

# The Chronic Related Groups Program: A Case Study

**Marco Nalin**  
*Telbios, Italy*

**Ilaria Baroni**  
*Telbios, Italy*

**Maria Romano**  
*Telbios, Italy*

## INTRODUCTION

With almost 10 million inhabitants, Regione Lombardia represents 1/6 of the Italian population, with over 4.6 million chronic patients, most of them over 65 years and affected by 3 or more pathologies. Chronic diseases are a growing burden for the regional health and social economy and this, in 2011, prompted the Regional Government to launch an innovative program, called CReG (Chronic Related Groups) with the objective to promote continuity of care for chronic patients.

The CReG is like a territorial (Health System and Policy Monitor, 2015) Diagnosis Related Group (DRG): a group of predefined economic resources assigned to an institutional subject (CReG Provider), to guarantee the delivery of an established treatment plan to the chronic patients it has in charge, in order to provide them with a comprehensive care outside of the hospital. The main pathologies involved are BPCO, hypertension, heart diseases (Lauri et al., 2015) and diabetes and co-morbidities.

The CReG Providers are cooperatives of family doctors (General Practitioners), which must guarantee: the definition of a personalized care pathway for each chronic patient and the adherence of the patient to it; a service center available for 12h/365 days, operated by trained personnel; tele-monitoring services at home; health data management and indicators evaluation; patient education; evaluation of the customer satisfaction of the enrolled patients.

The CReG pilot, run in five different local health authorities, involved more than 60.000 patients, and several CReG Providers were selected to manage this population. Many of the providers (for a total of more than 300 GPs involved) selected the same technological partner, having 60% of this population (approx. 37.000 patients) managed through the same IT platform, thus making this one of the largest European pilots for the care coordination and tele-monitoring of chronic patients.

The chapter will describe this experience, the background, the new model for managing chronic patients proposed by Lombardia Region, the enabling technological platform, the services provided through the platform, the population stratification method for the identification of the highest risk patients, the involvement of the end users (both patients and healthcare professionals), and the lessons learned in the use of the platform and the deployment of the services. A particular focus will be dedicated also to the pilot for the tele-monitoring services provided at home to the patients, which involved a subset of patients selected with a stratification algorithm.

## BACKGROUND

Lombardy (Lombardia, capital: Milan) is one of the 20 regions in Italy. In 2007, 9.545.441 people lived in Lombardy, with about 19.7% of its population above 65 years of age and about 27.5% being diagnosed with a chronic condition. Lombardy is divided into 12 administrative provinces. In 1997, Lombardy was the first Italian region with the setting of a so-called quasi-market model in its local health care system (Melchiorre et al., 2013); it has introduced competition to improve quality and control expenditures. As a consequence, the four main principles of the Lombardy health care system are universal coverage (solidarity), a separation between health care purchasers and providers, a competition between public and private accredited providers in the presence of a third part payer and patients' free choice among providers.

The health system is financed by general taxation and by citizens outpatient services co-payment. The National Government assigns the financial resources to the Regions on a capitation system, adjusted for different indicators (age, chronic diseases, geomorphology etc..)

The Lombardy Region receives and manages funds for health care, plans activities in cooperation with so-called Local Health Authorities (LHA or ASL) and monitors the delivery of minimum levels as defined by the central Italian Government. LHAs (15 in total) manage health care in a geographic region within Lombardy, through smaller units called Districts (86 in total), and contracts volume and kind of services with providers; LHAs are the purchasers of care. Each District manages the care of about 40.000 up to 100.000 people. Providers – either public, not for profit or private accredited - compete on production following the same rules. LHAs are paid by Lombardy through weighted capitation using previous expenses, demographics and geographical criteria, while providers are financed by LHAs on a fee for service basis: prospective DRG (Diagnosis Related Group) payment for hospital discharges, and tariffs for outpatient services. Lombardy is able to control its balance (21.177 million euro in 2008) to break even. In short, Lombardy acts as an autonomous region, with insurance and funding functions, the LHA with programming and purchasing power, while production is performed by providers. Lombardy has implemented a DRG (Diagnosis Related Group) prospective payment for hospital activities as reimbursement model. In 2012, Lombardy had 208 local hospitals, of which 102 are private accredited hospitals, and of which 25 are research hospitals (IRCCS - Istituto di Ricovero e Cura a Carattere Scientifico). The total bed count is 35.537 for ordinary and long hospitalizations, 1.058 for Day Hospital and 1.423 for Day Surgery. The total count of GPs is 8.120.

## CHRONIC RELATED GROUPS: A CASE STUDY

### A New Model for Chronic Patients Care

The Chronic Related Groups (CReG) is an innovative model of chronic patients care coordination with a built-in economic model (Fait et al. 2015, Sorlini et al. 2012). The initiative started in 2011 in Lombardy Region, and it is still ongoing at the time of writing of this chapter. Five Local Health Authorities (LHA) were selected to test the new model, with the idea to scale it up to the entire Region, in case of positive results.

8 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/the-chronic-related-groups-program/151943](http://www.igi-global.com/chapter/the-chronic-related-groups-program/151943)

## Related Content

---

### The Urine Drug Screen in the Emergency Department: Overuse, Technical Pitfalls, and a Call for Informed Consent

Megan Yuand Charles Desmond Donohoe (2022). *International Journal of Health Systems and Translational Medicine* (pp. 1-11).

[www.irma-international.org/article/the-urine-drug-screen-in-the-emergency-department/282703](http://www.irma-international.org/article/the-urine-drug-screen-in-the-emergency-department/282703)

### Emerging Technologies Serving Cytopathology: Big Data, the Cloud, and Mobile Computing

Abraham Pouliakis, Niki Margari, Effrosyni Karakitsou, Stavros Archondakisand Petros Karakitsos (2018). *Emerging Developments and Practices in Oncology* (pp. 114-152).

[www.irma-international.org/chapter/emerging-technologies-serving-cytopathology/197647](http://www.irma-international.org/chapter/emerging-technologies-serving-cytopathology/197647)

### GAN-Based Medical Images Synthesis: A Review

Huan Yangand Pengjiang Qian (2021). *International Journal of Health Systems and Translational Medicine* (pp. 1-9).

[www.irma-international.org/article/gan-based-medical-images-synthesis/277366](http://www.irma-international.org/article/gan-based-medical-images-synthesis/277366)

### Exploring Telemedicine Scope: A Deep Dive Into Malaysia's Landscape

Faerozh Bin Madli, Shaierah Binti Gulabdin, Yun Wong Singand Ismail Abdul Jabbar (2025). *Digitalization and the Transformation of the Healthcare Sector* (pp. 437-462).

[www.irma-international.org/chapter/exploring-telemedicine-scope/362465](http://www.irma-international.org/chapter/exploring-telemedicine-scope/362465)

### The Importance of Building Communities as the 10th Characteristic of Servant Leadership and Organizational Performance

Olayinka Creighton-Randall (2024). *Innovations, Securities, and Case Studies Across Healthcare, Business, and Technology* (pp. 50-63).

[www.irma-international.org/chapter/the-importance-of-building-communities-as-the-10th-characteristic-of-servant-leadership-and-organizational-performance/336884](http://www.irma-international.org/chapter/the-importance-of-building-communities-as-the-10th-characteristic-of-servant-leadership-and-organizational-performance/336884)