

Arctic Observing Network for Human Health

Project number: NI 5

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Abstract:

Human health is an integral component of the Arctic ecosystem. Life expectancy in arctic populations has greatly improved over the last 50 years due to a reduction in morbidity and mortality from infectious diseases, such as tuberculosis, and the vaccine preventable diseases of childhood and improved living condition and access to health care. However, significant health disparities remain between the indigenous and non indigenous populations in the arctic. Indigenous populations experience lower life expectancy, higher infant mortality; higher suicide rates higher rates of infectious diseases such as hepatitis b and tuberculosis and higher rates of some cancers. Health concerns of arctic peoples also include potential health impacts of environmental pollution, climate variability, and the rapid rate of modernization and associated social and cultural changes which may result in higher rates of obesity, diabetes, cardiovascular diseases and suicides.

The Centers for Disease Control and Prevention, Arctic Investigations Program, has established an International Circumpolar Surveillance (ICS) system for infectious diseases by creating a network of hospital and public health laboratories throughout the Arctic. The network allows collection and sharing of uniform laboratory and epidemiologic data among Arctic countries that will describe the prevalence of infectious diseases of concern to Arctic residents and assist in the formulation of prevention and control strategies. While currently focused on prevention and control of infectious disease the system also provides a model for standardized monitoring and respond to other non infectious health conditions of concern within Arctic regions. Many regional and national surveillance networks exist for monitoring health conditions of concern. Within the State of Alaska, the Alaska Surveillance, Epidemiology, and End Results (SEER) program collects and publishes cancer data as part of the National Cancer Institute's overall SEER program, and the Alaska Native Stroke Registry is a project to increase the understanding of stroke in Alaska Natives, with the goal of improving stroke care. Circumpolar linkage of such networks would facilitate international collaboration, international standardization of data collection international comparison of comparable data, thereby greatly adding to our knowledge of Arctic health, and enhancing design of treatment and prevention.

During the IPY, the ICS system expanded to include a working group on the surveillance of tuberculosis, and the formation of research working groups focusing on viral hepatitis and Helicobacter pylori infections. In addition a meeting was held in Moscow April 23-24, 2008 to discuss the possibility of expanding ICS to include northern Regions of the Russian Federation.

The establishment of well coordinated and Sustained Arctic Observing Networks (SAON) is a major objective of the IPY (www.arcticobserving.org). The goal is to develop long term Arctic wide observing activities that provide free, open and timely access to high quality data for both the scientific and societal communities.

Several human health monitoring networks already exist and could form the basis for the establishment of a circumpolar health observatory which could provide: 1) an international circumpolar collaborative health information system, 2) systematic standardized, consistent methods in data collection, analysis, and reporting, 3) ability to monitor trends and patterns in health status, health determinants and health care, 4) quantitative evidence for planning and evaluation of health programs and services, 5) a system that is population based and aggregated by administrative regions in all circumpolar countries.

The possibility of forming a circumpolar health observatory was discussed at the second Workshop on Sustaining Arctic Observing Networks Edmonton Alberta, Canada April 9-11, 2008.

Existing networks (IPY activities) that could provide the basis for a circumpolar health observatory include:

1. International Circumpolar Surveillance

Lead Country(s): USA

(Eol # 1150)

The purpose of the International Circumpolar Surveillance (ICS) system for infectious diseases is to establish a surveillance network of hospital and public health laboratories throughout the Arctic. The network allows the collection and sharing of uniform laboratory and epidemiologic data between Arctic countries that defines the prevalence of infectious diseases of concern to Arctic residents and assists in the formulation of prevention and control strategies. Currently the system monitors invasive bacterial diseases and tuberculosis in the US Arctic (Alaska), northern Canada, Greenland, Iceland Norway, Finland, northern Sweden. Expansion of ICS to include northern regions of the Russian Federation is anticipated in 2009. While currently focused on prevention and control of infectious disease the system could be adapted to monitor other human health issues of concern in Arctic countries, and serves as a model for a Sustainable Arctic Observing Network for human health.

2. Arctic Monitoring and Assessment Program

Human Health Assessment Group Conference.

Lead Country(s) Canada/Denmark

(FP # 145)

The Arctic Monitoring and Assessment Program (AMAP) has been coordinating circumpolar monitoring and assessment of atmospheric pathways, biota impacts, food chain dynamics and human health issues for environmental contaminants since 1991 (<http://www.amap.no/>). The contaminants have included persistent organic pollutants (POP's-both historic and emerging compounds), metals and radionuclides of concern in the circumpolar world. The AMAP Human Health Assessment Group (HHAG) has members in all eight circumpolar countries and has completed two assessments on the human health impacts of arctic environmental contaminants (1996, 2002). A third assessment is to be released in 2009. These assessments include human monitoring data, dietary studies, health effects studies and risk management strategies to mitigate the effects of contaminants. The HHAG has effectively functioned as an Arctic Observing Network for environmental contaminants in the circumpolar north and could work with the other human health observation networks to give an integrated picture of circumpolar human health.

3. International Network of Circumpolar Health Researchers

Lead Country(s): Canada

(Eol # 516)

The International Network of Circumpolar Researchers (INCHR) is a voluntary network of individual researchers, research trainees, and supporters of research based in academic research centers, Indigenous people's organizations, regional health authorities, scientific/professional associations, and government agencies, who share the goal of improving the health of the residents of the circumpolar regions through international cooperation in scientific research. The goals of INCHR are: 1). Conduct, sponsor, and promote research programs and projects investigating the patterns, determinants and impact of health conditions among circumpolar peoples and the strategies for improving their health; 2). Support research training at all levels and increase capacity for circumpolar health research in communities, service delivery agencies and higher educational institutions; 3).

Facilitate exchange, communication and dissemination of research data; 4). Strengthen the health information system in the circumpolar region. (www.inchr.org)

**4. Arctic Health Research Network.
(FP# 449)**

Lead Country(s) Canada

The Arctic Health Research Network is a health research network based in the three northern territories and a provincial region of Canada. The network has four sites in Yukon, Northwest Territories, Nunavut and Labrador. Each is registered under territorial societies act and are governed by a board of directors. The network's vision is to build on the strengths and knowledge of all cultures to achieve health in the territory.

The network fosters partnerships for the development of northern health knowledge through research, facilitation and training. The AHRN supports activities which build sustainable health research infrastructure in the north as well as engage northern partners in health research projects. The network is engaged in a broad spectrum of research projects and activities including community based participatory projects around climate change, suicide prevention and food security, territory wide research projects including HPV prevalence, surveillance development, knowledge translation, enhancing research capacity in territorial organizations through research methods workshops, proposal writing workshops and services as well as the training and support of graduate students. Specific activities and events for each region can be found at the website. www.arctichealth.ca

5. Survey of Living Conditions in the Arctic-Remote Access

**Lead Country(s): Denmark
(FP # 190)**

Initiated in 1998, the first phase of this project developed a standardized research design for the measurement of living conditions and well-being among the Inuit, Saami, and indigenous peoples of Chukotka. The survey was completed in 2006. During the IPY SLiCA will expand the understanding of Arctic change by extending the concepts of remote access analysis to the SLiCA international data base, allowing other researchers to remotely conduct analysis without access to raw data.

www.arcticlivingconditions.org

There are several other human health and social indicator networks that are operational and will increase our research capacity and to address social realities of the arctic. They all aim to encourage data sharing and use.

The Arctic Social Indicators (ASI) is a follow-up project to the Arctic Human Development Report. This project, which is currently on-going, will take advantage of existing data to create relevant indicators, and will recommend a set of new and relevant indicators. ASI will develop indicators in six domains: ability to guide one's destiny, cultural integrity, contact with nature, education, health and demography, and material well-being. The Arctic Observation Network Social Indicators Project (AON-SIP) is compiling data using a common framework, geography, time, and variables. There are five clusters of indicators: community living conditions (organized within the six ASI domains), tourism, fisheries, oil, gas, mining and marine transportation, and marine mammal hunting (www.search-hd.net). ArcticStat is a portal database that allows the user to select and reach existing tables that cover Arctic countries and regions, some ten socio-economic indicators and more sub-indicators, and years (www.arcticstat.org). Thousands of tables mainly from national agencies are linked to ArcticStat. All of the above projects are attempting to integrate their data.

Significant difficulties are presented in the use of existing data due to a lack of uniformity between existing data sets (between two countries for instance) and barriers to access the data (tables not accessible at the regional level, or in English language, or excessive charges). Moreover no researchers / agencies have ongoing funding for these important determinants and in some countries there is no funding for even basic database operation.