Industry Consultation on Innovative ICT tools and Telemedicine services

Wednesday 2nd April 2008
European Parliament, Brussels
room ASP 5F 385

Ilias Iakovidis
Deputy Head of Unit
ICT for Health Unit, DG INFSO
Challenges for European Health Systems

• **Pressure on healthcare systems**
  - Citizens’ expectations for high-quality care
  - Demographic changes
    - more people will require prolonged care
  - Increased prevalence of chronic diseases
    - substantial part of the overall healthcare costs
  - Medical accidents
  - Staff shortages
  - Reactive model of healthcare delivery
    - after appearance of symptoms
  - Rising healthcare costs
    - faster than the economic growth itself

• **How to offer high-quality & affordable care?**
Needs and Trends

• **Require changes in the way:**
  – Healthcare is delivered
  – Medical knowledge is managed & transferred in clinical practice

• **Emphasis on:**
  – Remote monitoring and care
    ▪ continuity of care - health services outside hospitals
  – Efficient disease management
    ▪ monitor patients over extensive periods of time (at home)
  – Prevention and Prediction of diseases
    ▪ enhanced quality of life
    ▪ avoid costly treatments - reducing healthcare costs
  – Individual citizen with stronger role in healthcare process
<table>
<thead>
<tr>
<th></th>
<th>Traditional model of healthcare</th>
<th>New model of health services delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model/Philosophy</strong></td>
<td>Disease centred cure</td>
<td>Citizen centred and wellness focused</td>
</tr>
<tr>
<td><strong>Interactions</strong></td>
<td>Episodic, on demand</td>
<td>Continuously, autonomous</td>
</tr>
<tr>
<td><strong>Data Characteristics</strong></td>
<td>Fragmented, proprietary</td>
<td>Integrated, distributed, shared, continuous update</td>
</tr>
<tr>
<td><strong>Care giver</strong></td>
<td>Healthcare professional</td>
<td>Citizen, informal carers, community, healthcare professional</td>
</tr>
<tr>
<td><strong>Care receiver</strong></td>
<td>Patient</td>
<td>All citizens (independent of social, mental, physical capacities)</td>
</tr>
<tr>
<td><strong>Entry into healthcare system</strong></td>
<td>Disease triggered</td>
<td>Choice</td>
</tr>
<tr>
<td><strong>Consultation delivery process</strong></td>
<td>Linear (cottage industry type)</td>
<td>Ubiquitous, seamless, collaborative</td>
</tr>
<tr>
<td><strong>Consultation receiver location</strong></td>
<td>Hospital, GP office</td>
<td>Home, community-based</td>
</tr>
</tbody>
</table>
Our WIN³ approach for eHealth

- For improvement of quality of care – Saving lives
  - ICT infrastructure for Continuity of care, Personalisation, prevention and improved patient safety

- For increase of productivity - Saving Money
  - Cost benefits possible when eHealth combined with appropriate organization and skills

- For economic development - eHealth Market
  - To facilitate sustainable growth of transparent and innovation friendly eHealth market. Current market size estimated at €20 Billion
Cardiovascular disease -CVD- in the EU
Facts & Figures

Costs the EU economy €192 billion a year
57% health care costs
21% productivity losses
22% informal care of people with CVD

CVD causes 42% of all deaths in the EU
Coronary heart disease > Stroke
Central and Eastern Europe > Northern, Southern and Western Europe

EU-funded projects
MyHeart, HeartCycle, Heartfaid, EUHeart, …
European Vascular Genomics Network (EVGN)
…

Source: «European cardiovascular disease statistics 2008» © European Heart Network
**eHealth Market Definition***
- 4 major categories

1. **Clinical information systems**
   a) Specialised tools for health professionals within care institutions
   b) Tools for primary care and/or for outside the care institutions

2. **Telemedicine systems and services, including homecare**

3. **Integrated regional/national health information networks** and distributed electronic health record systems and associated services

4. **Secondary usage non-clinical systems**
   a) Systems for health education and health promotion of patients/citizens
   b) Specialised systems for researchers and public health data collection and analysis
   c) Support systems for clinical processes not used directly by patients or healthcare professionals.

*Definition agreed with the eHealth Industry Stakholders Group reporting to the i2010 sub group on eHealth
I. Past R&D Focus 1990-1998
Regional health information networks
II. Current R&D focus (since 1999 - )
Connecting individuals with Health Information Networks

- Region 1: Home
- Region 2: Hospital
- Region 3: Emergency

- Mobile, Wireless & Broadband
- Secure Networks

- Health Centre
- Pharmacy
- Mobile PC

- Mobility
III. Current R&D focus (2004 - )
Towards full picture of individual’s health status

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

Integrated Health Records
EU current eHealth Agenda
Research & development – FP7

- **Personalisation of Healthcare**
  - Personal health system
  - € 72 Million 2007, € 63 Million 2009

- **Improving Patient safety & avoiding medical errors**
  - € 30 Million 2007, € 30 Million 2009

- **Predictive Medicine – Virtual Human**
  - Modelling/simulation of diseases
  - € 72 Million 2007, € 68 Million 2009,
I. Past R&D Focus 1990-1998
Regional health information networks

- Mobile, Wireless & Broadband
- Secure Networks
- Region 1
- Region 2
- Region 3
- Health Centre
- Hospital
- Emergency
- Pharmacy
- Mobile PC
- Home
- Mobility

Secure Networks
Estimated cumulative benefit by 2008: ~ € 1.4 bil.

- Prescriptions: 80%
- Disch. Letters: 81%
- Lab. reports: 95%

Reimbursement: 13290 = 95%
Referrals: 40113 = 80%
## IT use among primary care physicians in seven countries

<table>
<thead>
<tr>
<th></th>
<th>AUS (%)</th>
<th>CAN (%)</th>
<th>GER (%)</th>
<th>NET (%)</th>
<th>NZ (%)</th>
<th>UK (%)</th>
<th>US (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electronic medical record (EMR) system</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you currently use EMRs in your practice?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>79_b,c,d,e,f,g</td>
<td>23_c,d,e,f,g</td>
<td>42_d,e,f,g</td>
<td>98_e,f,g</td>
<td>92_g</td>
<td>89_g</td>
<td>28_g</td>
</tr>
<tr>
<td>Does your EMR system allow you to (base: all doctors; percent yes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share records electronically with clinicians outside your practice</td>
<td>10_b,d,e,f</td>
<td>6_c,d,e,f,g</td>
<td>9_d,e,f,g</td>
<td>45_e,f,g</td>
<td>17_g</td>
<td>15_g</td>
<td>12_g</td>
</tr>
<tr>
<td>Are the following tasks routinely performed in your practice?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor receives alert or prompt about a potential problem with drug dose or interaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, using computerized system</td>
<td>80_b,c,d,e,f,g</td>
<td>10_c,d,e,f,g</td>
<td>40_d,e,f,g</td>
<td>93_e,g</td>
<td>87_g</td>
<td>91_g</td>
<td>23_g</td>
</tr>
<tr>
<td>Yes, using manual system</td>
<td>10_b,c,d,e,f,g</td>
<td>31_c,d,e,f</td>
<td>33_d,e,f,g</td>
<td>2_e,f,g</td>
<td>6_g</td>
<td>6_g</td>
<td>28_g</td>
</tr>
<tr>
<td>No</td>
<td>11_b,c,d,f,g</td>
<td>56_c,d,e,f,g</td>
<td>27_d,e,f,g</td>
<td>4_g</td>
<td>7_f,g</td>
<td>3_g</td>
<td>47_g</td>
</tr>
</tbody>
</table>

**SOURCE:** Commonwealth Fund International Health Policy Survey of Primary Care Physicians, 2006.

**NOTES:** Reading from left to right starting with Australia (AUS), the letter indicates significant differences with the country or countries to the right, as indicated (p < .05).

b Different from Canada.

c Different from Germany.

d Different from the Netherlands.

Different from New Zealand.

Different from the United Kingdom.

Different from the United States.
Regional Health Information Networks
15 years of EC activities ("Innovation cascade")

- Research and Development
  - Stand alone systems (EHR, messaging)
  - Larger pilots with online services (e.g. eReferrals)
- Pilots validation
- Large scale Deployment
  - Member states + EU’s special programmes for demonstrations (eTen & CIP)
  - Large scale validation, EU wide services interoperability, mobility


eHealth Action plan (COMM 2004)
e-Health Action Plan: main areas of activity

- National/regional roadmaps
- Common approaches for patient identifier
- Interoperability standards for EHR
- Boosting investments in eHealth
- Certification and labeling (Q-REC project)
- Legal framework, certification of qualifications
- Yearly Ministerial conferences & exhibitions
- World of Health IT yearly conference
eHealth Action Plan
- progress report

- Publishing eHealth Roadmaps of 27 Member States (3/07)
- Launching Large Scale Pilots on interoperability of emergency and medication data – CIP (2/08)
- Lead Market Initiative (Dec 2007)
- EC Recommendation on eHealth Interoperability (April 2008)
- Mobilising the Actors
  - eHealth 2008 Conference Slovenia May 7-8
  - 3rd World of Health IT (WHIT 08), Copenhagen, November
- Creating the conditions: Working with all the stakeholders and other EC services on the legal framework, cross border health services, Innovation, boosting of eHealth financing
eHealth in EU – Some Good News
Euro leads eHealth deployment in primary care (EC Study 2007)
Current focus (since 1999 - )
Connecting individuals with Health Information Networks

Health Centre, Hospital, Emergency

Secure Networks

Mobile, Wireless & Broadband

Home, Mobile PC

Regions 1, 2, 3

Mobility
EU in support of Telemedicine - Innovation "cascade"

Personal Health Systems
Health monitoring

Research and Development

Pilots validation

Large scale Deployment

Research funds FP

CIP, Member states Structural funds

Innovative telemedicine services

1998 2004 2010

Telemedicine Communication & Action plan?
EU current eHealth Agenda
Support to Deployment

- Lead Market Initiative (Dec 2007)
- Recommendation on eHealth Interoperability (April 2008)
- Communication on Telemedicine and Innovative ICT Tools for chronic disease management (Q4 2008)
Definition

- Delivery of healthcare services for patients,
  - using information and communication technologies,
  - in situations where the clinician(s) and/or the patient are not in the same location.

- Includes transmission of medical images, audio, video, text or other data to support diagnosis, monitoring, treatment and rehabilitation.
Two main groups

- Healthcare professional to healthcare professional (e.g. teleradiology, telecardiology)
- Healthcare professional to patient (e.g. telemonitoring of chronic diseases, continuity of care)
- (for Telehealth) Social care/Patient to patient
Telemedicine (TM) and market perspectives

- Part of e-Health market, identified as one of the most promising sectors for growth (Lead Market Initiative)

- Market not developing as rapidly as could be anticipated

- Market is fragmented, lack of interoperability, legal and financing uncertainties

- Few proven, sustainable business models
The global market for telemedicine is estimated to be worth €4.7 billion in 2008, increasing to over €11.2 billion by 2012, an average annual growth rate of 19%.

Source: Telemedicine; Opportunities For Medical and Electronic Providers. BCC Research, 2007
A need for evidence and tech. assessment e.g. Cost savings in patient care

- Hospitals in Germany can save up to €1.5 billion per year through early discharge of patients made possible by mobile monitoring services.

<table>
<thead>
<tr>
<th>Early discharged hospital patients using mobile services (20% of total):</th>
<th>Average costs for one hospital day:</th>
<th>Average number of hospital days saved through early discharge:</th>
<th>Total yearly cost savings through early discharge:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3 million</td>
<td>€150</td>
<td>3 days</td>
<td>€1.5 billion</td>
</tr>
</tbody>
</table>

Source: GesundheitScout 24 GmbH and Bayerisches Rotes Kreuz
The EU Mosaic of health delivery systems: no solution fits all.

- **Scenario I:** Pan-European, open solution
  - Pan-European, solidary health collaboration
  - Public, solidary funding

- **Scenario II:** Individualised, market-driven health systems with national and cross-European cooperation
  - Private, individualised funding, market driven

- **Scenario III:** Limited, local/regional health collaboration in public systems
  - Proprietary solution, limited sharing of data

- **Scenario IV:** Market driven, limited sharing of data
Telemedicine (TM) and barriers for wider deployment

- **Technical**
  - infrastructure, interoperability, quality of transmission and encryption, identification and authentication

- **Organisational**
  - lack of awareness, training, acceptance by professionals and patients; lack of hard evidence of cost/benefits, quality standards; business models for procurement and reimbursement

- **Regulatory issues**
  - accreditation and authorisation of TM activities, liability, crossborder aspects, safeguarding security and privacy, reimbursement
Why does the Commission need to act?

- In the absence of Community action, possibly:
  - Lost opportunity for health systems and patients to take advantage of TM solutions to address specific challenges
  - Absence of common standards and solutions jeopardising future interoperability of systems
  - Lower market uptake and deployment of useful and technologically mature TM solutions
Does the Commission have the right to act?

- Legal basis (EC treaty)
  - Internal market art. 95
  - Competitiveness of industry, art. 157
  - Public Health art. 152

- Necessity test
  - Community involvement legitimate in:
    - Identification of common barriers to deployment of TM
    - Cross border aspects of healthcare provision
    - Coordination on common standards
    - Support of internal market on TM applications

- Proportionality
  - Policy initiative to support MS and Commission to address common challenges
    - Genuine need for coordination at EU level
Policy options (1)

No policy change

- TM services fall under the existing Directives 98/48/EC (transparency dir.) and Directive 2000/31/EC (Electronic Commerce dir.), but implications need to be clarified

- Proposal for a Directive on cross-border healthcare addresses some issues related to cross-border e-Health aspects (but not expected soon)

- Risks of insufficient coordination between Member States on issues related to common approaches and standards include
  - Hampering, delaying the benefits to patients for regional & national health systems
  - Unnecessary market fragmentation, Slower market development perspectives
Policy options (2)

Non-legislative approach

- Would allow to build a structured and coherent framework to the Commission activities in the Telemedicine area
- Rationale: some issues best addressed at Community level
- Aim of the approach:
  - analysing the main problems, obstacles and barriers for deployment of TM
  - Suggesting possible actions to address the issues (actions for Member States and for the Commission)
- Non binding measures
- Possible instruments: Communication or Recommendation
Policy options (3)

**Legislative approach**

- Would have to be based on internal market / free movement of services principles
- Currently,
  - lack of sufficient understanding of these information services
  - Little specific national regulation activity in place
- Appears premature to call for harmonisation of regulation in that area
- On the public health side, no legal basis foreseen for binding regulation in this area
Other Consultations

- TeleHealth 2007
- i2010 Sub group questionnaire, discussions in November 2007 and January 2008
- Expert Group Meeting, February 4, Brussels
- Commission Inter Service Group
- Med-e-Tel – Luxembourg, April 16-18 2008
- eHealth 2008, Portoroz, Slovenia, May 6-7 2008
- Consultation with patient organisations, date tbd
What is expected from this workshop

- Exchange of ongoing activities in the domain
- Capture the industry’s vision, commitment, concerns
  - An industrial analysis of the market (market data)
  - A better understanding of the industrial strategy
  - What does Industry expects from the Commission (regulation, financial support)
- Input for EC Communication and commitment on a feedback from Industry
For further information

- **DG ENTR LMI microsite:**
  http://ec.europa.eu/enterprise/leadmarket/leadmarket.htm

- **eHealth Task Force report:**

- **INFSO H1 Policy site:**

- **e-Newsletter:**

- **Research site:**

- **Interactive Portal:**
  http://www.epractice.eu