One Health Implementation Toolkit for Local Jurisdictions

California Department of Public Health

One Health Program

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CDPH
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Executive Summary

The One Health approach recognizes the interdependency of human, animal, and environmental health. The *One Health Implementation Toolkit for Local Jurisdictions* is a novel resource that provides actionable guidance for implementing the One Health approach at the local level.

Many of California's most urgent health threats are complex challenges that require a One Health approach to address. Zoonotic and vector-borne diseases, antimicrobial resistance, impacts of climate change, food safety and security, air and water quality, toxic chemical exposures that impact the ecosystem, harmful algal blooms, and natural disasters all have interdependent human, animal, and environmental health components impacting California's diverse communities.

The California Department of Public Health's One Health Program developed the *One Health Implementation Toolkit for Local Jurisdictions* to 1) assist local jurisdictions in developing and maintaining their own One Health implementation model to better address complex health challenges, and 2) meet increasing demands for technical assistance in implementing One Health at the local level.

In January 2025, a workgroup of local and state staff engaged in One Health efforts was convened to aid in the development of the toolkit. The toolkit underwent two workgroup reviews and revisions before it was finalized in June 2025, and represents ideas, efforts, and plans occurring at that time.

The toolkit contains an overview of One Health challenges in California; justification for utilizing a One Health approach; models for local One Health implementation structures based on existing local One Health collaborations; actionable steps for One Health implementation, disciplines and sectors crucial to effectively applying the One Health approach; specific One Health challenges and discussion topics to consider prioritizing at the local-level; tenets for successful collaborations; tools and approaches used at the state and national levels; and additional resources.

Introduction

Purpose

The One Health Implementation Toolkit for Local Jurisdictions is designed to assist local jurisdictions in establishing and maintaining a One Health approach. For the purposes of this document, “local jurisdiction” includes all local authorities within a local government (county or city) such as public health, environmental health, animal control, vector control, emergency management, water resources, and other authorities within the territorial division.

Although multiple tools exist for One Health implementation at the state, national, and international level, no comprehensive resource had been identified to specifically support local jurisdictions in implementing One Health approaches. This gap became evident during California’s 2024 response to highly pathogenic avian influenza (H5N1), which underscored the need for enhanced cross-sector coordination and integrated strategies. Concomitantly, the California Conference of Local Health Officers (CCLHO) identified “Addressing Climate Change and One Health” as a priority for 2025, prompting multiple local jurisdictions to seek guidance in launching One Health collaborations.

To meet this growing need, the California Department of Public Health (CDPH)’s One Health Program developed the *One Health Implementation Toolkit for Local Jurisdictions*. To ensure the toolkit is practical and relevant for the local jurisdictions that will utilize it, a collaborator workgroup consisting of health officers, veterinarians, epidemiologists, and program staff who have initiated One Health efforts in their local jurisdictions was convened to aid in the development of the toolkit.

The toolkit is a resource that, for the first time, provides actionable guidance for implementing the One Health approach at the local level. The process utilized to develop the toolkit, along with the toolkit itself, is adaptable and scalable for cities, counties, and regions both within California and in other states.

Key Concept

One Health is a globally recognized approach that incorporates the interdependency of people, animals, and our shared environment into strategies that achieve optimal health outcomes and well-being for all.

No one group or profession can solve complex One Health challenges alone. Optimal health outcomes for all can be achieved through close collaborations across human health, animal health, and environmental health disciplines at the local, state, and national levels.

Why One Health?

Human, animal, and environmental health disciplines are often isolated in professional siloes – yet the ecosystem in which we all exist knows no disciplinary boundaries. For example:

Antimicrobial resistance[1] is an emerging threat in humans, animals, and plants. Resistant microbes that infect humans and other animals are primarily due to use of antimicrobials in those species, but they can also develop resistance in the environment, requiring shared stewardship responsibility among all disciplines.

The human-animal bond[2] improves mental and physical health, but can be impacted by environmental disruptions such as emergency evacuations.[3] Additionally, housing insecurity can have devasting impacts on the human-animal bond for pet owners experiencing homelessness,[4] as they face exposure to harsher environmental conditions, social stigma, and challenges in access to human and veterinary care.

Impacts of climate change[5] such as rising temperatures, increasing extreme weather events, and rising sea levels drive consequences including forest tree mortality, heat-related illness in humans and animals, and an increase in disease-carrying vector distribution.

Foodborne outbreaks[6], such as *E. coli* in leafy greens resulting from downstream run-off from livestock operations, can impact human health and threaten food security.

Man-made “forever chemicals,” such as per- and polyfluoroalkyl substances (PFAS)[7] and heavy metals, persist in our environment, our pets, our food and water, and ourselves – leading to health consequences of which the full extent remains unknown.

Approximately 60% of infectious diseases originate in animal populations,[8] and changing climate conditions can facilitate their spread further. In addition to climate-induced changes, global human travel, habitat destruction, and land use changes have facilitated the introduction of novel pathogens into new populations.

In all of these challenges, under-resourced communities feel these impacts the hardest.

None of these complex challenges can be solved by any one group, department, or discipline. The One Health approach recognizes and embraces diverse perspectives and unique roles to work towards a "world better able to prevent, predict, detect, and respond to health threats and improve the health of humans, animals, plants, and the environment while contributing to sustainable development."[9]

Convening a One Health collaboration will improve the structure of existing collaborations and result in improved health outcomes by:

- Emphasizing a preventative rather than responsive approach
- Expanding participation to all key stakeholders
- Promoting interagency collaboration
- Enhancing interdisciplinary coordination
- Preserving resources through more efficient communication
- Embracing new perspectives and approaches to solving complex health problems
- Increasing the collective breadth of knowledge within the workforce

The One Health approach adds value through shared resources, diverse perspectives, and enhanced collaborative capacity.

Background

One Health Globally

The concepts and principles of One Health predate its formal recognition by thousands of years. Indigenous communities have long recognized and understood the linkage between the health of animals, people, and the environment.[10] Recently, the re-introduction of the traditional principles of One Health that were first recognized by indigenous communities have transformed Western science, medicine, and international policy. In the late 1700s, the relationship between animal health and human health was recognized after Dr. Edward Jenner discovered that the cow pox pathogen could be used to vaccinate humans against smallpox.[11] In the 1800s, further advancements occurred through the development of rabies vaccinations,[12] pasteurization, discovery that vectors are responsible for transmitting certain diseases,[13] and the first documentation of the term "zoonosis" to describe human infections from animals. Subsequently, the concept of "One Medicine" was first described in the 1900s and has since evolved into the term "One Health."[14] The early 2000s marked an accelerated adoption of the One Health approach in multiple countries around the world.[15] Following the World Health Organization (WHO), Food and Agricultural Organization (FAO), and World Organization for Animal Health (WOAH)'s Tripartite commitment to One Health in 2010, the One Health approach has been incorporated into over 20 countries' strategic action plans.[16] After the expansion of the Tripartite to include the United Nations Environmental Program (UNEP) in 2022, the incipient Quadripartite and its advisory One Health High Level Expert Panel (OHHLEP) developed the 2022-2026 Joint Plan of Action[9] (OH JPA), after which A Guide to Implementing the One Health Joint Plan of Action[17] was released.

One Health Nationally

In the United States, the American Veterinary Medical Association, the American Medical Association and the American Public Health Association collaborated in 2007 to form the One Health Commission, chartered in 2009. The Centers for Disease Control and Prevention (CDC)'s One Health Office was also established in 2009. Since then, national and federal partners such as the United States Department of Agriculture (USDA), Environmental Protection Agency (EPA), Food

and Drug Administration (FDA), National Oceanic and Atmospheric Administration (NOAA), and National Park Service (NPS) have incorporated One Health initiatives and staff into their agencies. Following Congressional direction in 2021 and 2023 for a federal One Health framework to address zoonotic diseases, the U.S. One Health Coordination Unit (U.S. OHCU) was established by shared interagency leadership within the CDC, USDA, and Department of the Interior (DOI)[18] and includes 24 federal agencies as members. In January 2025, the U.S. OHCU released the National One Health Framework to Address Zoonotic Diseases and Advance Public Health Preparedness[19].

One Health in California State Agencies

California agencies, such as CDPH, California Department of Fish and Wildlife (CDFW), California Department of Food and Agriculture (CDFA), and California Environmental Protection Agency (CalEPA), have been utilizing the One Health approach to combat complex challenges for decades including joint foodborne outbreak investigations, harmful algal bloom illness monitoring, zoonotic disease surveillance, prevention of antimicrobial resistant infections, climate impact reduction strategies, and more.

In 2022, the CDPH Center for Environmental Health established a One Health Program to promote multiagency One Health efforts across the State. The CDPH One Health Program works to address complex challenges that exist at the interface of animal, human, and environmental health through outreach and education, research, relationship building, technical assistance, advocacy, and collaboration with local, state, and national partners.

New and additional multisectoral One Health initiatives continue to be identified as partnerships and collaborations are fostered across State departments.

One Health Locally

With a population of more than 39 million people in 2024,[20] California is the nation's most populous state. California is composed of 61 local health jurisdictions, encompassing a wide diversity of urban, suburban, and rural communities, and featuring remarkable ecological and biological diversity, such as offshore islands, coastal lowlands, floodplains, forested mountain ranges, deserts, and various aquatic habitats. California's unique climate and geography enable the production of

over 400 agricultural commodities, including leafy greens and other vegetables, fruits and nuts, cattle and dairy products, and chickens raised for meat production (broilers).[21] According to the 2022-2023 California Agricultural Statistics Review, California remained the leading vegetable and melon producing state in addition to producing 18% of the nation's milk supply.[22]

Many of California's most urgent health threats are complex challenges that have interdependent human, animal, and environmental health components impacting California's diverse communities - requiring a One Health approach. Recent zoonotic disease events such as COVID-19, Mpox, and H5N1 have highlighted the impacts of increasing human-animal interactions within a shared environment. The introduction of invasive (non-native) disease carrying vectors such as *Aedes aegypti* (yellow fever mosquito) and *Aedes albopictus* (Asian tiger mosquito) highlights the importance of understanding environmental drivers and vectors that could facilitate spread of viruses like dengue, chikungunya, and Zika. Natural disasters, such as the 2018 Camp fire, 2024 Park fire, 2024 atmospheric river storms, and the 2025 Eaton and Palisades fires demonstrated the need for close collaborations among local jurisdictions, state partners, federal agencies, non-profit organizations, and private entities to jointly respond to preserve human lives, household pets, livestock, structures, communities, and natural spaces. As new challenges will continue to emerge, establishing multidisciplinary One Health groups within jurisdictions is a preventative action that can improve preparedness for the next challenge that arises.

The geographic diversity across California's local jurisdictions creates locally specific challenges that require tailored approaches to meaningfully and effectively address them. The following sections include models and resources for local jurisdictions to implement One Health collaborations with examples of local One Health collaborations already underway.

Implementation

Groundwork

Prior to implementing any of the proposed models for collaboration, initial groundwork will be needed to most effectively engage with partners. Recommended groundwork activities include:

Gathering and compiling contact information for partners that will be invited to collaborate. This may entail searching for contact information on program webpages, leveraging personal connections to identify appropriate contacts, and/or conducting initial outreach to programs to make new connections.

Establishing relationships by initiating one-on-one connections with newly identified contacts to understand their mission, passions, and needs.

Conducting a landscape analysis by becoming familiarized with local programs or departments involved in human, animal, and environmental health disciplines to understand their roles, missions, capacities, priorities, and current programmatic efforts that relate to One Health.

Identifying regions to which various jurisdictional partners may be assigned. For example, local health jurisdictions are divided into 6 regions by the CDPH Regional Public Health Office, local environmental health directors are divided into 4 regions by the California Conference of Directors of Environmental Health, local Agricultural Commissioners and Sealers are divided into 5 area groups, Regional Disaster Medical and Health Coordinators (RDMHC) are divided into 6 Mutual Aid Regions, and water quality control boards are divided into 9 regions. Additionally, some State departments have regional operations, such as the California Department of Fish and Wildlife (CDFW)'s 7 regions.

Models for One Health Collaboration

Model 1: Departmental Model

The Departmental Model can be utilized within a specific department, such as a local health department. Local health departments often staff epidemiologists, public health nurses, communicable disease controllers, laboratory personnel, behavioral health/mental health, public information officers, nutrition programs, and others that could benefit from joint information sharing.

Suggested Format: Weekly to Monthly Intradepartmental One Health Rounds

Pros:

- Logistically easiest due to smallest scale
- Can be easily implemented without additional funding
- Shared goal and mission among all department staff
- Data sharing more feasible
- Improved chance of shared decision-making and real-time solutions
- Increased breadth of knowledge across more staff

Cons:

- Limited in scope (especially if environmental health and/or animal care exist in separate departments)
- Limited in capacity (valuable perspectives from key external partners not considered)
- Likely to be heavily focused on human/public health

San Diego County

The One Health Epidemiology Program (OHEP) in the San Diego County Public Health and Human Services Agency is dedicated to the surveillance, investigation, response, and prevention of zoonotic disease outbreaks in San Diego County. Their team includes epidemiologists, communicable disease investigators, veterinarians, nurses, physicians and laboratorians. Their approach includes data analysis, field response and laboratory testing. They recognize the importance of wildlife for healthy ecosystems we all enjoy and frequently partner with wildlife groups. They provide information to health professionals and education to the general public. OHEP also trains MPH students in the One Health approach for disease investigation and prevention.

Model 2: Jurisdictional Model

The Jurisdictional Model can be utilized within any LJ, such as a city or county. Local city or county jurisdictions often have programs focused on human, animal, and environmental health organized in different agencies or departments, which can make it more challenging to partner across disciplines. The Jurisdictional Model recognizes these unique and varied governmental LJ organizations, ensuring all relevant agencies are collaborating regardless of whether health and human services, environmental health, animal control, and vector control are located in separate departments.

Suggested Format: Monthly to Quarterly Jurisdictional One Health Meetings with a core or rotating host

- Host Option 1: One Lead Host: One representative, such as the Health Officer, takes the lead on convening the group.
- Host Option 2: Rotating Host: Multiple representatives (example: the Health Officer, Environmental Health Director, and Agricultural Commissioner) rotate monthly to host meeting.

Pros:

- Ensures representation from whole LJ
- Ensures shared responsibility and buy-in across sectors
- Expanded opportunities for new perspectives, collaborations, and cross-sector decision making

Cons:

- Logistically more challenging than the Departmental Model as it may take time and resources to identify all relevant partners
- Additional effort may be needed early on to obtain buy-in from partnering sectors
- Data sharing strategies may not be established
- Some may express privacy concerns surrounding sharing internal information

Ventura County

The importance of the interconnectedness of these domains is promoted in Ventura County through interdisciplinary collaboration among the Health Officer, Communicable Disease, HIV/AIDS, Tuberculosis, Food Safety, Vector Control, other county programs and agencies such as the Agricultural Commissioner, Animal Services, alongside their partners in the community to protect and promote the health and well-being of the people of Ventura County.

The One Health Approach:

- Opens pathways for issues of concern to come to Public Health's attention.
- Creates significant efficiencies in addressing problems.
- Keeps issues on the front burner

"Human health doesn't happen in isolation."
— Dr. Robert Levin, Health Officer 1998 – 2024

Model 3: Regional Model

The Regional Model can be utilized to form a collaborative One Health group across multiple jurisdictions that fall within a geographic region. This model can be used to overcome hurdles that may be complicated by jurisdictional lines, such as outbreak events that impact residents across adjacent jurisdictions or environmental concerns that impact multiple jurisdictions. Additionally, some jurisdictions may not have their own public health laboratory, veterinarian, or other key One Health stakeholders, but they are geographically close to a jurisdiction that does. The Regional Model allows for a collaborative approach in which jurisdictions under-resourced in certain programs but robust in others may be able to leverage resources across jurisdictions for a more well-rounded regional capacity.

Given the larger scale of the regional model, two potential approaches are described:

Approach #1: Identify all partners in a designated region in advance and convene a regional kickoff meeting with the entire proposed regional One Health collaboration.

Approach #2: Build onto the Jurisdictional Model by identifying neighboring jurisdictions interested in collaborating at a larger scale. The number of jurisdictions in the collaboration can grow over time as the interest and need arises.

Suggested format: Quarterly or Biannual Regional One Health Convenings attended by multiple representatives per jurisdiction, planned by a steering committee. The steering committee is a smaller, core group made up of 1-2 representatives per jurisdiction that meets monthly or every other month to plan for regional convenings.

Pros:

- Ability to leverage resources across counties
- Largest breadth improves representativeness from more diverse perspectives
- Allows for prioritization of challenges that impact entire geographic regions
- Opportunity for large-scale impact

Cons:

- Logistically the most challenging as complexity increases
- Some may express privacy concerns surrounding sharing internal information
- Due to complexity and larger number of stakeholders, meetings may only be able to accomplish high-level didactic sharing and situational awareness
- Will likely require separate/additional subgroups to address specific challenges

Greater Sierra Sacramento (GSS) One Health Regional Collaboration

The Greater Sierra Sacramento (GSS) public health region, in partnership with CDPH, launched the One Health regional collaboration in early March 2025 bringing together experts from public health, environmental health and animal health fields at the Placer County Health and Human Services Center in Auburn, California.

A total of 62 participants, including regional and local representatives from public health, environmental health, animal services, agriculture, and other sectors were engaged in the inaugural convening. The GSS regional local health jurisdiction representatives in attendance included Alpine, Amador, Butte, Colusa, El Dorado, Nevada, Placer, Plumas, Sacramento, Sierra, Sutter, Yolo and Yuba counties. Participants attended keynote presentations and participated in breakout room planning discussions that were led by a regional steering committee.

The group will continue to meet quarterly to strengthen regional capacity and collective impacts on the health of communities, ecosystems and beyond.

For all models, meetings could be conducted in person or virtually. In person meetings allow for enhanced networking and relationship building across counties. Virtual meetings eliminate the need for securing meeting room space, travel planning, and additional logistics. Groups should weigh the pros and cons of each meeting format to best achieve their collective goals.

San Mateo County

While human, animal, and environmental health teams have coordinated on specific incident responses over the years, in 2025 San Mateo County launched quarterly One Health meetings to support more proactive coordination. Meetings are primarily virtual to maximize participation, though ideally at least one meeting per year will be held in person. The initial meetings included short presentations from each group to help build foundational understanding of the work happening across the different areas of expertise. Moving forward, regular meetings will include brief updates from each team, allowing the group to discuss a wider range of topics, identify emerging issues more rapidly, and shift from a reactive to a proactive response.

It is important to note these models are example structures that could be amended or scaled as needed. In reality, each collaborative will look different because the needs of each community will differ.

Preliminary Model

Individuals interested in implementing a One Health model in their jurisdiction may find that additional steps are needed to progress from the initial groundwork into a full collaborative model. In these circumstances, a "pre-model" strategy may be beneficial to more broadly introduce the idea of One Health, make the concept more attainable, and empower partners to recognize that much of their work may already fall within One Health principles.

If recurring, structured meetings are not yet feasible, there is still value hosting singular interdisciplinary activities such as tabletop exercises, symposiums, seminars, and forums to lay the foundation for bringing together various disciplines. A more formal collaborative model may more easily take form as a result of these initial activities.

Santa Clara County

The Santa Clara County Public Health Department (SCCPHD) established its One Health Collaboration (OHC) in mid-2024. The group started as a grass-roots effort, spurred by the 2024 avian influenza A (H5N1) spillover into dairy cows. The OHC is comprised of multidisciplinary contributors throughout the department including epidemiologists, program managers, informaticists, laboratorians, a health officer, and a veterinarian. They began by conducting a landscape analysis of existing One Health groups at the international, federal, state, and local levels. The OHC incorporated lessons-learned into an implementation framework for their county.

The OHC meets on a weekly basis to share updates and address work items and continues to grow in attendance, visibility, and influence both within SCCPHD and externally. In November 2024, OHC received official approval and support from SCCPHD Executive Leadership to adopt a One Health approach in their work. Currently the OHC has focused their efforts on building local One Health partnerships and hopes to host a kick-off meeting for all parties to meet in person to exchange information on an ongoing basis.

San Mateo County

San Mateo County has utilized a One Health framework over the years when responding to various disease incidents such as mosquito-borne diseases, rabies, and most recently, avian influenza A (H5N1). Seeing the value of the coordinated H5N1 response, several of the response staff came together around the shared goal of expanding these efforts beyond a single incident to establishing a regular One Health touchpoint. The initial group included representatives with expertise in agriculture, animal health, public health, environmental health, epidemiology, vector control, and laboratory science.

As they launch more formal One Health efforts, their first goal is to build connections across programs to improve situational awareness and facilitate more rapid and coordinated response when needed. From there, they aim to establish structures that are sustainable over the long term, invite additional groups to join, and further scope out their shared activities and goals.

The application of One Health models into jurisdictional initiatives can lead to tangible benefits including more money saved, quicker collaborations across sections, more rapid response to emerging threats, and an increase in shared resources. Example:

San Mateo County

Early engagement with their One Health group has already proven beneficial for San Mateo County as they were able to connect with the right people to pull together a grant application on a very short timeline, allowing them to secure some funding to support specific One Health activities.

Turning Conversation into Action

Convening the group to form a collaborative model is a significant accomplishment. However, in order to sustain momentum, drive meaningful change, and ensure impact, it is essential to move beyond discussion and take concrete actions. To transition from conversation to action, the group must define its desired outcomes and implement jointly developed strategies to achieve them. This can be achieved through practical steps at varying levels of complexity:

Introductory

- Creating a shared resource list by compiling a directory of regional resources, such as laboratories and their testing capabilities, to enhance collaboration and improve access to available expertise and services.
- Creating a contact list that includes the points of contact for programs in the collaborative.
- Creating a jurisdictional organizational chart that depicts how agencies and departments are structured within the jurisdiction. Include departmental roles, missions, and key program areas to help members understand each other's positions and contributions.
- Jointly establishing achievable goals and objectives for the group, such as committing to meeting regularly by setting meeting dates and times in advance.

Santa Clara County

The work is comprised of four initial objectives:

- Orient and expose colleagues to One Health principles and practices
- Establish communication and coordination networks with agencies and communities within Santa Clara County such as animal services, department of agriculture, vector control, and the veterinary medical community
- Identify strategies and opportunities for sustaining One Health initiatives
- Partner with various external stakeholders such as animal health laboratories, state agencies, universities, and neighboring local health jurisdictions for regional collaboration and capacity building.

- Starting with small and easily achievable actions such as asking partners for their input on an outreach flyer or public communications.
- Building relationships and introducing One Health concepts by leveraging existing multidisciplinary events such as vector-borne and zoonoses meetings, epidemiology forums, or other conferences. Consider having a One Health session, panel, or table at these events.

Intermediate

- Conducting a joint needs assessment. See “Application of Existing Tools” section for example of a One Health needs assessment.
- Alerting partners to newly released documents, webpages, guidance, resources, or initiatives to ensure situational awareness across the group.

Los Angeles County

Los Angeles County Veterinary Public Health (VPH) manages the Animal Health Alert Network (AHAN), a communication system that delivers timely updates and critical public health information to more than 1,700 professional subscribers. AHAN supports the One Health approach by disseminating alerts on emerging diseases, outbreak investigations, and providing practitioners with timely resources, guidance, and relevant information. In addition, VPH maintains a suite of webpages on the Los Angeles County Department of Public Health website to ensure the public has access to current information and resources related to rabies, animal diseases, disease outbreaks, and other key public health topics.

- Inviting partners from other departments to co-author projects to leverage subject matter expertise outside their own department.
- Jointly analyzing data sets that have human, animal, or environmental health components.
- Developing an evaluation metric to measure if shared goals and objectives are being met.
- Documenting success stories of cross-jurisdictional collaborations to show the added value of the One Health model.

- Hosting an in-person One Health conference to inform partners about relevant work, provide updates and recommendations on multidisciplinary challenges, and showcase success stories of collaborative efforts.

Advanced

- Drafting and publishing jointly established goals and objectives for the group on public facing webpages.
- Co-authoring joint health alerts, media advisories or other public notifications that require senior leadership approval and buy-in.
- Creating jurisdictional policies that align with One Health principles.
- Hosting cross-disciplinary Continuing Education events that provide credits for physicians, nurses, veterinarians, pharmacists, environmental health specialists, and other professions in the jurisdiction.
- Regularly incorporating and merging multiagency data into singular One Health reports or dashboards.

Los Angeles County

Los Angeles County Veterinary Public Health (VPH) publishes a prioritized list of reportable diseases in animals, designs disease-specific reporting tools, and systematically documents cases within an integrated surveillance platform. The data collected informs the development of evidence-based policies and tailored guidance for veterinary professionals, pet owners, and animal shelters, and other animal care providers.

Potential Collaborators

There is a diverse range of potential partners to consider including when planning a One Health collaboration. Not all groups will be needed for every challenge, but their contributions may bring unique and valuable perspectives. One Health collaborations may benefit from including some of the potential collaborators listed below. The process of inviting new collaborators may involve identifying the desired points of contact through a web search, networking with colleagues who may already have established connections, or sending introductory emails.

Broadly, individuals working in a variety of disciplinary fields should be considered, such as:

- Agriculture
- Animal health
- Air quality
- Climate sciences
- Clinical medicine
- Communications
- Ecological sciences
- Emergency management
- Environmental Health
- Food safety
- Health equity
- Laboratory sciences
- Mosquito/Vector control
- Public health
- Social sciences
- Waste management
- Water quality

There are many different positions and roles to consider bringing to the table to represent each of the fields listed above. Consider including the roles below:
Note: Entries with an asterisk (*) have suggested contact leads which can be found in the Additional Resources section.

- Epidemiologists
- Communicable disease controllers*
- Health officers*
- Physicians*
- Pharmacists*
- Behavioral health practitioners
- Mental health practitioners
- Occupational health practitioners
- Medical examiners
- Public health laboratories*
- Clinical laboratories
- Veterinarians*
- Animal control officers
- Animal shelter and humane society staff
- Wildlife health staff
- Zoo staff
- Marine biologists
- Veterinary diagnostic laboratories

- Tribal health liaisons
- Mosquito/Vector control staff*
- Environmental health directors*
- Registered Environmental Health Specialists
- Public information officers
- County agricultural commissioners*
- Agricultural advisory committee members
- Plant pest prevention specialists
- Environmental health laboratories
- Emergency services and responders
- Emergency management staff and coordinators*
- Social workers
- Attorneys

For all categories and roles above, consider participants at the local, regional, state, and federal levels as needed.

Additionally, recognize that there may be individual entities within specific jurisdictions that may provide uniquely valuable expertise into the collaborative such as museums, marine mammal centers, airports, zoos, universities, and other community-based, private, and non-governmental organizations.

Topics

Included below are examples of high priority challenges in California that require a One Health approach to most effectively address and could be considered as meeting topics in One Health collaborative meetings. When deciding on which topics to prioritize for group discussion, consider the following:

- Which challenges are community members expressing concern for?
- Which challenges are most frequently diagnosed/recognized/detected within the jurisdiction?
- Which challenges do you expect to have an increasing impact within the jurisdiction in the near future or long-term?
- Which diseases have pandemic or epidemic potential?
- Which conditions have high mortality and incidence in people or animals?
- Which challenges have high economic impact to the jurisdiction?

It will be up to the collaborative to decide what meeting structure works best for them. Some collaboratives may benefit from having structured agendas to work through specific topics of interest, while other groups may find less structured, free-flowing conversation particularly valuable. For example, structured agendas ensure meetings have purpose and objectives, while open discussion may allow for new solutions and ideas to be organically discovered.

- Emerging zoonotic diseases
    - Avian influenza
    - Mpox
    - New world screwworm
- Harmful algal blooms
    - Shellfish & water quality
    - Marine mammal impacts/prevention
    - Human and domestic animal illness tracking
- Vector-borne diseases
    - Mosquito-borne diseases (West Nile virus, dengue, Zika, chikungunya, etc.)
    - Tick-borne diseases (Rocky Mountain Spotted Fever [RMSF], Lyme, ehrlichiosis, babesiosis, anaplasmosis, etc.)
    - Flea-borne diseases (murine typhus, bartonellosis, etc.)

    - Changes in tick, mosquito, flea, and other vector distribution/ecology (ex: *Aedes aegypti*)
    - Incorporation of vector control agencies into local emergency planning and response efforts
- Food safety and security
    - Impacts and surveillance at farm level
    - Impacts and surveillance at processing level
    - Impacts and surveillance at retail level
    - Traceback investigations
    - Food-borne illness investigations
    - Notification and involvement of local, state, and federal collaborators
- Health equity
    - Prioritization of resources and efforts
    - Outreach efforts
    - Incorporation of equity principles into new and existing initiatives
    - Incorporation of traditional ecological knowledge of the tribal groups
- Antimicrobial use and stewardship
    - Tracking of antimicrobial use and outcomes in human, animal, and plant species
    - Outreach and partnership
- Monitoring of reportable and non-reportable companion animal diseases
    - Rabies
    - Brucellosis
    - Tularemia
    - Q fever
    - Psittacosis
    - Leptospirosis
    - Avian influenza in novel species
    - Parasitic infections
    - Reportability differences at local and state level
    - Integration with other human/vector surveillance data
- Impacts of climate change
    - Extreme temperature strategies (heat and cold)
    - Cooling & warming center access for people with pets
    - Flood and/or drought impacts and management
    - Air quality impacts on animals and people

    - Infectious diseases (such as Valley Fever/Coccidiomycosis)
- Wildlife and ecosystem health
    - Human-wildlife conflict
    - Plant disease surveillance
    - Invasive species management (such as invasive mosquitos, plant pests, fish, feral swine)
    - Aquaculture health
    - Soil health
    - Impact of biodiversity loss
- Data sharing and tracking strategies
    - Data-sharing agreements
    - Tracking and reporting of non-traditional health data (environmental health, domestic animal disease reports, etc.)
    - Discussion and acknowledgement of how and what types of vector, animal, and human data are reported in various data storing platforms/systems
- Toxic contaminants
    - Per- and polyfluoroalkyl substances (PFAS) (water, fish, household and commercial products, agriculture, human and animal health impacts, etc.)
    - Microplastics
    - Pesticides, fungicides, and herbicides
    - Impacts of hazardous materials
- Disaster preparedness and response
    - Human and animal co-sheltering during emergencies
    - Large animal evacuation
    - Wildfire and flood recovery & clean-up
    - Bioterrorism preparedness
    - Cross-sectoral tabletop exercise(s)
- Farmworker health and rights
    - Pesticide exposure and pesticide related illness
    - Zoonotic disease protection

Discussion Prompts

Once a discussion topic has been selected, consider the following prompts to guide collaborative discussion:

- Who in your Department tracks this information?
    - What is their contact information?
- How do these data get reported to the state?
- What steps are you/your department currently taking to address this topic?
- How does this challenge impact your line of work, directly or indirectly?
- Are there any groups or departments your work would benefit from having additional relationships with?
- What are some wins in this area that are already going well, and how can this success be used to inform another challenge or another department's work?
- How do you share and post end products or information with stakeholders and the public?
- How will climate change and related environmental drivers impact this challenge in the near or distant future?
- Is there sufficient laboratory capacity in the region to support detection?
- Are adequate surveillance systems already in place? If not, how can this be improved?
- Are there adequate vaccination programs and supportive care services available to support the community?

Application of Existing Tools

A robust catalog of One Health tools is maintained by the One Health Commission.[23] A selected set of tools that may be particularly relevant for local health jurisdictions is described in more detail below. These include the One Health-Systems Mapping and Analysis Resource Toolkit (OH-SMART), One Health Zoonotic Disease Prioritization (OHZPD) Workshop, a One Health Needs Assessment conducted in the State of Washington, and the Arizona One Health Toolkit.

1. OH-SMART

The One Health-Systems Mapping and Analysis Resource Toolkit (OH-SMART) Framework[24] was developed in 2013 by veterinarians at the University of Minnesota and the United States Department of Agriculture (USDA) to enhance multisectoral collaboration and increase capacity in managing complex health challenges through a One Health approach. The OH-SMART Framework (Figure 1) has been utilized in 30 states and 18 countries in the development of plans related to disaster preparedness, infectious and zoonotic disease response, One Health operations, community engagement, climate change, antimicrobial resistance, and workforce planning[25-27]. OH-SMART was also used for regional Avian Influenza planning to map out Minnesota's 2015-2016 highly pathogenic avian influenza (HPAI) outbreak response[28] and, more recently, in California's 2024 H5N1 proactive planning prior to detections in dairy cattle, raw milk, and humans.

Application at the local level: Local jurisdictions aiming to utilize the OH-SMART tool for enhanced collaboration of multiagency responses to challenges such as HPAI could host a workshop with appropriate local representatives including: local public health (for human exposure monitoring), local environmental health (for food safety), Local Enforcement Agencies (for carcass disposal and waste management), local public health laboratories (for influenza testing), local Agricultural commissioners (for situational awareness and coordinated communications with State Agricultural officials), local or regional emergency management (for resource distribution and incident management), public information officers/communications (for public and media communications), and representatives from State Public Health and State Food and Agriculture (for notifications coming to and from local jurisdictions).

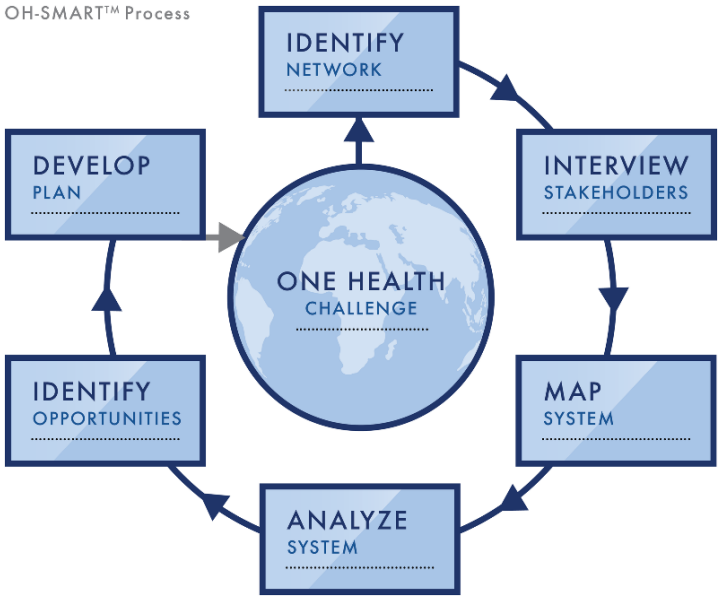

Figure 1. The OH-SMART 6-step Framework.[29]

2. CDC One Health Zoonotic Disease Prioritization Tool

The Centers for Disease Prevention and Control (CDC) created the One Health Zoonotic Disease Prioritization (OHZDP)[30] process to assist countries in prioritizing zoonotic pathogens of significance and developing actionable steps to address these pathogens using One Health collaborative efforts. This involves a series of voluntary workshops that result in:

- Development of a list of priority zoonotic diseases of greatest concern agreed upon by all represented One Health sectors
- Creation of recommendations for next steps and action plans for multisectoral, One Health engagement to address the priority zoonotic diseases
- Understanding of the roles and responsibilities of all represented One Health sectors
- Creation or strengthening of multisectoral, One Health coordination mechanisms and networks
- Development of a report highlighting the outcomes of the workshop to help advocate for One Health priorities

Previously completed workshop reports may be accessed on the CDC's website,[31] including one completed for the United States in 2017.[32] While most workshops have

been conducted at the country level, a few smaller-scale workshops have been conducted at the state-level (see Alaska's OHZDP Workshop report[33]) and regional level (See the US Southern Border Region OHZDP Workshop).[34]

Application at the local level: This approach can be adapted by local jurisdictions seeking to identify zoonotic pathogens of importance within their communities and corresponding action plans. The approach could also be modified to identify local priorities beyond zoonoses, such as environmental or toxicological hazards. The CDC's One Health Office is available to help train workshop facilitators in designing a workshop that meets the needs of their specific region/area. A factsheet[35] is provided to highlight the workshop benefits and process.

3. **Washington State Department of Health: One Health Needs Assessment Report**

In 2023, Washing State Department of Health conducted a One Health Needs Assessment[36] (OHNA) to:

- Foster new collaborations and partnerships
- Understand areas that benefit from One Health collaboration and facilitate One Health conversations
- Prioritize the One Health actions agreed on by multisectoral, One Health partners, and
- Develop a report of the assessment to guide funding, program activities, and policy decisions.

The OHNA process was developed through application of the three existing tools: OHZDP workshops, OH-SMART, and the One Health Joint Plan of Action.

Application at the local level: The Washington OHNA was a collaborative effort between State Departments, local health jurisdictions, academic partners, and other community-based organizations. The OHNA provides an actionable example of how existing national and international One Health tools could be tailored to identify and prioritize issues impacting a specific region (county, territory, or state). A local One Health Needs Assessment in CA could be conducted to bring local One Health stakeholders together to assess local capacity, establish new connections, and identify challenges of mutual priority.

4. Arizona Department of Health Services: One Health Toolkit

The Arizona One Health Toolkit[37] provides descriptions of the various state and federal One Health stakeholders; illustrations of multisectoral zoonotic disease investigations for plague, Q fever, and rabies using OH-SMART; contact information for relevant state One Health points of contact; a table of local, state, and national regularly occurring One Health calls/meetings, and results from a survey conducted among local and tribal health departments to evaluate which zoonotic diseases are more frequently investigated.

Application at the local level: As discussed above and seen in the Arizona One Health Toolkit, the OH-SMART tool could be applied locally to identify the notification processes and responsibilities of all local (+/- state and federal) players involved in specific One Health challenges such as zoonotic disease investigations. Additionally, a local One Health stakeholder point of contact list could be a valuable tool to increase efficiency of interdepartmental communications and notifications.

Overcoming Barriers and Challenges

Sustainability

Many One Health collaborations in California and in other states have been initiated by single individuals who are enthusiastic about One Health and have the expanded capacity to pursue One Health efforts in addition to their regular job duties. These types of individuals are often valued “One Health champions” who kick-start the efforts within their department/region. They have been successful by acting as charismatic facilitators who are able to skillfully bridge sectors through connectivity, visionary approaches, and a desire to learn and share partner perspectives.

If funding, organizational structure, and capacity allow, jurisdictions who do not already have an enthusiastic individual leading One Health efforts may consider adding positions or assigning roles to existing staff to fulfill this necessary “conduit” role. This role would be best served by someone willing and able to establish connections with partners, learn diverse professional languages, and understand varying perspectives and priorities.

While having someone spearhead One Health efforts is often the first step, additional steps need to be taken to ensure sustainability. If the initiative is primarily driven by one individual who leaves their position or has their work duties shifted to other priorities, then One Health efforts may go away with them. It is necessary to gain buy-in from additional staff, leadership, partners, and stakeholders who can help ensure progress continues to be made.

Potential actions to ensure One Health program sustainability include:

- Creating a One Health shared email inbox within departments, so that progress and connections are maintained beyond one individual’s network.
- Encouraging leadership to adopt One Health into mission statements and/or policies.
- Building One Health into regular or recurring processes such as having a One Health panel/session at annual conferences or establishing One Health coordinators in emergency response structures.

- Consider creating formal agreements or Memorandums of Understanding (MOUs) with partners that document a commitment to collaboration. Jurisdictions should consider the pros and cons of such formalized, institutional connections to best meet their needs.

Cost Considerations

As with any new initiative or project, the associated costs may represent a potential barrier. While additional resources and funding may be needed to implement some of the more large-scale advancements such as hiring One Health staff, creating One Health programs, or hosting One Health events, there are meaningful steps that can be taken even without additional resources or funds that have been captured in this toolkit, such as:

- Scheduling regular meetings as described in the proposed Models for One Health collaboration.
- Incorporating One Health discussions into existing conferences & annual meetings.
- Incorporating One Health collaborative principles into existing staff positions or newly hired epidemiologists, health program specialists, disease controllers, or other roles.
- As capacity allows, staff time can be utilized to advance One Health progress through implementing steps as described in the “Turning Conversation into Action” section.

Many jurisdictions and states have been able to successfully implement One Health initiatives without additional funding or resources, and have found that these efforts have actually resulted in saved resources and costs through:

- Having points of contact established with partnering agencies, allowing for more efficiency and saved staff time.
- Leveraging skillsets and sharing resources across departments, allowing for expanded capacity without additional financial investments.
- Expanding partner networkers and stakeholders, allowing for more robust outreach efforts to additional target populations of interest.

One Health Tenets

These tenets were drafted by the toolkit authors based on lessons learned in building meaningful One Health collaborations.

Prioritize relationships.

Relationships are at the crux of One Health. Prioritize in-person collaborative events when feasible. Relationships collapse without mutual respect and trust. Respect the expertise of your colleagues and treat them how you would want partners to treat you.

Consider everyone at an equal playing field.

No one group's mission is more important than another's. Understanding and valuing another entity's priorities, mission, and mandates can bridge and ease competing priorities.

Protect what is already good.

Not all efforts need to or should be directed towards identifying and preventing the next challenges. Celebrate the wins, take the time to reflect on what is going well, and prioritize wellness so that what is already good stays good.

Always assume good intent.

A key value of the One Health approach is the creation of opportunities to understand the good work and motivations of partner agencies. If the purpose or motivation behind a partner's actions are unclear, respectfully seek additional information and context to understand their perspective. Approach conflict with humility.

Understand when a One Health approach is needed, and when it isn't.

While collaboration is an essential part of the One Health approach, many collaborations occur separately – apart from One Health efforts. Referring to all collaborative projects as "One Health" dilutes the meaning and understanding of One Health and might contribute to a detrimental "One Health washing" effect. One Health collaborations should be used, and titled as such, when human, animal, and environmental health sectors each have prominent stake in the contributing factors or outcomes of the challenge.

Promote animal and environmental health for their own sake.

The protection of animal health and environmental health shouldn't just be a means to protect human health. Understand and prioritize the value of domestic animals, wildlife, and ecosystems as a whole and their worth independent from human health.

Celebrate small wins.

Recognize and expect that multisectoral and cross-jurisdictional collaborative efforts can be logistically, financially, politically, and administratively challenging. It may not be perfect, and that's okay. Small change is still progress.

Remain flexible and continually evaluate.

The needs of a collaborative group will change and evolve. Initial and continued efforts might flow then stall, and best laid intentions may need to be delayed or abandoned when urgent situations arise. Be amenable to flexibility and changing structure to ensure the collaboration continues to add value to, not distract from, respective missions.

Meet people where they are.

Everyone may be at a different place in their willingness to collaborate and trust external partners. Encourage field visits to see what on-the-ground staff do at various agencies. If there are people you really want to work with, bring your value to them. Even if it takes years, bridging communications can plant the seed.

Do not forget the (sometimes) forgotten.

Social sciences, health equity, law and policy, tribal health, wildlife and conservation, plant sciences, ecosystem health, and air/soil/water sciences all have a critical role in One Health – extra effort is needed to ensure these groups have a seat at the table.

Additional Resources

Contact Leads

A list of contact leads for potential One Health collaborators in California is provided below:

- Communicable Disease Control Officers – Contact List
- California Conference of Local Health Officers (CCHLO) – Directory
- California Conference of Directors of Environmental Health (CCDEH) – Membership List
- County Agricultural Commissioners and Sealers Association (CACASA) – County Contact Information
- Mosquito and Vector Control Association of California (MVCAC) – Member Agencies
- California Veterinary Medical Association (CVMA) – Local Associations
- California Medical Association (CMA) – Local Societies
- California Pharmacists Association (CPhA) – Local Associations
- California Society of Health-System Pharmacists (CSHP) – Local Affiliate Chapters
- California Association of Public Health Laboratory Directors (CAPHLD) – Network Laboratories
- Regional Disaster Medical Health Coordinators and Specialists – Regional Contacts

Webpages

- CDC One Health Office
- US EPA One Health Webpage
- FDA Page – Who's Who in One Health? | One Health Commission
- National Oceanic and Atmospheric Administration (NOAA) Climate Program Office One Health Webpage
- U.S. Department of Agriculture One Health Webpage
- U.S. National Park Service One Health Webpage
- World Organization for Animal Health (WOAH/OIE) – One Health
- United Nations Food and Agriculture Organization (UN FAO) – One Health
- California Department of Food and Agriculture (CDFA) – One Health
- University of California, Davis – One Health Institute
- One Health Commission
- CCLHO Strategic Map 2025-2028
- Washington's One Health Collaborative
- USAID One Health Strategic Plan Development Toolkit
- Global One Health and Infectious Diseases: An Interdisciplinary Practitioner's Guide
- One Health: Implementation Challenges and Need

References

1. CDC. Antimicrobial Resistance. Accessed April 17, 2025, https://www.cdc.gov/antimicrobial-resistance/index.html
2. van Heeckeren AM. The Power of the Human-Animal Bond. Updated January 26, 2023. Accessed April 17, 2025, https://www.onehealth.org/blog/the-power-of-the-human-animal-bond
3. O'Carroll A, La Jeunesse C, Lawry LL. Considering the human-animal bond in developing One Health guidelines and standards for companion animals in humanitarian crises. *CABI One Health*. 2024;doi:10.1079/cabionehealth.2024.0009
4. Conway KL, Jasuja RM, Hauser NE, Janet. Benefits, companion animal zoonotic disease prevalence and public perceptions of pet ownership among people experiencing homelessness in northern California. *Zoonoses and Public Health*. 2022;69(7):806-815. doi:10.1111/zph.12970
5. OEHHA. 2022 Report: Indicators of Climate Change In California. Accessed January 29, 2025, https://oehha.ca.gov/climate-change/2022-report-indicators-climate-change-california
6. WHO. Food Safety. Updated October 4, 2024. https://www.who.int/news-room/fact-sheets/detail/food-safety
7. U.S. EPA. Our Current Understanding of the Human Health and Environmental Risks of PFAS. Updated November 26, 2024. Accessed April 17, 2025, https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas
8. WHO. Zoonoses. Updated July 29, 2020. Accessed April 17, 2025, https://www.who.int/news-room/fact-sheets/detail/zoonoses
9. FAO, UNEP, WHO, WOAH. *One Health Joint Plan of Action (2022-2026): Working together for the health of humans, animals, plants and the environment*. 2022.
10. Riley T, Anderson NE, Lovett R, Meredith A, Cumming B, Thandrayen J. One Health in Indigenous Communities: A Critical Review of the Evidence. *Int J Environ Res Public Health*. Oct 28 2021;18(21)doi:10.3390/ijerph182111303
11. Raja N, Ashwinth Jothy A. Edward Jenner's Discovery of Vaccination: Impact and Legacy. *Cureus*. 2024;doi:10.7759/cureus.68993
12. Rappuoli R. 1885, the first rabies vaccination in humans. *Proceedings of the National Academy of Sciences*. 2014;111(34):12273-12273. doi:10.1073/pnas.1414226111

13. Assadian O, Stanek G. Theobald Smith—The Discoverer of Ticks as Vectors of Disease. *Wiener klinische Wochenschrift*. 08/01 2002;114:479-81.
14. Evans BR, Leighton FA. A history of One Health. *Revue Scientifique et Technique de l'OIE*. 2014;33(2):413-420. doi:10.20506/rst.33.2.2298
15. Mackenzie JS, McKinnon M, Jeggo M. One Health: From Concept to Practice. Springer Japan; 2014:163-189.
16. One Health Commission. One Health Strategic Action Plans. Updated September 8, 2022. Accessed January 28, 2025, https://www.onehealthcommission.org/en/resources__services/one_health_strategic_action_plans/
17. WHO, FAO, UNEP, WOAH. *A Guide to Implementing the One Health Joint Plan of Action at National Level*. 2023. Accessed January 29, 2025. https://iris.who.int/bitstream/handle/10665/374825/9789240082069-eng.pdf?sequence=1
18. CDC. Federal One Health Coordination. Updated January 10, 2025. Accessed January 28, 2025, https://www.cdc.gov/one-health/php/about/federal-one-health-coordination-1.html
19. CDC, DOI, USDA. *National One Health Framework to Address Zoonotic Diseases and Advance Public Health Preparedness, 2025-2029*. 2025. Accessed January 29, 2025. https://www.cdc.gov/one-health/media/pdfs/2025/01/354391-A-NOHF-ZOONOSES-508_FINAL.pdf
20. U.S. Census Bureau. Most Populous. Accessed April 17, 2025, https://www.census.gov/popclock/embed.php?component=populous
21. CDFA. California Agricultural Production Statistics. Accessed January 28, 2025, https://www.cdfa.ca.gov/Statistics/
22. CDFA. *California Agricultural Statistics Review 2022-2023*. 2024. Accessed August 7, 2025. https://www.cdfa.ca.gov/Statistics/PDFs/2022-2023_california_agricultural_statistics_review.pdf
23. One Health Commission. One Health Tools & Toolkits. Updated September 14, 2022. Accessed January 29, 2025, https://www.onehealthcommission.org/en/resources__services/one_health_tools__toolkits/
24. University of Minnesota. The OH-SMART Framework. Accessed January 29, 2025, https://oh-smart.umn.edu/oh-smart-framework

25. Moore SA, Severud WJ, Wolf TM, et al. Indigenous co-stewardship of North American moose: recommendations and a vision for a restoration framework. *The Journal of Wildlife Management*. 2024;88(6)doi:10.1002/jwmg.22623
26. University of Minnesota. OH-SMART in Practice. Accessed January 29, 2025, https://oh-smart.umn.edu/oh-smart-action/oh-smart-practice
27. Yasobant S, Patil S, Bhavsar P, Saxena D. Risk Prioritization tools for emerging and epidemic-prone diseases: A One Health scoping review. *International Journal of One Health*. 2024:74-81. doi:10.14202/ijoh.2024.74-81
28. Dutcher TV. *The One Health Systems Mapping and Analysis Resource Toolkit (OH-SMART)*. 2021. Accessed January 30, 2025. https://www.hhs.gov/sites/default/files/day2-06-dutcher.pdf
29. Vesterinen HM, Dutcher TV, Errecaborde KM, et al. Strengthening multi-sectoral collaboration on critical health issues: One Health Systems Mapping and Analysis Resource Toolkit (OH-SMART) for operationalizing One Health. *PLOS ONE*. 2019;14(7):e0219197. doi:10.1371/journal.pone.0219197
30. CDC. One Health Zoonotic Disease Prioritization (OHZDP). Updated April 18, 2024. Accessed January 29, 2025, https://www.cdc.gov/one-health/php/prioritization/index.html
31. CDC. Completed OHZDP Workshops. Updated April 25, 2024. Accessed January 29, 2025, https://www.cdc.gov/one-health/php/prioritization/completed-workshops.html
32. U.S. HHS, CDC, DOI, USDA. *Prioritizing Zoonotic Diseases for Multisectoral, One Health Collaboration in the United States: Workshop Summary*. 2024. Accessed January 29, 2025. https://www.cdc.gov/one-health/media/pdfs/us-ohzdp-report-508.pdf
33. U.S. HHS, CDC. *One Health Zoonotic Disease Prioritization for Multisectoral Engagement in Alaska: Workshop Summary*. 2022. Accessed January 29, 2025. https://www.cdc.gov/one-health/media/pdfs/Alaska-508.pdf
34. CDC. *Infectious Disease Prioritization for Multijurisdictional Engagement at the United States Southern Border Region: Workshop Summary*. 2021. Accessed January 29, 2025. https://www.cdc.gov/migration-border-health/media/pdfs/OneHealth-SouthernUS-508.pdf
35. CDC. *One Health Zoonotic Disease Prioritization Process: Factsheet*. Accessed January 29, 2025. https://www.cdc.gov/one-health/media/pdfs/prioritization-fact-sheet-H.pdf

36. Washington State Department of Health. *One Health Needs Assessment Report*. 2023. Accessed January 29, 2025. https://doh.wa.gov/sites/default/files/2023-09/420-524-OHNAReport.pdf
37. Arizona Department of Health Services. *Arizona One Health Toolkit*. 2019. Accessed January 29, 2025. https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/vector-borne-zoonotic-diseases/arizona-one-health-toolkit-2019.pdf