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Study of Insurance Economics

Études et Dossiers

Extract from

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**Technology, Innovation and change in
Health and Healthcare**

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The Geneva Association - General Secretariat - 53, route de Malagnou - CH-1208 Geneva
Tel.: +41-22-707 66 00 - Fax: +41-22-736 75 36 - secretariat@genevaassociation.org - www.genevaassociation.org

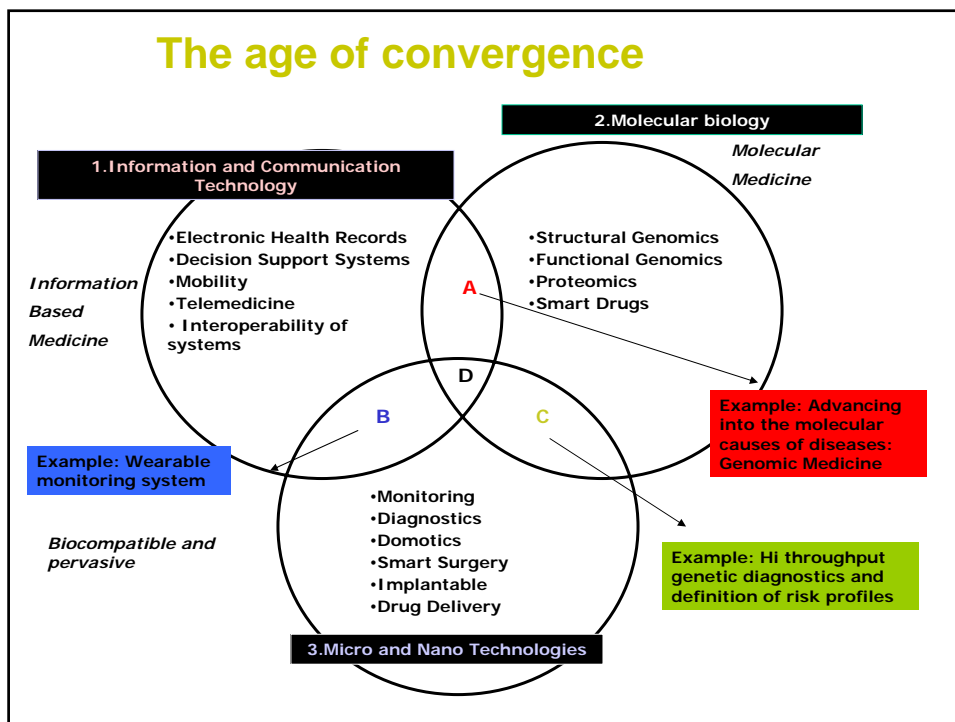
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Layout & Distribution: Valéria Kozakova

The Convergence of Nano-, Bio- and Information Technology leading to innovation in Healthcare

Nicola Pangher



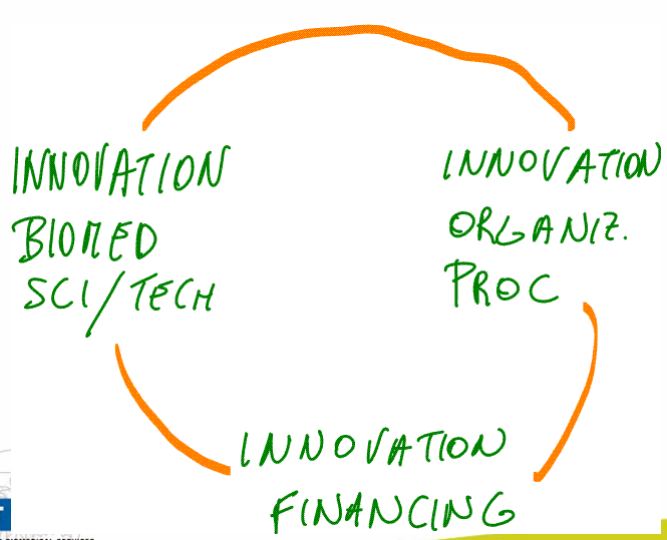
The Bathroom centered healthcare service

- Bathroom >> Apartment
- FDA Approved Bathroom
- Who pays for bathroom, consumables, maintenance, ..
- Who is the doctor in charge of the bathroom?
- Liability?



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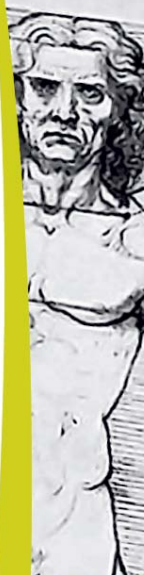

Reality



INNOVATION
BIOMED
SCI/TECH

INNOVATION
ORGANIZ.
PROC

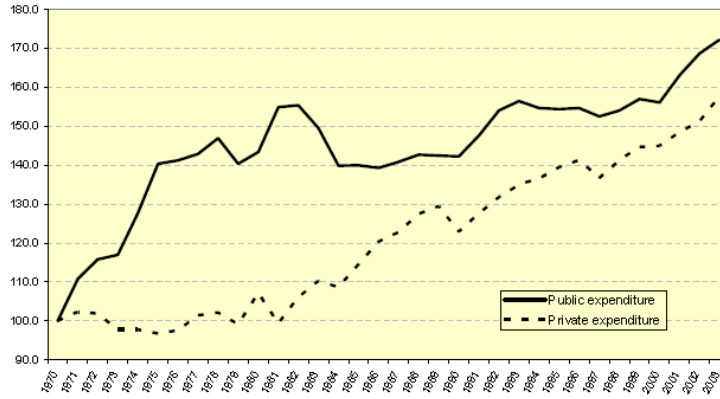
INNOVATION
FINANCING



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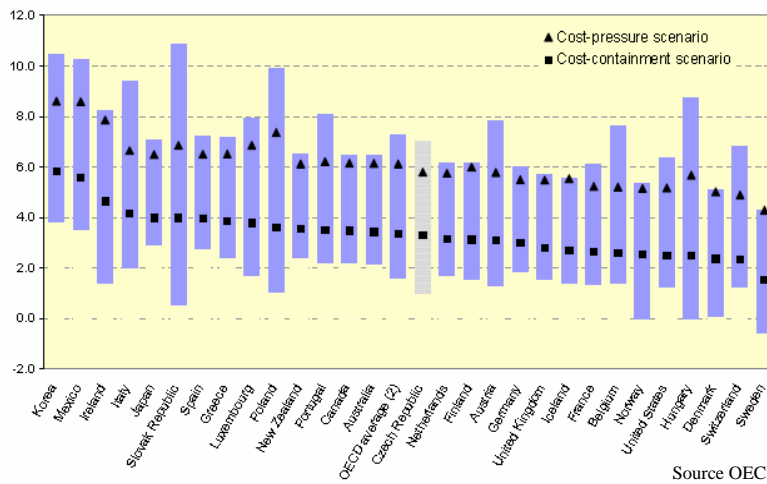
Healthcare is changing (1)

Figure 1.1 Evolution of public and private OECD health spending ¹
Index 1970 = 100

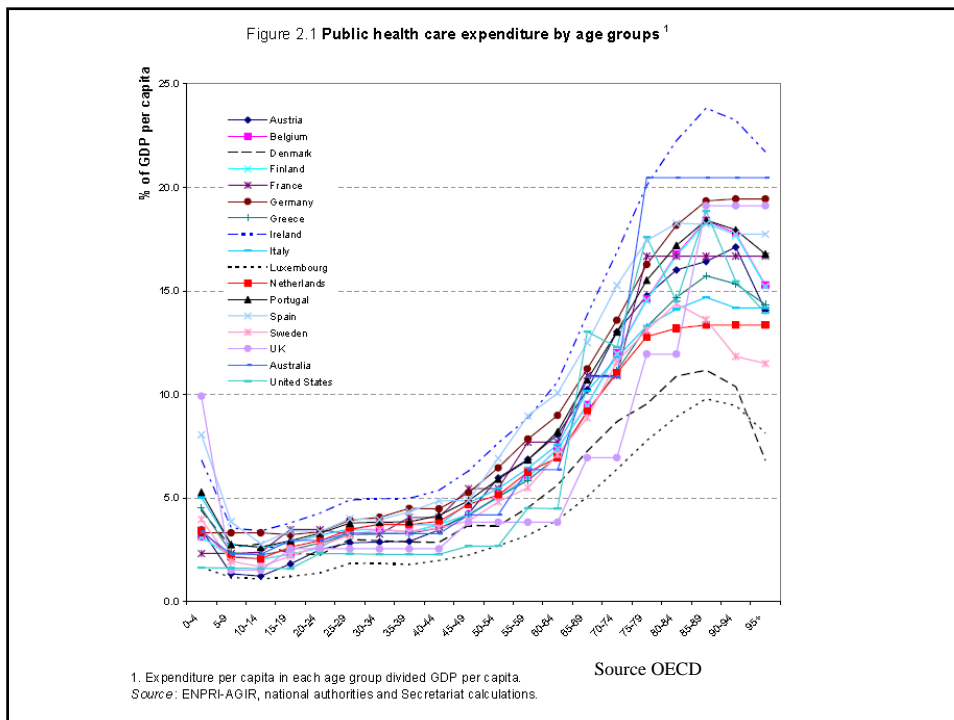
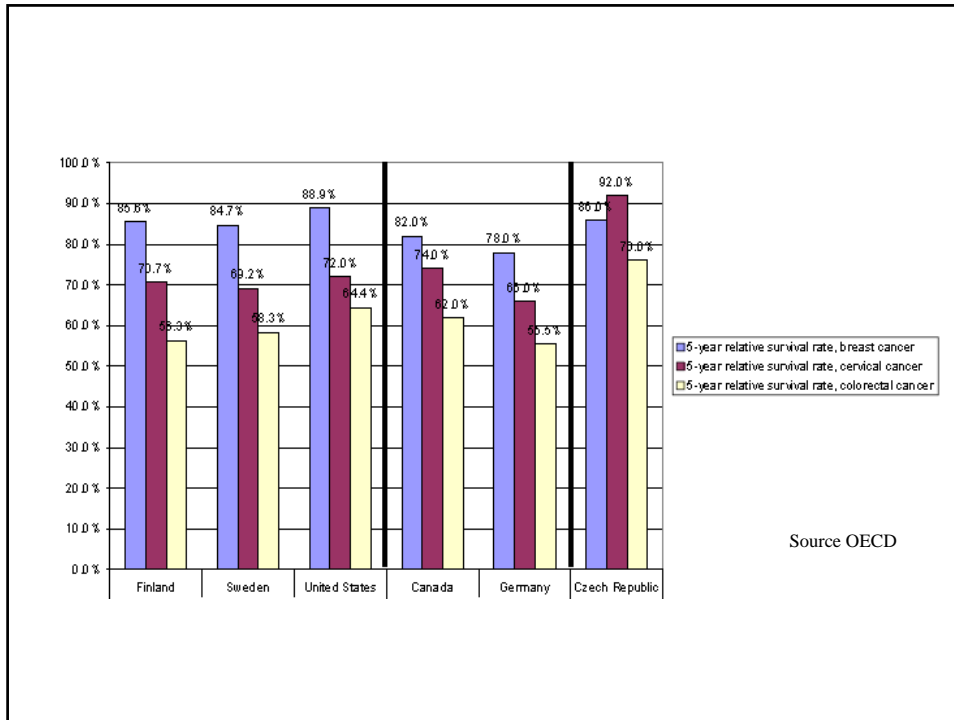


1. Unweighted average of available OECD countries. As a % of GDP.
Source: OECD Health Database (2005).

Figure 1.2 Total increase in health and long-term care spending, 2005-2050 ¹
In percentage points of GDP



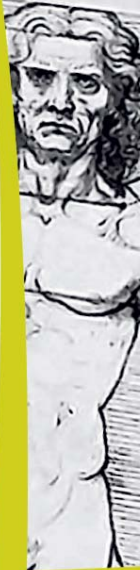

Source OECD



The disadvantage of Success

SICK for longer Time
↓
disease Management

DIE Healthy
↓
Wellness Management

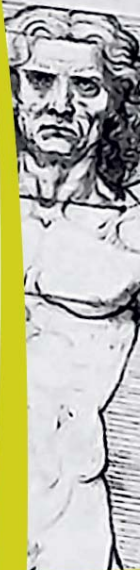



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Healthcare is changing (2)

→ From Cure to Prevention: manage your wellness

- Risk factors: diseases can be avoided. WHO - 80% of premature heart disease, stroke and type 2 diabetes is preventable, 40% of cancer is preventable
- Lifestyle management
- Bring in molecular medicine: genomics, proteomics, metabolomics - individual risk, prevention and therapy profile



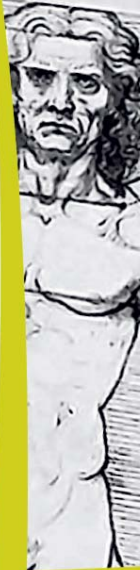

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The Paradox

HEALTHCARE SERVICES → Sick

↓

Healthy !!?



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Healthcare is changing (3)


- Quality: patient-centered processes
 - Evidence Based Medicine: Outcome/Costs
 - Risk management: reducing medical errors
 - Innovation: managing trials for new processes/devices/drugs. Impact of pharmacogenomics/personalised medicine.



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Continuity of care (of prevention?)

Source: European Commission




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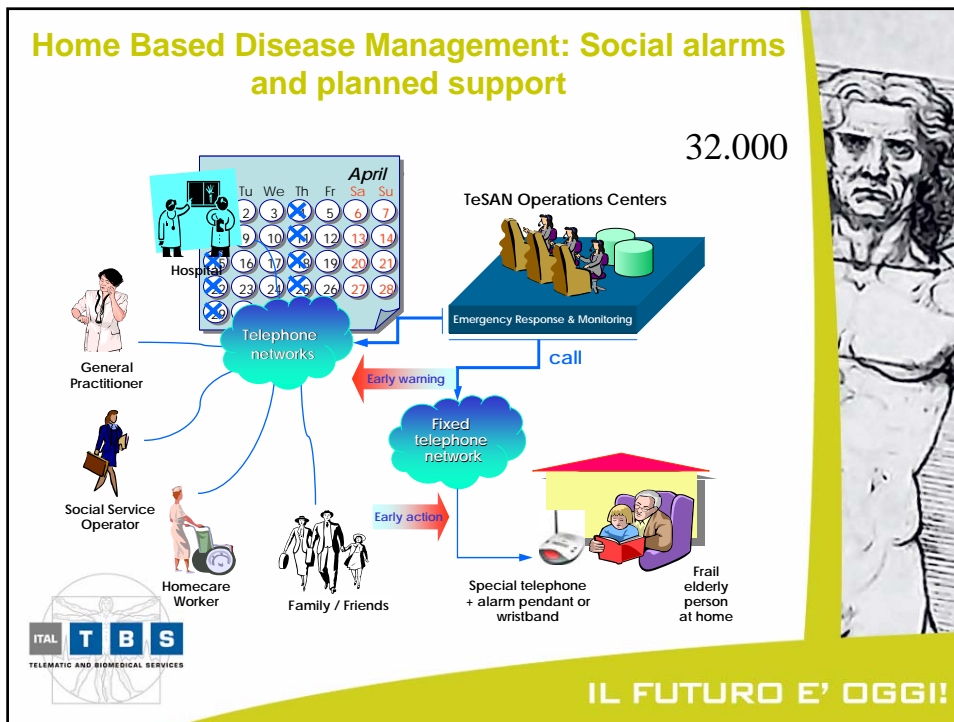
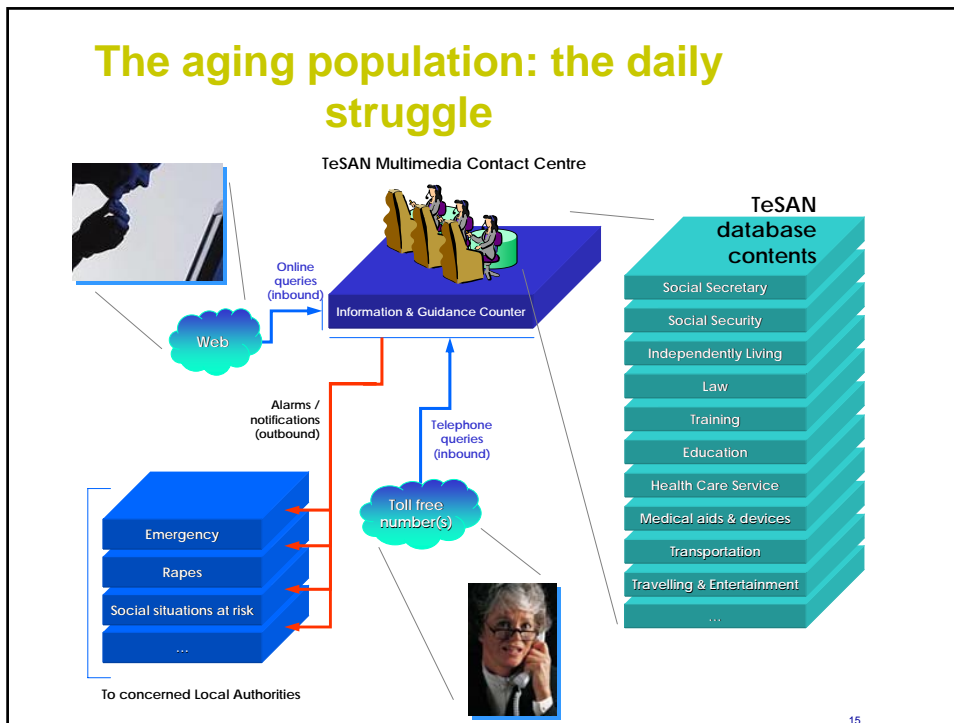
The Network

Hospital
↓
Primary
↓
Home

- Move data, not people
- Support @Home
- Web access to medical data and monitoring systems
- Video conference, access to medical signals/images
- ICT for unscheduled and scheduled consulting



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Going Home – Home Based Disease Management



Video access



GSM Localization



Burglary alarm

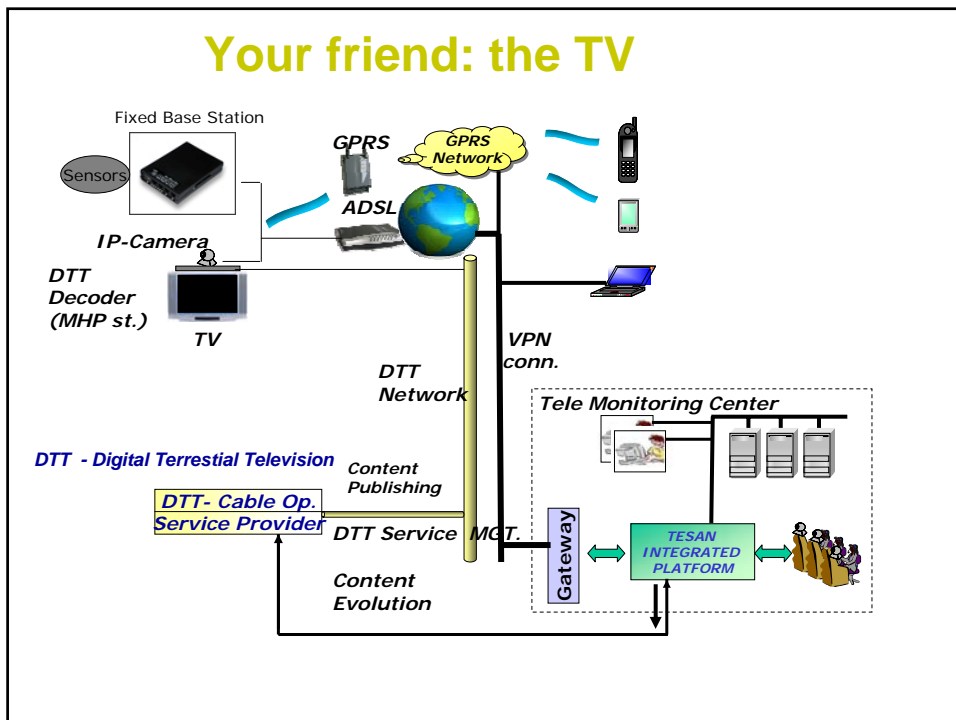


Video Communication

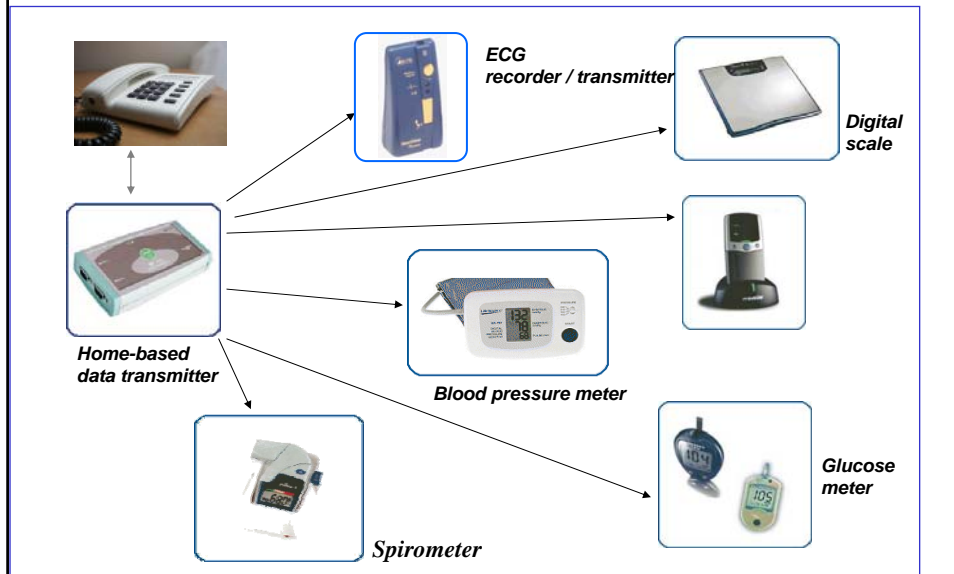




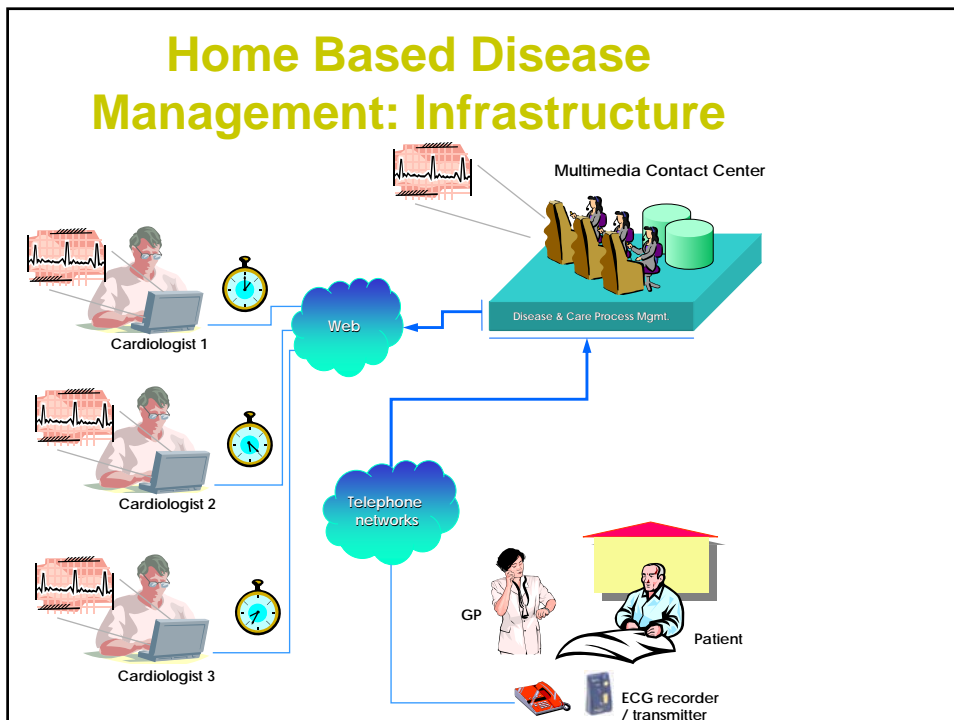
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Going Home – Home Based Disease Management



Home Based Disease Management: Infrastructure



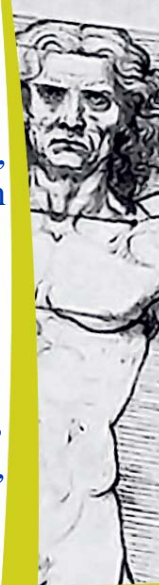
Disease Management Services

- o Home based follow up for patient with CHF, DRG value 1500 Euros/Year, based on Cardiology dept in Hospital.
- Home rehabilitation with a Fee for about 135€patient/day (21 days availability of an operating centre, web based portal application and leasing of telemedicine equipment (ECG)), home care and visit of nurses, Physiotherapists, doctors... (traditional Fee 250€)



400 in Lombardia

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Continuity of primary care



All citizens



General Practitioner



Primary Care Emergency

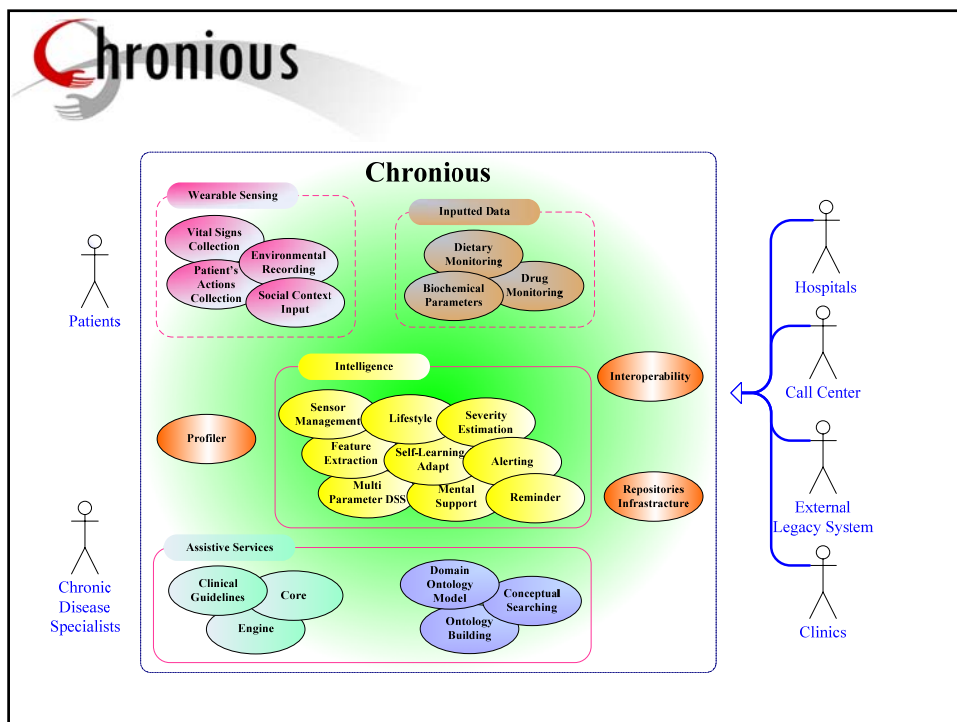
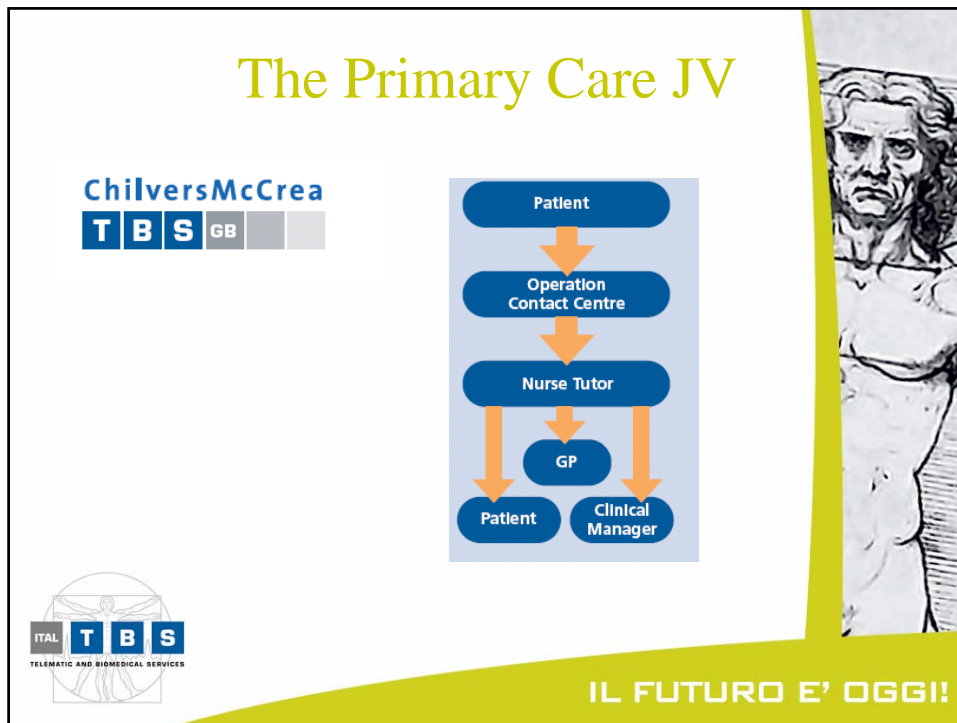
Telephone support: immediate & scheduling
 Agenda Management: access within 24 hours
 Primary care CC team
 Second Opinion
 Repetitive Therapy
 Home care mngmt

Exp
 40000
 citizens

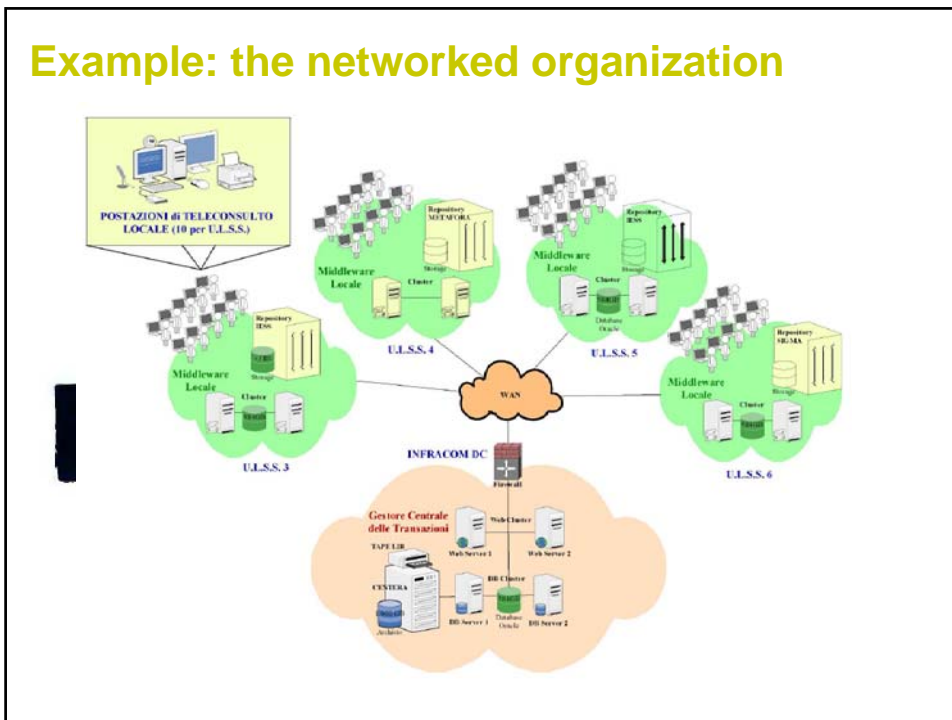


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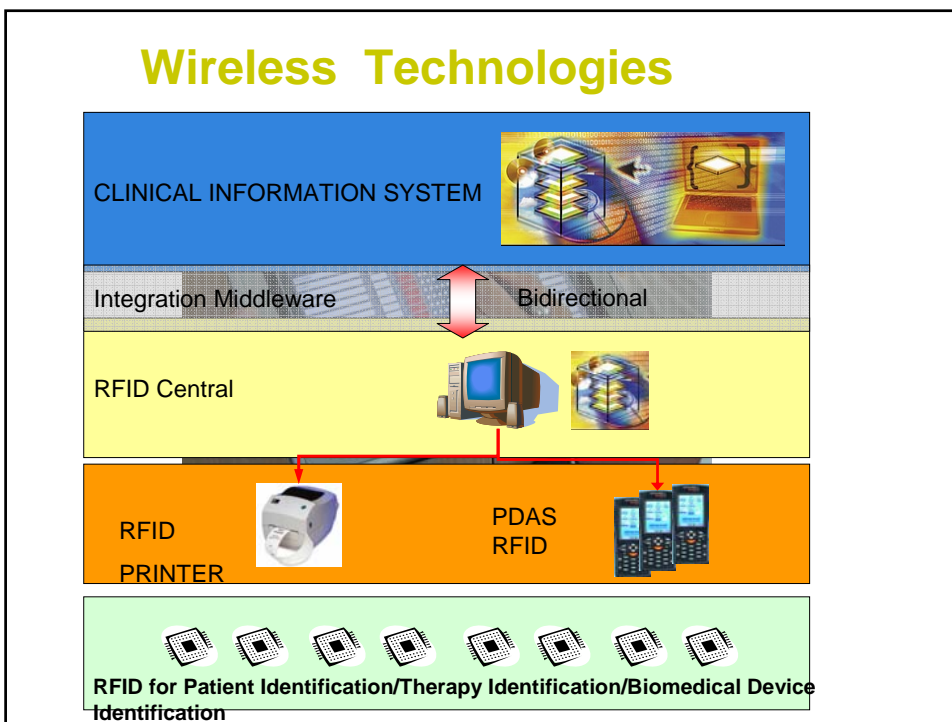


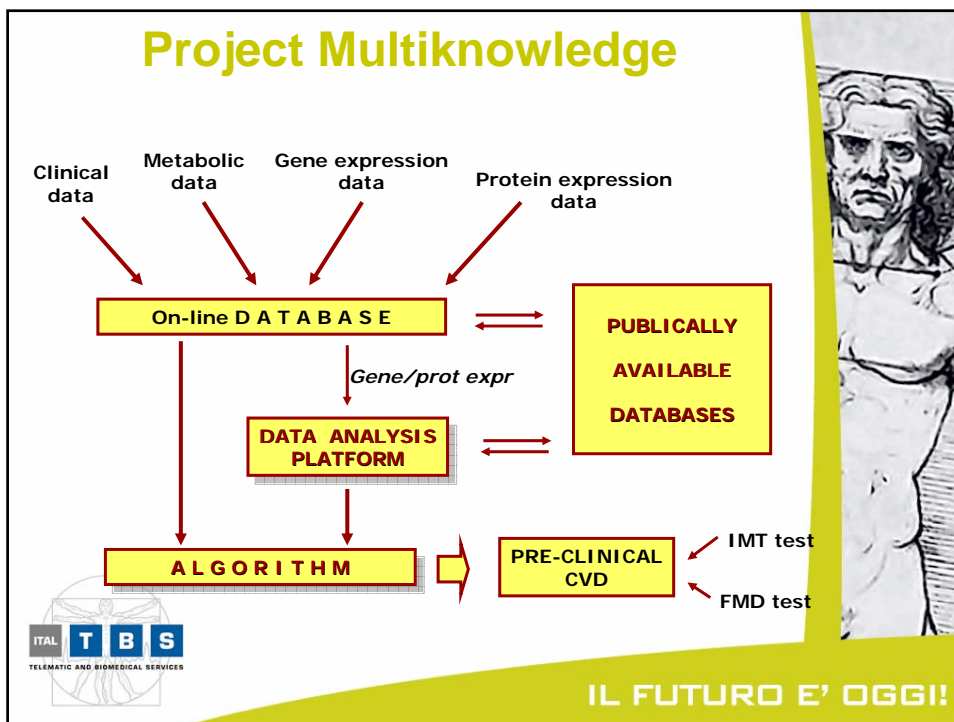
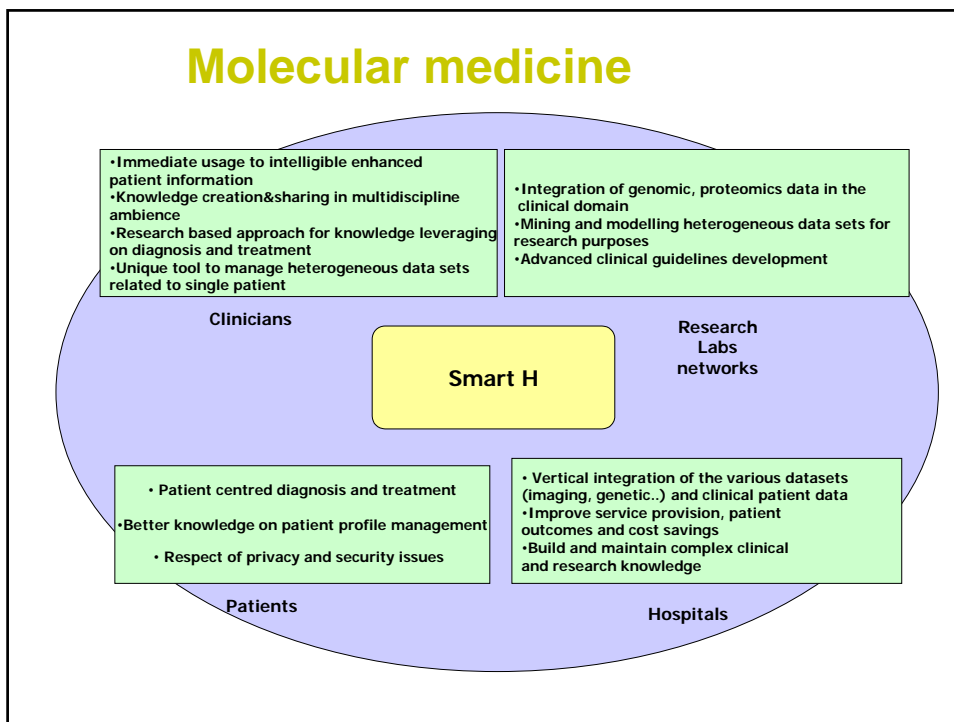


Example: the networked organization




Wireless Technologies






Project match



Reserved area

MATCH

- Home
- The Project
- Consortium
- Workplan
- Deliverables
- Field trials




Automated Diagnosis System for the treatment of Colon Cancer by discovering mutations on tumour suppressor genes

The scope of the project

The MATCH project will provide health professionals with a multi-functional platform for colon cancer prevention and pharmaceutical research, aiming at new drug design and discovery. It will contribute directly to the health care sector by grouping previously unrelated data and reducing cost of expensive trials in the area of biochemical and pharmaceutical research.

MATCH project is financially supported by European Community; it started in January 2006 and will be completed within 30 months

Project Health Plus Nutrigenomics?

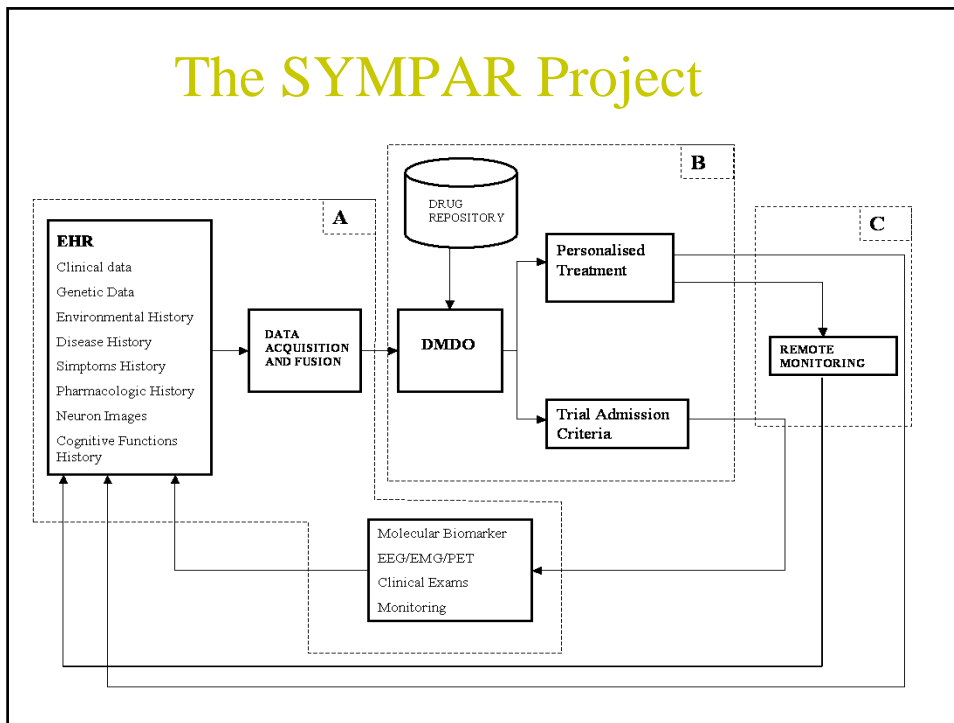


Health.plus

Improving Knowledge and Decision Support for Healthy Lifestyles

to become a leading web-based weight control, food intake monitor, lifestyle assistant and certified information provider positioned on the European market.

Research goals	Authorization definition	Research subjects	Research methodology	Research tools	Information collection	Information analysis	Results creating, dietary advice
Research subsystem							
Subject profile collection	Nutritional profile collection	Evaluation	Dietary advice and recommendations	Data import/export	Nutritional plan preparation	Monitoring (alerting)	
Operative subsystem							
Access to nutrition information	Subject data collection and Food diary insertion		Data processing and evaluation	Reports and advice provision	Risks evaluation and dietary advice		
Promotional subsystem							
Registration to KM tool	Content upload	Alerts sending	Content searching	Comments adding	Alerts receiving		
Knowledge subsystem							

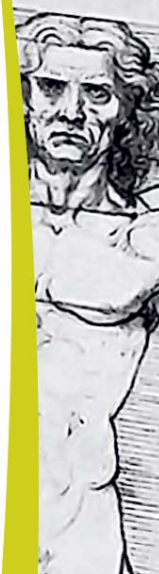


Conclusions

- Is there any?
- We need
 - Providers
 - Payors
 - Politicians

Thank you

pangher@italtbs.com



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