

European Commission



Unit Summaries

February 12-13, 2007
Brussels, European Parliament



DG Information Society and Media

Unit ICT for Health

Summary

The mission of the ICT for Health Unit is to contribute to better health status and well-being of all European citizens, to bring economic and productivity benefits to the health systems of all Member States, and to stimulate growth and competitiveness of the eHealth industry in Europe (http://ec.europa.eu/information_society/ehealth).

For a numbers of years now, the ICT for Health Unit has been supporting and promoting research and efforts towards a paradigm shift in healthcare delivery:

- a) from "reactive" to **preventive** healthcare and
- b) from "hospital-centred" to **person-centred** health systems.

The envisaged model of healthcare delivery involves continuity and extension of care beyond hospitals, to ordinary living and working environments. It puts major emphasis on prevention and early diagnosis of diseases. At the same time, this new model places the citizens at the centre of the healthcare delivery process, by assisting their education in health matters and empowering them to become actively involved in the management of their own health status.

ICT research in the Fifth Framework Programme (FP5) was first to place emphasis on the development of technologies, components and communications infrastructure to support seamless delivery of healthcare at the point of need, including home care. Research explored how ICT could help disease prevention and health promotion. It involved work on sensors, wearable devices, data processing, decision support and delivery of home care. The concept of **Personal Health Systems** was introduced at that time. It concerned wearable and fixed/portable systems, based on advanced sensors, microsystems and telemedicine services for personal health monitoring.

This effort has continued in the Sixth Framework Programme (FP6), with more emphasis on integrated systems and services and on the personalisation of health systems and care. FP6 has also supported work towards molecular *in vitro* diagnostics for use at the point of care.

The efforts in FP5 and FP6 have acted as a stepping-stone for more ambitious initiatives in FP7 towards preventive, personalised care and Independent Living. The foreseen FP7 activities aim at:

- a) Seamless provision of high-quality care regardless of the location.
- b) Remote and personalised disease management.
- c) Disease prevention and early diagnosis for people at risk.
- d) Integrated, user-centred and trusted solutions and services, addressing also the needs of elderly people or citizens with chronic health conditions.



Relevant related projects and web links

Sixth Framework Programme

HEARTFAID	(http://www.heartfaid.org)
K4CARE	(http://www.k4care.net/)
MICROACTIVE	(www.sintef.no/microactive)
MYHEART	(http://www.hitechprojects.com/euprojects/myheart/)
OFSETH	(http://www.ofseth.org/)
PIPS	(http://www.pips.eu.org)
SAPHIRE	(http://www.srdc.metu.edu.tr/webpage/projects/saphire/)
SMARTHEALTH	(https://www.smarthealthip.com/)

Fifth Framework Programme

ADICOL	(http://www.adicol.org/)
AMON	(http://www.medictouch.net/AMON)
CHRONIC	(http://www.chronic.cestel.es)
CHS	(http://lomiweb.med.auth.gr/chs/)
E-CARE	(http://www.e-care-ist.net/)
EPIMEDICS	(http://epi-medics.univ-lyon1.fr/)
H-CAD	(http://www.signomotus.it/hcad.htm)
HEARTS	(http://heartsproject.datamat.it/)
H-LIFE	(http://www.h-life.org/)
LIFEBELT	(http://www.lifebelt.eu.com)
M ² DM	(http://scorpion.unipv.it/m2dm/)
MOBIHEALTH	(http://www.mobihealth.org)
MOEBIUS	(http://www.ist-moebius.net)
PANACEIA-ITV	(http://www.itv4health.org/)
TELECARE	(http://www.biomed.ntua.gr/telecare/)
TELEMEDICARE	(http://www.telemedicare.net)
TOPCARE	(http://www.topcare-network.com)
U-R-SAFE	(http://ursafe.tesa.prd.fr/)
WEALTHY	(http://www.wealthy-ist.com)

Unit web link

http://europa.eu.int/information_society/ehealth



DG Research – Health Directorate

Public Health Research

Summary

OPTIMISING THE DELIVERY OF HEALTH CARE TO EUROPEAN CITIZENS

EUROPEAN RESEARCH IN ACTION

European health research will aim at providing the necessary basis both for informed policy decisions on health systems and for more effective strategies of health promotion, disease prevention, diagnosis and therapy. These activities will be carried out under the umbrella of **Health Theme** that is part of the specific Programme "**Co-operation**" of the EC's **7th Framework Programme for Research**. These activities aim at developing new research methods and generating the necessary scientific basis to underpin informed policy decisions.

It is recognised that the health systems of the EU are a central part of Europe's high levels of social protection and contribute to social cohesion and social justice as well as to sustainable development. The health systems of the EU reflect the overarching values of universality, access to good health care, equity and solidarity, aiming to make provision that is patient-centred and responsive to individual need.

The focus of the area "**Optimising the delivery of health care to European citizens**" will be on: *Translating clinical research into clinical practice*, *Quality, efficiency and solidarity of health systems* and *Enhanced health promotion and disease prevention*.

The main objective under **Translating clinical research into clinical practice** is to better understand clinical decision-making making appropriate use of behavioural and organisation interventions and health therapies and technologies. Special attention will be given to patient safety including pharmacovigilance and investigating outcomes of different interventions including medicines.

Quality, efficiency and solidarity of health systems will aim to translate effective interventions into policy decisions, taking into account the importance of national contexts and population characteristics (e.g. ageing, mobility, changing workplace ...). In particular effectiveness, efficiency and equity of health systems as well as investment issues and human resources will be covered.

Under **Enhanced health promotion and disease prevention** research will look into developing evidence for effective public health interventions addressing wider determinants of health (such as stress, diet or environmental factors) at both the individual and community level.



Relevant related projects and web links

Sixth Framework Programme

AHEAD

<http://www.enepri.org/Ahead.htm>

HEALTHBASKET

<http://www.wm.tu-berlin.de/fachgebiet/mig/research/healthBasket/index.htm>

DIS-QOL

http://ec.europa.eu/research/fp6/ssp/dis-qol_en.htm

MARQUIS

www.fadaq.org

MIC MAC

http://www.nidi.knaw.nl/en/micmac/newsletter/newsletter_1/micmac-newsletter-01.pdf

SPHERE

<http://www.epha.org/a/2259>

PATIENT SAFETY

www.patientsafetyresearch.org

Fifth Framework Programme

ACMEPLUS

<http://www.abdn.ac.uk/acmeplus/>

OASIS

<http://oasis.haifa.ac.il/>

CARMEN

<http://www.ehma.org/projects/default.asp?NCID=111>

DEMWEL

<http://www.enepri.org/Demwel.htm>

CLESA

<http://www.onderzoekinformatie.nl/en/oi/nod/onderzoek/OND1287836/>

PROCARE

http://www.euro.centre.org/print_detail.php?xml_id=127

CARMA

<http://www.wz-berlin.de/ars/ph/projekte.de.htm>

CAREKEYS

<http://www.carekeys.net/>

EUROFAMCARE

<http://www.uke.uni-hamburg.de/extern/eurofamcare/>

Programme web links

FP7 calls for proposals

<http://cordis.europa.eu/fp7/calls>

FP7 theme health

http://cordis.europa.eu/fp7/cooperation/health_en.html

FP5 key action Ageing population

<http://cordis.europa.eu/life/src/conf-ageing.htm>



DG Information Society and Media

Unit Micro & Nano Systems

Summary

The mission of the Micro and Nanosystems Unit is to strengthen Europe's leadership and industrial competitiveness by making the European Research Area progress in 'integrated micro/nanosystems and interfaces' as key ingredients of Ambient Intelligence Systems and Assistive Environments and by moving RTD towards innovation. In order to achieve this, the activities of the Unit are based on three pillars:

- **Technologies and systems development** with the objective of pushing further miniaturisation, integration, variety, interfaces and exploring the convergence of bio-nano-ICT competencies;
- **Manufacturing and product innovation** aiming at increasing performance, functionality and manufacturability;
- **Use of Micro and Nano systems and technologies to support applications.**

The evolution of the research on Microsystems during the last years can be summarized with the following *shift paradigms*:

- From small structures and MEMS devices towards Micro & Nano Systems and Smart Systems Integration.
- From single silicon devices towards a multitude of materials and integrated systems.
- From single disciplines to a very multidisciplinary activity.
- From single technology devices driven development towards application driven integration of technologies.

Major part of FP6 R&D activities addresses the area of "Nano-Bio-ICT", focusing on advanced systems by developing and integrating converging micro-nano, bio and information & communication technologies (MNBS, Micro-Nano-Bio Systems). In addition, other projects groups of G2, such as wearable smart textile systems (www.csem.ch/sfit) and user friendly micro-nano systems, supporting distributed services, user empowerment and human interaction, present strong synergies with MNBS towards enabling, among other applications, personal health.

Projects developing MNBS could be split in two main categories /sub-groups:

- **Biosensors, Lab on Chip, array sensors and other miniaturised MNS** enabling, handling, testing & analysis of biological samples for decision making at the point of need for several applications (food, biomedicine, safety, environment). Such projects develop and integrate components and systems e.g. microfluidic, signal processing, sensing and detection.
- **Body sensors, implantable MNS, endoscopic probes, active electrodes, micro-nano robots** enabling monitoring, diagnosis, microanalysis, drugdelivery, vigilance, stress support, etc. These projects address miniaturisation, sensing, micro-nano fabrication power scavenging and storage, smart processing, wireless telecommunication, manufacturing, etc.

In FP7 the Unit as a whole is focusing in two main areas: a) micro-nano systems and smart systems integration and b) Organic & large area technologies as well as high performance



visualisation systems.

Micro-nano systems is still an emerging area with applications in many industrial sectors and it is one of the most important drivers of ICT. Its main research and development lines are:

*Next-generation smart systems*¹: Major breakthroughs in intelligent sensor and actuator systems regarding complexity, miniaturisation, networking, and autonomy.

Micro/nano/biotechnologies' convergence for the development and production of integrated systems for specific applications, e.g. biomedicine and food quality management.

Integration of micro-nano technologies and smart systems into materials, e.g. biocompatible, bioconnective, flexible or very durable materials and the integration of such materials with e.g. conductive fibres and materials at the fibre core, microelectronics components, user interfaces, power sources, software, all-in-one fabric, for personal (wearable) or other applications.

Finally, *advanced microsystems manufacturing technologies* for the whole value chain as well as *Smart systems for communication technologies and data management* are key aspects promoted by the Unit to achieve cost-effective integrated systems.

In 2006 the constituency launched a European Technology Platform on Smart System Integration (EPoSS) <http://www.smart-systems-integration.org/public>. It brings together European private and public stakeholders in order to coordinate and to bundle efforts and to set-up sustainable structures for improving the competitiveness of European R&D on Smart Systems Technologies and their integration. One of the areas addressed by the platform is the medical technology applications.

Relevant related projects and web links

Sixth Framework Programme

BIOGNOSIS	http://www.biognosis-info.de
GOODFOOD	http://www.goodfood-project.org
HEALTHY AIMS	http://www.healthyaims.org/
INTELLIDRUG	http://www.intellidrug.org
MICRO2DNA	http://micro2dna.intranet.org
SENSATION	http://www.sensation-eu.org
BIOTEX	http://www.biotex-eu.com/
PROETEX	http://www.proetex.org/
VECTOR	http://www.vector-project.com/vector/
NEUROPROBES	http://naranja.umh.es/~np/index.php
Project portfolio :	ftp://ftp.cordis.europa.eu/pub/ist/docs/mnd/g2-proj-portfolio_en.pdf

Unit Web site

<http://www.cordis.lu/ist/so/micro-nano/home.html>

¹ Smart Systems are able to sense, diagnose, describe and qualify a situation and to mutually address and identify each other. They are predictive, enable the system to interface, interact and communicate with the environment and with other smart systems.



DG Information Society and Media

Unit ICT for Inclusion

Summary

The mission of the ICT for Inclusion Unit is to promote that all citizens should be able to participate equally, no-one should be left behind and everyone should have the opportunity to fulfil their potential in Europe's information society and economy. This is one of our foremost challenges: to ensure the participation and empowerment of all citizens, regardless of their abilities, age, sex, cultural background and information technology skill level and whether they live in a remote, rural, urban or metropolitan area.

The overall aim should be to position Europe as a global leader in eInclusion.

(http://ec.europa.eu/information_society/policy/accessibility/eincl/index_en.htm)

DG INFSO has been addressing RTD activities related to Information and Communication technologies (ICT) for the ageing of the population for more than 10 years. As part of this work, the European Commission has supported RTD work addressing technologies for people with disabilities and elderly persons as early as 1991. About 200 projects with an approximate EC contribution of 200MEuro have been funded.

The focus of these activities has been on the one hand developments of assistive devices focusing in supporting the multiple minor disabilities that come with age. On the other hand addressing the development of mainstream technologies that should be usable and suitable for older people for extending their independent living as well as full and active participation in society.

An additional key element has been to improve overall accessibility for all users of ICT based products and services irrespective of their capabilities.

In this process, the user-driven innovation through user participation in early stages of the research activities has played a very important role to facilitate the acceptance and impact from the developments.

Building on the work undertaken during FP5 and FP6, the foreseen FP7 Challenge on ICT for Independent Living and Inclusion aim at providing new ICT-based solutions for:

- e) Independent living for the ageing population
- f) Active ageing
- g) Mainstreaming accessibility of emerging ICT products and services
- h) Next generations of Assistive Technologies



Relevant related projects and web links

Seventh Framework Programme

http://cordis.europa.eu/fp7/ict/programme/overview7_en.html

Sixth Framework Programme

ALADIN	to be provided
EASY-LINE	to be provided
ENABLE	to be provided
DIADEM	(http://www.project-diadem.eu/)
MONAMI	http://www.monami.info
MPOWER	(http://www.mpower-project.eu/)
PERSONA	to be provided
SHARE-IT	to be provided
SOPRANO	to be provided

Fifth Framework Programme

CONFIDENT	http://cordis.europa.eu/ist/ka1/special_needs/projects/projects_cluster.htm#isil
SILC	http://www.fortec.tuwien.ac.at/silcweb/SILC.htm
SAID	http://www.eptron.es/projects/said/
TELECARE	http://www.uninova.pt/~telecare/

Unit web link

http://ec.europa.eu/information_society/policy/accessibility/eincl/index_en.htm



DG Joint Research Centre - IPTS	Information Society Unit
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Mission

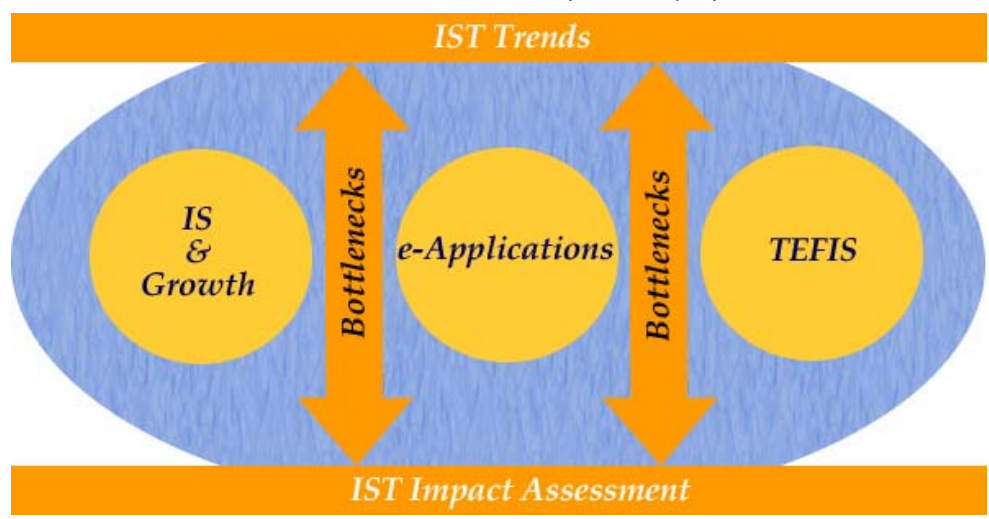
Building a European Information Society is a key ambition of the renewed Lisbon Objectives and is currently framed by the i2010 policy initiative. Within this policy framework, the role of the JRC is to support the overall formulation and implementation of appropriate Information Society strategies, policies, regulations and actions contributing to a competitive, innovative and inclusive European Information Society.

- The work of the IS unit of the JRC will focus on supporting the three main pillars of the i2010 initiative:
- i. Research to support the completion of a Single European Information Space in a global competitive dimension;
 - ii. Research to support the competitiveness of the European R&D system in Information Society Technologies as part of the European knowledge society;
 - iii. Research to support policies that apply Information Society Technologies to increase inclusion, enhance better public services and raise the overall quality of life.

The IS unit will complement technology push approaches to the development of the European Information Society with socio-economic impact and demand analysis. Its work has three axes:

- i. **Problem and policy driven:** What can IST do for the broader socio-economic challenges of the EU (Lisbon goals)?
- ii. **Prospective:** How to develop Europe into a knowledge society? What are the mid to long term R&D strategies needs with regard to European innovation in ICT and what are emerging ICT driven areas Europe should be active in?
- iii. **Scientific:** Understanding how technical inventions/artefacts in ICT become successful innovation/societal realities.

Research is carried according to the requests of the relevant DGs or the EP and in collaboration with international experts who participate in workshops, perform report reviews, contribute with contracted research, and/or collaborate in a research consortium on a joint IST project.





Three areas of work

IS&Growth: Information Society, Competitiveness and Growth.

This action will support the formulation of EU policies with regard to a competitive and innovative Information Society. It will focus on the integrated analysis of key factors in the deployment, access and use of Information Society Technologies. From that, best practices will be deduced in order to support the development of future strategies. The action will develop models that assess the impact of the Information Society on growth, competitiveness and cohesion. It will pay special attention to the take up of the Information Society in the New Member States and Accession Countries. It will also analyse from a global perspective the competitiveness of the European R&D system and Europe's industrial position in the field.

e-Applications: e-Applications for the Information Society

This action will support the formulation of policies for the development of the Information Society in the areas of governance, health, business, learning and social inclusion. Research will focus on how the application of Information Society Technologies by private and public institutions can contribute to create public value in a knowledge based society, encompassing its socially inclusive, democratic, economic and governance dimensions. These include the provision of public services such as education, health and social care, public administration and democratic processes. The action will also support the development of a coherent European e-learning strategy. The identification of best practices, combined with scenario exercises, will contribute to the design of future e-services.

TEFIS: Techno-economic foresight for the Information Society

This action will focus on emerging trends (up to a 15 year time horizon) in Information Society Technologies by executing integrated techno-economic foresight analyses (scenarios, road mapping and demand analysis). It will contribute, as part of the ERA objectives and the conclusions of Vienna Council on R&D in ICT (Austrian Presidency conference on European ICT-Research and Innovation Policy - i2010; March 2006), to establish a common European foresight platform on future scenarios and applications. It will specifically address the way digital technologies will affect identity and identity policies.

Unit web link

<http://www.jrc.es>



DG Information Society and Media

Unit eTEN

Summary

The eTEN programme supports the deployment of e-services of public-interest across Member States and thus underpins the i2010 initiative on an information society for growth and employment.

eTEN focuses on interoperability of ICT-enabled services to make them more accessible by testing their suitability and acceptance by citizens. eTEN has over the past years funded a significant number of projects that address "caring for people" with pilot services that support the philosophy of inclusion and provide home care for the sick and elderly.

One important area of services in the eTEN programme is eHealth, which accounts for about 30% of the available budget within the programme. The eHealth theme includes services that promote health and improve the prevention of illness. The target is access to, quality and cost-efficiency, of healthcare at a Trans-European level. In addition, the eHealth theme focuses on remote access to specialized care, home care and independent living for chronic disease patients. Another focus is the use of ICT that favours citizens' and patients' mobility across Europe and increases the impact of medical advances.

In order to support patient mobility and demographic change, taking advantage of medical and ICT advances, the objectives of eHealth are:

- to provide higher quality delivery of health care for mobile citizens;
- to foster the deployment of paramedical support, online health systems, telemedicine and homecare; and
- to favour the use of smart cards facilitating improved access to services, emergency medical data and patient identification

Beyond 2006, support to electronic services in areas of public interest will be provided by the ICT Policy Support Programme (ICT PSP), a component of the Competitiveness and Innovation Framework Programme (CIP) which will run until 2013. Some of the areas in the programme will address homecare, ageing and inclusion, while the large scale pilots will focus on – amongst others - the preparation of a minimum common data set as a subset of the electronic health record and of common requirements to support e-prescription at EU level.



Descriptions of relevant related projects and web links

EPOS

EPOS validates an efficient, virtual marketplace for healthcare supplies. The EPOS services include exchange of information between the suppliers of healthcare materials / pharmaceutical companies and the hospitals, together with decision support functionality and workflow management.

<http://www.eposproject.com>

For All

FOR ALL project is aimed to make the market validation at trans-European level of an existing pilot system deployed in Italy called ICAROS (Integrated care vs. Conventional intervention in cArdiac insufficiency patients Randomized Open label Study), which monitors and manages heart chronic disease patients in their daily life, offering cardiologic and psychological assistance with an all-time and all-place on-line mobile trans-European service. There is a high likelihood that people over 65 years old become patients suffering heart diseases, becoming thus potential users for FOR ALL service.

<http://forall.moviquity.com/>

Health Optimum

HEALTH OPTIMUM intends to carry out an in-depth analysis of the current organisational structures in the targeted countries, to identify and market validate the most suitable set of telemedicine services able to rationalise their internal organisation and substantially reduce running costs and improve citizens' access to high quality healthcare. Tele-laboratory pilots were carried out involving elderly homes.

<http://www.healthoptimum.info/>

Health e-Life

The Health-elife project validated the Doc@Home™ service in the context of typical European hospital outpatient clinics and is also conducting a review of previous socio-economic studies in the management of patients at home, undertaken in Portugal, Estonia and the UK. <http://www.health-elife.co.uk/>

HealthService24

The HealthService24 project, addressing eHealth and eInclusion, aims at launching an innovative mobile health care service supporting patients' and health professionals' mobility, increasing patients' quality of life and lowering health care costs. Target groups include elderly care and patient monitoring of elderly people.

<http://www.healthservice24.com/>

HealthWare

The Healthwear project aims at validating health-monitoring services in the market based on a prototype system. The service provides uninterrupted and ubiquitous monitoring of health status of patients away from the hospital extending from ischemic and those with cardiac diseases to elderly requiring health-care at home to patients with chronic conditions and performs sophisticated accurate and prompt medical diagnosis.



HelloDoc

The objective of the HELLODOC project is to validate a home-based rehabilitation service for the functional recovery of the arm in Stroke, Multiple Sclerosis and Traumatic Brain Injury treatment. The pilot service is currently implemented in three hospitals in Italy, Belgium and Spain. Elderly people can be considered potential users of any technological aid to be delivered at home.

<http://www.iss.it/hdoc/>

ICARE

ICARE aims at market-validating an eService improving mobility and autonomy of patients carrying chronic respiratory or heart diseases. The ICARE service will be targeted at obese or overweight patients, patients with high cardiovascular risk profile. Cystic fibrosis and elderly patients over 65 years old having frequent systolic murmur.

<http://www.icare-project.org>

MCC

The Medical Care Continuity service is meant for patients, who would continue recovering at home under the supervision of the hospital after acute care. This kind of telemedicine allows the inclusion of patients thanks to information society technologies. Primary beneficiaries will be elderly persons and patients suffering chronic diseases. The market validation will establish the benefits and the deployment conditions of the MCC service.

<http://www.eten-mcc.org>

Netc@rds for EHIC

The NETC@RDS for EHIC initiative is the second phase of a four steps project devoted to establish new improved health care administration services for mobile citizens across the EU. The actual phase aims at validating e-health services to be deployed via the European Health Insurance Card through a wide trans-European network simplifying health care access procedures.

<http://www.netcards-project.com/>

OPTESS

OPTESS is a market validation project for the evaluation of the services for the offshore industry, within a pilot case, which will include two installations on board offshore platforms, one in the North Sea and one in the Mediterranean Sea.

<http://www.optess.com/>

TENPET

TENPET aims to validate the market concerning the provision of integrated teleconsultation and computer supported cooperative work services between Positron Emission Tomography (PET) Centres in Europe. The objective is to create a network of PET Centres across Europe, connected via telecommunication and telemedicine services.

<http://www.tenpet.com>

Unit web link

<http://ec.europa.eu/eten>



DG Health and Consumer Protection

Unit Health Information

Summary

Mission Statement

Development and implementation of a comprehensive system of comparable health information and knowledge in liaison with the Community statistical system, other EU policies (DG Empl, DG Env), EU agencies (Lisbon, Bilbao, London, Stockholm, Copenhagen) and international organisations (WHO, OECD).

Implementation of EU health indicators, in particular the ECHI indicators, the Healthy Life Years indicator, the Environment and Health Indicators, health regional indicators, Health Care Quality Indicators (with OECD) and others; organisation of the necessary procedures for data collection and analysis, preparation of reports and analysis and diffusion of best practice and information exchange; health literacy.

Preparation and follow-up of new initiatives in the areas of health monitoring, analysis, evidence and reporting.

Reporting and analysis on EU health status, population groups (migrants, gender health, children and adolescent health, healthy ageing) and on mortality and morbidity (diseases, both chronic and rare, health conditions, lifestyle indicators, environment and health information, health systems information, accident and injuries information)

Management (with Eurostat) of the European Health Survey System: Implementation of the European Health Examination Survey, cooperation with Eurostat for the implementation of the European Health Interview Survey and implementation of other surveys (e.g. Eurobarometer).

Improvement of all the other mechanisms to collect health data (hospital information system, primary care, registers, sentinel networks, etc.); ethical, social and legal aspects of collection, processing, reporting and use of medical data including genetic data

Health Information on Cancer and major and chronic diseases initiatives, Electro-magnetic Fields risk management.

Development and follow-up of actions and initiatives in order to address problems related to rare diseases.

Unit web link

http://ec.europa.eu/health/ph_information/information_en.htm