



**Coordination practice**  
**INTRODUCTION OF A REGIONAL HEALTH INFORMATION SYSTEM**  
**IN THE VENETO REGION**

Greta Nasi and Maria Cucciniello, Bocconi University

Edoardo Ongaro, Northumbria University

Davide Galli and Claudia Guerrazzi, Bocconi University

*This case study focuses on the setup and functioning of the Electronic Medical Record (EMR) and the regional Electronic Patient Record (EPR) in the Italian region of Veneto. The EMR is a record that collects and elaborates all episodes of a patient health occurring within one provider. In 2007, twenty-one local health authorities and two public hospitals decided to coordinate themselves on eHealth themes through a consortium in which they share information about their projects and technical guidelines to assure information-sharing and overall eHealth coordination. The EMRs prove crucial in setting up the regional EPR, which allows any actor involved in the care episode to access all essential patient information such as the clinical history, the reports of previous visits, the drug prescriptions and the contact information. This coordination practice demonstrates how the use of electronic tools can improve cross-organisational coordination in the health sector.*



**EUROPEAN COMMISSION**  
**European Research Area**



**SEVENTH FRAMEWORK**  
**PROGRAMME**

**Funded under Socio-economic Sciences & Humanities**

## **Preface**

This coordination practice is a result of research within COCOPS Work Package 5: The Governance of Social Cohesion: Innovative Coordination Practices in Public Management.

The research leading to these results has received funding from the European Union's Seventh Framework Programme under grant agreement No. 266887 (Project COCOPS), Socio-economic Sciences and Humanities.

The COCOPS project (Coordinating for Cohesion in the Public Sector of the Future) seeks to comparatively and quantitatively assess the impact of New Public Management style reforms in European countries, drawing on a team of European public administration scholars from 11 universities in 10 countries.

The specific objectives of Work Package 5 are:

- To search and identify emerging coordination practices and related steering instruments in public management in European public sectors.
- To compile a case study catalogue of such coordination practices with direct utility to public managers and the research community.
- To analyse the functioning of such coordination practices and to assess their value in countering public sector fragmentation and delivering public value.

Work Package leader:

**Prof. Dr. Per Lægreid**

University of Bergen

Department of Administration and Organization Theory

Norway

Please visit the COCOPS website: <http://www.cocops.eu/>

## 1. THE COORDINATION LANDSCAPE

### Main country characteristics: ITALY

#### General political-administrative structure

Italy has been a parliamentary republic since 1946. The state is headed by a President who appoints a Prime Minister, the elected head of government.

The Italian Parliament is bicameral and consists of two chambers, both elected by universal suffrage: the Senate of the Republic and the Chamber of Deputies. They have equal powers, but they differ in the number of members (630 in the Chamber and 315 in the Senate).

The President of the Republic, who acts as the political guarantor of the constitution but does not hold executive powers, appoints the government, led by the Prime Minister, which has to have the vote of confidence of both chambers.

The Parliament holds the legislative function. Legislative proposal can also be made by government, regional councils, municipalities and also by citizen petition (at least 50,000 citizens needed).

The state has exclusive legislative powers in determined subjects, such as foreign policy, defence and armed forces, and social security, described in the Constitution. The regions have legislative powers in all subject matters that are not expressly covered by state legislation.

In their legislative activities both the state and the regions must respect the constraints posed by the Constitution and those deriving from European legislation and international obligations.

Italy is a decentralised system – a 1997 report of OECD described Italy, together with Spain, as a “regional” country, neither federal nor unitary, to pinpoint the influence regional governments have in many policy sectors.

Specifically, the Italian sub national governmental structure is composed by the following levels:

- regions;
- provinces;
- municipalities.

All three levels have elected councils and their own competences and financial resources.

There are 20 regional governments, including five regions with a special status, which enjoy a very high degree of autonomy and hold exclusive competences in many sensitive areas of public policy, due to particular ethnic, historical or geographical issues. The five special-status regions are: Friuli-Venezia-Giulia, Sardinia, Sicily, Trentino-Alto Adige and Val d’Aosta.

	<p>At the local level we find 110 provinces and over 8,000 municipalities.</p> <p>In order to coordinate administrative action across levels of government, certain coordination practices have been set up, at different moments in history.</p>
Coordination discourse	<p>Coordination has been present in the Italian public debate for several years. The issue is, however, mainly debated in “legalistic” terms, as if it were a problem of “setting the legal-normative framework rightly” and “allocating competences throughout levels of government in such a way to avoid any overlaps”, rather than a broader and deeper issue pervading the whole administrative action.</p>
Policy area	<p>The Italian National Health Service was established in 1978, and it is financed by general taxation. It provides universal coverage and free health care at point of delivery to all Italian and European Union citizens residing in the country, as well as all those holding a regular permit to stay in Italy.</p> <p>The administrative structure consists of 3 levels: central, regional and local.</p> <p>At the central level there is the Ministry of Health, which, receiving input from other ministries, issues the National Health Plan and coordinates the overall health-care system.</p> <p>At the regional level the 20 regional Departments of Health, in respect of the objectives of the National Health Plan, are involved in the regulation and management of health-care activities. Regions have generally also reached agreements with private hospitals allowing patients to be treated under the public health-care system on a reimbursement fee.</p> <p>At the local level, Local Healthcare Authorities (LHAs) offer specialised outpatient, acute and primary-care services on a territorial base, and Public Hospitals (PHs) deliver inpatient-care services.</p> <p>Together, they are responsible for ensuring the delivery of health-care services by means of public and private accredited providers and other social-care facilities. Even if, formally, the National Health Service is a single, unitary system, the regional level plays a key role. In fact, the 1992 reform initiated the process of regionalisation of the health system and the introduction of managerial methods and quasi-market mechanisms into the health-care system, giving the regional government complete responsibility and great autonomy for setting the strategy and appropriate levels for health-care delivery in the region.</p> <p>In addition, the policy process of the Italian health strategy has been strongly influenced by the Constitutional Reform of 2001, which gave to regions legislative authority within the frame of basic principles and levels of assistance, determined by the state. The regional department of health is the governing authority holding the regulatory and administrative competencies in the health-care domain, including planning and supplying, quality-monitoring and control, appropriateness and efficiency of services.</p>

As per *eHealth* issues, the Italian strategic plan aims at promoting the adoption and use of information and communication technologies to enhance the efficiency and effectiveness of the health-care system.

In February 2001, the Permanent Committee for political issues between central and regional authorities developed the new national health-care information system in order to achieve the previously defined objectives.

At the local level, LHAs and PHs have already been using eHealth instruments to address their own organisational need to share information to grant internal care continuity. In particular they have been introducing the Electronic Medical Record — a record that collects and elaborates all episodes of a patient’s health occurring within one provider. This allows any actor involved in the care event at the organisational level to access all essential patient information, such as the clinical history, the reports of previous medical examinations, the drugs prescriptions and the contact information. Not all LHAs and PHs are aligned at the same stage on the use of electronic medical records, but they all recognise the relevancy of information-sharing.

In 2004, at the national level the Ministry of Health launched a programme for e-health, called Mattoni, in which it formulated multiple objectives to achieve and to ensure the interoperability of electronic health-care systems among regions. To support this, the (former) Ministry of Innovation and Technologies and the Ministry of Health created a permanent “e-Health Board” in charge of managing the discussion and consultation between the regions and the two Ministries, and for the coordination of e-health policies at both the national and regional levels. This board still exists.

In 2010 the Ministry of Health required all regions to implement an Electronic Patient Record (EPR) system by 2012, confirming the relevance of this requirement in the National Digital Agenda recently published in October 2012. The EPR is a system that captures information about the longitudinal health episodes of a patient across a network of health-care providers on a territorial base (i.e. at the regional level).

## 2. COORDINATION PRACTICE: Introduction of a regional health information system in the Veneto region

### 2.1. Substance

Country	Italy
Area	Health
Main characteristics of the practice	<p>In the regional context, patients receive care from different providers and physicians. In order to provide good care to patients it is essential that healthcare processes are carried out in a coordinated manner. The basis for coordination and continuity of care is information, which should be shared across all providers to allow for more efficient decision-making (diagnosis and treatment) and more effective care.</p> <p>In some regions, including Veneto, the LHAs and PHs have been addressing their own organisational need to share information to grant internal continuity of care through the introduction of the Electronic Medical Record (EMR). This allows any actor involved in the care episode to access all essential patient information, such as the clinical history, the reports of previous visits, the drugs prescriptions and the contact information. Not all LHAs and PHs are at the same stage of maturity in the use of EMRs but they all recognise the relevance of information-sharing.</p> <p>In the literature and in practice there are multiple definitions of systems to manage patient data. In this case study, EMR (Electronic Medical Record) is a record that collects and elaborates all episodes of a patient's health occurring within one provider. An Electronic Patient Record (EPR) is a system that captures information about the longitudinal health episodes of a patient across a network of healthcare providers (i.e. at the regional level).</p> <p>At the national level, the Ministry of Health required all regions to implement an EPR system by 2012. Since the regional health departments have great autonomy, most regions, especially in the Northern part of Italy, were already working on such projects.</p> <p>In particular, executives in the healthcare sector in the Veneto Region have long recognised that the integration between the hospitals, primary care centres and general practitioners is fundamental to their healthcare strategy in order to ensure continuity of care. In this regard, the Veneto Region has set the objectives to enable the interoperability of information produced at each provider's location to build a regional electronic patient-record system with the aim to improve care provision and better understand and forecast health patterns of the regional population.</p>

<p>Background and initiation of the practice</p>	<p>The Veneto Region is situated in the North-East of Italy, it covers a geographical area of 18,398.85 km<sup>2</sup> and has a population of about 5 million inhabitants, accounting for about 8% of the total Italian population.</p> <p>The regional level provides health and social services to the resident population through the LHAs and public and private accredited hospitals. In the Veneto region the healthcare system is made up of:</p> <ul style="list-style-type: none"> <li>- 21 Local Health Authorities (LHAs);</li> <li>- 2 Public Hospitals (PHs) and 2 research hospitals;</li> <li>- 1076 primary-care service providers;</li> <li>- 3600 General Practitioners;</li> <li>- 250 Residential homes for the elderly.</li> </ul> <p>The average annual health expenses in Veneto are estimated at €8.5 billion.</p> <p>In the Veneto Region, the beginning of this coordination practice for electronic patient records can be found in the early 2000s.</p> <p>In fact, some LHAs started a process in order to introduce the EMR system at the organisational level, and the Veneto Regional Health Department was involved to put in place the coordination mechanisms to ensure the convergence of the different EMR implementations, to allow for regional information-sharing.</p> <p>The objective of the regional coordination practice is to introduce a Regional Electronic Patient Record System, in order to provide all care providers with access to patient data originated within the Region. A first step was the introduction of technical standards for the EMRs in 2007, but until the change of the regional President (governor) in 2010 there was not a strong regional commitment towards the development of an EPR system.</p> <p>For this reason, in 2007, twenty-one LHAs and the two PHs decided to coordinate themselves on eHealth themes through a consortium in which they shared information about their projects and concurred on shared technical guidelines to assure information-sharing and overall eHealth coordination. This consortium was originally founded in 2005 to work on telemedicine projects, but since 2007 it has been configured as a centre through which Venetian health providers could pursue healthcare process improvement and foster inter-organisation collaboration.</p> <p>After the 2010 regional elections, the new government set the objective to introduce a regional EPR system, building on the existing EMR systems. At the Venetian Department of health they realised that previous regional efforts to establish a regional interoperable health information system had been rather ineffective mainly due to a lack of coordination. As a consequence, they decided to pursue regional eHealth objectives thanks to the collaboration with the consortium.</p>
--	--

	In December 2010, through regional deliberation, the Department of Health set seven specific objectives for healthcare informatics to implement an EPR system by 2012. The commitment towards the regional EPR system is also stated in the Regional Health Plan 2012-2014.
Time frame	<p>The introduction of the EMR in LHAs began in the early 2000s, but the coordination practice implemented by the region started later. In 2007 there was the first regulation on electronic medical records, which created the groundwork for the clinical data digitisation, but only in 2010 was there a “political boost” on the process of setting up this coordination practice.</p> <p>The degree of implementation of the project is still incomplete as of 2013. Some LHAs have already developed EMR systems with interoperable standards in order to exchange clinical data of patients (for instance the healthcare organisations in the province of Verona) but others are still working to introduce the EMR at the level of the individual organisation.</p>
<b>2.2. Structure and actors</b>	
Basic features	<p>The territorial level of the coordination practice is represented by the Veneto Region, and the main goal is to share all the patients’ data at the regional level through the establishment of an EPR system. The EPR system builds on data originated by each provider’s electronic medical-record system.</p> <p>In this process, three main actors were involved in different roles.</p> <p>First of all, all public <i>healthcare providers</i> which have been introducing EMR systems and identified the need for coordination. To face this need, they established and currently govern a consortium dedicated to eHealth.</p> <p>The <i>consortium</i> is the structural means through which horizontal and vertical coordination occurs. Horizontally, healthcare providers decide how to converge in governing and managing health information and multiple information systems. However, they maintain full organisational autonomy in the decision and procurement process for IT. Vertically, the Region verifies the adoption of the regional interoperability guidelines through the consortium. In addition, when it sets requirements (mainly technical) for sponsored projects, the consortium verifies compliance and grants regional funding to health providers. The consortium mainly plays a technical coordination role.</p> <p>The <i>Region</i>, through the Health Department, has a steering role by setting policy and guidelines for eHealth.</p> <p>These roles and relations are essential to understand the several enabling conditions to start this coordination practice. The main enabling condition is the recognised need at the bottom level to implement converging eHealth projects that would lead to a beneficial situation of individual</p>

	<p>health providers as for the regional health system. From this comes the possibility of positive contamination between different health agencies in the implementation of the Regional EPR system.</p> <p>Another enabling condition is represented by the sustained political support in the form of a manifested strong desire by the new regional government to put together all the different projects in terms of EMR. This stressed the need for a Regional EPR system, which has been introduced in the new Regional Social and Health Plan, also in order to fulfil regulatory constraints imposed by law at the national level.</p> <p>The essential role has also been fulfilled by Arsenà.IT Consortium, which creates inter-organisational collaboration on these themes and offers technical support to the healthcare organisations, thus representing a facilitating platform.</p>
Main tools	<p>The introduction of EPR was initiated informally and has gradually become a formal regional project. Initially some LHAs started their own eHealth and EMR projects. Prior to 2010, health providers were not forced to adopt an EMR system. However, with the regional deliberation about the EPR system all healthcare providers have been forced to introduce at least some of the features of an EMR system to allow for the establishment of the EPR system.</p> <p>Patient-data-sharing at the regional level will make health services more efficient and reduce the cost of fragmentation of information. Through the EPR system, information is shared and accessible from any healthcare provider in the region, and in some cases, even from patient's homes. This is made possible through a technological solution deployed in order to allow for data and information interchange.</p> <p>The Italian Ministry of Health, the Regional governments and some other institutions, such as the European Union and local foundations, have been providing most of the funding for the EPR system. In addition, healthcare providers have also been allocating a budget for their own EMR system.</p> <p>The project has also been possible thanks to the competences and skills of the teams that each health provider and the consortium were able to put in place.</p>
Main actors	<p>The main actors involved in coordination practice are:</p> <ul style="list-style-type: none"> <li>- the Social Health Information System Service of the Health Department of Veneto Region;</li> <li>- the Arsenà.IT Consortium;</li> <li>- 23 Regional Healthcare Providers (21 LHAs and 2 PHs).</li> </ul> <p>The new regional government strongly pushed for the start of the project, which later involved the various administrative levels of the regional healthcare system.</p>

	<p>In 2013, in pursuit of greater convergence, healthcare providers of Veneto, through Arsenà.IT, are presenting a single project of EPR resulting in an agreement in which the three parties have clearly defined roles:</p> <ul style="list-style-type: none"> <li>- The Health Department, in particular the Social Health Information System Service which approves the specifications created by Arsenà.IT and verifies the implementation by healthcare organisations; its mission is to enhance the planning and organisational skills of the regional healthcare organisations.</li> <li>- Arsenà.IT, which, in addition to defining technical specifications, serves as a coordination platform for eHealth projects.</li> <li>- Healthcare providers, pursuing the implementation, according to the specifications outlined by the consortium, enhancing both internal and regional performance and the quality of care.</li> </ul> <p>Amongst the different LHAs, through the consortium Arsenà.IT, a network structure has been set up, strengthening co-operation. Cooperation occurs both at the horizontal and vertical levels. The relationships that have been established between the involved actors have a formal structure, based primarily on legal conventions subscribed by the various parties.</p>
<p><b>2.3. Impacts and effects</b></p>	
	<p>The EPR is an operational tool to improve the process of care by sharing patients' health information across all regional providers. The Veneto Region intervenes by setting regulatory standards and by funding part of the project.</p> <p>The intended effect of this regional coordination practice is the replicability of successful LHA's EMR implementation in other healthcare organisations within the Region, in order to create a unique regional EPR.</p> <p>The effects of the introduction of the EPR can be identified at both the regional and the organisational levels. At the organisational level, the EPR allows the LHAs to improve the efficiency of services with a significant reduction of time and costs through the use of paperless solutions and to enhance the quality and accuracy of information. Moreover an expected impact is the reduction of clinical risk, for which they are currently developing appropriate measures and which would be possible to assess in the medium and long run. At the regional level the EPR produces a systemic value since its introduction allows it to share clinical information among different providers, which is essential for the improvement in clinical processes and the quality of care. However, impacts measured so far mainly concern the effects at the organisational level.</p> <p>Performance indicators used are mainly related to the number of reports downloaded from the Internet and, thus, the avoided return of the patient</p>

	<p>to the healthcare providers, which, as mentioned above, was one of the main objectives of the project. In fact, the impact of the coordination practice also involves:</p> <ul style="list-style-type: none"> <li>- reduced rate of hospitalisation;</li> <li>- reduction of prescriptions (to avoid duplication of requests);</li> <li>- reduction of waiting times;</li> <li>- reduction in clinical errors (clinical risk reduction).</li> </ul> <p>Finally, in some cases the factor of “social economy” has been counted by estimating the cost for the citizen to travel to the healthcare provider to collect the clinical results. This cost included variables such as time to go to the healthcare structure, the cost of fuel or the public transportation ticket and the pollution factor.</p>
--	---

<b>2.4. Lessons learned and policy recommendations</b>	
--	--

	<p>With regard to this case, some enabling conditions can be identified, which have fostered the coordination practice described above.</p> <p>An example of an enabling condition is the convergence of interests between the LHAs, which has enhanced the coordination practice in terms of governance.</p> <p>Moreover, the rationale behind the architecture is to coordinate the extension of existing local projects and, therefore, the coordination mechanisms adopted in this practice are mainly based on the need for interoperability and technical information between the LHAs.</p> <p>Another enabling condition is represented by the remarkable fundraising ability developed by the LHAs and the consortium at the local, national and European level. This allowed the development of the projects within the LHAs and the coordination of the existing projects.</p> <p>Some of the elements highlighted are easily replicable in other contexts, such as the significant enhancement of the existing projects on the regional territory and the development of a concrete ability to attract financial resources.</p> <p>Although this project is not fully implemented, some relevant lessons can be identified.</p> <p>First of all, a strong commitment over time is needed in order to manage the change introduced by a coordination practice. In fact, some LHAs encountered resistance to change, which was overcome mainly thanks to the consortium’s leadership.</p> <p>Secondly, coordination is more easily reachable if there is a shared culture and common interests.</p>
--	--

	<p>Thirdly, the decision to establish a formal collaboration structure as the consortium has also been an enabling factor: it develops and coordinates projects involving the LHAs, allowing the achievement of shared eHealth objectives that the single LHAs alone are not able to achieve.</p> <p>Fourthly, consistency with national and European guidelines on eHealth facilitates access to additional financial resources. Organisations needed to find alternative ways of financing in a period of financial crisis to carry out innovative projects. This has led the organisations to develop remarkable fundraising capacity.</p>
<b>2.5. Further information</b>	
<p>Data and references</p>	<p>The information in this coordination practice example is based on the evaluation of some government documentation and on some interviews with the CIO of the Health Department of the Veneto Region and the CIOs of two LHAs and one Public Hospital.</p> <p><u>Government proposition:</u></p> <p>Proposal of Regional Social and Health Plan 2012-2014</p> <p><u>Legal acts and regulations:</u></p> <p>LR 34/2007: Norme in materia di tenuta, informatizzazione e conservazione delle cartelle cliniche e sui moduli di consenso informato</p> <p>DGR 832/2008 Progetto Large Escalate Pilot eHealth per la “Sperimentazione di un sistema per l’interoperabilità europea e nazionale delle soluzioni di fascicolo sanitario elettronico: componenti Patient Summary e ePrescription”</p> <p>DGR 2322/2009: Analisi e progettazione del modello di architettura tecnologica per lo sviluppo del SAR (Sistema di Accoglienza Regionale) e sviluppo del FSE da sperimentare presso l’ULSS n. 19 di Adria</p> <p>DGR 3140/2010 “Assegnazione obiettivi per gli anni 2011 e 2012 alle Aziende ULSS del Veneto, all’Azienda Ospedaliera di Padova, all’Azienda Ospedaliera Universitaria Integrata di Verona e all’IRCCS ‘Istituto Oncologico Veneto’”</p>
<p>Contact</p>	<p><b>Greta Nasi</b>, Associate Professor  Department of Institutional Analysis and Public Management  Bocconi University  <a href="mailto:greta.nasi@unibocconi.it">greta.nasi@unibocconi.it</a></p>