

Geographic Information Systems Infrastructure for Public Health and Surveillance.

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ABSTRACT

Public health professionals across Canada have recognized the need to better capture and use the inherent spatial elements found within public health surveillance information, to make better evidence-based decisions. Building towards this goal, the Centre For Surveillance Coordination has developed key decision support tools with Geographic Information Systems (GIS) that can access spatial data sets from a spatial data warehouse via the Internet to enhance the information network that serves to protect the health of Canadians.

The Centre For Surveillance Coordination collects and analyses the GIS and spatial data requirements of health information analysts, epidemiologists, Medical Officers of Health, and other health professionals working in health departments and health regions across Canada. A general summary of the findings are: public health surveillance professionals need direct access to available spatial data sets, intuitive and easy to use GIS tools, metadata, support and training -- all at no cost to users -- and more collaboration opportunities with other health/GIS initiatives in Canada and internationally.

Through its supporting GIS Infrastructure the Centre for Surveillance Coordination provides a fully functional solution for these requirements. The GIS Infrastructure is comprised of several integrated components including a spatial data warehouse, GIS tools, a meta data repository, open standards and secure Internet technologies. The spatial data warehouse maintains the spatial data sets required by public health surveillance professionals to link, visualize and analyze information related to diseases, health risks, and health determinants.

Public health surveillance professionals can download these spatial data sets via the Internet along with related metadata using five different tools developed and provided for their needs. These tools include several innovative applications such as, the Map and Data Exchange, Public Health Map Generator and web enabling plug-ins for EpiInfo/EpiMap 2000, ArcView and MapInfo. The GIS Infrastructure team operates, maintains, promotes and provides these GIS Infrastructure products in consultation, collaboration and coordination with public health surveillance professionals at the Federal/Provincial/Territorial and Regional levels across Canada.