One health, one Caribbean, one love

A ‘one health’ policy – the collaborative effort to attain optimal health for people, animals and the environment in relation to interactions between them – will be formulated and promoted across the Caribbean region through the development of national one-health leaders, and developing and implementing regional and national one-health strategic plans. To strengthen the ability of Caribbean countries to recognise, diagnose and respond to animal/zoonotic diseases, technical training will be provided for laboratory personnel in quality assurance, laboratory management and the use of appropriate low-cost, sensitive diagnostic techniques, and for veterinary surgeons and ‘first responders’ who deal with high-priority animal/zoonotic diseases.

Challenge

Despite the high burden of animal and zoonotic (naturally transmitted between vertebrate animals and humans) infectious diseases, the majority of Caribbean countries lack the capacity to accurately recognise, diagnose and respond to such diseases. Ongoing outbreaks of the classical swine fever virus in Haiti, the Dominican Republic and Cuba have proven difficult to control, and pose a risk to neighbouring countries. Leptospirosis (Weil’s syndrome) is endemic in the Caribbean and is considered an emerging issue on several islands, with Dominica recently experiencing an outbreak in people (mostly agricultural workers); Jamaica had several outbreaks in 2008-2009 with 600 confirmed human cases resulting in several deaths. Guyana is currently experiencing problems with bovine tuberculosis and Trinidad and Tobago is facing an emerging problem with brucellosis in cattle and water buffalo (both zoonotic). Rabies is reported in, among others, Belize, Cuba, the Dominican Republic, Haiti, Guyana, Grenada, and Trinidad and Tobago, and the reservoirs of the rabies virus across the Caribbean region include dogs, mongooses and vampire bats. Interactions between medical, wildlife and veterinary professionals are currently very limited. The low internal capacity of Caribbean governments, their limited resources and the high burden of infectious human and animal disease across the Caribbean region points towards the relevance of pursuing a holistic one-health approach, with interdisciplinary engagement on a regional scale, given the vital interconnectedness among humans, animals and the environment.

Focus

A one-health approach to zoonotic and food-borne disease surveillance, diagnosis and response to animal and zoonotic diseases, through coordinated regional efforts, will reduce the threat and impact of livestock diseases and will increase food security, and animal health and production across the Caribbean region.

Addressing health risks at the human-animal-ecosystems interface requires collaboration among players who may have different perspectives on some issues and different levels of resources. Collaboration will be strengthened between ministries of agriculture, health and the environment, as well as with international organisations such as the Food and Agriculture Organization of the United Nations (FAO), the Pan American Health Organization (PAHO) and the World Organisation for Animal Health (OIE). This intersectoral approach is expected to generate improved holistic strategies and measures to improve animal, human and environmental health in the Carib-
bean. Animal production and productivity will be improved, thereby increasing the availability and access to locally produced (safe) animal products. The net effect of these results will be a reduction in the negative impact of animal and zoonotic diseases on the livestock population in the Caribbean. The one-health approach will also yield net benefits to public and environmental health, which in turn should enhance the attractiveness of the Caribbean as a tourist destination.

Rationale
The majority of Caribbean islands and territories are small, resource-poor and have little capacity to respond to animal and zoonotic disease outbreaks. There is currently a lack of capacity within the Caribbean region to rapidly and accurately recognise and diagnose high-impact animal and zoonotic pathogens, both in the laboratory and in the field. This results in slow response times in the event of high-impact animal/zoonotic disease pathogens entering the country/region. Combined with the high burden of human and animal infectious diseases, this situation clearly points towards the relevance of pursuing a one-health approach that involves close collaboration and shares resources between sectors (animal, human and the environment), both within and between island states.

Method
The one-health concept will be introduced and developed within the existing Caribbean Animal Health Network (CaribVET) to enable scientists to collaborate at national and regional levels, so that relevant scientific information can be exchanged and knowledge increased. This regional collaboration network involving veterinary services, laboratories, research institutes and regional and international organisations aims to improve animal and veterinary public health in the Caribbean.

A core regional group of one-health leaders will be created, with representatives selected from the governmental, non-governmental and academic sectors. These future leaders will be trained in the one-health approach to strengthen the capacity of the Caribbean veterinary, public health and environmental services to design and manage one-health policies, programmes and projects in order to develop more holistic scientific solutions to emerging and endemic problems that currently limit food security, animal production and food safety.

The capacity of Caribbean veterinary diagnostic laboratories to detect high-impact animal and zoonotic diseases will be enhanced through the introduction of new technologies, such as isothermal techniques. The accuracy and reliability of veterinary laboratory results will be improved through quality assurance training, quality accreditation of the most advanced laboratories and laboratory management training, as well as through participation in inter-laboratory proficiency testing. The ability of Caribbean veterinary surgeons and first responders to accurately recognise priority animal and zoonotic diseases will be enhanced through specialist training. Relevant information that will aid disease recognition will be posted on the CaribVET website so that it is easily accessible to first responders from across the Caribbean region.

The Caribbean one-health network will link with similar African and European one-health initiatives, including the FAO, WHO and OIE, and information will be disseminated on the project website and through publications.

Results
- Caribbean network of one-health leaders with the capacity to design and implement one-health strategies and projects;
- Improved intersectoral collaboration between veterinary, medical and environmental professionals;
- Regional and national one-health strategic plans, policies and programmes;
- Improved intersectoral surveillance for zoonotic and food-borne diseases;
- Increased capacity of Caribbean countries to identify and respond to transboundary animal diseases;
- Increased laboratory capabilities to diagnose foreign and endemic animal diseases;
- Improved accuracy of veterinary diagnostic laboratory results.

Graphic depiction of the one-health conceptual framework showing that global, economic, social and cultural contexts of health and disease must be considered, along with human, animal and ecosystem factors, in order to formulate holistic strategies for disease detection, prevention and response. (This graphic has been reproduced with kind permission from the Public Health Agency of Canada).