

WHIT08 – EC Workshop Procuring for health benefits: Critical Factors for Beneficial Deployment of Innovative eHealth and Telemedicine Services

6 November 2008 13:30–17:15

Main compilation of the workshop findings

The main procurement models presented were:

- Formal large-scale procurement for telemedicine equipment and services – NHS CfH England
- Regional procurement of a large-scale application of a remote telemonitoring service supported by a range of self-standing pilots to expand patient and client experience of the new approaches as the procurement exercise is taken forward – Northern Ireland
- Local development of telemedicine and services equipment, with a plan to scale-up – Catalan
- Procure for emarketplace with local call-off – Odense, Denmark.

The models presented do not procure health services with embedded telemedicine directly. They procure telemedicine services for use with existing services. The Spanish Catalan models propose evaluations with a planned, later scale-up, so should enable an impact evaluation to select models linked to benefits. It is too early to produce evidence of success.

The Northern Ireland approach proposes evaluations as new arrangements are in place. This should enable an impact evaluation to select benefits added models. It is too early to produce evidence of success.

Procuring for benefits is part of the workshop title. None of the presentations dealt with this directly. The presentation from Northern Ireland emphasised the need to focus on issues of clinical and patient concern, such as improving health and supporting independent living. The presentation on cardiovascular diseases from the HeartCycle project identified the need to target telemonitoring to different risk groups and to prepare health services before investment. These factors need finalising before the call.

Models that fit DG INFSO needs reasonably well are HeartCycle¹ to set the benefits and procurement requirements, with Northern Ireland and Catalan, both offering local procurement models for applications with subsequent, but different, scale-up plans. The Telecare National Framework Agreement (NFA) offers a structured approach to large-scale procurement, and EC financial support could match these with assessments, evaluations and controls before releasing money to the regional initiatives. Designing and applying structured procurement models must reflect the potential impact of different procurement models on the emerging market for telehealth. Regional models can have the effect of closing down many players in the market, so potentially stifling innovation.

A suggestion at the workshop was a minimum patient workload of 1,000, but without evidence. Northern Ireland plans for workloads of 1,500, then to 5,000.

The workshop provided a structured exchange and discussion between all participants on the challenges to improve patient experiences and the quality of care, whilst simultaneously servicing the strategic and efficiency goals of their healthcare and social care systems.

Circulated workshop overview

The workshop aims focused on the perspective of the professional user:

- Why, and under what framework conditions, do physicians and nurses support investment in innovative eHealth and telemedicine
- Which benefits can be realised from this experience
- What are the challenges encountered
- Which lessons others can learn from
- How does this translate into the investment decision making and procurement process of their organisations?

A workshop aim was to have reports from users, not eHealth experts or informatics experts. Expectations were reports on users' concrete, routine experiences and challenges encountered in their daily endeavours to improve patient experiences and the quality of care, whilst simultaneously servicing the strategic and efficiency goals of their hospitals. The workshop was a structured exchange and discussion of these issues among all participants.

Related issues

A related issue raised was the financing arrangements for telemedicine, including new reimbursement models. A strong view was that these should be in place before procurement begins.

¹ <http://heartcycle.med.auth.gr/>

The workshop

The goal of the workshop was to find out the state of the art and lessons learnt in eHealth procurement, in particular deploying telemedicine services. Topics considered for discussion included:

- Which good procurement practices will support the call
- What are the achievements
- What works
- What makes sense
- What should be included, such as quality, certification and measurement
- Lessons, especially involving clinicians
- Who has done it, not what will be
- Who are the procurers
- What are the needs for incentives and reimbursements, especially from third party payers
- Role of product comparisons?

European Commission will use an output of the call in their plans to support large-scale deployments and to work towards a "guide to procurement" for telemedicine.

Ilias Iakovidis, Deputy Head of Unit ICT for Health, DG Information Society and Media, European Commission, Brussels

The planned 2009 personal health systems (PHS) large-scale pilot and thematic network of procurers, funded under the Competitiveness and Innovation Programme (CIP) provide a foundation for future investment. Taking it forward needs clarification of the state of the art in procurement, especially:

- Who should be brought together
- What are the lessons learnt
- Need for evidence of benefits.

Understanding and applying these can help the EC to support Member States to break out of the piloting mentality prevalent in telecare. This is:

- An emphasis on innovation, not on imitation
- A sound logic base to build from
- Sufficient personal commitment
- Inadequate system commitment.

Part of the support is producing procurement guidelines, along with financing guidelines.

Andrew Hamilton, CEO, European Centre for Connected Health, Northern Ireland, Great Britain – lessons learnt to date in moving towards large scale application of remote telemonitoring

The Department of Health and Social Services is responsible for the health and social care system in Northern Ireland. The Department, advised by a range of stakeholders, took the lead in designing and implementing the telemedicine strategy. It provided significant additional funding to finance the regional telemonitoring service as part of a wider programme of investment in chronic disease management. It acknowledges that introducing telemonitoring will provide downstream efficiencies and reduced costs. Successful scale-up of these new approaches depends on the initial availability of additional resources to pump prime the introduction.

Three themes were initiatives; critical success factors (CSF); procurement process. Ownership by the health and social care system is the most important, top CSF.

The aim is to provide a regional remote telemonitoring service for 5,000 people by 2011. As the procurement of this service goes forward over the next year, a number of pilots aim to extend the clinical and user experience of telemedicine and prepare the system for full implementation of the regional service later next year. These pilots will offer access to a range of remote monitoring services for 1,500 people by March 2009.

The pilots are not part of the procurement and short-listing. Procured regional service includes:

- Supplying, delivering, installing, commissioning, maintaining, decommissioning and making good equipment and supporting services such as training
- Collecting, processing, analysing, transmitting and providing relevant data, including triggering alerts to designated contact points
- Developing and implementing system interfaces
- Providing a triage service, including technical triage and optionally first line clinical triage
- Supporting evaluation
- Complying with current and emerging interoperability standards
- Future proofing.

Critical success factors are:

- Align with the strategic and operational health and social care agenda
- Regional leadership and drive
- Secure local, clinical and corporate support and ownership
- Promote logic and evidence base
- Appropriate resourcing.

These have several components.

- Align with the strategic and operational health and social care agenda
 - Transition from pilots with personal commitment to scale application with system commitment
 - Legitimise focus of Ministerial commitment supported by clear policy framework
 - Support case for prioritisation and investment
 - Move investment from investment in ICT to investment in care
 - So the debate and case for introduction is not about technology or economic gain, but about issues of clinical and user concern, such as:
 - Improving Health
 - Information for people
 - Better targeted health promotion
 - Self management
 - Optimising independent living and support for carers
 - Early intervention and case management
 - Supporting professionals & multi-disciplinary networks
 - Streamlining the operational delivery of services
 - Reducing risk
 - For health authorities and professionals, economic benefits are secondary to care benefits
 - Telemonitoring is an investment in healthcare, not a saving or reduced spending.
- Regional leadership and drive
 - Inconsistent response to key challenges
 - Recognition that service could not deliver system change without support
 - Feasibility study from October to November 2007 confirmed need and support for strategic intervention, recognising that current approaches are unsustainable
 - Market failure
 - Considerable stakeholder and cross-sector support
 - Evidence base pointing in right direction
 - Maturity in supply chain
 - Timing was right
 - Regional initiative in January 2008 with significant funding.
- Secure local, clinical and corporate support and ownership
 - Clinical buy-in is critical because the initiative impacts on working practices and thus management of clinical risk
 - Need for corporate commitment to make things happen on the ground
 - Time, energy, commitment and leadership needed
 - Highly participative project management and implementation structures

- Building awareness through road shows and expos
 - Active engagement of professional bodies
 - Identify and involve clinical champions
 - User engagement and participation
 - Set clinical parameters
 - Build and resource pilots to scale, but not yet done
 - Use local accountability framework and performance management arrangements
 - Project management and Implementation
 - Project board
 - Five local multidisciplinary design groups plus a regional design group
 - Regional quality assurance group
 - Regional clinical forum
 - Local organisational arrangements
 - Development of procurement documentation, such as memorandum of information (MoI), evaluation criteria, outline business case (OBC), invitation to participate in dialogue
 - Development of business case and procurement strategy
 - A full business case, incorporating the actual service costs as agreed in the procurement before contract award, and agreed with the service delivery organisations to ensure clinical and corporate buy-in and ownership of the benefits that the programme aims to deliver.
- Promote logic and evidence base
 - Critically important to clinicians and investment decision
 - Evidence base is building
 - Particularly strong for heart failure and aspects of diabetes
 - Less well developed for chronic obstructive pulmonary disease (COPD)
 - Positive patient experience
 - Initiative does not rest exclusively on evidence base but on logic and rationale of improved information and early intervention, and
 - Agreement to evaluation, then adopt what works and adapt what doesn't
 - Appropriate resourcing

The evidence base is limited, so the logic base is used. The limited evidence base points in the right direction, especially for heart failure, some aspects of diabetes and for the patient experience. The need remains for a more comprehensive analysis of the benefits. This is why the strategy we did not rely exclusively on the evidence base, but on the logic of early intervention and the provision of information to support that. The project website www.eu-cch.org has an analysis of the evidence for review.

Timetable

● Advertised in OJEU	26 August 2008
● Expressions of Interest received	26 September 2008
● Pre–Qualification Questionnaire and ● Memorandum of Information issued	26 September 2008
● PQQ returns closed	Mid October 2008
● Long list determined	Early November 2008
● Invitation to participate in dialogue	
● Output Based Specification issued	Early November 2008
● Short list determined	February 2009
● End of competitive dialogue	July 2009
● Best and Final Offer returned	Late August 2009
● Award of Contract	Late September 2009.

The planned elapsed time is 13 months. It is inevitably lengthy and laborious. Depending on the approach, it can embed local commitment and support. The market response was good: 52 expressions of interest and 25 responses to pre-qualification questionnaires (PQQ), with significant UK, European and US interest.

Key lessons are:

- Firmly anchor in the strategic care agenda
- Focus on contribution to quality, safety, accessibility and user experience, economic and efficiency benefits are by-products
- Make evidence base available
- Regional leadership and local design
- Clinically led, managerially promoted and supported
- Acknowledge that this takes time.

Professor John Cleland, HeartCycle Project, University of Hull, UK – the medical perspective of monitoring heart disease patients

Despite clear evidence of benefits for patients and a modest cost of some €50 a month each, the uptake of telemonitoring services is slow, so questions are:

- What are the main hindrances and how can they be overcome
- Why and when do health professionals support investment in eHealth and telemedicine solutions
- How does this translate into investment decision-making and procurement processes of their organisations
- Who should be considered for home telemonitoring are patients who might benefit from frequent measurements:
 - High but modifiable risk of hospital admission and death, such as patients with severe or unstable heart failure and to improve their outcome and reduce hospital cost

- Rapid treatment titration such as after a myocardial infarction, new hypertension and ensure good rehabilitation and secondary prevention
- Should stable patients be considered for telemonitoring if they:
 - Have a low risk of hospital admission and death in the next year, such as most patients who are well with no recent event, because the service is not cost-effective unless costs are very low
 - Need to avoid medicalising patients unnecessarily.

Specific targeting of telemedicine on high-risk people needing rapid treatment and titration is essential. A risk is that intensive monitoring can have negative results, such as some diabetes patients with increased anxiety and depression.

Plasma NT-proBNP is a sensitive marker of diastolic dysfunction and arterial remodelling in hypertension. Telemonitoring is effective in providing routine information about its status.

Despite clear evidence of benefits for patients:

- Structured telephone support and care offers inconsistent evidence that hospital costs can reduce, but can also increase
- Home telemonitoring can be beneficial on hospital admissions and mortality
- TEN-HMS study shows that both nursing support and home telemonitoring have better outcomes than traditional models, but that nursing support models are more costly because of their reliance on hospital admission
- TEN-HMS shows that telemonitoring has the highest reliance on care plans at between 80% to 95%, nursing support at 64% to 88% and traditional models at 71% to 80%
- TEN-HMS shows different self reporting by patients for the four New York Heart Association (NYHA) classifications, with telemonitoring at 69% and better than nursing support and traditional models for I and II, but the worst at about 20% for III and IV
- TEN-HMS shows the number of days in hospital is lower with telemonitoring compared to the other two care models
- The uptake of telemonitoring services is slow by NHS Direct.

The main hindrances and inhibitors are:

- Sub-optimal sensor technology, where snags occur, even for apparently simple things, such as patients weight with clothes, measuring heart rate by atrial fibrillation and blood pressure by atrial fibrillation using cuffs
- Exciting new technologies but no proof of utility for many types of bio-impedance, acoustic cardiography and ballisto-cardiography
- Wasted efforts on possibly intrusive visual links

- Important gaps in telesensor capability, so we measure what we can rather than what we should, such as systolic illnesses where greater benefits can be realised.

Sub-optimal communication technology is in use:

- Plain old telephone service (POTS) has limited data transmission speed and quality
- Broad-band is much faster but delays in installation
- General packet radio services (GPRS) or other mobile phone technology is probably the ideal solution
- Data-Security is not a problem in practice yet
- Lack of independent cost-effectiveness analyses such as:
 - Trial data, such as TEN-HMS and US Managed Care Data
 - Service data has lack of adequate controls, cluster randomisation, trials of service duration and hybrids.

There is a lack of appropriate service models:

- Who should monitor:
 - Remote call centre is a good solution when low-density use, a bad solution for high-density use
 - The same team that delivers usual care is the best solution provided it is a major responsibility
- How should monitoring be done:
 - Replace existing care pathways with home telemonitoring may be cost-effective
 - Adding home telemonitoring to existing care pathways may improve outcome but probably not cost-effective, and most randomised control trials (RCT) have done so far
 - Good care pathways need developing stating whom does what and when and showing that not more than one person has taken care of any problem.

A minimum viable telemonitoring workload is one thousand patients.

There is a lack of appropriate business models:

- Buying or leasing hardware offers a more flexible local service and may be the best option for long-term monitoring, but has a high initial cost, need for replacement and staff training
- Buying services has a low initial cost, may include staff and offers better back-up, but has a high recurring cost, less flexible local service and an incentive to terminate
- A hybrid model can spread of costs better aligned to clinical scenario.

Business models will be adapted by clinicians.

Clinicians have a lack of familiarity and confidence with telemonitoring and insufficient, robust decision–support software.

Turf wars between professional groups are inhibitors:

- Doctors, including family doctors, private specialists in some countries and hospital specialists
- Organisations, including family doctor organisations, private clinics and hospitals.

A major beneficial effect of home telemonitoring is on death and the duration of hospitalisation. It does not yet show benefits for the rate of hospital admission. This leads to complications in deciding who should pay.

How can these problems be overcome?

- Improved sensor and communication technology
- HeartCycle project experience and knowledge
- Evidence
 - Adequate preparatory work is essential but health services not ready
 - A definitive, intelligent study
 - Diagnostic outcome trial in heart failure (DOT–HF), and international, prospective, multi–centre RCTs
<http://clinicaltrials.gov/ct2/show/NCT00480077>
- Clinician–led models of service are needed that
 - Develop clinical pathways
 - Use decision–support software
 - Replace existing care patterns
- Need for proper business and health–economic models.

An important proposition is that RCTs should be the basis of evidence. Several people in the workshop who have considerable telehealth experience disagreed strongly. They see it as too complex and with too many variables for this approach.

George MacGinnis, Programme Manager, Assistive Technology, NHS Connecting for Health (CfH), England, UK – national procurement framework for telecare and telehealth: experience, learning and plans

Five themes were:

- Background
- Telecare National Framework Agreement (NFA)
- Lessons identified
- Future developments
- Wider implications.

Background to the national initiative is the policy drivers in 2005/06 for:

- Better preventative services
- £80million (€120 million) funding for about 250 buyers, about £1.57p per head of population
- Opportunity to pump prime a new industry.

Excluded from these budgets is the cost of organisational change in clinical and working practices. Healthcare providers have to finance this themselves.

A project management group delivers the sourcing strategy. Membership is from:

- NHS Purchasing and Supply Agency (PASA), including the Centre for Evidence-based Purchasing
- Department of Health, Older People and Disability Division
- Care services efficiency delivery programme
- Regional Centre for Excellence (Social Care) South East
- Care Services Improvement Partnership (CSIP)
- Office of Government Commerce (OGC)
- Commercial Directorate
- NHS Connecting for Health
- Exodus Market Research.

A very wide product range is included in the project:

- 13 prime suppliers
- >2,800 products
- Telecare, telehealth and home automation
- Equipment and services.

These combine into many stakeholders to engage.

Selecting bidders relied on a down-selection of offerings made by:

- Commercial assessment of vendor
- Product approved for market with CE marking to show compliance with applicable EC directives
- Compliance with the limited standards available using the Telecare Services Association (TSA) Code of Practice, a management framework for best practice for telecare services Part One Telecare Calls Handling Operational Requirements
- The same product or service was available from an alternative supplier on better terms
- Review of product literature.

The Telecare NFA sets standards. These are costly but essential to connect buyers and sellers constructively. Benefits are:

- Reduced time for local authorities to acquire telecare equipment and services for 160,000 new users within two years of the Preventative Technology Grant
- Cost savings from collective negotiation
 - >80% of local authorities in England actively use the NFA
 - Channel for £32 million spend in first year, saving >£9 million
 - Efficiency savings in the region of £27 million from duplicate tendering
- A new relationship with the market, especially small and medium sized enterprises (SME) as suppliers.

A potential constraint is that SMEs are very protective of their intellectual property rights (IPR). It limits sharing.

The approach won the Chartered Institute of Purchasing and Supply Best Public Procurement Project Award in September 2007.

Risk mitigation is an issue. Presentations had no information about the topic.

Lessons:

- Tailor to the market to reconcile the need for proprietary and interchangeable solutions
- Recognise maturity of the sector and segment
- Trade ease of acquisition with flexibility to accommodate new offerings
- Price transparency and comparability for cost of ownership
- Set compliance bar low to ensure interest.

Future developments are the technology issues of:

- The NFA opened up a new area for NHS information standards to address.
- Most existing standards relate to clinical systems, with only limited guidance available for telecare and telehealth systems features for security and access control usable by older people and data provenance
- Some technical issues where central requirements and standards might be feasible, including:
 - Service availability
 - Business continuity and disaster recovery
 - Security and access control
 - Device interoperability
 - Integration with clinical systems, including shared demographics and submission of clinical datasets.

Aims for future procurement include formal technical requirements to:

- Set clear expectations of suppliers
- Provide a level playing field for bid evaluation
- Drive desired market behaviours, such as interoperability
- Offer buyers greater confidence in the services procured

- Clarify the approach and improve the methodology.

Telehealth requirements are not set effectively. There is a need for much more development in this area. Performance at the three levels was:

- Standards – 8 requirements, with 3, almost 40%, in the range that includes “Not defined”
- Technical – 11 requirements, with 10, over 90% in the range that includes “Not defined”
- Services – 10 requirements, with 10, 100% were in a range that includes “Not defined.”

The total position is that about 80% of requirements are in a range that includes requirements “Not defined”. These match over 90% classified in the range with the best defined as “Good description of minimum feature set/functionality the system must have.” Two requirements, 7%, were at the highest level of “Fully specified with exact details of how the system will work and what features it will contain.”

Industry engagement

- Broad based engagement through open fora:
 - Continua Health Alliance
 - Intellect
 - Telecare Services Association
 - Others, including like Integrating the Health Enterprise (IHE), Fresh Approach to Successful Training (FAST) and United Kingdom eHealth Association (UKeHA)
- Continua V1 a first step
 - Device interoperability – but not full ‘patient’ choice
 - Could use of their standards be anti-competitive?
- Dialog needed to solve the big issues:
 - Identify management
 - Security and access control needs a new dialogue
 - Trust, truth & provenance
 - Clinical standards
 - Common user interface.

Wider implications and reflections on the current market are:

- Covers a wider range of offerings and maturity
- The emphasis on stand alone offerings, silos, an issue to be developed and resolved
- Interoperability a catalyst for innovation and growth
- Is it local, regional or global?
- Equipment different from services
- Conditions for larger scale offerings still not right

- Local and regional procurement can be more complicated than national, but telecare issues are local.

Issues discussed in the workshop included:

- The focus of the initiative is narrow on telecare, not new healthcare and social services
- Technologies for both remote healthcare and social services are covered, but the two markets are at different stages of maturity, so it is easier to specify and buy telecare equipment and services
- There are two distinct themes, with equipment and software probably a global market, so should be treated as such, and service delivery yet to be subject to any universal clinical and service standards, and so local bespoke procurement and implementation is required
- How to transfer the list of services
- A regional perspective may be best for the EC initiative, but could fragment the market.

It offers a good procurement methodology for telecare equipment, but no experience of service development. Setting requirements effectively needs improving.

More information is available at:

NHS Purchasing and Supply Agency (PASA) – Telecare National Framework Agreement

Website www.pasa.nhs.uk/telecare/

NHS Connecting for Health

Website: www.connectingforhealth.nhs.uk

Department of Health Long Term Conditions

Website: www.dh.gov.uk/en/Healthcare/Longtermconditions

Whole System Demonstrator Action Network (WSDAN)

Website: www.wsdactionnetwork.org.uk

Care Services Improvement Partnership (CSIP), Housing & Telecare Networks

Website: www.cat.csip.org.uk/telecare

Claus Duedal Pedersen, Project Manager, Odense University Hospital Region of Southern Denmark – a telemedicine project under implementation

A wide range of features of the telemedicine initiative is:

- Regional centre for videoconference interpretation
- Home hospital for COPD patients, which is the only COPD investment with a firm evidence base
- Treatment of endocrinology patients
- Cardiology services at GPs supported by specialist
- Acute neurosurgery service between hospitals
- Acute treatment over videoconference of patients with thrombolysis

- Monitoring of dialysis patients over distance
- Pre-operative assessment and preparation
- Alcohol treatment by videoconference
- Discharge conference between hospitals and homecare organisations
- An emarketplace for teleradiology.

Two procurement priorities are the planned interpretation service and the teleradiology service.

Goals of the teleinterpretation services are:

- Providing interpretation services by video conference
- Improving quality
- Improving access in emergency cases
- Reducing costs.

Implementation has already started in radio data system (RDS) and is ready to scale to a national solution next year. It was included in the telemedicine service procured for the interpretations service completed in 2007.

Economic performance evaluated four models with different utilisation:

- Model 1: 42%
- Model 2: 54
- Model 3: 65%
- Model 4: 42% + emergency interpretation services.

Model 2 offers the best arrangement. It can be used as a platform for emergency interpretation services

Cross-border market for teleradiology has features of:

- Healthcare institutions throughout the EU have to meet increasing demand with a shrinking budget
- Diagnostic radiology procedures increase annually at an average of 3.7%.

Needs and trends in healthcare delivery in Europe indicate that the regional, national or cross-border provision and consumption of eHealth services through electronic marketplaces appears a cost-beneficial proposition. In some settings, it may be the only realistic proposition in meeting these growing demands.

Customer challenges are:

- Accessing the whole market with more choices
- Compare prices, availabilities and response time easily.
- Creating access to select sub-specialists from a wider pool

- Integrating customer and provider systems with an easy plug and play solution
- Effective security and privacy
- Reporting in the native language in an international reporting environment
- Dealing with the different authorisations, contracts and payments protocols
- Quality assurance and certifications.

A potential solution is R–Bay: an online emarketplace for imaging diagnostic services across borders, the equivalent of eBay for radiology.

Current challenges are:

- Insurance issues
- Creating the emarketplace without conflicting with procurements regulations, especially selecting providers to be able to trade in the emarketplace and certification
- Online check in all member states' registers of status and specialty certification of an individual doctor
- Identity control
- Cross–border access to patient data.

Questions are:

- Can a procurement process fit into the daily practice of the healthcare system
- How can public institutions participate in tenders across borders
- Can a virtual emarketplace be created without going through procurement processes?

The potential to use an R–Bay model as a global market needs assessing. It should include arrangements for global certification. An R–Bay model is different to bi–lateral contracts between suppliers and procurers. However, specific differences need to identifying and assessing in detail. An emarketplace needs precise, clear definitions of telecare products to inform procurers and contractors.

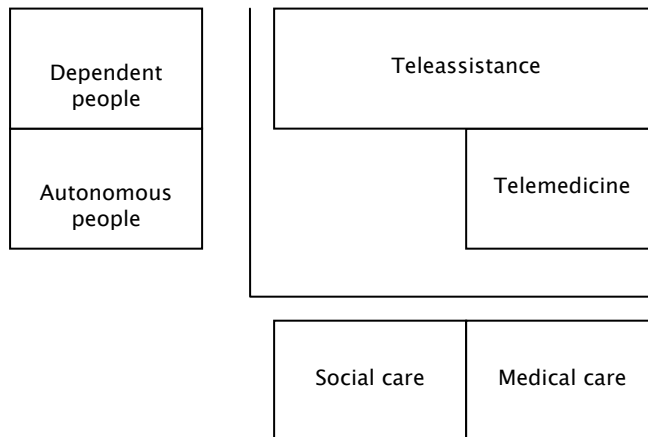
Joan Guanyabens, Secretary Strategy and Co–ordination, Department of Health, Catalonia, Spain – critical factors for beneficial deployment of innovative eHealth and telemedicine services

Outline

- Telemedicine and Teleassistance Pan
- Health administration scope for procuring services
- The Telectus plan
- Need for legal regulation.

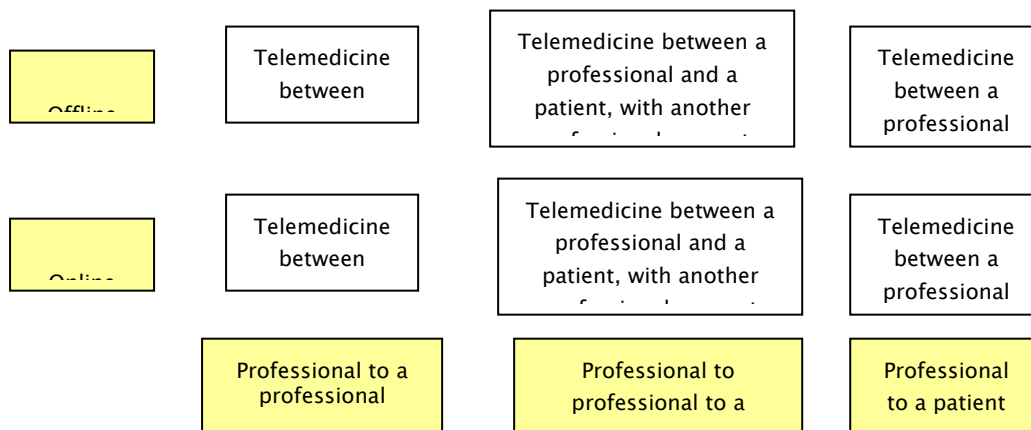
Five–year Telemedicine and Teleassistance Plan

There are many telemedicine and teleassistance pilots and projects in Catalonia. The five-year plan sets this out. The Department of Health draws up the health plan and the transfers of economic resources plan. The telemedicine and teleassistance plans look five years ahead. The eligibility model of the synergies between teleassistance and telemedicine is:

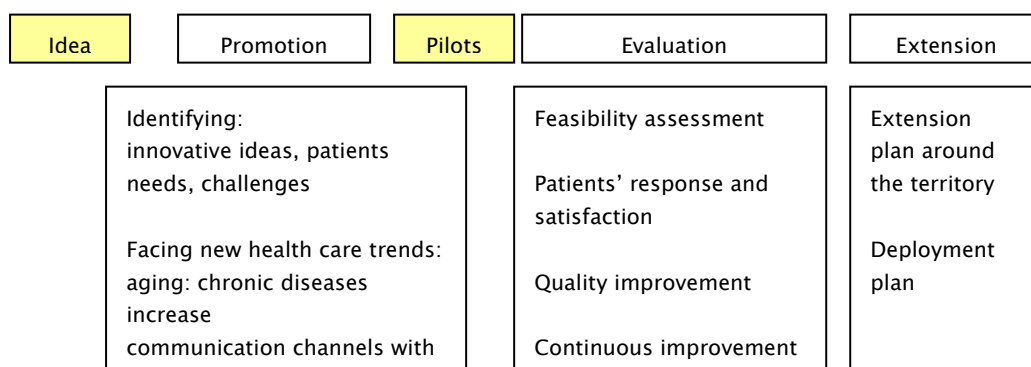


Dependent people who want telemedicine at home will have to be eligible for teleassistance first.

The Catalan five-year telemedicine plan aims to combine six different telemedicine models across two axes of online and offline:



This idea converts into reality in three steps:



Several entities are involved in achieving the goals. The Department of Health sets the ICT strategy. The Information and Quality Agency sets the ICT operability plan. Within this context, the Ticsalut Foundation works with healthcare providers and the Centre for ICT Service Supply works with ICT suppliers to convert the strategies and plans into deliverables and to evaluate solutions.

Ticsalut's role extends to technology and innovation for health. It is organised into three divisions; observatory, innovation and normalisation. The observatory manages a trend map; a directory of ICT professionals; a map of ICT innovations in Catalonia; a technological maturity index. Innovation manages the Telemedicine and Teleassistance Plan; sponsors pilots, tests and applied research. Normalisation manages the Office of Standards and Interoperability; approvals of supplier solutions; translation of international codifications into Catalan.

Discussions in the workshop were:

- Ilias Iakovidis requested the names and contacts of the evaluation team at the Foundation, and Joan Guanyabens agreed to provide them
- The arrangements for scale-up are iterative with successful pilots expanded into routine operation and less successful pilots replaced
- The Sweden experience is that scale-up of these initiatives is essential for sparsely populated areas because their resources are more limited than the average, and their approach is to build on the role of government as provider to improve the interconnectivity of telecare islands, equip clinicians to use telecare and develop business models, especially for new reimbursement models
- Veneto has a model similar to Catalonia, and it relies on critical political decisions, defining telemedicine services and patient mobility
- Technology for mobile working is seen as an investment by the EC
- Use of mobile phone technology are valuable where products and technology can be the same across Europe but services can be different, and healthcare professionals, especially cardiologists, are ready for this type of development
- A representative of the European regions pointed out that the limited infrastructure coverage inhibits investment and the development of knowledge simultaneously, so creating a combined challenge.

Mario Romao representing Continua Health Alliance identified that concerns and challenges are:

- How can products procured for a long lifecycles replicate and profile existing standards in specific use cases
- What happens before procurement
- What can the industry provide, especially in improving procurers' awareness of suppliers
- How can product requirements and specifications keep up with the pace of technological change that can render them obsolete
- Foster a collaborative environment:
 - All shortlisted suppliers should be engaged in discussions before contracts are signed
 - Some components of specifications can be overlooked, so post procurement evaluation is essential and procurements must be able to deal easily with post contract changes
 - Industry associations such as Continua should be linked to and part of procurement.

Ilias Iakovidis assessed these points as indicating the need for a shopping basket approach at all the pre–procurement, procurement and post–procurement stages. The Canada Health Infoway Guide for Telehealth Investment is helpful in this process, and an equivalent could be a deliverable from the EC's proposed call.

Klaus Juffernbruch from Cisco pointed out that people who buy telecare see the benefits. These should be included in the evaluation of pilots that should also show the technology and service fit to the new economic performance. At the micro–level, incentives need to be right for healthcare professionals and their organisations so to ease their switch from paper to ICT. New reimbursements need designing, implementing and reviewing.

Ilias Iakovidis pointed out that reliability is essential to realising benefits, which may be 30 years, a generation, away. Both cost containment and incentives need addressing simultaneously, with a current need to invest in set up and routine operation.

Christof Szymkowiak, Techniker Krankenkasse, introduced the German perspective as relevant to healthcare systems that rely on third party payers. Large–scale investment is not practical because there are too many doctors to engage, so small–scale steps are viable in this setting. An example is services for 600 COPD patients. There is also a need for frameworks and protocols for data security and call centres, and these can require changes by suppliers. The combined effect is that telehealth is not a big business for third party payers. Finance will not be available from new money, so the opportunity cost of redeployed finance will be high. An approach

could be for third party payers to work directly with national governments and within current reimbursement models.

Local pilots are too small to provide a sound evidence base.

It is essential that agencies that reimburse healthcare costs are included in all types of telemedicine projects from the outset. These include national, regional and local organisations that have to understand and agree the requirements for new types of reimbursement as part of sustainable finance.

A representative of the Veneto region of Italy stated the willingness to participate in the proposed EC study. Matters to be specified are financing, cash flow, telehealth costs and resolving cross-border legal differences.

A Romania representative confirmed that telehealth saves money and has doctors' support, but the start point is very limited. This could be a platform to access EC structural funds to set up the infrastructure needed.

Claus Duezel Pedersen pointed out that flexibility is essential, and findings from pilot evaluations need to inform procurement. Sometimes, doctors are not sure what they need, and this needs reflecting in procurement and pilots. Ilias Iakovidis pointed out that a trial and error approach is practical in some Member States, but not all. Andrew Hamilton pointed out that pilots provide a competitive advantage to the suppliers.

Josep Roca, Director, Lung Function Unit, The Hospital Clinic, Catalonia, Spain – the adaptation of the Catalonian healthcare system to the new scenario generated by chronic disorders

The initiative is a political mandate as the trigger for investment. Goals are to deal with the impact of:

- Burden of Chronic Disorders
- Elderly populations
- Co-morbidity conditions
- Cost containment
- Coordination with community services.

A challenge is to design appropriate evaluation models. Questions remain about the use of randomised clinical trials.

Hospital admission is falling to rates reduced to 52% over a year with traditional care, and to 33% with integrated care over one year. The cost containment effect of telemedicine is beneficial. At €2,033 for traditional care compared to €1,255 for hospital at home, the difference of €778 is a drop of about 40%.

Pilots already show gains in clinical efficacy; behavioural changes; satisfaction and cost containment as outlined above.

Activity organised by care programmes including clusters of diseases for cardiovascular, respiratory diabetes and obesity. All these patients are fragile. The approach switches the emphasis from a disease management model to a health management system. Integrating the ICT platform into integrated care changes the challenge from technical to organisational. It is also part of the educational change of health care professionals, especially as set out in “Preparing a Health care Workforce for 21st Century – The Challenge of Chronic Conditions”² published by WHO.

Karl Stroetmann, empirica – an overview and summary of workshop issues

Aspirations for telecare investment go back some 20 years, and still have limited coverage. How realistic are the goals for the next ten years? Why are suppliers not yet mature? Healthcare organisations need more skills and investment in healthcare development, training, change management, new business models, and producing good business cases; an essential tool to involve ICT suppliers and third party payers. Managing ICT change and obsolescence, and standards and certification, must be part of an investment. Will certification help? How can it be successful? Will collaboration help? If it can, how will collaboration work?

Ilias Iakovidis pointed out that timescales are long. The pharmaceutical industry can take some 16 years to complete an investment in new drugs. A helpful supporting tool and activity is health technology assessment, but this alone will not quicken the pace. Only an unlikely crisis will achieve that, so plans should have realistic, long timescales. A good strategy is to invest now to avoid a crisis from demand pulling further away from supply. Local politicians can play a valuable role in creating constructive pressure for change.

Other EC initiatives are eHealth training and eHealth business models studies³. Collaboration is essential to success by sharing knowledge. These fit with the EC goals for a telehealth call to parallel the large-scale pilot initiative by preparing for new regional services. Regional governments will need to show the support of national governments to commit to subsequent region-wide deployment. Representatives from the Veneto region claim to have achieved this, and links with the large-scale pilot, already.

A main discussion point: who should be part of the procurement team?

² <http://www.who.int/bookorders/anglais/detart1.jsp?sesslan=1&codlan=1&codcol=15&codcch=621>

³ http://ec.europa.eu/information_society/activities/health/studies/index_en.htm

Proposals were: HPO representatives, clinicians and their representatives, lawyers, procurement specialists, buyers and users, third party payers, data protection managers.

Other themes

These include:

- Meet the requirements of the health agenda for personalised healthcare and choice
- The process for suppliers is a journey of design, test and supply, so central procurement will not help, local models are needed
- Identify the barriers that need removing
- Municipalities provide some services, so should not be overlooked
- Financial provision, including new reimbursement models, is needed before procurement
- Mobile phones are complicated as a solution, so should not be oversimplified
- Technology and architecture must comply with national not regional setting
- Identify who uses and who pays, with the top down approach setting rules and standards. The bottom up view responding to local needs and impact
- Promote and stimulate use through local media
- Think in eco-systems for a fit of telehealth to healthcare, not components of systems
- Invest in education and skills as an emerging, new ICT and technical profession
- Open ended evaluation and assessment is a bad idea, RCTs is a good idea
- The use of RCTs should be approached with caution because IT is an engine that helps people perform, so it needs an evaluation model that fits
- Differentiate between telehealth that improves efficiency and telehealth that improves clinical gain
- The European Investment Bank (EIB) is increasing its activity in eHealth finance and a new study is beginning to assess the potential
- Do not underestimate the limitations of weak infrastructure, need for change, need for new business and reimbursement models

A proposal was to set up the infrastructure within current reimbursement models, and continue until an embedded telecare is in place. Opposition was strong. New reimbursement models must be set up at the beginning.

A DG INFSO perspective

Flora Giorgio directed everyone to the new EC communication on telemedicine⁴. It relies on an eco–model to promote telehealth and invites Member States to review their priorities and the requirements of a legal framework to improve clarity.

Michael Palmer directed everyone to the initial findings of the lead market initiative⁵, the work of the eHealth procurers community⁶ and the Commission Communication on Pre–commercial Procurement⁷.

Ilias Iakovidis suggested that two procurement models are needed, one for public procurement, one for incremental scale–up. This creates a challenge to be able to support several different procurement systems.

Follow–up contributions

An invitation extended to everyone was to send his or her top three procurement wishes and their top three concerns by email to Veli Stroetmann. Contributions are below.

Mario Romao, representing Continua, proposed that generally, procurers' priorities and budget allocations have not yet followed the advent of personal health technologies that have evolved faster than procurement procedures. This is mostly due to the lack of supporting policies, general awareness and information.

Policy makers must create a conducive environment that can identify funds and incentives then allocate and enact these to support procurers towards adoption. Relevant policies include updating procurer's reimbursement catalogues, availability of grants to finance initial investments, tax incentives that kick–in when personal health technologies are procured and utilised, and pay–per–value initiatives that reward the efficient management of chronic diseases.

Establishing shopping baskets that contain a defined portfolio of suppliers' offerings has benefits. These are normally set up to speed–up the procurement process. Frequent refresh cycles are important to accommodate new products and systems in a fast changing environment.

⁴ EC Communication on telemedicine for the benefit of patients, healthcare systems and society COM(2008) 689

http://ec.europa.eu/information_society/activities/health/policy/telemedicine/index_en.htm

⁵ Lead Market Initiative (LMI), COM (2007) 860

http://ec.europa.eu/enterprise/leadmarket/doc/com_07_en.pdf and related eHealth Task Force report: http://ec.europa.eu/information_society/activities/health/docs/publications/lmi-report-final-2007dec.pdf

⁶ <http://www.epractice.eu/community/ehealthprocurers>

⁷ Pre-Commercial Procurement COM(2007)799 final

http://ec.europa.eu/information_society/tl/research/priv_invest/pcp/documents/commpcp.pdf

Personal health technologies are evolving rapidly and procurers need to have a reasonable level of assurance that they will be investing in scalable, evolutionary and interoperable solutions. The willingness to invest goes hand in hand with having the right information to make informed decisions. Pre-procurement activities that promote awareness, such as road shows and collaboration with users and industry stakeholders are important sources of information and support.

Personal health technologies are recent and a balanced yet transparent collaborative approach between suppliers and procurers is highly encouraged. In addition, engaging in competitive dialogues with potential suppliers helps to find the most appropriate solution and align expectations. A well-known and recommended technique, it brings demonstrable benefits during the implementation stages.

Nicole Denjoy, representing COCIR, proposed that:

- Visions must be aligned with the themes of the healthcare strategy, such as quality and safety, and operations
- Telemedicine is about care services
- Need for appropriate business models and service models, including new reimbursement mechanisms
- Need for national, regional leadership and local ownership
- Telemedicine is not finite, so procuring should adapt and move away from current models and include all phases from pre-procurement to post-procurement
- Lack of essential tools as telemedicine is nothing without clinical pathways and decision support systems
- Gain user involvement and securing buy-in by being clinically-led and supported by managers
- Build trust and confidence with an evidence-based approach
- Include appropriate time and financing, including change aspects.

COCIR's proposals for procurement are:

- Closer collaboration and dialogue between public authorities, procurers and industry at every step from proof of concept to pilot to implementation to roll-out to on-going innovation and future developments
- Emphasise developing appropriate programmes and guidelines for the education of ICT procurers and invite all stakeholders to draw on the experience of the vendors in the field of innovative procurement, such as managed services
- Collaboration of all stakeholders around use cases will help foster trust, the indispensable foundation for a community where people's roles are subject to change when new processes are introduced
- Advances in deploying eHealth and telemedicine solutions rely on systems interoperability, and a coherent set of standards is key to the success of regional, national and cross-border projects, so COCIR recommends close

co-operation with fora, such as IHE and Continua, that have a proven track-record

- Recent years marked by high innovation rates compare with slow implementation of eHealth solutions, and COCIR believes that substantially increasing future implementation rates should be the common goal of all stakeholders.

A summary of the details of COCIR's proposal is:

1 – dialogue

Deployment of eHealth is timid and restrained and rarely achieves maturity to demonstrate its full potential. Governance and financial frameworks are the most significant barriers to market growth, but more factors that need stakeholders' attention. Dialogue, sharing of experience and knowledge, as well as the education of both, policy makers and procurers are also critical success factors.

The industry is calling for closer collaboration between public authorities, procurers and industry at every step from proof of concept to pilot to implementation to roll-out to on-going innovation and future developments. Sustainable business models and smart procurement processes need to move eHealth and telemedicine concepts from experimentation to wide acceptance.

2 – procuring processes and education

When procuring shared infrastructure, Member State governments might find it easier and more cost-effective to use the latest generation of smart procurement and managed services rather than undertake their own internal investment projects.

Managed services in healthcare are not new. Software vendors have provided them for many years, but take-up in Europe is very limited due, mainly, to legal, privacy and data protection barriers.

Public authorities should therefore support the move to develop new procurement routes. This requires procurers and vendors to work together to define whole-life costs and value.

ICT procurers need more education at national and regional level. Close collaboration with industry is required in the care perspective, where the caregiver is the user and success depends on the use of ICT, not its presence. Topics include governance during procurement, innovative procurement schemes with service model mechanisms, partnering with ICT solution providers to create a common win win and openness to innovation.

3 – people, processes and change

Introducing eHealth challenges traditional care delivery models and acts as a transformation tool supporting new ways of working, information sharing with colleagues and working as a virtual team. It also impacts on relationships with patients. People and processes are at the heart of change. Working around use cases is ideal for building trust and confidence and fostering dialogue between users and industry. Users are too often left behind, hence the current issues faced by a number of large-scale projects procured in Europe. Fora are needed, such as IHE where users and industry dialogue around processes. Dialogue, training and education should be part of everybody's goals.

Industry supports the view that we need to work step-by-step. First, we need to establish confidence and demonstrate the operational benefits of eHealth. We need to avoid complexity, proceed simply and clearly and ensure user acceptance. True user buy-in is indispensable before we can envisage profound changes in the ways of working through business transformation and process re-engineering. Healthcare transformation will not happen overnight, and therefore policy makers and procurers should consider people and their roles in procurement processes when working towards the necessary changes.

4– interoperability and standards

Lack of interoperability and commonly agreed standards contribute to market fragmentation in Europe. The many small, diverse national markets and healthcare systems do not allow for economies of scale for companies that offer eHealth-related goods and services. In turn, this leads to higher costs for all concerned, including the procurers. It also slows down take-up of eHealth and sharing best practices, especially between markets in different countries.

Standardisation is key. Stakeholders are responsible to encourage Interoperability standards adoption. Despite growing recognition of the efforts and work of IHE and the Continua Alliance, we need to be aware that any eHealth procurement approach needs to follow that path. Our industry is prepared to foster co-operation and engage in eHealth projects from the outset and to share efforts for a global approach to interoperability with policy makers and all stakeholders.

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The present report and the speakers' slides are downloadable from the Financing eHealth study site: <http://www.financing-ehealth.eu/downloads/workshops08.html>