

EMERGING AND REEMERGING DISEASES

EMERGING DISEASES

Emerging infections are defined as Those which have not been Previously Experienced Those with already known causative agents but Not Infected Humans previously or Occurring in New Region where they were previously inexistent

- * AIDS-until 1983-existence of the Human Immunodeficiency Virus (HIV) was unknown

- * Cholera in 1992-a new subgroup of *Vibrio cholerae* O139 emerged in

India

- COVID-19 - November 2019 - 1st case of COVID-19 (11th March 2020 - Declared as a Pandemic by WHO)
- Human Monkey Pox - May 2022 -

RE-EMERGING DISEASES

- Those infections which have been Experienced Previously, Controlled or Efficaciously Treated, but have now Reoccurred

• Example

- Syphilis - Spread of Syphilis in 18th & 19th Century was related to the movement of Armies
- Influenza Pandemics of Influenza A in

1957, 1968 & 2009 Diphtheria - in 1997 India reported all time low

- Diphtheria cases but due to low Immunization Coverage sudden increase in cases with several outbreaks were seen in 2004

- Mad Cow Disease - Bovine Spongiform Encephalopathy (BSE) in Europe

FACTORS RESPONSIBLE FOR EMERGENCE & RE- EMERGENCE OF DISEASES

- i. Ecological Changes

- o Human Intrusion into Wild Life Territory where in people comes in contact with the Natural Reservoirs

Nipah Virus out break in india owing to

Rapid Urbanization

Lymes Disease Re-forestation in USA led greater human interaction with Deer (via Deer Ticks)

Korean Hemorrhagic Fever - in South East Asia, increased Rice Cultivation resulted in increased human contact with the Field Mouse (viz natural reservoir of Hantaan Virus)

Scrub Typhus - due to Unplanned Urbanization & Deforestation

- ii. International Travel & Commerce

- o Yellow Fever - Slave Trade

- o Cholera - Pilgrimage

- o Plague - Silk Route • * Industries &

Technologies

Hemolytic Uremic Syndrome - Hamburger
Meat contamination with *E. coli*

Ebola-contaminated Hypodermic
Apparatus in Congo
Genetic Transformation

SARS - Genetic Changes in Coronavirus

Influenza - Antigenic Drift

Inadequate Public Health Measures

Water Borne Cryptosporidium - Non-
Operating Water Plant in Wisconsin, USA

Diphtheria resurgence of Diphtheriae
seen in India & Russia was due to
Insufficient

Immunization

- Antibiotic Resistance MDR/XDR-TB & Chloroquine Resistant/ACT Resistant Malaria - development of Antimicrobial Resistant

PREVENTIVE MEASURES FOR EMERGING & RE- EMERGING DISEASES

- Any outbreak anywhere must be seen as a threat to all countries, especially the major hubs of International Travel I. Epidemiological Surveillance

India - Integrated Disease Surveillance Program (IDSP) WHO

- International Health Regulations (IHR) Public Health Emergency of International Concern (PHEIC) WHO has declared following PHEIC till date 2009- Swine Flu 2014- Polio 2016 -

Ebola 2016-Zika 2019-Kivu Ebola

- 2. Capacity Building

2019-20-Coronaviruso In-Service Training Program - Field Epidemiology Training Program (FETP)

- o Training of Public Health Leaders - on Epidemic Intelligence Service (EIS) by CDC, Atlanta

- * Research & Developmento Viral Research & Diagnostic Laboratory Network (VRDLN) Network of laboratories in India with an objective to develop Diagnostics, Training & for Research

- * Information Sharingo Global Outbreak Alert & Response Network (GOARN)

Technical Alliance & Linkage of existing