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Article

Analysis of Community Vulnerability Using Standardised Health Indicators: Health Systems as a Source of Community Information

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Abstract

Background: Knowledge management in global health is essential in response to ageing populations, increasing morbidity, and rising expectations of care. The Knowledge Model about Person Care promotes health systems organized around individuals rather than diseases. Within this framework, vulnerability—understood as the risk of physical or moral harm—can be assessed through Basic Care Variables (BVC) that determine individuals’ need and capacity for self-care. Primary care health information systems provide an opportunity to operationalize these variables at the population level. **Methods:** This study applies Deductive Methodology to extrapolate community-level health indicator data to population-level vulnerability measures. Using the electronic Primary Care Objective Monitoring tool (e-SOAP) from the Community of Madrid, we analyzed health and social care indicators derived from primary care clinical information systems. The mathematical architecture of selected indicators was used as an approximation to Model-Based Systems Engineering. **Results:** Primary care indicators enabled the identification and aggregation of community-level data reflecting BCV. The system supports multi-level analysis (regional, managerial, institutional, and professional), facilitating grouped and anonymized data extraction for future vulnerability assessment. **Conclusion:** A minimum set of primary care indicators can effectively estimate community vulnerability, supporting person-centred health system management and informed decision-making.

Keywords: health information systems; systems; communities; community health status indicators; community health status indicators; primary healthcare

1. Introduction

In the global health sector, knowledge management is particularly relevant amid a multitude of challenges, including an ageing population with higher morbidity, greater expectations of social and

health services, and technological and scientific developments [1]. It is necessary to implement technological advances in the health system based on a model of care centred on the main client of these services: the individual. For this reason, health systems and services designed 'for and with people' are encompassed in the concept of Person-Centred Care (PCC), defined as an approach "to care that consciously adopts the perspectives of individuals, carers, families and communities as participants and beneficiaries of reliable health systems that are organised around the comprehensive needs of individuals, rather than individual diseases, and respect [2].

The Knowledge Model about Person Care combines knowledge management on care from ontologies with standardised languages and is geared towards computational application for health decision-making management, placing the focus on the individual. [3,4].

In this model, the person is observed within the healthcare system through their vulnerability, understood as the possibility of being hurt or suffering physical or moral injury. [4-6].

Vulnerability can be observed at the individual level, as demonstrated by the studies of Batalla et al. [6] and Gonzalez et al. [4,7-11] but it can also be studied at the community level, as supported by the studies of Sierra et al [5].

This vulnerability can be estimated based on a set of Basic Variables of Care (BVC) that are inherent characteristics of every person and will determine their need and ability for self-care. [5,6]

Health information systems are available to gain insight into these basic variables of care within the health system. A health information system (HIS) is the socio-technical subsystem of a health-related environment that encompasses all data, information and knowledge processing, as well as the human or technical actors associated with their respective roles in data, information and knowledge processing [12].

Twenty years ago, the Community of Madrid (Spain) designed a plan to improve primary care (the first level of healthcare in Spain) that included a standardised information system capable of integrating different levels of responsibility and components of care. This information system takes the form of a dashboard in a digital environment known as e-SOAP (electronic primary care objective monitoring). [5,13,14]

Currently, e-SOAP has a Specific Dashboard consisting of a series of indicators aimed at clinical management to improve care processes. Each indicator offers four levels of aggregation: Community of Madrid, Healthcare Management (division of the territory for healthcare), Health Centre Director and healthcare professional. In this regard, professionals can access information on their assigned patients (population quota) and export the grouped and anonymous data to an Excel® file [5,14].

Given this context, a reorientation of healthcare information management in health systems is proposed, identifying primary care (PC) as the key level of care for obtaining population data in the form of community indicators that provide information on Basic Variables of Care and, therefore, on the community vulnerability of populations, as demonstrated by the studies by Sierra et al [5].

This application of grouped indicators has also been carried out in international settings, such as in the research by Zhang et al, where they analyse public service welfare using institutional and community welfare indicators [15].

Likewise, the use of community-based clinical and sociodemographic data has also been employed to determine the health status of vulnerable populations in international settings, such as in the research carried out by Chen Xia et al. who developed a spatial-temporal framework for assessing community vulnerability by integrating human mobility with demographic characteristics [16], as well as in the research by Deziel, Nicole C et al., who assessed the spatial distribution, variability, and relationships between different metrics of social vulnerability and isolation in urban and rural settings [17], and the studies by Chien Lung-Chang et al., who developed the community vulnerability index optimised for the specific demographic prevalence of COVID-19 at the census district level [18].

The study uses Deductive Care Methodology (DCM) [19] for the population extrapolation of community health indicator data to population data, using the mathematical architecture of the

selected indicators themselves, i.e. using primary care clinical information systems as an approximation to Model-based systems engineering (MBSE) [20].

The research proposes studying a series of health and social care indicators from the primary care clinical information system using the electronic tool for monitoring primary care objectives (e-Soap) [5].

Therefore, the objective of this research is to identify the minimum set of health indicators belonging to the primary care health information system that allow for the analysis of population vulnerabilities.

2. Materials and Methods

The study is observational, retrospective, cross-sectional, and uses Deductive Care Methodology (DCM) [19] to draw inferences about the logical relationship between health indicators and BVC using Karnough tables .

Scope

The study is being conducted in the Community of Madrid (Spain), at the primary care level, in the Eastern Healthcare Directorate.

Period

The data collected corresponds to the period 2025–2026.

Study sample

The sample consists of 382 indicators from the specific e-Soap scorecard of the primary care clinical information system.

Process

The research was divided into the following phases in order:

2.1. Phase 1 Piloting of Community CVI Calculation Using e-Soap Indicators

A total of 18 indicators from the specific e-Soap scorecard related to the BVC of a population group of 2,106 people were selected with the approval of the Medicines Research Ethics Committee (CEIm) of the Príncipe de University Hospital (Code: OE 06/2024) [5].

Once the relationship was established, the range value of the VBC to which the indicator was linked was detailed according to the CVI index [5]

The selected indicators reported on the healthcare outcomes of a group of people in the sample, but did not report on the total, so the Vulnerability Correction Factor was developed to estimate a weight adjusted to the actual population analysed

Finally, by applying the FCV, the final community IVC of the sample was calculated, obtaining a value of 1.95. This phase was published and validated in 2025 in ‘Community Vulnerability: Measuring the Health Situation of a Population After COVID-19 Through Electronic Health Record Indicators’ [5].

2.2. Phase 2: Identification of Indicators for the Specific e-Soap Scorecard Related to BVC

The pilot phase demonstrated that the relationship between the selected indicators and the BVC made it possible to calculate the community vulnerability of population groups.

In the second phase, the largest number of indicators from the specific e-Soap scorecard that provided information on BVC were identified in order to estimate future community vulnerabilities of greater magnitude (communities, districts, etc.).

382 e-Soap indicators that make up the specific scorecard were selected and screened using the following selection criteria:

Identification Phase (Screening):

- Round 1: indicators not directly linked to the clinical activity of the primary care team composed of doctors, nurses, and paediatricians were excluded. Indicators belonging to support units were excluded: home palliative care support team, midwife, physiotherapy, and oral health..

- Round 2: indicators that were not operational at the time of the study were excluded. Indicators that are e-SOAP but without data measurement for the study period.

Eligibility Phase

- Round 3: indicators associated with the COVID-19 process that arose specifically ad hoc during the pandemic were excluded because they showed changes in the definition of the indicator.

Inclusion Phase

- Round 4: In the final round, the definitions of the indicators that made up the eligible sample were analysed in order to select the minimum set that would allow the health care outcomes of the study population to be represented..

The exclusion criteria for the final round were:

Indicators associated with administrative processes Example: use of the healthcare system, synthetic nursing care index (related to the total number of care plans recorded) with the recording in medical records of certain health status monitoring tests, the presence of which implies the measurement of the indicator and without which the indicator would not have data for its use. Indicators characterised by the classification of patients at a certain level of follow-up at the discretion of the clinician were also excluded, as this could lead to clinical bias, given that each clinician prioritises and manages the care of the population according to their professional criteria, and may carry out more or less follow-up of certain health processes.

Finally, after applying the selection criteria, 170 indicators were selected.

2.3. Phase 3: Structural Analysis of the 170 Indicators and Their Relationship with BVC

The indicators in the specific e-Soap scorecard had a common structure, were organised into 12 “types”, and each of the “types” was divided into “blocks”, with a total of 52 “blocks”.

Using a deductive methodology based on propositional logic and Karnough tables, the ‘type’ categories of the 170 indicators were related to each of the BVC [5,6] shown below:

- Age : classification of people according to their stage of maturity from birth to old age.
- Developmental state: continuous sequential physiological, psychological, and moral changes throughout a person’s life.
- Gender: Perception of attitudes or behaviours that limit the capacity for self-care based on stereotypical social roles related to the internal experience of gender roles.
- Culture: Level of attachment that a person perceives with their current place of residence in the physical, emotional, and functional context. This attachment must be reciprocal between the community and the person..
- Family System of Care: Care system that encompasses the knowledge, skills, and attitudes that the family imparts to the individual..
- Individual System of Care: Care system that integrates knowledge, skills and attitudes to meet the needs and develop the abilities of the individual.
- Physical limitations: Presence of any type of physical or physiological limitation.
- Psychological limitations: Difficulty with mental processes related to learning, thinking, reasoning, and judgement.
- Sensory limitations: Difficulty perceiving external and internal sensory stimuli to which the individual responds (sight, hearing, smell, taste, and touch).
- Environmental Factors: Influence of environmental factors in conditioning a person’s ability to practise self-care in some way
- Material Resource: Amount of material resources that a person may have or seek for self-care.
- Material Resource: Amount of time a person can have or seek for self-care.

Specifically, the aforementioned BVC were linked using Karnough tables to the following 12 ‘type’ categories of the 170 indicators in the specific e-Soap scorecard:

- Anticoagulation: includes population over 14 years of age undergoing anticoagulant treatment

- Control panel for elderly patients: includes population aged 65 years and older
- Nursing care: includes all life stages in the population under analysis with a record of care plans
- Healthy lifestyles: includes all life stages in the population under analysis
- Child population: includes population up to and including 15 years of age
- Polymedicated: includes only population aged 74 years and older
- Priority chronic processes: includes population over 14 years of age with a medical history of high blood pressure, diabetes, COPD, asthma, hypercholesterolaemia, heart failure or ischaemic heart disease
- Chronic processes: level of intervention: Includes individuals over the age of 14 with a medical history of any of the following health problems: high blood pressure, diabetes, COPD, asthma or hypercholesterolemia, heart failure or ischaemic heart disease, and the level of intervention assigned by the primary care professional based on the information provided by the stratification tool (healthy population, pregnancy and/or childbirth, acute pathology, chronic disease in 1 system, chronic disease in 2 or 3 systems, chronic disease in 4 or more systems, neoplasms [21]) and the individualised and comprehensive knowledge of the patient possessed by the professionals [22].
- Prevecolon: This is a secondary prevention programme for colon cancer which, according to regulatory criteria, includes the population over 50 years of age.
- Community health: includes all records of group and individual health education workshops at all stages of life for the population under analysis
- Follow-up reports upon discharge: includes all types of population with hospital discharge reports
- Vaccination: includes all populations with a recorded vaccination history.

This content analysis includes the definition of each BVC and the definition of the indicator category type to establish whether or not they provided information on that BVC. For example, if the category type in its definition referred to the age of the population (e.g., population over 14 years of age), it was positively related: ('Yes') with the basic variable of age care. Another example is that if the type category referred to the care behaviour of individuals, such as 'healthy eating', this type category was associated with the BVC individual care system through a positive relationship: ('Yes')

Subsequently, this methodology of relating using Karnaugh tables was carried out in the same way with the structure of the 52 'blocks' of indicators. As indicated above, each type category was divided into blocks, the structure of which is shown below:

- The anticoagulation type was subdivided into two blocks: coverage and effectiveness.
- The Control Panel for Elderly Patients type was subdivided into six blocks: population stratification, activity, care processes, care plans, effectiveness, and pressure ulcers.
- The type of nursing care was subdivided into six blocks: effectiveness, risk groups, registered population, population served, care processes, pressure ulcers.
- The healthy lifestyle type was subdivided into two blocks: adult population and child population.
- The child population type was subdivided into three groups: breastfeeding, acute conditions and vaccinations.
- The polymedicated type was subdivided into three blocks: polymedicated programme coverage, care and safety.
- The type of chronic conditions prioritised was subdivided into nine blocks: asthma, ischaemic heart disease, diabetes, chronic kidney disease, cardiovascular disease, chronic obstructive pulmonary disease (COPD), high blood pressure, stroke and heart failure.
- Chronic processes with intervention levels were subdivided into five blocks: assigned intervention levels, stratified chronic patients, overall intervention levels by risk levels, adequacy of resource use by chronic patients, and adequacy of resource use by chronic patients with high intervention levels per month.

- The prevecolon type was subdivided into four blocks: participation in the programme, positive faecal occult blood test, screening report, and risk allocation.
- Community health was subdivided into three blocks: level 1 asset prescription (resources that generate well-being and are recognised by the community, such as sports centres [23]), level 2 group activity, and level 3 community activity.
- The type of follow-up reports upon discharge was subdivided into seven blocks: monthly telephone follow-up upon discharge, annual telephone follow-up upon discharge, monthly management of the health centre by area of influence, annual management of the health centre by area of influence, monthly telephone follow-up upon discharge with a high level of intervention, annual telephone follow-up upon discharge with a high level of intervention, follow-up upon discharge with heart failure or COPD.
- The vaccination type was subdivided into two blocks: adult vaccination and childhood vaccination.

2.4. Phase 4: Relationship Between the 170 Indicators and the BVC

In this second phase, two rounds were carried out using a mixed two-phase methodology, including analysis by a group of experts to reach a final consensus.

Round 1: content analysis was established following a propositional logic methodology using Karnough table analysis [19] establishing whether the numerators and denominators of the 170 were associated with each of the BVC through content analysis. This content analysis includes the definition of each BVC and the definition of the numerator and denominator of the indicators to establish whether or not they provided information on that BVC [5,6].

For example, the indicator “Patients with arterial hypertension with age-adjusted blood pressure monitoring”, the indicator displayed the numerator: [Patients aged 15 to 79 years with diagnostic criteria for ischaemic heart disease, with active medical history and a blood pressure reading $\leq 140/90$ in the last year] $\times 100$ was related to the BVC “physical limitation”, and also referred to a specific age group, which is why it was also related to age-related BVC.

Round 2: Using the think aloud methodology with the expert group, a final consensus was sought [24] for the 170 final indicators selected and the indicator-BVC relationship results obtained in Round 1.

The group of experts consisted of a total of 13 people, forming a multidisciplinary team with more than 8 years of clinical experience in primary care.

The team consisted of a doctor specialising in family and community medicine and medical care director, a nurse specialising in family and community nursing, with a master’s degree in management and nursing care director for the area, a nurse specialising in family and community nursing and responsible for community health in the area, a doctor specialising in family and community medicine and head of health centres in the area, a nurse specialising in family and community nursing, with a master’s degree in management and school health and head of health centres in the area. a nurse with a PhD in health sciences, a PhD in computer science, a specialist in family and community nursing, and a care nurse at a local health centre; a nurse with a doctorate in computer science, a master’s degree in nursing informatics, and head of research at the Santa Cristina University Hospital in Madrid; a nurse specialising in family and community nursing, with a master’s degree in self-care management and working as a nurse in a local health centre; a nurse specialising in family and community nursing, with a master’s degree in management and administration and working as a nurse in a local health centre; a nurse specialising in family and community nursing and head of the area’s patient care unit, a doctor specialising in family and community medicine and head of health centres, a nurse with a master’s degree in management and head of health centres in the area, a nurse specialising in family and community nursing, with a master’s degree in gender and health and a support nurse in the area’s patient care unit..

The expert group meeting was structured as follows: PowerPoint presentations by those responsible for the lines of work; a question and answer session to ensure that the members of the

expert panel understood the material presented and to generate discussion on the results of the Round 1.

Two meetings were held to reach a final consensus with experts.

First meeting: the selection of the 170 final indicators was presented to the experts, offering them the possibility of including new indicators that had been excluded during the methodological process and that, based on clinical and management criteria, they considered should be included. At this stage, the 13 experts were in complete agreement with the selection of indicators chosen for the list.

Second meeting: consensus was reached with experts on the indicator-BVC relationship defined in round 1. Experts were asked to rate their level of agreement with the indicator-BVC relationship using a 10-point Likert scale (1 = strongly disagree to 10 = strongly agree). This scale was chosen to increase the variability of responses and improve the reliability of the elements that reached consensus. The midpoint of the scale was intentionally excluded to ensure that panellists made a positive or negative decision on each statement [25] After each part and at the end of the meeting, participants were given the option to propose modifications to develop the visual design.

The consensus was defined a priori, such that at least 90% of the experts had to strongly agree or totally agree (score ≥ 8) on the indicator-BVC relationship presented in Round 1.

Ethical Considerations

The research does not collect or identify individual persons (it does not consult the Autonomous Personal Identification Code) at any time during the consultation carried out in the clinical information system referring to the electronic medical record. Researchers cannot identify personal data because they have general data at the level of qualitative description of the indicator content.

3. Results

Each result is related and numbered according to the phases outlined in the methodology.

3.1. Phase 2: Identification of Indicators for the Specific e-Soap Scorecard Related to BVC

A final sample of 170 indicators was selected, which are shown in Table 1, including the indicator code, label, numerator, and denominator.

The results are shown in Table 1.

3.2. Phase 3: Structural Analysis of the 170 Indicators and Their Relationship with the BVC

Of the total number of BVC, at least four BVC were related to the type categories. Specifically, the age variable was related to seven “type” categories, the physical limitations variable was related to five type categories, the individual care system variable was related to two type categories, and the family care system variable was related to one “type” category.

The data are shown in Table 2.

The relationship between the “type” categories and the BVC was inherited for the “block” category, as this category was a subtype belonging to the “type” categories.

Based on this inherited relationship, each of the block categories was reanalysed to see if they presented new relationships with the BVC that had not been previously identified.

Of the total of the BVC, at least 4 BVC were related to specific block categories. The age variable was related to 34 block categories, the physical limitations variable was related to 29 block categories, the individual care system variable was related to 3 block categories, and the family care system variable was related to 4 block categories.

The data are shown in Table 3.

Table 1. Identification of indicators for the specific e-Soap scorecard related to BVC.

Indicator Code	Indicator Label	Numerator	Denominator
5.65.00	Follow-up of adult patients on oral anticoagulation therapy with VKAs	Number of persons over 14 years of age with an active prescription for acenocoumarol or warfarin with at least 2 INR measurements in the last 6 months and who have established the range	Number of persons over 14 years of age with an active prescription for acenocoumarol or warfarin with at least 2 INR measurements in the last 6 months and who have established the range
5.65.01	Stratification of thromboembolic risk in patients receiving anticoagulation therapy with VKAs	Number of patients >14 years old receiving VKA anticoagulation with thromboembolic risk stratification at some point since the start of anticoagulation	Number of patients >14 years old receiving VKA anticoagulation with thromboembolic risk stratification at some point since the start of anticoagulation
5.65.04	Patients well controlled with VKA by direct method (% INR within range)	Number of patients >14 years of age on VKA therapy followed in primary care with >70% of INR measurements within the therapeutic range in the last 6 months	Number of patients >14 years of age on VKA therapy followed in primary care with >70% of INR measurements within the therapeutic range in the last 6 months
5.65.05	Thromboembolic complications in patients receiving anticoagulation therapy with VKAs	Number of patients >14 years of age undergoing treatment with VKA followed up in primary care whose medical records show at least one new thromboembolic episode in the last year.	Number of patients >14 years of age undergoing treatment with VKA followed up in primary care whose medical records show at least one new thromboembolic episode in the last year.
5.65.06	Major bleeding complications in patients receiving anticoagulation therapy with VKAs	Number of patients undergoing treatment with AVK monitored in primary care whose medical records show at least one episode of major bleeding complications in the last year.	Number of patients undergoing treatment with AVK monitored in primary care whose medical records show at least one episode of major bleeding complications in the last year.
2.70.10	People aged 70 or older in institutional care	number of people aged 70 or older in institutional careX100	number of people aged 70 or older
9.70.17	Chronic patients with assigned intervention level $\geq$ 70 years old	number of patients with chronic conditions and assigned intervention level $\geq$ 70 yearsX100	number of patients with chronic conditions aged 70 or older
9.70.18	% Chronic patients in social and healthcare institutions with an intervention level of $\geq$ 70 years	numero de personas con patologia cronica estratificada que residen en instituciones sociosanitarias con NI asignando $\geq$ 70 añosX100	Number of people with stratified chronic conditions residing in social and healthcare institutions aged 70 or over
9.70.19	Chronic patients with high risk level and assigned intervention level ($\geq$ 70 years old)	Chronic patients with high risk level by stratification with intervention level assigned by the professional $\geq$ 70 years oldX100	number of patients with high risk level in stratification $\geq$ 70 years old
5.70.42	People aged 70 or older with frailty screening and risk of falls	People aged $\geq$ 70 who are independent or have low dependency, with frailty and fall risk screening in the last two years (between 70 and 79 years old) and annually (at $\geq$ 80 years old) x 100	Individuals aged $\geq$ 70 who are independent or have minimal dependencies (Barthel score between 100 and 91) and are active at the time of assessment.
5.70.43	People aged 70 or older with frailty screening or at high risk of falls and a six-month plan	People aged $\geq$ 70 years with frailty or high risk of falls and action plan implemented in the last 7 months x 100	People aged 70 or older who are frail or at high risk of falling
5.70.44	People aged 70 or older who are frail or at high risk of falling	People aged $\geq$ 70 with moderate dependency (Barthel score between 90 and 61) (included in the denominator) who have had an action plan implemented in the last 7 months x 100	People aged $\geq$ 70 with moderate dependency (Barthel score between 90 and 61) who were active at the time of assessment.
5.70.45	People aged 70 or older who are frail and at low risk of falling, with a six-month plan	People aged $\geq$ 70 years without frailty and at low risk of falls, with an action plan implemented in the last year (if $\geq$ 80 years) or in the last 2 years (between 70 and 79 years) x 100	People aged 70 years or older without frailty and at low risk of falls
9.70.09	Individuals aged 70 or older with care plans	Individuals aged 70 or older with a documented care planX100	Number of persons aged 70 or older
9.70.10	People aged 70 or older with care plans in place	People aged 70 or older discharged from a care plan due to resolution or controlled follow-upX100	Individuals aged 70 or older with active care plans at the time of the study
9.70.11	Patients with ischemic heart disease undergoing treatment with statins	People aged 70 or older on statin therapyX100	People aged 70 or older
9.70.12	Secondary prevention of cardiovascular disease with antiplatelet agents	People aged 70 or older with a record of antiplatelet therapyX100	People aged 70 or older
9.70.13	Control of hypercholesterolemia in secondary prevention of ischemic heart disease	People aged 70 or older with controlled hypercholesterolemiaX100	People aged 70 or older
9.70.14	Appropriateness of treatment in diabetic patients with nephropathy	patients with more than two tests in the last year separated by more than three months total number of diabetic patients with microalbuminuria with active history	
9.70.15	Age-adjusted control of hypertensive patients	People aged 70 or older with blood pressure control in the last 6 months adjusted for age $\leq$ 140/90 in those under 80 and $\leq$ 150/90 in those over 80X100	People aged 70 or older

9.70.16	Age-adjusted diabetic patient control	People aged 70 or older with diabetes control in the last 12 months adjusted for age <7% for those aged 70 or younger and <8.5% for those over 70X100	People aged 70 or older
5.70.39	People aged 70 or older who are bedridden, with prevention of pressure ulcers	People aged 70 or older who are bedridden with an assessment of the risk of pressure ulcers using the Norton scaleX100	number of patients aged 70 or older who are immobile
5.70.40	People aged 70 or older who are bedridden with pressure ulcers	People aged 70 or older who are bedridden with pressure ulcersX100	People aged 70 or older who are bedridden
5.04.94	Patients with care plans for specific processes: patients in palliative care	number of people with care plansX100	number of people identified as palliative care patients
5.04.95	Individuals with severe or total functional impairment (Barthel <=60) with care plans	People with severe or total functional impairment (Barthel <=60) by Autonomous Health Nursing Identification Code	People with severe or total functional impairment (Barthel <=60) with active care plans by Autonomous Health Nursing Identification Code
5.04.97	Home care coverage for dependent persons	People with severe or total functional impairment (Barthel <=60) with a home visit in the last yearX100	People with severe or total functional impairment (Barthel <=60)
5.06.20	People with care plans for specific conditions: chronic obstructive pulmonary disease (COPD)	Number of people over 40 with COPD with care plansX100	number of people over 40 with COPD
5.06.21	People with care plans for specific processes: ASTHMA	Number of people over 14 years of age with asthma (excluding allergic bronchitis) with care plansX100	number of people over 14 years of age identified with ASTHMA (excluding allergic bronchitis)
5.06.22	People with care plans for specific processes: Heart failure	Number of people over 45 years of age with heart failure and care plansX100	Number of people over 45 years of age with heart failure
5.06.23	People with care plans for specific processes: Ischemic heart disease	Number of people over 35 years of age with ischemic heart disease (except unstable angina), with care plansX100	Number of people over 35 years of age with ischemic heart disease (except unstable angina)
5.06.24	People with care plans for specific processes: Chronic kidney disease	Number of people over 14 years of age with chronic kidney disease with descriptor chronic renal failure with care plansX100	Number of people over 14 years of age with chronic kidney disease and chronic renal failure
5.06.25	People with care plans for specific conditions: Diabetes	Number of persons over 14 years of age with diabetes (excluding gestational diabetes) with care plansX100	Number of people over 14 years of age with diabetes (excluding gestational diabetes)
5.06.26	People with care plans for specific conditions: High blood pressure	Number of people over 14 years of age with high blood pressure and care plansX100	Number of people over 14 years of age with high blood pressure
5.06.27	People with care plans for specific processes: Stroke	Number of persons over 14 years of age with stroke and care plansX100	Number of persons over 14 years of age with stroke
5.06.28	People with care plans for specific conditions: Hypercholesterolemia	Number of people over 14 years of age with hypercholesterolemia with care plansX100	Number of people over 14 years of age with hypercholesterolemia
5.06.29	Individuals with care plans for specific conditions: Obesity	Number of persons over 14 years of age with obesity BMI >= 30 and with care plansX100	Number of persons over 14 years of age with obesity BMI >= 30
5.06.30	Individuals with care plans for specific conditions: Cardiovascular	Persons with care plans as a percentage of persons aged 14 and over with care plans for cardiovascular conditions X100	number of persons over 14 years of age identified with cardiovascular conditions
5.06.31	People with care plans for specific processes: Tobacco	number of persons with care plansX100	number of people identified with tobacco
5.06.10	Persons with care plans in the registered population aged 0–14 years	Total number of documented nursing care plans for the population aged 0–14 years by autonomous nursing health identification codeX100	Total registered population aged 0–14 by autonomous nursing health identification code
5.06.11	People with care plans in the registered population aged 15–64	Total documented nursing care plans for the population aged 15–64 by autonomous nursing health identification codeX100	Total registered population aged 15–64 by autonomous nursing health identification code
5.06.12	personas con Planes de cuidados en poblacion adscrita >=65 años	Total number of documented nursing care plans for the population aged 65 and over by autonomous nursing identification codeX100	Total registered population aged 65 and over by autonomous nursing identification code
5.05.30	% People with assigned intervention level or severe or total functional impairment (Barthel<=60) with proactive follow-up	Total number of distinct patients with assigned intervention level and/or severe or total functional impairment (Barthel <=60) who have 3 or more records or appointments for telephone, home, in-office, or teleconsultation care in the last 3 months.X100	Number of patients with chronic disease and/or assigned a high level of intervention and/or with severe or total functional impairment (Barthel ≤ 60) by autonomous health nursing identification code during the evaluation period.
6.05.44	Bedridden patients with pressure ulcer prevention	Number of bedridden patients with pressure ulcer risk assessment according to the Norton scale by autonomous health care identification code for nursing X100	Number of patients immobilised by autonomous health care identification code for nursing
6.05.45	Bedridden patients with pressure ulcer	Number of bedridden patients with pressure ulcers by autonomous health care identification code for nursing X100	number of immobilised bedridden patients by autonomous nursing health identification code
9.73.00	People with healthy eating habits	Individuals over the age of 14 with an active medical history of healthy eating x100	Total number of persons over 14 years of age with active medical history

9.73.01	People who engage in risky alcohol consumption	Individuals over the age of 14 with an active medical history who engage in risky alcohol consumption x100	Individuals over the age of 14 with an active medical history
9.73.02	Smokers	Individuals over the age of 14 with an active medical history of smoking x 100	Population over 14 years of age with active medical history
9.73.03	People with obesity	Individuals over the age of 14 with an active medical history of obesity recorded in their medical records x 100	Individuals over the age of 14 with an active medical history
9.73.04	Overweight people	Individuals over the age of 14 with an active medical history of overweight recorded in their medical records x 100	Individuals over the age of 14 with an active medical history
9.73.05	People who exercise	People aged 15 to 64 with an active medical history who engage in physical exercise x100	Total number of persons aged 15 to 64 with an active medical history
9.73.06	Children with obesity	children aged 2 to 14 years with an active medical history of obesity recorded in their medical records x 100	children aged 2 to 14 years with an active medical history
9.73.07	Overweight children	children aged 2 to 14 years with an active medical history of overweight recorded in their medical records x 100	children aged 2 to 14 years with an active medical history
9.73.08	Children with healthy eating habits	children aged 4 to 14 with an active medical history of healthy eating x100	Total number of children aged 4 to 14 with an active medical history
9.73.09	Children who exercise	children aged 6 to 14 with an active medical history who engage in physical exercise x100	children aged 6 to 14 with an active medical history
9.73.30	Exclusive breastfeeding assessed in newborns aged 0 to 15 days	[Number of infants aged between 12 and 23 months at the time of assessment and registered between 0 and 15 days of life as being fed only breast milk on the day before the visit to the health center] x 100	Number of children aged between 12 and 23 months at the time of assessment
9.73.31	Children exclusively breastfed for at least six months	[Number of infants aged between 12 and 23 months at the time of assessment and with a record of >168 days of life who were exclusively breastfed on the day before their visit to the health center x 100	Number of children aged between 12 and 23 months at the time of assessment
9.73.32	Children predominantly breastfed at six months	Number of infants aged between 12 and 23 months at the time of assessment and with a record of >168 days of life on breast milk alone, or breast milk and other liquids on the day before the visit to the health center x 100	Number of children aged between 12 and 23 months at the time of assessment
9.73.33	Children still breastfeeding at six months	Number of infants aged between 12 and 23 months at the time of assessment and with a record of > 168 days of life of DGP Breast milk only or Breast milk and other liquids, or Breast milk and formula milk, or Breast milk and complementary foods on the day before the visit to the Center x 100	Number of children aged between 12 and 23 months at the time of assessment
9.73.34	Continued breastfeeding after one year of age	Number of infants aged between 12 and 23 months at the time of assessment and registered as being >345 days old Breast milk and other liquids, or breast milk and formula milk, or breast milk and complementary foods, on the day before the visit to the health centre x 100	Children aged one year or older with an active medical history
9.73.35	Continued breastfeeding after the age of two	[Number of infants aged between 24 and 35 months at the time of assessment and with a record of >700 days of life with breast milk and other liquids, or breast milk and formula milk, or breast milk and complementary feeding on the day before the visit to the health center] x 100	Two-year-old children with an active medical history
9.73.36	Introduction of solid, semi-solid, or pureed foods between 6 and 8 months of age	[Number of infants aged between 12 and 23 months at the time of assessment and registered as having been fed breast milk and complementary foods, or formula milk and complementary foods, on the previous day, or at some point between 6 and 8 months of age, between 168 and 274 days of life x 100	Number of children aged between 12 and 23 months at the time of assessment
9.08.90	Pediatric upper respiratory tract infections without antibiotic treatment	Episodes in children aged 0-14 years with active clinical history diagnosed with upper respiratory tract infection except pharyngitis who are not receiving antibioticsX100	not recorded
9.73.37	Population aged 0 to 24 months with bronchiolitis without antibiotic treatment	Population aged between 0 and 24 months (at the cut-off date) with bronchiolitis episode including the descriptor "bronchiol" with active history in the last year, without antibiotic prescription by a physician associated with the episodeX100	Total population aged between 0 and 24 months with BRONCHIOLITIS EPISODE, including in the descriptor 'bronchiol' with active history in the last year.
9.73.38	Population aged 0 to 24 months with bronchiolitis without glucocorticoid treatment	Population aged between 0 and 24 months (at the cut-off date) with bronchiolitis episode including the descriptor "bronchiol" with active history in the last year without prescriptions associated with the episode made by a primary care physician with oral and/or inhaled glucocorticoids.X100	Total population aged between 0 and 24 months with BRONCHIOLITIS EPISODE, including in the descriptor 'bronchiol' with active history in the last year.

9.73.39	Population aged 0 to 24 months with bronchiolitis without treatment with salbutamol	Population aged between 0 and 24 months (at the cut-off date) with bronchiolitis episode including the descriptor "bronchiol" with active history in the last year, without a prescription for salbutamol issued by a physician associated with the episode	Total population aged between 0 and 24 months with BRONCHIOLITIS EPISODE, including in the descriptor 'bronchiol' with active history in the last year.
9.71.00	Children aged 2 years with correct vaccination	[Children aged 2 years who have completed and documented the recommended vaccination type and dosage] x 100	Children aged 2 years
9.71.01	Children aged 2 years with zero doses of vaccination	[Children aged 2 years who have not received any documented dose of the vaccine] x 100	Children aged 2 years
9.71.04	Women with proper HPV vaccination	[Women aged 15 years who have completed and documented the recommended vaccination type and dose] x 100	Women aged 15 years
9.71.05	Children aged 5 years with correct vaccination	Five-year-old children who have completed and documented the recommended vaccination in type and dose x 100	Five-year-old children
9.71.06	Boys and girls aged 7 years and older with correct booster vaccination	Children aged 7 years who have completed and documented the recommended vaccination type and dose x 100	Children aged 7 years
9.71.07	Population aged 13 years with correct booster vaccination	Population aged 13 years who have completed and documented the recommended vaccination type and dose x 100	Population aged 13 years
9.71.09	Population aged 15 years and older with correct booster vaccination	Population aged 15 years and over who have completed and documented the recommended vaccination between the ages of 10 and 14 in type and dose x 100	Population aged 15 years
5.05.05	Coverage of the programme for elderly patients on multiple medications	Number of active patients aged ≥ 74 years with 6 or more different medicines prescribed and dispensed and with a record in the last year of any of the activities x100	Number of active patients aged ≥ 74 years with 6 or more different medicines prescribed and dispensed
5.05.07	Percentage of polymedicated patients prescribed and dispensed medication out of the total number of polymedicated patients	Number of patients aged 74 or older with 6 or more prescribed and dispensed drugs.	Number of active patients aged ≥ 74 years with 6 or more different medicines prescribed
5.05.08	Number of patients receiving multiple medications per dispensation	Number of patients receiving multiple medications per dispensation	Not recorded
5.05.09	Number of patients receiving multiple prescriptions	Number of patients aged 74 or older with 6 or more prescribed drugs.	Not recorded
9.72.00	Asthma patients with effective self-management	Patients over 14 years of age with diagnostic criteria for asthma with an active medical history that includes: Use of an inhaler more than twice a week, monitoring of proper technique, or effective management of the therapeutic regimen x100	Total number of patients over 14 years of age with an active medical history and diagnostic criteria for asthma with an active medical history
9.72.01	Patients with asthma control	Patients over 14 years of age with an active medical history, meeting diagnostic criteria for asthma (excluding the descriptor 'allergic bronchitis'), with good control or partially controlled x100	Patients over 14 years of age with an active medical history, meeting diagnostic criteria for asthma (excluding the descriptor 'allergic bronchitis')
9.72.35	Asthma patients treated with inhaled glucocorticoids	Number of patients >14 years old with descriptors WITHOUT allergic bronchitis with active prescriptions during the evaluation period (with a closing date within the last 12 months at the time of the cut-off or later) from any of the following groups: Anti-asthmatics, glucocorticoids, adrenergics, and others for obstructive airway diseaseX100	Patients over 14 years of age seen in Family Medicine consultations, diagnosed with asthma ('except allergic bronchitis')
9.08.45	Patients with ischaemic heart disease undergoing statin treatment	Number of patients over 35 years of age with (excluding unstable angina) (angina), (heart attack or cardiac ischaemia without angina) and with an active prescription during the evaluation period (with a closing date within the last 12 months at the time of the cut-off date or later) for any of the following drugs: reducease inhibitors, reducease inhibitors in combination with other lipid-lowering agents and hmgcoa reductase inhibitorsx100	Number of patients over 35 years of age with (excluding unstable angina) (angina), (heart attack or cardiac ischaemia without angina) and with an active prescription during the evaluation period (with a closing date within the last 12 months at the time of the cut-off date or later)
9.08.46	Patients with ischaemic heart disease undergoing treatment with statins autonomous health nursing identification code	Number of patients over 35 years of age with (excluding unstable angina) (angina), heart attack or (cardiac ischaemia without angina) and with an active prescription during the evaluation period (with a closing date within the last 12 months at the time of the cut-off or later) x100	Individuals over 35 years of age with ischaemic heart disease diagnosed with myocardial infarction or angina with an active computerised medical record (at least one entry in the medical record in the last year).
9.08.47	Control of hypercholesterolaemia in secondary prevention of ischaemic heart disease	Number of patients > 35 years of age with active history of ischaemic heart disease and LDL records for the last 6 months whose latest LDL figures are <100X100	Number of people > 35 years old with ischaemic heart disease diagnosed with myocardial infarction or angina with active history

9.08.48	Control of hypercholesterolaemia in secondary prevention of ischaemic heart disease (autonomous health nursing identification code)	Number of patients > 35 years of age with active history of ischaemic heart disease and LDL records for the last 6 months whose latest LDL figures are <100X100	Number of people > 35 years old with ischaemic heart disease diagnosed with myocardial infarction or angina with active history
9.08.49	Secondary prevention with antiplatelet agents without acetylsalicylic acid in patients with ischaemic heart disease	Number of patients > 35 years old with ischaemic heart disease diagnosed with non-fatal heart attack or angina without acetylsalicylic acid (S/AAC) with active history treated with antiplatelet agents X100	Number of patients > 35 years old with ischaemic heart disease diagnosed with non-fatal heart attack or angina without acetylsalicylic acid (S/AAC) with active history
9.08.50	Secondary prevention with antiplatelet agents without acetylsalicylic acid in patients with ischaemic heart disease (Autonomous Health Care Identification Coding for Nursing)	Number of patients > 35 years old with ischaemic heart disease diagnosed with heart attack or angina with active history treated with (S/AAC) or clopidogrelX100	Number of patients > 35 years old with ischaemic heart disease diagnosed with non-fatal heart attack or angina without acetylsalicylic acid (S/AAC) with active history
9.72.04	Patients with ischaemic heart disease and controlled blood pressure readings	[Patients aged 15 to 79 years with diagnostic criteria for ischaemic heart disease with an active medical history and a blood pressure reading $\leq 140/90$ in the last year] x100.	Patients aged between 15 and 79 years diagnosed with ischaemic heart disease with an active medical history in Primary Care in the Community of Madrid.
9.72.23	Patients with ischaemic heart disease with effective treatment management	[Patients over 35 years of age with diagnostic criteria for ischaemic heart disease with an active medical history who have effective treatment management recorded in their medical records] in the last yearX100	Patients aged between 15 and 79 years diagnosed with ischaemic heart disease with an active medical history in Primary Care in the Community of Madrid.
9.72.36	Patients with ischaemic heart disease and/or stroke and controlled blood pressure readings	Number of patients aged 14–80 with a history of active and diagnosed ischaemic heart disease or stroke whose last blood pressure reading was $\leq 140/90$ in the last year.	Number of patients aged 14–80 with a history of active and diagnosed ischaemic heart disease or stroke
5.05.50	Overuse of blood glucose test strips	Patients diagnosed with diabetes mellitus who have a record in their medical history that they are receiving blood glucose test strips and are either untreated or taking non-secretagogue oral antidiabetic drugsX100	Patients diagnosed with diabetes mellitus who are untreated or taking non-secretagogue oral antidiabetic drugs
9.08.17	Diabetic patient control without adjustment in the last 12 months (Autonomous medicine Health Care Identification Coding for medicine)	Diabetics whose last recorded HbA1c level was < 7% x 100	People diagnosed with diabetes
9.08.40	Diabetic patient control without adjustment in the last 12 months (Autonomous nurse Health Care Identification Coding for nursing)	Number of diabetics with an active history and at least one HbA1 record in the last 12 months whose last recorded HbA1 figure is < 7% X100	Diabetic patients > 14 years old with active history
9.08.63	Appropriateness of treatment for diabetic patients with nephropathy	Number of patients >14 years of age with (diabetes mellitus) and albuminuria ≥ 30 mg/g, confirmed in two tests in the last two years separated by at least three months and with an active history, with an active prescription during the evaluation period (with a closing date within the last 12 months at the time of the cut-off or later) of ACEI or ARA IIX100	Number of patients >14 years of age with diabetes mellitus, presence of albuminuria greater than or equal to 30 mg/g confirmed in two tests in the last two years separated by at least three months, and with an active history.
9.13.07	Average blood glucose strips per patient with interstitial glucose monitoring system that does not require calibration	Number of strips delivered to patients >18 years of age using the interstitial glucose monitoring system >90 days in the current year $\times 100$	Number of days of interstitial glucose monitoring system use in patients >18 years of age with interstitial glucose monitoring >90 days in the current year
9.72.08	Diabetes patient with effective treatment management	[Patients over 14 years of age with an active medical history diagnosed with diabetes who have effective treatment management recorded in their medical history] X100	Patients over 14 years of age with an active medical history diagnosed with diabetes
9.72.09	Patient with diabetes with adequate age-adjusted HbA1c control	[Patients > 14 years of age with Diabetes and active medical history, whose last recorded HbA1 value is ≤ 75 years and 75 years] X100	Patients over 14 years of age with an active medical history diagnosed with diabetes
9.72.10	patient with diabetes and controlled blood pressure readings	[Patients aged between 15 and 79 years with an active medical history, whose latest recorded figures are: SBP <140 mmHg and/or DBP <90 mmHgX100	Patients aged between 15 and 79 years old with an active medical history diagnosed with diabetes.
9.08.51	Secondary prevention of cardiovascular disease with antiplatelet agents by family doctors	Number of patients > 35 years old with cardiovascular disease (excluding unstable angina) (angina pectoris), infarction (arteriosclerotic heart disease), (cva/stroke/apoplexy) or (atherosclerosis/peripheral arterial disease) with an active prescription during the evaluation period (with a closing date within the last 12 months at the time of the cut-off or later) for any of the following active ingredients: asa), (clopidogrel), (ticlopidine), (pravastatin and asa), x100	People over 35 years of age with ischaemic heart disease (diagnosed with myocardial infarction or angina) or other arteriosclerotic disease (cerebrovascular disease or peripheral artery disease), with an active computerised medical record (at least one entry in the medical record in the last year).
9.08.52	Secondary prevention of cardiovascular disease with antiplatelet agents by Nursing	Number of patients > 35 years old with cardiovascular disease (excluding unstable angina) (angina pectoris), infarction (arteriosclerotic heart disease), (cva/stroke/apoplexy) or (atherosclerosis/peripheral arterial disease) with an active	People > 35 years of age with ischaemic heart disease: diagnosed with myocardial infarction or angina) or other cerebrovascular arteriosclerotic disease or peripheral artery disease with an active

		prescription during the evaluation period (with a closing date within the last 12 months at the time of the cut-off or later) for any of the following active ingredients: asa), (clopidogrel), (ticlopidine), (pravastatin and asa), x100	computerised medical history (at least one entry in the medical history in the last year)
9.72.16	Patients with chronic kidney disease with effective treatment management	Patients over 14 years of age with an active medical history diagnosed with CKD who have effective treatment management recorded in their medical historyX100	Patients over 14 years of age with an active medical history diagnosed with chronic kidney disease.
9.72.19	Patients with chronic kidney disease and controlled blood pressure adjusted for age and albuminuria	[Patients aged 15 to 79 years with an active medical history diagnosed with chronic kidney disease who meet the criteria for blood pressure control adjusted for albuminuria] X 100	Patients aged 15 to 79 years with an active medical history diagnosed with chronic kidney disease
9.72.11	Patients with chronic obstructive pulmonary disease (COPD) with good control of its severity	Number of patients > 40 years old with COPD with active medical history with BODEXX100	Total number of patients >40 years of age with COPD with active medical history without exclusion criteria
9.72.14	Patients with chronic obstructive pulmonary disease(COPD) with effective treatment management	COPD patients > 40 years of age who have effective treatment management recorded in their medical history X100	Patients > 40 years of age with COPD with an active medical history in Primary Care in the Community of Madrid
9.72.15	Patients with chronic obstructive pulmonary disease (COPD) who do not smoke	[Number of people over 40 years of age with COPD with an active medical history indicating that they do not smoke or have quit smoking in the last five years] x 100	Number of people over 40 years of age with COPD with active medical history
9.08.16	Management of hypertensive patients without adjustment in the last 12 months Autonomous medical identification code	Number of hypertensive patients over 14 years of age with active history and adequate control (last BP reading taken in the last 12 months $\leq$ 140/90 mmHg non-diabetic and BP $\leq$ 140/80 diabetic) x 100	Number of patients over 14 years of age with autonomous health identification code for high blood pressure and with active history
9.08.39	Monitoring of hypertensive patients without adjustment in the last 12 months Autonomous health care identification code for nursing	Number of hypertensive patients over 14 years of age with active history and adequate control (last BP reading taken in the last 12 months $\leq$ 140/90 mmHg non-diabetic and BP $\leq$ 140/80 diabetic) x 100	Number of patients over 14 years of age with autonomous health identification code for high blood pressure and with active history
9.72.33	Patients with hypertension and left ventricular hypertrophy	Number of patients > 14 years of age with hypertension, active medical history, and electrocardiographic criteria for LVH in the last year X100	Number of patients > 14 years of age with hypertension and active medical history
9.72.34	Patients with hypertension with age-adjusted blood pressure control	[Patients over 14 years of age with an active medical history meeting the diagnostic criteria for high blood pressure, whose last BP reading was $\leq$ 140/90 if they are < 80 years of age or $\leq$ 150/90 if they are $\geq$ 80 years of age in the last year] x 100.	Patients over 14 years of age with an active medical history diagnosed with high blood pressure
9.72.27	Patients with stroke and controlled blood pressure readings	Patients aged 15 to 79 years with an active medical history meeting diagnostic criteria for stroke with a last BP reading $\leq$ 140/90 in the last yearx100	Patients aged between 15 and 79 with an active medical history diagnosed with stroke
9.72.28	Stroke patients with effective treatment management	[Patients over 14 years of age with an active medical history diagnosed with stroke who have effective treatment management recorded in their medical records] X100	Patients over 14 years of age with an active medical history diagnosed with stroke.
9.72.29	Patients with heart failure (III/IV) at higher risk of hospital admission and/or mortality	[Patients over 45 years of age with an active medical history and diagnosis of heart failure who are in NYHA functional class III or IV (last recorded functional class) in the last two years x 100	Patients over 45 years of age with an active medical history and diagnosis of heart failure
9.72.30	Patients with heart failure undergoing effective treatment management	[Patients over 45 years of age with an active medical history and diagnosis of heart failure who have effective treatment management recorded in their medical records] X100	Patients over 45 years of age with an active medical history and diagnosis of heart failure
9.72.31	Patients with heart failure and controlled blood pressure readings	[Patients aged 45 to 79 years with an active medical history meeting diagnostic criteria for heart failure with a systolic blood pressure $\leq$ 140/90 in the last year] x100	Patients between 45 and 79 years of age diagnosed with heart failure with an active medical history
9.70.70	% Chronic patients with assigned level of intervention: Health promotion and prevention	Number of persons with chronic conditions stratified by level of health promotion intervention assigned by the professional x 100	number of people with stratified chronic conditions
9.70.71	% Chronic patients assigned to low intervention level	number of persons with chronic pathology stratified with low level of intervention assigned by the professional X 100	number of people with stratified chronic conditions
9.70.72	% Chronic patients assigned to medium intervention level	number of persons with chronic pathology stratified with medium level of intervention assigned by the professional X 100	number of people with stratified chronic conditions
9.70.73	% Chronic patients assigned to high intervention level	number of persons with chronic pathology stratified with a high level of intervention assigned by the professional X 100	number of people with stratified chronic conditions
9.70.74	Chronic patients with assigned intervention level	number of persons with stratified chronic pathology and assigned level of interventionX100	number of people with stratified chronic conditions
9.70.75	% Chronic patients with at least one prioritised chronic condition assigned a level of intervention	Number of people with stratified chronic conditions and at least one prioritised chronic condition with a level of intervention assigned by the professional x 100	Number of persons with stratified chronic conditions, of whom at least one condition is a prioritised chronic condition (asthma, COPD,

			heart failure, ischaemic heart disease, high blood pressure, diabetes, chronic kidney disease, cardiovascular disease).
9.70.76	% Chronic patients in social and healthcare institutions with a level of intervention assigned	Number of people with stratified chronic conditions residing in social and healthcare institutions (residential homes) with assigned intervention level X 100	Number of people with stratified chronic conditions residing in social and healthcare institutions (residential homes)
9.70.80	Chronic patients with high risk level and assigned intervention level	Chronic patients with high risk level due to stratification with intervention level assigned by the professional X100	Number of chronic patients with high risk level in stratification
9.70.81	Percentage of chronic patients with high risk level and high intervention level assigned	Number of chronic patients with high risk level in stratification with high intervention level assigned by the professional × 100	Number of chronic patients with high risk level in stratification
9.70.82	Percentage of chronic patients with high risk level and medium intervention level assigned	Number of chronic patients with high risk level in stratification and average intervention level assigned by the professional × 100	Number of chronic patients with high risk level in stratification
9.70.83	Percentage of chronic patients with high risk level and low intervention level assigned	Number of chronic patients with high risk level in stratification and low intervention level assigned by the professional × 100	Number of chronic patients with high risk level in stratification
9.70.84	Percentage of chronic patients with high risk level and assigned intervention level Health promotion and prevention	Number of chronic patients with high risk level in stratification and level of intervention Health promotion assigned by the professional X 100	Number of chronic patients with high risk level in stratification
9.70.64	Visits to family doctors and paediatricians by patients with chronic conditions	Number of visits to general practice or paediatric consultations in the last year by patients with stratified chronic conditions X 100	Number of patients with stratified chronic conditions
9.70.65	Nursing visits for patients with chronic conditions	Number of visits to the nursing consultation in the last year by patients with stratified chronic conditions X100	Number of patients with stratified chronic conditions
5.75.00	Percentage of citizens participating in prevecolon	citizens who have submitted a stool occult blood test sample at prevecolonX100	citizens with a scientific order of snagre hidden in pre-colonic faeces created
5.75.02	Percentage of citizens with negative faecal occult blood	citizens with negative results from a faecal occult blood test using PrevecolonX100	citizens with a stool sample from pevecolon delivered with results
5.75.03	Percentage of citizens with positive faecal occult blood	citizens with positive results from a faecal occult blood test using PrevecolonX100	citizens with a stool sample from pevecolon delivered with results
5.75.04	Percentage of citizens with grounds for exclusion	citizens with a record of some reason for not requesting a colonoscopyX100	citizens with positive occult blood in stool
5.75.05	Percentage of citizens with pre-colon colonoscopy	citizens with a record of requesting a colonoscopy exclusively with PrevecolonX100	citizens with positive occult blood in stool
5.75.06	Percentage of citizens undergoing diagnostic colonoscopy	citizens with a record of requesting a diagnostic colonoscopyX100	citizens with positive occult blood in stool
5.75.28	Positive faecal occult blood test with screening colonoscopy record (no request for colonoscopy or reason for exclusion)	Number of individuals with positive faecal occult blood in the prevecolon programme without colonoscopy exclusively by Prevecolon, with or without anaesthetist and without record of exclusionsX100	Number of individuals with positive faecal occult blood in the prevecolon programme in the last 24 months
5.75.07	Percentage of citizens with screening report received	citizens with screening reports entered into the primary care computer programmeX100	citizens with exclusive colonoscopy prevecolon
5.75.24	Percentage of citizens with high-risk results	citizens with high-risk screening resultsX100	citizens requesting an exclusive pre-colonoscopy colonoscopy
5.75.25	Percentage of citizens with results: cancer	citizens with cancer screening results X100	citizens requesting an exclusive pre-colonoscopy colonoscopy
5.70.89	Level 1: Citizens pre-registered for health education workshops	Number of citizens pre-registered for health education workshops at health centres and/or community settings (educational centres, senior centres) x100	Population > 2 years old
5.70.67	Level 2: Group health education for children	Number of citizens in person and number of citizens online who have participated in group health education aimed at children in health centres and/or community settings (educational centres, social and health centres, etc.) x 100	Total number of citizens in the childhood stage of life with a health card assigned to the Health Centre
5.70.68	Level 2: Group health education for adolescents	Number of citizens in person and number of citizens online who have participated in group health education aimed at adolescents in health centres and/or community settings (educational centres, social and health centres) x 100	Total number of citizens in the adolescent stage of life with a health card assigned to the Health Centre.
5.70.69	Level 2: Group health education for adults	Number of citizens in person and number of citizens online who have participated in group health education aimed at the adult population in health centres and/or community settings, educational centres, and social and health centres X 100	Total number of adult citizens with a health card assigned to the Health Centre
5.70.71	Level 2: Group health education for the elderly population	Number of citizens in person and number of citizens online who have participated in group health education aimed at the elderly in health centres and/or community settings, educational centres, and social and health centres x100	Total number of citizens in the elderly stage of life with a health card assigned to the Health Centre.
5.70.74	Level 2: Citizens receiving face-to-face and online health education	Number of citizens (total number of in-person attendees and number of online attendees) receiving group health education in an online and in-person format at health centres and/or community settings educational centres, senior centres, X100	Population > 2 years old

5.70.77	Level 2: Citizens receiving online health education	Number of citizens receiving group health education online at health centres and/or community settings (educational centres, senior centres, etc.)X100	Population > 2 years old
5.70.84	Level 3: Citizens participating in information/awareness sessions	Number of citizens attending specific community interventionsX100	Population > 2 years old
5.60.02	Telephone follow-up after discharge in patients/month	Number of patients with at least one discharge report received, with telephone follow-up protocols carried out in the monthX100	Number of patients with at least one discharge report received during the study period
5.60.03	% of patients followed up by telephone after discharge report received/month	Number of patients with discharge reports received with telephone follow-up protocol upon discharge carried out in the monthX100	Number of patients with discharge reports received during the evaluation period
5.60.04	% of patients followed up by telephone after receiving a discharge report from nursing staff/month	Number of patients with nursing discharge reports received and telephone follow-up protocol carried out upon discharge during the monthX100	Number of patients with nursing reports received during the evaluation period
5.60.05	% of patients followed up by telephone after receiving an emergency report exclusively/month	Number of patients with emergency reports received with telephone follow-up protocol carried out in the monthX100	Number of patients with emergency reports received during the evaluation period
5.60.06	% of patients with nursing discharge report marked as seen/month	Number of patients with nursing reports received and at least one marked as seen in the monthX100	Number of patients with nursing reports received during the evaluation period
5.60.32	Telephone follow-up after discharge in patients/year	Total number of patients with at least one discharge report received, with telephone follow-up protocols carried out in the current yearX100	Number of patients with at least one discharge report received during the study period
5.60.33	% of patients followed up by telephone after discharge report received/year	Total number of patients with discharge reports received with telephone follow-up protocol upon discharge carried out in the current yearX100	Number of patients with discharge reports received during the evaluation period
5.60.35	% of patients followed up by telephone after receiving an emergency report/year	Total number of patients with emergency reports received with telephone follow-up protocol carried out in the current yearX100	Number of patients with emergency reports received during the evaluation period
5.71.20	% Health centre patients with discharge report from the referral hospital/month	Number of patients at the health centre with at least one discharge report issued and received from their referral hospital in the monthX100	Number of patients at the health centre with at least one discharge report issued and received in the month
5.71.21	% Health centre patients with discharge report from referral hospital outside the area/month	Number of patients at the health centre with at least one discharge report issued and received from a hospital other than the referral hospitalX100	Number of patients at the health centre with at least one discharge report issued and received during the month
5.71.22	% Health centre patients with emergency reports from the referral hospital/month	Number of patients at the health centre with at least one exclusive emergency report issued and received from their referral hospital in the monthX100	Number of patients at the health centre with at least one exclusive emergency report issued and received during the month
5.71.23	% Health centre patients with emergency reports from referral hospitals outside the area/month	Number of patients at the health centre with at least one exclusive emergency report issued and received from a hospital other than the referral hospital in the monthX100	Number of patients at the health centre with at least one exclusive emergency report issued and received during the month
5.71.30	% Health centre patients with discharge report from the referral hospital/year	Number of patients at the health centre with at least one discharge report issued and received from their referral hospital in the current yearX100	Number of patients at the health centre with at least one discharge report issued and received in the current year
5.71.31	% Health centre patients with discharge report from referral hospital outside the area/year	Number of patients at the health centre with at least one discharge report issued and received from a hospital other than the referral hospital in the current yearX100	Number of patients at the health centre with at least one discharge report issued and received in the current year
5.71.32	% Health centre patients with emergency reports from the referral hospital/year	Number of patients at the health centre with at least one exclusive emergency report issued and received from their referral hospital in the current yearX100	Number of patients at the health centre with at least one exclusive emergency report issued and received from their referral hospital in the current year.
5.71.33	% Health centre patients with emergency reports from referral hospitals outside the area/year	Number of patients at the health centre with at least one exclusive emergency report issued and received from their referral hospital in the current yearX100	Number of patients at the health centre with at least one exclusive emergency report issued and received in the current year
5.08.60	Coverage of the pneumococcal vaccination programme in adults	Number of persons aged 60 or over with at least one dose of pneumococcal vaccine registered in SISPAL (Information provided by Public Health).X100	Number of persons aged 60 or over
5.08.70	Adults aged 60 or over with pneumococcal vaccinations registered in primary care computer programme and/or SISPAL	Number of people aged 60 or over with at least one recorded dose of pneumococcal vaccine X100	Number of persons aged 60 or over
9.71.00	Children aged 2 years with correct vaccination	[Children aged 2 years who have completed and documented the recommended vaccination type and dosage] x 100	Children aged 2 years
9.71.01	Children aged 2 years with zero doses of vaccination	[Children aged 2 years who have not received any documented dose of the vaccine] x 100	Children aged 2 years
9.71.04	Women with proper HPV vaccination	[Women aged 15 years who have completed and documented the recommended vaccination type and dosage] x 100	Women aged 15 years
9.71.05	Children aged 5 years with correct vaccination	[Children aged 5 years who have completed and documented the recommended vaccination type and dosage] x 100	Children aged 5 years

9.71.06	Boys and girls aged 7 years with correct booster vaccination	[Children aged 7 years who have completed and documented the recommended vaccination type and dose] x 100	Boys and girls aged 7
9.71.07	Population aged 13 years with correct booster vaccination	[Population aged 13 years who have completed and documented the recommended vaccination in type and dose] x 100	[Population aged 13 years
9.71.09	Population aged 15 years with correct booster vaccination	[Population aged 15 years who have completed and documented the recommended vaccination between the ages of 10 and 14 in terms of type and dose] x 100	Population aged 15 years

Table 2. Relationship between categories: type and the BVC.

Category: Type	Age	Sex	Developmental State	Gender	Physical limitations	Psychological limitations	Sensory limitations	Individual System of Care	Family System of Care	Material Resource	Time Resource	Environmental Factors	Culture
Anticoagulation	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Control panel for elderly patients	yes	no	no	no	no	no	no	no	no	no	no	no	no
Nursing care	no	no	no	no	no	no	no	no	no	no	no	no	no
Healthy lifestyles	no	no	no	no	no	no	no	no	yes	no	no	no	no
Child population	yes	no	no	no	no	no	no	no	no	yes	no	no	no
Poly-medicated	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Priority chronic processes	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Chronic processes: level of intervention	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Prevecolon	yes	no	no	no	no	no	no	no	no	no	no	no	no
Community health	no	no	no	no	no	no	no	no	no	no	no	no	no
Follow-up reports upon discharge	no	no	no	no	no	yes	no	no	no	no	no	no	no
Vaccination	no	no	no	no	no	no	no	no	yes	no	no	no	no

Table 3. Relationship between categories: block and the BVC.

Category: block	Age	Sex	Developmental State	Gender	Physical limitations	Psychological limitations	Sensory limitations	Individual System of Care	Family System of Care	Material Resource	Time Resource	Environmental Factors	Culture
Coverage	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Effectiveness	no	no	no	no	no	yes	no	no	no	no	no	no	no
Population stratification	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Activity	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Care processes (standardised service portfolio)	yes	no	no	no	no	no	no	no	no	no	no	no	no
Care plans	yes	no	no	no	no	no	no	no	no	no	no	no	no
Effectiveness	yes	no	no	no	no	no	no	no	no	no	no	no	no
Pressure ulcers	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Effectiveness	no	no	no	no	no	no	no	no	no	no	no	no	no
Risk groups	no	no	no	no	no	yes	no	no	no	no	no	no	no
Registered population	no	no	no	no	no	no	no	no	no	no	no	no	no
Population served	no	no	no	no	no	no	no	no	no	no	no	no	no
Care processes	no	no	no	no	no	no	no	no	no	no	no	no	no
Pressure ulcers	no	no	no	no	no	yes	no	no	no	no	no	no	no
Adult	yes	no	no	no	no	no	no	no	yes	no	no	no	no
Child population	yes	no	no	no	no	no	no	no	no	yes	no	no	no
Breastfeeding	yes	no	no	no	no	no	no	no	no	yes	no	no	no
Acute processes	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Vaccines	yes	no	no	no	no	no	no	no	no	yes	no	no	no
Polymedication program coverage	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Care	yes	no	no	no	no	yes	no	no	yes	no	no	no	no
Security	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Asthma	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Ischemic heart disease	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Diabetes	yes	no	no	no	no	yes	no	no	no	no	no	no	no

Chronic kidney disease	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Cardiovascular disease	yes	no	no	no	no	yes	no	no	no	no	no	no	no
COPD	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Arterial hypertension	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Stroke	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Heart failure	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Assigned global intervention levels	yes	no	no	no	no	no	no	no	no	no	no	no	no
Chronic patients population stratification	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Levels of overall intervention by risk level	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Appropriate use of resources for chronic patients	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Appropriateness of resource use for patients requiring high-level intervention/month	yes	no	no	no	no	no	no	no	no	no	no	no	no
Participation	yes	no	no	no	no	no	no	no	no	no	no	no	no
positive faecal occult blood test	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Screening report	yes	no	no	no	no	no	no	no	no	no	no	no	no
Risk allocation	yes	no	no	no	no	yes	no	no	no	no	no	no	no
Level 1 prescription assets	no	no	no	no	no	no	no	no	no	no	no	no	no
Level 2 group activity	no	no	no	no	no	no	no	no	no	no	no	no	no
level 3 community activity	no	no	no	no	no	no	no	no	no	no	no	no	no
Telephone follow-up upon discharge/month	no	no	no	no	no	yes	no	no	no	no	no	no	no
Telephone follow-up upon discharge/year	no	no	no	no	no	yes	no	no	no	no	no	no	no
Health centre management by catchment area/month	no	no	no	no	no	no	no	no	no	no	no	no	no

Health centre management by catchment area/year	no	no	no	no	no	no	no	no	no	no	no	no	no
High-level telephone follow-up high intervention/month	no	no	no	no	no	yes	no	no	no	no	no	no	no
High-level telephone follow-up high intervention/year	no	no	no	no	no	yes	no	no	no	no	no	no	no
Follow-up after discharge with heart failure or COPD	no	no	no	no	no	yes	no	no	no	no	no	no	no
Vaccination in adults	yes	no	no	no	no	no	no	no	yes	no	no	no	no
Childhood vaccination	yes	no	no	no	no	no	no	no	no	yes	no	no	no

Phase 4: Relationship Between the 170 Indicators and the BVC

Round 1

Using Karnough table analysis, it was established whether the numerators and denominators of the 170 indicators were related to any of the BVC, using dichotomous values of direct relationship: (Yes/No).

The indicators were organised by life stages to which they referred, according to childhood indicators that included the population aged <=14 years, and adult indicators that included the population aged >=14 years.

Childhood indicators

Figure 1 shows the relationship BVC with numerator

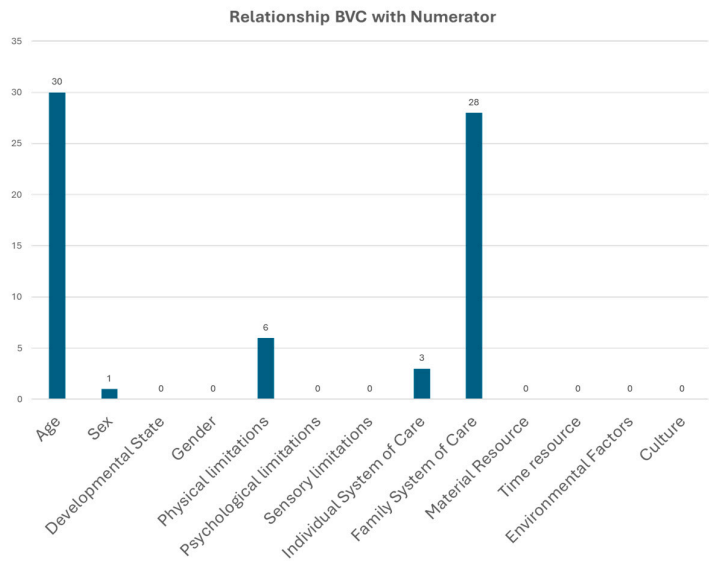


Figure 1. Relationship BVC with numerator.

Figure 2 shows the relationship BVC with denominators

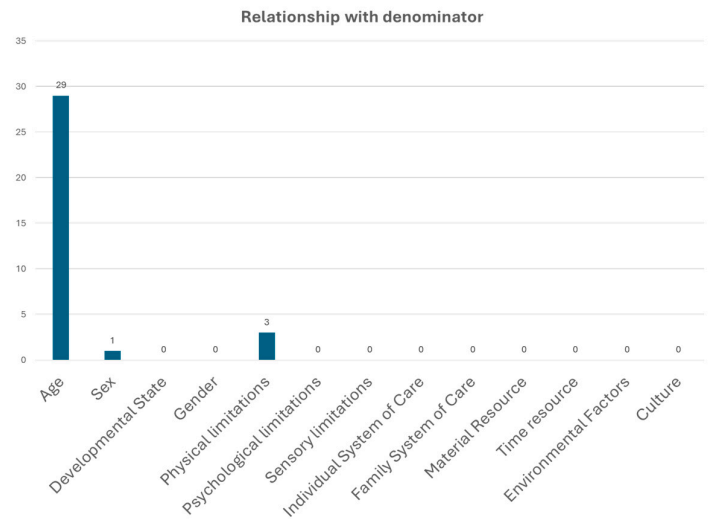


Figure 2. Relationship BVC with denominators.

Table 4 shows the descriptive analysis of childhood indicators related to BCV.

Table 4. Childhood indicators related to BVC.

Descriptive Statics	Data
Average	3,36
Median	3
Mode	3
Range	3
Mínimum	2
Máximum	5

Figure 3 shows the Childhood indicators related to BVC and the indicators above the mode value.

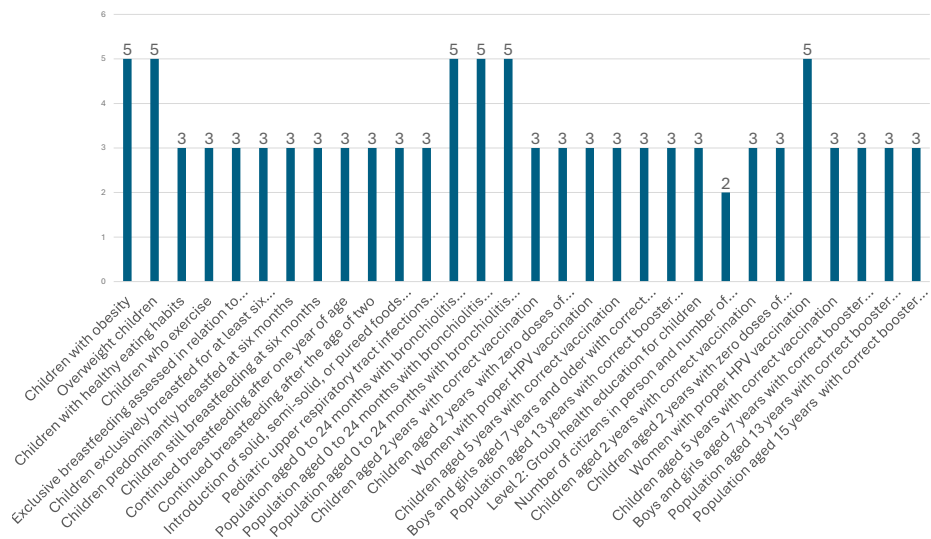


Figure 3. Childhood indicators related to BVC.

Adult indicators

Figure 4 shows relationship BVC with numerators

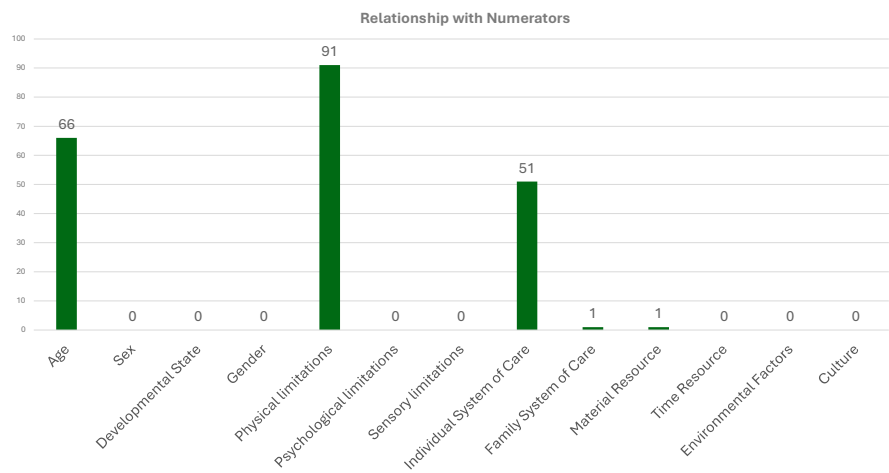


Figure 4. Relationship BVC with numerator.

Figure 5 relationship BVC with denominators.

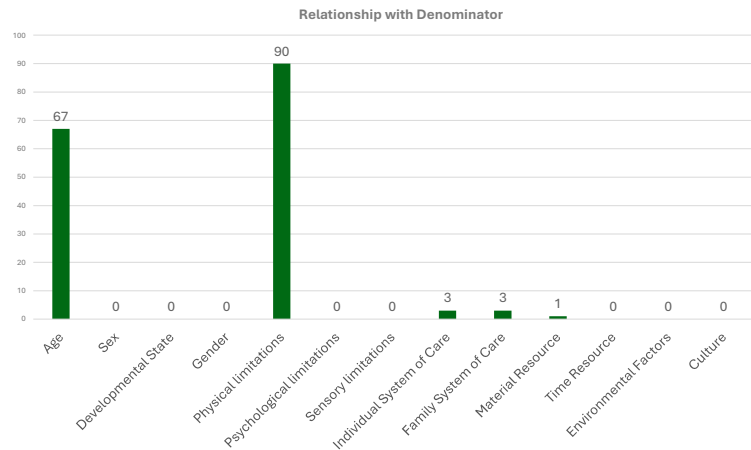


Figure 5. Relationship BVC with denominators.

Table 5 shows the descriptive analysis of Adult indicators related to BVC.

Table 5. Adult indicators related to BVC.

Descriptive Statics	Data
Average	3,36
Median	3,5
Mode	2
Range	8
Mínimum	0
Máximum	8

Figure 6 shows adult indicators related to BVC, and the indicators above the mode value.

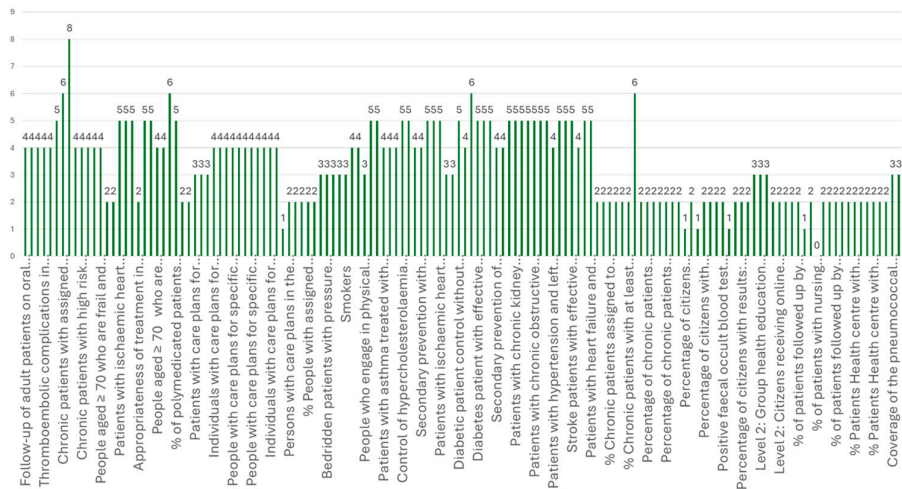


Figure 6. Adult indicators related to BVC.

Round 2

The 170 selected indicators were presented to the group of experts, who were asked to rate their level of agreement with the selection in order to assess aspects related to community vulnerability. All experts gave the selection of indicators a score of 8 or higher.

The results are shown in Table 6.

Table 6. expert agreement with the 170 selected indicators.

Indicator label	Numerator	Denominator	Expert agreement (n) puntuation >=8p (n=13) %
Follow-up of adult patients on oral anticoagulation therapy with VKAs	Number of persons over 14 years of age with an active prescription for acenocoumarol or warfarin with at least 2 INR measurements in the last 6 months and who have established the range	Number of persons over 14 years of age with an active prescription for acenocoumarol or warfarin with at least 2 INR measurements in the last 6 months and who have established the range	13 (100%)
Stratification of thromboembolic risk in patients receiving anticoagulation therapy with VKAs	Number of patients >14 years old receiving VKA anticoagulation with thromboembolic risk stratification at some point since the start of anticoagulation	Number of patients >14 years old receiving VKA anticoagulation with thromboembolic risk stratification at some point since the start of anticoagulation	13 (100%)
Patients well controlled with VKA by direct method (% INR within range)	Number of patients >14 years of age on VKA therapy followed in primary care with >70% of INR measurements within the therapeutic range in the last 6 months	Number of patients >14 years of age on VKA therapy followed in primary care with >70% of INR measurements within the therapeutic range in the last 6 months	13 (100%)
Thromboembolic complications in patients receiving anticoagulation therapy with VKAs	Number of patients >14 years of age undergoing treatment with VKA followed up in primary care whose medical records show at least one new thromboembolic episode in the last year.	Number of patients >14 years of age undergoing treatment with VKA followed up in primary care whose medical records show at least one new thromboembolic episode in the last year.	13 (100%)
Major bleeding complications in patients receiving anticoagulation therapy with VKAs	Number of patients undergoing treatment with AVK monitored in primary care whose medical records show at least one episode of major bleeding complications in the last year.	Number of patients undergoing treatment with AVK monitored in primary care whose medical records show at least one episode of major bleeding complications in the last year.	13 (100%)
People aged 70 or older in institutional care Chronic patients with assigned intervention level >= 70 years old % Chronic patients in social and healthcare institutions with an intervention level of >= 70 years	number of people aged 70 or older in institutional careX100	number of people aged 70 or older	13 (100%)
	number of patients with chronic conditions and assigned intervention level >= 70 yearsX100	number of patients with chronic conditions aged 70 or older	13 (100%)
	numero de personas con patologia cronica estratificada que residen en instituciones sociosanitarias con NI asignando >= 70 añosX100	Number of people with stratified chronic conditions residing in social and healthcare institutions aged 70 or over	13 (100%)
Chronic patients with high risk level and assigned intervention level (>=70 years old)	Chronic patients with high risk level by stratification with intervention level assigned by the professional >= 70 years oldX100	number of patients with high risk level in stratification >=70 years old	13 (100%)
People aged 70 or older with frailty screening and risk of falls	People aged ≥ 70 who are independent or have low dependency, with frailty and fall risk screening in the last two years (between 70 and 79 years old) and annually (at ≥ 80 years old) x 100	Individuals aged ≥ 70 who are independent or have minimal dependencies (Barthel score between 100 and 91) and are active at the time of assessment.	13 (100%)
People aged 70 or older with frailty screening or at high risk of falls and a six-month plan	People aged ≥ 70 years with frailty or high risk of falls and action plan implemented in the last 7 months x 100	People aged 70 or older who are frail or at high risk of falling	13 (100%)
People aged 70 or older who are frail or at high risk of falling	People aged ≥ 70 with moderate dependency (Barthel score between 90 and 61) (included in the denominator) who have had an action plan implemented in the last 7 months x 100	People aged ≥ 70 with moderate dependency (Barthel score between 90 and 61) who were active at the time of assessment.	13 (100%)
People aged 70 or older who are frail and at low risk of falling, with a six-month plan	People aged ≥ 70 years without frailty and at low risk of falls, with an action plan implemented in the last year (if ≥ 80 years) or in the last 2 years (between 70 and 79 years) x 100	People aged 70 years or older without frailty and at low risk of falls	13 (100%)
Individuals aged 70 or older with care plans	Individuals aged 70 or older with a documented care planX100	Number of persons aged 70 or older	13 (100%)
People aged 70 or older with care plans in place	People aged 70 or older discharged from a care plan due to resolution or controlled follow-upX100	Individuals aged 70 or older with active care plans at the time of the study	13 (100%)
Patients with ischemic heart disease undergoing treatment with statins	People aged 70 or older on statin therapyX100	People aged 70 or older	13 (100%)

Secondary prevention of cardiovascular disease with antiplatelet agents	People aged 70 or older with a record of antiplatelet therapyX100	People aged 70 or older	13 (100%)
Control of hypercholesterolemia in secondary prevention of ischemic heart disease	People aged 70 or older with controlled hypercholesterolemiaX100	People aged 70 or older	13 (100%)
Appropriateness of treatment in diabetic patients with nephropathy	patients with more than two tests in the last year separated by more than three months between themX100	total number of diabetic patients with microalbuminuria with active history	13 (100%)
Age-adjusted control of hypertensive patients	People aged 70 or older with blood pressure control in the last 6 months adjusted for age <=140/90 in those under 80 and <=150/90 in those over 80X100	People aged 70 or older	13 (100%)
Age-adjusted diabetic patient control	People aged 70 or older with diabetes control in the last 12 months adjusted for age <7% for those aged 70 or younger and <8.5% for those over 70X100	People aged 70 or older	13 (100%)
People aged 70 or older who are bedridden, with prevention of pressure ulcers	People aged 70 or older who are bedridden with an assessment of the risk of pressure ulcers using the Norton scaleX100	number of patients aged 70 or older who are immobile	13 (100%)
People aged 70 or older who are bedridden with pressure ulcers	People aged 70 or older who are bedridden with pressure ulcersX100	People aged 70 or older who are bedridden	13 (100%)
Patients with care plans for specific processes: patients in palliative care	number of people with care plansX100	number of people identified as palliative care patients	13 (100%)
Individuals with severe or total functional impairment (Barthel <=60) with care plans	People with severe or total functional impairment (Barthel <=60) by Autonomous Health Nursing Identification Code	People with severe or total functional impairment (Barthel <=60) with active care plans by Autonomous Health Nursing Identification Code	13 (100%)
Home care coverage for dependent persons	People with severe or total functional impairment (Barthel <=60) with a home visit in the last yearX100	People with severe or total functional impairment (Barthel <=60)	13 (100%)
People with care plans for specific conditions: chronic obstructive pulmonary disease (COPD)	Number of people over 40 with COPD with care plansX100	number of people over 40 with COPD	13 (100%)
People with care plans for specific processes: ASTHMA	Number of people over 14 years of age with asthma (excluding allergic bronchitis) with care plansX100	number of people over 14 years of age identified with ASTHMA (excluding allergic bronchitis)	13 (100%)
People with care plans for specific processes: Heart failure	Number of people over 45 years of age with heart failure and care plansX100	Number of people over 45 years of age with heart failure	13 (100%)
People with care plans for specific processes: Ischemic heart disease	Number of people over 35 years of age with ischemic heart disease (except unstable angina), with care plansX100	Number of people over 35 years of age with ischemic heart disease (except unstable angina)	13 (100%)
People with care plans for specific processes: Chronic kidney disease	Number of people over 14 years of age with chronic kidney disease with descriptor chronic renal failure with care plansX100	Number of people over 14 years of age with chronic kidney disease and chronic renal failure	13 (100%)
People with care plans for specific conditions: Diabetes	Number of persons over 14 years of age with diabetes (excluding gestational diabetes) with care plansX100	Number of people over 14 years of age with diabetes (excluding gestational diabetes)	13 (100%)
People with care plans for specific conditions: High blood pressure	Number of people over 14 years of age with high blood pressure and care plansX100	Number of people over 14 years of age with high blood pressure	13 (100%)
People with care plans for specific processes: Stroke	Number of persons over 14 years of age with stroke and care plansX100	Number of persons over 14 years of age with stroke	13 (100%)
People with care plans for specific conditions: Hypercholesterolemia	Number of people over 14 years of age with hypercholesterolemia with care plansX100	Number of people over 14 years of age with hypercholesterolemia	13 (100%)
Individuals with care plans for specific conditions: Obesity	Number of persons over 14 years of age with obesity BMI >= 30 and with care plansX100	Number of persons over 14 years of age with obesity BMI >= 30	13 (100%)
Individuals with care plans for specific conditions: Cardiovascular	Persons with care plans as a percentage of persons aged 14 and over with care plans for cardiovascular conditions X100	number of persons over 14 years of age identified with cardiovascular conditions	13 (100%)
People with care plans for specific processes: Tobacco	number of persons with care plansX100	number of people identified with tobacco	13 (100%)

Persons with care plans in the registered population aged 0–14 years	Total number of documented nursing care plans for the population aged 0–14 years by autonomous nursing health identification codeX100	Total registered population aged 0–14 by autonomous nursing health identification code	13 (100%)
People with care plans in the registered population aged 15-64	Total documented nursing care plans for the population aged 15–64 by autonomous nursing health identification codeX100	Total registered population aged 15–64 by autonomous nursing health identification code	13 (100%)
personas con Planes de cuidados en poblacion adscrita >=65 años	Total number of documented nursing care plans for the population aged 65 and over by autonomous nursing identification codeX100	Total registered population aged 65 and over by autonomous nursing identification code	13 (100%)
% People with assigned intervention level or severe or total functional impairment (Barthel≤60) with proactive follow-up	Total number of distinct patients with assigned intervention level and/or severe or total functional impairment (Barthel <=60) who have 3 or more records or appointments for telephone, home, in-office, or teleconsultation care in the last 3 months.X100	Number of patients with chronic disease and/or assigned a high level of intervention and/or with severe or total functional impairment (Barthel ≤ 60) by autonomous health nursing identification code during the evaluation period.	13 (100%)
Bedridden patients with pressure ulcer prevention	Number of bedridden patients with pressure ulcer risk assessment according to the Norton scale by autonomous health care identification code for nursing X100	Number of patients immobilised by autonomous health care identification code for nursing	13 (100%)
Bedridden patients with pressure ulcer	Number of bedridden patients with pressure ulcers by autonomous health care identification code for nursing X100	number of immobilised bedridden patients by autonomous nursing health identification code	13 (100%)
People with healthy eating habits	Individuals over the age of 14 with an active medical history of healthy eating x100	Total number of persons over 14 years of age with active medical history	13 (100%)
People who engage in risky alcohol consumption	Individuals over the age of 14 with an active medical history who engage in risky alcohol consumption x100	Individuals over the age of 14 with an active medical history	13 (100%)
Smokers	Individuals over the age of 14 with an active medical history of smoking x 100	Population over 14 years of age with active medical history	13 (100%)
People with obesity	Individuals over the age of 14 with an active medical history of obesity recorded in their medical records x 100	Individuals over the age of 14 with an active medical history	13 (100%)
Overweight people	Individuals over the age of 14 with an active medical history of overweight recorded in their medical records x 100	Individuals over the age of 14 with an active medical history	13 (100%)
People who exercise	People aged 15 to 64 with an active medical history who engage in physical exercise x100	Total number of persons aged 15 to 64 with an active medical history	13 (100%)
Children with obesity	children aged 2 to 14 years with an active medical history of obesity recorded in their medical records x 100	children aged 2 to 14 years with an active medical history	13 (100%)
Overweight children	children aged 2 to 14 years with an active medical history of overweight recorded in their medical records x 100	children aged 2 to 14 years with an active medical history	13 (100%)
Children with healthy eating habits	children aged 4 to 14 with an active medical history of healthy eating x100	Total number of children aged 4 to 14 with an active medical history	13 (100%)
Children who exercise	children aged 6 to 14 with an active medical history who engage in physical exercise x100	children aged 6 to 14 with an active medical history	13 (100%)
Exclusive breastfeeding assessed in newborns aged 0 to 15 days	[Number of infants aged between 12 and 23 months at the time of assessment and registered between 0 and 15 days of life as being fed only breast milk on the day before the visit to the health center] x 100	Number of children aged between 12 and 23 months at the time of assessment	13 (100%)
Children exclusively breastfed for at least six months	[Number of infants aged between 12 and 23 months at the time of assessment and with a record of >168 days of life who were exclusively breastfed on the day before their visit to the health center x 100	Number of children aged between 12 and 23 months at the time of assessment	13 (100%)
Children predominantly breastfed at six months	Number of infants aged between 12 and 23 months at the time of assessment and with a record of >168 days of life on breast milk alone, or breast milk and other liquids on the day before the visit to the health center x 100	Number of children aged between 12 and 23 months at the time of assessment	13 (100%)
Children still breastfeeding at six months	Number of infants aged between 12 and 23 months at the time of assessment and with a record of > 168 days of life of DGP Breast milk only or Breast milk and other liquids, or Breast milk and formula milk, or Breast milk and complementary foods on the day before the visit to the Center x 100	Number of children aged between 12 and 23 months at the time of assessment	13 (100%)

Continued breastfeeding after one year of age	Number of infants aged between 12 and 23 months at the time of assessment and registered as being >345 days old Breast milk and other liquids, or breast milk and formula milk, or breast milk and complementary foods, on the day before the visit to the health centre x 100	Children aged one year or older with an active medical history	13 (100%)
Continued breastfeeding after the age of two	[Number of infants aged between 24 and 35 months at the time of assessment and with a record of >700 days of life with breast milk and other liquids, or breast milk and formula milk, or breast milk and complementary feeding on the day before the visit to the health center] x 100	Two-year-old children with an active medical history	13 (100%)
Introduction of solid, semi-solid, or pureed foods between 6 and 8 months of age	[Number of infants aged between 12 and 23 months at the time of assessment and registered as having been fed breast milk and complementary foods, or formula milk and complementary foods, on the previous day, or at some point between 6 and 8 months of age, between 168 and 274 days of life x 100	Number of children aged between 12 and 23 months at the time of assessment	13 (100%)
Pediatric upper respiratory tract infections without antibiotic treatment	Episodes in children aged 0-14 years with active clinical history diagnosed with upper respiratory tract infection except pharyngitis who are not receiving antibioticsX100	not recorded	13 (100%)
Population aged 0 to 24 months with bronchiolitis without antibiotic treatment	Population aged between 0 and 24 months (at the cut-off date) with bronchiolitis episode including the descriptor "bronchiol" with active history in the last year, without antibiotic prescription by a physician associated with the episodeX100	Total population aged between 0 and 24 months with BRONCHIOLITIS EPISODE, including in the descriptor 'bronchiol' with active history in the last year.	13 (100%)
Population aged 0 to 24 months with bronchiolitis without glucocorticoid treatment	Population aged between 0 and 24 months (at the cut-off date) with bronchiolitis episode including the descriptor "bronchiol" with active history in the last year without prescriptions associated with the episode made by a primary care physician with oral and/or inhaled glucocorticoids.X100	Total population aged between 0 and 24 months with BRONCHIOLITIS EPISODE, including in the descriptor 'bronchiol' with active history in the last year.	13 (100%)
Population aged 0 to 24 months with bronchiolitis without treatment with salbutamol	Population aged between 0 and 24 months (at the cut-off date) with bronchiolitis episode including the descriptor "bronchiol" with active history in the last year, without a prescription for salbutamol issued by a physician associated with the episode	Total population aged between 0 and 24 months with BRONCHIOLITIS EPISODE, including in the descriptor 'bronchiol' with active history in the last year.	13 (100%)
Children aged 2 years with correct vaccination	[Children aged 2 years who have completed and documented the recommended vaccination type and dosage] x 100	Children aged 2 years	13 (100%)
Children aged 2 years with zero doses of vaccination	[Children aged 2 years who have not received any documented dose of the vaccine] x 100	Children aged 2 years	13 (100%)
Women with proper HPV vaccination	[Women aged 15 years who have completed and documented the recommended vaccination type and dose] x 100	Women aged 15 years	13 (100%)
Children aged 5 years with correct vaccination	Five-year-old children who have completed and documented the recommended vaccination in type and dose x 100	Five-year-old children	13 (100%)
Boys and girls aged 7 years and older with correct booster vaccination	Children aged 7 years who have completed and documented the recommended vaccination type and dose x 100	Children aged 7 years	13 (100%)
Population aged 13 years with correct booster vaccination	Population aged 13 years who have completed and documented the recommended vaccination type and dose x 100	Population aged 13 years	13 (100%)
Population aged 15 years and older with correct booster vaccination	Population aged 15 years and over who have completed and documented the recommended vaccination between the ages of 10 and 14 in type and dose x 100	Population aged 15 years	13 (100%)
Coverage of the programme for elderly	Number of active patients aged ≥ 74 years with 6 or more different medicines	Number of active patients aged ≥ 74 years with 6 or more different medicines prescribed and dispensed	13 (100%)

patients on multiple medications	prescribed and dispensed and with a record in the last year of any of the activities x100		
Percentage of polymedicated patients prescribed and dispensed medication out of the total number of polymedicated patients	Number of patients aged 74 or older with 6 or more prescribed and dispensed drugs.	Number of active patients aged ≥ 74 years with 6 or more different medicines prescribed	13 (100%)
Number of patients receiving multiple medications per dispensation	Number of patients receiving multiple medications per dispensation	Not recorded	13 (100%)
Number of patients receiving multiple prescriptions	Number of patients aged 74 or older with 6 or more prescribed drugs.	Not recorded	13 (100%)
Asthma patients with effective self-management	Patients over 14 years of age with diagnostic criteria for asthma with an active medical history that includes: Use of an inhaler more than twice a week, monitoring of proper technique, or effective management of the therapeutic regimen x100	Total number of patients over 14 years of age with an active medical history and diagnostic criteria for asthma with an active medical history	13 (100%)
Patients with asthma control	Patients over 14 years of age with an active medical history, meeting diagnostic criteria for asthma (excluding the descriptor 'allergic bronchitis'), with good control or partially controlled x100	Patients over 14 years of age with an active medical history, meeting diagnostic criteria for asthma (excluding the descriptor 'allergic bronchitis')	13 (100%)
Asthma patients treated with inhaled glucocorticoids	Number of patients >14 years old with descriptors WITHOUT allergic bronchitis with active prescriptions during the evaluation period (with a closing date within the last 12 months at the time of the cut-off or later) from any of the following groups: Anti-asthmatics, glucocorticoids, adrenergics, and others for obstructive airway diseaseX100	Patients over 14 years of age seen in Family Medicine consultations, diagnosed with asthma ('except allergic bronchitis')	13 (100%)
Patients with ischaemic heart disease undergoing statin treatment	Number of patients over 35 years of age with (excluding unstable angina) (angina), (heart attack or cardiac ischaemia without angina) and with an active prescription during the evaluation period (with a closing date within the last 12 months at the time of the cut-off date or later) for any of the following drugs: reducease inhibitors, reducease inhibitors in combination with other lipid-lowering agents and hmgcoa reductase inhibitorsx100	Number of patients over 35 years of age with (excluding unstable angina) (angina), (heart attack or cardiac ischaemia without angina) and with an active prescription during the evaluation period (with a closing date within the last 12 months at the time of the cut-off date or later)	13 (100%)
Patients with ischaemic heart disease undergoing treatment with statins	Number of patients over 35 years of age with (excluding unstable angina) (angina), heart attack or (cardiac ischaemia without angina) and with an active prescription during the evaluation period (with a closing date within the last 12 months at the time of the cut-off or later) x100	Individuals over 35 years of age with ischaemic heart disease diagnosed with myocardial infarction or angina with an active computerised medical record (at least one entry in the medical record in the last year).	13 (100%)
autonomous health nursing identification code			
Control of hypercholesterolaemia in secondary prevention of ischaemic heart disease	Number of patients > 35 years of age with active history of ischaemic heart disease and LDL records for the last 6 months whose latest LDL figures are <100X100	Number of people > 35 years old with ischaemic heart disease diagnosed with myocardial infarction or angina with active history	13 (100%)
Control of hypercholesterolaemia in secondary prevention of ischaemic heart disease (autonomous health nursing identification code)	Number of patients > 35 years of age with active history of ischaemic heart disease and LDL records for the last 6 months whose latest LDL figures are <100X100	Number of people > 35 years old with ischaemic heart disease diagnosed with myocardial infarction or angina with active history	13 (100%)
Secondary prevention with antiplatelet agents without acetylsalicylic acid in patients with ischaemic heart disease	Number of patients > 35 years old with ischaemic heart disease diagnosed with non-fatal heart attack or angina without acetylsalicylic acid (S/AAC) with active history treated with antiplatelet agents X100	Number of patients > 35 years old with ischaemic heart disease diagnosed with non-fatal heart attack or angina without acetylsalicylic acid (S/AAC) with active history	13 (100%)
Secondary prevention with antiplatelet agents without acetylsalicylic acid in patients with ischaemic heart disease	Number of patients > 35 years old with ischaemic heart disease diagnosed with heart attack or angina with active history treated with (S/AAC) or clopidogrelX100	Number of patients > 35 years old with ischaemic heart disease diagnosed with non-fatal heart attack or angina without	13 (100%)

(Autonomous Health Care Identification Coding for Nursing)		acetylsalicylic acid (S/AAC) with active history	
Patients with ischaemic heart disease and controlled blood pressure readings	[Patients aged 15 to 79 years with diagnostic criteria for ischaemic heart disease with an active medical history and a blood pressure reading $\leq 140/90$ in the last year] x100.	Patients aged between 15 and 79 years diagnosed with ischaemic heart disease with an active medical history in Primary Care in the Community of Madrid.	13 (100%)
Patients with ischaemic heart disease with effective treatment management	[Patients over 35 years of age with diagnostic criteria for ischaemic heart disease with an active medical history who have effective treatment management recorded in their medical records] in the last yearX100	Patients aged between 15 and 79 years diagnosed with ischaemic heart disease with an active medical history in Primary Care in the Community of Madrid.	13 (100%)
Patients with ischaemic heart disease and/or stroke and controlled blood pressure readings	Number of patients aged 14–80 with a history of active and diagnosed ischaemic heart disease or stroke whose last blood pressure reading was $\leq 140/90$ in the last year.	Number of patients aged 14–80 with a history of active and diagnosed ischaemic heart disease or stroke	13 (100%)
Overuse of blood glucose test strips	Patients diagnosed with diabetes mellitus who have a record in their medical history that they are receiving blood glucose test strips and are either untreated or taking non-secretagogue oral antidiabetic drugsX100	Patients diagnosed with diabetes mellitus who are untreated or taking non-secretagogue oral antidiabetic drugs	13 (100%)
Diabetic patient control without adjustment in the last 12 months (Autonomous medicine Health Care Identification Coding for medicine)	Diabetics whose last recorded HbA1c level was $< 7\% \times 100$	People diagnosed with diabetes	13 (100%)
Diabetic patient control without adjustment in the last 12 months (Autonomous nurse Health Care Identification Coding for nursing)	Number of diabetics with an active history and at least one HbA1 record in the last 12 months whose last recorded HbA1 figure is $< 7\% \times 100$	Diabetic patients > 14 years old with active history	13 (100%)
Appropriateness of treatment for diabetic patients with nephropathy	Number of patients > 14 years of age with (diabetes mellitus) and albuminuria ≥ 30 mg/g, confirmed in two tests in the last two years separated by at least three months and with an active history, with an active prescription during the evaluation period (with a closing date within the last 12 months at the time of the cut-off or later) of ACEI or ARA IIX100	Number of patients > 14 years of age with diabetes mellitus, presence of albuminuria greater than or equal to 30 mg/g confirmed in two tests in the last two years separated by at least three months, and with an active history.	13 (100%)
Average blood glucose strips per patient with interstitial glucose monitoring system that does not require calibration	Number of strips delivered to patients > 18 years of age using the interstitial glucose monitoring system > 90 days in the current year $\times 100$	Number of days of interstitial glucose monitoring system use in patients > 18 years of age with interstitial glucose monitoring > 90 days in the current year	13 (100%)
Diabetes patient with effective treatment management	[Patients over 14 years of age with an active medical history diagnosed with diabetes who have effective treatment management recorded in their medical history] X100	Patients over 14 years of age with an active medical history diagnosed with diabetes	13 (100%)
Patient with diabetes with adequate age-adjusted HbA1c control	[Patients > 14 years of age with Diabetes and active medical history, whose last recorded HbA1 value is ≤ 75 years and 75 years] X100	Patients over 14 years of age with an active medical history diagnosed with diabetes	13 (100%)
patient with diabetes and controlled blood pressure readings	[Patients aged between 15 and 79 years with an active medical history, whose latest recorded figures are: SBP < 140 mmHg and/or DBP < 90 mmHgX100	Patients aged between 15 and 79 years old with an active medical history diagnosed with diabetes.	13 (100%)
Secondary prevention of cardiovascular disease with antiplatelet agents by family doctors	Number of patients > 35 years old with cardiovascular disease (excluding unstable angina) (angina pectoris), infarction (arteriosclerotic heart disease), (cva/stroke/apoplexy) or (atherosclerosis/peripheral arterial disease) with an active prescription during the evaluation period (with a closing date within the last 12 months at the time of the cut-off or later) for any of the following	People over 35 years of age with ischaemic heart disease (diagnosed with myocardial infarction or angina) or other arteriosclerotic disease (cerebrovascular disease or peripheral artery disease), with an active computerised medical record (at least one entry in the medical record in the last year).	13 (100%)

Secondary prevention of cardiovascular disease with antiplatelet agents by Nursing	active ingredients: asa), (clopidogrel), (ticlopidine), (pravastatin and asa), x100 Number of patients > 35 years old with cardiovascular disease (excluding unstable angina) (angina pectoris), infarction (arteriosclerotic heart disease), (cva/stroke/apoplexy) or (atherosclerosis/peripheral arterial disease) with an active prescription during the evaluation period (with a closing date within the last 12 months at the time of the cut-off or later) for any of the following active ingredients: asa), (clopidogrel), (ticlopidine), (pravastatin and asa), x100	People > 35 years of age with ischaemic heart disease: diagnosed with myocardial infarction or angina) or other cerebrovascular arteriosclerotic disease or peripheral artery disease with an active computerised medical history (at least one entry in the medical history in the last year)	13 (100%)
Patients with chronic kidney disease with effective treatment management	Patients over 14 years of age with an active medical history diagnosed with CKD who have effective treatment management recorded in their medical historyX100	Patients over 14 years of age with an active medical history diagnosed with chronic kidney disease.	13 (100%)
Patients with chronic kidney disease and controlled blood pressure adjusted for age and albuminuria	[Patients aged 15 to 79 years with an active medical history diagnosed with chronic kidney disease who meet the criteria for blood pressure control adjusted for albuminuria] X 100	Patients aged 15 to 79 years with an active medical history diagnosed with chronic kidney disease	13 (100%)
Patients with chronic obstructive pulmonary disease (COPD) with good control of its severity	Number of patients > 40 years old with COPD with active medical history with BODEXX100	Total number of patients >40 years of age with COPD with active medical history without exclusion criteria	13 (100%)
Patients with chronic obstructive pulmonary disease(COPD) with effective treatment management	COPD patients > 40 years of age who have effective treatment management recorded in their medical history X100	Patients > 40 years of age with COPD with an active medical history in Primary Care in the Community of Madrid	13 (100%)
Patients with chronic obstructive pulmonary disease (COPD) who do not smoke	[Number of people over 40 years of age with COPD with an active medical history indicating that they do not smoke or have quit smoking in the last five years] x 100	Number of people over 40 years of age with COPD with active medical history	13 (100%)
Management of hypertensive patients without adjustment in the last 12 months	Number of hypertensive patients over 14 years of age with active history and adequate control (last BP reading taken in the last 12 months <=140/90 mmHg non-diabetic and BP<=140/80 diabetic) x 100	Number of patients over 14 years of age with autonomous health identification code for high blood pressure and with active history	13 (100%)
Autonomous medical identification code			
Monitoring of hypertensive patients without adjustment in the last 12 months	Number of hypertensive patients over 14 years of age with active history and adequate control (last BP reading taken in the last 12 months <=140/90 mmHg non-diabetic and BP<=140/80 diabetic) x 100	Number of patients over 14 years of age with autonomous health identification code for high blood pressure and with active history	13 (100%)
Autonomous health care identification code for nursing			
Patients with hypertension and left ventricular hypertrophy	Number of patients > 14 years of age with hypertension, active medical history, and electrocardiographic criteria for LVH in the last year X100	Number of patients > 14 years of age with hypertension and active medical history	13 (100%)
Patients with hypertension with age-adjusted blood pressure control	[Patients over 14 years of age with an active medical history meeting the diagnostic criteria for high blood pressure, whose last BP reading was ≤ 140/90 if they are < 80 years of age or ≤ 150/90 if they are ≥ 80 years of age in the last year] x 100.	Patients over 14 years of age with an active medical history diagnosed with high blood pressure	13 (100%)
Patients with stroke and controlled blood pressure readings	Patients aged 15 to 79 years with an active medical history meeting diagnostic criteria for stroke with a last BP reading ≤ 140/90 in the last yearx100	Patients aged between 15 and 79 with an active medical history diagnosed with stroke	13 (100%)
Stroke patients with effective treatment management	[Patients over 14 years of age with an active medical history diagnosed with stroke who have effective treatment management recorded in their medical records] X100	Patients over 14 years of age with an active medical history diagnosed with stroke.	13 (100%)
Patients with heart failure (III/IV) at higher risk of hospital admission and/or mortality	[Patients over 45 years of age with an active medical history and diagnosis of heart failure who are in NYHA functional class III or IV (last recorded functional class) in the last two years x 100	Patients over 45 years of age with an active medical history and diagnosis of heart failure	13 (100%)
Patients with heart failure undergoing effective treatment management	[Patients over 45 years of age with an active medical history and diagnosis of heart failure who have effective treatment	Patients over 45 years of age with an active medical history and diagnosis of heart failure	13 (100%)

	management recorded in their medical records] X100		
Patients with heart failure and controlled blood pressure readings	[Patients aged 45 to 79 years with an active medical history meeting diagnostic criteria for heart failure with a systolic blood pressure ≤ 140/90 in the last year] x100	Patients between 45 and 79 years of age diagnosed with heart failure with an active medical history	13 (100%)
% Chronic patients with assigned level of intervention: Health promotion and prevention	Number of persons with chronic conditions stratified by level of health promotion intervention assigned by the professional × 100	number of people with stratified chronic conditions	13 (100%)
% Chronic patients assigned to low intervention level	number of persons with chronic pathology stratified with low level of intervention assigned by the professional X 100	number of people with stratified chronic conditions	13 (100%)
% Chronic patients assigned to medium intervention level	number of persons with chronic pathology stratified with medium level of intervention assigned by the professional X 100	number of people with stratified chronic conditions	13 (100%)
% Chronic patients assigned to high intervention level	number of persons with chronic pathology stratified with a high level of intervention assigned by the professional X 100	number of people with stratified chronic conditions	13 (100%)
Chronic patients with assigned intervention level	number of persons with stratified chronic pathology and assigned level of interventionX100	number of people with stratified chronic conditions	13 (100%)
% Chronic patients with at least one prioritised chronic condition assigned a level of intervention	Number of people with stratified chronic conditions and at least one prioritised chronic condition with a level of intervention assigned by the professional × 100	Number of persons with stratified chronic conditions, of whom at least one condition is a prioritised chronic condition (asthma, COPD, heart failure, ischaemic heart disease, high blood pressure, diabetes, chronic kidney disease, cardiovascular disease).	13 (100%)
% Chronic patients in social and healthcare institutions with a level of intervention assigned	Number of people with stratified chronic conditions residing in social and healthcare institutions (residential homes) with assigned intervention level X 100	Number of people with stratified chronic conditions residing in social and healthcare institutions (residential homes)	13 (100%)
Chronic patients with high risk level and assigned intervention level	Chronic patients with high risk level due to stratification with intervention level assigned by the professionalX100	Number of chronic patients with high risk level in stratification	13 (100%)
Percentage of chronic patients with high risk level and high intervention level assigned	Number of chronic patients with high risk level in stratification with high intervention level assigned by the professional × 100	Number of chronic patients with high risk level in stratification	13 (100%)
Percentage of chronic patients with high risk level and medium intervention level assigned	Number of chronic patients with high risk level in stratification and average intervention level assigned by the professional × 100	Number of chronic patients with high risk level in stratification	13 (100%)
Percentage of chronic patients with high risk level and low intervention level assigned	Number of chronic patients with high risk level in stratification and low intervention level assigned by the professional × 100	Number of chronic patients with high risk level in stratification	13 (100%)
Percentage of chronic patients with high risk level and assigned intervention level Health promotion and prevention	Number of chronic patients with high risk level in stratification and level of intervention Health promotion assigned by the professional X 100	Number of chronic patients with high risk level in stratification	13 (100%)
Visits to family doctors and paediatricians by patients with chronic conditions	Number of visits to general practice or paediatric consultations in the last year by patients with stratified chronic conditions X 100	Number of patients with stratified chronic conditions	13 (100%)
Nursing visits for patients with chronic conditions	Number of visits to the nursing consultation in the last year by patients with stratified chronic conditions X100	Number of patients with stratified chronic conditions	13 (100%)
Percentage of citizens participating in prevecolon	citizens who have submitted a stool occult blood test sample at prevecolonX100	citizens with a scientific order of snagre hidden in pre-colonic faeces created	13 (100%)
Percentage of citizens with negative faecal occult blood	citizens with negative results from a faecal occult blood test using PrevecolonX100	citizens with a stool sample from pevecolon delivered with results	13 (100%)
Percentage of citizens with positive faecal occult blood	citizens with positive results from a faecal occult blood test using PrevecolonX100	citizens with a stool sample from pevecolon delivered with results	13 (100%)

Percentage of citizens with grounds for exclusion	citizens with a record of some reason for not requesting a colonoscopyX100	citizens with positive occult blood in stool	13 (100%)
Percentage of citizens with pre-colon colonoscopy	citizens with a record of requesting a colonoscopy exclusively with PrevecolonX100	citizens with positive occult blood in stool	13 (100%)
Percentage of citizens undergoing diagnostic colonoscopy	citizens with a record of requesting a diagnostic colonoscopyX100	citizens with positive occult blood in stool	13 (100%)
Positive faecal occult blood test with screening colonoscopy record (no request for colonoscopy or reason for exclusion)	Number of individuals with positive faecal occult blood in the prevecolon programme without colonoscopy exclusively by Prevecolon, with or without anaesthetist and without record of exclusionsX100	Number of individuals with positive faecal occult blood in the prevecolon programme in the last 24 months	13 (100%)
Percentage of citizens with screening report received	citizens with screening reports entered into the primary care computer programmeX100	citizens with exclusive colonoscopy prevecolon	13 (100%)
Percentage of citizens with high-risk results	citizens with high-risk screening resultsX100	citizens requesting an exclusive pre-colonoscopy colonoscopy	13 (100%)
Percentage of citizens with results: cancer	citizens with cancer screening results X100	citizens requesting an exclusive pre-colonoscopy colonoscopy	13 (100%)
Level 1: Citizens pre-registered for health education workshops	Number of citizens pre-registered for health education workshops at health centres and/or community settings (educational centres, senior centres) x100	Population > 2 years old	13 (100%)
Level 2: Group health education for children	Number of citizens in person and number of citizens online who have participated in group health education aimed at children in health centres and/or community settings (educational centres, social and health centres, etc.) x 100	Total number of citizens in the childhood stage of life with a health card assigned to the Health Centre	13 (100%)
Level 2: Group health education for adolescents	Number of citizens in person and number of citizens online who have participated in group health education aimed at adolescents in health centres and/or community settings (educational centres, social and health centres) x 100	Total number of citizens in the adolescent stage of life with a health card assigned to the Health Centre.	13 (100%)
Level 2: Group health education for adults	Number of citizens in person and number of citizens online who have participated in group health education aimed at the adult population in health centres and/or community settings, educational centres, and social and health centres X 100	Total number of adult citizens with a health card assigned to the Health Centre	13 (100%)
Level 2: Group health education for the elderly population	Number of citizens in person and number of citizens online who have participated in group health education aimed at the elderly in health centres and/or community settings, educational centres, and social and health centres x100	Total number of citizens in the elderly stage of life with a health card assigned to the Health Centre.	13 (100%)
Level 2: Citizens receiving face-to-face and online health education	Number of citizens (total number of in-person attendees and number of online attendees) receiving group health education in an online and in-person format at health centres and/or community settings educational centres, senior centres, X100	Population > 2 years old	13 (100%)
Level 2: Citizens receiving online health education	Number of citizens receiving group health education online at health centres and/or community settings (educational centres, senior centres, etc.)X100	Population > 2 years old	13 (100%)
Level 3: Citizens participating in information/awareness sessions	Number of citizens attending specific community interventionsX100	Population > 2 years old	13 (100%)
Telephone follow-up after discharge in patients/month	Number of patients with at least one discharge report received, with telephone follow-up protocols carried out in the monthX100	Number of patients with at least one discharge report received during the study period	13 (100%)
% of patients followed up by telephone after discharge report received/month	Number of patients with discharge reports received with telephone follow-up protocol upon discharge carried out in the monthX100	Number of patients with discharge reports received during the evaluation period	13 (100%)
% of patients followed up by telephone after receiving a discharge report from nursing staff/month	Number of patients with nursing discharge reports received and telephone follow-up protocol carried out upon discharge during the monthX100	Number of patients with nursing reports received during the evaluation period	13 (100%)

% of patients followed up by telephone after receiving an emergency report exclusively/month	Number of patients with emergency reports received with telephone follow-up protocol carried out in the monthX100	Number of patients with emergency reports received during the evaluation period	13 (100%)
% of patients with nursing discharge report marked as seen/month	Number of patients with nursing reports received and at least one marked as seen in the monthX100	Number of patients with nursing reports received during the evaluation period	13 (100%)
Telephone follow-up after discharge in patients/year	Total number of patients with at least one discharge report received, with telephone follow-up protocols carried out in the current yearX100	Number of patients with at least one discharge report received during the study period	13 (100%)
% of patients followed up by telephone after discharge report received/year	Total number of patients with discharge reports received with telephone follow-up protocol upon discharge carried out in the current yearX100	Number of patients with discharge reports received during the evaluation period	13 (100%)
% of patients followed up by telephone after receiving an emergency report/year	Total number of patients with emergency reports received with telephone follow-up protocol carried out in the current yearX100	Number of patients with emergency reports received during the evaluation period	13 (100%)
% Health centre patients with discharge report from the referral hospital/month	Number of patients at the health centre with at least one discharge report issued and received from their referral hospital in the monthX100	Number of patients at the health centre with at least one discharge report issued and received in the month	13 (100%)
% Health centre patients with discharge report from referral hospital outside the area/month	Number of patients at the health centre with at least one discharge report issued and received from a hospital other than the referral hospitalX100	Number of patients at the health centre with at least one discharge report issued and received during the month	13 (100%)
% Health centre patients with emergency reports from the referral hospital/month	Number of patients at the health centre with at least one exclusive emergency report issued and received from their referral hospital in the monthX100	Number of patients at the health centre with at least one exclusive emergency report issued and received during the month	13 (100%)
% Health centre patients with emergency reports from referral hospitals outside the area/month	Number of patients at the health centre with at least one exclusive emergency report issued and received from a hospital other than the referral hospital in the monthX100	Number of patients at the health centre with at least one exclusive emergency report issued and received during the month	13 (100%)
% Health centre patients with discharge report from the referral hospital/year	Number of patients at the health centre with at least one discharge report issued and received from their referral hospital in the current yearX100	Number of patients at the health centre with at least one discharge report issued and received in the current year	13 (100%)
% Health centre patients with discharge report from referral hospital outside the area/year	Number of patients at the health centre with at least one discharge report issued and received from a hospital other than the referral hospital in the current yearX100	Number of patients at the health centre with at least one discharge report issued and received in the current year	13 (100%)
% Health centre patients with emergency reports from the referral hospital/year	Number of patients at the health centre with at least one exclusive emergency report issued and received from their referral hospital in the current yearX100	Number of patients at the health centre with at least one exclusive emergency report issued and received from their referral hospital in the current year.	13 (100%)
% Health centre patients with emergency reports from referral hospitals outside the area/year	Number of patients at the health centre with at least one exclusive emergency report issued and received from their referral hospital in the current yearX100	Number of patients at the health centre with at least one exclusive emergency report issued and received in the current year	13 (100%)
Coverage of the pneumococcal vaccination programme in adults	Number of persons aged 60 or over with at least one dose of pneumococcal vaccine registered in SISPAL (Information provided by Public Health).X100	Number of persons aged 60 or over	13 (100%)
Adults aged 60 or over with pneumococcal vaccinations registered in primary care computer programme and/or SISPAL	Number of people aged 60 or over with at least one recorded dose of pneumococcal vaccine X100	Number of persons aged 60 or over	13 (100%)
Children aged 2 years with correct vaccination	[Children aged 2 years who have completed and documented the recommended vaccination type and dosage] x 100	Children aged 2 years	13 (100%)
Children aged 2 years with zero doses of vaccination	[Children aged 2 years who have not received any documented dose of the vaccine] x 100	Children aged 2 years	13 (100%)
Women with proper HPV vaccination	[Women aged 15 years who have completed and documented the recommended vaccination type and dosage] x 100	Women aged 15 years	13 (100%)
Children aged 5 years with correct vaccination	[Children aged 5 years who have completed and documented the	Children aged 5 years	13 (100%)

	recommended vaccination type and dosage] x 100		
Boys and girls aged 7 years with correct booster vaccination	[Children aged 7 years who have completed and documented the recommended vaccination type and dose] x 100	Boys and girls aged 7	13 (100%)
Population aged 13 years with correct booster vaccination	[Population aged 13 years who have completed and documented the recommended vaccination in type and dose] x 100	Population aged 13 years	13 (100%)
Population aged 15 years with correct booster vaccination	[Population aged 15 years who have completed and documented the recommended vaccination between the ages of 10 and 14 in terms of type and dose] x 100	Population aged 15 years	13 (100%)

The results were shown to the group of experts, who were asked to rate their degree of agreement with the childhood indicator-BVC relationship and the adult indicator-BVC relationship using a 10-point Likert scale (1 = strongly disagree to 10 = strongly agree). A priori consensus of at least 90% of the experts was established.

Table 7 shows their degree of agreement with childhood indicators.

Table 7. Expert agreement with chilhood indicator.

Childhood indicators E SOAP	Number of experts (N=13)	Score (p) 1-10	Expert agreement (n) score >=8p (n=13) %
	n=10	p=10	
Relationship between numerator and BVC			13 (100%)
	n=3	p=9	
	n=11	p=9	
Relationship between denominator and BVC			13 (100%)
	n=2	p=10	

Table 8 shows their degree of agreement with adult indicators

Table 8. Expert agreement with adult indicators.

Adult indicators E SOAP	Number of experts (N=13)	Score (p) 1-10	Expert agreement (n) score >=8p (n=13) %
Relationship between numerator and BVC	n=13	p=9	13 (100%)
	n=8	p=9	
Relationship between denominator and BVC			13 (100%)
	n=5	p=10	

4. Discussion

The study provides an innovative methodological proposal for analysing Community Vulnerability based on clinical and socio-health indicators from the Primary Care information system. Framed within the The Knowledge Model about Person Care allows to transcends the traditional view focused exclusively on disease and proposes a focus of study on vulnerability as a phenomenon inherent to the individual and, by extension, to the community.

One of the main findings is the feasibility of using existing indicators in clinical information systems (e-Soap) to infer population vulnerabilities using the Deductive Care Methodology (DCM). The final selection of 170 indicators, following a rigorous four-round screening process, demonstrates that it is possible to identify a minimum representative set of care outcomes, reducing the initial complexity of 382 indicators without losing internal validity. This process strengthens the structural validity of the model by eliminating administrative indicators or those susceptible to clinical bias.

The relationship established between the indicators and the Basic Variables of Care (BVC) is a significant contribution. It is noteworthy that variables such as age and physical limitations have a

greater number of associations at both the 'type' and 'block' levels in the health indicator structure, suggesting that health information systems are particularly oriented towards recording functional dimensions of care. In contrast, variables such as the individual and family care system are less represented, which could indicate a structural under-exploration in clinical record systems.

This finding opens up a line of reflection: although the conceptual model integrates a person-centered vision, the availability and design of indicators can condition the way vulnerability is measured. Therefore, the community vulnerability that is calculated will depend not only on the reality of the population, but also on the architecture of the information system. This reinforces the need to evolve towards systems that are more sensitive to social, family, and community factors related to individual and family care.

The use of Karnaugh tables as a propositional logic tool to relate numerators and denominators to the BVC brings transparency and reproducibility to the deductive process, reducing arbitrariness in the indicator-variable assignment. Likewise, the inclusion of a multidisciplinary group of experts and the prior definition of consensus ($\geq 90\%$ with a score ≥ 8) strengthen the internal validity of the study and the robustness of the relationships established.

In terms of applicability, the model allows aggregated data to be transferred to individualized and community-based clinical interpretations, facilitating both healthcare and management decision-making. The future possibility of analyzing evolutionary trajectories of Community Vulnerability, using sequentially updated official data, positions this methodology as a strategic tool for healthcare planning and evaluation of healthcare interventions.

However, the study has limitations. First, it is limited to a specific geographical area (Eastern Healthcare District of the Community of Madrid) and to the primary care level, which may limit its generalizability to other contexts with different healthcare organizations or indicator structures. Second, although expert consensus minimizes interpretive bias, the indicator-BVC relationship still depends partially on structured clinical judgment.

No similar studies have been found that analyze the descriptive internal structure of indicators with aspects related to caring for people, such as age, developmental status, individual or family care system, physical, psychological, and sensory limitations, environment, culture, gender, or the presence of material resources or time.

Other studies analyzing indicator structures focused on their content validity, such as that of (Salampessy et al, 2021) [26], which analyzed indicators from the Dutch National Institute for Health Care based on their suitability in areas of process and outcome, analyzing content validity without referring to aspects related to basic variables of care for the people to whom the indicator referred.

Another study carried out by (Barbazzia E et al, 2021) on the analysis of indicators focused on their use and suitability by a group of experts. Specifically, they referred to the detailed differentiation of the uses of healthcare performance indicators in the contexts of global decision-making in patient care (micro level), organizations (meso level), and policies (macro level), and on the suitability of an indicator for use based on its technical qualities, its intended context of use, and its management. However, they do not delve into the relationship between measuring aspects of care within healthcare [27].

5. Conclusions

The study shows that, based on primary care clinical information systems using a minimum set of 170 health indicators, information can be obtained on aspects related to patient care and, therefore, their vulnerability, in accordance with the patient care knowledge model.

The proposal contributes to integrating healthcare knowledge and computational modeling, aligning with model-based systems engineering (MBSE) approaches. Future research should explore the external validation of the model in other territories and the incorporation of broader social indicators.

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