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Member

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Indian Graduate in Veterinary Science with Masters in Microbiology. PhD from Cambridge University in UK on regulation of Gene Expression in Bovine Herpes virus-1 infection.Exclusive 20 years of research experience on animal viruses, e.g., FMD, rinderpest, PPR, Bluetongue, particularly in epidemiology and development of diagnostics and prophylactics.Was involved in teaching graduate students in the discipline of Microbiology and supervised 5 PhD students as Chairman and also worked as Head of the Faculty. As Project Director of FMD Epidemiology Programme in India between 2000 to 2004 coordinated activities of 22 laboratories in India involved in laboratory diagnosis and field epidemiology of FMD in India. Worked as Dean of Graduate programme in a National University from 2002 to 2004 in India.

Worked as Animal Husbandry Commissioner of the Government of India from 2004 to 2009. Besides CVO, this job also involved development and regulation of the livestock sector in the country with about 550 million livestock and 300 million poultry. The biggest challenge faced during the period is the emergence of bird-flu in India, which was successfully contained and subsequently confined to a small endemic zone in the eastern part of the country. As CVO also monitored the official FMD control programme fully sponsored by the Government in specific and defined areas of the country. Represented India asthe Chief of Delegation in OIE General Sessions several times during this period and managed to secure freedom from rinderpest disease and infection for India. Also obtained OIE status of International HPAI Reference Laboratory for the national referral laboratory in India.Was elected a Member of the OIE Biological Standards Commission from 2006 to 2009.

Between 2009 and 2012 worked as Senior Technical Coordinator and Team Leader for the FAO's HPAI programme in Viet Nam. The CVO experience of India was helpful in facing a different set of challenges in Viet Nam including the challenges of constantly evolving new strains of HPAI, particularly in northern region and the issue of vaccination of poultry against HPAI.

Presently working as Member of the Agriculture Scientists Recruitment Board in India. The job involves recruitment of Scientists and Science Mangers in about 85 research establishments of the Indian Council of Agriculture Research, with particular reference to animal and fishery science research.

CHALLENGES AND OPPORTUNITIES FOR PROMOTING ONE HEALTH

Following the Emergence of Bird-Flu in the Developing World: Policy Perspectives

Santanu BANDYOPADHYAY

While largely ignoring the events of 1997 in Hong Kong, South Asia in general and India in particular became concerned about the emerging HPAI in SE Asia only in 2004. There were a couple of scares, before it truly struck India for the first time in 2006 in Central West region. This was also the time when HPAI was reported globally from almost 58 countries covering continents of Asia, Europe and Africa.Two independent outbreaks covering a converging pockets shared by three different states were quickly stamped out with a well laid out Government Action Plan. HPAI never returned in that area. The disease though returned with a vengeance in 2007 and 2008 in the eastern and north-eastern region of India, which also included three countries sharing international borders in that very small region. Since then the disease got entrenched in that small geographical region referred also as Indo-Gangetic plateau but covering four countries, India, Bangladesh, Nepal and Bhutan. It is of interest to note that the H5N1 virus that struck in 2006 in West India is different from the one that subsequently emerged in the Indo-Gangetic Plateau since 2007.

Keeping within the action points relating to India, the major policy issues that evolved almost from the beginning of bird-flu episodes and which are continuing till date with periodical revisions are largely described as follows:

1. In a Federal System of Governance, acceptance of a uniform Action Plan by all constituent states for the control and containment of HPAI. This Action Plan in the animal health sector is well integrated in to the human flu Action Plan.
2. An agreement on equal cost-sharing between the federal government and the local government for all expenses related to surveillance, control and containment of bird-flu.
3. Constitution of a Joint Working Group on the wake of emergence of bird-flu even before it struck the country involved Ministries of Agriculture, Health and Environment of the Government at the very highest level, which continue to function till date.
4. A stamping out policy for control and containment with an instant compensation mechanism. Other measures, e.g., movement control, market closures etc., are integral

components of this policy.

5. Policy not to vaccinate poultry against HPAI though the option has been kept open in the event of wide-spread occurrence, which never happened.
6. Coordination between health, veterinary, agriculture, revenue, police and administration at the lowest administrative division at the site of any suspected/confirmed outbreaks of bird-flu.
7. Strengthening the AI diagnostic capacity. Recognition of the HPAI National Laboratory as OIE International Reference Laboratory in 2009 and Human Influenza National Laboratory as WHO Regional Reference Laboratory in 2008. More national laboratories established now.
8. Training of Veterinary and para-veterinary staff in detection, diagnosis, surveillance and management of HPAI. Almost 100% in the endemic region and about 60% of the total veterinary work force in India are now trained.
9. Ensure adequate stockpile of PPE, Tamiflu, disinfectants and other consumables at any time of the year in each of the State capitals.
10. A joint cross-border dialogue between India and Bangladesh opened and continuing to monitor cross-border movement of poultry and other livestock and the risks involved due to such movements. This initiative is apart from the FAO study on risks associated with cross-border trade in poultry between India, Bangladesh and Nepal.
11. A new veterinary legislation was passed through an Act of Indian Parliament in 2009 for the Prevention and Control of Infectious Diseases of Animals.
12. The Inter-Ministerial Conference on Animal and Human Influenza in New Delhi in 2006 was a real reckoner among the politicians and the administrators in India about the threat to the civilizationemerging at the animal-human interface.

There are also policy decisions which do not always work well and could be counter-productive. A very common policy decision in the face of an outbreak in sporadic incidence countries is to clamp an immediate ban on import of livestock and products as soon as an outbreak is reported. In a situation, where cross-border trade, formal or informal, is a norm such clamp down has little effect. It actually increases the risks as it encourages illegal trade through often porous borders. Such illegally traded animals are not cleared through any health inspection at either side of the international borders as it would, if traded legally.

The 1997 episodes of HPAI were mostly ignored in South Asia. The alarm bells started really ringing from the beginning of 2004 in the whole of Asia with reports of HPAI emerging from Indonesia, Thailand, China and Vietnam. No other diseases of animals brought the focus on the concept of One Health as much as HPAI did. The murmurs arose in the developing countries with the emergence of SARS, which transformed in to action with HPAI and got further strengthened with pH1N1 or swine-flu. Until then the zoonoses was mostly restricted to rabies and food-borne salmonellosis. It is also to be appreciated that the veterinary service delivery capacity, particularly the capacity in diagnostic laboratories increased several folds following the threat of HPAI and a possible

pandemic human flu. The contributions of the Governments, international donor agencies and the financial institutions were significant in this respect. Training of the veterinary and para-veterinary staff to face and manage bird-flu will go a long way in managing similar disease emergencies arising in future in the human-animal interface.

The policy constraints that the developing countries face in the developing world are too many to count. The most important among those is the financial resources. The most dilapidated building in the lowest administrative division of a developing country belongs to the Veterinary Department with matching infra-structure. In a federal system of governance, veterinary service delivery is the responsibility of the provincial or local government, which are often fund-strapped. Veterinary service has the lowest priority even in agriculture based economies of the developing world.

Veterinary training for the field veterinarians is not always equipped to sense anything unusual at the animal-human interface except the classical zoonotic infections, e.g., rabies or anthrax. There is very little interaction at ground zero between the human health specialists and veterinarians. The threat to wild life or from the wild life vis-à-vis domestic animal is not fully appreciated by the custodians of welfare of either sector. Bird-flu indeed provided an opportunity for these two sectors to come closer in the affected countries and realize the importance of working together.

A cause for concern is the capacity of the public health professional at the field level to identify unusual disease syndrome appearing among human, which could be a newly emerging zoonotic disease. Brucellosis is a very common cause of reproductive disorders in livestock in many developing countries with a covert capacity to cause serious health implication to animal handlers or people in regular contact with carrier of the infection or acutely infected animals. The medical practitioners or the para-medics are often not equipped to diagnose this infection and pass on as PUO(pyrexia of unknown origin) unless they are fully alert about the professional hazards and the risks associated with animal handlers. With H5N1, poultry handlers were possibly lucky as the human infection with this virus detected so far could not clearly establish if they were at any higher risks than those unfortunates who got the infection.

However, there are improvements in the thinking process at the policy level, particularly in those developing countries which bore the brunt of HPAI, SARS, Hendra-Nipah or similar newly emerging infections. It is now getting across to people at large and the administrators and political class in particular that the microbial world is changing fast with every attempt to exploit the environment for more physical benefits through development of industry or infra-structure. Possibilities of emergence of new pathogens at the human, animal and ecosystem interface are no longer within the pages of scientific fictions or plot of a block-buster movie. The world of the microbes is evolving fast with increasing capacity to involve multiple species. Appropriate policies and enabling environment for pursuing One Health is not trendy but an absolute necessity. Concerted efforts will be needed to promote One Health involving all the stake holders. Particular focus is required for the emergence of any unusual disease events at the identified global hot-spots.