Empowering Citizens through pHealth

– The EU Agenda –

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Overview

- The roadmap for eHealth
- eHealth in Europe
- The role of the European Commission
- Research funds on eHealth
- Large scale deployment – The upcoming large scale pilot on Telemedicine
- Conclusions
Who are we?

“ICT for Health” Unit, Information Society and Media DG
European Commission

- Supported > 500 eHealth projects with > €1 Billion since 1989
- Current support (ca € 100 Mil/year)
- Major focus in 90’s:
  - Regional Health Information Networks, Electronic Health Records, Homecare/telemedicine
- Today’s focus:
  - I) Research:
    - Personal health systems (wearable, portable monitoring)
    - Patient safety (Clinical information systems for safer outcomes)
    - Modelling and Simulation of diseases (Virtual Physiological Human)
  - II) Policy and support to deployment
    - eHealth Action plan, Lead market initiative,
    - Recommendation on Interoperability, Deployment of telemedicine
    - Large Scale Pilots, certification of Electronic Health Record Systems
Overview of Health sector in the EU

- **Health sector employs 9.3% of total workforce in the EU**, more than 15 Million people (compared to retail 13.0 M, business services 13.3 M).

- **Health expenditures** represent ~ 9% of GDP and **grow at a pace of 4% a year** (faster than EU economic growth).

- **ICT penetration is low compared to other sectors**. There is great potential for productivity gains in health delivery sector if technology, leadership and skills come together.
Challenges for European Health Systems

- **Pressure on healthcare systems:**
  - Citizens’ expectations for high-quality care
  - Demographic changes
  - Increased prevalence of chronic diseases
  - Increased mobility of citizens and patients
  - Staff shortages, unequal territorial distribution
  - Reactive model of healthcare delivery
  - Rising healthcare costs

How to offer high-quality & affordable care?
Continuity of care enabled by eHealth

- Prevention
  - General Practitioners
  - Health Authorities

- Diagnosis & Care
  - Hospitals
  - Labs

- Rehabilitation
  - Nursing Homes

- Homecare
  - Homecare

- Social Service
  - Social Service

- Continuity of care enabled by eHealth
  - Patients
  - Healthy citizens
  - Frail persons
  - Patients
  - Healthy citizens
  - Frail persons
  - Patients
  - Healthy citizens
  - Frail persons

Healthy citizens

Labs
The EU roadmap for eHealth

1. Linking all the points of care
2. Connecting individuals with Health Information Networks
3. Towards full picture of the individual’s health status
Step 1

1. Linking all the points of care

2. Connecting individuals with Health Information Networks

3. Towards full picture of the individual’s health status

Time

1990s

Today
Step 1 – Linking all the points of care

Secure data networks and interoperable applications
“epSOS – Smart Open Services for European Patients”

- Patient Summary for EU Citizens
- ePrescribing for EU Citizens
Step 2

1. Linking all the points of care
   - 1990s
   - Today

2. Connecting individuals with Health Information Networks
   - Time

3. Towards full picture of the individual’s health status
   - Time
Step 2 – Connecting individuals with Health Information Networks

- Patient at home
- Data acquisition
- Devices for multi-parametric monitoring
- Data communication and feedback
- Data processing & analysis
- Hospital
- General Practitioner
- Homecare

Medical Expertise
Decision Support System
Intelligent Analysis
"pHealth" is the use of Personal Health Systems (PHS) for Remote Patient Monitoring (RPM)

pHealth has the potential to:

- involve patients more in their own care
- assist the titration of medications
- improve compliance
- help care providers identify early signs of worsening pathologies and their precipitating factors.
### Hype Cycle for Telemedicine

Source: [Gartner, Hype Cycle for Telemedicine, 2008](#) (June 2008)

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Years to mainstream adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High</strong></td>
<td>less than 2 years</td>
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<tr>
<td>Teleradiology</td>
<td>E-Visits (Healthcare Provider)</td>
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<tr>
<td>E-Visits (Healthcare Provider)</td>
<td>Home Health Monitoring</td>
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<td>Remote ECG Monitoring</td>
<td>Teleretinal Imaging</td>
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<tr>
<td>Video Visits</td>
<td>2 to 5 years</td>
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<tr>
<td><strong>Moderate</strong></td>
<td>5 to 10 years</td>
</tr>
<tr>
<td>Call Centers</td>
<td>Mobile Health Monitoring</td>
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<tr>
<td>Teleradiology Outsourcing</td>
<td>Teledermatology</td>
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<tr>
<td><strong>Low</strong></td>
<td>more than 10 years</td>
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<td>Clinical Kiosks</td>
<td>Telepathology</td>
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<tr>
<td>Telesurgery</td>
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Step 3

1. Linking all the points of care

2. Connecting individuals with Health Information Networks

3. Towards full picture of the individual’s health status
Step 3 – Towards full picture of individual’s health status

- Biosensors
- Environmental Data
- Biochips
- Genomic data
- Phenomic data

ICT Systems
ICT market value

€ 668 billion**

eHealth Market

€ 17 billion

EU27 Health expenditure

~ €1000 billion*

* Deloitte&Touche - HINE report
** EITO 2007
High potential for growth and jobs in the EU (Lead Market Initiative):

- The global market for eHealth is estimated to be worth €17.4 billion in 2008, increasing to over €20.9 billion by 2012, an average annual growth rate of 4.7%.

Source: EU e-Health Business Models, Capgemini Consulting, Rand Europe, 2009 (Ongoing study funded by the EC)
Individual Member States' strategies:

- Over 22 countries have explicit eHealth policy strategies

[Bar chart showing the number of EU Member States prioritizing and achieving Complete EHR/interoperability and ePrescription]
1. Research (FP) and Demonstration (eTEN/CIP) programmes (since 1989)
3. Lead Market initiative for Europe (eHealth)

EC Instruments: the eHealth cycle

- **Stand alone systems** (EHR, messaging, healthcards, VPH, PS PHS)

- **Larger pilots with online services** (e.g. Home-based Monitoring)

- **EU R&D Programmes**

- **Member States + EU eTen & CIP programmes**

- **Large scale validation** (EU wide services interoperability, mobility)

- **Research & Technology Development**

- **Pilots validation**

- **Large scale deployment, support to policies**

• **Personalisation of Healthcare**
  - Personal health systems
  - € 72 Million (M) in 2007, (€ 63 M in 2009)

• **Patient safety-avoiding medical errors**
  - € 30 M in 2007, (€ 30 M in 2009)

• **Virtual Physiological Human**
  - Predictive Medicine – Modelling/simulation of diseases
  - € 72 M in 2007, (€ 68 M in 2009-10)
### Challenge 5: Towards sustainable and personalized healthcare

<table>
<thead>
<tr>
<th>Which Call</th>
<th>Title</th>
<th>Indicative budget</th>
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<tbody>
<tr>
<td>Objective 5.1</td>
<td>Call 4, Personal Health Systems</td>
<td>63.0 MEUR</td>
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<td>Objective 5.2</td>
<td>Call 4, ICT for Patient Safety</td>
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<td>Objective 5.3</td>
<td>Call 6, Virtual Physiological Human</td>
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<td>Objective 5.4</td>
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**Total**: 160.5 MEUR
### Challenge 5: Towards sustainable and personalized healthcare

<table>
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<tr>
<th>Call 4 Objectives</th>
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<th>Proposals received</th>
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<tr>
<td>Objective 5.2</td>
<td>ICT for Patient Safety</td>
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<td>29.5 MEUR</td>
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<td>Objective 5.4</td>
<td>International Cooperation on VPH</td>
<td>- 10 - 10</td>
<td>5.0 MEUR</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td>39 125 12 176</td>
<td>97.5 MEUR</td>
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2008 marks a new era in legal and policy framework for EU Cooperation on eHealth

- Proposal for a European *Directive* on patients’ rights in cross-border healthcare
- Commission *Recommendation* on cross-border interoperability of electronic health record systems
- *Communication* on telemedicine for the benefit of patients, healthcare systems and society
- eHealth *Standardisation* Mandate 403
The roadmap for Telemedicine

“Telemedicine for the benefit of patients, healthcare systems and society”


1. Building confidence and acceptance of telemedicine services
2. Bringing legal clarity
3. Solving technical issues and facilitating market development
1. Building confidence and acceptance on Telemedicine services:

- Measuring and documenting impact of telemedicine, improve quality of studies
- Supporting large scale telemedicine use, and innovative and sustainable procurement/funding schemes
- Involving health professionals and patients in telemedicine
- Defining Member States needs
- Collecting of good practice on deployment of Telemedicine in Member States
2. Bringing legal clarity:

- Member States to share information on current /future national legislative frameworks relevant to telemedicine
- and adapt national legal framework to allow telemedicine to be used
- Analysis of the European legal framework applicable to telemedicine services
3. Facilitating market development:

- *Industry and international standardisation bodies to propose a plan to achieve interoperability in Telemedicine*

- *Commission in cooperation with Member States to issue a strategy on conformance testing of interoperability, functionality and security of telemonitoring systems*
Is there a proof that specific Telemedicine application improves clinical (health) outcomes and/or is cost effective?

- Such proof shall be:
  - in large scale setting
  - using scientifically sound methods
  
(such as the randomised clinical trials for drug testing)
**Large Scale Pilot on Telemedicine:**

- Allocated €7 M within the Competitiveness and Innovation Framework Programme (CIP ICT-PSP) for the deployment of a *large-scale pilot* "(...) to validate in real life settings the use of existing PHS for innovative types of Telemedicine services and to prepare for their wider deployment".

- Focus on three chronic conditions: **diabetes**, **cardiovascular diseases** and **COPD**, a statistically significant sample size of the population to be monitored for each disease and the same methodology to be used in all testing sites.
**Large Scale Pilot on Telemedicine:**

- The call targets a consortium of *six to eight regional healthcare authorities or local healthcare organisations* directly responsible for the deployment of existing or planned telemedicine services.

- Operations are expected to start in **January 2010**, for a duration of **three years**.

- The initiative is expected to build up the *largest multi-centre clinical trial* ever deployed in Europe to **measure the effectiveness and cost effectiveness of Telemedicine solutions**.
In an ageing Europe, where more and more citizens live with chronic diseases, Telemedicine can make the difference in facing the global challenge posed to health systems by an increasingly heavier burden of demand for service.

The EC realizes this potential and intends to exercise leadership in fostering the deployment of Telemedicine applications on a large scale.

The EU agenda is focused on Research (PHS & VPH) as well as three key issues to facilitate greater deployment: 1) increasing confidence and acceptance of Telemedicine services; 2) gaining legal clarity; 3) overcoming unsolved technical issues and supporting market development.

Funding a large scale pilot on Telemedicine to be carried out as a multi-centre clinical trial throughout Europe is a main ongoing step.
Thank you!

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