



Mains Marathon

Day 47: Humans are to blame for the pandemic. Explain the statement in the context of increasing infectious diseases. (150 Words)

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Approach / Explanation / Answer

- Introduce by stating the UNEP data for infectious diseases and examples of recent outbreaks.
- Discuss how humans are responsible for genesis and spread of diseases.
- Reason for increasing number and intensity of the diseases.
- Conclude suitably.

Answer:

Human activities are responsible for viruses crossing over from animals like bats, monkey and causing pandemics like coronavirus. According to the UN Environment Programme (UNEP), 60% of human infectious diseases originate from animals. This figure climbs to 75% for “emerging” diseases such as Ebola, HIV, avian flu, Zika, SARS, Covid-19, etc. Beyond the current outbreak of coronavirus, IPBES estimates that zoonoses kill some 700,000 people a year.

How humans contribute

Modern humans contribute to the success of dangerous viruses. A virus replicates only when inside the cell of a living being, and spreads most efficiently when there is contact between two individuals.

- **Population growth:** The United Nations measures current world population growth at more than 1% per year. From the virus’ perspective, **potential incubators are increasing**. The world’s population is also urbanising, which means people living in closer proximity, which is conducive to the spread of a virus.
- **Domestic and international mass transport:** Advanced transport systems permit viruses to move **between regional populations**. Many dangerous virus infections are zoonoses, which are diseases transmitted to humans from other animals. Bats are a common culprit – one theory is that a unique low-grade immune system allows them to carry a relatively high number of viruses without developing disease. **Epidemics caused by severe acute respiratory syndrome (SARS) coronavirus; Covid-19** probably began through bat-human contact. **Covid-19 pandemic causes more than 6 million deaths in the world.**
- **Expanding settlement towards wilderness areas: Expansion of settlement** provides more opportunities for viruses to meet people. Domesticated livestock may carry viruses that infect humans, and the growing human population dictates increasing and more compact livestock

production.

- Influenza virus infects pigs, cattle and poultry as well as humans. The H7N9 strain that has infected more than 1,500 people in China and resulted in the death of one-third since 2013, first moved to humans from diseased poultry.
- The H7N9 virus first moved to humans from diseased poultry. When it comes to numbers though, **the most important viral transporter is the mosquito**. The bite of certain Aedes mosquitoes, for instance, is the primary route for infection with dengue, Zika and chikungunya viruses. Queensland is home to these mosquitoes, so outbreaks of dengue occur annually, usually due **to an infected traveller arriving from an endemic region**.

Reasons for increasing infectious diseases:

- **Environmental changes or ecological disturbances:** According to UNEP report, the emergence of zoonotic diseases is often associated with environmental changes or ecological disturbances, such as agricultural intensification and human settlement, or encroachments into forests and other habitats.
- **Human activity for the crossover between species:** Given the growth of the human population and its ever more intense use of planetary resources, the destruction of more and more ecosystems multiplies contacts. A key area of concern is deforestation to make way for agriculture and intensive livestock farming.
- **Widespread use of antibiotics:** Domesticated animals are often a “bridge” between pathogens from the wild and humans. The widespread use of antibiotics in the livestock industry has also led to bacterial pathogens building up immunity to front-line drugs. Domestic animals also carry about 50% of the zoonoses identified.
- **Urbanization and habitat fragmentation:** Habitat fragmentation are also highly disruptive of the balance between species, while global warming can push disease-carrying animals into new territory. People, through their actions, create opportunities for the microbes to come closer to human populations.
- **Land use changes:** The rate of global change in nature during the past 50 years is unprecedented in human history, and the most important direct driver of change in nature is land use change. Rodents, primates and bats as hosts of three-quarters of viruses transmitted to humans. In terms of endangered wildlife, those who share the most viruses with humans are precisely “populations declining due to exploitation and loss of habitat.

A sound public-health infectious disease control program is required to control infectious diseases which will include:

- Science-based policies, programs, and infrastructure to be in place to prevent infectious disease morbidity and mortality
- Rapid identification and controlling of outbreaks
- Support for disease elimination
- Prevention and response for re-emerging and emerging infectious disease threats
- Evolving risk factors associated with external drivers such as globalization, displacement of people and climate change reinforce the need for robust and sound public health infectious disease programs.

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