

## Popular Article

### Zoonoses and One health approach

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The term “zoonoses” refers to harmful infections that are spread naturally between vertebrate animals and humans. Following are the three classes of zoonoses: a) Endemic zoonoses which are widespread and have a wide range of human and animal hosts; b) Epidemic zoonoses whose temporal and geographic distribution is erratic; and c) Emerging and Re-emerging zoonoses which have just emerged in a community or have existed in the past, but whose frequency or geographic scope are quickly expanding. Examples of the latter include Rift Valley fever, SARS, pandemic influenza H1N1 2009, Yellow fever, Avian Influenza (H5N1) and (H7N9), West Nile virus and the Middle East respiratory syndrome coronavirus (MERS-CoV) reported in the recent past.

According to estimates, zoonoses cause roughly a billion cases of disease and millions of fatalities each year around the world. Zoonoses account for over 60% of newly reported infectious illnesses worldwide. In the previous three decades, more than 30 novel human diseases have been identified, 75% of these have their origins in animals. Global public health is increasingly under risk from emerging zoonoses. The recent appearance of MERS-CoV is an example of how these illnesses may appear at any time since they are caused by new viruses, they commonly begin in animals, and they are only discovered when outbreaks take place. Variable levels of monitoring and sudden increase across the nations at the animal-human interfaces have frequently made these epidemics worse. Due to their potential for fast worldwide spread as a result of increased commerce and global connectedness, including cross-border movement of animals, these zoonotic illnesses are also a worry for the security of the global health system. Aside from having an impact on public health, emerging zoonoses also have financial repercussions since they reduce options for travel, commerce in animals, and human employment because of the loss of livestock.

One tendency in these zoonotic illnesses that has been seen is the continued unanticipated emergence and international dissemination of novel viruses and other infections from animals. The illnesses pose a threat to world health due to their high case fatality rate, potential for epidemic transmission, and lack of accessible treatments and vaccinations for the majority of these zoonotic diseases (with the exception of the yellow fever vaccine). Emerging zoonoses in one country might possibly pose a threat to the security of global health due to the interconnectivity of the world. Subsequently, though, zoonoses are crucial not because they're so widespread but also because they result in high rates of morbidity and mortality, a strain on health systems, and most importantly significant economic losses to the countries in question due to the loss of animal trade, tourism, and employment opportunities for the populace due to the death of livestock. The unprecedented movement of people, animals, and things across international borders brought forth by globalisation has aided in the zoonotic disease epidemic's global expansion. Many zoonoses have terrible economic repercussions because they are trans-boundary illnesses, which mean they disseminate beyond boundaries from their point of origin. These infections are spread across borders often, putting all of the countries in the region at danger. However, the nations in the region are undoubtedly most at danger since they are frequently afflicted by difficult emergency circumstances and are frequently noted for failing to adequately manage the advent of new illnesses or the resurgence of old ones.

High burden and appearance of recurrent zoonotic illnesses in the region, frequently with explosive outbreaks, are linked to lack of efficient zoonoses management programmes, limited inter-sectoral coordination between the human and animal health sectors, and low priority assigned to zoonoses. The rise in newly emerging zoonoses in the region has also been significantly impacted by a number of disease amplifiers, including population shifts, disjointed healthcare systems, inadequate response and laboratory diagnostic capabilities, and instability of regular health services in conflict nations. Numerous viral viruses that are generating newly discovered zoonotic illnesses in humans are descended from animals (particularly wildlife) or items with animal byproducts. Identifying the epidemiology and possible management methods of these zoonotic illnesses still depends on knowing the added hosts of these infections. Ineffective collaboration between the animal and human health sectors under the "One Health" framework, which unites the human and animal health sectors and integrates the animal and human illness monitoring and feedback mechanism, is a major barrier to influencing zoonotic infections in the region. This would have allowed for early outbreak detection, prevented deadlier outbreaks, and controlled zoonotic infections in animal reservoirs. Our current era has taught us that developing zoonotic illnesses are unplanned and unforeseen occurrences. Additional thing

that has been discovered is that any illness epidemic that occurs today anywhere might cause issues for the entire planet future. The endurance and reactivity of the national health experts to respond promptly will continue to be tested by these emerging illnesses. The capability of regional and international organizations to work together to combat these illnesses that traverse international borders will also be a real measure for the sustainability of healthcare system. While ongoing worldwide attempts should be made to close information gaps related to the genesis and spread of several zoonotic illnesses, most of which have unique origins, much more regional collaboration would be required to safeguard human health against all forms of zoonotic infections. The necessity for implementing a long-term public health programme for the identification, prevention, and control of emerging zoonoses in the region should be clearly and articulately stated in today's global world in the region about the international and regional approach to MERS-CoV.

The “One Health” methodology, which entails a shared coordination mechanism, joint planning, joint implementation, community participation, capacity building, and combined evaluation and assessment structure between the animal health and human health sectors, should serve as the foundation for any core strategy for the regulation of zoonotic infections. Additionally, the “One Health” approach highlights five critical aspects where One Health is most likely to have an impact.

It will be possible to reduce the health hazards associated with zoonotic diseases, which are a global problem, and make the globe safer from newly developing and reemerging pathogens if emerging zoonoses are effectively controlled.

### **Measures to take strategically to manage zoonotic diseases:**

- (i) Fostering efficient cooperation across the domains of animal and human health
- (ii) Enhancing monitoring to identify disease risks in humans earlier
- (iii) Increasing the ability of laboratories to detect new infections
- (iv) Aiming to improve prevention efforts and case management
- (v) Incorporating monitoring of vector control
- (vi) Lowering dissemination via behavioural and societal changes
- (vii) Building capabilities for response and management to epidemics caused by new zoonoses

### **References**

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