eHealth strategy and implementation activities in Portugal

Report in the framework of the eHealth ERA project

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About *eHealth ERA* and this report

This report is the outcome of research in the context of the eHealth ERA project (Towards the Establishment of a European Research Area). The project was implemented by empirica GmbH (co-ordinating partner, Germany), STAKES (Finland), CITTRU (Poland), ISC III (Spain), CNR (Italy) as well as EPSRC and Imperial College (United Kingdom), based on a Coordination Action contract with the European Commission.

The European Commission, Directorate General Information Society and Media, supports this project to contribute towards greater transparency across Member States and other participating countries on eHealth strategies as well as innovation-oriented research and technology development (RTD) initiatives, including the coordination of Member States' eHealth strategy formulation and implementation. Thereby the project aims at fostering the establishment of an effective European Research and innovation Area (ERA) in eHealth. All project results are available on the internet and can be accessed at the *eHealth ERA* website: www.ehealth-era.org.

The status of activities described is generally August 2006.

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Country Report: *PORTUGAL*

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1 Executive Summary

In Portugal, the Ministry for Health is the main organization responsible for promoting the use of ICT in healthcare, and for the associated planning, financing and guidance mechanisms.

The National Health Plan is the currently national program for public health and defines the guiding principles by which institutions within the Ministry for Health, other bodies in the health sector (state, private and social welfare institutions) and other relevant sectors can assure, or contribute to, the achievement of health gains between 2004 and 2010, aiming at the promotion of health and the prevention of disease.

The strategic objectives of the programme include:

- Promoting health and preventing illness

- Improving the access to a better quality healthcare

- Promoting new partnerships and new agents in health

The areas targeted by the Program are: technical assistance; improve the hospital access network; improve information technologies and communication; quality certification; the creation and upgrading of health centres and the modernisation of hospital services. The main headlines of the program are:

- More and better Health (To protect and to promote the Health, National Plan of Health, To age in Health, School – the great promoter of health)

- Drug dependency

- HIV/AIDS

- A flexible and fair system (Primary Health Care, Accessibility, Joint with hospital cares, National Net, Hospitals, Quality)

- A well managed SNS ("Serviço Nacional de Saúde", national health service) (Human resources of the health, Public finances, Regulating activity, ICT, Medicines, Equipment of health, participation and social responsibility).

e-Health is considered a national priority at the National Action Plan for Information Society. The main objective is to use the ICT to place the citizen at the center of the health system, while increasing the quality of the services provided, increasing the efficiency of the system and reducing costs.

The eHealth policy is divided into three action lines with the following objectives:

- Health Information networks: Improve the backbone communications infrastructure of the health sector. Encourage the use of this backbone to introduce new added-value services and improve information exchange between healthcare providers.

- On-line health services: Improve communication between patients and doctors. For example, use new applications based on internet and mobile services to assist continuous monitoring of some chronic illness (diabetes, high blood pressure, obesity, drug dependency), support medication and treatment follow-up and support the patient's family.

- User/patient card: Introduce patient cards jointly with national idCard initiative to provide more efficient and effective personalized patient care.

2 Healthcare System Overview

2.1 Basic facts and features of the Portuguese healthcare system

The Portuguese health care system is characterized by three co-existing systems: the National Health Service (SNS), special public and private insurance schemes for certain professions (health subsystems) and voluntary private health insurance.

Ministry for Health

The central government through the Ministry for Health is responsible for developing health policy and overseeing and evaluating its implementation. It is also responsible for the coordination of health-related activities of other Ministries, such as Social Services, Education, Employment, Sport, Environment, Economy, Housing and Urban Planning. The core function of the Ministry is the regulation, planning and management of the SNS. Many of the planning, regulation and management functions are in the hands of the Minister of Health.

The Ministry for Health is made up of four directorates and six institutes. These are:

- Department of Health Modernization and Resources
  Provides technical and administrative support to the other sections of the Ministry, coordinated their work and provided assistance to staff within various Government offices and furthermore the regulation, the directed and the evaluation of the human resource activities for the SNS, namely professional education and practice, and directly oversaw schools for the training of nurses and technical staff working in health.
- The General Directorate of Health
  Plans, regulates, directs, coordinates and supervises all health promotion, disease prevention and health care activities, institutions and services, whether or not they are integrated into the SNS.
- The General Inspectorate of Health
  Performs the disciplinary and audit function for the National Health Service in collaboration with the General Directorate of Health and audits SNS institutions and services.
- The General Directorate of Health Infrastructures and Equipment
  Assesses, regulates, plans and coordinates the procurement of equipment and provides technical support for the programme of SNS building work. It has regional directorates.

The National Institutes are the following:

- The National Institute of Pharmaceuticals and Medicine (INFARMED)
- The National Institute for Medical Emergencies (INEM)
- The Portuguese Blood Institute (IPS)
- The Institute of Financial Management and Informatics (IGIF)
- The Social Services for Health Personnel
- The National Institute of Health, (INSA)
- The National Institute of Drug Addiction (IDT).

There are also four vertical programmes run by national bodies attached to the Ministry for Health: the National Council of Mental Health, the National Council on Prevention of Smoking, the National Committee on AIDS and the National Council of Oncology.

Legal provision has been made for a National Health Council, a consultative body for the Ministry for Health. Its function, in theory, is to represent all those concerned with the performance of health care: providers, patients, other health care employees, government departments in charge of health-related activities and other bodies.

Regional health administrations (RHAs)

The SNS, though centrally financed by the Ministry for Health, has had since 1993 a strong regional structure comprising five health administrations. In each region a health administration board, accountable to the Minister of Health, manages the SNS. Their management responsibilities are a mix of strategic management of population health, supervision and control of hospitals and centralized direct management responsibilities for primary care/SNS health centres.

The regional health administrations (RHAs) are responsible for the regional implementation of national health policy objectives and coordinate all levels of health care. They work in accordance with principles and directives issued in regional plans and by the Ministry for Health. Their main responsibilities are the development of strategic guidelines, coordination of all aspects of health care provision, supervision of management of hospitals and health centres, establishment of agreements and protocols with private bodies, and liaison with government bodies, *Misericórdias* and other private non-profit bodies, and municipal councils. Regional health administrations are subdivided into eighteen sub-regions each with a sub-regional coordinator:

Since 1998 each regional health administration (RHA) has established a Contracting Agency, a functionally autonomous entity with responsibility for contracting with hospitals, health centres and private for-profit and non-profit bodies. Its two main aims are to increase citizen participation in health decision making and to develop the separation of purchasing and provider functions within the SNS. Legislation in 1999 created the Agencies National Council which was intended to set up and regulate the development of the contracting agencies. However, further governmental changes resulted in a slow down of the contracting impetus and the National Council was never effective.

Local government

Below the region and sub-region are the municipalities. Health issues at this level are under the jurisdiction of the Municipal Health Commission. For the purposes of health care provision, boundaries are based on geographical proximity rather than administrative areas, so some communities may be included in neighbouring municipalities. This ensures that services are provided more quickly and easily. In some cases the larger urban communities have their own system of health care organization in order to meet the specific needs of the population.

There are a number of initiatives being undertaken in cooperation with the municipalities such as promoting greater traffic and pedestrian safety and encouraging physical exercise. Nutrition is also being promoted in close cooperation with the media, the educational system, sports organizations and local authorities. Portuguese Presidency of the European Union during the first six months of 2000 focused on food safety, starting with a white paper, along with major legislative reforms. Overall, though, the effective role of municipalities in the Portuguese health system is rather marginal. In recent years attempts have been made to establish partnerships between the central State and the municipalities with greater technical and financial capacities in respect to the building of new health centres, using external co-financing sources, particularly from the European Union.

Health subsystems

In addition to the cover provided by the SNS, about 25% of the population is covered by the health subsystems. Health care is provided either directly or by contract with private or public providers (in some cases by a combination of both). Access is generally limited to members of a specific profession and their families.

There are also a few additional smaller funds. Most health subsystems are members of the National Association of Health Subsystems. Some of the funds are associated with and run by trade unions and managed by boards of elected members. The largest fund, ADSE, is controlled by the Ministry of Finance. It covers 15% of the population, corresponding to 60% of all subsystem members (*23*) and includes amongst its members all employees of the SNS.

Private health care providers mainly fulfil a supplementary role to the SNS rather than providing a global alternative to it. Private sector activity continues to prosper despite the establishment of the SNS and now mainly provides diagnostic, therapeutic and dental services as well as some ambulatory consultations, rehabilitation and psychiatric care services. The key agents are private practitioners, *Misericórdias,* and private hospitals and clinics.

The majority of specialist consultations take place in the private sector whereas the public sector provides the overwhelming majority of general practice consultations. Overall the private sector accounts for 32% of all medical consultations.

Health care delivery system

Decentralization is formally a key word of the SNS constitutional framework. The Law on the Fundamental Principles of Health (1990) states that the SNS is managed at the regional level, with responsibility for the health status of the corresponding population, the coordination of the health services provision at all levels and the allocation of financial resources according to the population needs. This is in line with the reform trends in many European countries, which have regarded decentralization as an effective means to improve service delivery, to better allocate resources according to need, to involve the community in health decision-making and to reduce inequities in health. In practice, however, responsibility for planning and resource allocation in the Portuguese health care system has remained highly centralized even after the current five regional health administrations were established in 1993. In theory, the creation of the RHA conferred financial responsibility: each RHA was to be given a budget from which to provide health care services for a defined population. In practice, however, the RHA autonomy over budget setting and spending has been limited to primary care, since hospital budgets continued to be defined and allocated by the central authority. The regional contracting agencies created in 1997 were expected to further decentralize resource allocation responsibility through the gradual implementation of contracting arrangements with hospitals and health centres (through the sub-regional coordination levels). However, uncertainties about the role of these entities have hampered their effectiveness.

The restructuring of the health services organization, including the subregional coordination levels at each RHA and the set up of health units, was part of a broader strategy to try and integrate and coordinate levels of provision. The fragmented way in which services had been organized locally was reflected in the separation of primary care from secondary and tertiary care within the hierarchy of the Ministry for Health: the hospitals had been the direct responsibility of the General Directorate of Hospitals and the health centres fell under the direct hierarchical authority of the General Directorate of Primary Health Care. These two directorates were merged to form the new General Directorate of Health. At the hospital level, the delegation of responsibility down the line of management, allowing lower-level managers greater power to deploy resources more efficiently was the rationale for the creation of Responsibility Centres.

These would group hospital services and units of an adequate management dimension under criteria of homogeneity of production and complementarities of objectives, aiming at a better coordination of medical specialties, cost control and higher competitive strength. Although legislation was enacted in 1999 to set up the framework for the creation of responsibility centres at SNS hospitals, most did not go beyond an experimental status.

Health care financing

The Portuguese health care system is a mix of public and private financing. The SNS, which provides universal coverage, is predominantly funded through general taxation. The health subsystems, which provide either comprehensive or partial health care coverage to about a quarter of the population, are funded mainly through employee and employer contributions (including state contributions as an employer). A large proportion of funding is private, mainly in the form of direct payments by the patient and to a lesser extent in the form of premium to private insurance schemes and mutual institutions, which cover respectively 10% and 6.5% of the population. Public expenditure, which comes mainly from taxation (over 90%) includes funding of direct provision within the SNS and subsidies to the health subsystems for public sector employees. Private expenditure basically includes out-of-pocket payments and voluntary health insurance.

Although there is currently no available updated information on expenditure by specific agents, out-of-pocket payments in Portugal are perceived to be among the highest in Europe, having accounted for over 44% of the THE in 1995 as reported in the OECD 1998 database. This number, though, seems to be excessive and inconsistent with the revised time series published in 2002, where private expenditure as a whole remains under 35% of the THE. Nevertheless, one may state that, overall, the theoretically progressive, redistributive income tax system in Portugal turns out to be slightly regressive, reflecting a high share of out-ofpocket payments, along with a heavy reliance on indirect taxes. Indirect taxes on goods and services account for 42.6% of total tax revenue, whereas taxes on income and profits represent 28.5% of total tax revenue . The health expenditure falls more heavily on low-income households.

Public financing

The SNS is mainly financed directly by general taxes. Tax revenue also funds the employer contribution for state and public sector employees. A soft budget for total SNS expenditures is established within the annual national budget. Actual health expenditures usually exceed the budget limits by wide margins, requiring the approval of supplementary budgets. Apart from direct transfers from the State Budget, the SNS raises its own revenues, mostly generated by hospitals. These include payments received from patients for special services such as private rooms, payments from beneficiaries of health subsystems and private insurers, payment received for the hiring of premises and equipment, income from investment, donations, fines, flat-rate admission charges and co-payments for drugs, consultations and diagnostic tests. In total this accounts for about 8% of total SNS revenue and is estimated to account for as much as 20% of the overall hospital budget.

Health subsystems

The health subsystems, which pre-date the establishment of the SNS, account for about 5% of total health expenditure and are normally financed through employer and employee contributions, with the largest portion paid by the employer. Most beneficiaries of public sector health subsystems such as those covering civil servants, contribute 1% of their salary. In private subsystems, such as those of private enterprises, the contribution can vary and even be symbolic or inexistent. Generally the benefits received under subsystem coverage exceed those provided within the SNS. The employer and employee contributions are often insufficient

to cover the full costs of care and consequently a significant proportion of costs is shifted onto the SNS. Traditionally, most enrolees of these funds did not declare their membership when receiving treatment within the SNS, thus exempting the funds from responsibility for the full costs of their members' care. The mandatory use of the Patient Identity Card is progressively avoiding such duplications of coverage since it clarifies the financial responsibility for the patient.

Complementary sources of financing

Voluntary health insurance

Approximately 10% of the population has taken out some form of voluntary health insurance (VHI). Mostly this is group insurance provided by the employer, since fewer than 10% of people with private health insurance have individual policies.

Mutual funds

About 7% of the population is covered by mutual funds, which are funded through voluntary contributions. They are non-profit organizations that provide limited cover for consultations, drugs and more rarely some inpatient care. They do not exclusively provide health benefits to associates so it is difficult to calculate the health component of the contributions.

Out-of-pocket payments

In recent years, there has been increasing use of co-payments in health care with the aim of making consumers more cost-aware. Out-of-pocket payments have consistently accounted for over 30% of total health expenditure over the last ten years. The majority of these payments (59.9% in 1994/1995 and 55.1% in 2000) are for drugs and therapeutic products. Medical, nursing and paramedical services and hospital expenses make up the bulk of the rest. These three categories of expenditure represent over 90% of a household's out-of-pocket payments on health care. The co-payments on pharmaceuticals vary from 40% to 100% depending on the therapeutic value of the drug.

Public/private partnerships

The objective is to improve the SNS providing capacity while guaranteeing more value for money, by associating private entities in the public responsibility to build, maintain and operate health facilities. From a financial point of view, the risk transfer from the State to the private operators alleviates the former from the initial investment burden, which would be otherwise excessive considering the financial constraints of the public sector. Between 2003 and 2006, ten hospital projects will be launched under public-private partnerships, including replacement of seven facilities and building of two new hospitals.

External funding

Since 1994 there has been a programme of investment in health care services, co-financed by the European Union. Through the European Regional Development Fund (ERDF) significant investments have been made. For each co-financed project the Portuguese contribution must be at least 25% of total investment. The external funding complements the Ministry for Health's own capital expenditure plans.

Main decision making level for health care policy in the country

Ministry for Health -Ministerio da Saúde-

http://www.min-saude.pt/portal

2.2 National level health goals

Main issues and strategic targets of the national healthcare policy and implementation in Portugal

The main headlines of the program are:

1.- More and better Health

- To protect and to promote the Health.

- National plan of Health

- To age in Health

- School, the great health promoter

2.- Drug dependency

3.- HIV/AIDS

4.- A just and flexible system

- Primary Health care

- Accessibility

- Joint with hospital care

- National Health Network

- Hospitals

- Quality

5.- A well managed SNS

- Human resources of the health

- Public finances

- Regulating activity

- Information and Communication Technologies

- Medicines

- Equipment of health

- Regionalization, participation and social responsibility

A description of the program is located at the url below

http://www.min-saude.pt/portal/conteudos/a+saude+em+portugal/politica+da+saude/programa/programa.htm

Major currently running national programmes for public health and healthcare system development

The National Health Plan is the currently national program for public health and defines the guiding principles by which institutions within the Ministry for Health, other bodies in the health sector (state, private and social welfare institutions) and other relevant sectors, can assure, or contribute to, the achievement of health gains between 2004 and 2010, aiming at the promotion of health and the prevention of disease.

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- A well managed SNS (Human resources of the health, Public finances, Regulating activity, ICT, Medicines, Equipment of health, participation and social responsibility).

1. http://www.min-saude.pt/portal/conteudos/a+saude+em+portugal/politica+da+saude/plano+nacional+de+saude/PNS.htm

2. http://www.cancerworld.org/cancerworldadmin/getStaticModFile.aspx?id=737

3. http://www.dgsaude.min-saude.pt/pns/media/pns_vol1.pdf

4. http://www.dgsaude.min-saude.pt/pns/media/pns_vol2.pdf

3 Strategic eHealth Plans/Policy Measures

3.1 National-regional eHealth policy

3.1.1 Main actors

Ministry playing a role in influencing national eHealth policy

The main coordination body is the Ministry for Health (http://www.min-saude.pt/portal)

3.1.2 eHealth Roadmap: Background, Targets, Progress, and Prospects

The Great Options Plan approved in July 2005 drives the main guidelines and measures of the government for 2005 – 2009, with great emphasis on knowledge, Portuguese' qualification, technology and innovation as well as on a wide set of social policies.

e-Health is considered a national priority at the National Action Plan for Information Society. The main objective is to use the ICT to place the citizen at the center of the health system while increasing the quality of the services provided, increasing the efficiency of the system and reducing costs.

The healthcare Action Plan for the development of the information society intends to reach three great strategical objectives:

- To provide a bigger quality of service to the users;
- To reduce costs of the national health system increasing the efficiency levels;
- To guarantee a better procedure efficiency and management.

These objectives are supported by three action lines whitin the eHealth policy:

- Improvement of the Health Information networks: it is basic for the improvement of the quality of life of the citizens. Encouraging the sector with the tools (equipment, software and services) which guarantee a communication backbone, capable to support the information exchange among all the health services and the implementation of a new added value set of services on this network which improve it.

- On-line health services: to improve communication between patients and doctors, for example, use new applications based on the Internet and mobile services, continuous monitoring of some chronic illness (diabetes, high blood pressure, obesity, drug dependency), medication and treatment follow-up and for support the patient's family.

    Three great priorities had been defined to materialize the concept of the services of health in line:

    1º priority - To offer new canals of access to the patient

    2º priority - To develop an integrated system of hospital network management

    3º priority - To implement the electronic health record at health institutions

- The user/patient card: use of the patient card to provide the SNS with personalized and more useful information about an efficient care for the patient.

Future activities

- The National Data Center, including the SNS patient database, will aggregate information located in several distributed databases at local, regional and national levels. Comencing in March 2007, this will initially deal with the National Patient Identification and information on temporary incapacity for work for use by the Social Security Ministry.

- In order to guarantee that all institutions have high bandwidth access to exchange content, applications and services without limitations, the Health Information Networks Improvements will continue to promote telemedicine initiatives especially in the countryside regions and for applications in emergency care linking ambulances to hospitals.

- Contact center (in place since the beginning of May 2007) – it will replace the actual telephone lines that provide advice on medical information and guidance.

- The ePrescription functionalities will be developed in a comprehensive way.

- Family Health Units (USF) are being populated and will work under the health centres' supervision. These units are based on a new primary health care providers management model that is supported by ICT and uses a set of indicators for monitoring the health care provided and the relevant performance..

- The emergency services of the National Urgency Network will be enhanced by implementation of a computerized selection and information system.

- It is foreseen that a system for automatic scheduling of initial specialized consultations, based on clinical priority, will be implemented in all hospitals and health centres in 2007.

- The Portuguese electronic identity card (eID), ultimately replaces five presently existing cards: personal identity card, taxpayer's card, social security card, voter's card and health system card. The eID is a smart card that provides visual identity authentication with increased security and electronic identity authentication based on biometrics (photo and finger print) and electronic signatures. Started in February 2007 as a pilot in Azores islands, it is foreseen to be extended to all citizens during 2008.

- Specific studies on booking of medical appointments by SMS and on the introduction of Electronic Health Records are also envisaged.

More general information about this topic is available at link below (in portuguese)

1. http://www.anacom.pt/template20.jsp?categoryId=96803&contentId=121161

2. http://www.euser-eu.org/ShowCase.asp?CaseTitleID=580&CaseID=1217&MenuID=

3. http://www.cartaodecidadao.pt/

Implementation roadmap and progress. Preliminary plans or experiences in extending eHealth implementation to social care

There are several experiences in extending eHealth implementation to social care as a number of e-Health portals and other initiatives regarding the development of e-Health Services. Some of these are:

- Health Portals provided by public and private organizations mainly aim to inform the Portuguese population. The governmental portals from the Ministry for Health and the General Directorate of Health provide information about hospitals, health care public centres, rights of patients, national health plan, health diagnosis, diseases and health prevention, nutrition and fitness.
- Telephone lines that provide information, advice and guidance on medical matters, e.g. "poisonings line", "Health 24", "Public Health line".
- The SNS Patient card is based on the principle "one patient – one number" which uniquely identifies each Portuguese for health care purposes, since 1997.
- Telematic solutions: there are several pilots across the country on telediagnosis, telemedicine and teleconference, mainly in cardiology, neurology and genetics..
- Health information network improvements are being implemented in order to guarantee better connectivity between healthcare professionals.
- Since 2004 over 70% of hospitals and health centres, have implemented clinical support applications (SAM).
- Since 2006 a certification process for ePrescription applications used by private physicians and other institutions which enables their integration in the national ePrescription flow.
- The "Rede Telemática da Saúde" (RTS) project developed and implemented a telematic health network, in the Aveiro region, in order to improve clinical communication and interaction between healthcare institutions..

Existing or planned eHealth cooperation of Portugal with other Member States

Ministry for Health (throught IGIF) has been involved in the European working groups on eHealth (i2010 subgroup on eHealth and interoperability expert group). Also, The Social Security Ministry (with Ministry for Health collaboration) is involved in the ad-hoc groups concerning electronic data interchange. Moreover, Portugal is "open" to cooperate with other Member States in any other initiatives, willing to follow-up, namely the Large Scale Pilots' results and to analyse/implement the good practices used by other countries in eHealth and specially in the Electronic Health Records field, as this is a priority for Portugal.

3.1.3 Dissemination and co-ordination activities

Activities for making the national eHealth roadmap more widely known

The roadmap for implementing the User/Patient Card has been published by various means (workshops, newspapers, journal articles, online information). There is a dedicated website for the Patient Card with information about it.

1. http://www.anacom.pt/template20.jsp?categoryId=96803&contentId=121161

2. http://www.portugal.gov.pt/portal/pt/governos/governos_constitucionais/gc15/ministerios/ms/comunicacao/intervencoes/20031014_ms_int_pns.htm

3. http://www.cartaodecidadao.pt

Means available to the general public for expressing their opinions on eHealth policies and plans

There are no particular means for the general public for expressing their opinions about eHealth policies in Portugal.

3.2 Investment and Reimbursement framework

Investments for the implementation of eHealth systems and applications supported or funded

It is in its very early stage the discussion to create a national working group of representatives from healthcare professionals, healthcare institutions, public administration institutions, healthcare professional associations, users and industry. This group will be in charge of analysing the eHealth requirements from a global point of view (inside Portugal while looking to trans-european interoperability), covering at least telemedicine and EHR initiatives already in place to make a national eHealth strategy proposal, for superior approval.

Investment from Regional Funds, Structural Funds, World Bank, PHARE Programme, Specific national credit programmes, other sources

Since 1994 there has been a programme of investment in health care services, co-financed by the European Union. Through the European Regional Development Fund (ERDF) significant investments have been made. For each co-financed project the Portuguese contribution must be at least 25% of total investment. The external funding complements the Ministry for Health's own capital expenditure plans. Preparatory work is taking place in order to design and implement a new strategic plan for health with a 10-year horizon. A broad process of internal consultation has been initiated, as has external consultation, with WHO support, in order to learn from the experience of other European countries.

The health funds for 2000–2006 (the Saúde XXI programme) have been a result of negotiations between Portugal and the European Union under the strategic assumption that health promotion and prevention along with supporting information systems and technologies are the pillars of any real investment in the health sector. There has been, therefore, a shift of focus from the previous funding of building and infrastructure maintenance to the funding of strategic health-structuring areas. The Saúde XXI programme is structured along three development axes: health promotion and disease prevention, access to quality health care services (including a vast network of hospital referral arrangements); and promotion of health partnerships between the public and the private for profit and non-profit sectors, with a special emphasis in home care, long term care and family health.

http://www.euro.who.int/document/e82937.pdf

Reimbursement schemes to support the diffusion and implementation phase of eHealth applications. Types of eHealth services eligible for reimbursement

Specific information on this topic will be available with the national strategy on eHealth definition.

4   eHealth deployment status

4.1   eHealth infrastructure

4.1.1   Physical networks

Physical networks available for supporting the provision of eHealth services. Technologies are these eHealth networks based. Which types of eHealth services are delivered through these regional or national networks?. Plans for future development and expansion of these eHealth networks

The Health Information Network (RIS) is a private network that supports all the communications between hospitals, health centres and central organizations of the Health Ministry. It is the biggest private Portuguese network since it connects over 2000 sites all over the country. It was started on 1995, and has been improved to match the needs of health communications in the public sector.

It is a full featured based Internet Protocol (IP) network that can handle all IP based communications. As a general manner, it delivers high bandwidth access according to the needs and full integration between institutions.

Thereby it provides inter institutional access, national databases and Internet access. Application communications and telemedicine applications based on IP protocol are also supported and improved.

The Health Information Network is based on a tree architecture, from IGIF sites (Lisbon and Oporto) to regional hospitals and then to health centres and other health organizations.

The backbone is based on ATM technology and the access points are based on leased lines. Both are provided by two national telecommunication operators.

http://www.infosociety.gov.pt/conn_pt.pdf

http://www.euser-eu.org/ShowCase.asp?CaseTitleID=580&CaseID=1217&MenuID

http://www.euser-eu.org/euser_countrybrief.asp?CaseID=1792&CaseTitleID=746&MenuID=83

4.1.2 Legal and regulatory framework

National legislation addressing data protection, telecommunications, digital signatures, eHealth service provision and health-IT product liability

There are a national personal data protection law and the clinician practice, publicity and medicines marketing guidelines. There is no legal framework specific for e-Health or Telemedicine practice. Although, telemedicine pratice should obey to Law no. 67/98, of 26 of October and Law no. 12/2005, of 26 of January (articles 7º and 4º, respectively).

The "Comissão Nacional de Protecção de Dados" is the National Authority on Personal Data Protection.

In order to guarantee the basic right to one's life privacy and especially to health data confidentiality, all health professionals are under secrecy duty (article 85º of Decree-Law n. 104/98, of 21 of April, which approved the nurses' deontological code and article 67º and following, of physicians' deontological code).

Some more references are:

- Article 35º of Portuguese Republic Constitution.

- Law n.º 12/2005, of 26 of January – defines the health information and genetic information concepts, the human genom information circulation on health system and also the rules for collecting and maintaining biological products for investigation and genetic tests purposes.

- Base XIV of Law n.º 48/90, of 24 of August (Law on the fundamental principals of health), modified by Law n.º 27/2002, of 8 of November - guarantees the citizen/patient right to be treated with privacy while respecting personal data confidenciality.

- Law n.º 65/93, of 26 of August, modified by Law n.º 8/95, of 25 of March and Law n.º 94/99, of 16 of July – regulates the access to administration documents.

- Penal responsibility – articles 190º and 195º of Penal Code – crimes against private life privacy.

- Portaria n.º 247/2000, of 8 of May – approved the Hospitals' archive norms

Has regional or national legislation on the targeted areas been harmonized to the EU-level regulations listed below?

- Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 "on the protection of individuals with regard to the processing of personal data and on the free movement of such data". (Data Protection Directive)

- Recommendation No. R (97) 5 of the Committee of Ministers to Member States on the Protection of Medical Data and Explanatory Memorandum to Recommendation No. R (97) 5.

- Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures".

- Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 "concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communication)

- Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 "on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ("e-commerce Directive").

Directive 95/46/EC - Directive implemented by Law 67/98 of 26 of October. "Law on personnel data protection, relating to treatment and circulation of personal data about individuals"

Directive 1999/93/EC - Decree-Law no. 290-D/99, of 2 of August. Legal rules governing electronic documents and signatures, modified by Decree-Law no. 62/2003 of 3 of April and Decree-Law no. 165/2004 of 6 of July.

Directive 2002/58/EC - Law no. 41/2004, of 18 of August. Legal provisions transposing to the national legal order Directive 2002/58/EC, of the European Parliament and of the Council, of 12 July, concerning the processing of personal data and the protection of privacy in the electronic communications sector.

Directive 2000/31/EC - Decree-Law no. 7/2004, of 7 January - Transposing into the Portuguese legal system Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the internal market.

Recommendation No. R (97) 5 – included in the Law no.12/2005, of 26 of January, which envisaged also to comprise the recommendation' guidelines about protection of medical data.

http://www.anacom.pt/template20.jsp?categoryId=98972&contentId=166335

http://www.anacom.pt/template20.jsp?categoryId=98100&contentId=164788

http://www.anacom.pt/template20.jsp?categoryId=127219&contentId=227522

http://www.anacom.pt/template20.jsp?categoryId=98047&contentId=164733

http://www.dre.pt/pdf1s/1998/10/247A00/55365546.pdf

http://www.dre.pt/pdf1s/2005/01/018A00/06060611.pdf

http://www.dre.pt/pdf1s/2002/11/258A00/71507154.pdf

http://www.dre.pt/pdf1s/1999/07/164A00/44284432.pdf

http://www.dre.pt/pdf1s/2000/05/106B00/19371944.pdf

http://www.dre.pt/pdf1s/1998/04/093A00/17391757.pdf

4.1.3 Education and training on ICT

Education programmes on the national level to promote the acquisition of general or eHealth-specific) ICT skills by the general population

There are some education programs retated to the acquisition of ICT skills which are included on the "Connecting Portugal" initiative. Example would be:

- Provide all the schools with a broadband DSL connection to the Science Technology and Society Network (end of 2005); because it's essential to stimulate the perception of the Portuguese citizens regarding the relevance of ICT, making easier for them to use computers and the Internet.

- Public Internet Spaces - There are more than 300 Internet Spaces open over the country. These spaces provide free access to multimedia computers and Internet to all citizens.

- Science Alive ("Ciencia Viva") - It's a program for the promotion of science and technology within the society.

- e-U: Electronic University / Virtual Campus, it's targeted at students and higher education professors of higher education institutions and includes the extensive wireless networking of campuses with more than 5000 access points, as well as higher education electronic services, contents and applications.

- Basic ICT Skills Diploma - The process of recognition of basic competencies in ICT and the associated awarding is assured since 2001, based on a network of accredited entities of varied nature, most of which can also provide training in ICT, namely higher education institutions, schools, Science Alive ("Ciência Viva") Centers, centers for promoting the diffusion of ICT, professional training centers, Internet Spaces and others. The ICT competencies recognition system is being expanded to include intermediate and higher levels of competencies and e-learning.

1. http://www.infosociety.gov.pt/conn_pt.pdf

Education programmes on the national level to promote the acquisition of general or eHealth-specific ICT skills by health care professionals

The National Institute of Administration (INA), a public institute from the Minstry of Finance and Public Administration has as mission: "to contribute, through training, research and technical consultation, to the public administration' modernization and the civil servants skills update." INA provides, among others, high level training courses, workshops and specialized training. One of these is the specialization on health information systems with the main goal of developing skills in ICT strategic management of organizations, mainly addressed to physicians, nurses, IT directors and technical staff of health institutions sector. http://www.ina.pt/

The Faculty of Medicine – University of Lisbon is partner of the European Neurologic Networks – Interactive Communication System (eTen programme), an e-health project integrating advanced e-learning and e-publishing technologies with the goal to offer a new multilingual, regional and multinational service in the field of Sleep disorders.

http://www.ennics.org/webcms/ennics/live/index.html

Education programmes on the national level to promote the acquisition of general or eHealth-specific ICT skills by health care administrative and support staff at all levels

INA – the same as above (http://www.ina.pt/)

Success stories with regard to the provision and acquisition of eHealth-related skills and specific training curriculum available for the qualification of "Health ICT specialist".

Yes, a basic level and it's the Basic ICT Skills Diploma

Recognizing acquired basic competencies in ICT and training people for them, as a means to enhance info-inclusion

http://www.infosociety.gov.pt/

The responsible for the organisation of these education programmes

 Ministry of Science, Technology and Higher Education

http://www.mctes.pt

4.2 eHealth applications & services

Electronic Health Records

Title of Project or Programme: Information Extraction from Medical Reports

Type of application: Information Extraction from Medical Report with Natural Language Processing application

Start Date: 15/03/2004

End Date: 31/12/2005

Main partners and actors: University of Aveiro

Status: Completed

http://www.ieeta.pt/sias/projects_Details.php?id=17&frline=2

Clinical support applications & e-Prescription

Since 2004 over 70% of public hospitals and health centres, have implemented clinical support applications (SAM). This includes support, among others, for activities such as prescribing, diagnosis register, remote specialised outpatient scheduling, registration of the analysis results produced by other hospital applications, reports on patient delivery and certificates of temporary incapacity for work. Protocols established between institutions, allow direct access to the patient information from the connected organizations.
Specific applications to support nursing daily life activity at hospital and health centres are also in place for several years.
Since 2006 a certification process for ePrescription applications used by private physicians and other institutions which enable their integration in the national ePrescription flow. The electronic prescriptions are sent to a central database for invoice checking and payment. This system does not include yet the pharmacies.

SNS Patient Database

The SNS patient database, will aggregate information located in several distributed databases at local, regional and national levels. Started in March 2007, this will initially deal with the

National Patient Identification (to support the Citizen card) and information on temporary incapacity for work for use by the Social Security Ministry

SNS Patient card

The SNS Patient card (a magnetic trip card) is based on the principle "one patient – one number" which uniquely identifies each Portuguese for health services purposes. It was introduced in 1997 as a national mandatory project and since then every Portuguese has a patient card. The citizen's card will progressively replace this one.

Health Cards / Patient Identifiers

Title of Programme: The Citizen's Card project

Type of application: National Insurance card, patient (citizen) identification card

Start Date: 01/01/2007

Main partners and actors: Portuguese government and citizens

The citizen's card is a citizenship document. As a physical document it enables its holder to securely identify him/herself in person. The citizen's card is a project that will contribute to make the modernisation of the Public Administration more dynamic.

As a technological document it allows him/her to identify him/herself when dealing with computerised services and to authenticate electronic documents.

One aspect of the citizen's card is that in just one document it combines all the keys that are indispensable to a fast and effective relationship between the citizen and a variety of public services. It ultimately replaces five presently existing cards: personal identity card, taxpayer's card, social security card, voter's card and health system card.

With its digital hat on, it will foster the development of electronic transactions by giving participants the peace of mind of a strong authentication and an electronic signature.

1. http://europa.eu.int/idabc/en/document/4298/353

2. http://europa.eu.int/idabc/en/document/3769/342

3. http://www.cartaodecidadao.pt/

Health Portals

Public health service institutions give broad information on prevention and health promotion also using the Internet as one communication channel. These portals mainly aim to inform the Portuguese population. The governmental portals from Ministry for Health/General-Directorate of Health provide information about hospitals, health care public centres, rights of patients, national health plan, health diagnosis, diseases and health prevention, nutrition and fitness.

There are several Internet portals (even private ones) which provide useful health information for the citizens and health professionals

http://www.portaldecidadao.pt

http://www.dgs.pt/

Risk Management and Patient Safety

N/A

Personal Wearable and portable communicable systems

N/A

Other ICT tools assisting prevention, diagnosis, treatment, health monitoring, lifestyle management

N/A

Telemedicine services

Rede Telemática Saúde Project (01/05/2004 -31/12/2006).

This Project aims to develop and implement a telematic health network in the Aveiro region in order to improve clinical communication and interaction between healthcare institutions and professionals. Even it was previewed to end in Dec. 2006; the project is still running.

1. http://www.ieeta.pt/sias/projects_Details.php?id=3&frline=2
2. http://www.rtsaude.org/

There's ongoing a benchmark study on EHR. It is being studied the initiatives done by other European countries, in order to develop a strategy for implementing EHR in Portugal.

There are several pilots across the country on telediagnosis, telemedicine and teleconference, mainly in cardiology, neurology and genetics. A working group is studying all these initiatives.

5 eHealth RTD status

5.1 General information on RTD structure

Main actors in RTD policy setting in Portugal

Government Policy making and coordination

The responsibility for research policy, in the present Government, is assigned to the Ministry for Science, Technology and Higher Education (MCTES). This Ministry is responsible for designing and implementing research policy, as well as for the development of international research cooperation and for producing R&D statistics.

The MCTES is also responsible for the direct supervision of some public laboratories (such as Scientific and Tropical Research Institute or the Technological and Nuclear Institute) and shares with the relevant sectoral Ministry the responsibility for all the other public laboratories. MCTES has, therefore, the task of coordination and providing a drive to the research activities carried out in public laboratories.

In the present Government, the Technological Plan provides an important coordination mechanism to bridge research and innovation policies. In fact, an Inter-Ministerial Follow-up Commission, chaired by the Prime Minister, was implemented to assess and evaluate the implementation of the Plan. This is expected to be an important forum for policy coordination. Additionally, ongoing cooperation has to be developed between MCTES and the Coordination of the Lisbon Strategy and the Technological Plan.

Policy coordination is expected to be strengthened in the new National Strategic Reference Framework (NSRF) for 2007-2013, since there will be no longer a specific operational programme (OP) focused on research policy. This will be integrated in a general OP on competitiveness, requiring therefore a more cooperation-oriented approach. Several analysts have suggested that the coordination of the NSRF should be assigned to the Prime Minister. However, the decision taken was to assign the overall coordination to the Ministry for the Environment, Territorial Coordination and Regional Development.

The Parliament has had almost no role at all in the design of research policy. There is a specialized commission in the Parliament dealing with "Higher Education and Science" matters, but the analysis of the minutes of this commission shows it has had no substantial actions directed towards scientific issues.

Scientific advice

The main advisory body on research policy is the Higher Council on Science, Technology and Innovation. This includes around 25 members, encompassing representatives from Madeira and Azores regions, S&T organisations, public laboratories, Universities, employers' associations, the Academy of Sciences, associated laboratories, companies, and individual scientists and science policy experts. In 2004, this Higher Council was very active and played an important advisory role to the MCTES. Meanwhile, available information suggests that the denomination and the composition of the Higher Council is to be changed, since innovation is now outside the scope of the Ministry. This may lead to a stronger representation of the scientific community in the Council.

No foresight exercises in science have been carried out. The last exercise of this type was undertaken in 2000-2001, and was untitled 'Engenharia e Tecnologia 2000' ('Engineering and Technology 2000'). It stressed the insufficient technological effort developed by Portugal. Its

conclusions indicate the need for stimulating technological education and training, for promoting R&D programmes involving universities, companies and public administration, and for encouraging company networking and partnerships. Since then, no other major exercises of this kind were undertaken.

Stakeholders in the policy process

A general criticism raised to policy design and implementation in Portugal is the insufficient involvement of stakeholders in such processes. Formal mechanisms for participatory involvement have not been set up. Further, the lack of a sound public opinion basis and of systemic stakeholders consultation significantly hinders the accumulation of learning and policy consistency.

Research policy is no exception to this state of affairs. There are, however, some building blocks of research policy orientations on which there is a wide consensus. This is the case of the stabilisation of the research system, the consolidation of international evaluation processes, the increase in research quality, the internationalisation of the system (including, but not limited, to Europeanisation) and the promotion of scientific and technological culture. An issue is, however, the definition of the key stakeholders in the research policy process. This has been mentioned in connection with what has been classified as an 'academic bias' of research policy. If mechanisms for involving other stakeholders (the industry, the whole society, regional bodies) are not put in place, there may be a risk of funnelling research policy.

Other actors in policy implementation and communication

The two key implementation agencies are FCT, the Science and Technology Foundation, and AdI, the Innovation Agency. FCT is also under the scope of MCTES, and is the key arm for financing the 'institutional' research system, namely the support to research projects and the medium-term financing of research institutions, AdI is a *joint-venture* between MCTES and the Ministry for the Economy and Innovation. It is in charge of the management of the measures dealing with research and innovation in business enterprises, from both POCI and PRIME. This means that those measures aimed at promoting research consortia and research in companies are managed by AdI.

Another key actor is the Agência Ciência Viva. This has played a key role in the promotion of scientific and technological culture. The expansion of Ciência Viva Centres around the country has been relevant for diffusing S&T to the younger generations and to attract more students for scientific and research careers. By partnering namely with secondary schools, Ciência Viva has leveraged its resources and contributed to diffuse more experimental approaches to teaching and learning.

A reference is also due to UMIC, the Innovation and Knowledge Agency. Originally created to address information society and innovation issues, UMIC has gradually focussed almost exclusively on information society. It is now under the scope of the MCTES. Besides the contribution towards research in the ICT area, UMIC has played a role not just in the diffusion of ICT throughout the country but also in making information available for the research community (a good example is B-on, the on-line Library).

http://cordis.europa.eu/erawatch/index.cfm?fuseaction=ri.countryreport&full=1&countryCode=PT&printme=1

Main groups directly involved in or undertaking RTD activities in Portugal

The main groups are:

- The Government Ministries
- Universities
- Public research organisations
- Research and technology organisations
- Health professionals and providers (hospitals, ambulatories, doctors, pharmacies, nurses...)

http://cordis.europa.eu/erawatch/index.cfm?fuseaction=ri.countryreport&full=1&countryCode=PT&printme=1

Main focus areas and targets of RTD activities in Portugal

Three main strategic goals have been pursued by public policies towards science and research over the last decade:
- Bringing Portuguese science to the levels of excellence of the leading countries in different disciplinary areas;
- Promoting the internationalisation of the Portuguese academic community, through integration in European and other international networks; and
- Setting up a machinery of support to the research system.

The Programme of the present government defined as its general aim in this area «to duplicate the S&T capacity of the country». The specific aims to bring this about are:

- Multiply by a factor of 3 private investment in R&D (now 0.26% of GDP)
- Multiply by a factor of 3 the number of granted patents;
- Multiply by a factor of 2 public investment in R&D to reach 1% of GDP;
- Promote a 50% growth in human resources and in the internationally refereed publications and increase up to 1,500 the number of new PhDs per year;
- Stimulate research employment, providing 1,000 new jobs in the public sector;
- Make compulsory experimental activities in S&T subjects in secondary schools;
- Organize the research capacities to minimize public risks.

To pursue these aims several guidelines were identified. Those guidelines have to do with the three strategic priorities mentioned above (excellence, internationalisation, setting up of support machinery) but other two main orientations were also identified. They have to do with *promoting S&T culture, science education and experimentation* and with the *reform of the public labs system*.

The *Commitment to Science for Portugal's Future* announced early in April 2006 provides practical guidelines in relation to same of the aims identified above.

The effort in relation to research and science has been put by the present government in a wider context. That context has been provided by the *Technological Plan*, that was designed with the intention of coordinating the efforts related to ICT diffusion ("information society"), innovation, science and knowledge (life long learning and education). The initial concept behind the Plan had to do with the idea of promoting a horizontal policy similar to what has been called in other countries *innovation policy*. The Plan met however several difficulties in its initial setting up and it had a slow start.

Research policy priorities (Key priorities)

The research policy over the last decade in Portugal has been guided by two main priorities: stimulate the Portuguese research system so that the levels of scientific excellence of the leading groups of the international research community are reached; stimulate the internationalisation of the national research community. In this context academic science has been prioritised, while strategic or applied research efforts have been given less emphasis.

Research policy

The key objectives for the research policy in Portugal were defined in the Programme of the current government and were further confirmed in the Technological Plan and in the Commitment to Science announcement.

Those objectives should be met through a number of policy measures including the following:

1. **Development of research consortia, networks and programmes aimed at strengthening Portuguese scientific research to meet international standards**. This will be expressed namely in the consolidation of the present system of selection of basic and applied research projects, and of international evaluation of research organisations and projects. Public-private consortia to carry out applied research projects will be further promoted to encourage the research cooperation between companies and public research organisations. Calls for proposals in this regard will be addressed to specific research fields, and projects will be evaluated by two different commissions: one concerned with their scientific merit, and another with their strategic relevance.
2. **Development of science and research programmes in international cooperation**, namely through the involvement in the definition of E.U. science and technology policy and the participation in international research organisations. Meanwhile, several protocols were established with relevant U. S. Universities (MIT, University of Texas and Carnegie-Mellon).
3. **Defining the missions of public laboratories**, to strengthen their contribution towards research and technology diffusion as well as to rejuvenate their human resources. A public announcement on the reform of these labs was made in June 2006.
4. **Promoting the extension of the network of associated laboratories to further scientific areas**, while establishing public service contracts with such laboratories and with public laboratories to promote the definition of new public policies and to prevent public risks.
5. **Launching of S&T thematic networks**, with a view to ensure the linkages among the various S&T organisations to work around new challenges and opportunities for the development of Portugal in the European context.
6. **Encouragement of company R&D activities**, namely through the relaunching of the system of fiscal incentives to company R&D activities (SIFIDE) – this was one of the first measures taken by the Socialist Government after taking office in April 2006 –, the assignment to R&D of 0.5 to 1 per cent of the amount of the largest public investment projects – these measures, already mentioned in the Technological Plan, were defined in more concrete terms in a recent Parliamentary speech by the Prime Minister –, and the promotion of research cooperation agreements between companies and public research organisations in the context of European and international projects.
7. **Promoting scientific and technological culture, scientific education and experimental teaching**, through the strengthening of the Agência Ciência Viva (Live Science).
8. **Improving S&T management to align it with the best international practices**, to cut red tape and to make management procedures more independent from

government changes. A working group was nominated in this regard and produced a report mentioned in the policy documents section.

In operational terms, the main instrument of research policy is the Operational Programme Science and Innovation 2010 (POCI), supported by the EU Structural Funds, and running until 2006. In late 2004, the former Operational Programme Science, Technology and Innovation (POCTI) was revised and transformed into POCI. The new POCI has six axes: (1) training and qualifying human resources; (2) developing the science, technology and innovation system; (3) promoting scientific and technological culture; (4) science and Higher Education; (5) science and innovation for technological development; and (6) science and innovation for public policies. The revision of POCTI into POCI has been criticised by the new Government (as well as by the working group on S&T management). However, having in mind the fact that POCI is already in its final year, no major changes are expected

http://cordis.europa.eu/erawatch/index.cfm?fuseaction=ri.countryreport&full=1&countryCode=PT&printme=1

5.2 Research Programmes

Major research programmes in Portugal, eHealth RTD programmes

IDEIA - Support to Applied Research and Development Projects

IDEIA is a programme focussed on the support to R&D consortia involving companies and S&T organisations. Its main goals concern the promotion of the cooperation between Industry and S&T organisations and the encouragement to the economic exploitation of research results as well as the transfer of technology to industrial applications in new or improved products, processes and services. The most distinctive feature of the programme is the requirement for the establishment of a consortium including at least one company and one S&T organization

The programme is aimed at addressing three inter-related shortcomings of the Portuguese research and innovation systems. First: the weak University/Industry cooperation, or, more generally, the low level of cooperation and inter-action among the actors in those systems. Second: the insufficient economic exploitation of research results. Third: the low involvement of companies in research activities (business enterprise R&D expenditures are much below the Barcelona targets)

Start date: 2003

End date: 2006

List of target groups: All companies; Consultancies and other private service providers (for profit);Higher education institutions research units/centres; Other non-profit research organisations (not HEI);Technology and innovation centres (non-profit)

Overall structure of implementation: Projects may involve two types of actions: (1) industrial research; and (2) pre-competitive research. The first concerns projects aimed at developing new technologies and new competencies. The second concerns namely the development of prototypes, pre-series and pilot actions, aimed at validating, in company environment, technologies already demonstrated in laboratory as well as the carrying out of promotional actions to encourage the economic exploitation of research results.

Overall budget: 40 million

Other RTD initiatives ongoing

- Information and Knowledge Society Observatory - is the part of UMIC -

  Knowledge Society Agency in charge statistical indicators and studies on the Information Society and the use of Information and Communication Technologies (ICT) in Portugal. It assures regular surveys and studies on the use of ICT by families, enterprises, hotels, hospitals, schools, public administration, and other sectors, as well as on the employment in the ICT sector, the quality of public administration websites and other matters of interest to monitor the development of the Information Society in Portugal and compare it with the development observed in other countries.

- Online Knowledge Library

  Through b-on (www.b-on.pt) full texts of the main academic and scientific journals published internationally are accessible to individuals in all research and higher education institutions in Portugal.

- Science Alive ("Ciencia Viva") Program

  Is the contribution of the Ministry of Science and Technology to the promotion of a scientific and technological culture among the Portuguese population. It involves a wide network of research centres and institutes, special education projects in schools for the experimental teaching of sciences, a network of Ciencia Viva Centres throughout the country which operate as hands on science museums for all ages

- Digital Cities and Digital Regions

  More than 25 projects for the development of Digital Cities and Digital Regions are being publicly supported. The projects involve electronic government solutions for local public administrations, conditions for reinforcing the competitiveness of small and medium enterprises, and a wide variety of citizen centred services (e.g., information, health, education, safety).

- e-U: Electronic University/Virtual Campus

  it's targeted at students and higher education professors of higher education institutions and includes the extensive wireless networking of campuses with more than 5000 access points, as well as higher education electronic services, contents and applications.

http://www.adi.pt

http://www.qca.pt

http://www.prime.min-economia.pt

http://www.infosociety.gov.pt

http://www.cienciaviva.pt

http://cordis.europa.eu/erawatch/index.cfm?fuseaction=ri.countryreport&full=1&countryCode=PT&printme=1

5.3 RTD Funding - National

R&D Funding by Ministry of Science, Technology and Higher Education. Amount of annual funding available for R&D related activities on the regional and national level in Portugal

The public budget for S&T has been growing in recent years since 1999 up to 2006, with the exception of a decline in 2003. While in 1999 the budget was of €725 Million in 2006 the equivalent figure is of €1,315 Million. This represents a nominal growth rate of 9%, well above the inflation levels. The growth in the S&T budget has brought the S&T sector close to 3% of the overall national budget. The expectation is that this share will grow further over the next few years. The " Commitment with Science for Portugal's Future" announced in April 2006 (in line with the Government Programme and also the Technological Plan) indicates that the Government is committed to reach the 1% Barcelona target up to 2009.

In the €1,315 Million available for 2006, the S&T and Higher Education Ministry has the largest share (€531 Million, 40%), followed by the Universities (€430 Million, 33%), the Public Labs (€198 Million, 15%) and other public sources (€157 Million, 12%). Most of the S&T and Higher Education Ministry budget is allocated to two agencies (FCT with €325 Million and UMIC with €144 Million). The figure provided for the universities stems from an estimate that 40% of the total funds allocated to them go to research. Finally, in relation to the "other public sources" the most important is the PRIME O.P. that provides €121 Million for research. Yet in relation to the total 2006 public budget for S&T, the information is that 87% is directed to R&D activities.

The backbone of the public expenditure in S&T has been provided by the Operational Programmes carried out under CSF 3. The POCTI programme, meanwhile transformed into POCI 20010 after the mid-term review, had an initial budget above €1 Billion. The POSI/POSC O.P. has a total public budget after the mid-term review of €826 Million. The estimate, given the reinforcements provided in the sequence of the mid-term review, is that each of these O.P.s shall be providing annually above €250 Million and €150 Million respectively to the public S&T budget. This is yet reinforced by a contribute of the PRIME O.P. estimated above €100 Million.

The main agencies that have been channelling these funds to the research units are FCT, UMIC and AdI.

Basic research funding

The main mechanism available to provide basic research funding is the *Pluriannual Funding Programme* of the Science and Technology Foundation (FCT) . This scheme started with a call for proposals in 1994 addressing research units in all disciplinary areas. Most of the units funded are in the university sector, but some of them are Non-profit Private organizations with close relationships with the universities.

In addition to the Pluriannual Funding programme, the FCT promotes regularly open calls for all areas to support R&D projects. In principle these calls were expected to be of an annual periodicity but actually that has not always happened. These calls attract research proposals on a competitive basis. Their selectivity has been raising with approval rates below one-third. The evaluation of the proposals has similarities to the system used for the Pluriannual Funding. The projects that are approved make up an important share of the budget of the research centres, eventually well above the contribute of the Pluriannual Funding. Nevertheless, being a member of the Pluriannual Funding network is not a condition to compete for these funds.

The FCT agency also runs calls for the research units and laboratories applying for funding to purchase new experimental equipment.