



One Health 101: Background and Resources

June 30, 2021

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 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.			

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. *Source:* https://www.state.gov/wp-content/uploads/2019/11/GHSAR-2019_final.pdf?fbclid=IwAR295gcoJTwjCmSfFSBv2n7e5V1kxkOosEly6EKOwxkf5plwAvkrfxEWP8w

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 affect 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

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 respond 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 zoonotic 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-HjWBib7a2oxGSyrLTYCcxzeoVsw2uVk