In a fashion resembling ancient caravans and oceangoing vessels, which used to carry illnesses between cities and countries, modern transportation systems do the same thing, only at a vastly greater speed. According to the World Tourism Organization (WTO), by the year 2010 there were 935 million international tourist arrivals, a 6.6% increase compared to 2009 and a 1.8% increase over the previous peak in 2008. It is estimated that by 2020, the number of people crossing international borders will increase even more, exceeding 1.5 billion per year.

The tropics include those regions of the earth around the Equator, where the sun reaches a point directly overhead at least once during the solar year. The area is limited in latitude by the Tropic of Cancer in the northern hemisphere at approximately 23° 26’16” (or 23.4378°) N and the Tropic of Capricorn in the southern hemisphere at 23° 26’16” (or 23.4378°) S. The tropics are also referred to as the Torrid or Tropical Zone.

About 40 percent of the world’s human population currently lives within the tropical zone, and by 2060 it is estimated that at least 60% of the human population will be in the tropics, due to high birth rates and migration.

The concept of tropical diseases and tropical medicine arose in the 19th century, when European colonial doctors encountered infectious diseases unknown to them. According to the World Health Organization, tropical diseases are illnesses that occur uniquely in tropical and subtropical regions (which is rare) or, more commonly, are either more widespread in the tropics or more difficult to prevent or control. The warmth and humidity of the tropics, as well as the often unsanitary conditions under which so many people live in these areas contribute to the development and dissemination of many infectious diseases and parasitic infestations.

The concept of «domestic» as distinct from «international health» is outdated. Such a dichotomous concept is no longer germane to infectious diseases in an era in which commerce, travel, ecologic change and population shifts, are intertwined on a truly global scale.†

While communities are geographically separated, they have become progressively closer and more interdependent because of efficient transport, communication and trade systems that allow pathogens to travel and infect people much more easily than ever before. This has resulted in the inexorable globalisation of infectious diseases. The latter is possible in part because of massive human movement across borders.

† U.S. CDC, Addressing Emerging Infectious Disease Threats: A Prevention Strategy for the United States, p. 12

Abstract

NEUE INFEKTIONSRKANKHEITEN IM 21. JAHRRUNDERT

There is a growing awareness among health-care professionals that, as people travel more frequently to remote places and global trade expands, more people will return home carrying unusual infectious diseases that, until recently, have only seriously beleaguered the remote places and global trade expands, more people will return home carrying unusual infectious diseases that, until recently, have only seriously beleaguered the developing world. Global travel is relevant not only because of the increased propagation of contagions, but also because transit itself often contributes to the spread of disease.

Of note, the transmission routes of infectious tropical diseases do not flow exclusively from poorer populations to richer ones. Indeed, as history has often revealed, when people of developed countries come into contact with isolated or developing populations, it is the health of people from developing societies that tends to be impacted most severely.

As of 2011, mankind is confronted with about 350 generic infectious diseases, distributed in a seemingly random fashion across 220 countries. Over 1,600 human pathogens have been reported, each with a specific set of phenotypic, genomic, biotype and susceptibility characteristics. On average, three new diseases are described every two years – and remarkably, a »new« infecting organism is published every week.

At present, there are many new emerging tropical infectious diseases. Good recent examples are SARS, West Nile encephalitis, Chagas’ Disease and dengue fever. Most of the newly recognised infectious tropical diseases are originally zoonoses from wild creatures, especially mammals, which at a given moment, may jump from animals to humans. As human population increases, wildlife is progressively crowded into ever-smaller areas, and the chances for crossing over multiply. Some pathogens may be picked up by hunting or gathering, while others cannot be acquired outside of human settlements. For example, malaria may travel through protective screens from infected mosquito to pregnant women. The latter mosquito bites have caused thousands of cases of congenital malaria; however, the disease needs specific vectorial transmission in these new distribution areas.

The emergence of tropical and »exotic« diseases as a public health problem certainly affects the whole world. This became apparent yet again in August 2007, in Castiglione di Cervia and Castiglione di Ravenna, two small villages of the province of Ravenna, Region Emilia-Romagna, Italy, where a sudden large outbreak of chikungunya fever, which is normally found in the Indian Ocean region, occurred. When more than two hundred residents developed high fevers, joint pain and exhaustion, summer vacations were cancelled and African immigrants were blamed. However, public health officials eventually traced the epidemic back to an Italian citizen who had recently been visited by a relative returning from Kerala in India, the high density of tiger mosquitoes (Aedes albopictus) – invaders from Albania – contributed to the rapid spread of the disease. More recently, autochthonous dengue infection has been documented in Nice, South-East France, where Aedes albopictus is also established, and in Southern and Central Florida in USA, where A. aegypti was never eradicated.

Whereas Chagas’ disease, paradoxically, exhibits a decreasing health and economic impact in endemic countries, due to successful multi-national control programs aimed principally at the interruption of vectorial and transfusional transmission, the illness now appears to be emerging outside these areas. Some European countries, especially Spain and Italy, as well as Australia, increasingly recognise cases of Chagas’ disease as a consequence of recent trends in immigration from Latin America, and the disease may become a significant cause of chronic cardiomyopathy in the near future. In countries where vectorial transmission does not occur, blood or organ grafts from infected donor and congenital infection would be the main modes of transmission of Trypanosoma cruzi. Besides changes in national policies with respect to the screening of blood donations already in effect, further specific preventive strategies would need to be developed and implemented at a national level in order to control non-vectorial transmission in these new distribution areas.

The concept of imported tropical diseases (ITD) is emerging. As described before, many tropical pathogens are not restricted to the tropics, and may be diagnosed instead in countries of the developed world in common travellers, immigrants and travellers visiting friends and/or relatives (VFR).

Tropical diseases manifesting in endemic areas and
Fortunately, physicians, medical students and other health professionals from Europe and North America have developed a growing interest in tropical diseases as they increasingly need to be able to diagnose and treat them. Nonetheless, this new interest also reflects a larger trend: developed countries are paying greater attention to world health for humanitarian, economic and political reasons.

It is conceivable that the problem of the tropical diseases «spilling over» into more developed countries will be linked to even greater combined international efforts to control these infections.

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