



UNIVERSITY OF THE ARCTIC

Arctic Telemedicine Priorities Recommendations and proposed actions

Background

The Arctic Council (www.arctic-council.org) is hosting an Arctic ICT Conference in Iceland, on October 20-21, 2003. The University of the Arctic was approached to develop a background paper on the current status of ICT in the Arctic. There are three focus areas for the conference: infrastructure, education, and telemedicine.

The Arctic Telemedicine Project report, completed for the Arctic Council in 2000, is still relevant today and should serve as a background document for the telemedicine discussions at the Icelandic ICT workshop. The Arctic Telemedicine Report can be obtained at www.ichs.uaa.alaska.edu/ichs/previous-projects/telemed.htm online as a pdf document.

As a follow-up, University of the Arctic organised a small workshop in Tromsø, Norway, and authors of the Telemedicine report from 2000 and selected other experts were invited to participate. The purpose of this meeting was to assess the current relevance of the recommendations in the Arctic Telemedicine report, and to identify immediate and concrete actions for future Arctic cooperation in the field of telemedicine. The outcome of this meeting is summarized in this report, and will provide input for the ICT conference in Iceland in October.

Below are the seven recommendations from the 2000 Arctic Telemedicine report, as well as proposed new recommendations and tangible action items.

Recommendations

1. Enhanced Information and Telecommunication Technology

(The purpose of this recommendation is identical to the Higher Education recommendation No.1)

Telecommunications in the Arctic should be in place to support efforts for telemedicine. If systems are in place, affordable, and reliable they will be utilized for health care delivery.

Reports for the past thirty years have anticipated enhanced telecommunications in the arctic as a significant step toward improving the delivery of healthcare and the training and retention of staff. Supporting expanded telecommunications for northern communities improves healthcare delivery and expands the abilities of the tele-community.

Review of the recommendation:

The need for accessible, affordable, and reliable telecommunications is highlighted, and although improvements have been made, this need still exists today. In particular, access to ICT (information communications technology) infrastructure in small communities is still low. The recommendation is still valid.

Possible follow up:

Responsibility for progress in infrastructure lies outside the telemedicine community. The participants made the following observations and suggestions based on experiences from the telemedicine area:

- The cost of access to telecommunications in urban and rural areas must be balanced. There are existing examples of national programs, or regulations, that could inspire practical solutions for most of the Arctic.
- Telemedicine projects should continue to be used as front-line projects to motivate and showcase regional ICT infrastructure development. Collaborating in this way would greatly benefit the progress of telemedicine in the north, and provide resources for future advancement.
- A mechanism to share telecommunications solutions in Arctic areas should be implemented.

2. Local Training

Health professionals working in the Arctic need to be trained to fully utilize the telemedicine tools that are or will be available to them in the community they serve.

As technology is implemented in remote health clinics, staff must be able to fully utilize these tools. Personnel in the field must be trained to make use of the latest equipment. As new healthcare professionals are trained they should have the experience to use technology that will be waiting for them at their remote work sites.

Telemedicine provides information in two directions. Remote healthcare providers can maintain skills through consultations in regional centers, and cultural and local contact can be maintained with patients who have had to leave their community for health care. Regional providers must therefore also be trained to fully utilize the potentials of telemedicine.

Review of the recommendation:

Training for health professionals working in remote regions is essential to the success of telemedicine projects. Health professionals must be able to use the tools and technology available to them, and be able to work independently in remote communities. Training tailored to the unique health and telecommunications issues in Arctic regions is an important aspect of the development of telemedicine, and can be expanded on both a regional and cross-regional level. This recommendation is still very relevant.

Possible follow up:

- Develop standardized training programs and/or credit systems for the certification of telehealth workers would aid regional and cross-regional training opportunities.
- Establish funding networks to encourage sharing of training techniques, manuals, best practices, and program development on a cross-regional level. This puts local programs into a global context and encourages partnership on joint or over-lapping projects.
- Develop a web site of available telemedicine training programs relevant to the Arctic that are offered by distance education would be a valuable resource.
- Share knowledge in specialized health fields in remote areas to expand available resources. Initially, areas where this is most needed should be identified.
- Deliver Circumpolar training programs on regional levels (e.g. Nordic countries, North America, Barents region and East Russia) in order to provide health professionals with an opportunity to become familiar with other telemedicine projects in their region, and encourage further collaborative efforts.

3. Prioritise the most remote and under-served users

New endeavors in the field of telemedicine in the Arctic should place a priority on the ‘front end’ users in the most remote and under-served communities.

Although larger communities have received advanced health services, the most remote clinics are often the last to participate in upgraded technology. Every effort should be made to foster improvements at the most remote sites. In addition to the new technology, training efforts should be expanded to bring staff up to the level of proficiency required for the new interface. It is also important to assure that these remote sites are maintained and supported so the telemedicine system is complete and operational at all levels.

Review of the recommendation:

The most remote and under-served communities should be the priority for receiving new technology. The outcomes of this collaboration would not only benefit Arctic telemedicine projects, but also have implications in other regions of the world where telemedicine programs struggle with community access and mobility. Providing advanced health services to under-served areas, in spite of being complicated and potentially expensive to implement, is still a very important recommendation.

Possible follow up:

- Mobile telemedicine teams are one possible solution to this priority. A circumpolar program should be initiated to identify and demonstrate practical solutions to the many challenges faced by telemedicine teams, including access, mobility and transportation of fragile instruments.
- A catalogue of mobility solutions for specific medical fields should be developed for remote communities.
- Investigate the possibility of creating ‘telemedicine district centres’ where several small communities are located close together. The centres would ensure regular use of the equipment and be able to provide sufficient training for the staff located there.
- Methods and practices to implement solutions that are tailored to the local needs of remote users should be shared and improved

4. Public Awareness

Efforts to inform the Arctic public on telemedicine programs and services should be initiated to gain greater acceptance for the values of quality distance delivered health care. In addition, this effort should raise the awareness of the health care system administrators and managers of the various telemedicine tools available to meet their identified service needs. These efforts should also incorporate local and cultural practices.

With new technology comes the need to make informed decisions on what tools will best address community health needs. Local politicians and healthcare administrators must have access to current assessments of workloads and practices. In addition, community members must have a level of comfort in the distant delivery of healthcare through the newly developing telemedicine system. These processes bring community education and the experience of receiving regular and reliable healthcare close to home.

As Arctic residents learn about the possibilities for expanded access to healthcare, they may desire to select services from practitioners from a variety of sources. Existing structures of health delivery may not be the most appropriate or desired source of care. Indigenous people may consult health professionals from their own cultural background, albeit residing in other nations or distant states. Innovative programs that utilize customary and traditional practices can be shared with ease.

Review of the recommendation:

Communicating developments in telemedicine is still a very strong priority, as noted in the 2000 report. Health professionals, decision-makers, doctors and patients all need to be aware and educated in the issues of telemedicine in the Arctic.

Possible follow up:

- Local level: Patients are encouraged to take an active role in their health care, and sharing information about telemedicine on a local level will help with the advancement of the use of the technology in remote communities, as well as encourage interaction and communication between patients and health-care providers.
- Cross-regional: Awareness of telemedicine projects that are being developed in other Arctic regions will aid under-funded areas in their telemedicine initiatives. Collaboration on this level also helps to identify possible areas for joint research and training.
- Outside of the health field: Policy makers, ICT providers and other experts would benefit from learning more about Arctic telemedicine. It may form opportunities for competition between companies to develop ICT infrastructure in remote regions, or potentially influence local, regional, and national administrators in making informed decisions and creating action plans for Arctic health and ICT in government.
- Promoting telemedicine in any of these three areas would be an ideal area for circumpolar cooperation.

5. Interoperability

Telemedicine systems used in the Arctic should be spatially and temporally interoperable, and based on guidelines established in various existing international forums (such as the International Medical Informatics Association).

Since other international efforts are establishing interoperability guidelines, there is no need for the Arctic nations to establish their own. Encouragement should be given to the collaborative efforts that target concerns on how to share health information over both space and time. In addition, there should be a commitment to utilize these guidelines wherever possible within the Arctic.

Review of the recommendation:

The standardization of terminology, technology, and software on a local level remains an issue in telemedicine.

Possible follow up:

- Arctic telemedicine activities should follow international work on the standardization of the terminology used between telemedicine centres, programs and projects. It may reveal a need for a review of Arctic-specific terminology and concepts.

6. Program Communication

Arctic programs should make use of the virtual meeting place provided through existing technologies, thus reducing the need for physical travel. Virtual conferencing can be utilized to identify needs, develop programmatic strategies, plan discussions, and organize structures.

As technology improves and telecommunications systems cover a broader area of the Arctic, the opportunity for reducing travel increases. The electronic production of Arctic reports, as well as the ability to hold interactive discussions via web based virtual meetings, increases the efficiency and effectiveness of northern professional staff. The use of the virtual meeting place is another aspect of building the overall tele-community. Arctic communities are well-positioned to become leaders in the use of virtual meeting technology due to similar regional concerns, but lack the ability to have convenient physical gatherings.

The Arctic Council can promote the use of virtual meeting places through their programmatic activities at all levels of interaction. All twelve of the Arctic key contacts for telemedicine did not meet face to face during the process to prepare this report. Most did attend one workshop that was hosted by the US Department of State. The bulk of the work – of collecting, discussing, synthesizing, and compiling the ideas that form this document—have been shared around the arctic via some electronic format. This model is cost effective and can be replicated.

Review of the recommendation:

Programs and projects involving activities in the Arctic, regardless of location, are often confronted by similar challenges regarding funding, regional and/or national support, and other elements of project development. Arctic programs must communicate their efforts to each other in order to maximize the quality of their implementation and delivery. Program communication not only refers to consultation between telemedicine projects, but also between other health and ICT-related projects. The recommendation is still valid.

Possible follow up:

- An existing international/northern body with a parallel telecommunications and health focus would be ideal to oversee the coordination of communication between national-level telemedicine centres and other Arctic organizations. Ideally, such a body would provide an opportunity for the exchange of ideas, information, proposals and data. There are few existing organisations that could possibly take on this responsibility.
- The body proposed above, in cooperation with Arctic Council working groups, should ensure collaboration outside of the telemedicine and health field.

7. EPPR Working Group

Arctic Telemedicine should be closely linked to the efforts of the Emergency, Prevention, Preparedness and Response (EPPR) Working Group of the Arctic Council.

The sustainability of programs is tied to the quality of the foundations upon which they are built. Specifically, telemedicine is linked to the efforts of other existing entities and structures that are at work in the Arctic. These include the existing telecommunications systems, emergency frequency agreements, and working guidelines established among the EPPR participants. Making use of these networks of expertise and existing national programs will foster the continued dialogue required to sustain the sharing of information on the advancement of healthcare delivery in remote Arctic communities. These linkages need to be investigated to see how well they would address the requirements of sustaining Arctic Telemedicine.

Review of the recommendation:

It was recommended in the 2000 report to the Arctic Council that Arctic telemedicine become a part of the Emergency, Prevention, Preparedness, and Response Arctic Council working group. Arctic telemedicine has since been identified as relevant to the Sustainable Development Working Group (SDWG) portfolio. The meeting concluded that the Arctic Council must decide where Arctic Telemedicine belongs in its structure. National-level telemedicine organizations can and will assist the Arctic Council in their endeavours, and will work together on collaborative workshops, conferences, and studies.

Possible follow up:

- Telecommunications and telemedicine groups in the Arctic can take a lead role in advancing the recommendations put forward in this report, and the responsibility for follow-up and communication can be joint or shared between regions.

- The Norwegian Centre for Telemedicine's annual Tromsø Telemedicine Conference is an ideal venue to host a small Arctic-focused coordination meeting to discuss some of these recommendations.

8. Evaluation (new)

New recommendation:

Arctic Telemedicine projects have been growing with increasing speed and enthusiasm in the circumpolar world. Telemedicine centres need to work together to evaluate the many aspects of telehealth in the Arctic.

Possible follow up:

- A study should be undertaken to evaluate the efficacy and impacts of telemedicine in the Arctic, and all circumpolar telemedicine centres should be encouraged to participate. Evaluation on this level can be instrumental in aiding future development in Arctic telemedicine.
- A compendium of literature that includes reports, data and statistics from the telemedicine projects that have taken place in northern regions would greatly benefit telemedicine centres, and it is hoped that reports could be translated to aid the efforts of sharing information. From project development to equipment to training methods, this collection of reports would be an asset to the further developments of telehealth in the Arctic.

Appendix A – Participants in Arctic Telemedicine Discussion

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Appendix B – Additional Current Contact Information and Resources

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