

Editorial

Zoonoses: a social and economic burden

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People have always depended on animals as sources of food, transport, labour and companionship. However, countless species of animals are also sources of viral, bacterial and parasitic diseases transmitted in many ways, including direct contact from them or water contamination by them. These are zoonoses.

For many years and in many countries these diseases, with their reservoirs in domestic and wild animals, have imposed and are still imposing a very heavy burden, especially among the vast number of people living and working in rural areas.

The significance of zoonotic and parasitic diseases and related foodborne diseases, is growing continuously and their health and socioeconomic impacts are increasingly being felt by many countries and most particularly, although not exclusively, by developing countries. Apart from causing human suffering, morbidity and mortality, they hamper agricultural production, decrease availability of food, and create barriers to international trade.

The great changes of the last decades, especially the increasing urbanization, most of which is inadequately planned, large movements of populations, opening up of badly needed new areas for food production, the increasing trade in meat, milk and other products of animal origin, the vastly increasing number and speed of vehicles, and even tourism have contributed to mak-

ing the problem of zoonoses not only rural and characteristic of defined areas but regional and, in some cases, worldwide.

Close association between human population groups and animals, consumption of unpasteurized milk and dairy products, intensification of animal production and increased trade of animals and animal products, the large number of stray dogs, illegal slaughtering and inappropriate waste disposal are some of the principle factors perpetuating infection in humans.

The greater part of the Mediterranean and Arabian Peninsula regions share the same conditions for zoonotic infections and foodborne diseases, i.e. brucellosis, rabies, echinococcosis, leishmaniasis, salmonellosis, etc.

Environmental factors have played an important role in the spread of zoonoses and the environment itself has suffered, through the alteration of ecological conditions due to this increase. Such increase contributes to the pollution of the environment, not only through biological pollution due to their agents and dangerous vectors, but also through the many control measures applied, such as the widespread use of pesticides which have far-reaching consequences in so many biological cycles, and which have negatively affected human health and well-being. Some characteristic examples show the present epidemiological situation.

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Brucellosis. Human brucellosis transmitted from farm animals such as cattle, sheep, goats and pigs is regarded as one of the world's most widespread zoonoses. It is reported in at least 56 countries. In particular, during the last 10 years a considerable increase in infection has been recorded among the human population in the Eastern Mediterranean and Middle East regions. The disease is very rare in North America, northern Europe and Australia.

Rabies. This disease occurs on all continents with the exception of Australia. Rabies risk and infection rates vary from country to country and within each country. Reliable epidemiological information is generally lacking in most developing countries and particularly those of the Mediterranean area.

Echinococcosis/hydatidosis. This continues to have high morbidity rates, to cause much suffering in populations of the Mediterranean area and to give rise to high economic losses both in the public health sector and the animal production industry, despite great advances in the health sciences and in technology.

Leishmaniasis. This is an important public health problem for many countries of the world and most of the countries of the Mediterranean littoral and the Arabian peninsula. The leishmaniasis comprise a broad spectrum of human and animal vector-borne diseases due to different species and strains of the protozoan parasite *Leishmania*. At least 16 species and sub-species affect humans. Most of them are characterized by zoonotic life cycles, with wild and/or domestic mammals acting as reservoir hosts and phlebotomine sandflies as vectors. In a few cases, humans constitute the main or sole reservoir. *Leishmania*/HIV co-infection is considered to be an "emerging disease", especially in southern Europe where visceral leishmaniasis (VL)

is now the most common opportunistic parasitic infection among HIV-positive persons; 25%–70% of adult VL cases are related to HIV infection, and 1.5%–9% of AIDS patients suffer from newly acquired or reactivated VL.

Foodborne zoonotic infections. Almost half of the world's population suffer from diseases associated with contaminated food and water. Their importance as a public health problem is often overlooked because their true incidence is difficult to evaluate and the severity of their health and economic impact is often not fully understood. Moreover, there is a scarcity of reliable information on the spread of foodborne zoonotic infections among the human population and the sources of food contamination in most countries of the Mediterranean region. Zoonotic tuberculosis, campylobacteriosis, enterohaemorrhagic *E.coli* infections, listeriosis and salmonellosis are among the most important.

Control programmes implemented in individual countries have had only partial success or have failed. Besides needing an adequate national organization and availability of resources, effectiveness requires strong international cooperation, especially between neighbouring countries. Timely exchange of information on zoonotic disease occurrence, intercountry technical cooperation, harmonization of legislation, etc. are all essential for the success of the national zoonoses prevention, surveillance and control programmes.

This situation was first addressed by the WHO Member States at the Thirty-first World Health Assembly in 1978 which endorsed resolution WHA31.48 on prevention and control of zoonoses and foodborne diseases due to animal products. The need for the development of regional zoonoses centres which would provide regional resour-

es to overcome the various constraints was emphasized. They would supply the countries with expertise and information, and prevention and control guidelines would also be adapted to local conditions and assure other forms of cooperation between countries of that region.

In accordance with this resolution, WHO with a number of countries established the Mediterranean Zoonoses Control Programme (MZCP) in 1978. For the coordination and implementation of its activities, the Mediterranean Zoonoses Control Centre was established in Athens, Greece, in 1979. Participating countries are Bulgaria, Cyprus, Egypt, Greece, Kuwait, Lebanon, Portugal, Saudi Arabia, Spain, Syrian Arab Republic and Turkey. Countries associated with the programme are Algeria, Italy, Jordan, Malta, Morocco and Tunisia.

The programme closely collaborates with the Division of Emerging and other Communicable Diseases Surveillance and Control of WHO headquarters, Geneva, as well as with the WHO Regional Office for the Eastern Mediterranean, specialized WHO collaborating centres and the MZCP network of National Participating Institutions.

The activities implemented are directed mainly towards surveillance, prevention and control of major zoonoses in the Medi-

terranean region, i.e. brucellosis (in humans and animals), echinococcosis, leishmaniasis, rabies, salmonellosis and other foodborne zoonotic diseases. Veterinary public health activities, particularly in emergency situations, in urban veterinary hygiene, in occupational health and intersectoral collaboration are included among the activities, of primary importance. Moreover, epidemiology and surveillance of foodborne zoonotic diseases together with public health education, exchange of information, planning and coordinating research projects and training programmes are matters of particular interest to the programme.

Prevention and control of major zoonoses depend on the firm decision of national authorities to face these diseases and on their capabilities to mobilize resources in different sectors, to establish coordination of activities, promote much needed intersectoral cooperation, especially between national veterinary and public health services in association with public health education campaigns and community involvement. Only comprehensive national approaches supported by international technical collaboration will alleviate or eliminate the public health and economic impact of zoonotic diseases.