Introduction

One Health is a collaborative, multisectoral, and transdisciplinary approach with the goal of achieving optimal health outcomes that recognizes the interconnection between people, animals, plants, and their shared environment. The One Health approach applies across local, regional, national, and global levels and involves multisectoral coordination and transdisciplinary collaboration of experts across human, animal, plant, environment, and other relevant sectors. Implementing a One Health approach to address complex issues is critical to achieving optimal health outcomes, addressing health inequities, and building resilience for all sectors. Many issues can benefit from a One Health approach, including zoonotic diseases (diseases shared between animals and people); emerging and reemerging infectious diseases; antimicrobial resistance; food safety and security; vector-borne diseases; threats to our environment including climate change, loss of biodiversity and habitat, and land use changes; and other shared health threats. Equitable coordination, collaboration, and communication across human, animal, plant, and environmental health disciplines, as well as other relevant sectors (e.g., commerce, security, defense), are key to successful implementation of a One Health approach to maintain and promote the health and resilience of all species and ecosystems upon which we depend. Multisectoral and transdisciplinary work can provide a basis to address complex issues sustainably and effectively and can facilitate rapid responses to endemic and emerging zoonotic disease threats, as well as other threats with epidemic or pandemic potential. Nature as a foundation for physical and mental health, cultural values, and indigenous traditional ecological knowledge should be incorporated as part of the One Health approach.

Previous multisectoral work has identified a need for a coordinated national One Health framework to address zoonotic diseases and advance public health preparedness in the United States. In 2017, Centers for Disease Control and Prevention (CDC), the U.S. Department of the Interior (DOI), and the U.S. Department of Agriculture (USDA) organized a One Health Zoonotic Disease Prioritization (OHZDP) workshop for the United States. Participants included 30 government officials from federal and state agencies who work to address zoonotic diseases in the public health, animal health, and environment sectors. The workshop used a One Health approach to identify and prioritize endemic and emerging zoonotic diseases of greatest national concern that should be jointly addressed by federal zoonotic disease programs (Appendix A). Participants also developed plans for implementing and strengthening One Health approaches to address these diseases in the United States. The “National One Health Framework to Address Zoonotic Diseases and Advance Public Health Preparedness in the United States: A Framework for One Health Coordination and Collaboration across Federal Agencies,” or NOHF-Zoonoses, responds to one of the recommendations from the OHZDP workshop and is focused on coordinated federal activities in the United States. In addition, Congress directed CDC, in partnership with other departments and agencies, to develop a One Health framework to address zoonotic diseases and advance public health preparedness in both the House Appropriations Committee report accompanying the 2021 omnibus appropriations bill and the 2023 Consolidated Appropriations Act.

NOHF-Zoonoses was designed to align with other U.S. initiatives that incorporate a One Health approach including the National Biodefense Strategy and Implementation Plan, the National Public Health Framework for the Prevention and Control of Vector-Borne Diseases in Humans, and others and was developed with the same foundational components including improving communication and coordination and focusing on strengthening
prevention, preparedness response, and recovery in the United States. The NOHF-Zoonoses was created to complement and fit within the landscape of aligned U.S. federal initiatives to help strengthen disease prevention, control, and preparedness using a One Health approach to address zoonotic diseases across the U.S. Government.

Recognizing the importance of international action, the U.S. Government works to advance One Health globally in partnership with the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), the World Health Organization (WHO), and the World Organisation for Animal Health (WOAH) – known collectively as the Quadripartite – and other international partners. Although the NOHF-Zoonoses is meant to guide coordinated federal activities in the United States, similar efforts are underway globally. For example, in 2022, the Quadripartite Organizations released the first ever One Health Joint Plan of Action, which aims to create a framework to integrate systems and capacity so that countries and regions can collectively better prevent, predict, detect, and respond to health threats in six areas: One Health capacities for health systems; emerging and re-emerging zoonotic epidemics; endemic zoonotic, neglected tropical and vector-borne diseases; food safety risks; antimicrobial resistance; and the environment. Once implemented, the NOHF-Zoonoses will enable strong, coordinated U.S. federal government representation to such global efforts.

Framework Purpose and Scope

The NOHF-Zoonoses will facilitate One Health collaboration for zoonotic disease prevention, control, and preparedness across the U.S. Government for the next five years (2023–2027). The goals and objectives of this framework specifically address zoonotic diseases and advancing public health preparedness in relation to zoonotic diseases and aim to achieve a better understanding of the drivers of zoonotic disease, improving disease prevention and detection, and enhancing disease preparedness, response, and recovery. The framework describes a common vision, mission, and goals for key federal partners involved in implementing a One Health approach to address zoonotic diseases. Additional One Health partnerships to address zoonotic diseases cross federal, state, tribal, local, and territorial government jurisdictions and involve non-governmental, academic, and private sector partners. All relevant sectors are encouraged to collaborate for effective and consistent One Health outcomes. Successful federal One Health collaboration is contingent on continued strong partnerships and coordination with public health, agriculture, wildlife, environment, and other relevant authorities at the state, tribal, local, and territorial levels. The activities described in the NOHF-Zoonoses are intended to complement existing efforts. At the end of the five-year period, collaborating federal agencies may determine whether to renew their commitment to this framework or update the goals and objectives.

Although this framework focuses primarily on zoonotic diseases and does not address other issues of One Health importance, the resulting partnerships, systems, and lessons will inform future One Health work and strengthen the nation’s ability to address other threats and promote health, safety, security, and resilience at the human-animal-plant-environment interface. Full implementation of the activities described in this framework is dependent upon expanding existing One Health capacities and resources within the federal government. Monitoring and evaluating the value and effects of existing subnational, national, regional, and global initiatives will also maximize outcomes.
Framework Mission

**Mission:** Protect people and animals in the United States from zoonotic diseases while optimizing health, food safety and security, and sustainability and promoting biodiversity and conservation outcomes through a One Health approach.

Framework Vision

**Vision:** A prepared nation where people, animals, and the environment are protected from zoonotic disease threats by a proactive, coordinated, and collaborative system using a One Health approach.

Guiding Principles

**Health Equity:** Health equity is “the attainment of the highest level of health for all people.”¹ To achieve health equity, multisectoral efforts are needed to address and eliminate health disparities, removing the social and economic obstacles that lead to poor health outcomes, and acknowledging historical and contemporary injustices.

**Sustainability:** Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. To pursue sustainability is to create and maintain the conditions under which humans, animals, and nature can exist in productive harmony to support present and future generations.

**Stewardship:** Stewardship and the responsibility of humans to adopt behaviors to provide responsible solutions that recognize the importance of animal health and welfare, and the integrity of the whole ecosystem is integral to securing the well-being of current and future generations.

**Multisectoral Approach:** A multisectoral approach complements existing efforts by key federal partners across multiple sectors and disciplines involved in implementing a One Health approach to address zoonotic diseases within the United States.

Goals and Objectives

**Goal #1: Coordination, Collaboration, and Communication:** Establish a standing formal, One Health coordination mechanism to provide a common platform and governance structure to address One Health needs.

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**Objective 1.1:** Describe and disseminate information on the roles and responsibilities of the core federal agencies engaged in One Health work in the United States that is responsive to the Goals and Objectives of this framework.

**Objective 1.2:** Coordinate, collect, and disseminate in a timely manner information regarding progress, including successes and challenges for each objective under this framework, to leadership within core One Health sectors through the coordination mechanism.

**Objective 1.3:** Develop and support ongoing initiatives and joint communication activities and materials for coordinated outreach and education at various levels to advance One Health in the United States.

**Objective 1.4:** Develop joint priorities for One Health science and research to better understand, predict, and prevent previously identified priority zoonotic diseases, as well as endemic, emerging, and reemerging zoonotic diseases, including upstream drivers.

**Goal #2: Prevention:** Strengthen existing and identify new opportunities for One Health collaboration among federal partners to prevent and control zoonotic diseases.

**Objective 2.1:** Leverage and expand existing initiatives to efficiently exchange information from relevant sectors regarding surveillance, research, and other One Health activities used to identify and assess priority, endemic, emerging, and reemerging zoonotic disease issues, risks, and potential threats.

**Objective 2.2:** Collaborate with states, tribes, territories, and other relevant partners to develop resources and implement joint prevention and control strategies including the use of novel approaches to address gaps in preventing and controlling zoonotic diseases.

**Objective 2.3:** Coordinate timely One Health messaging and communication activities for preventing priority, endemic, emerging, and reemerging zoonotic diseases to ensure guidance and outreach reflect a unified federal voice.

**Objective 2.4:** Explore and develop interventions and capacity to improve human and animal resilience and determinants of health in the face of changing biological, social, economic, and environmental factors that may increase the risk from zoonotic diseases and related One Health threats.

**Objective 2.5:** Support and expand efforts to sustainably preserve and restore ecosystem health, addressing factors that contribute to zoonotic disease emergence, reemergence, spillover, and spillback and enhancing resiliency among people and the ecosystems on which they depend.

**Goal #3: Preparedness:** Strengthen One Health collaborations for preparedness and build new approaches where needed to address priority, endemic, emerging, and reemerging zoonotic diseases to improve health for people and animals.

**Objective 3.1:** Support the integration of a One Health approach during development, review, and revision of preparedness plans.
Objective 3.2: Conduct One Health trainings and interagency exercises to reinforce and test preparedness coordination structures.

Objective 3.3: Review, prioritize, and implement relevant recommendations from completed interagency response exercises.

Objective 3.4: Support One Health collaboration to identify, assess, and address the effects of environmental determinants, including climate change, on priority, endemic, emerging, and reemerging zoonotic diseases.

Objective 3.5: Support the development, validation, and use of models and risk-prediction tools that include data from human populations and wildlife and domestic animal surveillance to better predict zoonotic disease outbreaks or emergent events.

Objective 3.6: Support the advancement of research to inform preparedness efforts, including medical, veterinary, public health, and agricultural product research, development, and supply chain needs for new and targeted diagnostics, vaccines, and therapeutics.

Goal #4: Coordinated Outbreak Investigation, Response, and Recovery: Build and strengthen One Health approaches to coordinate zoonotic disease outbreak investigation, response, and recovery across relevant sectors.

Objective 4.1: Identify best practices across existing One Health processes for coordinated zoonotic disease outbreak investigations and responses between relevant departments and agencies.

Objective 4.2: Develop a flexible model One Health framework for coordinated zoonotic disease outbreak investigations and responses between relevant departments and agencies including coordination of real-time research needs.

Objective 4.2: Support the integration of a One Health approach during development, after-action review, and revision of response and recovery plans.

Objective 4.3: Collaboratively develop standard operating procedures for interagency coordination with state, tribal, local, and territorial governments, and non-governmental, academic, and private sector partners.

Goal #5: Surveillance: Strengthen coordinated surveillance and information sharing for relevant zoonotic disease surveillance and reporting systems across sectors.

Objective 5.1: Leverage and expand on existing surveillance system evaluations to review One Health collaboration, coordination, communication, and information exchange across relevant sectors.

Objective 5.2: Enhance knowledge and strengthen One Health collaboration, coordination, communication, information exchange, and data interoperability for surveillance and secure information sharing systems focused initially on the effects of social, economic, and environmental determinants and upstream drivers such as climate change on priority, endemic, emerging, and reemerging zoonotic diseases (Appendix A).
Objective 5.3: Develop a model One Health framework for coordinated surveillance and secure information sharing for priority, endemic, emerging, and reemerging zoonotic diseases, between relevant U.S. government departments and agencies, including international efforts.

Goal #6: Laboratory: Strengthen One Health laboratory capacity (e.g., trained personnel and use of advanced laboratory techniques), coordination, and reporting for detection of priority, endemic, emerging, and reemerging zoonotic diseases.

Objective 6.1: Support efforts to institutionalize partnerships among relevant federal agencies to harmonize laboratory protocols, secure sample sharing, and validated diagnostic assay development.

Objective 6.2: Identify One Health laboratory capacity gaps to effectively detect priority, endemic, emerging, and reemerging zoonotic diseases.

Objective 6.3: Support efforts to establish and strengthen laboratory reporting processes and timely data sharing.

Objective 6.4: Detect and characterize emerging and reemerging zoonotic disease threats through a coordinated One Health approach including use of advanced pathogen detection technologies such as advanced molecular detection.

Objective 6.5: Support research in applied biosafety and biosecurity innovation and enhance laboratory biosafety and biosecurity practices and best practices.

Goal #7: Workforce: Support and expand efforts to develop a qualified, diverse, equitable, and inclusive One Health workforce to address zoonotic disease threats.

Objective 7.1: Identify opportunities to collaboratively develop and deliver trainings to build critical competencies to accomplish goals of agencies, departments, and the NOHF-Zoonoses.

Objective 7.2: Support the integration of One Health into sector-specific trainings among relevant departments and agencies to ensure an adequately trained One Health workforce within the federal government.

Objective 7.3: Enhance equitable recruitment, development, and retention of qualified, diverse staff to ensure a sustainable and dedicated One Health workforce.

Conclusion

Implementing a One Health approach means involving all relevant sectors concerning human, animal, plant, and environmental health to address health concerns collaboratively in a more effective, efficient, and sustainable manner than each sector approaching these issues alone. The National One Health Framework to Address Zoonotic Diseases and Advance Public Health Preparedness in the United States: A Framework for One Health Coordination and Collaboration across Federal Agencies will inform One Health work across the U.S. Government and strengthen cooperative efforts to address the threat of zoonotic diseases and advance public health preparedness. This framework will also strengthen federal collaborations with state, tribal, local,
territorial, international, non-governmental, academic, and private sector partners. Although the NOHF-Zoonoses is specific to zoonotic diseases, the partnerships, systems, and lessons learned from the proposed activities can be expanded and applied to other One Health issues and shared priorities. The activities described in this framework are intended to support and encourage collaboration and cooperation with existing efforts, initiatives, and plans rather than create a parallel set of activities and priorities. Future work needed to support the framework’s objectives, including evaluation efforts and gap analyses, will be conducted within the five-year period.
Appendix A

Prioritized Zoonotic Diseases of National Concern in the United States.

Identified as part of the 2017 U.S. One Health Zoonotic Disease Prioritization workshop*

1. Zoonotic -Influenza
2. Salmonellosis
3. West Nile virus
4. Plague
5. Emerging coronaviruses (SARS, MERS)**
6. Rabies
7. Brucellosis
8. Lyme disease

* For additional context please refer to the full U.S. One Health Zoonotic Disease Prioritization Report

**List was developed in December 2017 prior to the emergence of SARS-CoV-2, the virus that causes COVID-19