Sustainable Development, Climate Change and Human Health in the Arctic

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

International Experts meeting:
"Sustainable development in the Arctic in the face of Global Climate Change: scientific, social, cultural and educational challenges".
Monaco, March 3-6, 2009

Sustainable Development, Climate Change and Human Health in the Arctic

- Climate change will affect sustainable development through its impact on the sanitation and water infrastructure, food supply, prevalence of infectious diseases, safe transportation. Without addressing these basic community public health needed communities are not sustainable.

"Without health there is no sustainable development- without sustainable development there is no health"

Indigenous peoples of the Arctic Live in Small Remote Communities

- Dependent on the land for livelihood
- Little economic Infrastructure
- Hunt, fish and gather for food
- Marginal Public Health or acute care systems

Health Concerns of Indigenous Arctic populations

- Life expectancy lower
- Higher infant mortality
- Rising rates of cancer and heart disease
- High mortality for unintentional injury & suicide
- High prevalence of certain infectious diseases
- Health impacts of:
  - Environmental pollutants
  - Rapid economic change
  - Climate change

At highest risk for health impacts of climate change

Climate Change in the Arctic

- Rapid warming results in melting of permafrost
  - Erosion of riverbanks
  - Sinking of ground surface
  - Damage to buildings
  - Disruption to sanitation infrastructure

The villages of Shishmaref and Kivalina face relocation

Climate Change Human Health Impact

- Direct impacts
  - Heat stress-low impact
  - Unintentional injuries, mortality will increase
- Indirect impacts:
  - Threats to the traditional food supply
    - Reduced snow, ice cover, permafrost
      - obstructs travel, access to food supply
    - Retreating and thinning of sea ice
      - stress marine mammal populations,
      - hunting dangerous, unproductive
    - Changes in animal, bird migration patterns
      - Hunting unproductive
    - Increased exposure to environmental contaminants
    - Infectious diseases in subsistence species
    - Change to “western” diet
      - increase in “modern” diseases
  - Village relocation
    - -mental/behavioral health effects

ACIA Conclusions -Human Health

- Much needs to be done to establish a relationship between climate change and individual and community health.
- That climate will continue to influence public health in small and remote communities in the Arctic
- There remains an urgent need to implement community based monitoring strategies that would identify both emerging threats and opportunities (ie identifications of funding for infrastructure improvements).

Gaps in knowledge & action...

- There is a lack of comparability in health status data between countries
- There is a need for carefully planned strategy at the community and regional level to monitor and document environmental change
- There is a lack of organized effort to collect and utilize indigenous knowledge regarding climate and climate changes

Gaps in knowledge & action...

- There are few data on climate change and the impact on regional biota.
- There is no systematic monitoring in all regions for safety in snow and ice conditions for local regional travel for subsistence activities.
- Monitoring is critical in regions of the Arctic where physical infrastructure depends on permafrost or where a village site depends on sea ice protection from storm erosion.
- Data on contaminant transport into and out of the Arctic is critical for projecting impact and risk for arctic wildlife and residents. Changing climate makes monitoring essential

Things that can be done...

- Identifying communities and segments of the populations at greatest risk.
- Identification of community leaders or project managers.
- Evaluation of existing capacity resources, motivation and infrastructure needed to establish an community based monitoring system
- Identification and creation of regional partnerships.
- Identification selection and monitoring of basic indicators of climate change and community health.

Things that can be done...

- Expansion of community based monitoring to include other communities both regionally and internationally.
- Development of contingency plans, communication networks, education programs and early warning systems.

Recommendations

- Take action on the ACIA recommendations on human health and climate change in the Arctic
- Develop and support linkages within the Arctic Councils Sustaining Arctic Observing Networks process to establish an Arctic Observing Network for human health
- Identify communities at greatest risk and facilitate community based monitoring and adaptation strategies

- More Information:

Alan J Parkinson
CDC
Arctic Investigations Program
Anchorage Alaska
(907) 729 3407
ajp1@cdc.gov

The findings and conclusions of this report are those of the author and do not necessarily represent the official position of the Centers for Disease Control & Prevention