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### Healthcare IT and E-Health in Italy

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#### Author

Tosh Sheshabalaya,

*Italy's approach to healthcare IT, and more specifically e-Health, has three facets. These are based on:*

Ó *National-scale techno-infrastructure requirements (the New National Healthcare Information System).*

Ó *e-Health Board, to harmonise regional and national policies and implementation, and ascertain that these are in line with the European Union.*

Ó *Semantic considerations. The overall goal of the e-Health programme is to improve the efficiency and*

*effectiveness of the Italian healthcare system as a whole, and ensure adequate levels of healthcare services. In*

*addition, the e-Health programme also aims to accelerate technological innovations and take-up of patient-centred healthcare services.*

*Responsibility for the programme is entrusted to a body called the Cabina di Regia. It is comprised of representatives of both the national government and the regions, and coordinated by the Ministry of Health. Key IT projects within Italy's e-Health programme are discussed below:*

#### **New National Healthcare Information System**

*The New National Healthcare Information System (NSIS) was proposed in early 2001 by the Permanent Committee, which coordinates political issues between the central and regional authorities. On the policy level, the NSIS is intended to govern (support, oversee and monitor) the Fundamental Levels of Healthcare Services (Livelli Essenziali di Assistenza or LEA) required by law and guaranteed by the Italian National Healthcare Service for various clinical and care conditions.*

*At the technical level, the NSIS seeks to define a minimum dataset for analytical data to be used for health governance needs by the Italian authorities. Towards this, it has two primary goals:*

Ó *To build an integrated system of individual health records, where patient information and the healthcare delivery structure are the central entities, but provide information on all levels of operating healthcare facilities, services delivered, as well as human and financial resources used by the patient(s).*

Ó *To contribute to good governance principles of the health authorities by ensuring that all required data on individual healthcare is available (to the authorities, physicians and healthcare facilities) and usefully grouped, with adequate levels of anonymisation of patient identifiers to preserve privacy.*

*Broadly speaking, the NSIS faces and meets the needs of both patients (in terms of increasing the efficiency of healthcare access and delivery) as well as the authorities (who obtain a valuable tool for comparatively assessing hospitals and monitoring the overall healthcare infrastructure). The latter is an especially strong need, given the growing trend to decentralise hospitals and provide new, flexible care settings – such as revolvingdoor treatments for the growing number of elderly patients with chronic diseases.*

#### **E-Health Board (TSE)**

*The permanent e-Health Board (in Italian, Tavolo di lavoro permanente per la Sanità Elettronica or TSE) was established in 2004. It was a joint initiative by the Health Ministry as well as the Ministry of Reforms and Innovations in Public Administration.*

The TSE provides the forum and setting for technical consultations to harmonise national and regional e-Health policies in Italy, and to coordinate the implementation of e-Health action plans.

One of TSE's first major deliverables was a position document called 'Politica condivisa per la Sanità Elettronica' (Shared policy for e-Health). This adapts the strategic policy and implementation objectives in the European Union's 2004 e-Health Action Plan to an Italian context.

In Spring 2006, TSE released another major document 'Strategia architetturale per la Sanità Elettronica' (Architectural strategy for e-Health), which contains the first high-level guideline and technical building

blocks for designing a national e- Health architecture.

Technical issues of direct concern are standards to represent collaborative healthcare delivery processes, data formats for electronic documents exchanged in the healthcare system.

In consonance with trends across the EU, the architectural approach recommended by the TSE considers the following requirements to be overarching:

Ó Clinical information of the patient is available anytime, anywhere.

Ó The system respects the federated architecture of the Italian Healthcare System and Italian laws on privacy.

Ó The system has a high level of security reliability and availability.

Ó The system is based on the use of open standards.

Ó The system has a modular structure which enables a progressive implementation nationwide, and safeguards existing investments by being capable of interacting with existing legacy systems.

The full version of the Strategia architetturale is available from the website: [www.innovazione.gov.it](http://www.innovazione.gov.it).

TSE has also launched a series of key e- Health pilots: General practitioners e- Health services network (covering 13,500 GPs in nine Southern Regions)

Ó e-Booking (five regions)

Ó e-Signature for operators (200,000 smart cards in 16 regions)

Ó Oncology Excellence Centres Network,

Ó Proactive prevention, telemedicine and tele-education

#### **Semantic Considerations Interoperability**

The Cabina di Regia mentioned previously coordinates development and implementation of a program to develop semantic interoperability between different regional health information systems and the new National Healthcare Information System. One specific aspect of this program (known as the Patient File project) has two goals:

Ó Re-engineering certain processes with a direct impact on digitally enhancing workflow (for example, patient registries, death certificates etc.).

Ó Defining a framework for EHR development at regional and national levels (which has been closely coordinated with the Veneto EHR project (described below).

#### **Brick by Brick**

The so-called Bricks programme, representing common elements and building blocks of the healthcare system, was launched in 2004. It establishes the semantic toolkit necessary to ensure a common language for:

Ó the classification and codification of concepts such as healthcare services, facilities etc.

Ó the sharing of methodologies to measure and compare quality and efficiency of the Regional Healthcare Services such as waiting times

Ó achieving a uniform approach in the generation of data and information for the Fundamental Levels of Healthcare Services.

The Bricks toolkit also helps to ensure interoperability in the information systems developed by the Regions, and by the local healthcare administrations, will all interoperate. It has been organised into 15 thematic projects (bricks), with each Region responsible for managing one specific project.

Overall, the key e-Health projects under the auspices of the Bricks programme, has been run by the Veneto Region and the Lombardia Region.

#### **The Veneto Project: Authentication, Signoffs, EHRs and Interoperability**

Veneto has been responsible for IESS - *Integrazione per l'erogazione di Servizi in Sanità (Integration for Health Services delivery)*. This project, beginning with demonstrations and scaling up of pilots, has gone to the heart of the entire e- Health chain. It facilitates a direct online approach by citizens to healthcare services and professionals (hospitals, GPs, pharmacies).

The Veneto region has also been mandated to set up a functional Electronic Health Record (in Italian, *Fascicolo Sanitario Personale or FSP*) alongside online authentication of 105,000 smartcards with digital signoffs at two local health units as well as the setting up of an interoperability network for all local health units of the region involved with electronic booking and the Electronic Health Record.

#### **The Lombardia Project: Healthcare Extranet**

The Lombardia Bricks project (due to end in 2009) involves a Healthcare Extranet to securely link all actors in the wider healthcare delivery chain, that is beyond patient and provider to also include social services organizations, aftercare paramedic professionals etc. The Extranet, known by its Italian acronym SISS, tracks and records all events in the patient treatment cycle. The project is based on smartcards to provide access to the SISS Network.

The first phase involved prototyping, and ran from the end of 1999 until 2002. Between 2003 and 2005, it was extended across the Lombardia region.

The second phase, which started in March 2002, is to be completed by September 2009 by when it is due to cover the entire country.

#### **Healthcare IT and Quality**

Decisions on investing in healthcare technologies have become increasingly important across the world. A key reason for this is the acceleration in technology lifecycles, alongside strategically vital questions of not being locked out by making one particular choice from an alternative (but still maturing) spectrum of other choices.

In 2001, Italy established a Health Technology Assessment (HTA) unit at the Gemelli University Hospital to support hospital CEOs in financial, quality and strategic-organisational decisions involving a full range of areas - from medical devices and pharmaceuticals drugs to biomedical instrumentation and IT systems. The Gemelli HTA Unit catalysed the first triennial Technological Investment Plan for the period 2004-2006. Other units have since followed suit.

Part of the inspiration for the HTA actually date back to the Italian National Health Plan 1998–2000, which set up a procedure for accreditation of healthcare providers (both public and private), based on an assessment of their infrastructure and human resources. The National Health Plan also called for developing a Programme on Health Care Quality to steer the Italian NHS to strive for a Six Sigma- style continuous improvement of all dimensions of quality.

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