Public Disclosure Authorized

Public Disclosure Authorized

Project: Improving the management of health services for people with multiple chronic diseases in three Latin American countries - Brazil, Colombia, and Uruguay

PROPOSAL FOR A COMPREHENSIVE HEALTHCARE MANAGEMENT MODEL FOR PEOPLE WITH MULTIMORBIDITY AND THEIR CAREGIVERS IN COLOMBIA

BANCO MUNDIAL
BIRF • AIF

Project: Improving the management of health services for people with multiple chronic diseases in three Latin American countries - Brazil, Colombia, and Uruguay

PROPOSAL FOR A COMPREHENSIVE HEALTHCARE MANAGEMENT MODEL FOR PEOPLE WITH MULTIMORBIDITY AND THEIR CAREGIVERS IN COLOMBIA

BANCO MUNDIAL
BIRF • AIF

Authors

Mery Concepción Bolívar Vargas
Sandra Milena Hernández Zambrano
Alexandra Porras Ramírez
Guiovanni Esteban Hurtado Cárdenas
Axel Darío Arcila Carabali
Janet Bonilla Torres
Roberto Iunes

Co-researches

Eduardo Andrés Alfonso Sierra
María Heidi Amaya Valdivieso

Collaborators

María Luisa Latorre Castro
Juan Pablo Toro Roa
Ana María Lara Salinas

Research Director

Mery Concepción Bolívar Vargas

Project Management

Roberto Iunes
Health, Nutrition, and Population Global Practice - World Bank

Agradecimentos

The work team thanks the officials of the Ministry of Health and Social Protection of Colombia from the following areas who accompanied the project over more than two years and acted as counterparts: Office of the Minister, Vice Ministry of Public Health and Service Provision, Vice Ministry of Social Protection, Advisory Office of Planning and Sectoral Studies, Group of Sectoral Studies and Public Policy Evaluation. Promotion and Prevention Directorate, Non-Communicable Diseases Subdirectorate, Integrated Management Group for cardiovascular, oral, cancer and other chronic conditions. Directorate of Regulation of Benefits, Costs and Rates of Health Insurance and Cooperation and International Relations Group. Special thanks to the insurers, providers, patients, caregivers, doctors, nursing assistants, health secretaries, and liaison professionals of the municipalities of Bogotá, Barranquilla, Cajibío, La Virginia, Barrancominas, Inírida, and Barú - who were linked to the test pilot and to the insurers – and providers who participated in the interviews and focus groups of the study of successful experiences of multimorbidity care in Colombia. Also, to the professors from the universities Fundación Universitaria de Ciencias de la Salud - FUCS, Hospital San Juan de Dios Sevilla – Spain, and Universidad Nacional de Colombia, who trained the team that implemented the pilot test of the Model.

Preparation of the summary document: Mery Bolívar Vargas
Edition: Janet Bonilla Torres
Graphic creation: María Cristina Rueda
Photograph: Flickr World Bank, Wilson Martínez Montoya, Freepik y Pixabay

Colombia 2023

ACCESS ACCELERATED
EThe study was funded with resources from Access Accelerated

Content

Acronyms 5

Key Messages 6

Introduction 9

Goals 11

Methodology 13

Results and Main Contributions to The Country and The Region 17

- Strategic Component 17
- Tactical Component 22
- Operational Component 26

Projection or future possibilities 38

Acronyms

PHC	Primary Health Care
ASIS*	Health Situation Analysis
CAE*	Specialized Care Centers
PHCC	Primary Health Care Centers
ICD 10	International Classification of Diseases, Version 10.
CUPS*	Unique Coding of Activities, Interventions and Procedures
SDH	Social Determinants of Health
EAPB*	Benefit Plan Administration Companies
BHE	Basic Health Equipment
NCDs	Chronic Noncommunicable Diseases
CD	Chronic Disease
ETS*	Territorial Health Entity
GIRS*	Comprehensive Health Risk Management
PRG	Prioritized Risk Groups
HCE*	Electronic Medical Record
IPS	Institutions Providing Health Services
MAITE*	Comprehensive Territorial Action Model
MIAS*	Comprehensive Health Care Model
MOH	Ministry of Health and Social Protection
PAC	Collective Care Plan
PAI*	Individual Care Plan
PCP	Personalized Care Plan
PBS*	Health Benefits Plan
SCP	Shared Care Planning
PIC*	Collective Intervention Plan
PMM	People with Multimorbidity
RIAS*	Individual Health Service Provision Records
IHSN	Integrated Health Services Networks
CPMH	Comprehensive Route for the Promotion and Maintenance of Health
SGSSS*	General Health Social Security System
ICU	Intensive Care Unit
IMCU	Intermediate Care Unit
UPC*	Capitation Payment Unit
MA	Multidimensional Assessment

* By its acronym in Spanish

Key Messages

- Multimorbidity is a growing and increasingly visible global phenomenon due to population aging, for the physiological and emotional effects it causes, the high costs that its care generates for health systems, and above all, its impact on the quality of life of those who live with it, their families, and their caregivers.

- In Colombia, multimorbidity presented a prevalence of 19.5% for all ages during the period 2012 – 2016, according to data from the study carried out within the framework of this project, and showed greater use and cost of health services associated with older age and the complexity of multimorbidity in an aging population that shifts its epidemiological profile towards chronic diseases.

- Multimorbidity is one of the most significant challenges for health systems in all countries. It requires innovations in the conception, organization, and management of health systems, in the training and performance of human resources, in the understanding of the person as a whole, the prescription of medications, the interprofessional care, and in the quality of care.

- Attention to multimorbidity in Colombia has been a scattered response from different actors in the system, who have answered to the problems of people with multimorbidity (PMM). However, Colombia needs a national commitment to a management and care model that addresses the needs, expectations, and preferences of the PMM.

- The proposal developed for Colombia of a comprehensive healthcare management model for PMM, and their caregivers incorporates theoretical references, successful national and international experiences, and pilot testing within the right to health and Primary Health Care (PHC) framework.

- The model is a flexible and holistic proposal focused on the person and their environment. Its route path begins with the identification and stratification of PMM risk in areas of strengthened PHC. It continues at other levels with other elements that complement healthcare, such as physical activity, emotional support, or relevant nutrition, among many others.

- The model is adaptable to the country's different health management and care realities. However, it is imperative to establish the household Primary Care Centers (PHCC) as the appropriate settings for the care and self-care of complex chronic cases. This implies consolidating the people's connections and integrating the services into comprehensive care circuits organized in comprehensive and integrated health services networks (IHSN), led by the PCCs within a PHC framework under the stewardship of the ETSs* and the participation of community actors, to promote the satisfaction of the needs, preferences, and expectations of the PMM.

* By its acronym in Spanish

Photography: Pixabay

Introduction

Multimorbidity in Colombia represents a significant challenge for the health system due to the confluence of several realities: (i) nearly 40% of the population with chronic conditions (around 4.5 million people) have two or more diagnoses; (ii) non-communicable chronic diseases (NCCDs) represent a significant burden within the system; (iii) fragmented care, increased use of services, and high costs persist.

Multimorbidity is a complex phenomenon associated with people's social and living conditions. It implies challenges related to changes in the biographical trajectory, adaptation, and the capacity for agency in contexts of poverty and social inequalities for those who suffer from it, their family, and their caregivers. It represents multiple impacts in the social, physical, emotional, and spiritual spheres of people and their families.

In response to this problem, in Colombia, the project "Improving the management of health services for patients with multiple chronic diseases in three Latin American countries, Brazil and Colombia and Uruguay", designed and implemented a pilot of a comprehensive healthcare management model for PMM and their caregivers.

The results are a management and care model that aims to guide and organize the comprehensive healthcare of PMM in the face of physiological and existential needs at any time during their lifetime, with the support of their caregivers, their family, and their community, considering the institutional and communal environments where people develop. The starting point is to consider the different realities of the health system in urban, rural, and dispersed rural areas.

The comprehensive healthcare management model for PMM and their caregivers has been defined as the set of approaches, attributes, strategies, resources, processes, and results of the health system for comprehensive health risk management (GIRS*) and health care of PMM and their caregivers. Its objective is to contribute to the health outcomes and quality of life of PMM. The components of the model are:

(i) **The strategic one** that contains the references, the definition, the objectives, and the target population;

(ii) **The tactical one**, which includes approaches, attributes, and strategies;

(iii) **The operational one**, that has two dimensions, one for management and another for care.

More information

* By its acronym in Spanish

Goals

General Objective

To propose a comprehensive healthcare management model for people with multimorbidity and their caregivers in Colombia.

Specific Objectives

1. To review national and international literature related to clinical, management, and financial aspects of multimorbidity.
2. To analyze successful national programs or models for multimorbidity management.
3. To design and implement a pilot test in six locations in the country in the departments of Guainía, Risaralda, Cauca, Atlántico, Bolívar, and Bogotá.
4. To exchange national and international knowledge throughout the process with Brazil, Uruguay, and Chile.
5. To propose a comprehensive healthcare management model for people with multimorbidity and their caregivers in Colombia.

Photography: World Bank | Flickr

Methodology

The formulation of the model proposal was conceived as a multi-method study that incorporates different phases and designs. Ministry teams, representatives of public and private insurers and providers, local health authorities, and groups of patients and their caregivers participated in different regions of the country.

Period of Duration

The study lasted three years, between the first half of 2021 and the second half of 2023.

Methods

The methods used to fulfill each objective are described in the figure below:

Figure 1. Methods of the multimorbidity care and management model. Proposal for a comprehensive healthcare management model for PMM and their caregivers. Colombia 2022

Review of national and international literature related to clinical, management, and financial aspects of multimorbidity	**Systematic review of model effectiveness**	A systematic search of the literature indexed in the databases Medline, Embase, Google Scholar, Cochrane Library, and Lilacs was carried out to identify the definition of PMM, type of diseases, definition, and models of care.. **More information**
	Realistic review of management and care	Aimed at the critical analysis of articles that address the phenomenon of multimorbidity and the management and care models for its approach from patients', families', caregivers' and professionals' points of view. **More information**
	Systematic review of financing	A systematic search of the literature indexed in the Medline and BVS databases was carried out to identify sources of financing, effectiveness, and economic evaluation studies, and forms of recognition and payment. **More information**
Study for the analysis of successful national multimorbidity management programs or models	A mixed analytical study was conducted to identify the characteristics of patients and multimorbidity programs in three EAPBs*, their network of services for this type of care, and one health service provider of the Colombian Teachers' Union (Magisterio Colombia). The mixed sequential exploratory design has a first qualitative phase of data collection and analysis, followed by a second quantitative phase of data collection and analysis based on the results of the qualitative phase. **More information**	
Design and implementation of a pilot test in the departments of Guainía, Risaralda, Cauca, Atlántico, Bolívar, and Bogotá	A qualitative research was conducted. It was based on the methodology of Participatory Action Research, which implied the definition and implementation of a strategy of technical assistance, accompaniment, and collaborative work. The object of study was the management and care processes and their implementation at each model level: meso, micro, and macro. **More information**	

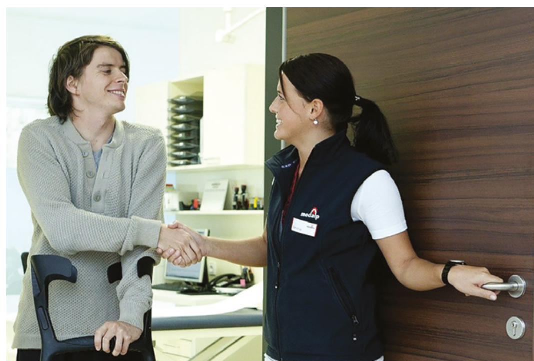
Continued on next page...

* By its acronym in Spanish

...Continuation. Figure 1. Methods of the multimorbidity care and management model. Proposal for a comprehensive healthcare management model for PMM and their caregivers. Colombia 2022

Exchange of national and international knowledge throughout the process with Brazil, Uruguay, and Chile	An exchange of national and international experiences and knowledge was held on the progress made in studies to improve the management of health services for patients with multimorbidity in the countries participating in the project to examine the methodologies for incorporating innovative management models for patients with multimorbidity into the institutional framework and public policy, and to make a joint reflection on the three experiences of the project and Chile.
Formulation of a proposal for a comprehensive healthcare management model for PMM and their caregivers in Colombia	Based on the results obtained from scientific evidence and successful experiences, a preliminary formulation of the model is made, which is then piloted and adjusted for a final version that includes the main results of the pilot test and allows the model to be adapted to the different country realities. **More information**

Source: The authors



Photography: Wilson Martínez Montoya

Results and Main Contributions to The Country and The Region

The main results of the proposed model are described in the following chapters.

Strategic Component

References

The references are the foundations for formulating and transforming the comprehensive healthcare management model of the PMM. Conceptual, public policy, normative, and empirical references were used. They are developed in a conceptual framework based on background, scientific, and empirical evidence. (See Figure 2)

Conceptual References

- **Systematic review related to the clinical effectiveness** of multimorbidity models, interventions, approaches, and management.
- **Realistic review** that looked for the underlying mechanisms and contexts through which these interventions work or do not work. Notions and dimensions of the physical, social, and spiritual multimorbidity of PMM and their caregivers were identified.
- **Systematic review** related to financing, costs and forms of recognition and payment.
- **Integrative review of the literature aimed at health risk management** related to multimorbidity, considering health risk and actuarial.

Public Policy References

- **Literature review of the public policy framework** of Colombia, in which the care and management model is developed.

Regulatory References

- **Regulatory review based on the recognition that health is a fundamental right** and the health system, an element that contributes to this materialization.

Empirical References

- **Successful experiences in the management and care of multimorbidity** in Colombia that included insurers and health service providers.
- **Results of the application and evaluation of a pilot implementation test of the model** at the levels of macro-management at the territorial level, meso-management through the EAPB* and micro-management in the IPS of six places in the country.

* By its acronym in Spanish

Figure 2. References of the multimorbidity care and management model. Proposal for a management and health care model for PMM and their caregivers. Colombia 2022

Background

Multimorbidity situation study

Study of the multimorbidity situation in Colombia (MSPS & BM, 2018)

More information

Scientific evidence

Literature Reviews

Empirical evidence

Pilot Test Successful Experiences

1. Model Effectiveness Systematic Review → Models Effectiveness Systematic Review (MSPS & WB, 2022)

Conceptual References

2. Care and Management Realistic Review → Care and Management Realistic Review (MSPS & WB, 2022)

3. Financing Systematic Review → Financing Systematic Review (MSPS & WB, 2022)

4. Risk Management Literature Review

Public Policy References → 5. Public Policy Literature Review

Regulatory References → 6. Regulatory Review

7. Review of Successful Care Management Experiences → Successful Care Management Experiences (MSPS & WB, 2022)

8. Pilot Test of the Care and Management Model Proposal → Model Pilot Test, a possible bet (MSPS & WB, 2023)

Care and Management Model for People with Multimorbidity (MSPS & WB, 2023)

Source: The authors

Model Definition

The management and care model for PMM and their caregivers is the set of approaches, attributes, strategies, resources, processes, and results of the health system for comprehensive health risk management (GIRS*) and comprehensive health care for PMM's physiological and existential needs.

Model Objectives

General Objective

To contribute to the health outcomes and quality of life of PMM and their caregivers at any time during their life course, with the support of families and the community, to advance in guaranteeing the right to health.

Specific Objectives

i. To promote comprehensive health risk management (GIRS*) of the groups at highest risk for multimorbidity.

ii. To guarantee comprehensive health care with availability, accessibility, quality, and acceptability to PMM.

iii. To strengthen PMM caregiver care actions.

iv. To promote adequate governance and financing of the management and comprehensive care of the PMM.

v. To monitor and evaluate the effectiveness of the multimorbidity healthcare management model.

Subject Population

The model is aimed at everyone with high risk and complexity as a result of the population stratification process according to risk, at any time in their lifetime, with multimorbidity (defined as the simultaneous presence of two or more chronic diseases), their

* By its acronym in Spanish

caregivers, their family, and their community. It is expressed in people at any age with:

The model is aimed at everyone with high risk and complexity as a result of the population stratification process according to risk, at any time in their lifetime.

Two or more chronic diseases from the eight prioritized risk groups (PRG):

1. RG1 Population at risk of or with evident cardio-cerebrovascular metabolic alterations
2. RG2 Population at risk of or with chronic respiratory diseases
3. RG3 Population at risk of or with presence of nutritional alterations
4. RG5 Population at risk of or with psychosocial and behavioral disorders
5. RG7 Population at risk of or with presence of cancer
6. RG9 Population at risk of or with presence of infectious diseases
7. RG14 Population at risk of or with orphan diseases
8. RG16 Population at risk of or with degenerative, neuropathies, and autoimmune disorders

and that meet one or more of the four characteristics of increased service use:

1. A yearly hospitalization in the Intensive Care Unit (ICU) for chronic PRG pathologies
2. An annual hospitalization in the Intermediate Care Unit (IMCU) for chronic PRG pathologies
3. Two annual hospitalizations for chronic PRG pathologies
4. Two annual emergency consultations for chronic PRG pathologies
5. Ten active ingredients dispensed monthly for chronic PRG pathologies

or that their annual cost exceeds 3 times the Capitation Payment Unit (UPC) of the age group and geographical area.*

- An annual value per person of three times the UPC* of their age group and geographic area

Tactical Component

Approaches

The proposed model's approaches seek to direct management and care towards the issues that are considered of interest, contributing to the needs, expectations, and preferences of the PMM and their caregivers, according to the notions and dimensions of multimorbidity identified in the frame of reference.

Rights and Differential Approach: The relationship that combines international human rights instruments and international humanitarian law with the decisions that public authority's issue to fulfill social needs. The rights approach implies the recognition of difference, diversity, interculturality, pluralism, inequality, and, likewise, the need to adopt policies based on the principles of equality, equity, non-discrimination, and non-stigmatization to guarantee the performance and protection of rights. The above implies recognizing the correct elements in the model proposed: availability, accessibility, quality, and acceptability, the benefit facet, and a differential approach to these rights that promote equity.

The rights approach implies the recognition of difference, diversity, interculturality, pluralism, inequality, and, likewise, the need to adopt policies based on the principles of equality, equity, non-discrimination, and non-stigmatization to guarantee the performance and protection of rights.

Salutogenesis Approach: It seeks to focus attention on the factors that help a person cope with stress, physical and psychological problems, and exposure to pathogenic factors, and through these, to boost the sources of self-regeneration and the power of self-healing. Therefore, the model explains how people can maintain and even improve their health in stressful life situations.

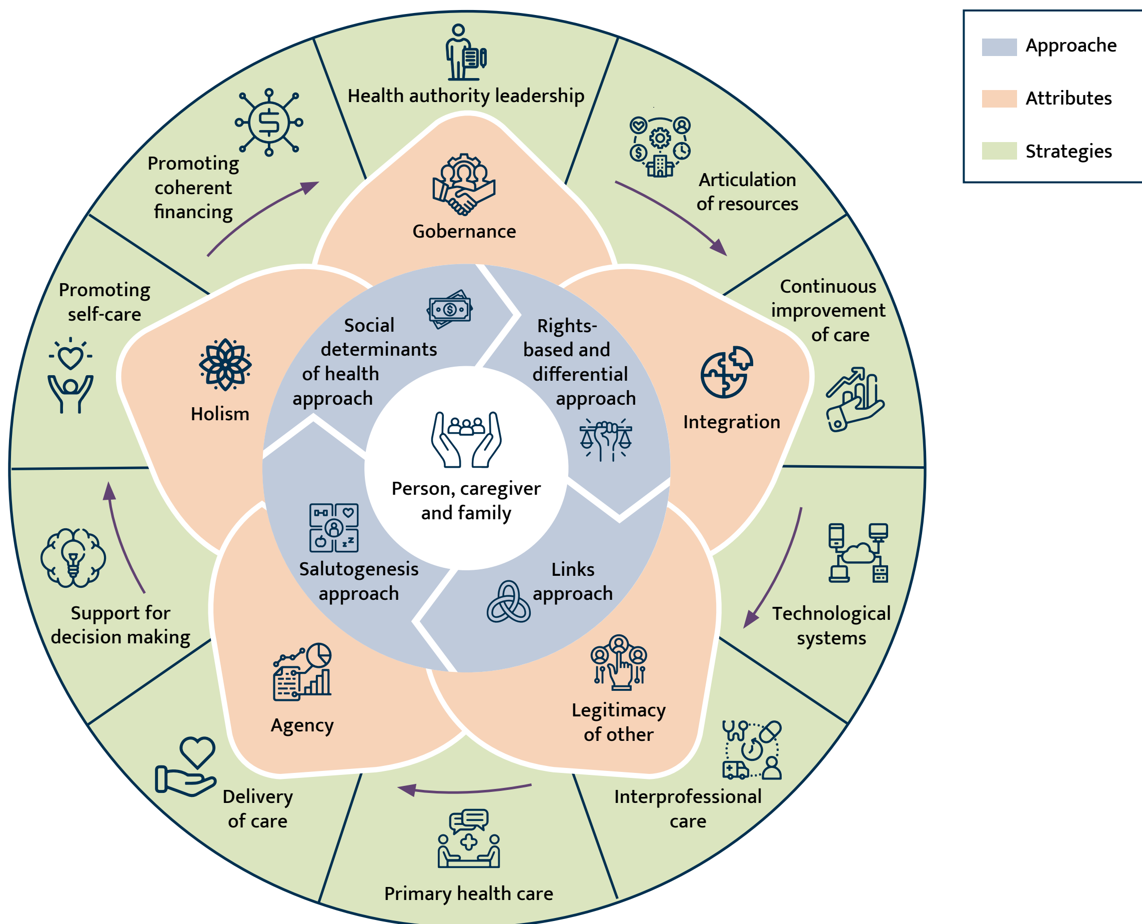
Social Determinants of Health (SDH) Approach: The circumstances surrounding people's lives influence their daily lives and health outcomes. The literature review revealed a significant association between multimorbidity, age, and a lower socioeconomic level. For this reason, the model seeks to influence SDH.

Approach centered on the Person, Caregiver, Family, and Community: It makes them participants and beneficiaries of health systems respond to the integral needs of the person and respect social preferences. The voice of the PMM, their needs, their expectations, and their preferences, the

main thing that ails them, are essential determinants when building the Personalized Care Plan (PCP), which is more likely to be successful when it is built along with the person and the family, responding to their needs.

Connection Approach: These bonds translate into the attributes of multimorbidity that can be enhanced or minimized depending on what connection is built and how it is expressed. The most relevant connections identified are those: of the subject with themself; between the caregiver family and the PMM, the reference professional at each level and the PMM, health professionals and the PMM at home, and between the members of the interprofessional team of Primary Healthcare Centers (PHCC) and Specialized Care Centers (CAE*), the PHC and CAE* teams, and the PMM, the family, and the community.

Figure 3. Elements of the tactical component. Proposal for a management and health care model for PMM and their caregivers. Colombia 2022



Source: The authors

* By its acronym in Spanish

Attributes

The attributes and characteristics of the model proposal that specify the approaches are described below:

Governance: The model takes up the elements of coordination, collaboration, and co-production in all strategic, care, support, monitoring, and evaluation processes. Especially in the strategic processes of intersectoral and sectoral coordination, the comprehensive organization of care, the organization and management of IHSN, contracting and payment methods, and the collaboration that promotes the co-production of knowledge that improves health and quality of life of the PMM among the different actors.

Agency: It recognizes a range of skills and knowledge about health and the environment in care subjects and caregivers, which allows them to make commitments, be creative in self-care, make health assessments, and have reflective attitudes and behaviors regarding health that trigger novel effects or transformations in the act of care and health. The reflective power of the agent or actor in health allows meaning to be given to care practices, support networks, and how they are inserted, adapt, and make decisions in the vulnerable circumstances of life.

Holism: It implies a paradigm shift in the traditional relationship of the "sick subject," which is fragmented and focuses on the affected organ and is treated from a bio-pathological perspective that aims to cure. In this attribute, the "sick subject" is re-signified as a person who has multiple physical, social, spiritual, and emotional needs that must be valued and prioritized within the framework of a dialogic, authentic, and meaningful relationship with a multi-professional team; and whose maxim is to improve the perception of well-being and quality of life of the person in a situation of multimorbidity and their family environment.

Comprehensiveness / Integration: These attributes are evident in the PCP, which is based on the needs of the PMM, in the comprehensiveness for the mobilization and articulation of social, community, and health system resources, as well as in transitional care, which links care in the hospital and primary care settings. Also, in interprofessional collaborative practice, to contribute to achieving of the goals and priorities agreed upon with the person in their PCP. This is observed in different elements of the model, such as the inter-institutional coordination tables or the operation in comprehensive health service networks.

Legitimacy of the Other: This concept was taken up by Humberto Maturana (Maturana, 1996), who starts from understanding that reality is co-constructed in situations of coexistence and that, therefore, it is not possible to legitimize any way of thinking, acting, understanding, or making sense of life over another. In this way, the notion of legitimacy of the other comes into a close relationship with that of agency since both constitute the possibility of equal relationships in diversity that break traditional power relationships. Therefore, this attribute determines the relationships between PMM, families, interprofessional teams, and community agents, based on respect for difference, authenticity, and reciprocity.

Strategies

The management and care model articulates strategies based on the relationship between approaches and attributes.

Primary Health Care (PHC): It is the articulating axis of the model. It implies the need to reorganize health systems and is the care interface because it articulates a diversity of community actors and resources, which enhance the agency capacity of the care subject.

Health Authority Leadership: It is necessary to highlight the need for a stewardship perspective as a collective action that includes health authorities and other actors, whether or not members of the State with a leadership role, and participation and co-creation.

Promotion of Coherent Financing: It is based on managing the main risks that affect the financing of the model in terms of the allocation of population and resources to cover the needs of the PMM and the operating conditions.

Articulation of Social, Economic, Environmental, and Community Resources: It transcends a traditional view of listing problems and needs, helping build and rebuild knowledge from the communities and through intersectoral and sectoral management.

Continuous Improvement of Care: It focuses on the person and their needs, involves them in their activities, and identifies aspects of the process susceptible to improvement to establish the necessary adjustments and exceed their expectations.

Strengthening Interprofessional Care: To provide the PMM with a coordinated and integrated interprofessional care network, encompassing different levels of the health profession and different disease specializations.

Use of Interoperable Technological and Information Systems: Interoperable HCEs* should be available given that PMMs often have multiple cares and must attend numerous healthcare sites, facilitating decision making at different levels.

Care Delivery: Healthcare is seen from the relationships and practices with oneself, others, and the environment. In this context, the review showed that periodic comprehensive evaluations of the person are necessary.

Support in Decision Making: Health professionals must include the person and, where relevant or at the person's request and consent, their family in making decisions about their care and treatment, such as goals and expected future outcomes.

Promotion of Self-Care – Self-Management: Staff support for self-management almost always aims to verify compliance with medical orders, not to develop or empower people's skills and resources.

In the operational component, the objectives proposed in the model are operationalized around how to contribute to the health results and quality of life of the PMM, to advance in the guarantee of the right to health.

Operational Component

In the operational component, the objectives proposed in the model are operationalized around how to contribute to the health results and quality of life of the PMM, to advance in the guarantee of the right to health, through the dimensions of care and management. (See Figure 4)

Care Aspect

The first two objectives related to (i) the promotion of Comprehensive Health Risk Management (GIRS*) for people with multimorbidity and (ii) the guarantee of health care with availability, accessibility, quality, and acceptability to the PMM are the main lines of action of the care dimension with activities and interventions aimed at the PMM and their caregivers, human resources in health, and actors in the health system.

- The GIRS's* line of action is executed through the identification, stratification, treatment, and monitoring and evaluation of population, collective, and individual risks in accordance with sectoral competencies.

* By its acronym in Spanish

- The comprehensive healthcare line of action is carried out through population, collective, and individual interventions for health promotion, prevention, diagnosis, treatment, rehabilitation, and palliation of the disease, and integration through managers, according to the scope of their competencies.

Photography: Freepik

The third objective, aimed (iii) at strengthening care actions for the caregiver, materialized in the second axis.

- The comprehensive healthcare line of action is through the intervention of comprehensive care for the caregiver.)

Management Aspect

The last two objectives, related to (iv) governance and financing of the model and (v) monitoring and evaluation of the effectiveness of the model, are instrumentalized through the management dimension in a systemic approach framework, which is based on the process management and results of the model, and the need for a health system that provides the elements for its development.

- Resource management through support processes.
- Strategic care process management ranges from public health to providing individual services as well as monitoring and evaluation.
- Result management.

In the model, management and care bring together different actors, strategies, and interventions within the framework of the SGSSS*, aimed at promoting the model's attributes: governance, holism, integration, agency, and legitimacy. To this effect, the model seeks to guide and organize PMM management within the framework of a systemic approach to resources, processes, and results at the following management levels:

- **Macro level:** It generates organization between different public administration systems at the national and territorial level, under the national leadership and governance of the MOH* and the ETSs* at the local level.

* By its acronym in Spanish

- **Meso level:** It generates organization within and between the health system insurance entities, such as the BPAC, the Occupational Risk Administrator (ARL in Spanish), and the Mandatory Traffic Accident Insurance Administrator (SOAT in Spanish), among others. It focuses on assurance operations, especially the PBS* from the BPAC.

Photography: Freepik

- **Micro level:** It generates organization within and between health service providers such as IPS, State Social Enterprises, Independent Health Professionals, and Special Patient Transportation Services, and other actors in the system that provide health services based on the IPS.

This component is developed through two inputs. The first is the management dimension, in which the necessary elements are presented, that is, they make it possible for the model to be viable and its effectiveness to be enhanced from the health system and its different actors. These are not the end of the model, but they are necessary means for its performance. Others that are also part of management are, for example, the focus on connections, which is only possible with the awareness, will, and commitment of the people involved in the model.

The second input, the attention dimension, is the "core" of the model. In this, the actions that are in contact with the PMM are developed through the GIRS* and comprehensive care according to the management, meso-management, and micro-management framework levels.

* By its acronym in Spanish

Figure 4. Objectives and dimensions of the operational component. Proposal for a healthcare management model for PMM and their caregivers. Colombia 2022

Contribute to the health and quality of life outcomes of people with multimorbidity and their caregivers

1. Promoting CHRM in people with multimorbidity

Comprehensive Health Risk Management (CHRM)
- CHRM population
- CHRM collective
- CHRM individual

1. Identification of the PMM territory/affiliate/assignee
2. Stratification of the PMM territory/affiliate/assigned
3. Treatment of the PMM territory/affiliated/assigned
4. Monitoring and evaluation of the PMM territory/affiliate/assigned

2. Guarantee comprehensive health care for people with multimorbidity

Public Health Management
1. Collective care plan
2. Participation at the table
3. Collaboration for the continuous improvement
4. Promotion of community assets
5. Support Networks Support
6. Referral to social services
7. Referral to health services

Cases Management
1. Individual Care Plan
2. Health Promotion
3. Healthy Habits Promotion
4. Individual Risk Prevention
5. Care Coordination
6. Continuity of Care
7. Integration of Care

Clinical Management
1. Personalized Care Plan
2. Shared Planning
3. Promotion of agency capacity
4. Pharmaceutical optimization
5. Functional and cognitive rehabilitation
6. Transitional Care Hosp - Home
7. Comprehensive care for the Caregiver

3. Strengthen care actions for the caregiver
1. Comprehensive Care for the caregiver

4. Promote adequate governance and financing of the model

Supporting Process Management
1. Human Resources Management
2. Knowledge Management
3. Management of health services and technologies
4. Infrastructure Management
5. Information and Communication Technologies Management
6. Management of financial resources

Strategic Processes Management
1. Public Policies Formulation
2. HBP Financing
3. Intersectoral and sectorial coordination
4. Comprehensive organization of care
5. IHSN Organization and management
6. Contracting and payments management
7. Actuarial risk management
8. Care Circuit Management
9. Changes Management

5. Monitor and evaluate the model effectiveness

Results Management
1. Process indicators
2. Result indicators
3. Effect indicators
4. Impact indicators

Management of monitoring and evaluation processes
1. Public health surveillance
2. Inspection, surveillance and control
3. Institutional monitoring and evaluation

People with multimorbidity (PMM)

Source: The authors

Management Aspect

Next, the comprehensive management component is described, which is the set of coordinated institutional and interinstitutional, and sectoral and intersectoral actions, to achieve the objectives of the model.

Management Levels of the Multimorbidity Model

Implementing the comprehensive multimorbidity management and care model requires a health system that is organized, prepared, and motivated to provide the organizational context conducive to the change that involves a set of interventions from different roles and managers. Management organization uses two tools:

- **Comprehensive process management:** The PMM's and their caregivers' lives go by in the processes in the health system in search of answers to their health needs, their expectations, and their health preferences. Therefore, the different levels of the health system are considered, given that if it were focused on just one of the levels, a response could not be given from the holism and integration and comprehensiveness that is sought.
- **Results management:** It allows aiming at harmony among the objectives, the management processes, and the lines of intervention for the care of the PMM to build a resource system that provides an adequate basis to influence the health results of the PMM.

The above requires a systemic vision of the management processes that are classified according to the direct impact on the PMM:

- **Strategic processes:** They adapt the model to the PMM's needs, expectations, and preferences, so they set the guidelines and help to achieve the objectives of the model at the different management levels.
- **Care processes:** They are those who are in direct contact with the user to provide benefits and care through population, collective and individual outreach interventions, for integrated and comprehensive care. They are the ones that create greater value and bring greater satisfaction to PMMs.
- **Support processes:** They generate the resources (physical, health services and technologies, knowledge, information technologies,

and economic) and the development of human resources in health that other processes require for their proper functioning.

- **Monitoring and evaluation processes:** They establish the standards, indicators and controls that allow us to know the behavior of the model, the results, and the achievement of the objectives for the continuous improvement of the different processes, based on the use of tools such as the Shewart cycle (plan, do, verify, act).

Implementing the comprehensive multimorbidity management and care model requires a health system that is organized, prepared, and motivated to provide the organizational context conducive to the change that involves a set of interventions from different roles and managers.

The processes presented in the model are complex because they involve different actors from the health system and from other sectors that are crucial for the management of SDH. Therefore, the proposed process architecture for the model is as follows:

- **First level:** Global representation of the integrated processes of the model as a whole.
- **Second level:** Representation of processes for each macro, meso, and micro-management levels.
- **Third level:** Representation of processes at the institutional level for each of the levels.
- **Fourth level:** Representation of the subprocesses at the institutional level for each of the levels.

The processes described in this model are those on the first level with the aim of adopting and adapting them at the following levels under the country's institutional realities. Below is the process map with the first-level architecture.

Figure 5. Architecture of the integrated processes of the first level. Proposal for a management and health care model for PMM and their caregivers. Colombia 2022

Public Policies Formulation | Benefit plan financing | Intersectoral and sectorial coordination | Population Stratification According to Risk | Comprehensive and Integrated Networks | Actuarial Risk Management | Contracting and Payments Methods | Care Circuit | Changes Management

PMM Needs and Expectations

Public Health Management	Cases Management	Clinical Management
Population and Collective CHRM	Collective and Individual CHRM	Individual CHRM
Collective Care Plan	Individual Care Plan	Personalized Care Plan
Participation in the coordination tables	Health Promotion and Maintenance	Shared Decision Making
Collaboration for improvement	Promotion of Healthy Habits	Promotion of Agency Capacity
Promotion of community assets	Prevention of risks and diseases	Pharmaceutical Optimization
Promotion of Support Networks	Care Coordination	Rehabilitation and Preservation Measures
Referral to social services	Continuity of Care	Hospital-Home Transitional Care
Referral to Health services	Integration of Care	Comprehensive Care for the Caregiver
ETS*	EAPB*	IPS

Improving the PMM Quality of Life

Support Process

Human Resources Management | Health Services and Technologies Management | Infrastructure Management | Knowledge Management | Information Technologies Management | Financial Resources Management

Monitoring and Evaluation Processes

Inspection, Surveillance and Control | Public Health Surveillance | Processes Monitoring and Evaluation | Products Monitoring and Evaluation | Effects Monitoring and Evaluation | Impact Monitoring and Evaluation

Source: The authors

Strategic processes: adapt the model to the PMM's needs, expectations, and preferences, so they set the guidelines and help to achieve the objectives of the model at the different management levels.

* By its acronym in Spanish

Care Aspect

Multimorbidity care organizes different actors, strategies, and interventions within the SGSSS* framework at the three proposed levels.

Levels for Multimorbidity Care

According to what is reported in the literature reviews, to promote integrality and holism, models, approaches, strategies, or interventions are proposed, which translate into notions such as: person-centered care, PCP, comprehensive care, and interprofessional care, among others (Aggarwal et al., 2020; Berntsen et al., 2018; Boeckxstaens et al., 2020; Mann et al., 2018; Oksavik et al., 2021; Orbett et al., 2020). From these notions, the focus of multimorbidity care is the needs prioritized by the person in conversation with the interprofessional team and their caregiver, and on these needs a PCP is agreed upon that is dynamic, determines the goals, objectives and activities that can be achievable and seek the maximum level of well-being of the person in a situation of multimorbidity (Hernández-Zambrano et al., 2022).

Likewise, this roadmap is the main line of comprehensiveness for mobilizing and articulating social, community and health system resources to promote the salutogenesis approach. Primary and specialized care health personnel, community assets, and informal care networks must ensure continuity of care or care coordination. This implies that everyone who participates in the process will recognize that responsibility is not fragmented; it is not a question of each person fulfilling a task, but rather that there is co-responsibility that can ensure cooperation, conversation, and co-creation of the route path that each care subject and caregiver can follow to achieve well-being (Hernández Zambrano et al., 2022).

From this point of view, relevant documents in the global context, such as the NICE Guide for Clinical Evaluation and Management of Multimorbidity and the Integrated Care Process for the Care of Pluripathological Patients (Junta de Andalucía, 2018; NICE Guideline, 2016), plus the evidence from the systematic and realistic review (Hernández Zambrano et al., 2022; Latorre Castro et al., 2022) concur in the key

* By its acronym in Spanish

components for care: identification of the population, MA for the identification of needs, the PCP and the articulation of health system and community actors.

According to what is reported in the literature reviews, to promote integrality and holism, models, approaches, strategies, or interventions are proposed, which translate into notions such as: person-centered care, PCP, comprehensive care, and interprofessional care, among others.

On the other hand, regarding the contexts conducive to care, the realistic review of the literature shows that the household and the care of the PHCC in the framework of the PHC are the conducive territories for care and self-care for attention to complex chronic cases (Hernández Zambrano et al., 2022). This implies consolidating comprehensive care circuits, organized from the IHSN of health insurance, led by the PHCCs within the framework of the PHC, and involving ETS* and community actors, to promote the satisfaction of needs in complex chronic cases.

The model aims to guide and organize PMM's comprehensive health care according to the literature and the approach to the reality of the Colombian health system. This means pooling the different actors' efforts in performing their powers at the different macro, meso, and micro levels.
The model identifies the GIRS* as a care process, which is developed in the four stages of risk identification, risk evaluation and measurement, risk treatment and control, and monitoring and evaluation. Its contents are obtained
from current regulations, the evidence available in the literature and the pilot study's findings that indicated a set of recommendations to adapt the proposed model to the territories and the actors and resources of the SGSSS*.

From the GIRS*, it is carried out for each of the macro-management, meso-management, and micro-management levels. The stages are developed as seen in Figure 9 and are described in detail in this dimension and general below:

- **Risk identification** must be carried out at all levels. The macro level begins with the characterization of the PMM and the health risks in the

* By its acronym in Spanish

territory with the Health Situation Analysis (ASIS) and the PIC's* home visits; the meso level with the characterization of the PMM and its individual risks; and the micro level with the identification of the PMM due to demand induced by the information sent by the BPAC.

- **Risk evaluation and measurement** with different instruments, statistical methodologies, and a set of scales according to the risk level and type are used to stratify the PMM and to identify the population subject to the management and care model.
- **Risk treatment and control** are carried out through a specialized management process, and care plans composed of the interventions proposed for each of the different levels are derived that effectively respond to the health needs, expectations, and preferences of the PMM, their caregiver, their families, and their communities.
- **Risk monitoring and evaluation** focus on macro-management of the PMM's quality and well-being indicators; on the meso-management on indicators of mortality, morbidity, and sequelae in the PMM; and on micro-management on clinical indicators that account for clinical, functional, psychological risk and transversal indicators for monitoring the processes, products, and effects of the care and management model for the PMM and their caregivers.

Figure 6. Comprehensive health risk management at different levels of PMM management and care. Proposal for a healthcare management care model for PMM and their caregivers. Colombia 2022

PMM Identification

Level	
Macro	PMM Characterization in the territory
	• Public Health Risks and SDH
Meso	Characterization of the assigned PMM
	• Morbidity risks and risk preferences
Micro	Characterization of the assigned PMM
	• Clinical, functional, psychological risks and values

PMM Measurement and Assessment

Level	
Macro	Statistical method of rate difference
	• Measurement of Health inequalities
Meso	Charlson and Kaplan-Fleintein Scales
	• Measurement of chronic pathologies severity
Micro	Battery of scales
	• Measurement of capabilities, complexity and resources

Public Health Management Macro Resident PMM

Case Management PMM assigned Meso

Micro assigned PMM clinical management

Monitoreo y evaluación de PMM

Level	
Macro	Public Health Risk Control in PMM
	• Quality of life/Well-being indicators
Meso	PMM Risk Profile Control
	• Mortality/Morbidity indicators
Micro	PMM Clinical Risk Management
	• Clinical/Functional Indicators

PMM Treatment

Level	
Macro	Public Health Management
	• Collective Care Plan/Population and Collective Interventions
Meso	Case Management
	• Individual Care Plan/Collective and Individual Interventions
Micro	Clinical Management
	• Personalized Care Plan/Individual Interventions

Source: The authors

Photography: DCStudio en Freepik

Projection or future possibilities

The future possibilities of this proposal for a comprehensive health care and management model for PMM and their caregivers in Colombia are linked to the following aspects:

1. Healthcare for the PMM within a framework of the right to health - with elements of availability, accessibility, quality, and acceptability, and PHC - aiming at a more personalized, comprehensive, integrated, effective, technologically advanced, and preventive care focused on the PMM. This is the way forward to improve the PMM's quality of life and to overcome the fragmentation of supply and the segmentation of people by pathologies.

2. The model scaling-up at the national level is a bold undertaking that would allow for model adaptation to different territories, in different contexts of health insurance and provision of services as a necessity for the care of millions of people in the country who today live in a condition of multimorbidity and could benefit from a holistic and interprofessional view, such as the one in the proposed model.

3. The model must be integrated into public policies that guarantee care in terms of availability, accessibility, quality, and acceptability of health services for the entire population in the national territory, especially in marginalized areas or areas with low population density. This includes model organization with existing tools such as the IHSN and the Comprehensive Health Care Routes (CHCR), among others.

4. The training of transdisciplinary human talent with a focus on the right to health, PHC, complex chronicity, and multimorbidity, among other aspects, is a challenge against which the country needs to advance. This involves aspects of public policy, university training,

continuing education, and intersectoral and transdisciplinary work in the sector between the different agents of stewardship, insurance, and provision.

5. The model must have a complete and self-contained document that presents the entire model and serves as a reference guide to resolve concerns. It should also have a set of training documents that are short, simple, punctual, and specific in their recommendations, didactic and pedagogical, so that they can support the change management, training, and retraining processes.

6. The payment methods must complement the model to seek the alignment of incentives with the model's objectives and reduce the risk selection that may be presented to the PMMs. This includes the UPC's* epidemiological risk adjustment, the prospective and value-based payment methods between insurers and providers, and the payment methods for human resources in health.

7. The exchange of experiences between different countries is a fundamental element of knowledge management, PMM management and care models. This includes having knowledge exchange networks around multimorbidity and spaces for meeting and co-creation of legislators, regulators, insurers, providers, State and Non-State agencies, PPM, caregivers, and the community.

Photography: World Bank | Flickr

Multimorbidity is seen today as one of the greatest challenges for health systems health in all countries. It requires innovations in the conception, organization and management of health systems, in the training and exercise of human talent, in the understanding of the person as a whole, in the prescription of medications, in interprofessional care, and in the quality of care required by those who have multimorbidity condition.

The project "Improving the management of health services for patients with multiple chronic diseases in three Latin American countries, Brazil and Colombia and Uruguay" has focused its focus in recent years on studying and proposing alternatives to confront multimorbidity in an innovative way.

In Colombia, in conjunction with the country's Ministry of Health and Social Protection (MOH*). The studies have had two phases: a first diagnostic phase and a second, oriented to the design of a proposal for a comprehensive health care and management model for people with multimorbidity (PMM) and their caregivers. The data from the study of diagnosis show that Colombia presented a prevalence of multimorbidity of 19.5%, for all ages during the period 2012 – 2016. In the future this prevalence may be higher. According to data from the Colombian MOH* between 1985 and 2020, the proportion of older adults in the country went from 6.9% to 13.8%, and it is estimated that it will exceed 16% by 2030.

The components of the second phase of the project are:

1. Review of national and international literature related to clinical aspects, management and financial of multimorbidity
2. Identification of successful national health management programs or models multimorbidity.
3. Formulation of a preliminary management and comprehensive care model for the multimorbidity
4. Design and implementation of a pilot test.
5. Exchange of national and international knowledge throughout the process with Brazil, Uruguay and Chile
6. Formulation of the final model proposal.

This document includes the proposal for the comprehensive management and care model of the health of PMM and their caregivers in Colombia, which incorporates elements of the theoretical references, of successful national and international experiences and adjustments and recommendations resulting from the pilot test.

---

* By its acronym in Spanish