46.002

Google Flu Trends: Mapping Influenza in Near Real Time

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Google.org uses Google's strengths in information and technology to build products that address global challenges. Infectious diseases are responsible for millions of deaths around the world each year. Influenza, in particular, affects 3-5 million people per year, and kills 250-500 thousand.

With this in mind, a small group of engineers, working closely with medical professionals at Google.org and externally, began to investigate what innovations Google could bring to this issue. By some estimates, there are more than 1.6 billion people on the planet with access to the

Internet and Google receives more than a billion searches daily. By analyzing influenza-like illness (ILI) data from the U.S. Centers of Disease Control and Prevention, and anonymized, aggregated search query data, we discovered that a rise in the frequency of certain influenza-related search terms in a place corresponds with a rise in actual flu activity for that area. In November 2008, we introduced Google Flu Trends for the United States, an online tool that tracks and analyzes search terms to provide flu activity estimates. Now for 20 countries, Google Flu Trends generates estimates that are automatically updated daily, providing a timely indicator of influenza activity. Our hope is that Google Flu Trends be a complementary surveillance tool for health officials, as well as a source of useful information for the general public.

We continue to receive feedback from health officials worldwide regarding the tool's use, helpfulness and limitations. We have also learned about the positive impact that Google Flu Trends has had on public awareness of the timing and intensity of flu season, as well as preventative measures like hand washing and vaccination. Now entering its second year, Google Flu Trends will continue to adapt in response to a growing body of information regarding its practical application and potential.

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46.003

CaribVET: A Model for Surveillance of Zoonotic Diseases

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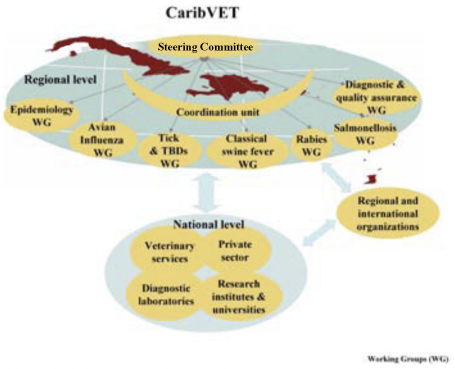
The Caribbean region is considered to be at risk for zoonotic diseases because of widespread backyard breeding system, diverse disease surveillance systems, legal or illegal human and animal movements. Several zoonosis are reported including Influenza, West Nile, Rabies, Leptospirosis.

The Caribbean animal health network (CaribVET) is a collaboration among veterinary services, laboratories, research institutes, and regional/international organizations to improve animal and veterinary public health in the Caribbean. Its specific objectives are to promote a regional approach for emergency preparedness and diseases control especially for emerging and zoonotic diseases, reinforce regional diagnostic capacities, and strengthen national epidemiological surveillance systems.

Meetings, trainings, skills building and development of regional tools for information and data exchange are the main strategies used. The Steering Committee of CaribVET is responsible for the regional strategy while seven Working Groups organize the collaboration on specific diseases (Tick and Tick Borne Diseases, Avian Influenza, Classical Swine Fever, Salmonellosis, Rabies) or activities (Epidemiology, Laboratory quality assurance).

The epidemiology working group has developed criteria for the definition of priority diseases, core surveillance databases, an evaluation of national surveillance systems and risk analysis of regional interest. It participates in the updating of a participatory website (www.caribvet.net), with information and data on surveillance systems, diagnostic laboratories, conferences, and major diseases of the region. The Working Group for avian influenza has developed a regional surveillance protocol, a diagnostic network, surveys of wild birds and on risk posed by fighting cocks trade. Research on West Nile first developed in Guadeloupe, identified risk factors which were used to implement risk based surveillances in the region.

The interaction between surveillance and research within CaribVET facilitates the access to surveillance data and field samples for the development of research studies. Research results are used for emergence prediction, improvement of surveillance and control of diseases.



CaribVET network organisation

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GeoSentinel: Provider-based Surveillance of International Travelers

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80 million individuals from industrialized nations travel to the developing world each year. Provider-based surveillance of travelers is increasingly sophisticated. One such network,