Advancing Emergency Preparedness Through One Health Act

AVMA SUPPORTS

One Health is the idea that humans, animals, and the environment are inextricably linked. This Act would improve federal efforts to prevent, prepare for and respond to zoonotic disease outbreaks under a One Health Framework by coordinating activities across Federal agencies.

KEY POINTS:

- **Builds on existing efforts by the Department of Health and Human Services (HHS), the United States Department of Agriculture (USDA), and other federal agencies to integrate human, animal, and environmental health oversight by directing the development and publication of a One Health Framework for coordinated Federal activities.**
- **Advances workforce development for prevention and response to zoonotic disease outbreaks.**
- **Furthers scientific understanding of the connections between human, animal and environmental health to safeguard the U.S. food and feed supplies.**

What is One Health?

One Health is a collaborative, multisectoral, and trans-disciplinary approach - working at local, regional, national, and global levels - to achieve optimal health and well-being outcomes recognizing the interconnections between people, animals, plants and their shared environment.

- **Increasing vulnerability**: globalization increases contact between human and wild animal habitats presenting the risk of exposure to new viruses, bacteria and other disease-causing pathogens.
- **National security**: protecting U.S. food and feed supplies from food-borne diseases, contamination, and acts of terrorism is critical for human and animal health.
- **Advancing technologies**: science-based evidence is increasing understanding of interdependency of human, animal and environmental health.

Why One Health?

- According to the Animal and Plant Health Inspection Service (APHIS), at least 75% of emerging and re-emerging diseases are estimated to be either zoonotic (spreading from animals to humans) or vector-borne (transmitted by vectors, including mosquitoes, ticks, and fleas).
- The Centers for Disease Control and Prevention (CDC) estimates there are 2.5 billion cases of zoonotic infections annually resulting in 2.7 million deaths.
- The World Bank estimated that the global cost from 6 zoonotic disease outbreaks Nipah Virus (Malaysia), West Nile Fever (USA), SARS (Asia, Canada, other), HPAI (Asia, Europe), BSE (US, UK), Rift Valley Fever (Tanzania, Kenya, Somalia) between 1997 and 2009 exceeded $80 billion.

Why AVMA supports:

Veterinarians play critical roles in the health of animals, humans, and the environment and are the only professionals that routinely operate at the One Health nexus. While trained in animal health, veterinarians protect public health through the diagnosis and treatment of animal disease, investigating outbreaks, conducting research, and ensuring a safe and nutritious food supply. AVMA is committed to animal and public health and supports advancements and awareness of the One Health approach.

Status of the bill:

S. 1903 was introduced by Senators Smith (D-MN) and Young (R-IN) on 6/19/2019 and referred to the Committee on Health, Education, Labor and Pensions.

To co-sponsor contact Senator Smith or Senator Young's offices.

H.R. 3771 was introduced by Representatives Schrader (D-OR) and Yoho (R-FL) on 8/09/2019 and referred to the Committees on Energy and Commerce, Agriculture, Natural Resources, and Foreign Affairs. ***To co-sponsor contact Rep. Yoho or Rep. Schrader's offices.***

AVMA Government Relations

Last updated 1-23-2020

State Veterinary Medical Associations
Alabama Veterinary Medicine Association
Alaska State Veterinary Medical Association
Arizona Veterinary Medical Association
Arkansas Veterinary Medicine Association
Delaware Veterinary Medicine Association
District of Columbia Veterinary Medical Association
Florida Veterinary Medicine Association
Georgia Veterinary Medical Association
Idaho Veterinary Medical Association
Indiana Veterinary Medical Association
Iowa Veterinary Medical Association
Kansas Veterinary Medicine Association
Maine Veterinary Medical Association
Maryland Veterinary Medical Association
Michigan Veterinary Medicine Association
Minnesota Veterinary Medical Association
Missouri Veterinary Medical Association
Montana Veterinary Medical Association
Nebraska Veterinary Medical Association
Nevada Veterinary Medicine Association
New Hampshire Veterinary Medicine Association
New Jersey Veterinary Medical Association
New Mexico Veterinary Medicine Association
New York State Veterinary Medical Society
North Carolina Veterinary Medical Association
North Dakota Veterinary Medical Association
Ohio Veterinary Medical Association
Oklahoma Veterinary Medical Association
South Carolina Association of Veterinarians
Tennessee Veterinary Medicine Association
Vermont Veterinary Medical Association
Virginia Veterinary Medical Association
Washington State Veterinary Medical Association
Wyoming Veterinary Medical Association

Non-Profit Organizations
AHEAD (Animal & Human Health for the Environment and Development)
American Academy of Pediatrics
American Animal Hospital Association
American Assoc Public Health Veterinarians (AAFSPHV)
American Association of Equine Practitioners
American Association of Feline Practitioners
American Association of Food Safety and Public Health Veterinarians
American Association of Industry Veterinarians
American Association of Small Ruminant Practitioners
American Society of Laboratory Animal Practitioners
American Society of Tropical Medicine and Hygiene
American Veterinary Epidemiology Society
American Veterinary Medical Association
Association of American Veterinary Medical Colleges (AAVMC)
Association of Avian Veterinarians
EcoHealth Alliance
Infectious Diseases Society of America
International Student One Health Alliance
Iowa One Health
Louisiana One Health in Action
MRIGlobal
National Association of Federal Veterinarians
National Environmental Health Association
National Link Coalition (US)
Ohio State Global One Health Initiative, LLC.
One Health Academy
One Health Commission (OHC)
One Health Initiative pro bono team
One Health Organization (Ohio)
Ovarian Cancer Symptom Awareness
Pet Partners

Corporate
Adtalem Global Education
Aequor, Inc

Academic Institutions
CTSA One Health Alliance
Cummings School of Veterinary Medicine at Tufts University
Global Health Initiatives
The Ohio State University Global One Health Initiative (GOHi)
National Institute of Antimicrobial Resistance Research and Education (NIAMRRE)
One Health at the University of Georgia (Students and Faculty)
One Health Institute, School of Veterinary Medicine, University of California, Davis
Ross University School of Veterinary Medicine
The Texas A&M University System

For more information visit the One Health Commission
https://www.onehealthcommission.org/

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One Health 101: Background and Sources

January 30, 2020

One Health is a collaborative, multisectoral, and trans-disciplinary approach - working at local, regional, national, and global levels - to achieve optimal health and well-being outcomes recognizing the interconnections between people, animals, plants and their shared environment

We live in an increasingly complex world – globalization, advancements in technology, and many other factors have increased the nation's vulnerability to public health crises. As the world becomes more complex, our approach to solving true 'Sky is Falling' problems must adapt to these complexities. Traditionally, our education, health, and governing systems have evolved in separate 'silos'. The current 2019-nCOV (coronavirus) outbreak in China and cases in the US, demonstrates ' the importance of preparedness in an increasingly interconnected world. The United States requires a more comprehensive solution for future outbreaks and epidemics through a federally coordinated One Health approach.

Using a comprehensive One Health approach:

- *Removes the blinders on separate specialties to ensure cooperation*
- *Is more efficient and effective than continuing as separate inquiries*
- *Saves money and lives*

Example of Consequences of Poor Planning and Coordination

by Olga Jonas

During the response to H5N1 avian flu after 2006, the World Bank, the European Commission, WHO, FAO, USAID, and other official partners supported assessments of outbreak preparedness in more than 30 countries in sub-Saharan Africa. Country authorities then prepared, prioritized, and costed Integrated National Action Plans, to close the most dangerous gaps. Ultimately most of these action plans were set aside, and few actions were taken.

The action plans aimed at adequate capacities for outbreak detection and control also in Guinea, Liberia, and Sierra Leone. The combined cost in the three countries would be $26 million. Since the plans were phased over three years, the countries would need an average of $9 million per year. Neither the governments, nor the World Bank or another partner helped to finance these urgently needed investments in core public-health capacities for disease outbreak detection and control.

The governments and their partners knew about the gaps in outbreak-control performance because they had paid for the assessments. The cost was very small compared to the large expected benefits and health sector budgets. In 2008-2013, when implementation of the Integrated National Action Plans was to occur, the three countries together spent $500 million of public funds annually on health, of which $260 million was financed by donors and $240 million by their governments' budgets. Spending $9 million annually on the urgently needed public health systems would have taken up just 1.8% of total public financing for health. Poor governance (failure to spend funds productively and to comply with IHR, 2005] then caused the Ebola crisis, which cost $6.4 billion (Table 1 below), or enough to fund 700 years' worth of

the preventative requirements. Clearly, the $9 million annual expenditures called for in the Integrated National Action Plans should have been made. Even if performance of outbreak control improved only partially (because some of the $9 million would have been wasted or diverted to healthcare, for example), the expected benefits were so large that the capacities should have been financed as a priority, ahead of other, less productive activities. It is tragic that the preventable crisis hit healthcare facilities and personnel so hard that additional non-Ebola illness and death tolls exceeded the direct health impacts of Ebola. The progress brought by the $500 million annual spending on healthcare dissipated because the countries did not have safeguards to protect their scarce healthcare assets.

Table 1. Economic costs of outbreaks are often more significant than public-health impacts

Examples of outbreaks	Type of impact	Magnitude of impact (US$ billion)	Number of cases	Cost/ case, US$ 000
Small public-health impact (because response contained outbreak)				
SARS in 37 countries (2003)	Economic cost	40-54 a/	8,096	4,941
Ebola in West Africa (2013-16)	Economic cost	6.4 b/	28,652	223
Ebola in West Africa (2013-16)	Comprehensive cost	53 c/		1,850
MERS in Rep. of Korea (2015)	Economic cost	8.2 d/	186	44,300
Large public-health and economic impact (because response much-delayed)				
AIDS	Response cost only	563 e/	76 m	7,395
Catastrophic public-health and economic impacts (pandemics)				
Flu pandemic (or similar disease)	Economic cost (ongoing, annual expected value)	80 f/	~30% of population	~37
Flu pandemic (or similar disease)	Comprehensive cost (annual)	570 f/		~265

Notes and sources

a/ Lee, J.W. & McKibbin, W. (2004). Estimating the Global Economic Costs of SARS. National Academies Press.

b/ World Bank (2016). –West Africa Ebola Crisis Impact Update: economic cost of $2.8b. CDC (2017). Cost of the Ebola Epidemic. Factsheet: response cost of $3.6 b.

c/ Huber, C., Finelli, L. & Stevens, W. (2018). The Economic and Social Burden of the 2014 Ebola Outbreak in West Africa. The Journal of Infectious Diseases.

d/ Cho K. & Yoo J. (2015). Estimation of economic loss from the Korean outbreak of MERS-CoV. Korean Economic Research Institute (KERI) Insight, Seoul.

e/ Institute for Health Metrics and Evaluation (2018). Financing Global Health 2017; UNAIDS (2018). Factsheet.

f/ Severe and moderately severe flu pandemic, with annual probabilities of 1.6% & 2.0%, respectively. Fan, V., Jamison, D. & Summers, L. (2016). The Inclusive Cost of Pandemic Influenza Risk. NBER Working Paper No. 22137. Based on severe-case scenario of the World Bank, with economic impact of 4.8% of GDP. A novel flu strain is considered most likely, but other pathogens cannot be excluded. They will most likely originate in animals (like novel flu strains). Thus, “similar disease” refers e.g. to a coronavirus with similar transmissibility and severity as a severe flu.

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Implementation Framework for One Health Approach

By Rajesh Bhatia

Framework for effective implementation of One Health incorporates political commitment, policy formulation, sustainable financing, programme development, knowledge sharing, institutional collaboration, capacity enhancement, engagement of civil society and active participation of the communities. One Health is a simple and powerful concept with a complex implementation process. It is imperative to bring about a change in the narrative in national response to zoonoses, improving food security and ensuring environmental integrity. The change has to be catalyzed by the top political leadership. Strong continuous advocacy, especially by international development partners, namely FAO, OIE and WHO, sharing of evidence-based outcomes, expected economic gains and global best practices should be shared with the top national leadership. The Sustainable Development Goals being intertwined offer a unique opportunity for advocacy as well as an integrated methodology12. The political declaration by the United Nations General Assembly on combating AMR13 strongly recommends the One Health approach.

Pooled national financial resources can fuel accelerated implementation of One Health approach for better public health outcomes. A paradigm shift in the national policy formulation is urgently required to desectoralize human, animal, plant and ecosystem health and to take a more integrated, interconnected and logical programmatic approach towards human and animal health. Knowledge integration at every stage of policy development shall be a prerequisite to strengthen the coordination and governance14.

Source: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6607818/

One Health in Action – Some Success Stories

By Drs. Bee Lee Ong and Hussni Mohammed

No one sector alone has sufficient resources and system to prevent and control zoonotic diseases successful. A coordinated response to a specific zoonotic disease usually arises during an emergency outbreak and lasting only when a particular crisis is over. Hence a lot of energy and resources need to be repeated to start the process of another coordinated response when a different or a new zoonotic disease emerges. Recognizing the importance of a multidisciplinary or One Health approach and a need to prepare a generic coordinating mechanism that can response to any emerging zoonotic disease, a Guide was published by World Health Organization (WHO), the Food and Agriculture Organization of United Nation (FAO), and the World Organisation for Animal Health (OIE) in 2008. The Guide spelt out the step-wise approach to establish a functional and sustainable coordinating mechanism under a framework of zoonoses. The framework is generic and not disease specific. Instead, it consists of four pillars of work, i.e. surveillance for information sharing; coordinated response; risk reduction and collaborative research. The framework is linked via a single coordinating mechanism, which once established will then be able to address any emerging zoonotic disease control programmes in the country. This paper highlights some of the success stories of controlling zoonostic diseases such as anthrax, brucellosis, rabies, Highly Pathogenic Avian Influenza (HPAI), leptospirosis, Ebola Reston and Nipah virus infection based on The Guide and the authors' experiences, while they were working in Laos People's Democratic Republic (Laos PDR), Mongolia, Philippines and Malaysia.

Source: https://www.researchgate.net/publication/282988930_ONE_HEALTH_IN_ACTION_-_SOME_SUCCESS_STORIES?fbclid=IwAR2V9roJ-0kvVnYi5Vy1Q_qJ3r-HjWBib7a2oxGSyrLTYCcxzeolVsw2uVk

Advancing the Global Health Security Agenda: Results and Impact of U.S. Government Investments

The economic burden of infectious disease outbreaks can be devastating. Economists estimate that pandemics could cause an average annual loss of 0.7% of global GDP [1]. Recent estimates of the 2014 Ebola outbreak place the economic and social burden at $53 billion globally[2]. The next severe pandemic could cost the world economy up to $6 trillion[3]. Sustained investments in health security capacity building, both domestic and international, must be a leader-level priority for governments, development banks, nongovernmental organizations (NGOs), and private sector stakeholders.[4],[5]. Experience has demonstrated that early investments in prevention, detection, and mitigation are far less expensive than the costs of responding to an infectious disease threat later.

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Source: https://www.state.gov/wp-content/uploads/2019/11/GHSAR-2019_final.pdf?fbclid=IwAR295gcoJTwjCmSfFSBv2n7e5V1kxkOosEly6EKOwxkf5pIwAvkrfxEWP8w

Pandemic Preparedness Financing - Status Update, World Bank Report, September, 2019

The high death count and social disruption are not the only costs associated with pandemics; the financial and economic damages are also devastating. The 2003 SARS epidemic led to a global economic loss of more than USD52 billion. Ebola wiped out recent development gains in Guinea, Liberia, and Sierra Leone. By contrast, upgrading countries' preparedness is relatively inexpensive and affordable; recent data from costing of the gaps in public health capacities identified using Joint External Evaluations (JEEs) suggest that most countries would need to spend on average USD1.69 per person per year to reach an acceptable level of epidemic preparedness. Besides its cost effectiveness, investing in pandemic preparedness contributes to poverty alleviation, especially because infectious diseases tend to after poor people disproportionately more than others.

To succeed will require a multipronged effort to persuade policy makers and communities to take measures of the political economy, cultural environment, and embrace a "One Health" approach which recognizes human health as connected to that of animal health and the environment requiring multisectoral engagement when mobilizing and allocating resources. It will mean convincing decision-makers that they should not ignore what is important in lieu of what is urgent and make preparedness a priority, persuade the private sector to invest in it, and do so in a sustainable manner.

A critical window of opportunity is open—one that is the culmination of efforts to make sure that history does not repeat itself and the world be better prepared for future outbreaks Major shifts have taken place in awareness of these threats, but without prioritized and sustained financing, people and economies will remain vulnerable. To ensure meaningful progress a deeper understanding of the shared value and collective effect of investments in preparedness should be leveraged. This means strengthening the evidence and knowledge base; building a strong investment case; and communicating that case to decision-makers and winning their support to prioritize and integrate preparedness in the annual national planning, budget appropriations, and sectoral resource allocation processes. ……The four priority areas are: mobilizing demand for investment in preparedness; beating the DRUM (domestic resource utilization and mobilization) for preparedness; optimizing the use of development assistance for preparedness; and developing standardized measurement and monitoring approach for preparedness financing.

Source:https://apps.who.int/gpmb/assets/thematic_papers/tr-4.pdf

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I. Huang, C. et al. (29 authors). "Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China". Lancet 2020 (January 24) at:

https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30183-5/fulltext

See bottom of page 3 Figure 1B: "Date of illness onset and age distribution of patients with laboratory-confirmed 2019-nCoV infection." (NOTE: **Earliest patient illness onset DECEMBER 1st. And 13/41 patients had no link to the "Huanan seafood market").**

II. Li Q et al (45 authors including Dr. George F. Gao and Dr. Gabriel Leung). "Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus-Infected Pneumonia". N Engl J Med 2020 (January 29).

https://www.nejm.org/doi/full/10.1056/NEJMoa2001316

Conclusion: "On the basis of this information, there is evidence that human-to-human transmission occurred among close contacts since the middle of December 2019."

Science Speaks: Global ID News

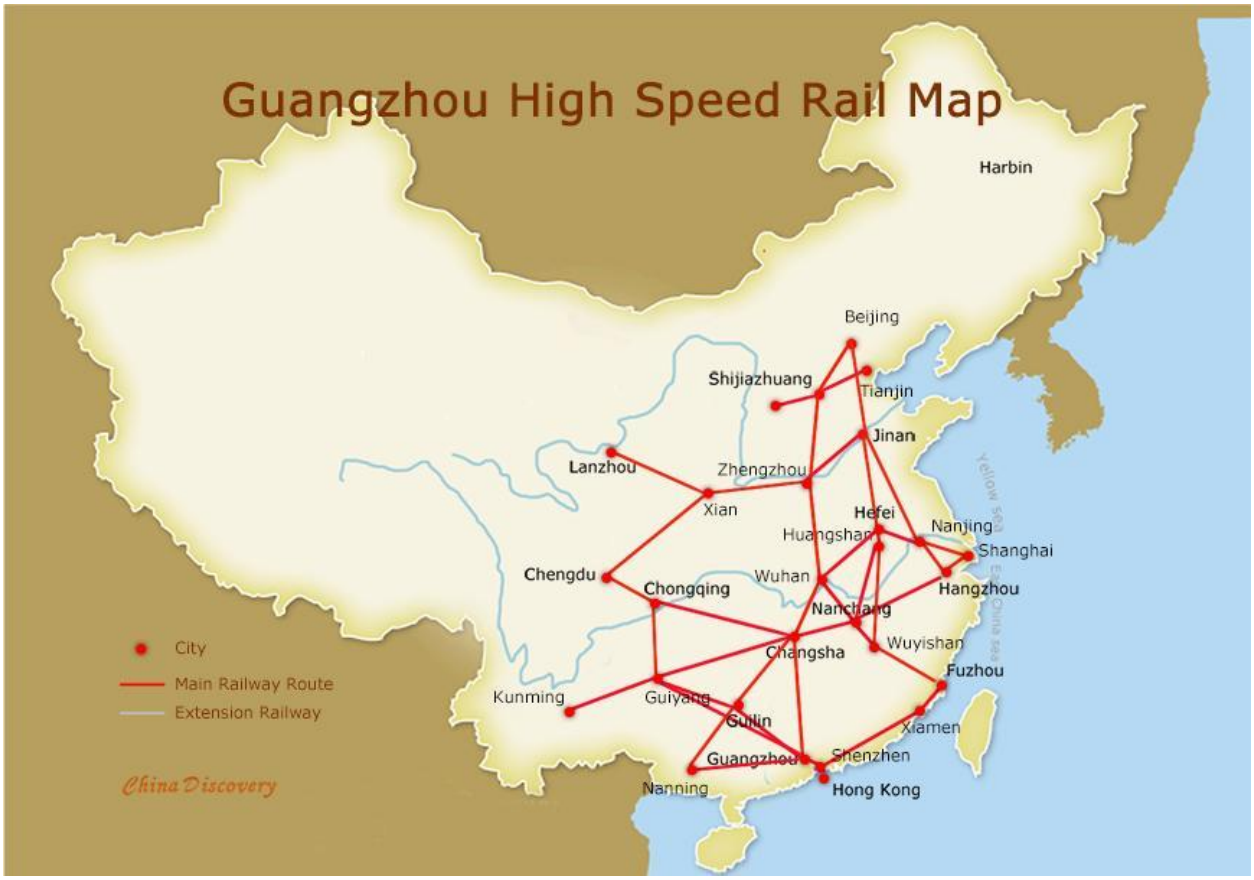
A PROJECT OF IDSA GLOBAL HEALTH

Dr. Daniel Lucey, who has responded to, and monitored information on outbreaks since 2001, has provided a series of updates and analysis on the outbreak, now an epidemic of 2019-nCoV, the novel coronavirus identified in Wuhan China, since Jan. 7. He continues to respond to development and data on the outbreak here.

UPDATE #7: A second evidence-based hypothesis:

Given that "human-to-human transmission has occurred among close contacts since the middle of December 2019" (Li et al. NEJM Jan. 29, 2020) then the virus may have traveled by train and plane in December or earlier from Wuhan to other locations in China and other nations.

https://sciencespeaksblog.org/2020/01/30/2019-ncov-a-second-evidence-based-hypothesis/


Guangzhou High Speed Rail Map
Harbin
Beijing
Shijiazhuang
Tianjin
Jinan
Lanzhou
Zhengzhou
Xian
Hefei
Huangshan
Nanjing
Shanghai
Chengdu
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Extension Railway
China Discovery