



# **Operationalizing “One Health”:**

A Policy Perspective—  
Taking Stock and Shaping  
an Implementation Roadmap

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MEETING OVERVIEW | MAY 4–6, 2010 STONE MOUNTAIN, GEORGIA

National Center for Emerging and Zoonotic Infectious Diseases  
Division of High-Consequence Pathogens and Pathology





## PART I. Executive Summary

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The U.S. Centers for Disease Control and Prevention (CDC), at the request of and in close collaboration with the World Organisation for Animal Health (OIE), the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO), hosted a meeting entitled *Operationalizing “One Health”: A Policy Perspective—Taking Stock and Shaping an Implementation Roadmap* in Stone Mountain, Georgia, USA, May 4-6, 2010. The Stone Mountain meeting was the latest in a series of One Health meetings organized by diverse global institutions with the intent of providing a forum for national and international specialists to focus on policies and implementation of a One Health approach to improving human and animal health.

The specific goal of the Stone Mountain meeting was to identify clear and concrete actions to move the concept of One Health from vision to implementation. Fifty-four select global leaders from government, non-government, academic, policy and economic sectors reviewed progress to date and identified key policy decisions and financial commitments necessary to support sustainability and expansion. To provide background for participants, the meeting began with a series of presentations about recent One Health events, followed by short panel presentations and in-depth discussions where speakers described their own experience in advancing the concept of One Health within their sector and/or country. Participants had the opportunity to comment on panel presentations during group discussion periods and provide their own perspective through small group sessions and activities. Meeting participants defined a 3-5 year vision of One Health encompassing four main areas: culture change, increased visibility, political will/financial support, and optimal coordinated efforts. Seven specific activities were identified as being critical steps in attaining the defined 3-5 year vision and separate workgroups were formed to address each of these activities. These workgroups include:

**Training:** Develop and build skills, expertise, and competencies through a One Health training curriculum, and identify opportunities to integrate One Health approaches into existing curricula.

**One Health Global Network (OHGN):** Advocate and garner international support for One Health through a network that serves as a vehicle for further global collaboration on One Health programs.

**Information Clearing House:** Promote One Health advocacy through a centralized area where One Health success stories and lessons learned are gathered and made available to a wide-ranging audience.

**Needs Assessment:** Develop country-level self-assessment methods that will identify programmatic areas that could benefit from a One Health approach, and specific areas for targeting improvement.

**Capacity Building:** Identify ways to leverage existing programs and capacity-building efforts to have a major impact at minimal cost.

**Proof of Concept:** Demonstrate through a retrospective and prospective evidence base that the use of One Health interventions leads to better cross-species health outcomes.

**Business Plan:** Articulate the concept of and rationale for One Health more clearly and present this information to policymakers and donors worldwide.

Each group was asked to develop One Health plans and partnerships that would occur within a designated timeframe. These workgroups will convene and continue their development to finalize their actions plans, develop timelines and carry out activities.



## PART II. Overview of Events Leading Up to the Stone Mountain Meeting

### Background

According to the World Health Organization (WHO), new infectious diseases have emerged at the rate of one or more per year since the 1970s. SARS, HIV/AIDS, West Nile virus encephalitis, Nipah virus encephalitis, dengue hemorrhagic fever, and other diseases of zoonotic origin are well known examples of this increase in disease threats. In 2008, the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE), and WHO (the three major international organizations dedicated to issues concerning animal health and human health) collaborated with the United Nations Children's Fund (UNICEF), the United Nations System for Influenza Coordinator (UNSIC), and the World Bank to develop a joint strategic framework to address risks associated with emerging and re-emerging infectious diseases. The document in which this framework was originally communicated, *Contributing to One World, One Health\*—A Strategic Framework for Reducing Risks of Infectious Diseases at the Animal-Human-Ecosystems Interface*, set out six specific inter-linked objectives for countries to consider in their approach to infectious-disease control at the animal-human-ecosystem interface.

In March 2009, the Public Health Agency of Canada hosted an expert consultation titled "One World, One Health: from ideas to action" in Winnipeg, Manitoba. The purpose of the consultation was to discuss the Strategic Framework and to identify and shape country-level recommended actions to globally advance the framework. Participants recommended the development of supra-country approaches that use multidisciplinary/trans-disciplinary methods in addition to trans-boundary/regional approaches to ensure an integrated approach. In her closing

remarks, Danielle Grondin of the Public Health Agency of Canada noted that because the political economic agenda is the priority of world leaders today, One Health must be translated into language that is relevant to finance ministers to facilitate the evolution of this concept from principle to practice.

### Stone Mountain Meeting

Much progress was made at the Winnipeg meeting toward defining approaches for achieving One Health objectives; however, a complementary meeting was necessary in order to define the specific action steps needed to further move the One Health concept forward. Therefore, a Scientific Planning Committee composed of representatives from the U.S. Centers for Disease Control and Prevention (CDC), OIE, FAO, WHO, the European Union, and Princeton University was assembled to organize a follow-up meeting. This subsequent expert consultation titled, *Operationalizing "One Health": A Policy Perspective – Taking Stock and Shaping an Implementation Roadmap*, was held May 4-6, 2010 in Stone Mountain, Georgia, USA. The Scientific Planning Committee developed a rich and interactive agenda and carefully selected leaders from national Ministries of Health and Agriculture, the European Commission, the United Nations, and the World Bank; in addition, representatives from other diverse institutions from the academic, policy, and economic sectors were invited to participate and contribute their expertise and experience to the discussion.



## PART III. Welcome and Overview

### Opening Remarks

#### Rima Khabbaz, CDC Deputy Director for Infectious Diseases

During her opening remarks, Dr. Khabbaz thanked everyone for their participation, recognizing that everyone was present for the same reason – a belief that One Health is the best approach for attaining better health for humans and animals and for improving the environment.

Dr. Khabbaz pointed out that One Health is not a new idea. While historically, physicians and veterinarians had worked closely, the 20th Century brought about a wide separation between these specialties. Moving from generalists to specialists further hindered interactions between these practices which became even more critical as the century progressed. The tremendous mid-century advancements in technology and industry, increasing ecologic and environmental changes, and new human patterns of travel and consumption created a highly connected world that provided multiple opportunities for the introduction and spread of new and re-emerging diseases.

In September 2004, health experts from around the world met in New York City to discuss One Health. The meeting, titled “One World, One Health: Building Interdisciplinary Bridges to Health in a Globalized World,” was organized by the Wildlife Conservation Society (WCS)/ Rockefeller University and resulted in 12 recommendations. Referred to as the Manhattan Principles, these recommendations called for the establishment of a more holistic approach to preventing epidemic and epizootic diseases and maintaining ecosystem integrity.

Since the New York meeting, additional global strategies, conferences, and consultations have further advanced the One Health effort and laid a strong foundation for the current meeting.

Dr. Khabbaz stressed that the large number of attendees at this meeting is evidence in itself of the worldwide commitment to One Health. She went on to explain that each participant invited to attend the Stone Mountain meeting was identified and selected to ensure a global, multi-disciplinary representation. Together, the participants represented the inter-sectoral collaboration needed to move forward on One Health initiatives.

Dr. Khabbaz said that CDC was honored to host this meeting and hoped that the agency could serve as a strong partner in advancing this effort. She pointed out that One Health is an important priority for CDC’s infectious disease programs overall. Dr. Khabbaz ended by emphasizing the need for participants to continue working to move One Health forward by assessing the current state of the One Health approach; identifying and building upon successes and lessons learned; identifying opportunities and barriers to implementing One Health; and formulating strategies to address needs. Participants also were encouraged to identify concrete action steps for each of these critical components associated with One Health implementation.

### Purpose and Proposed Scope for One Health

#### Speakers: Alex Thiermann, OIE, Liz Mumford, WHO, Jan Slingenbergh, FAO

During this session, participants were provided with information regarding the concept of One Health as it was defined for the purposes of the strategic meeting. It was stressed that there is a clear need to operationalize One Health to move beyond the conceptual. The environment must be broadened, but should not challenge the mission of each agency individually. Instead, the way in which One Health objectives are achieved must change. Therefore, the importance of operationalizing One Health is not in defining the concept, but rather lies in the activities at the



cross-cutting points of each organization. These organizations must work in terms of collaboration and integration rather than individually and in silos.

It was also observed that the Stone Mountain meeting could serve as a well-timed complement to the FAO-OIE-WHO Joint Technical meeting held in Verona the previous week, where a variety of themes regarding emerging and re-emerging diseases at the human-animal interface were explored. These common themes identified during the Verona meeting could ideally provide a technical basis for the discussions taking place at the Stone Mountain meeting concerning strategies for operationalizing the agreed upon concepts and translating strategic alignment into action.

## Review of the Series of One Health Meetings and the Significance of the Stone Mountain Meeting

**Speakers:** Alain Vandersmissen, European Commission, Mark Raizenne, Public Health Agency of Canada, Alex Thiermann, OIE, Kate Glynn, OIE

This session aimed to provide participants with an understanding of the key historical events leading up to this meeting (the achievements) in the context of developing and advancing the One Health agenda (the work that remains to be done), specifically to move from the theoretical to the more practical, allowing further implementation at international, regional, national, and local levels. A timeline was given to illustrate the history of One Health, focusing on the last 6 years and in particular on the role of the recent International Ministerial Conferences on Avian and Pandemic Influenza. In their remarks, presenters described several of the most recent meetings focusing on One Health or the animal-human-ecosystems interface and detailed their accomplishments, lessons learned and existing gaps. Presenters discussed the significance of and contributions

from past meetings and how they set the stage for operationalizing the concept of One Health during the Stone Mountain meeting.

The significance of the timing of the Stone Mountain meeting was described during the overview of the “One World, One Health: from ideas to action” consultation held in Winnipeg, Manitoba, Canada in 2009. The Winnipeg meeting did provide a stepping-stone for the Stone Mountain meeting, which promised excellent results and increased forward momentum, including focused decision making, timeline development and distribution of activities and roles for advancing One Health.

## Review of agenda and participant expectation

**Daniel Normandeau, Meeting Facilitator, ConversArt**

When reviewing the agenda, Mr. Normandeau suggested that the group consider the following:

- What must we walk away from this meeting with?
- What should we be creating together in this two and a half day period?
- How would you define success in specific, concrete, grounded terms?

Participants then compared notes with their colleagues, shared ideas, and determined what kind of shared or common agenda would emerge from this meeting. There were many connections among the reports, but one strong theme that emerged was a sense that the “pump is primed” for operationalizing One Health. It is time to move toward specific, concrete, results-driven, and observable actions that are not confined to one individual view and can make a significant impact on health.



## PART IV. Working Sessions

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Eight working sessions were held during this two and a half day meeting. The sessions focused on diverse topics, including the economic benefits and drivers of a One Health approach; successful examples of One Health implementation at the national level and within other sectors (professional, NGO, international and academia); creating a shared view of success for One Health and the necessary stakeholders; and identifying critical enabling initiatives to advance the concept of One Health. Most sessions opened with panel presentations from subject matter experts, who briefly described their own experience (or that of their institution) regarding the session topic; these experiences are summarized in the following pages of this document as “case reports.” A group discussion followed, allowing all meeting

participants the opportunity to ask questions as well as describe their own experiences. Finally, the members of each individual group were asked to exchange views with fellow group members and develop possible recommendations/next steps for their topic area that could help operationalize One Health concepts.

The key messages that emerged from each session are summarized in the following section of this report as bulleted text. Although recommendations and next steps are outlined in this report, they do not imply consensus or agreement from the entire group or their affiliated institution. Instead, the recommendations are intended as suggestions that may serve as a vehicle for moving One Health forward.

### SESSION TWO: Economic Benefits of a One Health Approach: Why Should Anyone Invest?

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Examples were presented of when applying a One Health approach generated better economic and health outcomes.

The discussion included comparing and contrasting developing, in-transition and developed country aspects.

**Panel:** Jean Kamanzi, World Bank, Jonathan Rushton, Royal Veterinary College, Esther Schelling, Swiss Tropical and Public Health Institute

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#### Key messages of the panel presentations and associated discussion:

- Recent zoonotic threats, including BSE, SARS, H5N1, and H1N1, all have human health and economic impact. For example, the estimated direct cost of SARS to Canada and Asian countries is \$50 billion.
- During the H5N1 crisis, the World Bank collected \$3.9 billion from donor countries over 4 years. By the end of 2009, \$2.7 billion had been disbursed for capacity-building, training, education, and resources.
- An H5N1 pandemic has been estimated to have a \$3 trillion global impact; therefore, there are good returns on investments made in preventive measures to reduce the risks of H5N1 becoming pandemic (i.e., investments of \$2.7 billion on prevention to avoid potential losses of \$3 trillion).
- Ensuring food safety is critical; for example, 339,000 people working in the agricultural sector in the UK (0.6% of the pop.) can affect the wellbeing of 60 million consumers.



- When avoidable losses are greater than the cost of the intervention, investment is worthwhile.
- When an outbreak of pandemic disease occurs, traditionally public health AND veterinary services respond as separate entities – no coordinated response occurs between services.
- Joint Service Provisions is an example of added value through better cooperation between animal and health sectors. The sharing of infrastructure and equipment clearly illustrates the cost reduction associated with a collaborative approach.
- For diseases that exclusively affect either animals or humans, a specialized approach is advantageous; for zoonotic diseases, a more generalized systems approach is more appropriate.
- A definition of One Health that allows organizations to work with a common vision is needed.
- Controlling diseases at the human-animal-ecosystems interface in operational terms requires *gradualism* -- a systems approach that reflects gains in both effectiveness and efficiency. Gradualism in the context of

One Health can be viewed through two different levels:

- » Initial level: focus on disease at the human-animal-ecosystems interface.
  - » Secondary level: focus on drivers that rest outside this domain and may influence the emergence and spread of disease (e.g., land use, deforestation, agriculture systems, and migration)
- Improved monitoring provides a more accurate, real-time estimate of disease burden and impact.
  - Investing in One Health is advantageous, because it ensures:
    - » better preparedness and contingency plans;
    - » more efficient and effective surveillance systems for diseases;
    - » cost-sharing between sectors according to their benefits of control;
    - » increased health equity (neglected zoonoses primarily affect socioeconomically disadvantaged groups); and
    - » improved sharing of logistics and costs for service provision.

## Session Recommendations:

- Traction is needed at the policy level.
- A convincing case needs to be presented to ministries (Health, Agriculture, Finance) to control and manage lingering diseases (e.g., rabies and brucellosis) when the threat is not as obvious. As each new threat emerges, the prior threat is easily forgotten.
- Sustainable funding should be created; for instance, a minimal tax could be applied to products of animal origin.
- The benefits of One Health should be presented via a strategy of cost/benefit analysis, and interventions should be developed.
- Ministries should work together to distribute burden; costs/benefits of disease-causing activities are not born by the same sectors. Rolling up costs for integrated systems saves money across sectors.
- Veterinary and human health infrastructure and capacity should be strengthened to



enable the exchange of information between the two sectors - sharing knowledge and resources, including joint labs, shared processes and sample-sharing in the field has quantifiable economic benefits.

- Investments in general platforms, rather than specific ones, should be made.
- The private sector should be considered a partner in sharing the costs proportionate to the benefits when distributing responsibility for emerging pathogens.
- Trade and travel should be used as economic drivers; change is likely to occur when economic interests are affected.

- Language should be developed to effectively communicate One Health to stakeholders and bring relevancy to the concept -- One Health can provide the right language for stakeholders to understand and make it relevant to their systems.
- The benefit of building resilient systems that can handle uncertainty must be established.
- Food security and public health issues should be addressed together, improving streamlining and efficiency.

## SESSION THREE: Successful Approaches or Systems for Implementing One Health—National Examples

Examples of how policy decisions have been made and how financial investment has been encouraged at the national and sub-regional level were presented for discussion. Barriers (consistently present) that hamper or prevent

policy development, program implementation, financial investment, or sustainability in a variety of settings were also discussed, as well as strategies to overcome these barriers.

**Panel:** Carol Rubin, CDC, Albert Ko, Oswaldo Cruz Foundation

### Key messages of the panel presentations and associated discussion:

- Establish evidence based results to gain national support
- Be creative and use various types of media (i.e., public journals) in order to gain high-exposure and support
- Build upon existing multi-disciplinary/intersectoral structures that can be leveraged to increase capacity, while establishing defined responsibilities and coordinated plans and guidelines for each of the respective partners at the local and national level
- Incorporate community and non-traditional partners (i.e., civil defense, residents associations, public sanitation companies, media)



## Case Study:

# Pandemic H1N1 response as an example of One Health achieving some success: United States

## Background

- In the United States, CDC functions somewhat like a Ministry of Health and, USDA serves roles often assigned to a Ministry of Agriculture. CDC and USDA often collaborate but have different mandates and responsibilities that historically have led to the Agencies functioning independently.
- Response to High Pathogenic Avian Influenza (H5N1) built new communication bridges between CDC and USDA, and pilot surveillance programs for SIV in pigs was being planned.
- However, the discovery of pandemic H1N1 in people but not in animals created a new tension between the Agencies. For example, some countries issued bans on receiving US pork based on human H1N1 case counts published on public health websites. The economic impact was significant, but not science-based.
- In addition, Swine Influenza Virus (SIV) surveillance systems planned by CDC and USDA were abandoned during the outbreak. In order to avoid being the first positive herd, US producers did not submit samples for SIV analysis.

## A One Health Opportunity

- The communication bridges built during HPAI H5N1 response planning allowed CDC and USDA to coordinate science-based messaging BEFORE H1N1 was diagnosed in US pigs.
- USDA conducted research that clearly showed that, as with other SIV, H1N1-recovered pigs could safely go to slaughter.
- CDC, USDA and pork producers met to design a united One Health response.
- Conference calls were organized with relevant stakeholders and USDA, together with CDC, delivered unified messaging about pork safety.

## Result

- When the first US swine herd was diagnosed as pandemic H1N1 positive in Indiana, the story did not impact pork sales domestically or internationally. Recovered pigs went to slaughter and ended up in the grocery store.



## Session Recommendations:

- Non-traditional partnerships should be formed.
- Trust and confidence must be built.
- Performance indicators should be established.
- Although virus sharing and banking has increased, it must continue to improve into the future.
- Consistent messaging across sectors must be established; when the public blames industry for disease, tension increases.
- Joint-decision making and communication should continually and consistently occur; building relationships to overcome turf/control issues and developing a shared vision are critical to the success of any action to improve health.
- Prevention should be addressed, rather than just the problem.
- Lack of urban planning in developing countries is a big concern and should receive greater representation.
- Peri-urban settings, including peri-urban agriculture, must be addressed; as populations move toward urban centers, so do livestock and agriculture systems.
- Attention must be directed toward a range of issues rather than continuing the singular disease focused approach.
- Incentives to bring multi-disciplinary actors to the table (e.g., reward structures) should be identified to motivate and leverage funding.
- Novel and innovative approaches to multi-disciplinary training and career development (e.g., incorporating human public health in veterinary medicine curriculum and zoonotic public health in medical curriculum) are necessary to develop a bottom up horizontal approach which crosses over diverse sectors and create a cadre of One Health partners across sectors.
- Veterinarians should continue to be incorporated in the Field Epidemiology Training Program (FETP), national rapid response teams, and related programs, ensuring they receive the same training as other health professionals and can enhance the types of public health responses made to outbreaks.



# SESSION FOUR: Successful Approaches or Systems for Implementing One Health—Examples From Other Sectors (Professional, NGO, International, and Academia)

Examples of behaviors that can prevent progress, how they were identified as the root factor, and how political will was engaged to implement One Health were presented and discussed.

Examples of behavioral changes leading to sustainable change were also discussed.

**Panel:** John Mackenzie, Curtin University of Technology, Laura Kahn, Princeton University, Manish Kakkar, Public Health Foundation of India, Roland Suluku, Animal Health Clubs (Sierra Leone)

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## Key messages of the panel presentations and associated discussion:

- Lack of communication and collaboration between medical and veterinary authorities, particularly during a disease outbreak, is very problematic.
- A major challenge to implementing One Health is that most physicians are sub-specialists, meaning their practices are so specialized that they may not recognize the relevance of collaboration with other professionals such as veterinarians.
- The mission of medical schools is to train physicians to focus on individual health. This is expensive and does not prevent diseases – it treats disease at the tertiary level.
- Physicians often do not see the connection between animal and human health when there is no direct patient care.
- Efforts to educate inter-disciplinary practices are easier at the undergraduate level, before specialization becomes the focus of educational efforts, then continued at the graduate level to reinforce what is learned at the undergraduate level.
- Stepping back from a medicalized paradigm of public health and involving more disciplines is important (e.g., social science professionals and economists).
- Inter-sectoral collaboration is an elusive paradigm, especially at ground-level implementation.
- One Health must be defined in terms of major stakeholders involved.
- One Health is not just about zoonotic diseases. Most disease processes are shared cross-species, and therefore One Health encompasses more than just emerging infectious diseases.



## Case Study: Animal Health Clubs in Sierra Leone

### Background

- In Sierra Leone, 95% of the country's animal population was destroyed during an 11-year civil war.
- The country is experiencing an "Expert Crisis," or a crucial lack of human resources, with only 70 medical doctors, three veterinarians (all scheduled to retire in 2-6 yrs), and 21 livestock officers.

### A One Health Opportunity

- Animal Health Clubs (AHCs) are a multi-sectoral collaboration that strives to teach communities in Sierra Leone about healthy living.
- The clubs began by educating students from primary school through university on rabies and using them as a way to disseminate prevention information through their communities and among peers.
- AHCs have broadened to promote awareness on prevention and control of other endemic and emerging zoonoses through community level approaches.

- The clubs aim to influence higher level structures from local authorities to the national government.
- AHCs have a consortium of various schools in the university working with rural development, including the Schools of Agriculture (Animal Health and Nutrition, Home Sciences and Agronomy), Environmental Sciences, Education (Drama and Songs), Technology, Horticulture, and Forestry.

### Result

- AHCs' achievements include:
  - » Growing membership from 1 to 25 schools.
  - » Bringing the university closer to the community.
  - » Collaborating with municipal authorities.
  - » Providing a neutral forum for multi-sectoral/multi-disciplinary stakeholder meetings locally and nationally.
  - » Improving awareness and contributing to the gradual adoption of the One Health message.



## Session Recommendations

- Successful collaboration is needed between human and animal health communities.
- The broad types of transmission mechanisms that may not be apparent initially must be taken into consideration.
- Public health should be reintegrated with individual health.
- There should be provision for flexibility in possible approaches and entry points for inter-sectoral collaboration. There may not be a “one size fits all” approach.
- An integrated core sector that includes humans, animals, and wildlife should be identified.
- All stakeholders involved in animal, human, and ecosystem health issues should engage in dialogue and collaboration beginning in the early stages of any new initiative.
- Transparency and communication through rapid and shared surveillance are needed for the prompt detection of novel emergent agents.
- Health-science schools (e.g., medicine, veterinary medicine, public health, and nursing) should be situated geographically closer together in order to improve collaboration among the sectors.
- Veterinary and medical students should participate in joint investigations of zoonotic diseases.
- Pilot models of inter-sectoral collaboration should be established for students and others to enable them to learn best practices.
- At the global level, One Health should integrate developed and developing world perspectives and recognize that their priorities may be different.
- The medical community should be engaged by contacting and working with professional societies (e.g., The American Medical Association and the American Veterinary Medical Association).
- Because children are disproportionately affected by zoonoses, pediatric organizations and societies should be included in collaborative efforts.



## SESSION FIVE: Creating a Shared View of Success for One Health

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Panelists shared their own ideas of success for One Health in terms of outcomes and benefits in order to create a collective view for the group.

**Panel:** Lonnie King, The Ohio State University, Jian Du, China Ministry of Agriculture, John McDermott, International Livestock Research Institute

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### Key messages of the panel presentations and associated discussion:

- “Where you stand depends on where you sit” -- success is defined by the lens through which one looks. The following are a series of possible lenses through which to look at One Health.
  - » Cultural/Organizational lens: the “this is how things are done around here” culture is broken down, and mutual and reciprocating respect, trust, and interaction across disciplines are instilled as the norm.
  - » Non-technical lens: workers/leaders possess the necessary skills to ensure success by having the ability to work across boundaries over which they do not have authority.
  - » Technical lens: training programs are in place to prepare a cadre of One Health professionals and teams locally, nationally, and globally.
  - » Economic lens: a metrics is formulated with economic parameters that reinforce and support One Health and prove reductions in deaths and costs from diseases, as well as demonstrate gains in productivity.
- » Change-Management lens: a generational change, one which overcomes old mindsets, must take place in 3-5 year segments and be associated with specific outcomes; a communication strategy is critical.
- From an agriculture research and development perspective, One Health can contribute outcomes and benefits in the following ways:
  - » by addressing the needs of marginalized and vulnerable people;
  - » by addressing the needs of the rapidly changing developing world; and
  - » by ensuring phased planning and risk mitigation.
- One Health can make a major contribution in the agriculture sector in developing nations, where 70%-80% of households are involved in agriculture production (compared with 2% in the developed world).



## Case Study: Rhodesiense in Uganda

### Background

- Rhodesiense is a zoonotic sleeping sickness that is not easy to diagnose early and is difficult to treat in late stages.
- Rhodesiense is largely an infection of cattle that carry the trypanosome infection, which can be transmitted to people.
- Cattle infected with these trypanosomes are asymptomatic; this can complicate diagnosis, because healthy cattle can be a reservoir for tsetse transmission to people.
- Many people in Uganda live long distances from health-care clinics, making access to human interventions difficult.
- The drugs used to treat Rhodesiense are highly toxic; about 10% of patients who take these drugs die from toxicity overdose.
- Because of the high prevalence of HIV/AIDS in the area, rates of Rhodesiense are under-reported. In many cases, health-care providers erroneously assume that symptoms of chronic disease are associated with HIV/AIDS.

### A One Health Opportunity

- Significant cattle restocking took place north of the areas where sleeping sickness typically occurs, resulting in the transport of cattle from infected areas into uninfected areas.
- A major outbreak occurred in the local cattle market, and nearby residents became infected.
- A study was conducted to assess the veterinary, human, and ecosystem aspects of the disease to better understand its origin in the area.

### Result

- Several pilot studies have demonstrated that improving animal health can reduce the threshold of transmission, because illness in humans merely represents the “tip of the iceberg.”
- An animal intervention not only allows the disease to be controlled, but is also beneficial to agriculture in terms of increased productivity.



## Session Recommendations

- Powerful guiding principles should be developed to direct processes with sponsoring coalitions.
- New approaches for anchoring new behavior in the organizational culture should be developed.
- Champions who have access to media internationally should be identified and recognized as conduits for global communication.
- Visions should be defined and communicated, and others empowered to take action.
- The short-term wins must be planned today to disempower cynicism in the future.
- Efforts must be made to plan ahead, understand those impacted, and plan win/win consequences and incentives to overcome resistance.
- One Health should be expanded to encompass the area of preparedness.
- The One Health concept should be considered in terms of a global start-up company. As such, a business strategy to establish the concept should be developed.
- The mentality reflected in the phrase “It is the way things are done around here” must be transformed and transcended.
- Efforts should focus on developing countries, where opportunities exist for making the largest changes quickest. Steps can be skipped, evolutionary leaps forward can be made, and real gains can be shown.



## SESSION SIX: Developing a View of Success for One Health in the Next 3–5 Years

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**Facilitator:** Daniel Normandeau, ConversArt

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The group recognized that comprehensive operationalization of One Health involves making changes on a long-term time scale. In small groups, participants were asked to discuss a vision of what One Health should look like globally in the next 3-5 years. It was stressed that each view should be tangible, results-oriented, outcome-driven, and practical. During the plenary session, four key common themes emerged from the small groups as they presented their 3-5 year vision for One Health.

- **Culture change**—appreciation for the importance of the connection between humans, animals, and ecosystems;
- **Increased visibility**—evidence-based recognition of the value added by operationalizing the One Health approach in preventing, detecting, and controlling diseases that impact both humans and animals;
- **Political will and financial support**—to support interdisciplinary collaborative programs;
- **Optimal efforts and Improved coordination**—inter-sectoral collaboration in surveillance, communications, outbreak response, and sample sharing.



## SESSION SEVEN: Implementing a One Health Approach

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**Facilitator:** Daniel Normandeau, ConversArt

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During Session Seven, participants were tasked with identifying “critical enabling initiatives” that are feasible for completion over the next 18 months and will ensure the integration of One Health approaches into policy development and help guide implementation. Each group came up with several such initiatives, reflected in the following list.

- Creating a foundational structure initiative/legitimacy
- Conducting a gap analysis of value added
- Branding and messaging
- Establishing a global One Health alliance/network/partnership
- Creating a One Health business plan
- Conducting proof-of-concept projects
- Holding annual or bi-annual international One Health meetings
- Involving UNEP, the inter-governmental agency dealing with drivers of emerging diseases
- Obtaining data on One Health experiences worldwide to raise awareness and understanding
- Conducting training and human development
- Engaging a financial and business consulting group
- Developing a communication plan
- Making investment cases
- Ensuring political engagement at cross-jurisdictional levels
- Changing existing authorities and delegations in order to facilitate a community approach
- Leveraging institutional arrangements
- Involving private-sector enablers that influence behaviors
- Identifying national focal points for wildlife and disease reporting
- Establishing a working group to develop key One Health deliverables
- Creating a clearinghouse website
- Engaging in knowledge management, information sharing, and dissemination



Of these nominated critical initiatives, seven key activities were selected as fundamental to moving forward the One Health agenda and obtaining goals associated with the 3-5 year vision. Seven work groups were then formed to collaboratively develop and implement the key activities, which follow.

1. **Training:** Develop and build skills, expertise, and competencies through a One Health training curriculum and identify opportunities to integrate One Health approaches into existing curricula.
2. **One Health Global Network (OHGN):** Advocate and garner international support for One Health through a network that serves as a vehicle for further global collaboration on One Health programs and projects.
3. **Information Clearing House:** Promote One Health advocacy through a centralized area where One Health success stories are gathered and made available to a wide-ranging audience.
4. **Needs Assessment:** Develop country level self-assessment methods to identify programmatic areas that could benefit from a One Health approach and areas for targeting improvement.
5. **Capacity Building:** Identify ways to leverage existing programs and capacity-building efforts in order to have a major impact at very little cost.
6. **Proof of Concept:** Demonstrate through a retrospective and prospective evidence base that the use of One Health interventions leads to better cross-species health outcomes.
7. **Business Plan:** Articulate the subject area of One Health more clearly and present it to policy-makers and donors at the global level.

Each group was asked to develop One Health plans and partnerships that would occur within a designated timeframe; plans included specific activities, budgets, deliverables, and constraints. The groups presented the results from their discussions and fielded questions from the larger group, who provided their opinions and suggestions to help strengthen the ideas of each work group. These work groups will convene and continue their development process via teleconference to finalize their action plans and carry out activities.



## PART V. Workgroup Summary

### WORK GROUP 1: Training

**Goals/Objectives:** To develop and build skills, expertise, and competencies through a One Health training curriculum for various target audiences (e.g., students and politicians) to prepare One Health leaders and workers for planning and implementing One Health activities.

Training will be provided at the following levels: orientation, operational, proficient, practitioner, and leader. Using a pre-designed metric to develop the scope of the project, the training group will select an initial target audience (e.g., the trainees); define where this training will be delivered; determine the critical needs/outcomes (e.g., locate the next generation of leaders in the area and identify the skills needed); and define the depth of knowledge and the length of time required, depending on training level.

### WORK GROUP 2: One Health Global Network (OHGN)

**Goals/Objectives:** To advocate and garner international support for One Health through a network that serves as a vehicle for further global collaboration on One Health programs and projects and provides an efficient method for the collection and dissemination of information.

The OHGN will be a virtual umbrella, coordinating One Health leadership and advocacy. This network will be composed of global professionals representing a wide range of stakeholders from various public and private institutions; to maintain credibility, members will not be asked to participate in a personal capacity. Criteria for the selection of members will be based on expertise and experience in One Health, networking and coordination skills, availability, and willingness to participate. Efforts will initially focus on getting the network functioning; members will be added as the network gathers momentum. Similar to

the avian influenza response, communication will be based mainly on an electronic system, with occasional in-person meetings when possible.

A Virtual Coordination Team can be permanently active electronically to serve as a neutral group, or advisory board, which will represent all One Health professional sectors (up to 10 persons) acting in their expert capacity.

### WORK GROUP 3: Information Clearing House

**Goals/Objectives:** To promote One Health advocacy and enable trans-disciplinary and trans-boundary connectivity through the creation of a centralized area where One Health success stories are gathered and made available to a wide-ranging audience. This clearinghouse will serve as a repository for information regarding past and ongoing One Health programs, results, partners, and other pertinent information.

This group will help establish or identify a portal for One Health information to provide broader One Health connectivity. As a neutral portal website, existing websites will have the ability to link to the site to share their One Health related programs and information. UNICEF offered to support the creation of a neutral web space (i.e., a website that does not contain UNICEF branding). To leverage the overlap in responsibilities between the Information Clearing House Group and the Global Network Group, the OHGN could potentially serve as the website's managing body.

### WORK GROUP 4: Country Level Needs Assessment

**Goals/Objectives:** To develop country-level self-assessment methods to identify programmatic areas that could benefit from a One Health approach and areas for targeting improvement. These assessments would focus on the level of



threats/risk of new disease emergence and the fragility or weakness of existing systems within individual countries to encourage policymakers to incorporate a One Health approach while developing nation-wide activities and setting priorities.

An expert working group will develop a process, including pre-assessment methods and tools, through which a country could request participation in a needs-assessment to determine where and how One Health approaches could lead to real benefits in their unique context. Initially, a pilot program will be established to inform assessment development and test implementation. External facilitators (initially, members of the expert working group) will help countries identify members for their in-country team, or steering committee (e.g., professionals in government, from NGOs, and in the private sector) to be involved in long-term implementation. After the completion of the pilot program in several countries, results will be evaluated and the assessments revised to develop the standardized tools. Countries will submit a formal assessment request and have complete ownership over all the results so the process will not be seen as obligatory.

## WORK GROUP 5: Capacity Building

**Goals/Objectives:** To raise awareness and expand engagement in the One Health concept by identifying ways to leverage existing programs and capacity-building efforts, which ideally will result in substantial health impact at very little cost.

This five-part approach includes developing a cross-sectoral capacity building plan with individual countries, coordinating OIE/IHR focal points that already exist, enhancing training activities, engaging academia in the promotion of One Health, and ensuring One Health is a major component of the zoonotic disease portion of the Asia-Pacific Strategy for Emerging Diseases (2011-2014).

## WORK GROUP 6: Proof Of Concept

**Goals/Objectives:** To demonstrate through a retrospective and prospective evidence base that the use of One Health interventions leads to better cross-species health outcomes than comparable health-care systems that do not utilize One Health concepts.

This group will conduct a series of studies, both retrospective and prospective, that will provide a holistic examination of One Health and its various applications over time (i.e., in the past, present, and future). These studies will look closely at high-risk communities and provide evidence-based information describing why One Health approaches are more effective, efficient, and beneficial to improving animal and human health. An example of one such study is a prospective demonstration project that uses baseline data and metrics to reveal whether disease was reduced through One Health efforts, thereby validating the proof of concept.

## WORK GROUP 7: Business Plan

**Goals/Objectives:** To articulate the subject area of One Health more clearly and present it to policymakers and donors at the global level.

This group will define the overall importance of One Health and create a strategy investment document, or socio-economic framework, that clearly defines the general concepts of One Health by addressing the proof of concept and the socio-economic impact. A communication strategy will also be developed to identify the various stages at which material should be presented to donors and policymakers to ensure adequate understanding of the One Health Concept and to garner support.



## PART VI. Conclusion

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### Closing Remarks

**Rear Admiral Ali S. Khan, Assistant Surgeon General and Acting Deputy Director of NCEZID, CDC**

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In his closing remarks, Ali Khan expressed amazement at how well participants dealt with the dynamic tension in the room between defining all that falls under the umbrella of One Health and identifying the specific actions needed to operationalize the multi-disciplinary concept. He also remarked on how the group took inspiration from the larger vision to develop key actions.

It is apparent some actions will require a considerable amount of time; cultural change, in particular, does not happen overnight. Dr. Khan quoted from David Quammen’s book, *The Reluctant Mr. Darwin: An Intimate Portrait of Charles Darwin and the Making of His Theory of Evolution*, where Darwin states, “In the long history of mankind, and humankind, those who

have learned to collaborate and improvise have prevailed.” Dr. Khan added that this quote speaks directly to the activities being undertaken by meeting participants and to the One Health concept overall.

This meeting resulted in the identification of many short-term projects that will require follow-up. Dr. Khan emphasized that this is an ongoing process and reminded participants that these projects, if realized, will lead to actual implementation and field action of One Health. He recognized that this group was empowered and has empowered individuals in terms of next steps for One Health in the United States, specifically with regard to a Presidential Directive and the possibility of Congressional action leveraging additional resources for domestic and international use. Dr. Khan ended his presentation with a quote from Dr. Martin Luther King that he felt described the group’s efforts during the two and a half day meeting: “Your labors in pursuit of uplifting humanity have dignity and importance and are due excellence.”



## Appendix:

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The *Operationalizing “One Health”: A Policy Perspective—Taking Stock and Shaping an Implementation Roadmap* meeting was organized by:

**Carol Rubin**, Associate Director for Zoonoses and One Health and Director of the One Health Office, CDC/NCEZID

**Alex Theirmann**, Advisor and President of the Terrestrial Animal Health Code, OIE

**Kate Glynn**, Veterinary Epidemiologist, Scientific and Technical Department, OIE

**Jan Slingenbergh**, Senior Officer of the Infectious Diseases Group/EMPRES, FAO

**James Zingeser**, Epidemiologist, FAO

**Elizabeth Mumford**, Project Lead for the Global Influenza Program, WHO

**Simone Magnino**, Scientist, Department of Food Safety, Zoonoses and Foodborne Diseases, WHO

**Laura Khan**, Research Scholar, Program on Science and Global Security, Woodrow Wilson School of Public and International Affairs, Princeton University

**Alain Vandersmissen**, Coordinator, Influenza, “One Health”, Emerging Diseases of the Directorate General External Relations, European Commission (EC)

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<sup>1</sup>World Health Organization. World Health Report 2007. A safer future: global health security in the 21st Century.

For more information please contact:  
Centers for Disease Control and Prevention  
1600 Clifton Road NE, Atlanta, GA 30333  
Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348  
E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov) Web: [www.atsdr.cdc.gov](http://www.atsdr.cdc.gov)  
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