In the name of God, the Compassionate, the Merciful

Address by

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TO THE SYMPOSIUM
CHALLENGES OF EMERGING INFECTIONS:
NEW PATHOGENS OR NEW DISEASES
EMERGING AND RE-EMERGING INFECTIOUS DISEASES:
GLOBAL AND REGIONAL OVERVIEW

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Ladies and Gentlemen, Dear Colleagues,

It gives me great pleasure to welcome you to this Symposium on the Challenges of Emerging Infectious Diseases. I take this opportunity to thank the organizers for inviting me to address this symposium and I wish to express my gratitude to this Institution for bringing to the forefront such an important health issue.

Ladies and gentlemen

With the increasing availability of new antibiotics and vaccines and with socioeconomic development and scientific advances in the prevention and control of infectious diseases, spectacular progress has been made in preventing the devastating epidemics that characterized previous centuries and the first half of the 20th century. Smallpox has been eradicated and six
other diseases will be eradicated or eliminated soon. Indeed, there was great hope that communicable diseases would no longer pose a major threat to public health. But, tragically, with optimism came a false sense of security and financial resources have been redirected to other health priorities, such as cardiovascular diseases and cancer.

Emerging infectious diseases are those diseases whose incidence in humans has increased during the past two decades or which threaten an increase in the near future. Many of the emerging diseases have shown a clear epidemic potential and pose a threat to the health of millions of people. For several of them there is no treatment, cure or vaccine yet. During the past two decades, at least 30 new microorganisms linked to emerging communicable diseases have been identified for the first time, and other diseases are making a deadly comeback in many parts of the world, after years of decline.

There are multiple and inter-related factors pertaining to the emergence and re-emergence of infectious diseases, related to population, environment and pathogen dynamics. Most of these factors are observed in the Eastern Mediterranean Region with varying degrees of intensity.

Population factors, for example. The increase in mass population movements through external and internal migration, and displacement and resettlement as a result of civil strife, border conflicts and natural disasters, which are mostly evident in developing countries, have exposed susceptible populations to new environmental and infectious hazards. The increasing population densities as a result of rapid unplanned urbanization have created conducive environments for disease transmission. Massive growth in international travel and easy transportation of live and slaughtered animals and their products have made it easier for diseases to be carried to geographical areas where they did not previously exist.

Environmental factors—People have expanded their use of land and particularly forest, bringing them into closer contact with animals and insects that harbour infectious diseases. Climatic changes and global warming, seen in the past few decades, are producing ecological changes favourable to the spread of many infectious diseases, such as malaria, yellow fever, dengue fever and schistosomiasis, into new zones.
Changes in handling and processing of food as well as altered eating habits create new opportunities for emergence of food-borne infections. At the same time, practices in modern medicine, such as uncontrolled and inappropriate use of antibiotics, wider use of invasive measures and inappropriate or nonexistent precautionary measures in health facilities, have resulted in an increase in drug and anti-microbial resistance.

Deterioration in the quality of health services, seen in many developing countries, may have contributed to their failure to contain infectious diseases. Public health structures that would combat communicable diseases in developing as well as industrialized countries, were eroded when financial resources were redirected to other health priorities, such as cardiovascular diseases and cancer. As resources for public health decreased, so the infrastructures for surveillance and control of communicable diseases weakened.

In terms of pathogen dynamics, microbes are themselves posing greater and greater challenges. Some organisms have become known to man only recently. Others have changed their antigenic identity over time. The world is also witnessing the evolution of several more virulent strains that have gained antimicrobial drug resistance to the commonly used medicines.

Emerging and re-emerging infectious diseases may generally be classified into four groups for which I will cite a few examples of pertinence to the Eastern Mediterranean Region.

Among the group comprising the newly emerging infectious diseases, HIV/AIDS is perhaps the most devastating. Since it was identified in 1983, HIV has infected over 47 million people worldwide, of whom almost 14 million have died of AIDS. In the Eastern Mediterranean Region, some 220 000 individuals were estimated to be infected with HIV by 1998, and over 7400 AIDS cases had been reported. Building on promotion of appropriate behaviour and the family values, ethics, cultural and religious beliefs of the Middle East is the main strategy in this Region, and so far these factors have ensured that the EMR is still the least affected region globally.

Ebola haemorrhagic fever with its high case fatality rates (50% to 85%), appeared for the first time in Zaire and Sudan in 1976. Outbreaks of Marburg haemorrhagic fever, closely related to Ebola, were reported in the Congo Democratic Republic, bordering Sudan in 1999.
Among the emerging food-borne infections, *Vibrio cholerae O139*, a mutant of El Tor strain, caused its first epidemic in India in 1992 and was later reported in 10 other Asian countries, including Pakistan in our own Region; while a cytotoxin-producing strain of *Escherichia coli* has caused serious epidemics of haemorrhagic colitis and haemolytic uraemic syndrome. It was identified in 1982 and has caused several outbreaks since then. The new variant Creutzfeldt-Jakob Disease (nvCJD) appeared for the first time in the United Kingdom in 1996. Forty cases of CJD had been reported by 1999 from the UK and one from France. Suspicion of a link between bovine spongiform encephalopathy and the new variant CJD had a devastating impact on consumers’ confidence in beef safety and thereby the meat industry. *Hepatitis E virus* (HEV) another food-borne disease, was identified in 1990. Since then, it has been incriminated retrospectively in more than one outbreak in this century. It is a relatively frequent cause of outbreaks of jaundice in the Region.

*Hepatitis C virus* (HCV) was only identified in 1988, although it had been occurring for several generations. The estimated number of HCV carriers globally is around 180 million. The prevalence of HCV throughout the Region ranges from 1% to 12 %. Chronic HCV infection has emerged as a leading cause of chronic liver disease and a contributing cause of primary hepatocellular carcinoma in several countries.

The second group comprises infectious diseases spreading to new geographical areas. Among these, yellow fever, dengue fever and Rift Valley fever are the most important. Yellow fever resumed its potential for spread after a relatively long period of restriction within its natural foci, in tropical regions of Africa and South America, and the estimated annual number of cases is now around 200 000 with 20 000 deaths. Sudan is the country most threatened in this Region and efforts are being made to create an immunological barrier through vaccination of people living on the southern border of Sudan. Dengue fever now affects more than 100 countries in all continents, except Europe. The estimated annual occurrence is around 100 million cases with approximately 25 000 deaths mainly due to the haemorrhagic type. It is spreading rapidly in many areas and spread to countries of this Region has been reported from Djibouti, Pakistan, Saudi Arabia, Sudan and the Republic Yemen.

From 1930 onwards, Rift Valley fever (RVF) was reported from countries of Central Africa where it existed for 20 years before moving northward and southward to invade new areas. In 1977, RVF crossed the sub-Saharan belt and appeared in Egypt for the first time with
an estimated 18 000 cases and about 600 deaths besides a heavy economic burden due to loss of domestic livestock. The most recent outbreak in Kenya and Somalia in December 1997, with relatively high case fatality due to haemorrhagic manifestations, stimulated international action and support from WHO, FAO and other agencies in the analysis of the situation and in preparing a plan for its control.

Tuberculosis, diphtheria, malaria and meningococcal meningitis are important infectious diseases that are re-emerging after a decline in incidence. Tuberculosis was thought to be a disease of the past and was neglected in the 1970s and 1980s. It is now the leading infectious killer of adults and kills more women than all causes of maternal mortality combined. Global deaths from tuberculosis reached 3 million in 1995. The estimated annual incidence of all forms of tuberculosis in the Region in 1999 was about 600 000, nearly half of which were pulmonary smear-positive cases with 320 000 deaths. WHO has given high priority to tuberculosis control through the strategy of directly-observed treatment, short course, known as DOTS. We are hoping that most countries will have 100 % DOTS coverage by the end of 2000.

Diphtheria has been largely under control in the past 50 years, especially in countries with good vaccination coverage. However, recent epidemics occurred in the countries of the former USSR and in 1996, an outbreak of more than 460 cases occurred in Iraq. These epidemics are a warning that this disease can make a deadly comeback if immunization is not maintained.

Malaria used to be highly prevalent in all the countries of the Eastern Mediterranean Region. In 1955 WHO recommended a policy of malaria eradication. During the 1960s and 1970s this objective was achieved in some countries, while in others incidence was brought down considerably. In the 1990s malaria resurged after years of successful control in several countries and importation of the disease is threatening the countries of the Gulf Cooperation Council, Oman and Egypt.

Meningococcal meningitis, which in the 1960s was a permanent public health problem only in countries of the meningitis belt in Africa, started spreading outside its usual boundaries towards the end of 1980s and the early 1990s. The most recent meningococcal disease pandemic, which began in the mid-1990s has so far resulted in approximately 350 000 cases
and thousands of deaths. In 1999, Sudan suffered a massive epidemic, with over 30,000 cases and 2000 deaths.

**Antimicrobial drug resistance** is an important threat to human health which has emerged during the last 20 years. It is a rapidly increasing problem worldwide, facilitated by inappropriate prescribing by health workers, poor compliance by patients to prescribed dosage and the antibiotic availability policies of the national systems. Drugs which once were counted on for treatment of many infectious diseases are becoming less and less useful as resistance to them spreads. At the same time, pharmaceutical companies are less willing to take the risk of developing new antibiotics because of the high cost of research and development and the potential for rapid development of resistance that jeopardizes recovery of the investment made. WHO is taking major steps to initiate drug resistance surveillance in Member States.

Ladies and gentlemen

Worldwide partnership between countries, nongovernmental organizations, international organizations, medical institutions and individuals is required to respond to the threat of emerging and re-emerging infectious diseases by ensuring rapid detection and effective containment. The World Health Organization, globally and in the Eastern Mediterranean Region, has been in the forefront in recognizing the importance of this new trend in infectious disease. Much has been done to increase awareness and draw attention to the seriousness of this new challenge. A global framework was developed by WHO to guide the collective response of all countries, through national and international organizations. It is aimed at strengthening the global surveillance of communicable diseases; strengthening the national and international infrastructure necessary to recognize, report and respond to emerging infectious diseases; strengthening national and international capacity for the prevention and control of infectious diseases; and conducting research in infectious disease control.

The era of infectious diseases is not yet at an end. There is no longer any room for complacency, anywhere in the world, because no nation is immune to this threat. If we don’t consolidate and increase the vigour of our efforts at this critical stage, we will have to face a more intense “double burden” of infectious and noninfectious diseases in the coming years.

Thank you for your attention.