers of cases being reported identify locations/regions more at risk for CCHF human and animal disease. CDC also provided input on serosurvey studies i
Epidemiology, surveillance, risk assessment (true)	Nipah surveillance and modeling	CDC has been conducting serological surveys (human surveys) in close proximity to Pteropus (bats) roosts to identify new are Bangladesh – areas not previously identified as human outbreak locations. CDC is also conducting ecological niche modeling usi data and bat serological/PCR data to develop risk maps based on environmental drivers (i.e., rainfall, humidity, habitat perturba land use changes, etc.). These ECM maps could be extended to other countries (i.e., Cambodia, Thailand, broader South and S home range of Pteropus exists (there is some evidence of Nipah/henipah positive bat samples but no known/identified human c surveillance.
Epidemiology, surveillance, risk assessment (true)	Anthrax Control Strategic Planning, Cameroon	CDC facilitated a workshop where government partners presented and reviewed the latest version of the Anthrax strategic plan. presentation and discussion of different carcass disposal methods and agreed upon a final SOP for safe disposal of carcasses su:
Epidemiology, surveillance, risk assessment (true)	Brucellosis Workshop, Cameroon	Participants from multiple sectors, including human and animal health participated on a 2-day workshop to evaluate Camer prevent and control brucellosis in both animals and humans. Both Ministry of Health and Ministry of Agriculture presented the Cameroon related to laboratory capacity, existing surveillance infrastructure and current knowledge of the disease. Participan (Stepwise tool for the elimination of brucellosis) during the workshop to self asses their existing capacity and assist in identifyin and long-term priorities for Cameroon. PNPLZER is developing a report to be shared with participants. The expectation is that thi as a guide to develop their National Control Program.
Training, capacity building (true)	One Health Zoonotic Disease Prioritization Process Facilitator	CDC's One Health Office, in collaboration with global partners, conducted One Health Zoonotic Disease Prioritization (OHZDP) that included 199 multisectoral representatives from ministries of health, agriculture, wildlife, and environment for 24 countries : America, and Southeast Asia. One Health partners, including FAO, WHO, WOA, UNEP, and Africa CDC also participated in these trainings. The following countries participated in these facilitator trainings: Argentina, Colombia, Chile, Ecuador, Paraguay, P Indonesia, Laos, Thailand, Papa New Guinea, Philippines, Vietnam, Angola, Botswana, eSwatini, Lesotho, Malawi, Mozambique Leone, South Africa, Zambia, Zimbabwe.

	Training	
Training, capacity building (true)	One Health Rapid Response Teams	CDC is developing a framework for One Health Rapid Response Teams (OHRRTs) to support countries in enhancing One Health capacity. OHRRTs are teams made of experts from multiple sectors and disciplines representing public health, agriculture, w environment. These teams are trained and equipped to rapidly deploy and respond to One Health issues such as zoonotic dis emerging infectious diseases. CDC's OHRRT Framework utilizes a comprehensive, multi-phased approach designed to assist cour and managing their OHRRT programs. This includes supporting countries in designing, developing, implementing, and eval program. Using an assessment of the current One Health emergency response readiness and capacity, the process includes a s workshops, and mentorship to develop critical OHRRT components. This includes the creation of sustainable peacetime and em to ensure a trained, ready, efficient, and effective OHRRT response system and workforce. CDC is currently piloting the OHRRT F Government of Cambodia.
Training, capacity building (true)	One Health Sporotrichosis Working Group	Working with Brazilian partners, CDC has formed the One Health Sporotrichosis Working Group (WG) as a response to the incr zoonotic sporotrichosis in the Latin American region. The WG is the first step toward a holistic and collaborative One Health pub for tackling this epidemic.
Training, capacity building (true)	Evaluation of Infection Prevention and Control (IPC) Performance for COVID-19 and Preparedness Activities for Sudan Virus Disease (SVD)	CDC supported ICAP at Columbia University to establish the East Africa Infection Prevention and Control (EA IPC) Network to worker capacity to improve adherence with IPC standards. The network included 20 hospitals across four countries: Ethiopia, Ke Uganda and includes weekly case-based learning sessions, collaborative quality improvement projects for IPC, facility assessme performance for COVID-19 and tailored professional development for facility IPC focal points and team members. The netw leveraged to share information on response and preparedness activities underway after the identification of the Sudan ebolaviru:
Training, capacity building (true)	Training and capacity building in infectious disease pathology	CDC provides training opportunities for physician and veterinary pathology trainees and practitioners. These include in-person i through use of glass or digitally scanned slides, for identification of pathologic lesions associated with infectious etiologies, incl emerging pathogens. CDC also provides in-person and telepathology support for infectious disease capacity building efforts ir countries in South America, Africa, and Asia.
Training, capacity building (true)	Anthrax trainings in Bangladesh	CDC provided the Institute of Epidemiology, Disease Control and Research (IEDCR) and Bangladesh's Department of Livestock Sei and hands on gram stain training to 8 staff and a One Health Anthrax Surveillance Workshop over 2 days to over 50 at
Training, capacity building (true)	Anthrax and Brucellosis trainings in Cameroon	CDC trained Cameroon laboratory staff on anthrax and brucellosis laboratory diagnostics. Fifteen laboratory staff from Center I (CPC) and Centre de Recherche pour la Santé des Armées (CRESAR): were trained on RoseBengal (brucellosis). During the traini staff discussed future applications of the RoseBengal Test in clinical settings. Conducted laboratory re-training at CPC on the mo Brucella species by real-time PCR including a pan-Brucella screening assay and species-specific assays for the detection of B. i abortus DNA. Introduced the Anthrax AAD-Plus lateral flow test for the presumptive diagnosis of pulmonary Anthrax. Demonst observed training participants perform and interpret the test at both CPC and CRESAR Provided Laboratoire Nationale Veterina training to 10 laboratory staff on Anthrax transmission, biosafety and animal sample collection protocols. Introduced the Anthra) assays to screen suspect animals in the field. Performed a demonstration of the rapid test and observed training participants cor the test in a group setting. Conducted laboratory training at CRESAR on the molecular detection of Brucella species by real-tim pan-Brucella screening assay and species specific assays for the detection of B. melitensis and B. abortus DNA
Zoonoses (true)	VHF surveillance activities in Sierra Leone	Since 2016, CDC has collaborated with Njala University to conduct routine surveillance in small mammal populations for VHFs. T in 2022 through a cooperative agreement with Viral Special Pathogens Branch.
Diagnosis, biotechnology and laboratory (true)	Global Genomic Epidemiology Study on Zoonotic Sporotrichosis	CDC is conducting a multicenter, global genomic epidemiology study on zoonotic sporotrichosis. The aim is to better understa and transmission of cat-transmitted sporotrichosis worldwide (current partners include Argentina, Brazil, Chile, Paraguay, Unite Thailand, and Malaysia).
Diagnosis,		Through the Antimicrobial Resistance Laboratory Network (AR Lab Network), CDC supports all 50 states, several large cities, and

biotechnology and laboratory (true)	Antimicrobial Resistance Laboratory Network	or implement new AR testing for improved detection of AR threats across One Health, including those linked to animals, their food supply. In FY 2023, CDC funded more than 40 jurisdictions to implement whole genome sequencing for enhanced detection to support outbreak response efforts (14,000 isolates sequenced and uploaded since the start of FY22). Since 2016, the AR Lab performed more than 1,000,000 different tests overall, including more than 300,000 isolate characterizations, 360,000 colonizati 390,000 sequences. https://www.cdc.gov/drugresistance/ar-lab-networks/domestic.html
Diagnosis, biotechnology and laboratory (true)	CDC's BEAM (Bacteria, Enterics, Amoeba, and Mycotics) Dashboard	CDC's BEAM Dashboard is an interactive tool to access and visualize data from SEDRIC (System for Enteric Disease Response, I Coordination), a secure, cloud-based platform for foodborne and animal contact outbreak investigations in the United States. It p on pathogen trends and serotype details to inform work to prevent illnesses from food and animal contact and was updated i NARMS data to include the percentage of outbreak-associated isolates that have clinically important AR. https://www.cdc.gov/n dashboard.html
Diagnosis, biotechnology and laboratory (true)	Global Antimicrobial Resistance Laboratory and Response Network	The CDC Global Antimicrobial Resistance Laboratory and Response Network (Global AR Lab & Response Network) completed a year of AR efforts around the globe, since its launch in December 2021. The Global AR Lab & Response Network uses a broad-re approach to improve the detection of antimicrobial-resistant threats and prevent their spread globally. The Global AR Lab & R spans nearly 50 countries and works with more than 20 organizations worldwide to identify risk factors driving the emergence threats across One Health and responds to threats on the ground, including those found in health care, the community, food, environment (e.g., water and soil). These settings are impacted by many types of pathogens, including healthcare-associated, se fungal, enteric, and invasive bacterial and respiratory. Recipients funded in the first two years of implementation will continue to into year three, while three new recipients have also been added to cover AR threats in additional areas in FY23. These ongoi represent progress in accomplishing the ambitious goals in the National Action Plan for Combating Antibiotic-Resistant Bacteria and reflect CDC's commitment to transforming the way the world responds to AR in people, animals, and the enviro https://www.cdc.gov/drugresistance/ar-lab-networks/global-projects.html
Diagnosis, biotechnology and laboratory (true)	CDC and FDA Antimicrobial Resistance (AR) Isolate Bank	CDC and U.S. Food and Drug Administration (FDA) collaborate on the CDC & FDA Antimicrobial Resistance (AR) Isolate Bank to i of and information available on antimicrobial-resistant pathogen isolates, including whole genome sequencing data. The more AR Isolate Bank samples are available to researchers', clinical laboratories and diagnostic device and drug manufacturers to stren development of new diagnostics and therapeutics for antimicrobial-resistant pathogens from across One Health, support stud submissions to FDA, help labs detect new and unusual AR threats that require swift intervention, and evaluate new antibiotics an October 2023, the CDC & FDA AR Isolate Bank has filled more than 4,300 orders, shipping around 9,300 panels containing near
Diagnosis, biotechnology and laboratory (true)	Tissue-based diagnosis of zoonotic and high-consequence pathogens	CDC provides pathologic evaluation and laboratory testing of human and animal biopsy and autopsy specimens for zoonotic, ei consequence pathogens, including Category A, B, and C bioterrorism agents.
Diagnosis, biotechnology and laboratory (true)	Tissue-based diagnosis of mpox and other poxviral infections	CDC provides pathologic evaluation of human and animal biopsy and autopsy specimens for Mpox and other poxviral ir immunohistochemistry and PCR. In situ hybridization techniques have been developed to help further understand viral tropism CDC characterized the pathology of severe and fatal Mpox infections in immunosuppressed patients, and submitted a manu pathology, virus distribution, and coinfections in these patients for consideration to Journal of Infectious Diseases for an up Supplement.
Diagnosis, biotechnology and laboratory (true)	Characterize pathology of fatal SARS-CoV-2 infection in big cats	CDC completed pathologic evaluation and SARS-CoV-2 detection by immunohistochemistry, in situ hybridization, and PCR fc samples from 5 big cats from U.S. zoos. CDC characterized pneumonic and other pathologic features and identified fatal ASi coinfections associated with SARS-CoV-2 in these cats. Manuscript submitted to Veterinary Pathology.
Vaccines (true)	Routine Mpox vaccines for at risk individuals	The ACIP voted unanimously to approve a routine recommendation of JYNNEOS for at risk individuals. At risk individuals includ other men who have sex with men, transgender or nonbinary people who in the past 6 months have had one of the following: A sexually transmitted disease, more than one sex partner, sex at a commercial sex venue, Sex in association with a large public eve area where mpox transmission is occurring, sexual partners of persons with the risks described in above, persons who anticipate the above.

TOR3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main focus area for which you were designated

Proposal title	Scope/Content	Applicable area

--	--	--

3. In exercising your activities, have you identified any regulatory research needs* relevant for WOA?H?

4. Did your Collaborating Centre maintain a network with other WOA?H Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

Yes

Name of WOA?H CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Multiple WOA?H CCs/RLs/other organizations	Multiple countries		CDC is in communication with multiple collaborating centres, reference laboratories, and other organizations from multiple countries and regions to maintain a network and share information on One Health activities related to emerging and re-emerging zoonoses.
Africa CDC	Ethiopia	Africa	Coordinating opportunities for workforce capacity training
Multiple diagnostic laboratories across West and Central Africa	West and Central Africa	Africa	Establishing a network of partners in West and Central Africa to coordinate diagnostic capabilities and research for mpox

TOR4 AND 5: NETWORKING AND COLLABORATION

5. Did your Collaborating Centre maintain a network with other WOA?H Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

Name of WOA?H CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
WOA?H CCs affiliated with the U.S. Centers for Disease Control and Prevention; WOA?H CCs affiliated with the U.S. Centers for Disease Control and Prevention; Department of Agriculture; National Institutes of Health; Food and Drug Administration; Environment Protection Agency; U.S. Department of the Interior: National Park Service, U.S. Fish and Wildlife Service, U.S. Geological Survey; U.S.	United States	Americas	To communicate, coordinate, and collaborate on projects related to One Health; Approaches to prevention and control of emerging and re-emerging zoonotic diseases; To identify and pursue opportunities to improve efficiency outcomes for human, animal, and environmental health across

Department of Homeland Security; U.S. Department of Defence; Defence Threat Reduction Agency; U.S. Department of Labor, U.S. Agency for International Development, and others			the U.S. government and with One Health partners.
National Wildlife Health Center US Geological Survey Department of the Interior	United States	Americas	One Health coordination and collaboration to conduct surveillance for coronaviruses in wildlife.

TOR6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOAAH?

Yes

NAME OF EXPERT	KIND OF CONSULTANCY	SUBJECT
Casey Barton Behravesh, MS, DVM, DrPH, DACVPM	Technical Assistance, Attendance at WOAAH Meetings, support WOAAH on guidance development and updates for emerging and reemerging zoonoses like mpox and SARS-CoV-2 at the human-animal interface, member One Health High-Level Expert Panel (Term 1)	One Health, COVID-19, mpox, emerging and reemerging zoonoses, surveillance, outbreak investigation and response, public health, Tripartite Zoonoses Guide, global health security, and World Animal Health Information System + Steering Committee, also a member of OHHLEP which supports the Quadripartite organizations
Colin Basler, DVM, MPH, DACVPM	CDC One Health Liaison to WOAAH, Technical Assistance for WOAAH-FAO-WHO joint project "Building Tripartite International Guidance Tools for the National Implementation of One Health"; Member of WOAAH WAHIS Active Search Team; Member of Global Laboratory Leadership Program (GLLP) Animal Health Working Group	One Health, COVID-19, emerging and reemerging zoonoses, surveillance, outbreak investigation and response, public health, Tripartite Zoonoses Guide, antimicrobial resistance, global health security, food safety, World Animal Health Information System+, laboratory capacity, multisectoral workforce development, and joint risk assessment
Sean Shadomy, DVM, MPH, DACVPM	CDC One Health Office (OHO) senior technical advisor; Technical assistance, WOAAH-FAO-WHO joint project "Building Tripartite International Guidance Tools for the National Implementation of One Health"; member of FAO-led working group for the One Health Monitoring and Evaluation Operational Tool; led the Surveillance and Information Sharing Operational Tool Facilitator Training Workshop for ECOWAS, training over 70 participants from 15 ECOWAS member states and international partners including WHO, FAO and WOAAH; technical support for the Jan 2023 WHO EMRO emerging vector-borne and zoonotic infectious diseases workshop and Quadripartite regional meeting on One Health; leading CDC collaborations with FAO developing the joint "Stepwise Approach for the Progressive Elimination of Brucellosis" guidance and global database on economic and health burden of zoonotic diseases; technical expert for CDC-FAO-University of Oslo project developing public and animal health surveillance system interoperability applications; technical reviewer for CDC inventory of One Health tools supporting the One Health High Level Expert Panel (OHHLEP).	One Health, COVID-19, emerging and reemerging zoonoses, surveillance, outbreak investigation and response, public health, Tripartite Zoonoses Guide, Operational Tools, global health security and multisectoral workforce development
Ryan Wallace, DVM, MPH	Rabies technical expertise and committee member; Co-chair RABLAB.	Ad hoc committee to review rabies control status (virtual), tripartite meetings on the status of global rabies burden (in person); RABLAB rabies laboratory network
Jeffrey B. Doty	Mpox technical expertise and panelist member	Member of WOAAH Mpox Guidelines panel and Mpox Diagnostics panel

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

Yes

Details on CDC services and advice provided at the request of Members are cross reported in other sections of this document.

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOA, to personnel from WOA Members?

Yes

a) Technical visit : 0

b) Seminars : 6000

c) Hands-on training courses: 199

d) Internships (>1 month) : 4

TYPE OF TECHNICAL TRAINING PROVIDED (A, B, C OR D)	CONTENT	COUNTRY OF ORIGIN OF THE EXPERT(S) PROVIDED WITH TRAINING	NO. PARTICIPANTS FROM THE CORRESPONDING COUNTRY
B	CDC's One Health Office hosts the Zoonoses and One Health Updates (ZOHU Call), a monthly webinar to provide the latest news and resources on zoonoses and other One Health issues, including public health and animal health professionals (domestic and wildlife) and environment experts working in government, non-governmental organizations, industry, and academia. ZOHU calls offers continuing education for a variety of health professionals. For more information on the ZOHU Calls or to access webinar recordings or to subscribe to the monthly ZOHU Newsletter, visit: www.cdc.gov/onehealth/zohu/index.html	United States	6000
D	CDC hosted Epidemiology Elective Students and graduate student interns to provide public health training; students supported work on WOA projects	United States	4
C	CDC's One Health Office, in collaboration with global partners, conducted One Health Zoonotic Disease Prioritization (OHZDP) facilitator trainings that included multisectoral representatives from ministries of health, agriculture, wildlife, and environment for 24 countries across Africa, South America, and Southeast Asia. One Health partners, including FAO, WHO, WOA, UNEP, also participated in these OHZDP facilitator trainings.	Argentina, , Colombia, Chile, Ecuador, Paraguay, Peru, Cambodia, Indonesia, Laos, Thailand, Papa New Guinea, Philippines, Vietnam, Angola, Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, Sierra Leone, South Africa, Zambia, Zimbabwe	199

TOR8: SCIENTIFIC MEETINGS

9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOA?

No

TOR9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOA that may be useful to Members of WOA

a) Articles published in peer-reviewed journals:

163

Perdomo, Angela, et al. "First Known Report of mcr-Harboring Enterobacteriaceae in the Dominican Republic." *International Journal of Environmental Research and Public*

Health 20.6 (2023): 5123.

Chen, Jessica C., et al. "Reoccurring *Escherichia coli* O157: H7 Strain Linked to Leafy Greens–Associated Outbreaks, 2016–2019." *Emerging Infectious Diseases* 29.9 (2023): 1895.

Ford, Laura, et al. "Antimicrobial-resistant nontyphoidal *Salmonella* infection following international travel—United States, 2018–2019." *The Journal of Infectious Diseases* (2023): jiad128.

Walters, Cynney, et al. "Genome Sequences from a Reemergence of *Vibrio cholerae* in Haiti, 2022 Reveal Relatedness to Previously Circulating Strains." *Journal of Clinical Microbiology* 61.3 (2023): e00142-23.

Plumb, Ian D., et al. "Increased Multidrug-Resistant *Salmonella enterica* I Serotype 4,[5], 12: i- Infections Associated with Pork, United States, 2009–2018." *Emerging Infectious Diseases* 29.2 (2023): 314.

Carter, Michelle Qiu, et al. "Genomic and Phenotypic Characterization of Shiga Toxin–Producing *Escherichia albertii* Strains Isolated from Wild Birds in a Major Agricultural Region in California." *Microorganisms* 11.11 (2023): 2803.

Ochieng, John B., et al. "Epidemiology of Enteroaggregative, Enteropathogenic, and Shiga Toxin–Producing *Escherichia coli* Among Children Aged < 5 Years in 3 Countries in Africa, 2015–2018: Vaccine Impact on Diarrhea in Africa (VIDA) Study." *Clinical Infectious Diseases* 76.Supplement_1 (2023): S77-S86.

Canning, Michelle, et al. "Salmonella Outbreaks Linked to Beef, United States, 2012–2019." *Journal of Food Protection* 86.5 (2023): 100071.

Patel, Kane, et al. "Human Salmonellosis Outbreak Linked to *Salmonella* Typhimurium Epidemic in Wild Songbirds, United States, 2020–2021." *Emerging Infectious Diseases* 29.11 (2023): 2298.

Nemechek, Kaylea, et al. "Multistate outbreak of turtle-associated salmonellosis highlights ongoing challenges with the illegal sale and distribution of small turtles." *Zoonoses and Public Health* 70.8 (2023): 684-691.

Ford, Laura. "Strain of Multidrug-Resistant *Salmonella* Newport Remains Linked to Travel to Mexico and US Beef Products—United States, 2021–2022." *MMWR. Morbidity and Mortality Weekly Report* 72 (2023).

Over 10,000 full text articles can be accessed at CDC Stacks: stacks.cdc.gov/welcome

CDC Stacks is a free, digital archive of scientific research and literature produced by CDC. This online archive is composed of curated collections tailored for public health research needs. This repository is retained indefinitely and is available for public health professionals, researchers, as well as the general public. CDC Stacks provides access to current CDC research and literature such as the Open Access Collection. In addition, CDC Stacks offers a historical perspective that was previously not available, such as the first 30 volumes of the *Morbidity and Mortality Weekly Report*. As a fully featured repository, CDC stacks provides the ability to search the full text of all documents browse journal articles by public health subjects and explore the curated collections of documents on relevant topics. There were 163 peer reviewed articles produced by CDC on zoonoses or zoonotic diseases in 2023.

b) International conferences:

100

Each year, CDC technical and program staff attend and present at numerous international conferences.

c) National conferences:

100

Each year, CDC technical and program staff attend and present at numerous national conferences.

d) Other (Provide website address or link to appropriate information):

11. What have you done in the past year to advance your area of focus, e.g. updated technology?

Please see previous entries for additional details on advancement in area of focus.

12. Additional comments regarding your report:

In 2023, CDC's One Health Office advanced CDC efforts to protect the health of people, animals, and our shared environment using a One Health approach. Throughout the year, we engaged with partners and shared our expertise on One Health science and coordination across the federal government, in the U.S., and globally. CDC's One Health Office also supported other CDC centers, institutes and offices, and multisectoral partners on responses to public health emergencies like mpox and COVID-19. CDC continued to focus on maintaining, streamlining, and distributing COVID-19 and mpox guidance for key One Health audiences outlining the risks and information known on SARS-CoV-2 and mpox in animals, including pets. New online graphics featured different One Health topics, including a One Health coloring book, all of which outlines the importance of One Health. For One Health Day, CDC released a webpage, social media campaign, newsletter, and partner communications toolkit. The Office distributed 28 newsletters to One Health partners and stakeholders, as well as pet owners.

Emerging Infectious Diseases (EID) Journal – Published monthly by CDC, EID was established to promote the recognition of new and re-emerging infectious diseases around the world and improve the understanding of factors involved in disease emergence, prevention, and elimination. EID Journal Website: wwwnc.cdc.gov/eid
The National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) website maintains updated information on current outbreaks, recent work, and publications. www.cdc.gov/ncezid/

CDC's One Health Office maintains two websites (One Health website [www.cdc.gov/onehealth/index.html] and Healthy Pets, Healthy People website [www.cdc.gov/healthypets]), which provide up-to-date information on One Health activities and zoonoses-related prevention for the general public, public health professionals, human and animal health professionals, policymakers, partners, and other stakeholders. CDC led efforts for or participated in numerous One Health-related communication campaigns, including One Health Day, National Pet Week, National Preparedness Month, and US Antibiotic Awareness Week. Promotional activities included social media, graphic development, feature articles, newsletters, ZOHU Call presentations, and partner outreach, resulting in global awareness. CDC promotes programs supporting One Health-related activities, publications, and events.