Zoonoses and Public Health

A zoonosis is any disease or infection that is transmissible between animals and humans. Examples of zoonotic diseases include rabies, West Nile encephalitis, avian influenza (H5N1) and *Escherichia coli* O157:H7. Zoonotic diseases represent a significant public health challenge, it is estimated that 60% of all human pathogens and 75% of recently emerging infectious diseases affecting humans are zoonotic.

The health of humans, animals and the environment are inextricably interconnected. As a result, a collaborative and multidisciplinary approach is needed to address public health challenges at the human-animal-environmental interface.

The Centre for Public Health and Zoonoses (CPHAZ) is based at the Ontario Veterinary College (OVC), University of Guelph. It was established in 2006 to build on the University of Guelph’s strong tradition of research and education in animal-related aspects of public health, as well as its close collaborative relations with numerous animal health and public health agencies and organizations. The role of CPHAZ is to coordinate existing public health research at the OVC, create and support working relationships between researchers in diverse fields, and advance education related to zoonoses and public health.

CPHAZ is centrally located within the city of Guelph, providing close access to collaborating groups including the Public Health Agency of Canada, Ontario Ministry of Agriculture, Food, and Rural Affairs, Canadian Food Inspection Agency, and Agriculture and Agri-Food Canada.

The figure below demonstrates the wide range of end-users and collaborators connected to CPHAZ.

About CPHAZ

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CPHAZ Members

CPHAZ has more than 50 scientists from 14 departments within the University of Guelph and continues to expand. CPHAZ members have a breadth and depth of experience and broad methodological expertise in areas such as: zoonoses, antimicrobial resistance, food safety, environmental health, water safety, synthesis research and public health policy. They enjoy close collaborations in public health research and teaching with other faculty at the University of Guelph, as well as colleagues from other universities and animal health and public health organizations.

CPHAZ Research Activities

The CPHAZ research goal is to create a community of practice, where public health researchers with diverse disciplinary backgrounds can work together to solve complex problems and implement solutions related to public health at the human-animal-environment interface. Since 2006, CPHAZ members have collaborated on over 137 published scientific papers with researchers from external groups such as McMaster University, the Public Health Agency of Canada, the Ontario Agency for Health Protection and Promotion, and the Ontario Ministry of Agriculture, Food and Rural Affairs. These collaborative publications have occurred across a variety of methodological areas, from basic discovery research to applied and theoretical research.

Construction is currently underway on new research facilities for CPHAZ. The work is supported by a $1-million grant from the Canada Foundation for Innovation (CFI) New Initiatives Fund. The funding goes toward equipment and facilities to expand CPHAZ’s capacity to conduct state-of-the-art research on animal-related aspects of public health, particularly zoonotic diseases. This infrastructure project will also provide unique resources aimed at enhancing collaboration between basic scientists and field researchers, from both animal and human health communities. Construction is scheduled for completion in May 2011.

CPHAZ Educational Activities

Many CPHAZ members actively participate in public health education within the undergraduate and Doctor of Veterinary Medicine (DVM) curriculums, and through graduate student training and mentoring. Scientists from external groups have also historically been involved in these public health capacity building activities:

- CPHAZ currently has over 90 graduate student members.
- In 2008, the OVC launched a cross-department Master of Public Health (MPH) program in which students are required to complete a 12 to 16-week practicum in a public health practice setting. Past placement partners have included: local public health (e.g., Wellington-Dufferin-Guelph Health Unit, Region of Waterloo Public Health), non-profit organizations (e.g., Veterinarians Without Borders, Centre for Coastal Health), government agencies (e.g., Ontario Ministry of Health and Long-Term Care, Public Health Agency of Canada), and industry groups (e.g., Chicken Farmers of Ontario).
- The Department of Population Medicine within the OVC offers graduate degrees that are research based (MSc, PhD), and practice and research based (DVSc). In the last five years alone, over 35% of the Department’s graduates have had an advisory committee member from external groups such as the Public Health Agency of Canada, the Ontario Ministry of Health and Long-Term Care, the Canadian Food Inspection Agency, the University of Prince Edward Island, and the Pan-American Health Organization.

For the external groups involved, these collaborative educational activities provide a pool of potential candidates for future recruitment.

CPHAZ Knowledge Translation Activities

CPHAZ disseminates knowledge, provides expertise, and contributes to the implementation of sound policy and decision making in animal-related aspects of public health. Below are some examples of CPHAZ knowledge dissemination activities involving external partners:

- The Worms & Germs Blog (www.wormsandgermsblog.com) is an educational website focused on zoonotic diseases of pets. The website features blogs on current zoonotic disease issues and provides fact sheets for children, adult pet owners, veterinarians and physicians. The Worms & Germs Blog is a partnership between CPHAZ and the City of Hamilton.
- In January 2011, CPHAZ hosted a 2-day workshop in which individuals from Canada’s 5 veterinary colleges and other interested stakeholders met to discuss teaching of public health and regulatory medicine in the Canadian DVM curriculum. The workshop served as a forum for discussing opportunities for collaboration and resource-sharing among the veterinary colleges. Funding for the workshop was provided by the Canadian Veterinary Regulatory Epidemiology Network (CRVE-Net).