

Zoonotic Disease Prevention and Control, One Health, and the Role of the World Bank

“Between animal and human medicine there are no dividing lines – nor should there be. The object is different but the experience obtained constitutes the basis of all medicine...”

Dr. Rudolf Virchow (1821-1902)

“The real problems are setting up delivery systems that can not only protect people from the diseases of today but from the diseases of tomorrow. That is how I would like to see the World Bank engage.”

Jim Yong Kim, 2012

1. ***Animal diseases pose a profound challenge to global public health.*** In developing countries every year 2.4 billion human infections with origins in animals (zoonotic) occur, causing widespread illness and 2.2 million human deaths. These are not the pandemic illnesses like HIV/AIDS and influenza that are also of animal origin, and that periodically dominate the headlines and command the attention of the international community. Instead, they are the diseases that are often endemic in developing countries – brucellosis, leptospirosis, rabies, and others – that are underdiagnosed, underreported, and which disproportionately affect those who live nearest to animals – the poor. Even where zoonotic diseases do not cause death, they invariably deepen poverty, destroy livelihoods, and undermine food security and food safety. Zoonotic diseases pose a direct challenge to the World Bank’s mission and require that human and animal health specialists find new and better ways to work together – or risk seeing global gains in human welfare repeatedly eroded.

2. ***Countries regardless of income are vulnerable to a pandemic – and the probability of such an event is rising.*** World Bank (DEC) has estimated that a severe flu pandemic, one that could result in 70 million deaths, would entail US\$3 trillion in global economic losses – equivalent to the impact of the 2008 global economic downturn. The expected values of pandemic impacts indicate the scale of necessary prevention efforts: the losses may be on the order of US\$30 billion and 20 million DALYs per year.¹ This assumes that the probability of a severe pandemic is just 1% in any year – but it may well be higher, and is rising. Recent experiences with SARS and Highly Pathogenic Avian Influenza (HPAI) outbreaks as well as with HIV/AIDS and the 2009 H1N1 pandemic underscore the urgency of the task ahead.

3. ***Helping to strengthen the weak links.*** The prevention and control of zoonotic diseases is a global public good, and the very definition of a development issue with transboundary impacts. Dramatic improvements in human mobility and increasing urbanization mean that a novel pathogen can spread from a remote rural village to cities on all continents within 36 hours. As

¹ See World Bank (2012). *People, Pathogens and Our Planet, Volume 2: the Economics of One Health*. In addition to avoided pandemic impact thanks to prevention, there are substantial expected benefits from prevention of zoonotic outbreaks that did not become pandemics. The impacts of just the major outbreaks, for which estimates are available, averaged \$6.7 billion per year in a recent 12-year period. Such risks are expected to persist. Thus, the expected value of the benefits from preventative investments is at least \$37 billion per year under plausible assumptions.

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the global population increases, demand for food and an unprecedented expansion in livestock production brings people in ever closer contact with domestic animals and wildlife habitats. Contagion can originate in – and spread to – any country. Developing countries typically lack the disease surveillance and control mechanisms necessary to identify and prevent the spread of disease in time. Their public health systems (both their human and veterinary systems) are often the weakest links in preventing the spread of disease in their animal and human populations, to their neighbors and to the rest of the world.

4. ***Effective, efficient responses are possible but progress has not been sustained.*** One of the most striking features of the coordinated HPAI response was that countries – regardless of size, capacity or previous experience with integrated disease prevention and control – were able to move rapidly to respond and to control disease outbreaks, and find ways to keep their people informed of the risks and of measures to keep themselves safe. The prevention and control methods proposed by technical agencies are tried, tested and have been proven effective. Moreover, despite the large amount of funding needed to coordinate international and regional efforts, most national interventions were relatively inexpensive. Nonetheless, a vast majority of countries have struggled to sustain vigilance once the initial emergency subsided. Equally, despite their early enthusiasm, most donors have refocused their funding and attention to other priorities. Nascent systems have been left to wither, as the international community has reverted to a passive mode.

5. ***Meeting the challenge of sustainability.*** The urgency that galvanized unprecedented coordination during the emergency phase has been incredibly difficult to sustain. Paradoxically, the more practiced and efficient authorities become at responding and controlling disease outbreaks, the more quickly that urgency – and political and budgetary support for those nascent systems – can begin to erode. Likewise, donor efforts have shrunk dramatically, indicating a preference for waiting to address the next crisis rather than act now to mitigate the disease risks we face. Our challenge is to help our clients capitalize on successful emergency responses by embedding that capacity in systems and institutions that can successfully respond to outbreaks or to unanticipated disease threats that occur in the future.

6. ***There is a growing body of international experience and the World Bank can help transform this into sustainable and capable institutions.*** Countries that were able to respond effectively to HPAI in poultry were able to mobilize a similarly effective response to H1N1 in humans. Others were able to use the capacity developed in the response to HPAI to tackle other disease outbreaks. The leading technical agencies guiding the responses to animal and human influenzas have begun to develop tools that gauge the institutional health of the national agencies responsible for disease prevention and control. The World Organization for Animal Health (OIE) has already had good results with the Performance of Veterinary Services (PVS) assessment tool in more than 100 countries; in some countries, the assessments have guided the HPAI response. When the PVS is complemented by assessment tools for human public health capacities, the resulting array of system diagnostics will help countries and their development partners to concentrate their efforts on priority areas and be able to measure progress systematically. These tools provide an internationally-recognized foundation for the World Bank to apply its own experience and to help its clients develop capable, coordinated health systems.

7. ***Demonstrating leadership in the prevention and control of zoonotic diseases.*** Since 2005, the international community committed US\$3.9 billion to support developing countries to

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undertake the coordinated response to a zoonosis with pandemic potential – HPAI. In a key contribution to this effort, the World Bank helped to frame a new multisectoral approach that brought to bear international expertise in human health, animal health, analytical and technical support, and development communication to underpin comprehensive and integrated country-led responses to HPAI. The World Bank – often with teams of HD and SDN specialists working side by side – mobilized 72 operations (totaling \$1.3 billion, of which US\$0.1 billion was from trust funds) under a global program that still serves as the model for rapid global response operations. This experience and the impact of these operations give the World Bank an extraordinary opportunity to help shape the next generation of zoonotic disease control efforts.

BACK TO THE FUTURE: ONE WORLD, ONE HEALTH AND THE REDISCOVERY OF COLLABORATIVE MEDICINE

8. *The international public health concerns generated by SARS, HPAI, and H1N1, laid bare the mutual dependency between countries near and far.* This was an incentive to cooperation as no one country or even group of countries, could have faced these threats alone. **It was also a reminder that no single sector or group of specialists can mobilize an effective global disease response.** Through this experience, the international community stumbled on the neglected concept of One Health. Recognized and practiced long before it was given the name, systematic collaboration between public and veterinary public health professionals and agencies formed fundamental aspect of medical training. The German physician and pathologist Rudolf Virchow (who coined the term “zoonosis”) emphasized the importance of collaboration between human and veterinary medicine. Since popularized in the 19th century, the shift towards ever greater specialization in both animal and human health professions has seen the idea slip from curricula and professional practice.

9. *The experience of HIV/AIDS, HPAI, SARS and H1N1, and the burden these and other diseases of animal origin place on the poorest, should encourage the World Bank to “rediscover” and promote the One Health approach.* The interdisciplinary collaboration between OIE and WHO and the growing demand from our clients for integrated human/animal health interventions argue for World Bank engagement at the collision of core development issues that is taking place at the interface between animals, humans and the broader environment. **The Bank has much to offer, its contributions are unique and, without them, it is difficult to imagine a successful transition from sporadic emergency responses to the long-term systemic strengthening that will help protect the poor from high and growing risks and increase shared prosperity.** The Bank’s unrivaled analytical capacity in the area of economics, its financial resources and convening power, and its ability to coordinate multidisciplinary engagement are just a few of comparative advantages that that the World Bank can bring to bear. But unless the institution can commit to providing this support, hard-won health gains may be threatened, especially for those least able to bear such burdens. The Public Health Policy Note (2012) emphasizes connecting systems and sectors for health results and offers a great umbrella for both the human health and veterinary sectors to move forward together on this agenda.

10. *One Health: an effective approach to health systems strengthening.* The One Health approach is not new, nor does it demand that technical disciplines be subsumed in response to the latest health trend. Its scope is the overlap between the two domains, not their sum. The great promise that a One Health approach offers is the chance to strengthen and equip health systems (veterinary and human) to protect people from the diseases of today and tomorrow.

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Failures in past responses have occurred in part because of the gaps that exist between public health and veterinary authorities. One Health provides a framework under which Human Public Health and Veterinary Public Health authorities can coordinate essential aspects of their work.

OUT OF MANY, ONE (HEALTH): REFINING THE WORLD BANK'S ROLE

11. Many factors contributed to the (fragile) success of the global and country responses to HPAI, but this experience can perhaps be explained by three principles: coordination, comparative advantage, and country ownership.

- **Coordination:** Whereas the response to SARS was chaotic, the HPAI response was from the start coordinated effectively at national, regional and global levels. Financing was channeled according to a financing framework developed by the World Bank. Agencies with global mandates for human and animal health, WHO and OIE respectively, were explicitly charged with developing technical guidance to inform activities on the ground together with other agencies with related technical expertise – including FAO, UNICEF and many others.
- **Comparative advantage:** Although the Bank has considerable technical expertise in public health, development communication, economic analysis, livestock management and animal health, these were not the Bank's principal contributions. Instead, the institution's convening power across sectors and agencies, our experience in structuring and tracking global funding, strong country relationships, IDA/IBRD funding capacity and operational experience, did most to support the global response.
- **Country ownership.** This central principle recognized that committed country leadership was essential to mobilizing a rapid and credible national response. The Bank was able to play a central role in bringing partners and government agencies together to prioritize and coordinate interventions in response to rapidly changing needs. It helped that most interventions were effectively "dual purpose", strengthening the capacities needed to control other diseases as well. Despite the breadth of sectoral interventions, the emergency nature of the response, and the difficulties of coordination, HPAI operations disbursed at twice the level of regular investment loans (an indicator of strong country ownership). Moreover, initial IEG evaluations indicate broadly successful outcomes – with the closing portfolio likely to yield further important lessons.

ONE HEALTH: TWO ROADS DIVERGE

12. ***The World Bank Group has supported coordinated emergency responses that have changed the way in which affected countries and international agencies view their roles and responsibilities.*** This One Health approach has also raised expectations in our clients and partners. But our experience to date shows that, while coordinated multisectoral responses can enhance the efficacy and efficiency of disease response, they have been extremely difficult to sustain.

13. ***What approach will help the World Bank protect the poor from the diseases of tomorrow?*** The World Bank Group faces a choice: accept the high-impact/low-sustainability

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tradeoff and the huge human and economic losses of recurrent emergency responses or commit to supporting systemic prevention efforts that will deliver substantial long-term health and economic benefits. Adoption of the One Health approach is conceptually consistent with the commitment of the Human Development Network to focus on systemic reform. Equally, One Health is ultimately an approach that supports Sustainable Development.

CHOOSING THE ROAD LESS TRAVELLED COULD MAKE ALL THE DIFFERENCE

14. *The One Health approach holds the promise of delivering a broad range of ancillary benefits in public health and in the sustainable development of rural economies.* Greater collaboration between animal and human health professionals is required to address the incidence of anti-microbial resistance (AMR). Stronger health systems will help ensure that coming generations are not forced to shoulder the crippling burden of disease and the poverty that so often results. One Health approaches would also help draw together and make more effective the strands of work addressing food security, food safety, nutrition, and increased trade. Indeed, there is scope for mainstreaming One Health approaches in ongoing and new operations to increase effectiveness and sustainability of measures to address multisectoral concerns such as public health, nutrition, agricultural competitiveness, livestock development, pasture management, environmental health, food safety, and food security.

15. *The World Bank Group: to lead or to follow?* Our clients are increasingly convinced of the benefits of developing shared capacity in disease surveillance and the establishment of laboratory networks. Many of the Bank's principal partners are supportive of – and often already supporting – One Health approaches: the EU, UN, Australia, Canada, France, United Kingdom, and the United States. Latin American ministers have chosen One Health as the topic for their annual summit. Other countries, including China, Indonesia as well as some in South Asia, Southeast Asia, Central Europe and Africa, are moving to adopt One Health approaches. Moreover, many have acknowledged the evident benefits of World Bank involvement and support for this transition.

ENHANCING SYNERGIES BETWEEN SECTORS: DEVELOPING AN OPERATIONAL FRAMEWORK

16. *Global experience and unprecedented collaboration with technical and donor agencies gives the World Bank a perfect opportunity to shape an operational framework for systems strengthening.* The Framework would set out a flexible and pragmatic approach to health systems strengthening, outlining the elements of medium-term investment programs at country-level in all regions. The Framework would draw on the lessons of experience from the Bank's engagement in the responses in HPAI and H1N1, and from the latest technical guidance from the OIE, WHO, and FAO. The Operational Framework would be launched through combined HNP/AES workshops and a strong internal and external communications campaign. (See slide presentation for next steps.)

*Prepared by members of the ARD (AES) Anchor,
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