International Congress on Telehealth and Telecare

Poster Presentations

Day 2: Thursday 3 March 2011

Headline sponsors
Poster Presentations

Heribert Baldeus
Principal Research Scientist, Philips Research
Automatic Fall Detection

*Calls for help when I can’t*

- More than 30% of people older than 65 suffers at least one fall a year
- Half of which experience multiple falls
- 5% to 10% result into severe injuries
- Immediate attention reduces consequences

**Philips - AutoAlert**
can automatically call for help if the subscriber falls and can’t, won’t, or forgets to push his or her Personal Help Button

**Breakthrough Innovation**
- High accuracy
  Multiple Sensors to detect falls and reduce false alarms
- Intelligent Alarm
  Monitoring of user before, at and after a fall
- Smart Battery Management
  Provides 18-month wearing life
- Pendant based Fall Detection
  Supports wearability and ease of use

**User benefits**
- Ensuring help whenever needed
- Reduce fear of falling and risk of hospitalization
- Provide confidence and reduce fall incidents
- Enable better independent living

Contact: heribert.baldus@philips.com
Poster Presentations

Terry Bearpark
Enterprise Fellow, University of Teeside, UK
Prevention and reduction of health care needs for older people in care homes

Dr Terry Bearpark, Enterprise Fellow
Wade Tovey, Assistant Dean, Manager, Tees Valley Alliance
Pat Watson, Research Fellow

School of Health and Social Care, Teesside University, Middlesbrough, TS1 3BA
Process

• Two care homes in Darlington whose residents’ health is managed in partnership with community nursing and GP services
• Participants enrolled after a formal consent process
• Relevant health data points and questions agreed with the participating GPs
• Data were entered onto a data hub supplied by Docobo® and uploaded to a secure website
• Review of past emergency call outs was undertaken
The Finance

- accurate costs of past emergency calls to health services are difficult to quantify on current costing models
- cost savings demonstrated by telemonitoring at home were not replicated in this study
- cost savings are unlikely in cash terms and any resource freed up will accrue to the health care provider, not the home
The Quality Benefits

• for the Residents
• for the Care Home Staff
• for the Care Homes
• the Technology
• for the Commissioners
Thank You

terry.bearpark@tees.ac.uk
Poster Presentations

Dr Malcolm Clarke
Reader, Information Systems and Computing, Brunel University, UK
Project Hydra
Using the smart meter infrastructure to support home based patient monitoring

Malcolm Clarke, Charles Palmer, Russell Jones

malcolm.clarke@brunel.ac.uk
http://projecthydra.info
The Consortium

Thanks to

[Logos of various organizations]
Extending the Smart Meter

The smart meter is seen as a hub to transmit energy consumption and tariff data from the utility meters to the utility company over a communications infrastructure.

Hydra extends the smart meter by adding a wireless home area network (Zigbee) to connect health devices (weighing scales) and environmental sensors (bed sensor, chair sensor).
Exploiting and demonstrating the standards for telehealth and telecare

Hydra exploits the newly emerging IEEE 11073 personal health device standards for health devices and environmental sensors to demonstrate a unified architecture for telehealth and telecare.

Hydra exploits the IHE-PCD01 standards to provide a unified communication of data from the home to the enterprise through the smart meter.

Interoperable components are created for a modular system that conforms to Continua Alliance guidelines.
Delivering the benefits

**Application Areas**

<table>
<thead>
<tr>
<th>Disease Management</th>
<th>Frail Elderly</th>
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<tbody>
<tr>
<td>Ubiquitous communication infrastructure to the home with unobtrusive sensors to provide intelligent disease management</td>
<td><strong>Technology</strong> Wireless sensors for Telehealth and Telecare</td>
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<tr>
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<td><strong>Existing applications</strong> Health and environment monitoring</td>
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</table>
Poster Presentations

Miceala Colle
Telemedicine Products and Services, TeSAN S.p.A a company of TBS Group
@HEALTH:  
AN EXCELLENCE APPLICATION IN TELEMEDICINE

Michela Colle – TeSAN S.p.A., Vicenza - Italy

International Congress on Telehealth and Telecare 2-3 March 2011 - London
Introduction

We present our experience as **Telemedicine services provider** in collaboration with the Verbano-Cusio–Ossola (VCO) Local Health Authority, provider of healthcare services located in the Piedmont Region, Italy.

Customer Body: Public regional consortium CSI-Piemonte, Local Health Authority “VCO”
Duration: March 2009 – December 2011

We designed an **innovative telemedicine business** model for 4 different target patients, affected by

- Heart failure Disease
- Diabetes,
- COPD (Chronic obstructive pulmonary disease)
- Cancer in final stage

*The project was selected as an innovation for Expo Shanghai 2010 by Italian Ministry of Public Administration and Innovation.*
The service

Clinical services care - scheduled

Patient

Call centre (Private provider):
- Nursing staff
- Physicians
- Technical assistance

Data gathering

Technical assistance

Monitoringservices and nurse care - scheduled

Active Medical Guard

GPs, Medical specialist

Clinical Repository:
- Clinical patient data
- Monitoring service data

Data consultation

Data archive - registration
The Technologies

Home Kit

**Wrist clinic**: measurable parameters:
- Heart frequency
- ECG 1 lead
- Blood Pressure
- Heart Rhythm regularity
- Respiratory Frequency
- Oxygen Saturation (SpO2)
- Body Temperature

Web Portal

**Wrist Clinic**

**Digital Scale**

**Glucometer**

**MEDIC GATE**

Home based data transmitter
Results

- Since 1st July 2009 we have assisted **166 patients**, 114 patients (69%) affected by diabetes, 39 patients (23%) affected by COPD and 13 patients (8%) affected by heart failure disease.

- For **diabetes patients** mean Glycated Hemoglobin (HbA1c-average plasma glucose concentration) **decreased** from **8.2%** to **7.5%** in 1 year.

- After 1 year the **76% of diabetes patients** have a **reduction of HbA1c**, the 54.4% of diabetes patients have a reduction of total cholesterol and 53.9% of diabetes patients have a reduction of triglyceride levels values.

- In 1 year we **saved 288 total accesses to the diabetes clinic**.

For its features, the project probably represents one of the most challenging telemedicine experience in Italy at present time.

Thank you!
Poster Presentations

Dr Maria Hagglund
Postdoctoral Researcher, Karolinska Institute, Sweden
Int. Congress on Telehealth and Telecare 2011

Does User Centred Design work in Homecare for Elderly?
A retrospective on the OLD@HOME case

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APRI eHealth

Health Informatics Centre,
Dept. of LIME and Dept. of Medicine (MedSolna), KI
The OLD@HOME case

District nurse

Home help personnel

Elderly patients

General Practitioner

APRI | eHealth
OLD@HOME - User Centred Design

- Observations and interviews
- **Interdisciplinary** working groups
- Specification of **work scenarios**
- Iterative **prototyping**

Pre-seminar work

Thematic Seminar Series

Iterative prototyping

Care professionals and researchers

Inter- and Intra-professional Working groups

![Diagram](Image)
Results of OLD@HOME

Home helpers in action
Read, write and communicate!

District nurse at a patients home
Gets online information!

Patient in his home
Participates and feels safe!

Relatives
Participate and are updated!

General Practitioner
Reads up to date information!
A Key Success Factor

Our **user centred design** approach enabled us to develop a system that is:

– Adapted to the context of integrated homecare
– Easy to use and intuitive
– Accepted by end users

**Future research**

– Further explore the long-term outcome of the project
– Hinders and facilitators for development and implementation of health information system in integrated care
Poster Presentations

Brian Kelly
Associate, Covington and Burlington LLP, UK
Overview

- Regulatory framework for telehealth
- Ethics and consent
- Liability and other issues
Regulatory Framework

• Patchwork of regulations apply
• e-Commerce Directive
  – is telemedicine an information society service?
• Medical Device Directive 93/42/EEC
  – wireless monitoring devices
  – iPhone applications
  – electronic health records and PACS
• Data Protection Directive 95/46/EC
  – sensitive personal data (health information)
• E-Privacy Directive 2002/58/EC
  – electronic communication of patient data
• Regulations governing practice of medicine
  – shift in traditional doctor-patient relationship
Ethics and Consent

- Ethical concern over ensuring patient data are secure and confidential one of main obstacles to more wider use
- Consent must be specific and informed
  - explain who will have access to the health information;
  - what the data will be used for;
  - how long it will be stored;
  - withdrawal of consent for using telemedicine
  - whether any of the information will be transferred outside the EU and the consequences of this
- Ensure compliance with health information standards and healthcare institution/professional codes of conduct
  - NHS Confidentiality Code of Practice
  - Honorary Contracts/Connecting for Health statement of compliance
  - BS ISO/IEC 27002:2005
- Sending identifiable health information by email/SMS
  - Apply “post-card” test
Liability and other issues

- **Liability** in negligence
  - Duty of care
    - applies to telehealth operators (e.g., NHS Direct) if they provide clinical advice
  - Defective products
- **Reimbursement/public procurement**
  - NHS contractors may need to go through tender process
  - Future standards/health technology assessment for telehealth (NICE?)
  - Greater potential for use in the community following NHS reform
- **Cross-border** telehealth
  - European Commission Directive on the application of patients' rights in cross-border healthcare (adoption Feb. 2011)
  - Interoperability issues (need to ensure that different information and communication technologies of different EU Member States are compatible)
Poster Presentations

Ciaran Kenny
Speech and Language Therapist, The Adelaide and Meath Hospital, Dublin Incorporating the National Children’s Hospital, Ireland
Loudness Therapy Application for Parkinson’s Disease using iPhone and iPad

Ciarán Kenny
Speech and Language Therapist
Parkinson’s Disease (PD)

- 89% of PD patients have disordered speech at any given time, eventually 100% (Logemann et al., 1978)

- Speech is disordered by virtue of reduced loudness, reduced articulation, poor breath support (Trail et al., 2005)

- Level 1 evidence exists for the behavioural treatment of speech in PD with treatment effects demonstrated to last 2 years post-treatment (Ramig et al., 2001)
Difficulties with treatment

- PD additionally causes difficulties with self-perception of speech loudness (Ho et al., 2000)

- This causes difficulties with promoting generalisation of a loud voice outside of the clinic room

- Ongoing practice of a loud voice is needed to maintain benefits

- Return visits to the clinic could be avoided if this were automated
Solution

- Develop an tool that can be used by patients to perform homework tasks to maintain loudness

- Deliver therapy as normal and introduce the tool to patients during their therapy block

- Provide patients with the tool after therapy, configured to match their target loudness levels

- Tool should give live feedback to patients on their performance and supply data electronically to their therapist, to enable timely review
Project

- Develop a tool for patients to use at home, based on existing evidence (Yan, 2008) and patient feedback on its accessibility and ability to motivate

- Compare two groups: one using tool, one sticking with traditional homework tasks without live feedback to patient and therapist

- Survey groups RE motivation to perform homework and satisfaction with therapy

- Hypothesis: the group using the tool will be more motivated and see better loudness results
References

Poster Presentations

Tanja Kreiser
Product Development, Product Management and Development, Almeda GmbH, Germany
Behaviour modification within a telemedical Population Health Management Programme in Abu Dhabi, United Arab Emirates (UAE)

International Congress on Telehealth & Telecare

Tanja Kreiser
London, March 3rd 2011
Purpose, Objectives and Methods of the telemedical Health Programme for Diabetes Type 2 and Obesity

Purpose and Initial Situation
- The prevalence of diabetes type 2 in the UAE reaches up to 18%, 50% of the population is overweight
- A further increase in the prevalence of diabetes type 2 and obesity is predicted
- The reasons are a substantial change in lifestyle over the last 40 years in the UAE
- In 2009 Daman National Health Insurance decided to implement a telemedical Population Health Management Programme for diabetic type 2 UAE Nationals

Objectives of the Population Health Management Programme are...
- ... to influence and motivate patients to change their lifestyle
- ... to self-manage their chronic condition in order to prevent complications
- ... to improve the quality of life
- ... to reduce costs in the long run

Methods
- The programme combines a telecoaching programme and a face-to-face training.
- Both programmes have been successfully used and evaluated in Germany and have been culturally adapted for use in accordance with UAE’s cultural environment
- Core elements of the telecoaching programme are:
  - Structured supervision of participants via phone by a personal coach
  - Supporting changes in participants' lifestyles via recognized methods (Transtheoretical and SMART model)
  - Definition of personal goals (i.e. healthy nutrition, regular exercise, weight loss)
First Results of the telemedical Population Health Management Programme

The results were evaluated in a prospective longitudinal study. The clinical data was collected from the participants throughout the programme.

<table>
<thead>
<tr>
<th>Body Mass Index (BMI)</th>
<th>HbA1c (%)</th>
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<tbody>
<tr>
<td>31.90 (t0)</td>
<td>7.55 (t0)</td>
</tr>
<tr>
<td>31.58 (t1) (180 days later)</td>
<td>7.29 (t1) (180 days later)</td>
</tr>
</tbody>
</table>

p<0.05  p=0.157

Currently 1,300 Patients are enrolled in the Programme.
Conclusion

- Telemedical Population Health Management Programmes from western countries can successfully be transferred to the international market.

- Such programmes are particularly interesting for countries with a high prevalence of diabetes type 2 and obesity.

- First results indicate that medical parameters such as BMI and HbA1c can be improved by telemedical Population Health Management Programmes.

- More results are expected in autumn 2011.
Thank you for listening

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Poster Presentations

Dr Inaki Martin Lesende
GP, Bilbao Primary Health Care Region, Osakidetza – Basque Health Service, Spain
TELEMONITORING PATIENTS WITH CHRONIC DISEASES IN PRIMARY CARE. Conjunction of a randomized controlled trial (TELBIL study) with a realistic clinical application of Information and Communication Technology (ICT) in primary care.

Martín Lesende 1, Cairo M 2, Oronuo E 2, Romo M 3, Bayón JC 2, Reviriego E 2, Abad R 1, Bilbao A 3, Vergara I 3, Larrañaga J 1, Asua J 4

1 Department of Primary Care in Bilbao, 2 Office for Health Technology Assessment (OSTEBA), 3 Foundation for Health Innovation and Research (BIOEF), 4 Department of Health and Consumer Affairs

Basque Health Service (Osakidetza) – Basque Government

For further information: INAKLMARTINLESENDE@osakidetza.net

IN-HOME PATIENT
Daily information transmission by GP/R. Alerts.

PRIMARY CARE CENTRE
Physician – Nurse
Daily checking of information. Clinical attitude in the event of changes or alerts

REMOTE WEB SERVER

In case of emergency -> hospital

Out-of-hours assistance, telephone: 112

Technological support: Saludnova

Osakidetza
O+iker
Instituto vasco de Investigaciones sanitarías
Eusko Jaurlaritzako Gobernazio Vasco
MAIN METHODOLOGICAL ASPECTS

- Randomised controlled trial (RCT).
- Patients with heart failure (HF) and/or chronic lung disease (most of them COPD) and several hospital admissions.
- Primary care physicians and nurses are in charge of the telemonitoring and patients' management.
- For the intervention group, telemonitoring consisted of daily transmission of self-measurements of respiratory/heart-rate, blood pressure, oxygen saturation, weight, temperature and a brief clinical questionnaire.

COST-EFFECTIVENESS analysis at 12 months follow up

PATIENTS/caregivers/families SATISFACTION
face to face questionnaire administration

PROFESSIONAL SATISFACTION
focus groups

TECHNICAL ANALYSIS
(compliance, incidents, problems)

- 75.3% of total/days follow up, patients send data
- 2311 professional access, 1984 patient transmissions

In-home patients with HF or chronic lung disease, ≥2 hospital admissions (≥1 due to one of the diseases considered) previous year.

Randomisation 1:1 stratification by disease

Excluded n

INTERVENTION GROUP (IG)
Home telemonitoring
Baseline characteristics, Homogeneity

28

CONTROL GROUP (CG)
Usual care

30

Partial results

3 months

Hospital admissions
Mortality
Clinical resources

Partial results

6 months

Deaths & other losses

HRQL (EuroQol 5D)
Functionality (Barthel I)
Caregiver burden (Zarit Q)

1-YEAR ANALYSIS

Assessed n

Assessed n
The RCT (TELBI study) will have an important repercussion in clinical practice, and for designing future interventions.

**Specific and peculiar TARGET POPULATION** (very aged, advanced and severe diseases considered, high comorbidity, high proportion of dependency and bad quality of life perception, with Clinical instability and high usage of healthcare resources (primary care and hospital admissions), and social and family needs, caregiver burden)

**PRIMARY CARE PROTAGONISM.** Nurses and physicians (70) in charge. Workshops (training). Coordination with hospital.

**BROAD ASSESSMENT OF RESULTS,** Clinical efficacy and usage of healthcare service, but quality of life, functionality, caregiver burden, cost-effectiveness, and patients-families and professionals satisfaction too.
Poster Presentations

Dr Paul McCullagh
Reader, Computer Science Research Institute,
University of Ulster, UK
Knowledge Capture for Self Management of Long Term Conditions

The SMART Consortium

www.thesmartconsortium.org
Self Management of Long Term Conditions

- In the UK, 17.5 million adults are estimated to be living with a chronic disease, resulting in adverse long term health conditions.
- Self management encourages the person to solve problems, take decisions, locate and use resources, identify an action plan and take actions to manage their condition.
- There is evidence to show that self management can ameliorate the adverse effect of these conditions and possibly reduce the costs of healthcare delivery.
- The SMART consortium is developing a self management platform and evaluating this platform for people with chronic pain, congestive heart failure and stroke.
SMART2: Personal Self Management System
Knowledge Capture

- Identify Value
  - Life Goal
    - pain/stroke/CHF
  - Vital Signs
    - Activity Monitoring
    - Self Report
  - Real time
- Over a period of time
- Justify
- Decision Support System
  - Reminder/Feedback
- Users
  - Activity monitoring
    - Accelerometer dGPS
    - mobile phone
  - Acceleration sensing
  - Rule learning
  - Machine Learning (CL.5, NS, SPM, MLP)
Feedback for Self Management

Two approaches to knowledge acquisition were used: (i) obtaining knowledge from the stakeholders (ii) obtaining knowledge from the PSMS, as the user undertakes activities of daily living in pursuit of their end-goals. Knowledge capture requires abstraction of key process used by the stakeholders and the use of data mining procedures to obtain information patterns, which we believe can ultimately be used to promote effective self-management.
Poster Presentations

Antonia Moran
Research Assistant, Newcastle University
“It does what it says on the tin!”
Feasibility study for developing a scheme for approving, rating or accrediting Assistive Technology (AT)

KTP Project Lead: Antonia Moran
antonia.moran@newcastle.ac.uk 44(0)191 248 1289
Why an accreditation, approval or rating scheme?

- Consistently over the last couple of years, less than 20% of people questioned in Years Ahead research would automatically think of AT as a solution to overcome a daily living difficulty.

- Product assurance seals have been shown to provide consumers with an elevated level of trust in products.
  - Having a high level of trust is proven to have a positive effect on purchasing behaviour.

- Speaking to consumers there was a common belief that having an accreditation, approval or rating by an independent body would influence their purchasing decision positively.
Feasibility study: Stakeholders

Consumers
- Self Funded
- State Funded

Originators
- Manufacturers
- Suppliers

Distribution
- Retailers
  - E-commerce
  - Mail Order
  - Retail Stores

Influencers
- Carers
- Family & Friends
- Healthcare Professionals
- Third Sector Organisations

Trade Organisations

Community Equipment

200 individuals consulted by:
- Interviews
- Focus groups
- Workshop
- Consumer survey

Newcastle University
Key Findings

- **Expert & user panel** combined with an **online review website** was the favoured approach.
- Crucial to have **consumers at the centre of the scheme** to provide feedback to industry and also develop a community.
- A scheme has the potential to significantly **increase consumer awareness** of AT.
- Widespread support from consumers & indications show good industry level support.
- Multiple organisations are to collaborate to develop a scheme and launch it into the marketplace.
Aims for the development of a scheme

- Promote awareness that there are products that can help overcome daily living difficulties and increase consumer confidence in these products.

- Normalise ‘mobility & independent living’ products and help to dispel the stigma associated with them.

- Stimulate innovation & enterprise in the Assistive Technology market place by getting the voice of the consumer at the heart of the R&D process.
Poster Presentations

Maria de les Neus Padilla Just
Nurse, Catalan Health Institut of Barcelona, Spain
Chronic patients telephone follow-up, an alternative face-to-face

Centre Seguiment Malalties Cròniques
MNeus Padilla Just
London, 3 March 2011
csmc@gencat.cat
It is a device of welfare telephonic support to persons with chronic diseases

To promote autocare and automanaging of the disease

Managed for trained nurses: clinical formation and effective communication

Proactive follow-up, individualized frequency
Information systems

La medicación con color vermell correspon a un altre professional que no és el meu.

<table>
<thead>
<tr>
<th>Val</th>
<th>Medicament</th>
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<tbody>
<tr>
<td></td>
<td>ATROVENT 20MG/600MG 200 DOSOS 1ML SOL. INH. (MG)</td>
</tr>
<tr>
<td></td>
<td>BUSCAPINE 10MG 30 COMPRIMIDOS RECUBIERTOS (MG)</td>
</tr>
<tr>
<td></td>
<td>ENALAPRIL MERCK 20MG 28 COMPRIMIDOS EFG. (MG)</td>
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<tr>
<td></td>
<td>FLOKOPROFEN 5% 50G SOL. (MG)</td>
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<tr>
<td></td>
<td>ISO-LACER 50G 50 COMPRIMIDOS (MG)</td>
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<tr>
<td></td>
<td>NICOTIL 575MG 20 CAPSULAS (MG)</td>
</tr>
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<td></td>
<td>OMIFRAZOL VR 20MG 28 CAPSULAS DURAS EFG. (MG)</td>
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<td></td>
<td>PARACETAMOL SANDOZ 500MG 20 COMPRIMIDOS EFG. (MG)</td>
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<tr>
<td></td>
<td>PEPYX 75MG 20 COMPRIMIDOS RECUBIERTOS PELÍCULA. (MG)</td>
</tr>
<tr>
<td></td>
<td>PULMICORT 200MG/3MG 1X120 DOSIS SUSPENSION ENV. PRES. (MG)</td>
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<td></td>
<td>SEGURIL 40MG 30 COMPRIMIDOS (MG)</td>
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Vestigado en base a la prescripción médica de la medicación:

VOLTAREN 50MG 40 COMPRIMIDOS GASTRORESISTENTES. (MG)

Guide of clinical practice

Institut Català de la Salut

Medical prescription

Plan of care

MEAP

Hospitable episodes

Plan of care

Plan of care
Patients' profile and types of follow-up

- **AGE / SEX**
  - Men: 38%
  - Women: 62%
  - Age: 77,9 years

- **FREQUENCY OF CALLS**
  - 1 month: 11%
  - 6 months: 43%
  - 2 months: 34%
  - 3 months: 12%

- **FUNCTIONAL CLASS**
  - CF4: 1%
  - CF1: 3%
  - CF3: 41%
  - CF2: 55%

- **FOLLOW-UP REALIZED WITH**
  - Patient: 26%
  - Keeper: 74%

- **DOMICILIARY ATTENTION**
  - ATDOM: 11%
  - No ATDOM: 89%
POSITIVE RESULTS

- More than 80 % improves the autocare
- Adherence to the pharmacological fulfillment is 80 %
- Pneumococcal vaccine has improved the coverage in 25 %
- High level of satisfaction of the patient
- Decrease in the use of healthcare resources
THANK YOU!

csmc@gencat.cat
Impact of telephone support to patients with heart failure risk

Centre Seguiment Malalties Cròniques
MNeus Padilla Just
London, 3 March 2011
csmc@gencat.cat
Precedents and Current situation: 2009-2010

Implantation of the program in Primary care

- Coordination with the Hospitals
- Extension of the territorial coverage
- Extension of the sanitary coverage
Explotation of information of the sample of population of more risk

AGE AND SEX

MEN
30%

WOMEN
70%

AGE: 80 years

FOLLOW-UP REALIZED WITH

PATIENT
35%

KEEPER
65%

FUNCTIONAL CLASS

CF 4
3%

CF 2
20%

CF 3
77%

DOMICILIARY ATTENTION

ATDOM
32%

NO ATDOM
68%

Management of cases 62,5%

• More than 60 % of the follow-ups carries out with the keeper, for his complexity and the fragility of the type of patients

• The patients are included in 30 % in the program ATDOM

• More than 60 % has been or is in Management of cases
A decrease of the visits has been observed to the family doctor and to the nurse for any reason (visits to the center, visits to the emergency room, home visits, EKG, INR control, analytical).
Has been observed a decrease of the hospitable urgencies and of the hospitable income by cardiorespiratory decompensation (decompensation of the heart failure, or respiratory infection if is added Pulmonary Obstructive Chronic Disease)
THANK YOU!
csmc@gencat.cat
Poster Presentations

Bradley Shepherd
Assistant Marketing Manager, Telehealth Solutions, UK
Title: Telehealth's efficacy at aiding the provision of community outreach cardiovascular disease screening programmes

9 in 10 of us are lowering our risk of heart attack, stroke and TIA
Use of Telehealth in Public Health Screening – the Technology p. 1

• The CardioPod is a portable touchscreen device for public health screening in the field, in this project it was used to deliver NHS Health Checks.

• It measures blood pressure, cholesterol, blood glucose, BMI and other physiological data.

• Conversely, it can be used to record relevant lifestyle information – diet, exercise, family history of cardiovascular disease and more.
Use of Telehealth in Public Health Screening – the Technology p. 2

- With the data it collects, the CardioPod can use clinical algorithms (such as QRisk and Framingham) to calculate a user’s risk of cardiovascular disease.
- For maximum impact, the results of that risk calculation are presented as a visual diagram that participants can understand (see left and below).
Use of Telehealth in Public Health Screening – Project Findings

• The project exceeded its target number of health checks by 13% (109 v 96)
• Of those, 73 agreed to answer research questions
• 91% said they planned to make lifestyle changes or speak to a GP about lowering their risk of CVD
• 73% didn’t know they could get an NHS Health Check
• 13% hadn’t visited a GP in the last year, and 5% weren’t even registered.
• On average, it took just 16 minutes to complete a health check
Use of Telehealth in Public Health Screening – the Implications

• Telehealth may benefit a number of primary care faculties – moving beyond LTC disease management

• Telehealth may enhance uptake of public health screening by making it more convenient and accessible

• Similarly, it might reduce the cost of delivering public health screening by taking less time per appointment

Author: Bradley Shepard
Affiliation: Telehealth Solutions Ltd.

Title: Telehealth's efficacy at aiding the provision of community outreach cardiovascular disease screening programmes
Poster Presentations

Michel Vervaet
Project Manager Innovation, dr. leo kannerhuis, The Netherlands
Stress meter with telemonitoring for people with autism

Using a chest band and smartphone, the user’s stress level is calculated.
Stress meter with telemonitoring for people with autism

pebble:
warning in case of stress
Stress meter with telemonitoring for people with autism

After the stress signal the Digital Coach on your smartphone will open with suitable advice
Stress meter with telemonitoring for people with autism

The professional can discuss the situation by video call, depending on received measurements.
Online education & Digital Coaching
innovation in autism-care

Online education autism
- Better prepared parents
- More time is available during the classroom meetings
3. Information is also available for other people around the child
Online education

Modules:
Psycho education for parents
Autism and using the internet
Autism and substance use
Digital coaching for people with autism

Coach2Care
A digital coach for mobile devices: improve the quality of life and reduce the need for lifelong support!
Digital coaching for people with autism

**Coach2Care**
Dr. Leo Kannerhuis develops mobile coaches for:
- travelling by public transport
- support at school
- support on the job
Autismcare 2.0

powered by
dr. Leo Kannerhuis,
centre for autism
The Netherlands

info@leokannerhuis.nl
Poster Presentations

Dr Paul Rice
Regional Telehealth Lead, NHS Yorkshire and the Humber
Introducing Telehealth at Scale and Pace
A Development Resource for Telehealth Pioneers
What does this resource contain?

Assisting pioneers with:

• Video case studies
• Service models
• Advice on key telehealth implementation issues
• Contacts for advice
• Telehealth service documents
• Summaries of evidence
• Generic business cases
• Links to other resources
How does this resource help?

Making adoption easier by:

- Reducing implementation risks
- Learning the lessons from pioneers
- Accessing proven documentation to localise
- Contacting leaders & practitioners in the field
- Linking to the best telehealth resources
Developed in Yorkshire .......

.........available to all

• These resources will develop and grow as the pace of adoption quicken and experience increases

• Available here at the Congress from Dr Paul Rice or from paul.rice@yorksandhumber.nhs.uk

• Available soon at the HIEC website at www.yhhiec.org.uk/yhtoolkit
Acknowledgements

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NHS Scotland

NHS East Riding of Yorkshire

NHS North Yorkshire and York

NHS Hull

NHS Barnsley

......to be involved contact Dr Paul Rice

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Poster Presentations

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Feasibility Study on Gait Monitoring and Assessment using Smart Mobile Phones

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Accelerometers and gyroscopes have been adapted to determine the orientation of smart mobile phones (SMPs).

Research has been carried out to employ SMPs in health care.
- Step counters
- Activity analysis

Gait pattern analysis plays an important role in clinical practice.

This study aims to explore the use of SMPs to develop a low cost gait tele-monitoring and assessment system.
Methodology

Agreement analysis
• Average error rate (AER)
• The normalized limits of agreement (NLOAs)
• Intra-class correlation coefficients (ICC)
Results

- Thirteen features were extracted and compared between the two systems.
- The SMPs can provide high consistent measurement of spatial-temporal gait features, for example cadence, velocity, mean step length and root mean square of acceleration, with AER less than 0.1 and ICC higher than 0.92.
- Gait symmetry and regularity measurements from the HTC phone should be viewed with caution due to low sampling rates.
Conclusion

This study shows that SMPs can provide useful gait information and may be used in tele-gait monitoring and assessment for elderly people or gait related conditions.