



Promoting innovative eHealth services across the Northern Periphery

The aim of the Competitive Health Services is to develop health services for people in remote or rural communities where access to health services might be limited. We will do so by

- implementing innovative eHealth solutions and
- promoting transfer of the best practices in the Northern Periphery

Piloting of services has begun and you may read a report of one of the pilots in this eNewsletter.

Competitive Health in LAVA09 Conference

Competitive Health Services project was presented in the Northern Periphery Programme Annual Conference LAVA09 in Reykjavik, Iceland. The conference aim was to discover ways in which the creative industry can help add extra value in business development and NPP projects. The event was attended by more than 125 people from 9 countries. Competitive Health Services project was exhibited in Reykjavik Town Hall Exhibition.

For more information, please visit the LAVA09 Facebook page

www.facebook.com/lava09

Project meeting in Tromsø

Project partners met in Tromsø, Norway in mid December 2009 to discuss project progress and piloting of new eHealth services. The meeting was held in the Norwegian Centre for Integrated care and Telemedicine. Our Norwegian partners organised a programme which was full of interesting presentations and demonstrations. The Scottish tele-dialysis team had a chance to visit a dialysis unit and learn first hand from the Norwegian experiences before launching the tele-dialysis pilot in Scotland.



Piloting new e-Health services

FINLAND

Check-Up Life: Health promotion through wireless devices

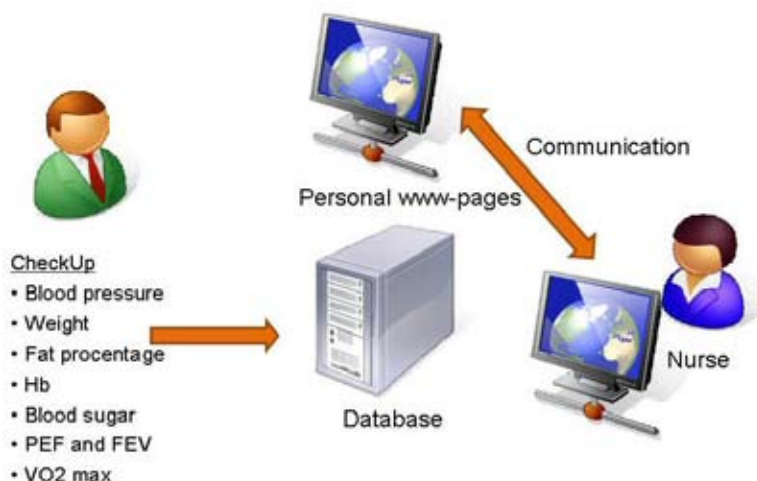
Technology Healthcare Centre Oulu, Kaakkuri, Finland

www.ouka.fi/ttkaakkuri

Piloting of new e-Health services has begun. The first service to be tested is the Check-Up Life Bag, a Swedish innovation developed by Explizit Ab for health promotion and maintenance. It allows wireless monitoring of health-related biosignals such as blood pressure, haemoglobin, blood sugar, weight, fat-percentage and several respiratory values. All data is stored in a database, which can be accessed by the user and a health professional who can offer guidance and advice. All measurement devices are packed in a bag, which can be easily transported and moved. The service includes a test bike which has a Bluetooth connection for transmission of test results.

The Check-Up Life Bag is piloted in the Kaakkuri Technology Healthcare Centre in Oulu, Finland. The health care centre offers product testing services and this pilot is managed by a product testing specialist Kimmo Kääriäinen. The aim of this pilot is to promote health by offering citizens support in weight management. The service concept was first tested with five test users and two nurses and once this had been completed, the actual pilot service was launched. Eight people were chosen for the weight management group. Two users were given the opportunity to keep the bag at home and one bag was kept in the health care centre where participants could come and do the measurements. All data is automatically stored in a database, which can be accessed through a web browser. All participants have their own user profiles and can log in to monitor their test results and progress. They can also send questions to health advisors (nurses) and receive feedback on their progress.

We are collecting user experiences through questionnaires and will be evaluating the service in more depth later. Results will be published as a report later this year.



eHealth in Scotland

Scotland project team – Centre for Rural Health, University of Aberdeen
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Background

Most healthcare in Scotland is provided by the National Health Service. NHS Scotland is administered by the Scottish Government Health Directorates and funded from public taxation, delivering healthcare which is free at the point of delivery, apart from some charges for dental and optical treatment and for prescriptions. Exemptions apply for children, people over 60 years and those on benefits related to low income.

Scotland is divided into 14 territorial NHS Boards, responsible for the planning and delivery of health services in their own areas. At one end of the spectrum, some health boards cover small geographical areas with relatively dense, primarily urban, populations; in contrast, several serve scattered island groups to the west and north of the mainland (Western Isles, Orkney and Shetland). NHS Highland, which is an associate partner in the Competitive Health project, covers the largest area (32 518 km² – 41% of Scotland's land surface) and has a low population density (10 per km²). Tourism contributes to an increase in patient numbers at certain times of year.^{1,2}

eHealth at national level

The eHealth Directorate of the Scottish Government has overall responsibility for Scotland's eHealth programme, which comprises a number of initiatives managed by NHS Boards and nationally.³ A key element of the national programme is the Clinical Portal, which will enable clinicians to view a 'virtual electronic patient record' in which information relating to individual patients is retrieved on demand from a range of databases. The portal's resources will be unlocked via a single sign-on, with the level of access to data being restricted to certain staff categories. This portal development fulfils a commitment made in the Scottish Government's eHealth Strategy 2008-2011, and is in line with the stated policy of creating bridges to link existing data sources, rather than creating a new all-purpose patient database.

A 'toolbox' approach will enable health boards to create customised portals, allowing for different rates of progress towards the goal while ensuring that portals achieve a minimum baseline. A pilot is currently underway and it is expected that the first phase of the portal programme will be implemented during 2010. A clinician survey has been conducted to establish the types of data to be included. Data will be sourced from national systems, such as the Emergency Care Summary (ECS) and from local repositories (eg the SCI Stores in all health boards, which contain individual patients' lab results, clinical reports etc.)



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The Emergency Care Summary consists of a patient's name and address, date of birth, GP surgery, current prescribed medication and any known allergic reactions, linked to the patient's unique NHS identifying number. This information is copied from the GP's computer system and stored electronically in a secure national database so that authorised NHS clinical staff who need to treat a patient in an out-of-hours emergency can access key clinical information, with the patient's consent. Currently over 99% of Scottish patients have an ECS record, and it is used around 50,000 times each week. Many benefits have been found, principally in connection with patient safety.

Other examples of eHealth applications which are available nationwide in Scotland are NHS24 (a web and telephone-based source of information for the public and a gateway for out-of-hours care) and the Diabetes Retinal Screening programme.

eHealth at local level

Many local telehealth initiatives are in place across Scotland, some of which receive support with implementation and evaluation from the Scottish Centre for Telehealth.⁴ The focus of the Competitive Health project is on initiatives which enable remote rural patients to receive healthcare while reducing the need to travel to urban specialist centres. Examples within the NHS Highland area include monitoring heart failure in patients at home, secure transmission of ECG and spirometry readings from primary to secondary care, multi-disciplinary cancer team meetings via videoconference, and remote neurology consultations for patients with complex epilepsy. Island health boards have set up remote clinics using video conferencing to the mainland in a number of clinical fields: eg ENT endoscopy and paediatric diabetes (Western Isles to Inverness) and neurology, cancer and diabetes (Orkney to Aberdeen).

Some potential eHealth applications are constrained at present by limited infrastructure and connectivity (broadband and mobile phone network coverage). This applies particularly across the north of Scotland. For example, mobile video conferencing units which operate over domestic broadband are an attractive option for delivering intensive speech therapy, as in northern Sweden – but for now this belongs in the future.

1. NHS Highland – www.nhshighland.scot.nhs.uk
2. General Register Office for Scotland (GROS) - www.gro-scotland.gov.uk
3. eHealth Directorate, Scottish Government – www.ehealth.scot.nhs.uk
4. Scottish Centre for Telehealth – www.sct.scot.nhs.uk



Implementation of eHealth services

Frank Larssen, *The Norwegian Centre of Integrated Care and Telemedicine*, Troms, Norway



The purpose of the Competitive Health project is to transfer best eHealth practices across regions in the Northern Periphery. eHealth services that have been demonstrated to work well in one country will be implemented in another country. The regions of the Northern Periphery will be able to learn from each other and benefit from each other's experiences.

Implementation has been called “the critical gateway between decision to adopt the innovation and the routine use of an innovation” (Klein & Sorra, 1996). Cooper & Zmud (1990) have developed and described a process model of implementation focusing on six stages. The first stage is called initiation and describes the search for organizational problems/opportunities and technological solutions. The next phase, adoption, is focusing on the negotiations to get organizational support for the implementation. If the organization decides to allocate resources for the implementation of the solutions, the next phase is the adaptation stage. During this stage the technologies are adapted to the organizational contexts and installed. Work procedures are developed and the potential users are trained to use the technology. The result is that the technology is available and the users are able to use the technology. The stage is followed by an acceptance stage where the users are committed to use the technology. A routinization stage then follows where the use of the technology is seen as the normal way of performing the activities and not something extraordinary. The last stage is called infusion and describes a situation where increased organizational effectiveness is realised through the use of the technology in a comprehensive and integrated way in order to support the organization's goals.

SWOT analyses have been used to examine the opportunities and threats and to identify strengths and weaknesses of a number of eHealth solutions in the Northern Periphery. The initiative to implement eHealth services in organizations in each of the countries in the Northern Periphery came from the Competitive Health project. A tool, the Normalisation Process Model, has been used to assess the readiness of the organizations to implement the eHealth services, and one or two organizations in each country have been chosen as implementation sites based on the fit between the services and the organization. The process of adaptation of the technology to the local conditions may differ. A technology that is tailored to meet the requirements of a specific system may require more adaptation than a more general technology. Many eHealth services fail to routinize as sustainable models of delivery of health care. Acceptance is an ongoing process and is the basis for routinization. The potential user's acceptance of the eHealth services is dependent on how well the technology is integrated with ongoing work practices and what kind of added value the eHealth services bring to the health care sector. Through this project we will gain knowledge about factors that promote or inhibit transfer of innovations across regions.

Cooper, R.B. and Zmud, R.W. (1990) “Information Technology Implementation Research: A Technological Diffusion Approach,” *Management Science*, 36:2, 123-139.

Klein, K.J. & Sorra, J.S. (1996). “The challenge of innovation implementation.” *Academy of Management Review*, 21, 1055-1080.

