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GUEST EDITORIAL

Challenges fly in the wake of bird flu

After AIDS and SARS the world is now knotted with yet another alarming virus – the H5N1 bird flu virus. Since its first major record in south east Asia in 2003, the virus has reportedly spread to over 55 countries in three continents, developed and developing, and seems to be all set to make its journey around the globe. However in its march around the globe, it has lit a number of fires, some small, some large – all of which have put to spin entire governments, institutions and finally of course the people. Visa or no visa, the virus did finally make its entry into India and was noticed for the first time in February, 2006. No one knows from where it came and speculations are abound if the virus was indeed planted by some unscrupulous interest groups. Following the news of the outbreak and thanks to the 24 × 7 television coverage, all hell seems to have broken loose. Suddenly people seemed to have chickened out, preferring a sedate veggie meal. Poultry farmers and scores of other people dependent on the industry are suddenly finding their lives slipping beneath them and are at cross roads in as far as meeting their daily livelihoods.

But more than anything, the outbreak and its immediate aftermath have raised some very familiar and disturbing issues, typical to the Indian context. First, for days on end, speculation was rife if indeed the death of the birds was due to H5N1 virus. Second, it was unclear, amidst the deluge of reports from the news media and the TV, who the country's spokesman of the issue was. Both, lay public and academician at large, were no better informed. Third and far away from the melting pot, it was not clear if there was a disaster management plan, should things get out of control. It appears that as a nation, we always have found ourselves holding our hands and waiting for things to happen, then taking a pro-active not to speak of a pre-emptive action. Finally and as a country priding itself with the third largest scientific manpower, it was not evident if there were any plans to launch some major initiatives to study the spread and containment of the disease. Consequently the outbreak has raised several challenges, technical, social and political, that beg an answer sooner than later, if we are to deal with such outbreaks in the future.

Among a number of technical challenges the country faces, the predominant are that of analysing the spread of

the disease, and of course in providing an effective control in case of an unfortunate transmission of the disease to human beings. The world has come a long way from the catastrophic 1918 influenza virus outbreak and today almost all major outbreaks have received serious epidemiological investigations. For example, elaborate models of distribution of the Ebola and SARS virus have been developed. However as a country, how well prepared are we to undertake studies related to the forecast of the bird flu disease so that prophylactic measures could be taken? What are the major drivers of the spread, such that one could restrict the spread? Can detailed epidemiological studies be conducted to monitor the spread of the disease and thence to control the disease? Do we have sufficiently trained manpower to undertake such epidemiological studies? Unfortunately, perhaps no. Epidemiological studies sadly are not the major forte for our mainstream students and are generally regarded as abstruse. Nevertheless, the outbreak such as this one, underlines the need to keep interests in these study areas warm, such that a critical mass of people are available should contingencies require them to act swiftly.

The outbreak has also brought to fore a less realized but nonetheless an important concern of transfer of diseases across domesticated and wild forms of life. The concern is especially relevant to megadiversity countries such as India, where agricultural landscapes and homesteads including farm animals jostle closely with feral and wild life in parks and reserve forests. Oftentimes, the setting could be a recipe for an explosive cocktail of disasters. Medical literature is replete with instances of many diseases and their causal organisms jumping species barriers and resulting in huge causalities. It is now well known that many of the notorious viruses such as the SARS, AIDS, Ebola, etc. were born of the cauldron containing domesticated stocks in close proximity to their wild relatives or species. The outbreak of bird flu is one such transfer of disease from wild ducks to poultry birds. The Centers for Disease Control and Prevention at Atlanta, USA have listed nearly 32 important diseases which are transmitted to humans from animals (<http://www.cdc.gov>). For record, of course it should be mentioned that the dis-

ease traffic is not just one way from wild to domesticated, rather has often involved the transmission from the domesticated to the wild populations. Take the case of the foot and mouth disease, affecting the wild life such as deer, bison, etc. Trespassing of domesticated and infected cattle into reserve parks has often led to the transfer of the disease to the wild stocks, resulting in heavy casualties to such animals. This problem has been a recurring one in India and has become a major threat to the wild animals in the wildlife sanctuaries and national parks. In recent years there has been considerable interest internationally on the consequences of the loss of biodiversity and the increasing interface of the wild populations with their domesticated counterparts on disease spread. Unfortunately yet again, there have been few serious attempts to document and study the spread of diseases across the wild and domesticated animals in our country.

At this time the major fall out of the outbreak in India and other developing countries, is not as much the casualty due to the disease as it is due to the loss of livelihood due to lost business and employment. Overnight, in countries such as India, China, Indonesia and certain African states, the bird flu outbreak has thrown out of gear an incredible number of people out of their meagre livelihoods, most of which anyway were already impoverished. What are the larger and lasting socio-economic consequences to these people? While for many of us, the devastation is not existent after our daily ritual with the newspaper, the people at the centre of the outbreak have to sustain and rebuild their lives, almost from start. What sort of insurance systems can be put in place? How are these systems implementable? What are the systems in place in other countries? What systems do we have as a nation to address these calamities? Admittedly these questions are complex and hence will not have a straightforward answer or solution. Nevertheless attend we must these questions.

A major concern and fear of the outbreak is of course the possibility that the disease may infect humans and then spread from one to the other resulting in a pandemic. Though the possibilities have been pooh-poohed in various circles, it is a fact that since 2003, nearly 196 confirmed cases of avian influenza virus infection in humans have been reported and has claimed about 110 lives in Cambodia, China, Indonesia, Thailand and Vietnam. Most of these reported cases have occurred from direct or close contact with infected poultry or contaminated surfaces. And as recently as 25 May 2006, the first major human to human

infection resulting in the death of 7 members of a family has been reported from Indonesia. While one may not be able to do much once a pandemic did break out, it would be in the scheme of things for the country to have some sort of a white paper developed, that can address potentially critical questions. For example, how much Tamiflu, the drug that is effective against bird flu, can we possibly stockpile? Is it available even if we have the resources to buy it? Who should get the priority in getting a Tamiflu shot, should the need arise? Are market forces alone going to decide the stockpiling? With the demand for Tamiflu reaching a crescendo in recent months, it is anyone's guess where the bulk of the drug will be heading to. Should there be some national and regional equities in dispensation of the scarce drug? Answers to these questions look grim if ever we are going to face the virus and need Tamiflu in millions of doses.

Finally, what might or should be the roles of science academies of the country preceding, during and following an outbreak? From the track record of the academies in the country in the last three months, it appears that very little, if any, has been done. In contrast, however, science academies of many countries, even outside those immediately affected (e.g. the Australian Academy of Sciences) have gone on an overdrive in providing reliable information on the bird flu. Web sites have been hosted to provide information on the various issues falling out of the outbreak. The academies have explored the imminent risks, the containment strategies and of course drawn up draft policies for their governments. In other words the academies seem to have taken up a very important social role of providing reliable information as well as in helping their governments take informed decisions on the many issues cropping up due to the outbreak. Unfortunately our own science academies have not stretched themselves to the extent it might be desired. The problem might lie with the structure of our academies that currently do not necessarily have a provision to integrate other national professional bodies into their fold. Thus national goals and direction may take a back seat. But can we afford that? The bird flu could provide a warning call to explore how in the case of national emergencies, science academies can play a more active role in addressing the problem at hand.

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