

# Discovering the potential of Solventum™ Clinical Risk Groups (CRGs) Classification System

An in-depth study of the use of CRGs in the Region of Valencia, Spain.

“The potential uses of Solventum CRGs are unlimited; from pharmaceutical spending to improving the quality of care, or the management of waiting lists. You only need to think of the idea to be able to apply them.”

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**Laia Buigues Pastor**

Health Economist & Analyst at the Directorate for Pharmacy and Healthcare Products.  
Valencia Regional Government. Spain



Reduction in pharmaceutical spend of 6,5%



Improvements in our financial management and the assignment of human resources



Improvements to the quality of life for our patients

Explore the unlimited potential of CRGs.

A Comprehensive Study

This study **analyses the various uses of CRGs by the Health Authority of the Community of Valencia**, who initially implemented them in 2008 under the General Pharmaceutical Authority (Direcció General de Farmàcia - DGF).

It examines the development and scope of the use of CRGs, not only by the DGF, but also by other bodies belonging to the authority, including the General Health Care Authority



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## Información in the Region of Valencia

4,9

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million inhabitants

881

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primary care health  
centres

30

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specialist health care  
centres

35

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hospitals

75K

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professional personnel

24

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health departments

## Monthly data management

10M

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million electronic  
medical prescriptions  
issued

1,7M

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million primary care  
contacts

350K

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external consultation  
contacts

17K

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emergency service  
contacts

24K

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hospitalisation contacts

# CRGs permit the efficient management of resources, from both the pharmaceutical and care delivery points of view.

- **Significant reduction in pharmaceutical spend:** a reduction of 6,5%<sup>1</sup> was achieved in pharmaceutical spend associated with the prescription of medication at pharmacies; exceeding the reduction witnessed in other regions of Spain. This represents a positive impact in financial terms.
- **Improvement in clinical management:** health care professionals witnessed an improvement in clinical management resulting in more efficient care focused on the needs of each patient group.
- **Improvement in financial management and the assignment of human resources:** by analysing the information from the CRGs, the areas of greatest demand for medical care can easily be identified supporting the more efficient assignment of human resources, preventing the excessive or inadequate assignment of personnel and thus optimising the operating costs for the health care system.
- **Support in decision making:** CRGs aid the health care professionals in the making clinical decisions, leading to a better informed and customised level of care for patients.
- **The drafting of key indicators:** financial, managerial and quality indicators were developed that permitted easier evaluation of key performance indicators and levels of care; providing a solid foundation for continuous improvements.
- **Identification of at risk populations:** using the CRGs, populations with particular pathologies can be more effectively identified for more focussed prescription management; supporting a more proactive management of the health of those populations.
- **Improvement in interdisciplinary collaboration:** collaboration is encouraged between clinics, pharmacies and central services which facilitates integrated and coordinated patient care.
- **Increased patient quality of life:** the design of indicators using CRGs contributes to improving the quality of life for patients; bringing focus to relevant clinical outcomes and the optimisation of treatment plans.

<sup>1</sup> In parallel with the deployment of the SCP-CV tool, a number of measures were implemented that also contributed to reducing the pharmaceutical spend.

“The General Directorate of Pharmacy have used CRGs for almost 16 years and in that time many other agencies within the Ministry of Health have recognised the usefulness of this grouper, with multiple collaborations between departments applying the CRGs to address health management challenges beyond the pharmaceutical field.”

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# The challenge and the needs:

## Management of pharmaceutical expenditure, patient safety and promotion of the rational use of medicines



### Management of the pharmaceutical spend

Firstly, the Ribera Health Department and later the Region of Valencia, sought to effectively manage pharmaceutical spending at the population level, both in outpatient and hospital prescriptions. The Region of Valencia sought to control pharmaceutical spending, in particular with the introduction of electronic prescriptions which required the establishment of IT systems to make the best use of the data recorded.



### Increased patient safety

Both entities sought to improve patient safety in the prescribing, dispensing and use of medication, thereby reducing errors and associated risks.



### Promotion of the proper use of medication

It was crucial to promote the proper use of medication in order to ensure that treatments were effective and to prevent self-medication and unnecessary or inappropriate use of pharmaceutical products..



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Close collaboration with Solventum (formerly 3M Health Care) was essential in the CRGs implementation process. Solventum played an active part in the monitoring and ensuring that the Community of Valencia understood and implemented solutions that took full advantage of the logic of the CRGs.

## Introduction of the CRGs: Piloting and deployment in the Region of Valencia

In 2008, the Pharmacy and Health Care Products Authority (Dirección General de Farmacia y Productos Sanitarios - DGFPS) launched a pilot project with Solventum™ Clinical Risk Groups (CRGs) Classification System, the purpose of which was to improve patient safety, promoting the appropriate use of medications while simultaneously improving the care for chronically ill and polymedicated patients through the development of programs to improve the quality of care and efficiency in the use of health resources.

In the course of the autonomous regional pilot project, intended to validate the effectiveness of the CRGs in achieving their aims, the retrospective focus became prospective. The prospective focus proved to be particularly beneficial for the management of pharmaceutical expenditure, facilitating a more precise grouping together of individuals with similar profiles. The system was refined by extending the information period from 12 to 24 months which improved the accuracy and robustness of the results. The integration of CRGs into all the organisations' databases was a complex process that took four years, but now allows updates in almost real time, on a monthly basis, giving doctors access to up-to-date information.

A close collaboration with Solventum was fundamental in this process. Solventum played an active part in ensuring that the Region of Valencia fully understood the underlying logic of the CRGs. After this collaborative work, an analysis tool was developed that met the needs of the analysts supporting central services as well as those of the general practitioners. The application provided a clear and concise vision of the data that allowed GPs to quickly identify deviations in their patients' pharmaceutical consumption and to take informed decisions.

It is important to remember that the database architecture for each organisation varies a great deal so before making comparisons of the CRGs results between organisations or regions, each data architecture must be studied and analysed. Thus, the concept of Equivalent Patients was born for the analysis of variations in the consumption of medications. Statistical regression was used to relate the patients' health status to their medication consumption in local pharmacies. GPs can compare the population assigned to their surgery between themselves, using this approach.

# Solution of needs

## Principal users of CRGs in Valencia

- General Directorate of Pharmacy
- General Directorate of Health Care
- General Directorate of Public Health
- General Directorate of Planning and Technological Efficiency

After confirming the need and usefulness of the pilot results, the project was consolidated and its viability was articulated through contracting documents managed by the General Directorate of Pharmacy (DGF) and financed with funds for the Rational Use of Prescribed Medications by the Ministry of Health, Consumption and Social Welfare.

The solution proposed was characterised by its being fully integrated into the various existing information systems. This assured efficient resource management both from the point of view of spending and healthcare.

In addition, a mechanism has been designed to collect proposals for improvements and corrections from users, involving doctors, managers and technology experts from Solventum (formerly 3M Health Care). This ensures that the solution evolves according to the changing needs of the health system and remains aligned with industry best practices..

- Collaboration between Solventum, the Central Services of the Region Valencia and doctors to improve the CRGs.
- Optimisation of health management and use of resources.
- Positive impact: directing patients rapidly towards adequate care.
- Commitment to a single project by Primary Care, Public Health, IT and Pharmacy.



# The application of CRGs by the General Directorate of Pharmacy.



“CRGs have served, and continue to serve as support in the work of different services and different directorates across the entire Department of Health, the applicability of which affects all health care professionals and therefore, all citizens.”

## 01

### Information Tool for the Analysis of Problems Related to Medications (PRM) in Clinical Management

In the Strategic Pharmacy Plan, an information tool has been developed, a pioneering implementation in Spain, for the analysis of problems related to medications (PRM).

This application utilises CRGs and allows the identification of the population on the basis of their burden-of-illness and their care needs by health service, which improves the clinical management of patients by health care professionals. The PRM platform is accessible as part of the corporate Business Intelligence toolkit of the Ministry of Health.

## 02

### Pharmacotherapy Review and Follow-Up Program

The Pharmacotherapy Review and Update Schedule (REFAR), an instrument for establishing specific programs and protocols for evaluating pharmaceutical care in particular for chronically ill and polymedicated patients has been implemented. In this programme, CRGs are used as support in the decision-making process.





## 03

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### SCP-CV – The Patient Classification System of the Valencian Community

The SCP-CV information tool classifies the population on the basis of their burden-of-illness and has been developed with the aim of carrying out more efficient pharmaceutical management by GPS and health care managers; in terms of both financial and clinical outcomes – crucially allowing the identification of patients with the greatest deviations in pharmaceutical spending.

The SCP-CV platform is accessible as part of the corporate Business Intelligence toolkit of the Ministry of Health.

After the first year of enabling access to the tool for all family medicine personnel with primary care quotas, the pharmaceutical bill associated with dispensing medications decreased by 6.5%.<sup>1</sup>

<sup>1</sup> In parallel with the deployment of the SCP-CV tool, a number of measures were applied that also contributed to the reduction in pharmaceutical spend, most notably the Decree Law 2/2013 of the 1<sup>st</sup> March on Urgent Management and Efficiency Actions in the Pharmaceutical and Orthopaedics Provision.

## 04

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### Development of Key Indicators

Since 2013, successive Management Agreements have incorporated indicators that offer markedly more robust results, in terms of precision, by providing data based on the burden-of-illness of each citizen. Said indicators<sup>2</sup> are:

- Variation (in euros) in the outpatient spend per patient according to the FarmaIndex (FIX) burden-of-illness.
- Average Price per prescription according to burden-of-illness.
- Review of Drug-Related Problems in chronic patients according to their burden-of-illness and clinical risk.

<sup>2</sup> None of said indicators apply to the 2024 Management Agreement although their results remain available and accessible in the corporate Business Intelligence toolkit of the Ministry of Health.

## 05

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### Economic evaluation studies to identify high risk patients

Economic evaluation studies have been carried out that determined the impact of burden-of-illness on costs and helped identifying patients with the greatest clinical risk, for whom the lack of follow up care translates into a worsening of their state of health with the consequent increase in resource consumption.

## 06

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### Distribution of PPE during the Covid-19 pandemic

In the context of the Covid pandemic, CRGs helped identify which populations were to receive free Personal Protective Equipment, based on the provisions of the resolution of April 15th 2020 by the Regional Minister of Universal Health and Public Health. By which the donation of masks etc. for the vulnerable populations in the Community of Valencia was made possible.

# Application of Solventum™ CRGs by other Central Services agencies.



“The failure would have been if CRGs had stay in a group or department, section or service. The good thing is that they have grown and are now utilised by a multidisciplinary team”

## 01

### Development of Indicators

The incorporation of performance indicators into Management Agreements calculated on the basis of CRGs. Examples include:

- Rate of nursing home consultations in high complexity chronic populations and those in palliative care.
- High frequency (>16) consultations per year for adults with chronic long term conditions.

## 02

### Management of chronic patients

The Strategy for the Care of Chronic Patients in the Comunitat Valenciana, was drafted by a committee of clinical experts who based their conclusions and recommendations on results obtained by CRGs, which served to identify the population to be included in each specific programme.



## 03

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### Implementation of alert markers of chronicity in Health Information Systems

Implementation of the chronicity flag alert based on the Kaiser Permanente pyramid with CRGs used to determine the marker for each citizen within the Region of Valencia. This marker is currently visible in various corporate information systems, including the regional Electronic Medical Record (EMR).

## 04

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### Care Programs

The Nursing Case Manager Program, in which nursing professionals use CRGs to identify patients to be included in to said programme.

In 2023, the CRONIFARMA Programme designed by primary care pharmacist Marta Aparicio Cueva was launched in the health department of Alicante. This methodology was designed to select polymedicated and highly complex patients and enrol them on a patient centred pharmacotherapeutic review (in terms of adequacy/suitability, duplication of medication, interactions, deprescribing, drug safety, simplification of dosages etc.). The patients likely to benefit from this program are selected on the basis of their CRG with particular established criteria (age and clinical complexity). Health outcomes obtained so far show a reduction in the number of hospitalisations and ED visits for those enrolled.

## 05

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### Redistribution of Primary Care Patients

The redistribution of primary care places based on CRGs, the criteria for which is based on comparing the population assigned to each family GP, not in terms of the true population but rather, in terms of equivalent population adjusted on the basis of burden-of-illness.

## 06

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### Management of Human Resources

The allocation of human resources of any other category (pharmacy personnel, nursing staff, etc.) on the basis of the number of patient equivalents for the area or service to be covered, calculated from CRGs populations are adjusted on the basis of burden-of-illness.

## 07

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### Predictive Analytics Models

During the pandemic, work was carried out on a project to identify those patients with a greater probability of complications (hospital admissions, admissions to intensive care units, need for mechanical ventilation and/or death) in case of contracting COVID-19. This model included CRGs variables for prediction.

## 08

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### Management of Waiting Lists

During the post-pandemic months, the Autonomous Secretariat of Public Health and the Public Health System implemented a model, based on CRGs, for the prioritisation of patients on waiting lists.

# About Solventum™ CRGs

Solventum™ Clinical Risk Groups (CRGs) Classification System are a clinical categorical model for population stratification, segmentation and cohorting.

Based on diagnoses, procedures, drug codes, functional and mental health status. The methodology assigns each patient into a single, mutually exclusive category and takes a clinically-driven, whole-person approach to measuring a patient's burden-of-illness; and includes a severity scale derived from a clinical understanding of chronic disease burden.



#### **Patient-centric clinical model that enables change**

Solventum™ CRGs are patient centric, focusing on the total burden of illness rather than on a specific disease or service. This categorical approach to patient classification provides clinicians and planners with actionable data.



#### **Suitable for all populations**

Solventum™ CRGs were developed for use in all populations and particular attention was paid to the most complex and most resource consuming patients, including paediatrics.



#### **Flexible**

Solventum™ CRGs are available as both concurrent & prospective categorisations with multiple levels of aggregation. Their clinical categorical approach ensures a model remains stable despite changes in service costs, utilisation etc.

Solventum™ CRGs provide risk adjustment for important health outcomes making sure we can “compare apples with apples”.

Solventum enables better, smarter, safer healthcare to improve lives.

#### **Call today**

For more information on how Solventum solutions can assist your organisation, call **0800 626578**, email [sales.his.uk@solventum.com](mailto:sales.his.uk@solventum.com) or visit online: [www.solventum.com](http://www.solventum.com)

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