Overview II. International Polar Year


Alan J. Parkinson
Arctic Investigations Program
Centers for Disease Control & Prevention
Anchorage, Alaska, USA

Background

The IPY (2007–2009) is the fourth major international polar research program intended to provide a venue for expanding the boundaries of our understanding of the polar regions. However, in contrast to previous polar years (1882–1883, 1932–1933, 1957–1958), for the first time the fourth polar year focused significant attention on the human dimension of Arctic research, particularly the concerns of indigenous peoples, including human health.

While the health of Arctic populations has greatly improved over the last 50 years, life expectancy and infant mortality are higher in indigenous Arctic residents in the American Arctic, northern Canada, Greenland and the Russian Federation than in Arctic residents of the Nordic countries (1). The rapid pace of change within the Arctic region also presents new challenges to the health and well-being of its residents. For example, in many Arctic regions, living conditions have changed and continue to change from an economy with a foundation of subsistence hunting and gathering to one that is cash-based. Across the circumpolar north there is increasing activity towards sustainable development via local resource development and widening involvement in the global economy. Such changes have had many positive influences on the physical health of Arctic residents, including improved housing conditions, stable food supplies, increases in access to a wider variety of Western goods and decreases in morbidity and mortality from infectious diseases. However, these changes in lifestyle have also led to an increase in the prevalence of chronic health problems such as diabetes, hypertension, obesity and cardiovascular diseases. In addition, increasing rates of child abuse, alcohol abuse, drug abuse, domestic violence, suicide and unintentional injury are also associated with rapid cultural change, which can cause a loss of cultural identity and self-esteem in these populations (2).

Similarly, globalization of the Arctic economy has been accompanied by improvements in Arctic transportation infrastructure. Many communities that were once isolated are now linked to major cities by air transportation. Consequently, these communities are now vulnerable to infectious diseases (influenza, SARS-like infections and antibiotic-resistant pathogens such as multi-drug resistant tuberculosis) commonly found in more densely populated urban centres (3).

Environmental contaminants continue to cause health problems globally. Contaminants such as mercury, other heavy metals, PCBs, DDT, dioxins and other organochlorines originate primarily in the mid-latitude industrial and agricultural areas of the globe but are concentrated in the Arctic via atmospheric, river and ocean trans-
port. Their subsequent bio-magnification in the Arctic food webs and appearance in subsistence food, and the Indigenous peoples who rely on these foods is of great concern to Arctic residents. Potential human health effects include damage to the developing brain, endocrine and immune systems. A new concern is the role of mercury in cardiovascular diseases. More research is needed to identify the levels and human health effects of these contaminants in Arctic residents, particularly in the very young, and to provide guidance on both the risks and benefits of consuming traditional food (4, 5, 6).

Climate change is already affecting many Arctic rural communities and is bringing economic and health threats, as well as possible opportunities. The impacts of climate change on the health of Arctic residents will vary depending on factors such as age, socio-economic status, lifestyle, culture, location and the capacity of the local health infrastructure systems to adapt. It is likely that the most vulnerable will be those living close to the land in remote communities, those who are already facing health-related changes (7, 8).

These are clearly circumpolar challenges, and dealing with them will require a higher level of circumpolar commitment, co-operation, collaboration and resources.

Legacy of collaboration

Arctic countries have a long history of international collaboration and co-operation when it comes to dealing with issues that affect their communities, including human health.

Some examples include:

- The International Union for Circumpolar Health (www.iuch.net) is a non-governmental organization comprised of an association of five circumpolar health organizations. The organization promotes co-operation on human health through the activities of some 13 working groups and promotes communication on human health through the International Journal for Circumpolar Health (IUCH) and the triennial International Congress for Circumpolar Health.
- A sister organization, the International Arctic Social Sciences Association (www.iassa.gl), promotes co-operation among the disciplines relating to behavioural, psychological, cultural and social sciences.
- The International Network for Circumpolar Health Research (www.inchr.com) is a voluntary network of individual researchers, research trainees, supporters of research based in academic research centres, Indigenous peoples’ 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 co-operation in scientific research.
- The Northern Dimension Partnership in Public Health and Social Well-being (www.ndphs.org) has a membership of 13 European countries, along with Canada. The partnership is committed to improving human health and social well-being in member countries.
- The Barents Euro Arctic Council (www.barentshealth.org) is a regional co-operation program focused on health and related issues in the Barents Euro-Arctic Region.
- The Northern Forum (www.northernforum.org) is a non-profit organization of regional or subregional governments based in northern countries. The forum fosters communication and co-operation among northern regions, providing avenues for discussion, training and co-operative ventures.
- The Arctic Council (www.arctic-council.org), established in 1996, is a ministerial intergovernmental forum which promotes co-operation, coordination and interaction among eight Arctic states (including Indigenous communities and other Arctic residents), on issues relating to sustainable development and environmental protection. The Arctic Council tracks human health using two groups: the Arctic Monitoring and Assessment Program’s Human Health Assessment Group, which is responsible for the assessment of relationships between environmental population and human health, and the Sustainable Development Working Group, which has the goal to advance sustainable development in the Arctic, including opportunities to protect and enhance the health of Indigenous communities and other inhabitants.
The Arctic Human Health Initiative

The Arctic Council recognized that the International Polar Year (IPY) 2007-2008 represented a unique opportunity to further stimulate cooperation and coordination on Arctic research, to increase the awareness and visibility of Arctic regions and to expand co-operation on human health research. In response, the SDWG submitted the Arctic Human Health Initiative (AHHI) to the IPY International Program Office as an IPY-coordinating project that would advance the joint circumpolar human health research agendas of the Arctic Council working groups and the International Union for Circumpolar Health. The project aimed to link researchers with potential international collaborators and to serve as a focal point for human health research, education, outreach and communication activities during IPY 2007-2009. The goal of the AHHI is to increase the awareness and visibility of human health concerns for Arctic peoples, to foster human health research and to promote health strategies that will improve the health and well-being of all Arctic residents. Proposed activities included:

- expanding research networks that would enhance surveillance and monitoring of health issues of concern to Arctic peoples, and increase collaboration and co-ordination of human health research;
- fostering research that would examine the health impact of anthropogenic pollution, rapid modernization and economic development, climate variability, infectious and chronic diseases, intentional and unintentional injuries;
- promoting education, outreach and communication that would focus public and political attention on Arctic health issues using a variety of publications, printed and electronic reports from scientific conferences, symposia and workshops targeting researchers, students, communities and policymakers;
- promoting the translation of research into health policy and community action, including implementation of prevention strategies and health promotion; and
- promoting synergy and strategic direction of Arctic human health research and health promotion.

The AHHI monitors the progress of 28 individual IPY human health projects in the thematic areas of network expansion (5), infectious disease research (6), environmental health research (7), behavioural and mental health research (3), and outreach education and communication projects (5). While some projects have been completed, others will continue beyond the IPY. Individual project details can be viewed at www.arctic-health.org.

Accomplishments

A major accomplishment of the AHHI and the IPY has been the increased visibility of human health concerns of Arctic peoples. This interest and concern has been reflected by the emphasis on Arctic human health during the Arctic Council’s Norwegian chairmanship (2007–2008), the subsequent commitment of the Arctic Council to pursue human health as a priority during the Danish/Greenlandic chairmanship 2009-2010, which is anticipated to continue through the Swedish chairmanship that will follow in 2011–2012.

The IPY and the AHHI has increased circumpolar collaboration on human health research and other activities, and these projects will continue beyond 2009.

During the IPY we have seen the expansion of existing networks such as the International Circumpolar Surveillance System which monitors infectious diseases in the Arctic, and the creation of new health research networks such as the International Network for Circumpolar Health Researchers and the community-based Arctic Health Research Network.

In the area of outreach, education and communication, we have seen an increase in publications such as the International Journal of Circumpolar Health, special issues and supplements, workshops and workshop proceedings, and websites on Arctic human health. We anticipate that this trend and expansion of publications will continue as AHMI projects progress and are completed.
Challenges

Looking beyond the IPY, building on the successes already realized and maintaining the momentum and increased visibility already achieved will be an important challenge. It is critical to continue expanding circumpolar networks, international research collaborations and outreach education and communication activities. In addition, it will be important to continue exploring ways to promote the translation of research findings into health strategies that will improve the health and well-being of all Arctic residents and lead to measurable health improvements at the individual and community level. There is a continuing need to promote synergy and interaction between organizations working on Arctic human health. This can be done by ensuring that linkages are made between existing Arctic health co-operatives and networks to prevent duplication of effort and capitalize on collaborative activities.

There is a need to develop a more strategic plan and direction for human health research and health promotion activities in the Arctic. This means setting priorities and moving forwards on those priorities that are achievable and will make a difference to health in the Arctic. A step in this direction has been the formation of an Arctic Council SDWG Arctic Human Health Expert Group. The role of this group is to develop practical responses to improve health in the Arctic, and to ensure greater collaborations and linkages between other Arctic Council working groups, Indigenous peoples’ organizations, academic institutions and other relevant circumpolar health organizations. An early focus of this group is to address behavioural and mental health issues in the Arctic, and in particular, to address the high rate of suicides among Indigenous peoples of the North. There is a need to continue to engage the Arctic Council on human health issues, and to use this forum, where possible, to influence national policies to improve the health of all Arctic peoples.

Lessons learned and a vision for Arctic human health by IPY 2057–2059

A major goal of this IPY was to stimulate interest in polar science and to generate a new generation of polar scientists to ensure the success of the next IPY in 2057–2059. One of the difficulties faced by organizers of human health activities during IPY 2007–2009 was a lack of funding support for new research proposed for the IPY. This problem may be overcome by planning human health IPY activities 5 to 10 years before the beginning of the polar year, early enough to influence the political process and national health research funding cycles.

History has shown that much can be accomplished to improve human health in the span of 50 years. While a great deal remains to be done, perhaps by the next polar year we could anticipate the elimination of many of the health disparities we now see between the Indigenous and non-Indigenous populations in Arctic regions. This can be achieved by the development and implementation of new vaccines for respiratory infections such as respiratory syncytial virus, and perhaps tuberculosis. A vaccine for Helicobacter pylori infection may reduce gastric ulcers and gastric cancer. Improved vaccines for invasive bacterial diseases caused by Streptococcus pneumoniae, Neisseria meningitides and Haemophilus influenzae could further reduce morbidity and mortality caused by these infectious agents.

Improvements in housing conditions as well as improved water and sanitation systems in Arctic communities could greatly reduce person-to-person transmission of respiratory infectious diseases and could improve dental health as well. These advances will further reduce infant mortality and increase life expectancy. Greater access to health care in remote regions could greatly reduce morbidity and mortality from infectious diseases, reduce perinatal mortality, improve dental health and improve the quality of life for people with disabling medical conditions. Greater access to secure and healthy food sources, reduced access to or use of tobacco and alcohol and programs that increase physical activity could lead to better nutrition and health and a recuc-
tion in chronic diseases such as obesity, diabetes, cardiovascular diseases and cancer.

Much remains to be done in the area of behavioural and mental health, and in particular the prevention of suicide in Arctic communities. However, much can be done by engaging the community and developing strong circumpolar networks of co-operation, knowledge exchange and sharing of best practices, with the goal of lowering rates of death by suicide in Arctic countries.

Achieving this vision for Arctic human health in 2057 will mean ensuring that the existing burst of activity is converted into sustainable long-term programs and securing the human health legacy of the IPY. In the short term, this will mean continuing to track, monitor and report progress of IPY human health activities with a focus on translating results into actions that can improve the health of Arctic peoples. The longer-term goal will be to capitalize on linkages, collaborations, networks and infrastructures created during the IPY to ensure the political commitment and continuation of activities that improve health and well-being of all Arctic residents.

References


Alan J. Parkinson Ph.D
Deputy Director
Arctic Investigations Program
Centers for Disease Control & Prevention
4055 Tudor Center Drive, Anchorage
Alaska 99508, USA
ajp1@cdc.gov