

Human Health in Arctic Russia: A Concept of National Monitoring Program

By
*Northwest Public Health Research
Center, St. Petersburg*

*in collaboration with the AMAP
Human Health Expert Group;*



Arctic policy of Russia: New priorities

- 2/3 of Russia's territory is represented by permafrost lands.
- About 11 million residents are reported to live there (about 7% of total population).
- Some 70,000 people are entitled to be the arctic indigenous minorities.
- Over 20% of Russia's GNP is provided by the economy of arctic regions enormous concentration of unique natural resources.

Arctic policy of Russia: New priorities

- The Russian political establishment has recently began working out a trenchant policy to improve social and economic development of arctic regions. During the period of time from 2006 to 2008 there were enforced a number of presidential decrees and governmental enactments intended to stabilize demographic situation in the arctic minorities and to resolve long-term social and environmental problems that have been accumulated for about 80 years now.

Arctic policy of Russia

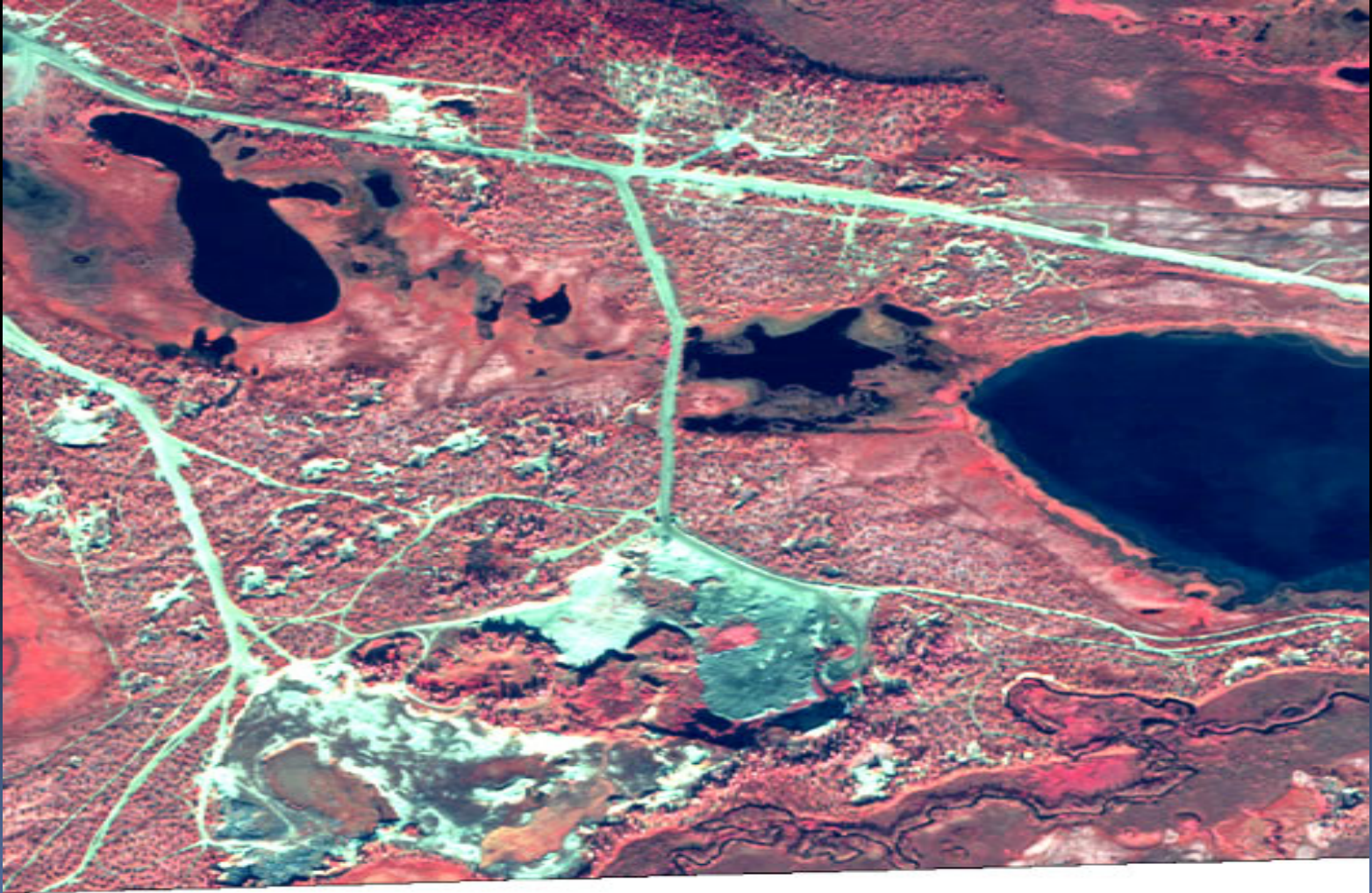
- For a response to the latest political development in Russia and great public demand supported by the Arctic Council there has been elaborated a national concept focused on practical solution of social, demographic and health problems that Russia has been facing.
- **This concept was formally accepted by the Ministry of Trade and Economy as well as regional and local authorities and Association of Indigenous People of the North.**
- **Arctic Health Monitoring Network is considered to be a key component of the Arctic Health Policy**

Challenges to Arctic Population Health

There still is a wide range of pressing social and health problems in the Arctic Russia such as:


- higher poverty and unemployment rates,
- - higher suicide rates,
- larger prevalence of alcoholism,
- lowest life expectancy,
- vast environmental contamination and lack of safe food

Pollution “hot spots” of Barents Region (a satellite picture)




Challenges

- Unlike many other arctic populations, the human exposure to POPs in Russian indigenous communities is originated mostly from local sources (80-95%) rather than from long-range ones (5-20%);
- Existence of a great number of unaccounted local sources of POPs;
 - Monitoring and decontamination services are generally inaccessible for indigenous communities;
 - National health statistics are solely available for general population. Health status reports of ethnical groups is not the case.



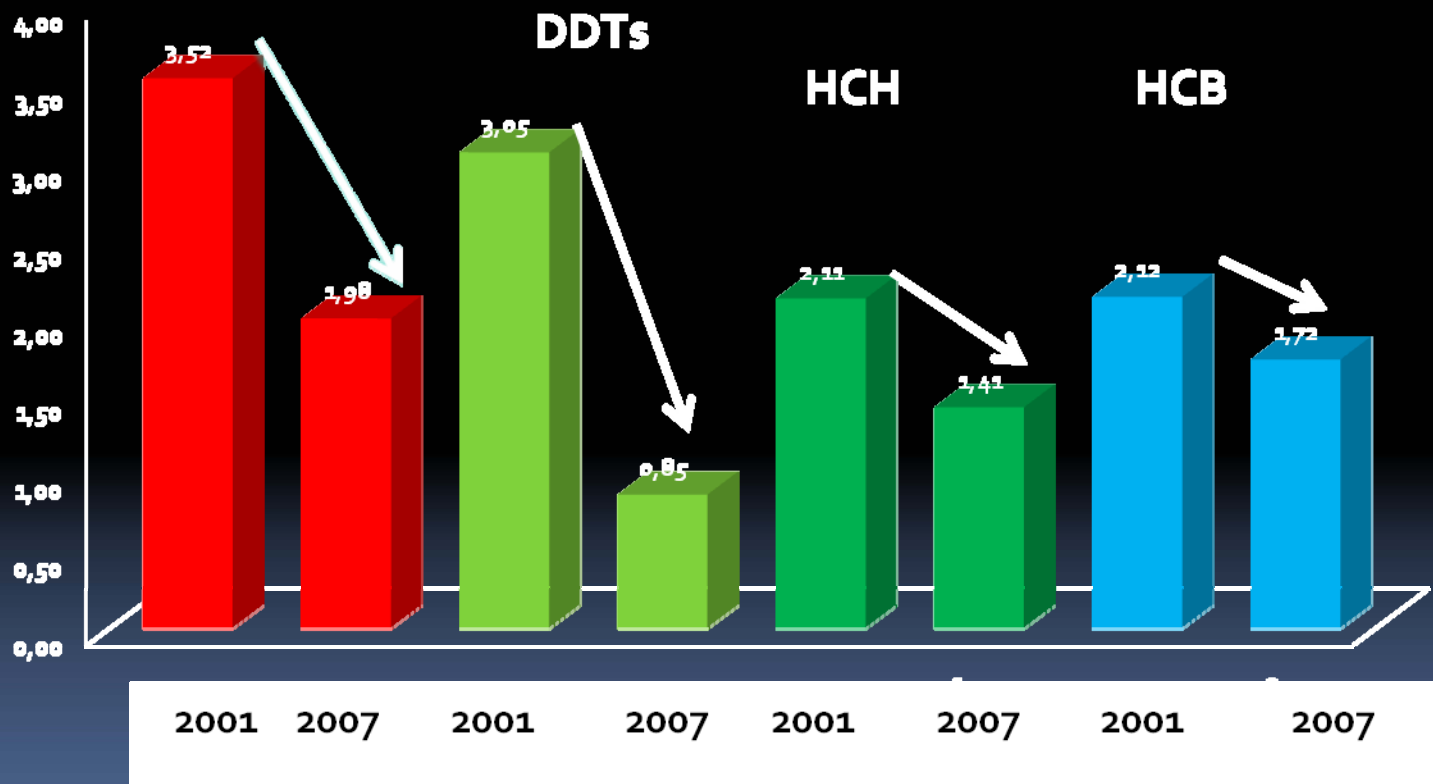
Major Adverse Health Effects Associated with Human Exposure to POPs

- **Higher infant mortality and lower life expectancy have been reported for the most of arctic indigenous populations exposed to environmental contaminants in the Arctic Russia.**
 - **Carcinogenic, genotoxic, immunotoxic and neurotoxic effects were demonstrated in a number of both animal and epidemiological studies.**
- 

Health Indicators to be Monitored in Indigenous Populations Heavily Exposed to POPs as Recommended by the AMAP HHEG

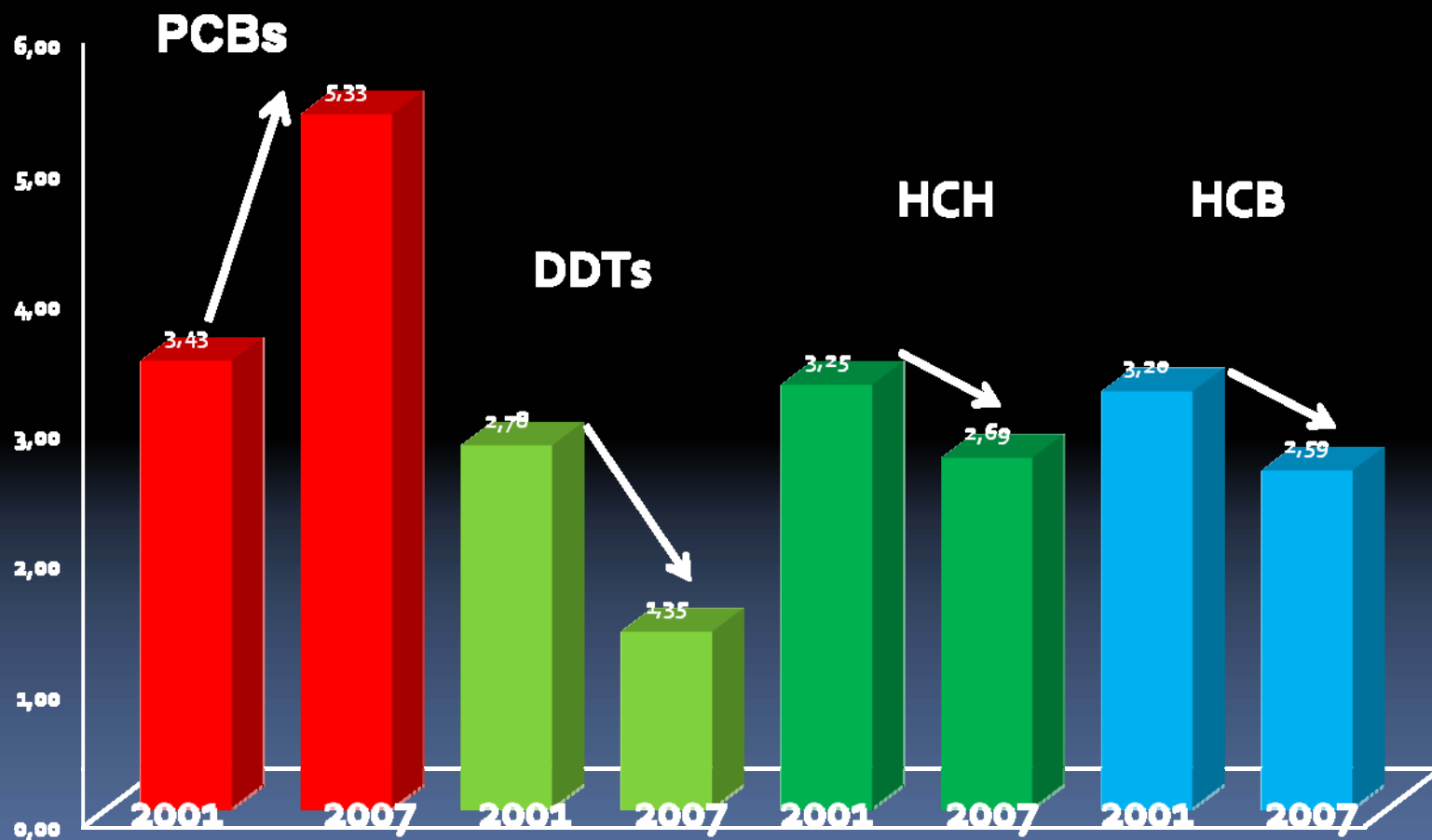
- Low Birth Weight;
- Premature Births;
- Stillbirths
- Major Structural Malformations;
- Altered Gender Ratio

Temporal Trends in Human Exposure to POPs (as measured for serum concentrations, $\mu\text{g/L}$). **A Cohort of Indigenous Adult Females of Arctic Russia**

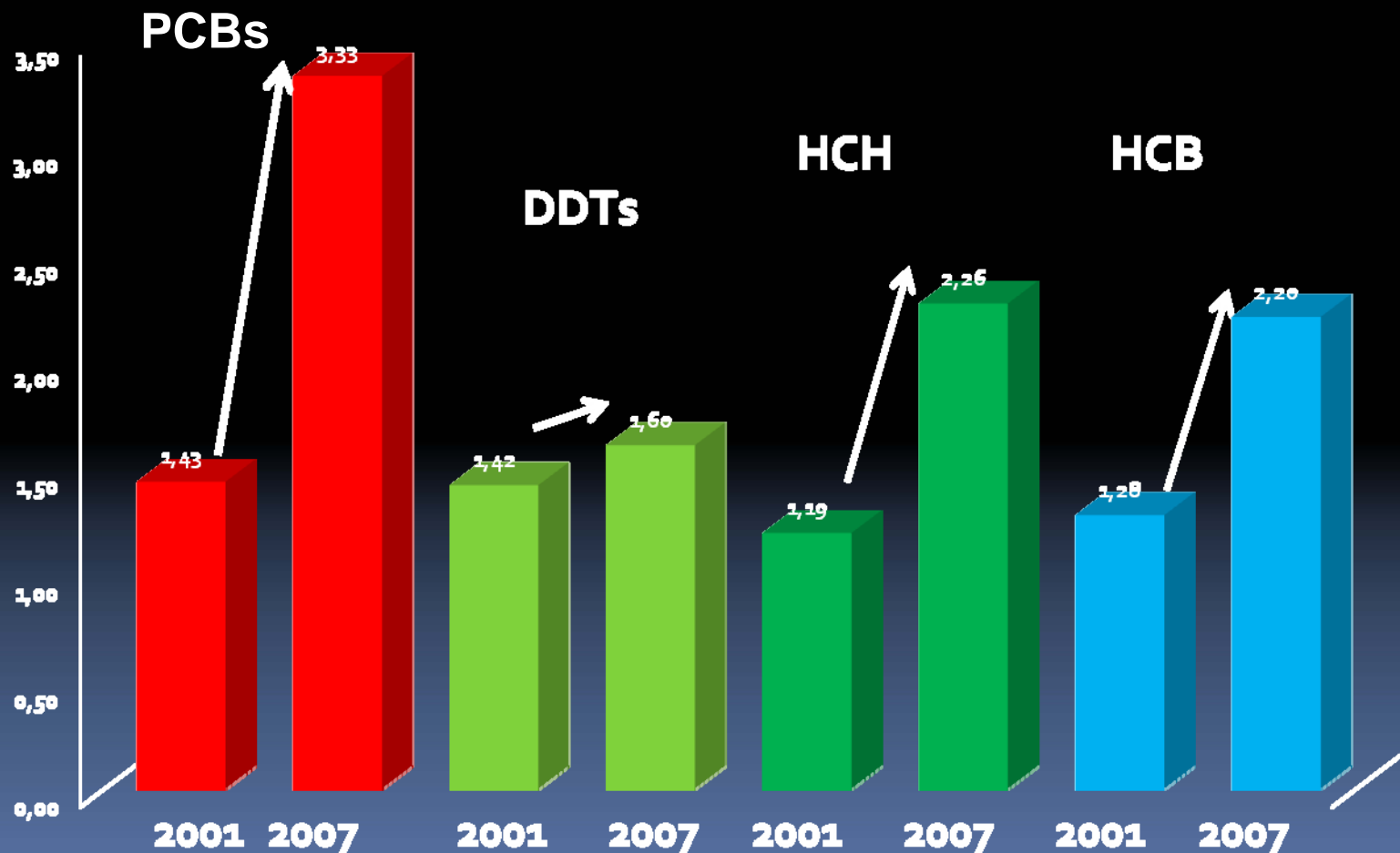


Temporal Trends in Human Exposure to POPs (as measured for serum concentrations, $\mu\text{g/L}$).

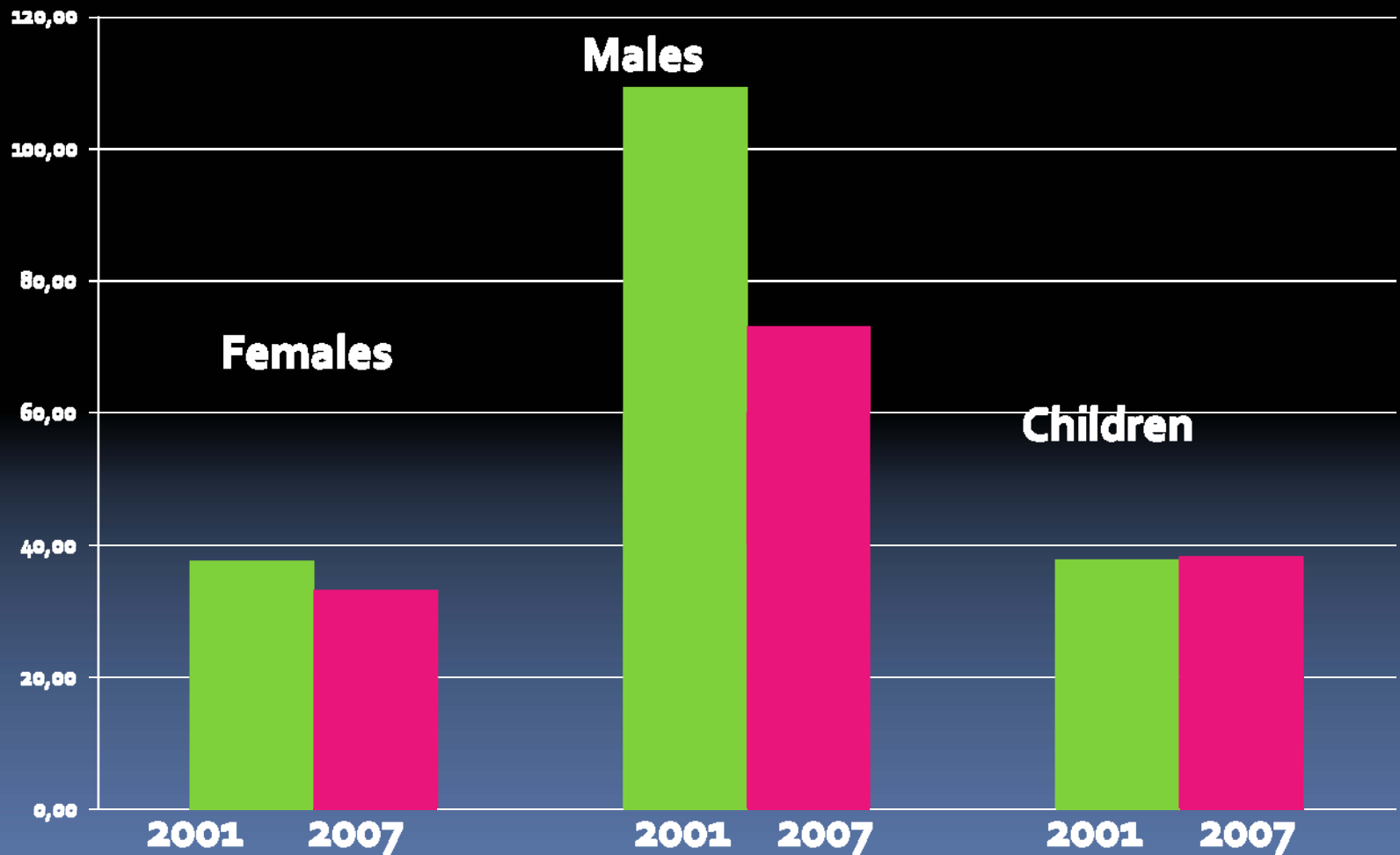
A Cohort of Indigenous Adult Males of Arctic Russia



Temporal Trends in Human Exposure to POPs (as measured for serum concentrations, $\mu\text{g/L}$). **A Cohort of Indigenous Children 6 yrs old of Arctic Russia**



Lead Blood Concentrations in The Followed Cohort of Indigenous People in Arctic Russia, $\mu\text{g/L}$





Concept of the 2009-2012 National Targeted Arctic Human Health Program.

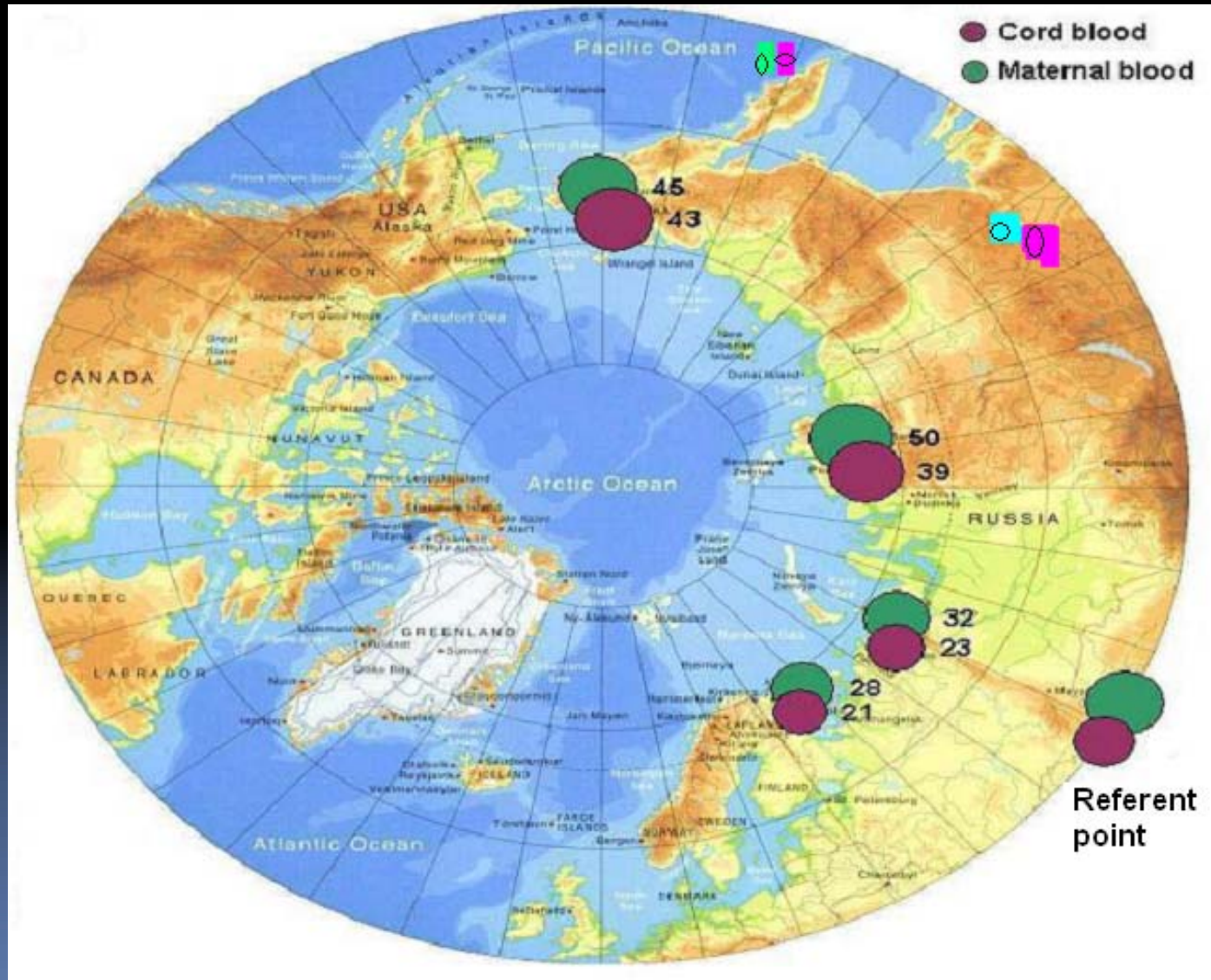
- Development of a responsive monitoring system for transferring health information within the Arctic Council countries, including environmental health information network for researchers and the public through both international and regional health information centers.
- A working model for monitoring and/or removal of local sources of contaminants in indigenous communities is a priority issue. This model can be adapted for implementation in other geographic regions and communities.

Concept of the 2009-2012 National Targeted Arctic Human Health Program.

Anticipated outcomes

- Establishment of National Health Monitoring Arctic Network with special emphasis to “hot spot population monitoring”
- Better adaptation of indigenous people to potential adverse impact of climate change;
- Enhanced awareness of local people and greater partnership of indigenous communities;
- Recommendations on early detection and prevention of health effects caused by contaminants;

Arctic Russia Health Monitoring Network



A Clean Land...Will this dream ever turn into reality?

