WHO Collaborating Centre for Telemedicine

Annual report 2004-2005

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Preface

This report is prepared in September 2005 and summarizes the work performed by the Norwegian Centre for Telemedicine (NST) as a World Health Organization Collaborating Centre for Telemedicine in the period July 2004 to July 2005. The report is based on activities described in the Terms of Reference.¹

In general, most activities are funded by internal means. A project-group of five people is allocated to WHO-Collaborating Centre issues in addition to a full-time co-ordinator.² In addition, other human resources of the Norwegian Centre for Telemedicine are engaged in the WHO-Collaborating Centre activities based on the required field of expertise.

¹ http://www.telemed.no/index.php?cat=7753
² http://www.telemed.no/index.php?cat=7403a
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1. Activities 2004-2005 – an overview

The activities last year have been focused on some specific areas. One target area has been eHealth support for combating HIV/AIDS. In June 2005, the NST organized an international workshop on eHealth support for HIV/AIDS in connection with the 46664 Arctic Concert in Tromsø. Prior to the workshop, desktop studies were made to investigate the state of the art in this area. It revealed that few studies are found on eHealth in the field of HIV/AIDS in general and developing countries in particular. Pilot projects and feasibility studies for supporting HIV/AIDS are also few or not existing. Therefore, it is a need for evidence based knowledge in the field of eHealth for HIV/AIDS. The workshop provided a joint platform for key players in the field; for exchanging ideas and areas of collaboration. A full report of the workshop is found at www.telemed.no/who

The NST is the co-ordinator of an EU-funded project, eHealth Trends, an international survey on European health consumer’s use of, their attitudes to and their desires with regards to information and communication technology for health purposes, eHealth. Seven countries participate in the project: Denmark, Germany, Greece, Latvia, Norway, Poland and Portugal. The project started 1 June 2005 with the funding of the European Commission, DG Sanco. Read more about the project at www.telemed.no/eHealthTrends

On May 23 and 24, the European Commission held The European eHealth Conference 2005 in Tromsø, eHealth 2005. This conference was a follow-up from the conferences in Brussels, Belgium (2003) and Cork, Ireland (2004). Ministers of Health from all the member states participated in the conference. A total of 450 participants from 35 countries attended the conference, among them 23 European Ministers of Health and ICT. The statement from the conference was: “In a Europe in which our citizens are increasingly mobile - whether within the borders of their own Member State or among different countries - we need to raise awareness of the pressing need for a more integrated and interoperable European health information space. The Ministers commit to taking up this challenge in a staged and structured approach over the next five-year period.” The Norwegian Centre for Telemedicine organized the Conference in collaboration with the Norwegian Directorate of Health and Social Affairs and the Ministry of Health and Care Services.

Dissemination is a priority area since the designation of NST as a WHO Collaborating centre. A dedicated website for WHO-CC activities has been developed at www.telemed.no/who. Further information on the activities mentioned below are found here.

The NST/WHO CC for Telemedicine receives visitors from various countries; delegations and visiting professors and students. Last year, the Minister of Health from China and South Korea visited the NST, in addition to delegations from Greenland, Sri Lanka, The Maldives, South Africa, UK and USA, to mention a few.

The WHO logo has been integrated in the NST profile and information material of the NST.

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3 http://www.46664arctic.no/


5 www.ehealth2005.no
For the **Global Forum for Health Research in Mexico 2004** a poster presentation was given focusing on the Global Telemedicine Partnership\(^6\).

The major activities conducted between, July 2004 to July 2005, are described in more detail in the following.

### 1.1 eHealth Management for people living with HIV/AIDS

The HIV/AIDS pandemic is one of the largest global health problems. The World Health Organization (WHO) estimates that around 40 million people are living with HIV worldwide, including 2.5 million children under the age of 15. As a WHO collaborating centre for telemedicine, the Norwegian Centre for Telemedicine (NST) has been requested to explore the potential for telemedicine\(^7\) in health management for people living with HIV/AIDS in the developing world. In connection with the 46664 Arctic Concert in Tromsø\(^8\), an international workshop on eHealth support for HIV/AIDS was organized on 11-12 June 2005, at the premises of NST, Tromsø Science Park.

The aim of the workshop was to explore how eHealth can improve the quality of life for people living with HIV/AIDS. The concept of the workshop was to invite a limited number of participants from research, health-care provision and eHealth, with a shared background and interest in the field of HIV/AIDS. The programme was developed in collaboration with the workshop participants coming from South-Africa, Russia, Botswana, Belgium, UK, Karelia and Norway, in addition to international organizations as the World Health Organization (WHO) and the Constellation for Aids Competence.\(^9\) Prior to the workshop, the NST organized telephone- and video-conferencing meetings with the participants to develop the programme and ensure a multi-professional and dedicated group of participants. The workshop was organized by the Norwegian Centre for Telemedicine/World Health Organization Collaborating Centre for Telemedicine (NST) in collaboration with the University of Tromsø.

In the course of the workshop, various concepts for sustainable telemedicine service and distance training for HIV/AIDS health management was discussed. A joint list of actions was proposed. The workshop provided a platform for taking some of these ideas further. It is our expectations that some of the proposed joint actions will prove to be actual collaborative activities. For the full report on recommendations and conclusions, please see [www.telemeth.no/who](http://www.telemeth.no/who)

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\(^7\) Telemedicine or eHealth is understood as the use of telecommunications to provide medical and health care at a distance. Telemedicine is usually assumed to mean curative practices. Telemedicine is playing an increasing role in health development: in education and training, in quality improvement and in improvement of efficiency of health care services.

\(^8\) [http://www.46664arctic.no/](http://www.46664arctic.no/)

\(^9\) See Annex for participant’s list and programme.
1.2 eHealth trends: WHO-European survey on eHealth Consumer Trends

The NST is the co-ordinator of *eHealth Trends*, an international survey on European health consumer’s use of, their attitudes to and their desires with regards to information and communication technology for health purposes, eHealth. Seven countries participate in the project: Denmark, Germany, Greece, Latvia, Norway, Poland and Portugal. The project started 1 June 2005 with the funding of the European Commission, DG Sanco.10

This project will for the first time in Europe investigate eHealth consumers using representative samples from each of the participating countries. We will combine methods from previous US and European initiatives, to further investigate the nature of Internet use for health purposes. This is in line with the methodology used in the three previous Norwegian studies.

The first workshop on European ehealth consumer trends survey, "eHealth trends", since the approval of the project, was organized at the Norwegian Centre for Telemedicine (NST) in Tromsø 15-16 June 2005. The survey will be conducted in October 2005 in all the seven countries. The scientific papers will be published in the course of 2006.

The European survey is a further development and expansion of a Norwegian annual survey on e-Health consumer trends, conducted by the NST over the past three years. The purpose of the Norwegian survey was to monitor health consumers’ use of, their attitudes to and their needs with regards to information and communication technology for health purposes.11

This project was initially a joint NST-WHO initiative. In May 2004, WHO Regional office for Europe, WHO European Office for Integrated Health Care Services, hosted a workshop on the same topic in Barcelona. WHO is present in the Advisory Board of the project by Mr. Somnath Chatterji, WHO Geneva.

1.3. Scientific review study on evaluation methods in telemedicine / eHealth

‘What is the science in Telemedicine?’ is a research study undertaken by the NST in collaboration with Michigan State University, USA. A total of 19 scientific databases have been searched for articles from January 1990 to May 2005. The aim is to publish the study in BMJ in the beginning of 2006. The study will serve as a background to offer recommendations for future telemedicine research strategies and to further knowledge in the field. The data will be a basis for further research in the field. The total cost of the study is NOK 992,000. The project is funded by NST with support from the TFU-programme of Helse Nord RF (North Norwegian Health Authorities)

1.4. eHealth for Bam, Iran, meeting 11-12 September 2004

During the last two decades, Iran has experienced several natural disasters: four major earthquakes, a number of devastating floods and the worst draught in the last thirty years. The Bam earthquake of 26 December 2003, is the third earthquake in Kerman province in the past 25 years. The Iranian government has developed detailed plans for the reconstruction of the health services in Bam and would investigate the prospects of integrating eHealth into the further reconstruction of services. The meeting at the Ministry of Health on 11-12 September was organized to address this issue. Dr Steinar Pedersen, head of NST, was invited as an expert to the meeting. On 12 September the workshop developed an action plan for the integration of eHealth into the health system of Bam. The meeting concluded with recommendations to the Iranian government and the WHO.12

1.5. Global Telemedicine Partnership

Over the last year, efforts have been made to establish the Global Telemedicine Partnership which is now scheduled to the end of the year. The aim of the partnership is to reduce the digital divide between the haves and have-nots within and between nations. Further, the aim is to encourage telemedicine projects and services in developing countries and under-served regions. The programme will support studies, projects and activities. Establishing the partnership is made by NST internal funding.13

The Global Telemedicine Partnership was launched on 10 June 2005 during the first board meeting in Tromsø. The following members participated in the meeting: Turid Josefsen, former president of Autosuture, US, Thorvald Stoltenberg, president, Norwegian Red Cross, former Norwegian minister of foreign affairs, Bjørn Pehrson, professor, Royal Institute of Technology, Stockholm, Sweden and Bjørn Kaldhol, chairperson of the University Hospital of North Norway who met in the absence of Knut Schrøder, director, University Hospital of North Norway. Apologies for absence were received from Ole D. Mjøs, Chairperson of the Norwegian Nobel Committee. Representatives from the Norwegian Centre for Telemedicine (NST) were Steinar Pedersen and Tove Sørensen.

The board strongly supported the work of the GTP and encouraged NST to continue the efforts with finding contributors to the partnership. They advised the NST to focus more on specific projects than taking a general programme approach. The initiative on eHealth for HIV/Aids management as well as net-based education for orthopaedic engineers in Cambodia, are two examples of what the partnership should support. The NST will seek collaboration with other international organizations on these specific projects. The GTP will seek dialogue with potential contributors and their interest in telemedicine in specific countries or regions.

The Norwegian Ministry of Health and the Directorate for Health and Social Affairs are supporting the initiative, together with the World Health Organization and the European Space Agency (ESA). The ESA is providing free satellite capacity for the partnership according to an agreement with the NST lasting through 2006.

12 For further information, contact Dr Steffen Groth, WHO Geneva
13 http://www.telemed.no/index.php?cat=8157a
1.6. Tsunami Task Force: Mission to Sri Lanka 7-18 February 2005

Following the Tsunami disaster of 26 December 2004, the World Health Organization's department of Essential Health Technologies (WHO/EHT) has put forward a proposal for introducing a consultancy-based service system for eHealth for emergencies. NST was asked to perform a needs assessment in selected hospitals in the country. Mr Jan-Hugo Olsen from NST undertook the assessment in collaboration with the Sri Lanka WHO office. The report deals with the findings of the assessment, which was carried out 7-18 February 2005. 14

2. Recommendations

Some of the activities described will be continued according to the Work Plan 2004-2006. We see no need to revise the Terms of Reference, except for combining no 4 and 6, which is treated as one item in the work plan. In general, the Norwegian Centre for Telemedicine is eager to undertake more activities as a WHO Collaborating Centre, in particular supporting practical telemedicine and eHealth services in the Member states.

The WHO Collaborating Centre for Telemedicine acknowledges the implementation of a WHO initiated telemedicine / eHealth project as a priority area for 2004-2006. We are satisfied with the collaboration with WHO-Euro and other WHO-units and are looking forward to strengthen the collaboration in the future, especially in joint projects and programmes.

3. Related activities

Being a WHO Collaborating Centre, the NST receives several requests from developing countries and economically under-served regions, which we are trying to meet. Among these requests are workshops and feasibility studies as well as requests for internships and visiting scholarship to NST. These activities are mostly funded by internal NST means. Below is a summary of the activities:

3.1. Net-based education for orthopaedic engineers in Cambodia

With support from the Atlas Alliance, the NST is conducting a feasibility study on net-based education for orthopaedic engineers in Cambodia. The intention is to develop educational modules for orthopaedic engineers in the Third World. Cambodia is chosen as a case-country as it has a large number of people who have lost arms and legs in accidents due to landmines as well as road accidents. The educational modules will be developed according to the standards and requirements of the International Society of Prosthetics and Orthotics (ISPO). This is a joint collaboration between the NST, Norsk Dysmeliforening and Sophies Minde.

14 http://www.telemed.no/cparticle270292-7398a.html for the full report
3.2. Mission to Palestine 11-18 September 2004

With the stringent restrictions on travel in Palestine, many people with disabilities do not have access to services they need. Palestinian rehabilitation centres will now tackle the obstacles with help from the Norwegian Centre for Telemedicine in Tromsø. A new study shows that Norwegian expertise in telemedicine can be an effective aid to counter the consequences of the political situation in Palestine.

The four rehabilitation centres in Palestine are supported by the Norwegian Association of the Disabled (NAD), which for more than a decade has operated a programme to develop the rehabilitation sector in the country. At the request of the centres, the Norwegian Centre for Telemedicine (NST), Sunnaas Rehabilitation Hospital Trust and NHF visited Palestine to investigate the possibilities for establishing a telemedicine network between Ramallah, Bethlehem, Gaza and Jerusalem, and between the centres and the communities abroad. The preliminary study "Breaking the Wall in Palestine with Telemedicine" shows that it is technically possible to develop a network for overcoming the obstacles that the rehabilitation centres face. The study was funded by Innovation Norway, a state-owned company which promotes industrial development, and the Atlas Alliance, an alliance of Norwegian organizations for disabled people which contributes aid to people with disabilities in poverty-stricken areas of the world. Download the report from the feasibility study at www.telemed.no 15

3.3. Medical Peace Work

The Medical Peace Work project will develop a new European field of expertise that merges health- and peace work, in order to strengthen European physicians’ competence in violence prevention and sustainable peace building. Such strengthened competence will benefit European citizens by improving their health and social wellbeing, as well as the life situation of people in conflict areas where European physicians go to work.

Physicians often find themselves in a special position when they work in areas with conflict, but their involvement in peace building and reconciliation requires particular competence, which has often lacked from the physicians’ educational background. European as well as international health institutions and organisations have voiced a need for such competence, and regard skills such as mediation, conflict resolution, human rights and ethics as increasingly important within modern health care.

A resource network linking key teaching-institutions in Europe as well as relevant European NGOs and health institutions will be established. The lead partner is the Centre for International Health (SIH) in Norway16. The project has a total of 11 partners in five countries, Norway, England, Slovenia, The Netherlands and Germany, with a multi-professional background in medical peace work, medical education and ICT development. The project is running from 2005-2007 and is funded over the Leonardo da Vinci programme, the European Commission.

15 http://www.telemed.no/cparticle198192-4259.html
16 http://uit.no/sih/
3.4. Master's degree programme in telemedicine and e-health

In August 2005, the University of Tromsø commenced a two-year English-language master's programme in telemedicine and e-health.

The programme is admitting 20 students in the first year, and is intended for people who have a Bachelor's degree, Norwegian intermediate subject or equivalent in technology or health as their basic education.

The Master's programme has been developed in close cooperation between the University of Tromsø and the Norwegian Centre for Telemedicine (NST). The university is responsible for implementation of the programme, while the NST is contributing to the development of the curriculum and providing teaching resources.

The Master's programme in Tromsø is an international course admitting students from the whole world. Later, it will be possible to take parts of the programme at other locations in the world. International collaboration with universities and e-health centres in other countries will also be developed with close links to this master's programme.


The Ministry of Health and Social Affairs of the Republic of Croatia has embarked on a telemedicine project to improve access to specialized health services for the population residing permanently or temporarily on Croatian islands. The project consists of pilot implementation in 21 remote locations and four referral centres. Implementation phase is 2006. The NST's involvement in the project is firstly to contribute with sufficient counselling regarding legal and security-related issues, challenges related to the development of a network with adequate bandwidth, security and integration, challenges associated with the choice of telemedicine solutions and organizational challenges associated with implementation and operation of the services.

Secondly, the NST will perform comprehensive evaluation of the pilot phase of the Croatian Island Telemedicine System Project. The evaluation as a whole will involve technical performance of the system and its components, economic and cost evaluation, organizational and implementation aspects, legal and ethical aspects, public health impact, user and patient satisfaction, health services utilization and policy impact. The evaluation will be performed jointly by Norwegian and Croatian experts and consultants. Norwegian expertise will be engaged in the areas where Croatia is lacking specific expertise.

The project has major implications and importance for the Ministry of Health and Social Welfare of the Republic of Croatia which plans to expand telemedicine applications beyond the pilot phase. The project is funded by the World Bank, The Ministry of Health and Social Welfare of the Republic of Croatia and the Norwegian Royal Ministry of Foreign Affairs.
3.6. Collaboration with Russia

Conference on International Co-operation in the Medical-Social field – exchanging experience, Arkhangelsk, 4–8 April 2005

The conference provided a meeting-place for exchanging experiences from several years of the joint North-Russian- North-Norway collaboration. The aim of the conference was to evaluate the projects and to create synergy in order to further develop and strengthen the collaboration between Tromsø and Arkhangelsk. Today there are more than 50 collaboration projects, most of them using telemedicine applications and distance learning as part of the project. The NST takes part in some of the projects on quality development of services and competence in Northwest Russia, e.g. in Pathology, Neuropathology and rehabilitation. The conference was organized by The Centre for International Health and funded by the Barents health Programme, the Ministry of Health and Social Affairs in Norway.17

The Arctic Network of Family Medicine

The Arctic Network of Family Medicine started back in November 2003. The network shall develop and promote Family Medicine and Public Health, as well as social development, in the arctic and sub-arctic areas. The aim is to support the implementation of evidence-based Family Medicine by research and development projects and to support undergraduate and post-graduate training. Participants in the network are: Finland, Lithuania, Norway, Russia and Sweden. The network’s method of work is by telecommunication (telemedicine), conferences, internet, network meetings with professionals and “on-the-job-training”. The Norwegian Centre for Telemedicine is engaged in the technical aspects of web-site for the Network. All five countries were present at the workshop in Klaipeda, Lithuania in April 2005, organised by the Centre for International Health in Tromsø and the Lithuanian partners. The objective of the workshop was to start the practical work and to develop an Arctic Network website. The Norwegian Centre for Telemedicine was represented as a partner at the workshop and has the technical responsibility of the website. 18

The project “Competence network to combat tuberculosis” is finalized and the results will be published in the paper “Using e-mail to assist the WHO-recommended tuberculosis control strategy, north-west Russia” in International Journal of Tuberculosis and Lung Diseases.19

Competence Development in rehabilitation

Disability is a challenge in public health in the world. The NST is participating in a pre-project between the University Hospital of Northern Norway and Russia. The project will establish a multi-disciplinary cooperation between health workers in Sweden, Russia (Arkhangelsk and St. Petersburg) and Norway (Tromsø). The expected results of the project are increased knowledge, attitudes to and skills in the field of rehabilitation. Participants are occupational therapists, physiotherapists and social workers in all countries. The pre-project is funded over the Barents Health Programme, the Norwegian Ministry of Health and Social Affairs.

17 http://uit.no/sih/6757/
18 http://uit.no/sih/news/2355?From=0
19 http://www.ingentaconnect.com/content/iuatld/ijtld
4. Collaboration between the centre and WHO

4.1. Visits by WHO staff (headquarters and/or Regional Office) to the Norwegian Centre for Telemedicine:

27-30 September 2004
Dr Palitha Abeykoon, WHO Office Sri Lanka

23-25 May 2005
Mr Jean-Claude Healey, WHO-HQ
Ms Irma Velasquez, WHO-HQ
Mr Gerard Schmets, WHO-EURO

11-13 June 2005
Mr Phillipe Broucher, WHO-HQ

4.2. Visits by the centre staff to WHO (headquarters and/or Regional Office)

23 June 2005, WHO Geneva (Mr Sture Pettersen and Ms Kirsten Eriksen): The meeting was a follow-up of the Oslo Consultation, on how telemedicine can sustain WHO’s aim in the HRH area, connected to capacity building.

In addition, several meetings have been conducted via video-conference and telephone. Also, NST-WHO-meetings have been organized in connection with conferences and other international events.

4.3. Use of the centre staff by WHO

Dr Steinar Pedersen was applied as a temporary adviser on mission to Iran 11-12 September 2004.

Mr Jan-Hugo Olsen was applied as a temporary adviser on mission to Sri Lanka, 7-18 February 2005.

General advice to WHO on different aspects of telemedicine, e.g. SEARO on equipment and systems for Pathology.
4.4. Support provided by centre staff for courses co-sponsored or organized by WHO (headquarters and/or Regional Office)

No courses have been organized by the centre in the period, but an international workshop on eHealth management for people living with HIV/AIDS was organized by NST in Tromsø, on 11-12 June 2005.

4.5. WHO financial support to the centre through contractual or technical services agreement

WHO HQ funded travel to mission to Sri Lanka, February 2005.

4.6. Collaboration with other WHO collaborating centres

The NST collaborates with several WHO Collaborating Centres. The NST acknowledge the need for more collaboration in the field. Since we do not know which collaborating centres that would be most appropriate for collaboration, we would need input and suggestions from the WHO.

Professor Maurice Mittlemark, Research Centre for Health Promotion, University of Bergen, Norway (HEMIL-centre), is a member of the Advisory group for European eHealth Consumer trends survey. In addition the two centres (HEMIL and NST) are collaborating in research projects and exchange of information and meetings have been arranged over the last year.

Joint meeting has been arranged with The National Centre for Fetal Medicine, Trondheim, Norway and the NST in order to exchange information and exploring joint areas of collaboration.

A Memorandum of Understanding is under development between the NST and the Medical Research Council, Telemedicine Lead Programme, in South Africa, which is in the process of becoming a WHO Collaborating Centre.

The NST has been in contact with the WHO Collaborating Centre for Tuberculosis in Moscow, Russia, in connection with the project with the Northwest Russian project: “Competence network to combat tuberculosis”.

4.7. Other

Every year the NST receives health-professionals, trainees and students from abroad who are working or studying telemedicine/eHealth. One group of students are participating in the International Association for the Exchange of Students for Technical Experience (IASTE) programme. In 2004 we had students from Ukraine, Sri Lanka and Russia in 2004. We have also had visitors from Russia via the Presidential Initiative organised by The Norwegian Association of Local and Regional Authorities.

http://www.iaeste.org/network/index.html
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