

Country Brief: Malta

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About the eHealth Strategies study

The eHealth Strategies study analyses policy development and planning, implementation measures as well as progress achieved with respect to national and regional eHealth solutions in EU and EEA Member States, with emphasis on barriers and enablers beyond technology. The focus is on infrastructure elements and selected solutions emphasised in the European eHealth Action Plan of 2004.

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Executive summary

The main national document for eHealth in Malta is the “National ICT Strategy for Malta 2008”¹. It seeks to pro-actively meet the major challenges that will arise as a result of implementing the strategy. One particular approach of the strategy is to set strategic targets for developing an eHealth system together with online content. Aside from the strategy another important policy document, which has implications for setting up an integrated eHealth system in Malta, is the “National Strategic Reference Framework 2007-2013”² which concentrates on the providing of eServices in general.

In order to consider Malta’s position regarding eHealth interoperability objectives the following eHealth applications have been examined: patient summaries and electronic health records, ePrescription, standards and telemedicine. In overview Malta’s situation is as follows:

In Malta, electronic patient summaries exist in different formats that have not yet been merged into a single consolidated system. The further development of an integrated electronic health record system and an electronic archive of patients’ records has been mentioned in some strategy papers, such as the “Smart Island Strategy” and the “National ICT Strategy”.

ePrescription is not yet in use in Malta, however Malta’s 2009 pre-budget consultation document entitled “Together for a sustainable future”³, from the Ministry of Finance, the Economy and Investment stated that it will be a priority in the coming years.

The Malta Standards Authority has adopted a large number of health informatics related European and international standards, which have been prepared under the auspices of the European Committee for Standardisation (CEN) and the International Organization for Standardisation (ISO), as Maltese National Standards.

Telemedicine applications, such as Telemonitoring, Teleconsultation or videoconferences between health professionals and Call centres for patient information/care are currently available in Malta as a 24-hour service. In fact Telemedicine pilots have been taking place in Malta since 1998. In the future further telemedicine applications will be explored and the possibility of creating more teleconsultation activities with specialist hospitals outside of Malta is already underway.

¹ Also called “Smart Island Strategy”, Ministry for Infrastructure 2007

² Ministry of Finance 2006

³ Ministry of Finance 2009

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1 Introduction to the report

1.1 Motivation of the eHealth Strategies study

Following the *Communication* of the European Commission (EC) on “eHealth – making healthcare better for European citizens: An action plan for a European eHealth Area”⁴ Member States of the European Union (EU) have committed themselves to develop and issue national roadmaps – national strategies and plans for the deployment of eHealth applications addressing policy actions identified in the European eHealth Action Plan.

The *2004 eHealth Action Plan* required the Commission to *regularly monitor* the state of the art in deployment of eHealth, the progress made in agreeing on and updating national eHealth Roadmaps, and to facilitate the exchange of good practices. Furthermore, in December 2006 the EU Competitiveness Council agreed to launch the *Lead Market Initiative*⁵ as a new policy approach aiming at the creation of markets with high economic and social value, in which European companies could develop a globally leading role. Following this impetus, the Roadmap for implementation of the “eHealth Task Force Lead Market Initiative” also identified better coordination and exchange of good practices in eHealth as a way to reduce market fragmentation and lack of interoperability.⁶

On the more specific aspects of electronic health record (EHR) systems, the recent *EC Recommendation on cross-border interoperability of electronic health record systems*⁷ notes under “Monitoring and Evaluation”, that “in order to ensure monitoring and evaluation of cross-border interoperability of electronic health record systems, Member States should: consider the possibilities for setting up a monitoring observatory for interoperability of electronic health record systems in the Community to monitor, benchmark and assess progress on technical and semantic interoperability for successful implementation of electronic health record systems.” The present study certainly is a contribution to monitoring the progress made in establishing national/regional EHR systems in Member States. It also provides analytical information and support to current efforts by the European Large Scale Pilot (LSP) on cross-border Patient Summary and ePrescription services, the epSOS - European patients Smart Open Services - project.⁸ With the involvement of almost all Member States, its goal is to define and implement a European wide standard for such applications at the interface between national health systems.

Earlier, in line with the requirement to “regularly monitor the state of the art in deployment of eHealth”, the EC already funded a first project to map national eHealth strategies – the eHealth ERA “Towards the establishment of a European eHealth Research Area” (FP6 Coordination Action)⁹ - and a project on “Good eHealth: Study on the exchange of good

⁴ European Commission 2004

⁵ European Commission 2007

⁶ European Communities 2007

⁷ European Commission 2008

⁸ European Patients Smart and Open Services (epSOS)

⁹ eHealth Priorities and Strategies in European Countries 2007

practices in eHealth"¹⁰ mapping good practices in Europe - both of which provided valuable input to the present *eHealth Strategies* work and its reports. Member States' representatives and eHealth stakeholders, e.g. in the context of the *i2010 Subgroup on eHealth* and the annual European High Level eHealth Conferences have underlined the importance of this work and the need to maintain it updated to continue to benefit from it.

This country report on Malta summarises main findings and an assessment of progress made towards realising key objectives of the eHealth Action Plan. It presents lessons learned from the national eHealth programme, planning and implementation efforts and provides an outlook on future developments.

1.2 Survey methodology

After developing an overall conceptual approach and establishing a comprehensive analytical framework, national level information was collected through a long-standing Europe-wide network of national correspondents commanding an impressive experience in such work. In addition, a handbook containing definitions of key concepts was distributed among the correspondents to guarantee a certain consistency in reporting. For the report on Malta, Brian Restall provided information on policy contexts and situations, policies and initiatives and examples for specific applications. He gave input in the position of an Executive Director at Projects in Motion Ltd. The research organisation is a cluster platform based in Malta, which covers innovative issues related to ICT.

The key tool to collect this information from the correspondents was an online survey template containing six main sections:

- A. National eHealth Strategy
- B. eHealth Implementations
- C. Legal and Regulatory Facilitators
- D. Administrative and Process Support
- E. Financing and Reimbursement Issues
- F. Evaluation

Under each section, specific questions were formulated and combined with free text fields and drop-down menus. The drop-down menus were designed to capture dates and stages of development (planning/implementation/routine operation). In addition, drop-down menus were designed to limit the number of possible answering options, for example with regard to specific telemedicine services or issues included in a strategy document. The overall purpose was to assure as much consistency as reasonably possible when comparing developments in different countries, in spite of the well-know disparity of European national and regional health system structures and services.

Under Section B on eHealth implementation, questions regarding the following applications were formulated: existence and deployment of patient and healthcare

¹⁰ European Commission; Information Society and Media Directorate-General 2009

provider identifiers, eCards, patient summary, ePrescription, standards as well as telemonitoring and telecare.

The data and information gathering followed a multi-stage approach. In order to create a *baseline* for the progress assessment, the empirica team filled in those parts of the respective questions dealing with the state of affairs about 3 to 4 years ago, thereby drawing on data from earlier eHealth ERA reports, case studies, etc. to the extent meaningfully possible. In the next step, national correspondents respectively partners from the study team filled in the template on recent developments in the healthcare sector of the corresponding country. These results were checked, further improved and validated by independent experts whenever possible.

Progress of eHealth in Malta is described in chapter 3 of this report in the respective thematic subsections. The graphical illustrations presented there deliberately focus on key items on the progress timeline and cannot reflect all activities undertaken.

This report was subjected to both an internal and an external quality review process. Nevertheless, the document may not fully reflect the real situation and the analysis may not be exhaustive due to focusing on European policy priorities as well as due to limited study resources, and the consequent need for preferentially describing certain activities over others. Also, the views of those who helped to collect, interpret and validate contents may have had an impact.

1.3 Outline

At the outset and as an introduction, the report provides in chapter 2 general background information on the *Maltese* healthcare system. It is concerned with the overall system setting, such as decision making bodies, healthcare service providers and health indicator data.

Chapter 3 presents the current situation of selected key eHealth developments based on detailed analyses of available documents and other information by national correspondents and data gathered by them through a well-structured online questionnaire. It touches on issues and challenges around eHealth policy activities, administrative and organisational structure, the deployment of selected eHealth applications, technical aspects of their implementation, legal and regulatory facilitators, financing and reimbursement issues, and finally evaluation results, plans, and activities

The report finishes with a short outlook.

2 Healthcare system setting

2.1 Country introduction¹¹

The Maltese archipelago basically consists of three islands: Malta, Gozo and Comino, with a total population of 416.333.¹² Malta became independent in 1964, a republic in 1974 and since 2004 it is a member of the EU. Overall, Malta has an extremely centralised system of government, with no administrative divisions and is administered directly from the capital, Valletta. The House of Representatives consists of 65 seats. Members are elected by popular vote on the basis of proportional representation to serve five-year terms.

The Maltese healthcare system is mainly state-funded from general taxation. The government holds overall responsibility for the healthcare system, exercised through the Ministry of Health, the Elderly and Community Care. All residents have access to preventive, investigative, curative and rehabilitation services in Government Health Centres and hospitals. People on low incomes are means-tested by the Department of Social Security. If they qualify for assistance, they receive a card, which entitles them to free prescription drugs. In addition, people diagnosed with one or more diseases of a specific list are entitled to free treatment irrespective of their financial circumstances. Private health services exist alongside the State service.

Key facts about the Maltese healthcare system:¹³

Life expectancy at birth: 80.1 years

Healthcare Expenditure as % of GDP: 8.4% (WHO 2005)

WHO Ranking of Healthcare systems: rank 5

Public sector healthcare expenditure as % of total healthcare expenditure:
77.4% (WHO 2005)

2.2 Healthcare governance

Decision making bodies, responsibilities, sharing of power

The Ministry of Health, the Elderly and Community Care is layered into a number of organisational structures and figures:

The Minister for Health is the overall responsible figure for the health sector.

The Permanent Secretary is the administrative head within the Ministry. He is a public officer and is accountable to the Prime Minister through the Principal Permanent Secretary. He has the responsibility to support the general policies and priorities of the

¹¹ eUser 2005

¹² Eurostat 2010

¹³ Data from World Health Organization 2000; Health Consumer Powerhouse 2008; World Health Organization 2009

Government and to operate within the context of management practices and procedures established for the government as a whole.

The management of the Health Division is entrusted to three Director Generals (DGs), namely the Director General for Health Care Services (DGHCS), who is responsible for managing the Division's healthcare and long-term care services; the Director General for Public Health Regulation (DGPHR), who is responsible for the regulation of all healthcare and long-term care services delivered in Malta and who also performs the duties of Chief Government Medical Officer and Superintendent of Public Health in terms of law; and the Director General for Strategy and Sustainability (DGSS), who is responsible for steering the Division forward in a sustainable manner in consultation with internal and external stakeholders. The Director Generals are answerable to the Permanent Secretary.

Each Director General is supported by a management team of Directors and Heads of Services responsible for specific Departments and other entities such as individual hospitals and authorities. Hence, DGHCS is supported by the Director of Elderly Care, the Director for Primary Care and the Director for Government Pharmaceutical Services and the Heads of the different hospitals; DGPHR is supported by the Director for Environmental Health, the Director for Health Care Services Standards, the Director for Nursing Services Standards, and the Director for Health Promotion and Disease Prevention and the CEO of the Occupational Health and Safety Authority; DGSS is supported by the Director for Health Information and Research, the Director for Policy Development and EU & International Affairs, the Director for Programme Implementation and Monitoring, the Director for Pharmaceutical Policy and Monitoring and by the Head of the Entitlement Unit.

Healthcare service providers

Primary healthcare is provided by public health services and by private GPs; these two systems function independently. The private sector accounts for about two-thirds of the workload in primary care. Secondary and tertiary care is provided by public hospitals.¹⁴

The Government delivers primary healthcare mainly through eight Health Centres that offer a full range of preventive, curative and rehabilitative services. The general practitioner and nursing services are supplemented by various specialised services that include antenatal and post-natal clinics, Well Baby clinics, Gynae clinics, diabetes clinics, ophthalmic clinics, psychiatric clinics, podiatry clinics, Physiotherapy, and Speech and Language Pathology clinics. Community nursing and midwifery services are provided by the Malta Memorial District Nursing Association (MMDNA) on a contract basis.

The Government's Health Centre system works side by side with a thriving private sector and many residents opt for the services of private general practitioners and specialists who work in the primary care setting.

Secondary and tertiary care are provided from a number of public hospitals, the principal performer being Mater Dei Hospital, which provides a full range of secondary and tertiary medical services, including transplant surgery and open heart surgery.

¹⁴ Micheli, Coebergh et al. 2003, p.v49

Sir Paul Boffa Hospital provides oncology and dermatology services, while Mount Carmel Hospital offers psychiatric care and the Rehabilitation Hospital (Karin Grech) offers specialised rehabilitation services.

There are three private hospitals that offer private hospital services.

Figure 1: Important features of primary healthcare organisation in Malta

Political/administrative unit responsible for primary healthcare	The Ministry for Health, the Elderly and Community Care is responsible for primary healthcare in Malta.
Consumer Choice	Free choice of GP.
Financing	The public healthcare system in Malta is funded through taxation and national insurance
Public or private providers	In Malta there are publicly employed GPs as well as GPs in private practices.
Gatekeeping function of the GP	GPs are primarily responsible for the provision of comprehensive and continuing medical care and are therefore the first contact point. In order to benefit from free healthcare, patients are usually referred to specialists (secondary/tertiary care) by a GP. The primary healthcare reform plans that the gatekeeping role of GPs will be strengthened.
Integrating health: initiatives for coordination	Healthcare in public services in Malta is generally free at the point of use. According to the Ministry of Health, "All private practice in Malta is carried out exclusively from private facilities and there are no private beds or facilities in public hospitals or health centres." Private healthcare insurance plans exist and are offered from a wide range of providers. With the planned primary healthcare reform Government is considering three distinct yet complementary care packages: <ul style="list-style-type: none"> [1] Core package of care, covering all of the standard medical needs of the population with the participation of all registered care providers; [2] Specific national programmes and initiatives, covering health promotion and prevention activities, with the participation of all registered care providers; [3] Specific initiatives for group practices.

2.3 Recent reforms and priorities of health system/public health

Currently ongoing reforms in the health and social care systems

Over the last few years, extensive healthcare reforms have been planned and were implemented by the Ministry of Health, the Elderly and Community Care. The main aims and policy orientation of these reforms were to establish an integrated management approach and to provide more client-oriented, outcome driven (evidence-based) and financially sustainable services.

Efforts towards reforming the primary healthcare system in Malta have been intensified in recent years. In 2007 the (then) Health, the Elderly and Community Care Division of the Ministry for Social Policy developed its key vision which is "A society that fosters an environment that is conducive to persons attaining their maximum potential for health and well-being." This vision was chosen because the health sector in Malta wants to foster the development of health and healthcare provision at the community level. In 2008 a task force consisting of representatives of various healthcare stakeholders has been appointed in order to initiate a consultation process and advise Government on the implementation of a Personal Primary Health Care System. As a result the Health, the Elderly and Community Care Division within the Ministry for Social Policy published a consultation document with the title "Strengthening Primary Care Services. Implementation of a Personal Primary Health Care System in Malta" in December 2009, which outlined the Government's strategy to improve and strengthen primary healthcare services in Malta and Gozo.¹⁵ According to this document, the measures put forward are in line with the achievement of the Government's main policy objectives for the health sector which are:

1. enhancing equity in access to care
2. promoting quality and excellence
3. safeguarding sustainability

The current report marks the launch of the formal consultation process through which the Maltese Government is encouraging feedback from experts, professionals, interested stakeholders including patient associations and NGOs working in the field as well as the general public.

According to the government, the main aim of the reform in primary care services is to provide the necessary framework to bring about a change in the way care is being offered. The proposed changes under the personal primary healthcare system are meant to mark a departure from the traditional methods of healthcare delivery from a curative to a preventive and health promotion model.

In the future, the entitled/eligible persons for the reception of healthcare services in Malta and Gozo will be obliged to register with a General Practitioner (GP). It is planned that patients, through the family doctor, will be able to access medical services and care, as well as (electronic) medical records, (electronic) prescriptions and history, in an

¹⁵ Ministry for Social Policy 2009

individualised and personalised manner. The GP may be in independent full-time practice or also in part-time, independent or group practice.

The personal primary healthcare reform also aims to provide an inter-disciplinary approach to care both in the health centres and in the private sector. To enhance this inter-disciplinary approach, the setting up of group practices in the private sector is being encouraged. A group practice is made up of two or more doctors together with a team of healthcare professionals that will include nurses, physiotherapists, occupational therapists and other supporting staff.

The successful introduction of the reform would primarily enhance the provision and delivery of services to the patient in the community. This, in turn, would help release the pressure on secondary healthcare services, mainly on Mater Dei Hospital. In view of the critical over-demand for beds and services offered at MDH, this favourable aftermath predicted to follow the successful outcome of the reform is desperately awaited.

Supplementing the proposed organisation of GP services, the regional health centres would continue to offer a free walk-in GP service and urgent patient care on a 24-hour basis.

The Ministry of Health, the Elderly and Community Care has also published a booklet and is running regular television adverts as part of their mission to inform the Maltese public of the means by which it intends to reform the Primary Health Care System in Malta.

It needs to be mentioned however, that the proposed changes are still subject to an incremental consultation process which will take place in the coming months.

2.4 ICT use among general practitioners

This section provides a brief overview of relevant ICT related infrastructure and services data. It draws on earlier studies commissioned by the EC, notably the Indicators eHealth Study. Although the results of this study date from 2007 and may therefore not reflect latest changes, a more recent pan-European survey is not available¹⁶.

In terms of infrastructure, 65% of the Maltese GP practices use a computer. The majority of those practices are connected to the Internet as well – this pertains to 55% of all Maltese GP practices. In Malta a very high share of the GP practices that are connected to the Internet use a broadband connection: 51% of the practices use this sort of Internet access, while only 4% use a different form of Internet access.

Malta displays its best eHealth performance in the area of medical and administrative patient data storage and the use of a computer for consultation purposes. Half of Maltese practices register administrative patient data and about 40% of GP practices store at least one type of medical electronic patient data.

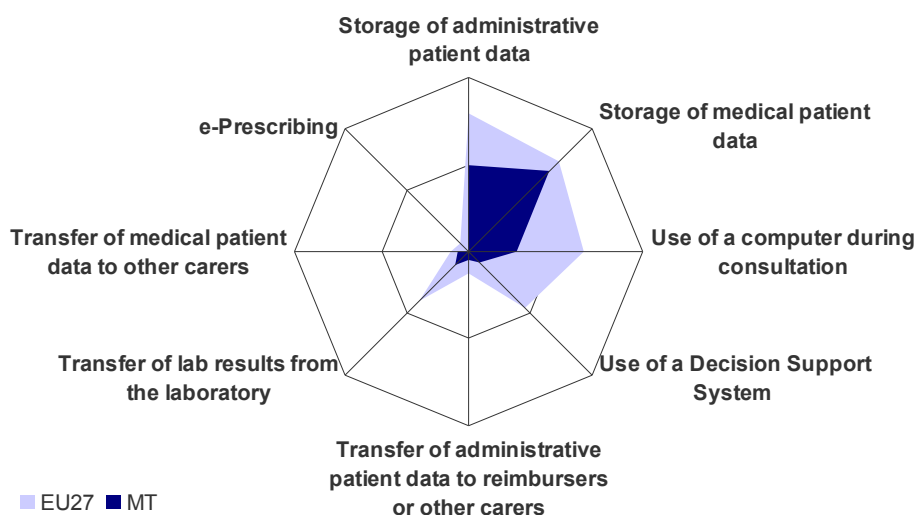
In Malta, computers are used in consultation with patients to a limited extent (27% of the GP practices). The use of Decision Support Systems is also rather the exception than the rule. They are used for diagnosis or prescribing purposes in only 13% of Maltese GP practices.

¹⁶ ICT and eHealth use among General Practitioners in Europe 2007

The electronic transfer of individual patient data has not yet arrived on the agenda of Maltese GPs. Only 7% of Maltese GP practices exchange administrative data with other carers and only around 3% of practices transfer administrative patient data to reimbursers via networked connections. The exchange of medical data via networked connections is equally not very prevalent: only 7% of the Maltese GP practices having participated in the survey exchange medical data with other care providers while 11% receive results from laboratories this way. ePrescribing is still not a reality for Malta where none of the GPs who participated in the survey reported using ePrescribing.

The rather low use level of eHealth applications in Malta can be explained by the fact that the issue of eHealth has arrived only very recently on the political agenda in Malta. Many projects and reforms have, however, already been planned. In 2005 a national eHealth Vision was formulated by the Ministry of Health, the Elderly and Community Care that is to be implemented in the upcoming years.

Figure 2¹⁷: eHealth Use by GPs in Malta



Indicators: Compound indicators of eHealth use (cf. annex for more information), % values. Source: empirica, Pilot on eHealth Indicators, 2007.

3 eHealth Strategies survey results

The following sections present the results of the eHealth Strategies country study. In a first section, the eHealth policy actions undertaken in Malta are presented. This is followed by a presentation of administrative and organisational measures taken. Section 3.3 presents results on key eHealth applications. Section 3.4 focuses on the technical side of eHealth, namely the role of patient and healthcare provider identifiers and the role of eCards. Legal and regulatory facilitators as well as financing and reimbursement

¹⁷ The notion of „compound indicator“ designates an indicator build from a set of other indicators/survey questions regarding the same topic. The compound indicator reflects an average calculated from different values. (see Annex) The final results of the study on eHealth Indicators are available at www.ehealth-indicators.eu.

issues are presented sections, 3.5 and 3.6. The report concludes with evaluation activities (3.7) in the country and an outlook (4).

3.1 eHealth policy action

The eHealth strategies of EU and EEA countries are not always classified as strategies by the countries themselves. Some countries may indeed publish a policy document which refers to the ICT strategy in the healthcare sector. Other countries such as France and Germany have enshrined the central eHealth activities in legislation that governs the healthcare sector. In Germany, the relevant law is the law on the modernisation of healthcare; in France the introduction of an electronic medical record is included in a law concerning social security.

Sometimes documents from domains such as eGovernment strategies or Information Society strategies may contain provisions which concern eHealth. In cases where the healthcare system is decentralised, i.e. where power is delegated to the regional level, regional authorities may even publish strategy documents regarding eHealth.

3.1.1 Current strategy/roadmap

Until today, the main national document addressing eHealth is the “National ICT Strategy for Malta 2008”¹⁸. The National ICT Strategy, published in 2007, seeks to pro-actively meet the major challenges, which Malta is said to inevitably face. An example of such a challenge is a new digital divide within the coming years, as well as the challenge of a successful application of technologies in the enhancement of quality of life and the constantly moving target of becoming (and remaining) a leading ICT industry in the region. In the period 2008-2010, Malta should further pursue its eHealth strategy that is aiming to facilitate the extensive use and application of ICT in the public and private healthcare institutions across Malta and Gozo. Malta’s vision for eHealth is that it will lead to a better communication between all stakeholders in the healthcare system, throughout the whole process of healthcare delivery and health service management. Through facilitated and improved human, organisational and technical communication healthcare in general will be more efficient, of better quality and accessible to all, whilst respecting the privacy of individuals¹⁹.

National ICT Strategy for Malta 2008

Although progress has been made in recent years in setting up a large number of health related e-Services including a dedicated eHealth portal, there is currently no comprehensive or coherent eGovernment or eHealth legislation in Malta. However, there are pieces of legislation in various documents that provide a legal framework that supports eGovernment and eHealth applications.

In general, there are not only different pieces of legislation, but also a plethora of documents, all containing references to the country’s eHealth strategy to varying degrees. The Ministry responsible for IT for example, launched two complementary documents: the “National ICT Strategy” and the “National Broadband Strategy”, which laid out the plan of action from 2004 up to 2006. Regarding eHealth issues, the National

¹⁸ Also called “Smart Island Strategy”, Ministry for Infrastructure 2007

¹⁹ This follows from the Smart Island Strategy and other policy documents such as the Operational Programmes 2007-2013.

ICT Strategy then set out the strategic target to develop an eHealth system together with online content focusing on women's health, STDs, heart conditions, cancer and diabetes. The National Broadband Strategy of the Maltese government has an important effect on the spread of any eServices – also those related to eHealth.

Another important policy document, which includes implications for setting up an integrated eHealth system in Malta, is the “National Strategic Reference Framework 2007-2013”²⁰. The NSRF for Malta has four strategic objectives, of which three issues are related to the development of eServices or to its precondition, the development of an information society infrastructure.

**eHealth Strategy
as a subset of
ICT and
eGovernment
programmes**

In sum, Malta's eHealth Strategy can still be considered a subset of ICT and eGovernment programmes at this point. The Ministry for Infrastructure, Transport and Communications, formerly known as the Ministry of Investments, Industry and Information Technology, already introduced a number of policies and initiatives.

The Ministry for Social Policy (Health, the Elderly and Community Care) published a short information leaflet²¹ directly targeting eHealth related services. The leaflet explains the eHealth portal launched by governments as well as how citizens can apply online for the European Health Insurance Card (EHIC). It also presents the online services of the Ministry, which can be accessed through the dedicated eHealth portal.

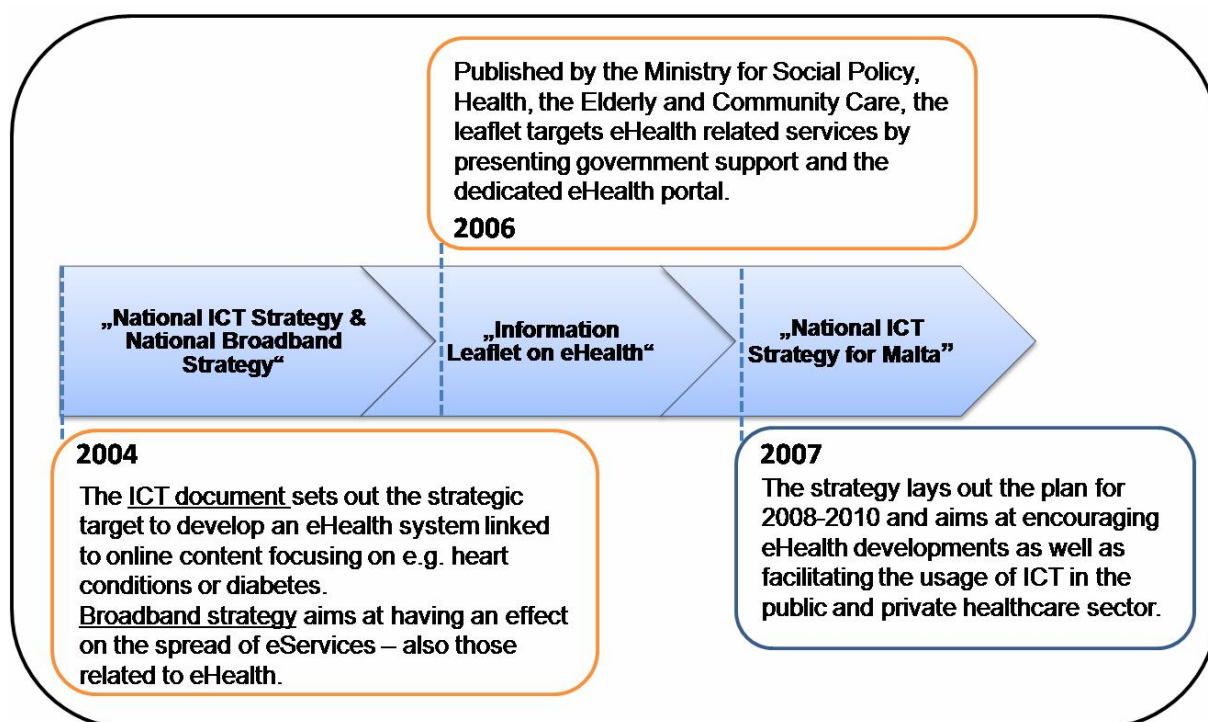
None of the above mentioned documents make a direct reference to the EU eHealth Action Plan. However, Malta is represented as a Member State on the i2010 subgroup on eHealth, where exchanges of information about national eHealth initiatives are undertaken. One of the key objectives of this working group is the facilitation, contribution and implementation of the European eHealth Action Plan (2010) including eHealth action plans in each of the Member States and European Economic Area countries.

Figure 3 lists the most important policy documents related to eHealth or ICT.

²⁰ Ministry of Finance 2006

²¹ Ministry for Health the Elderly and Community Care 2006

Figure 3: Maltese Policy Documents related to eHealth



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3.2 Administrative and organisational structure

The Ministry for Health, the Elderly and Community Care is the main responsible body for eHealth administrative and organisational issues. These Institutions are in charge of publication, implementation and evaluation of the Government's medium- to long-term eHealth strategy.

Maltese Information Technology Agency

As a government mandated competence centre, the Malta Information Technology Agency (MITA), formerly a company by the name of MITTS Ltd., is providing a technical platform for the different eHealth services. The agency took over the functions of former Information Society Secretariat, the ICT in Government Unit, the Core ICT Advisory Committee and MITTS Ltd.

The Ministry for Health, the Elderly and Community Care (MHEC) as well as the Ministry for Infrastructure, Transport and Communications (MITC) are public bodies, forming part of the government. As part of the MITC, the MITA has been appointed by the government of Malta as the prime agency for propagating ICT policy in the country and as the executor of the "Smart Island Strategy". The MITA directly reports to the Minister responsible for Communications. Both Institutions are financed through public money.

3.3 Deployment of eHealth applications

3.3.1 Patient summary (EHR)

In this study, the epSOS project's definition²² of a patient summary was used as a general guideline. There a patient summary is defined as a minimum set of a patient's data which would provide a health professional with essential information needed in case of unexpected or unscheduled care (e.g. emergency, accident), but also in case of planned care (e.g. after a relocation, cross-organisational care path).

Lacking a standard definition, a patient's electronic health record (EHR) is here understood as an integrated or also interlinked (virtual) record of ALL his/her health-related data independent of when, where and by whom the data were recorded. In other words, it is an account of his diverse encounters with the health system as recorded in patient or medical records (EPR or EMR) maintained by various providers like GP, specialists, hospitals, laboratories, pharmacies etc. Such records may contain a patient summary as a subset. As of yet, fully-fledged EHR systems rarely exist, e.g. in regional health systems like Andalusia in Spain or Kronoberg in Sweden, or in HMOs (health maintenance organisations) like Kaiser Permanente in the USA.

It should be noted that in most policy documents reference is made simply to an "EHR" without any explanation of what is meant by it, thereby in reality even a single, basic electronic clinical record of a few recent health data may qualify. As a consequence, this section can only report on national activities connected to this wide variety of health-related records without being able to clearly pinpoint what (final) development stage is actually aimed for or has been reached so far.

In Malta, electronic patient summaries, besides the paper based health record, exist in different formats that have not been merged into a single consolidated system at that time. The different items included in these health records have been gradually extended over the last years. The further development of an integrated electronic health record system and an electronic archive of patients' records and/or references to their nature and location has also been mentioned in some of the strategy papers, like the "Smart Island Strategy" and the "National ICT Strategy".

Different local formats of patient summaries

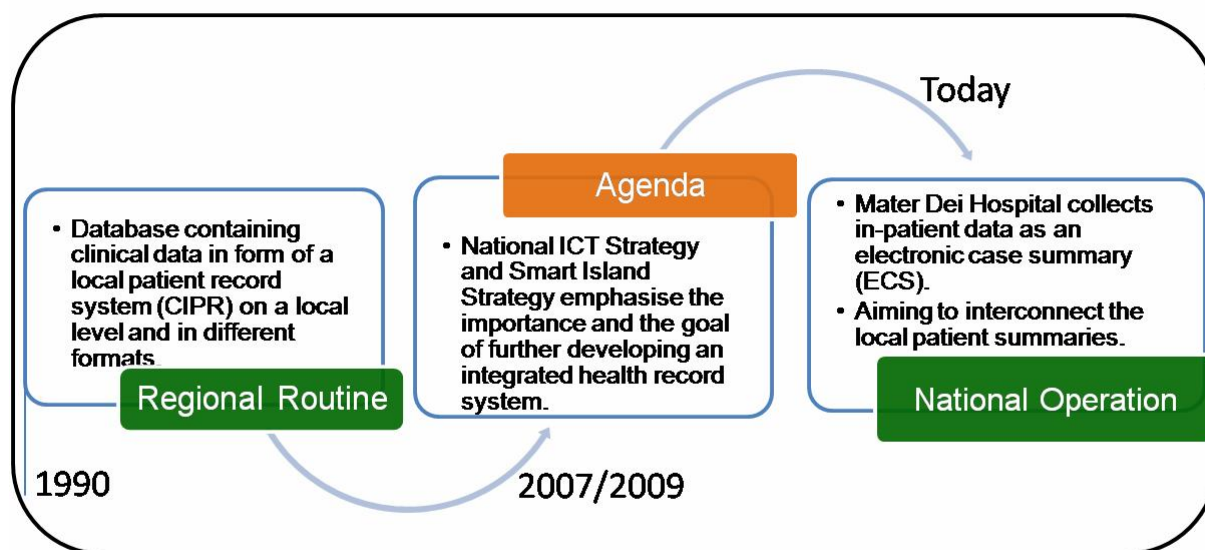
In 1990, the first database containing clinical data on Coronary Care Unit admissions was put in place. This database was further developed gradually into the Cardiac Investigation and Patient Record System (CIPR), which was designed by MITA (ex-MITTS Ltd) in 1998, to capture all the cardiological test results and interventions which the patient receives and to make them available for review in all the locations necessary: wards, out-patients, A&E Department, Gozo General Hospital, etc. The CIPR System has been developed to capture patient personal data (linked to the main Patient Administration System Database), history, appointments (scheduling and referrals), medical test results, cardiological test results and interventions and any further data generated by the various units even external to the Government Health Services. Automated report generation for statistical purposes is also available.

²² European Patients Smart Open Services

Since 2008, by far the most important system at MDH currently collecting in-patient data is the Electronic Case Summary (ECS) system. Through this system, doctors create a unified case summary on discharge, drawing on data in the Patient Administration System, the Electronic Medical Record System and the Laboratory Information System, to which they add clinical narrative, diagnosis on discharge, medication on discharge and other clinical data elements.

Figure 4 sums up the development of patient summaries in Malta up to this point.

Figure 4: Patient Summary in Malta



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3.3.2 ePrescription

In the framework of this study and following work in epSOS²³, ePrescription is understood as the process of the electronic transfer of a prescription by a healthcare provider to a pharmacy for retrieval of the drug by the patient. In this strict sense, only few European countries can claim to have implemented a fully operational ePrescription service.

Plans to set up an ePrescription system

ePrescription is currently not used in Malta. However, in the National ICT strategy the objective to replace at least 50% of the current paper communications in general and 25% of paper communications leaving the public healthcare sector by electronic communications was expressed. Furthermore Malta's 2009 pre-budget consultation document entitled "Together for a sustainable future"²⁴, the Ministry of Finance, the Economy and Investment announced that it will be a priority in the coming years to set up

²³ European Patients Smart Open Services

²⁴ Ministry of Finance 2009

an ePrescription system as part of its wider National ICT strategy. It is planned, that the ePrescription system will also provide a tracking system for prescription and dispensing of Government funded medicines linked through a 'pharmacy of your choice' scheme.

The pharmacy of your choice scheme which is currently still in the process of being developed enables patients to pick up their free medicines from their chosen pharmacy relying on the yet to develop Smart ID Card²⁵.

The main challenge concerning ePrescription is currently the validity issue of electronic signatures. There is currently no standard and fraud prevention system for electronic signatures in Malta. The use and validity of electronic signatures are laid out in the "Electronic Commerce Act"²⁶, which does not make any provisions regarding health related services.

3.3.3 Standards

Standards are not only crucial to enable interoperable exchange of meaningful information in the healthcare system; they also ensure secure access to patient records by healthcare providers and citizens. This study aims to identify, among other usage, standards related to the domain of health informatics, such as the SNOMED Clinical Terms or the LOINC terminology.

In Malta, the national competent authority dealing with health informatics standards is the Malta Standards Authority (MSA).

The MSA has been established in 2000 by the "Malta Standards Authority Act"²⁷. It has a dual role: the regulatory role and the standardisation and conformity assessment role. These tasks of the Authority are mainly exercised through three directorates: the Accreditation Directorate, the Standardisation Directorate and the Methodology Directorate.

The Standardisation Directorate is mainly responsible for the running of the standards library, the development of new standards and the adoption of foreign standards to the Maltese system (including eHealth and Health Informatics related standards).

To date, the Malta Standards Authority has adopted a large number of health informatics related European and international Standards, which have been prepared under the auspices of the European Committee for Standardisation (CEN) and the International Organization for Standardisation (ISO), as Maltese National Standards.

3.3.4 Telemedicine

The use of telemedicine applications is recognised as beneficial to enable access to care from a distance and to reduce the number of GP visits or even inpatient admissions. Commission services define telemedicine as "the delivery of healthcare services through the use of Information and Communication Technologies (ICT) in a situation where the actors are not at the same location"²⁸. In its recent communication on telemedicine for the

²⁵ Strategic target 4.24 of the National ICT Strategy 2008-2010.

²⁶ Maltese Government 2002

²⁷ Maltese Government 2000

²⁸ Europe's Information Society

*benefit of patients, healthcare systems and society, the Commission re-emphasises the value of this technology for health system efficiency and the improvement of healthcare delivery*²⁹.

Telemedicine applications, such as Telemonitoring (at/in the home), Teleconsultation or videoconferences between health professionals and Call centres for patient information/care are currently available in Malta as a 24-hour service. This is provided by the Department for the Elderly and Community Services in conjunction with the telecommunications provider GO plc³⁰.

Tele-monitoring, Tele-consultation and video conference features are available

The Telemonitoring system enables the subscriber to call for assistance when required. In order to use the system the patient can press a large button that is found on the Telecare set (a special telephone set) to make contact with the Telecare Centre from where the client is assisted. The Telecare client is also supplied with a pendant which is to be worn indoors and kept within reach during the night since this gives the subscriber access to the service even though the telephone set is not at hand. This pendant consists of a small transmitter that once activated by pressing puts the client in direct contact with the Telecare Centre. In the advent of the Telecare Subscriber being unable to speak to the Telecare Operator on activating the large button/pendent, the Telecare operator contacts the client's relatives/carers. In order to become a registered user of the Maltese telecare system, the applicants have to fulfil certain eligibility criteria:

- Elderly couples/persons living alone, aged sixty years and over
- Disabled persons and those with special needs
- Persons of any age who are afflicted by life threatening illnesses and who are living alone and who are not gainfully occupied
- Persons who are afflicted by life threatening illnesses and whose carer will benefit from the service and those who are not in a gainfully occupied household

The first formal instance of medical videoconferencing in Malta dates back to a pilot project in 1998 between St Luke's Hospital in Malta and the General Hospital in Gozo. This link between them was established by the Ministry of Health, the Elderly and the Community Care in collaboration with MITTS Ltd. The pilot system allowed physicians in Gozo to carry out a clinical discussion about their patients, with more specialised physicians in Malta. By this, specialists in Malta could consult the patient directly, and observe the physical examination of the patient over the videoconference application. The aim of the pilot system was to allow patients from Malta's sister island to stay in Gozo in order to receive the more specialised health services available. The link between the hospitals gave physicians the opportunity to exchange medical images, such as x-ray pictures and ECG's, and discuss them in real time.

When Mater Dei Hospital (MDH) opened in 2007, provision was made for medical videoconferencing services. Both ISDN-based and ADSL-based services were developed, and these are now in full operational use. The facilities are used regularly for tele-education purposes with UK hospitals, and sporadically for the transmission of the

²⁹ European Commission 2008

³⁰ GO p.l.c.

video/audio of specialised surgical operations held at MDH to conference venues both inside and outside MDH.

The National Broadband Strategy intends to encourage a health and service culture by providing the facility for users to:

Malta's plans to provide the following services:

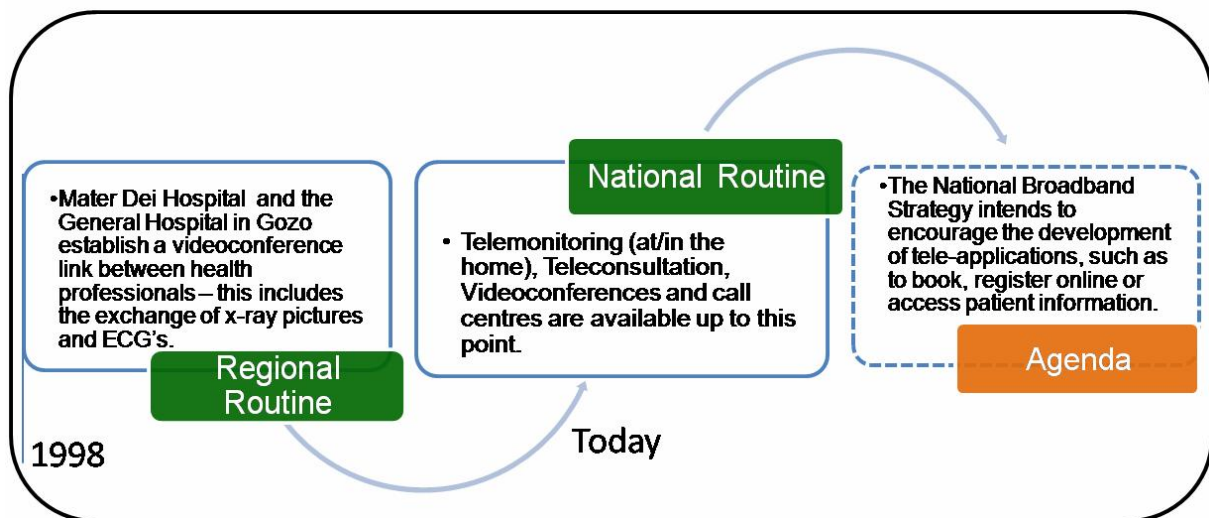
Book an appointment online (both doctor and / or citizen) at any of the Out-Patient Clinics within the Mater Dei Hospital. Currently, access is only available to authorised health professionals but it will be extended to the public.

Register online to receive automatic notification / reminders for child immunisation vaccinations and international travel immunisations via SMS and or email.

Furthermore, a number of potential telemedicine applications are being explored such as the possibility of establishing further teleconsultation activities with specialist hospitals abroad, which receive patients from Malta for tertiary care and to provide telemonitoring of patients in the community. The inclusion of national health priorities for telemedicine within the national health strategies is considered to be an effective way of ensuring that interest and progress is registered.

The development of Telemedicine Services are summarised in Figure 5.

Figure 5: Telemedicine Services in Malta



3.4 Technical aspects of implementation

A key prerequisite for the establishment of an eHealth infrastructure is the ability to uniquely identify citizens/patients and healthcare professionals. This part of the survey deals with identifiers and how they are stored. This section does not deal with the tokens through which identification can or will take place. One such possibility would be via an eCard. This topic is dealt with in the following section. The current section focuses solely on whether or not unique identifiers are in place in Malta and for which purpose.

3.4.1 Unique identification of patients

Since the early 90's, the Government of Malta has had a Common Database (CdB), based on the unique citizen identifier (ID number) that has been established since the early 80's. This unique identifier is also used in the health services; since 1997 patient demographics based on this identifier have been stored in the Patient Administration System (PAS) that is accessible from all public hospitals and Health Centres. Since 2007 these patient demographics are available to integrated systems by means of HL7 messaging.

Since 2005, Malta has a consolidated electronic registry, which stores health insurance/healthcare patient information and processes all claims and payments related to pensions and other social security benefits. Citizens can apply for an electronic identity by presenting themselves at any district office of the Department of Social Security with a copy of their ID card and a valid e-mail address. These details are registered and submitted to the electronic identity administrator, who performs validity checks and sends the applicants a first-time password through their registered e-mail address and an activation number by post. These password and activation numbers enable citizens to activate their electronic identity and services account on the government portal.³¹

Connected to the e-ID is a dedicated eHealth portal³², which can be accessed by citizens. The current system used by the Department of Social Security (DSS) is called SABS ("Sistema għall-Amministrazzjoni ta' Beneficcji Soċjali"), which is based on Informix running on Linux. For healthcare purposes the register stores information on the national ID, address, immediate kin and payments.

3.4.2 Unique identification of healthcare professionals

In Malta, four statutory bodies are responsible for maintaining registers of healthcare professionals in accordance with the Health Care Professions Act³³: The Medical Council, the Pharmacy Council, the Council for Midwives and Nurses and the Council for Professions Complementary to Medicine. All of them keep national registries of specific category of health professionals, containing professional ID, name, address, date of registration, title to registration and additional qualifications. Currently, copies of the national registers are publicly available as PDF files from the website of the Ministry of Health, the Elderly and Community Care.

³¹ IDABC eGovernment Observatory 2006

³² Ministry for Health, the Elderly and Community Care

³³ Maltese Government 2003

These registries or lists are the following:

Public Registries for Professionals in Malta:

Medical Practitioners – Principal Register

(http://www.sahha.gov.mt/showdoc.aspx?id=87&filesource=4&file=Principal_Register.pdf)

Medical Practitioners – Provisional Register

(http://www.sahha.gov.mt/showdoc.aspx?id=87&filesource=4&file=Provisional_Register.pdf)

Medical Practitioners – Temporary List

(http://www.sahha.gov.mt/showdoc.aspx?id=87&filesource=4&file=Temporary_Register.pdf)

Dental Register – Principal list

(http://www.sahha.gov.mt/showdoc.aspx?id=87&filesource=4&file=Dentists_Register.pdf)

Specialist Accreditation Register

(http://www.sahha.gov.mt/showdoc.aspx?id=87&filesource=4&file=Specialists_Register.pdf)

3.4.3 The role of eCards

The “Maltese Central Registry Act”³⁴ broadly outlines plans to introduce an e-ID card that includes health related patient data. This bill is currently revised and discussed in the Maltese parliament and is therefore not finalised yet. The bill aims at consolidating the separate pieces of legislation related to public registry operations into one law. According to current plans by the Ministry of Finance, the Economy and Investment, the individual health record information would be linked to the Mater Dei Hospital, health clinics and after some time, also to general practitioners’ clinics for sharing information and facilitation of access to patient health records. This will allow rapid access to information such as radiology reports and results from blood investigations.

The current National Citizen ID card is a passive card, which does not contain any chips or magnetic strips. However, it can be used in combination with the in 2004 introduced e-ID system that also provides the possibility to collect patient data.

In May 2008 it was announced by the Ministry for Infrastructure, Transport and Communication that a new identity card will be introduced: “Through the investment we are making in our integrated health information systems and the Smart ID Card, we will partner with private healthcare providers and general practitioners to provide patients with the benefit of a portable clinical health record offering access to patient data from multiple points”³⁵. The new identity card would, in other words, contain an electronic chip holding

³⁴ Maltese Government 2008

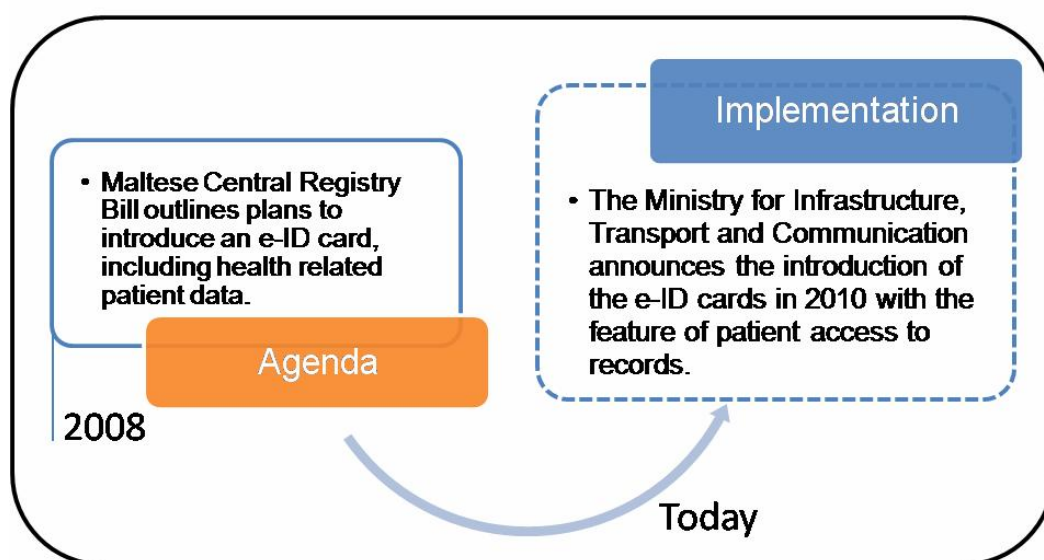
³⁵ Strategic Target 4.24 of the National ICT Strategy 2008-2010, available at <https://mitc.gov.mt/page.aspx?pageid=263&lid=1>

the patient's health record. According to a recent newspaper article³⁶ and to information obtained from the Maltese Information Technology Agency MITA, the new electronic ID cards will be issued within the first quarter of 2010. This process will then be closely integrated into the eHealth system and feature access to medical records by patients.

There are currently no plans from an official side to introduce eCards for professionals. Professionals can access a number of online services through the eHealth Portal using their eID. Authorisation is based on their registration in the appropriate register of healthcare professionals.

Figure 6 illustrates the agenda and the implementation of eCards in Malta.

Figure 6: eCards in Malta



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3.5 Legal and regulatory facilitators

Legal and regulatory issues are among the most challenging aspects of eHealth: privacy and confidentiality, liability and data-protection all need to be addressed in order to make eHealth applications possible. Rarely does a country have a coherent set of laws specifically designed to address eHealth. Instead, the eHealth phenomenon has to be addressed within the existing laws on professional liability, data protection etc.

This is no different in Malta. There have been limited legislative changes in support of the health service reforms that have taken place since the early '90s. No specific legal framework exists for patient summaries, telemedicine or ePrescriptions. General

³⁶ Times of Malta 2009

regulation on Patients' Rights, Data Protection and practice of healthcare apply to eHealth services.

Rights and duties of healthcare providers and patients are furthermore scattered over an array of health acts, amongst which: the Medical and Kindred Professions Ordinance, Chapter 31 of the Laws of Malta; the Health Care Professions Act, Chapter 464 of the Laws of Malta; the Medicines Act, Chapter 458 of the Laws of Malta, Dept. of Health (Constitution) Ordinance, Chapter 94 of the Laws of Malta, etc. Although no official guideline, the patient will in most cases be able to call upon the Patients' Charter of Rights and Responsibilities, which is issued by the Malta College of Family Doctors and which is provided to patients at all levels of care in both the public and private sectors.

The Patient Charter assigns the patient (amongst others) the right to consent explicitly prior to any form of treatment. In a response to a Memorandum on a Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, titled "European i2010 Initiative on inclusion 'To be part of the Information Society'", the Maltese Parliament affirms³⁷ that the consent of the patient will also be required when it comes to the transfer and access of patients' health related data. This will be accomplished by the development and future implementation of the electronic health record. However, no reference to specific legislative acts has been made so far that would regulate access and use of the patients' electronic health data for telemedicine purposes.

Protection Act (2001) includes provisions on patient data transfer

Next, the Data Protection Act³⁸, which was enacted in Malta on the 14th December 2001, includes certain provisions with regard to data concerning health or medical purposes, providing protection for individuals against the violation of their privacy by the processing of personal data and for matters connected to it.

Article 12 of the Data Protection Act states that sensitive personal data shall not be processed except in particular cases or as may be prescribed by the Minister having regard to an important public interest. For health and hospital care purposes, sensitive data may be processed provided that it is necessary for:

- preventive medicine and the protection of public health
- medical diagnosis
- healthcare or treatment
- management of health and hospital care services

This is however at all times on the condition that the data is processed by a healthcare professional or other person subject to the obligation of professional secrecy³⁹. Healthcare professional should in this context be interpreted according to the Medical and Kindred Professions Ordinance, which defines the term quite broadly as "a person in possession of a warrant to exercise a regulated profession and any person acting under the personal direction and supervision of such a person".

For the field of Telemedicine, legislation and national regulation is being developed and assessed, aiming to spread telemedical services and the possibility of patient access.

³⁷ Ministry for Infrastructure 2008

³⁸ Maltese Government 2001

³⁹ see above

The plans are integrated in the Strategic Objective 2 of the draft eHealth Strategy and are connected to a large-scale Telemonitoring pilot project that is planned for 2010 by the Commission through its Competitiveness and Innovation Programme. Currently online interaction with family doctors is not a recognised practice. Neither are telephone-based consultations. Online consultation with other than one's family doctor has been tabled within the eHealth Strategy.

The Ministry responsible for Health states further that the lack of legal clarity with regard to liability issues that are involved when it comes to cross border provisions of telemedicine services, has to be addressed. Therefore, internal consultations have been carried out with the Ministry for Infrastructure, Transport and Communications.

3.6 Financing and reimbursement issues

There currently is no specific budget assigned to eHealth in Malta. Moreover, the budgets of the different governmental ministries and units concerned with the implementation of eHealth only give a very rough indication of the amounts spent on IT systems whereby it is not possible to identify whether it is an eHealth concern or not.

The Planning and Priorities Coordination Division (PPCD) within the Office of the Prime Minister recently announced that a new call for project proposals part-financed by the European Regional Development Fund (ERDF) will be launched. Applications will be eligible for projects falling under Priority Axis 6 of Malta's Operational Programme I "Investing in Competitiveness for a Better Quality of Life"⁴⁰. This call is furthermore restricted to actions within the health sector which would also include the implementation of telemedicine applications. The total indicative financial threshold for projects under this action is EUR 37 million.

3.7 Evaluation results/plans/activities

From a public policy perspective, evaluation is a key activity in the policy-cycle. It provides insights into the success or failure of a policy or project and leads to new policy goals and new methods of implementation. The need for evaluation of eHealth policies and projects has been stressed time and again by the EC, not least in order to further the spread of eHealth in the process of healthcare delivery.

In Malta, there is currently no indication of a planned or ongoing publicly available evaluation of eHealth activities by Government agencies, university stakeholders or think tanks. Due to Malta's size, evaluations of the effectiveness and efficiency of eHealth applications, programs and possible revisions usually take place within the government agencies through internal information exchange.

However, in 2005, the Institute for Prospective Technological Studies (IPTTS) launched a project which aimed to assess the developments in eGovernment, eHealth and eLearning

⁴⁰ Planning and Priorities Co-ordination Division 2007

in the 10 New Member States at national, and at cross-country level in which Malta was also included. The report on Malta which was published in 2008 describes the government and health systems and the role played by eGovernment and eHealth within these systems. The report then analyses, on the basis of desk research and expert interviews, the major achievements, shortcomings, drivers and barriers in the development of eGovernment and eHealth in Malta. This analysis provides the basis for the identification and discussion of national policy options to address the major challenges and to suggest R&D issues relevant to the needs of Malta. In addition to national monographs, the project has delivered a synthesis report, which offers an integrated view of the developments of each application domain in Malta.

4 Outlook

Malta is starting to recognise the many opportunities eHealth provides. There are many documents addressing eHealth relevant aspects. However, an overarching strategy which draws all the different strands together is still missing. It seems that the legal framework is developed in parallel to the eHealth services. This leads on the one hand to bottlenecks in different fields, but on the other hand hastens some processes profoundly.

In the coming years, progress on healthcare ID legislation and implementation can be expected as the current “Central Registry Bill” is finalised. First steps towards the implementation of a country-wide ePrescription system can also be expected. The hub for any further eHealth implementations in Malta remains the Mater Dei Hospital.

5 List of abbreviations

CEN	European Committee for Standardisation
CIPR	Cardiac Investigation and Patient Record System
DG	Director General
DGHCS	Director General for Health Care Services
DGPHR	Director General for Public Health Regulation
DGSS	Director General for Strategy and Sustainability
DRG	Diagnosis Related Group
EC	European Commission
ECS	Electronic Case Summary
EEA	European Economic Area
EHIC	European Health Insurance Card
EHR	Electronic Health Record
EMR	Electronic Medical Record
EPR	Electronic Patient Record
epSOS	European patients Smart Open Services
ERA	European Research Area
ERDF	European Regional Development Fund
EU	European Union
GDP	Gross Domestic Product
GP	General Practitioner
HCP	Healthcare Provider
HL7	Health Level Seven International (authority on standards for interoperability)
HMO	Health Maintenance Organisation
HPC	Health Professional Card
ICT	Information and Communication Technology
ID	Identification (e.g. number, card or code)
IHTSDO	International Health Terminology Standards Development Organisation
IPTS	Institute for Prospective Technological
ISO	International Organization for Standardisation

IT	Information Technology
LSP	Large Scale Pilot
MDH	Mater Dei Hospital
MITA	Maltese Information Technology Agency
MMDNA	Malta Memorial District Nursing Association
NSRF	National Strategic Reference Framework
OECD	Organisation for Economic Co-operation and Development
PAS	Patient Administration System
PHS	Personal Health System
PPCD	Planning and Priorities Coordination Division
R&D	Research and Development
SABS/DSS	Sistema għall-Amministrazzjoni ta' Beneficċji Soċjali [Department of Social Security]
SNOMED	Systematized Nomenclature of Medicine-Clinical Terms
WHO	World Health Organization

6 Annex

Annex 1: Compound indicators of eHealth use by GPs

Compound indicator name	Component indicators	Computation
Overall eHealth use	<ul style="list-style-type: none"> - Electronic storage of individual medical patient data - Electronic storage of individual administrative patient data - Use of a computer during consultation with the patient - Use of a Decision Support System (DSS) - Transfer of lab results from the laboratory - Transfer of administrative patient data to reimbursers or other care providers - Transfer of medical patient data to other care providers or professionals - ePrescribing (transfer of prescription to pharmacy) 	Average of component indicators
Electronic storage of individual medical patient data	<ul style="list-style-type: none"> - A2a - Symptoms or the reasons for encounter - A2c - Medical history - A2c - Basic medical parameters such as allergies - A2d - Vital signs measurement - A2e - Diagnoses - A2f - Medications - A2g - Laboratory results - A2h - Ordered examinations and results - A2i - Radiological images - A2j - Treatment outcomes 	Average of component indicators
Electronic storage of individual administrative patient data	<ul style="list-style-type: none"> - A1 - electronic storage of individual administrative patient 	A1 value
Use of a computer during consultation with the patient	<ul style="list-style-type: none"> - B2 - Computer use during consultation 	B2 value
Use of a Decision Support System (DSS)	<ul style="list-style-type: none"> - B3a - Availability of DSS for diagnosis - B3b - Availability of DSS for prescribing 	Average of component indicators
Transfer of lab results from the laboratory	<ul style="list-style-type: none"> - D1e - Using electronic networks to transfer prescriptions electronically to dispensing pharmacists? 	D1e value
Transfer of administrative patient data to reimbursers or other care providers	<ul style="list-style-type: none"> - D1a - Using electronic networks to exchange of administrative data with other healthcare providers - D1b - Using electronic networks to exchange of administrative data with reimbursing organisations 	Average of component indicators
Transfer of medical patient data to other care providers or professionals	<ul style="list-style-type: none"> - D1c - Using electronic networks to exchange medical data with other health care providers and professionals 	D1c value
ePrescribing (transfer of prescription to pharmacy)	<ul style="list-style-type: none"> - D1d - Using electronic networks to transfer prescriptions electronically to dispensing pharmacist 	D1d value

Source: Dobrev, Haesner et al. 2008

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