

Study name: International Circumpolar Surveillance of Infectious Diseases

Project number: Eol 1150

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Abstract:

The goal of the International Circumpolar Surveillance (ICS) project is to establish an integrated surveillance network linking hospitals and public health laboratories throughout the Arctic for the purpose of monitoring emerging and reemerging infectious disease problems within Arctic communities, and assist in the formulation of preventive strategies. The current network monitors invasive bacterial diseases in the U.S. Arctic (Alaska) and northern Canada, Greenland, Iceland, Norway, Finland, and northern Sweden. Data is shared and the impact of interventions such as vaccines can be monitored over time. While ICS provides a model for international cooperation on infectious disease prevention and control, the model can be applied to the prevention and control of non infectious diseases and health conditions of concern to Arctic residents and these can be added to this system as the need and resources allow. Proposed ICS IPY 2007-2008 activities include: 1) Expansion of ICS to include the northern and far eastern regions of the Russian Federation. 2) The convening of infectious disease working group meetings with infectious disease specialists from northern regions and far eastern of the Russian Federation, to assess the infectious disease problems, surveillance methods, interventions and the training needs of infectious disease specialists in these regions. 3) The development of collaborative arrangements for infectious disease information exchange and inclusion of northern and far eastern regions of the Russian Federation in ICS system 4) Initiate an ICS International Fellowship program(2007-2008) 5) Expansion of ICS to monitor tuberculosis in circumpolar countries. 6) Expansion of ICS to include non infectious diseases, such as injuries, chronic diseases, and birth defects 7) Initiation of research projects to evaluate the long term sequelae of chronic hepatitis b infections indigenous populations of the Arctic, the investigation of the natural history of *Helicobacter pylori* in Arctic communities, the investigation of the emergence and potential control of invasive bacterial diseases caused by non vaccine serotypes of *Haemophilus influenzae*. 8) Initiation of a community based monitoring system for the detection of zoonotic diseases in subsistence animal species.

Project Status: Active

Project Progress 2007-2008:

A special IPY issue of the Emerging Infectious Diseases Journal (www.cdc.gov/ncidod/eid) was published in January, 2008. This edition featured a description of the ICS system, and several reports from the ICS network. Papers also focused on new and reemerging infectious diseases in Arctic regions.

An ICS tuberculosis working group has been established. Participating countries include, the US (Alaska), Canada, Greenland/Denmark. A working group meeting is planned in conjunction with the 14th International Congress on Circumpolar Health, to be held in Yellowknife NWT, Canada July 12-16, 2009

A viral Hepatitis research working group has been formed to examine long term sequelae of chronic hepatitis b and c infections indigenous populations of the Arctic. A working group meeting will be held in Copenhagen, Denmark September 16,17, 2008

A *Helicobacter pylori* research working group has also been formed to examine the natural history of *Helicobacter pylori* in Arctic communities, and the potential link between *Helicobacter pylori* and gastric cancer in Arctic populations. A working group meeting will be held in Copenhagen, Denmark, September 18, 2008

ICS together with the Northern Forum (www.northernforum.org) sponsored an IPY International Conference on Infectious Diseases in Moscow, April 24-26, 2008. The Conference was attended by infectious disease epidemiologists from northern Regions of the Russian Federation. The purpose of this conference was to discuss the possibility of establishing an Infectious Disease Surveillance Network in northern regions of the Russian Federation that would contribute to the ICS network. A follow-up meeting is planned in 2009 to discuss the possibility of forming a tuberculosis working group within northern regions of the Russian Federation that would contribute data to the ICS tuberculosis working group.

A major IPY initiative is the formation of Sustainable Arctic Observing Networks (SAON) for the purposes of long-term monitoring change in the Arctic (www.arcticobserving.org). The ICS may be considered a sustainable observing network for infectious diseases and could be used as a model for establishing observing networks for other human health issues and concerns. This concept was presented at a workshop was held at the Second SAON meeting in Edmonton Alberta Canada April 24-26, 2008.

Preliminary results (if applicable):

Parkinson, AJ., Bruce MG, Zulz T. International Circumpolar Surveillance, an Arctic network for surveillance of infectious diseases. 2008. Emerg. Infect Dis J. 2008. 14 (1) 18-24.

Bruce, MG., Deeks, SL., Zulz, T., Druden, D., Navarro C., Lovegren, M., Jette, L., Kristinsson, K, Sigmundsdottir, G., Jensen, KB., Lovoll, O., Nuorti JP., Herva E., Nystedt, A., Sjostedt, A., Koch., Hennessey TW., Parkinson, AJ. International Circumpolar Surveillance for invasive pneumococcal disease, 1999-2005. Emerg. Infect Dis J. 2008. 14 (1) 25-33.

Bruce, MG., Deeks, SL., Zulz, T., Navarro, C., Palacios, C., Case, C., Hemsley C., Hennessy, T., Corriveau, A., Larke, B., Sobel, I., Lovegren M., DeByle C., Tsang R., Parkinson AJ. Epidemiology of Haemophilus influenzae serotype a, North American Arctic 200-2005. Emerg. Infect Dis J. 2008. 14 (1) 48-55

Plans 2009:

Continue surveillance of invasive diseases in the US Arctic, northern Canada, Greenland, Iceland, Norway, Finland and northern Sweden
Conduct an ICS tuberculosis working group meeting in Yellowknife NWT, Canada, July 12-16, 2009
Conduct an ICS Conference (Workshop) and epidemiology training course on Infectious Diseases in the Russian Federation 2009.

Expand ICS to include non infectious disease problems important in Arctic Communities, such as Injuries; Chronic diseases; Birth Defects
Initiate a community based monitoring system for the detection of zoonotic diseases in subsistence animal species.
Establish ICS as an Arctic Observing Network for Human Health

Expected Completion Date:

Ongoing