

# Population Health Review in Valcea County in the Last Decade

2024

Editor

Radu POPA-NEDELCU, MD, PhD

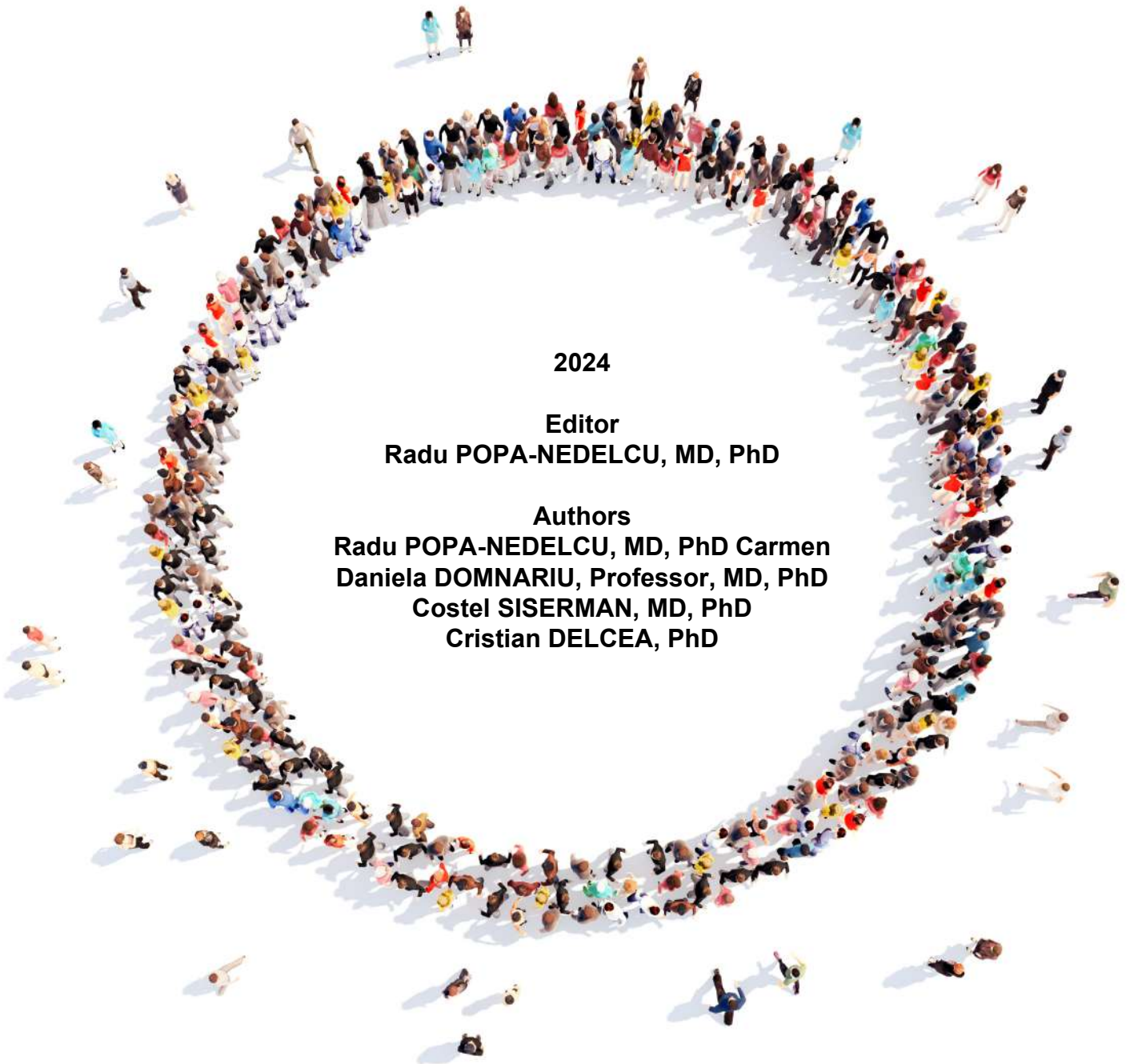
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## **Foreword**

This study represents not only a demographic characterization and an assessment of the state of health of the population of Vâlcea county, but also a critical analysis of the elements that make up a health complex: the medical infrastructure, the specialized human resource, the medical insurance system, the specific medical-therapeutic procedures and implicitly, the way of providing care.

Moreover, the present paper highlights the particular health needs of this territory.

Finally, following these assessments, concrete measures are presented to improve the local medical system and, subsequently, the health status of the population.

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## INTRODUCTION

Assessing the health status of the population is an activity we are constantly concerned with. This type of study must become a priority for any community and its leaders, but it is also necessary and mandatory to raise awareness at the individual population level. Regular medical assessments offer maximum benefits on general health status even in the absence of any symptoms or signs and, more importantly, validate a scientific approach to preventive and therapeutic methods that are specific, but above all useful for each population. Dealing with the situation in a school-educational key would be of real benefit to the community.

The importance of the interest in the permanent assessment of the health status of the population lies in the need to maintain a satisfactory level of personal and community health, which is indispensable in all societies in order to fulfil the prerequisites for development on all scales: socio-demographic, economic and financial, technological or cultural. It is also the basis of the pyramid of essential needs without which we might consider the perpetuation and existence of humanity as we know it today threatened. It can also be considered that the importance of the topic is very topical, especially in the context of the overall circumstances in which humanity finds itself at regional and global level.

In analysing public health, as many characteristics of the population under study as possible are investigated. One of the best tools to achieve this is the population census. This method emphasises many aspects and particularities of the community, establishing, for example, certain categories of events with the frequency and, possibly, the relationships between different phenomena. Establishing causality is achieved by investigating the demographic, social and economic structures and determinants in society. Although there are common international standards in census-taking which must obviously be followed, society-specific items can be included in the questionnaire to be filled in, precisely in order to uncover the distinctive features that we suspect or wish to explore in more detail.

In the same context lies the motivation for the study. We have endeavoured to contribute to the improvement of the population's health, which is a specific duty of the profession, by establishing a current picture of the community health evolution and the functionality of the local health system. The field will be seamlessly intertwined with social phenomena, medicine being a social science per se. It is the duty of all doctors and health researchers to contribute to the improvement of living conditions by ensuring a medical status that is favourable to this goal.

According to European standards, health is assessed according to several indicators. As in any other field, and in medicine too, in order to have comparable institutions, infrastructure and procedures, the need to align with European standards is obvious. Any such research takes into account demographics (e.g., birth rate, morbidity, mortality or infant mortality), health characteristics (various pathologies in the population), health system (providers and services) and health determinants (physical and mental health aspects and their links with environment and lifestyle). For example, a circumstantial factor that increasingly permeates social life is drug use. Obviously, this scourge needs to be measured, monitored and effectively controlled. The study has to be rigorous and detailed in order to be able to provide the best results to the stakeholders, in particular the authorities, and the authorities have to have the capacity to understand it so that they can make the best decisions to protect the health of the population. Subsequently, the implementation of the solutions obtained through the co-operation of the interested institutions also requires the adherence of the final beneficiaries, the population.

Health is assessed not only by tracking somatic indicators, but also by monitoring psychological and psychological elements that shape individual and social behaviour. Determining mental status is invariably an indispensable component in assessing the health of a population.

Although it can sometimes be a difficult subject to approach, it should not be neglected in view of the consequences. One example of this is the negative influence that the Covid-19 pandemic has had on the mental state of a certain proportion of individuals (1, 2).

Health surveillance and monitoring are two of the pillars endorsed by the World Health Organisation (3, 4) to protect the health status of populations at national, local or regional level. WHO encourages regular community health assessments to provide sound, scientific evidence to inform health policy decisions. Moreover, this provides important data on risk factors, lifestyle or health determinants for that population.

As is also shown in the literature, the compliance of the population with health care measures implemented by the authorities is highly correlated with the health status of individuals and communities. Health illiteracy has been shown to lead to suboptimal general health status and is even a determinant of population health (5). This general idea of health literacy is centred on the personal ability to assimilate health information. Researchers have attested that poor understanding of health information leads to over-use and overall unprofitable use of various health services, low compliance with treatment, failed screening or vaccination campaigns, poor communication with health workers and, ultimately, poor health status of the population (6).

In any sector of activity, the premise of knowledge is awareness of the state of affairs. Medicine is even a strong exponent of this idea, developing the notion of evidence-based practice (7), in addition to the already well-known, evidence-based medicine, concepts which are now the basis of all treatment guidelines and protocols. The need for truthful and detailed information is reflected in the accountability of decision-makers for the health strategies they adopt. Ignorance or non-recognition of population health problems and conditions can be used as an alibi by decision-makers for poor management or social indifference towards this area. Complex and accurate information needs to be extracted by clinicians and practitioners through studies and reports in order to enable the theorists to make an informed decision.

Various demographic analyses, records resulting from the collection and processing of medical documents, the description and interpretation of data relating to general population or health-related phenomena are the tools that can be used by professionals to achieve the necessary steps to improve the health status of the population. Step by step, measure by measure, implemented measure, situations that are detrimental to the status of life need to be improved, a process that also needs to be monitored. Any development of this kind needs dynamic adaptation to manage resources efficiently and maximise results.

It is in this key that the present work is conceived, wishing to expose vulnerabilities and problematic situations related to the health status of the population and to find the best solutions in order to improve them. For any health professional, this is not just a motivation, it is first and foremost a vocation. In addition to finding the weaknesses of the local health system, this study aims to provide proposals for the development of the specialised apparatus and variants of health literacy models for the population, with the aim of improving the health status of the population analysed.



## I. DEMOGRAPHIC FACTORS

### *Abstract*

*Strictly etymologically, the name "demography" comes from the Greek word "demos", which means people, and "graphos", which means to describe. Simply put, demography is the description of the population in terms of several representative elements. Analyzing some demographic aspects is closely related to elements related to the medical field. Also, this is a two-way situation, the health status of the population influencing the demographic characteristics of a certain area.*

Demography is the science that deals with the study of population in terms of numbers, geographic distribution, density, structure and the phenomena of movement and change in composition over time. To summarise, it can be said to study population statics and dynamics (8). These changes can be due to births, deaths, migration, and can be analysed for whole societies or well-defined groups according to certain variables, e.g., nationality, religion, level of education, place of residence, or occupational or job hierarchies. Thus, demography is a multifactorial analysis of populations, studies that end with a predictive projection of the variance of the characteristics of the object of study.

Analyses of these specific demographic units are closely linked to the assessment of public health and its maintenance. By analysing the characteristics of the population (number, structure and properties, age groups or sex), judgements can be made about the general health status of the population or the health problems faced by the population. The most important results of the studies are transformed into indicators of the health status of the analysed population and possible medium- and long-term consequences. Thus, it can be argued that the study of demography belongs among the social sciences, with important medical, social or economic applications.

The materials through which demographic elements are investigated are represented primarily through the institution of the census. This is a fairly exact calculation that looks at the whole population. This tool can be used to calculate an overall human capital resulting from the sum of the entire population taking all characteristics into account, a procedure that is usually used every decade at a given point in time. The first census based on modern concepts was conducted in the USA in 1790, while among the historical Romanian provinces, the first strict and detailed censuses were conducted in 1859-1860 during the period of Alexandru Ioan Cuza (9).

Surveys based on estimation methods are also carried out, but these will always have a degree of error. Information can also be collected at the level of population registration units where data on births, deaths, marriages and divorces are stored.

To sum up, static elements (number of inhabitants, structure by age, sex or background and different socio-economic characteristics) and dynamic elements (related to migratory or natural population changes) are analysed through the prism of demographic events and phenomena operationalised by different rates with which statistical analysis is performed. For example, the birth rate is a demographic phenomenon that expresses the number of live births (demographic event) in relation to the average number of inhabitants in a given geographical area and over a given period of time. In other words, the birth rate is the positive component of natural population movement and consists in the phenomenon of population reproduction. It can also be referred to as a process of population renewal or increase in the numbers of a population, or in management terms, 'entry' into the socio-economic environment.

Fertility is a couple characteristic, meaning the couple's ability to procreate. Later, it refers to a woman's physiological ability to conceive, to carry a pregnancy to term and the ability to give birth (a live birth). Crude is a factor that can be expressed as the number of live births per 1000 women of childbearing age (15-49 years) in a given population. This in turn is influenced by the age of partners, medico-social indicators and reproductive behaviour. Overall, fertility is directly related to population structure, the ability to conceive, and can also be related to marital status; all of which suggests that the maximum fertile age is 20-24 years. The study of fertility thus validates a more pertinent illustration of the determinations sought.

Overall mortality is the demographic phenomenon represented by the negative component of the natural movement of populations manifested by the occurrence of deaths (considered a demographic event) in a given population and within a given time frame. The crude death rate is the frequency of deaths per 1,000 inhabitants, calculated as the total number of deaths in a calendar year divided by the average total population. The factors characterising mortality can be intensity indicators (measuring frequencies of mortality rates), while structure indicators (measuring weights of deaths of a given type) can study population segments according to the variables sought (age groups, background, gender). The evolution can also be measured by examining the entries in the medical certificates of death. Moreover, according to medical documents, mortality can be broken down by causes of death, providing concrete aspects in order to determine the state of health or the factors influencing mortality in the population.

Investigating the topic on the basis of these indicators and tools introduced the notions of demographic metabolism and global human capital (10). Estimating future trends needs to be done multidimensionally. In addition to the classical elements of demographic analysis, it has been established that it is necessary to include education among the variables of primary interest in studies of this kind. Demographic metabolism refers to the cyclical succession of population types, demonstrating the evaluative and forecasting importance of the study, a quality confirmed by the rise in the age pyramid of younger and more educated populations among individuals belonging to a given geographical area. Global human capital signifies the strength of the population and the link through education to sustainable development on the basis of which one can evolve in the socio-economic position. It is concluded that education becomes a determinant of society and, subsequently, of demographic analysis with its derivatives involving the health system.

Following the above, we can conclude by emphasising a theme that will always be topical: the fact that education is a factor not only in establishing social, but also medical and health elements. Health education must be given greater weight and significance in school programmes and extra-curricular activities. Also, starting as early as possible brings a beneficial mindset, added-value and extra security to the community environment. Basic life support and, later, advanced life support are elements to be learnt from a very early age and are skills that can be learnt with a minimum of attention and understanding by people from any social, cultural or professional background.

In addition to the specifications resulting from demographic statistics, analysing the social and educational status of a population as a basis for assessing the health status of the community, medical data are also used. Obviously, they are collected from the health sector and have perhaps the most important role in assessing the health of the population. It's also the easiest way to get organised information on the most common pathologies, the most appropriate treatments, the necessary investigations and other facts. Certain morbidities require specific therapies, characteristic complementary examinations and, above all, early diagnosis in order to improve and have a favourable outcome. This is why such regular assessments of health status and its properties are needed in order to adapt health policy decision-makers. The patient needs to be at the centre of the healthcare package, and it needs to be tailored to the person's needs. No less important is health literacy, as explained above.

## II. HEALTHCARE ISSUES

### *Abstract*

*The health system itself must be analysed when assessing the health status of the population. It is a key determinant of public health developments. These assessments take into account medical infrastructure, financing, type and number of services provided, complexity of investigations, technological development, assessment of medical expertise, etc. There are gaps and surpluses to be accommodated for the benefit of patients, and these are made on the basis of the research applied to this component. In principle, the health system is tested on the basis of performance indicators that show positive and negative values according to its results.*

The health care system is the whole system concerned with the health of the population. With the bio-psycho-social well-being. As the World Health Organisation has added, health is not only a fully favourable organic, mental and social-community state, and not merely the absence of medical conditions or infirmity.

### **A. Healthcare Infrastructure**

The evaluation of health care activity is based on classic indicators such as waiting or hospitalisation times, mortality, prevalence of superinfections, pathological relapse, costs, etc. In addition to these factors, it is imperative to look for other elements to guide us in assessing the quality of health care in hospitals, outpatient clinics or other specific types of facilities. As medicine is such a broad field, there will be specific markers for each type of activity in all specialities to monitor and improve performance. In some situations, it is not only necessary to determine indicators, but sometimes strategies or changes in policies or organisational structure are needed in order to assess hospital activity adequately and correctly.

In addition to quality indicators, performance is determined by efficiency and effectiveness criteria. Through statistical analysis it is possible to find an average (a benchmark) which by comparison with key indicators can give results in this evaluation. And this can and should be used to improve health services for the population. We should not forget that most of the assessment factors are interlinked and interact. They influence each other (11).

According to the current legislation in force (12), quality indicators are categorised into classical, critical and general. Subsequently there is a further sub-division of criteria related to human resource management, efficient utilisation of services, economic-financial values or related to patient safety and experience. They all have usage rules and calculation formulae, but there is certainly room for improvement.

For example, one of the classic indicators used also for hospital activity in Romania is the case-mix index and it is an index of case complexity. The types of patients treated in a hospital by diagnosis and severity are recorded (13). In addition to these factors, the medical procedure by which the medical situation has been resolved should also be taken into account, together with possible relapses or complications and how the patient's experience is perceived, because in certain pathologies certain resources are consumed in a surgical treatment and other resources in a conservative treatment, and they may have approximately the same evolution. These linkages could be possible on the basis of the patient's personal identification number and electronic medical record by finding a formula that is in line with personal data protection laws; all this, of course, in relation to the hospital's possibilities.

Elements that are still being taken into account, such as the number of cases dealt with in emergency units, the duration of hospitalisations or the occupancy rate of beds in a ward, require an adaptation of the criteria analysed, as in some cases they become redundant. For example, there are wards where there is only one doctor, wards that are closed during the doctor's holidays. At that time (which may vary up to a longer period) there are no more

admissions in that ward, so the occupied beds are 0, and the emergency unit staff is obliged to refer the case to another hospital or to solve the case on the spot - representing a positive index, which is actually a false positive. In relation to the excessive length of hospitalisations for pathologies that do not justify such resources, a control mechanism would be needed to limit this situation. A cross-check, perhaps monthly or bi-monthly, from neighbouring hospitals could be a solution.

Directly related to medical performance is the activity of specialised outpatient clinics. An important indicator should be the utilisation of these cabinets. There are many specialities that have hospital wards, but which are no longer so suitable for on-call, for example, and should focus more on outpatient work, at least locally. There are many specialities where the effectiveness has increased so much that most pathologies can be resolved under such conditions. In dermatology, ophthalmology, ENT, these facilities can be used much more effectively and even in other specialities with a more surgical character.

Another element that could be taken into account for medical performance, at least for some specialities, could be geographical location. Access to emergency surgery, vascular or cardiological procedures, for example, is a real public health problem. An algorithm can be found to be able to score additional points for procedures realised under such conditions. This requires first a detailed mapping of the needs for specific health services together with a managerial predictive projection of the priority units, and then the implementation of a programme to cover the deficient areas with the necessary health services, but this process means, first of all, an involved and visionary manager who is able to attract funds for state-of-the-art equipment and highly qualified doctors.

In this way you can also create a link with the community. And this connection is very important. In addition to each hospital, medical teams can be set up to provide care at home. In addition to the ones that can be contracted from the Insurance Fund, they can also be done additionally, at a cost, bringing not only additional income to the hospital, but also creating a strong social bond. This method also benefits the mental state of the patient, who is no longer taken out of the family environment to be brought to hospital, decreasing anxiety and improving mental status. This indicator (home examination teams in the area of competence) should become a criterion for hospital accreditation.

In order for the use of these indicators to ultimately help improve the performance of healthcare work, a relevant system that is open to feedback, analysis, control and implementation of results is also needed. All these elements listed above need to come from the top level, from the manager of the organisation, who has to ensure the functionality of the model.

The indicators found should be used according to the level of the health system, its needs and priorities. These need to be analysed in a balanced way to find specific results for each operational area. The purpose of health performance indicators should always be the provision of quality health services and equity, one of the main dimensions in health (14).

Costs are also an index that any manager should keep an eye on. Apart from the obvious costs of materials, utilities, staff, technology or consumables, there are also indirect costs, such as, for example, the cost of administrative staff, who do not de facto come into contact with and provide services to the patient. In addition to these, the amount of the cost of resting an individual could also be taken into account, depending on the work performed by each individual. It represents the value of a productive resource recovered in the market more quickly or, in other words, the savings made by getting a person back to work more quickly through fast and effective treatment than by keeping them in a non-productive convalescent and recovery state. This report can be worked out with the authorities responsible for labour law and may also have implications for the amount of compulsory or optional health insurance the person may take out.

## B. The Health System

The health system is also assessed on the basis of its operating characteristics. In general, we can identify 4 health systems, with small variations. The Beveridge and Bismark types are used in Western Europe, the Semashko type in Russia and former socialist bloc countries, and the voluntary private health insurance system in the USA (15).

At present, Romania has a health system modelled on the Bismark model with some reminiscences of Semashko and Beveridge notes (16). It is based on the principle of solidarity with compulsory health insurance and is characterised by decentralisation, accessibility to health services, free choice of doctor (17). There are also two packages of medical services that can be provided, a minimum package for the uninsured and a basic package for the medically insured, programmes complemented by a series of rights and obligations for both providers and beneficiaries (18). How the health care system works in Romania, one can discuss at length. But recognising that the US has some of the most advanced and efficient patterns of activity in many areas, we can reflect on the introduction of voluntary private health insurance.

For the time being in Romania, private insurance is an optional pillar in the health services provided to the population and is more like a subscription for medical services than a real insurance. There are advantages and disadvantages to the widespread introduction of such a system. One of the first and main advantages would be that each person would be able to contribute according to his or her needs and not according to income. This avoids excessive and unjustified expenditure and at the same time increases the satisfaction of the insured. However, the possibility of supplementing the number or type of services, obviously at a cost, is still pressing.

In close connection with the above-mentioned elements, we should also mention, as a positive element, the encouragement of the expansion of the types of services offered, especially by the most sought-after insurance companies, which could reach the highest standards in medicine and at the same level as the best treatments applied anywhere in the world. Likewise, providers, doctors or other health care personnel may receive financial or other incentives or benefits in the event of increased efficiency. This could boost the development of the medical sector, both through hospitals, outpatient centres, surgeries, technology, equipment and highly-skilled staff.

At the same time, however, also because of the financial situation, there will be a large part of the population that will not be able to afford the cost of insurance, which will lead to a large uncovered area of the population with regard to health services, generating numerous inequalities. Moreover, there may be discontinuities in the provision of health care due to delays in recurring payments or the generation of penalties, and because of this, the desired effect will not be the desired one of recovery or improvement of the condition, but may be even the opposite, of worsening the medical evolution. As the financial situation of the population in Romania is not satisfactory, there is a high risk of multiple disruptions in the provision of healthcare services and the lack of health insurance protection strictly for economic reasons.

Another unfavourable aspect of private health insurance is the ability of any institution, whose main aim is profit, to adapt to this. In this way, cases will be selected so that people with resource-intensive pathologies will not be accepted for insurance or will be overcharged. It would put economics first, leaving medical ethics second. But even this could be well managed with a rigorously formulated and enforced code of ethics. Additional rules and laws could be introduced in relation to the institution of health insurance, i.e., restricting the conditioning of the personal pathological history or other pre-existing medical conditions, as has been done for example with the right to be forgotten of cancer survivors (19).

Also, in order to increase income, some medical procedures can be prescribed and performed abusively through the payment per medical service specific to private health insurance. In any health system based on logical and moral precepts, the emphasis will be on preventive action. These services should be paid extra and providers should be encouraged to perform them. Another idea for maintaining the health of the population could be the implementation of mandatory annual standardised screening programmes and/or medical examinations targeting the main health problems of the population, whereby providers would be paid separately and these payments would represent financial incentives to maintain and improve public health.

One advantage of these types of insurance may be that medical cover can be facilitated through employers by establishing favourable clauses in collective labour contracts. Labour movements could campaign for this and other health benefits for employees. And for people who are not employed or cannot afford any kind of insurance, the state can subsidise a tailored and balanced package of health services. Similar health services should be offered by providers to vulnerable populations such as the elderly, people with special needs or disadvantaged social groups.

Just as the US health system is not perfect, given that despite the almost 17 per cent of GDP allocated to health care, there are still many flaws in certain medical fields, private health insurance in Romania may not be operating at the expected capacity. All applied principles and models must have self-regulatory systems and evaluation mechanisms to assess their usefulness.

### **C. Quality Management in Healthcare**

Recently, in Romania, too, the obligation to implement a quality management system in health care organisations has been legislated, in accordance with various reference standards, designed to permanently increase the level of its results. These systems are designed to coordinate the fulfilment of the requirements of healthcare recipients and compliance with relevant legislation and regulations. It is intended for organisations' internal and external partners, as well as certification bodies, to assess the institution's ability to meet the requirements.

Addressing risk factors enables healthcare organisations to identify phenomena that could corrupt its processes and quality management system by influencing expected outcomes, to carry out preventive assessments with the aim of limiting negative effects, and to maximise resources and opportunities when they arise.

In an organisation with very complex and ever-evolving dynamics, a standardised approach to requirements and consideration of future needs and expectations is a challenge for any healthcare institution. In order to fulfil the planned goals, the unit may adopt different forms of improvement, such as adaptive change, innovation or strategic re-planning.

Quality policies generally pursue several goals:

- meeting the needs of beneficiaries by providing quality services while complying with legal requirements;
- continuously improve the quality of the services provided by discovering and adapting any inconsistencies throughout the service delivery flow;
- continuous training of staff to identify and understand their responsibilities for achieving quality performance;
- cultivating competence, responsibility and a positive, collegial, team atmosphere among its own staff;
- improving managerial capacity, communication between employees and collaborators of the institution, creating and developing the information ecosystem of the organisation;

- establishing and maintaining favourable bilateral business relations with contractors and suppliers of products and services by objectively evaluating and selecting them;
- creating, maintaining and developing a positive and favourable image in general and in particular in the environments in which the organisation operates;
- protecting the environment.

Adaptation in dynamics must be an essential prerequisite in the functioning of any health system, together with all its components and annexes, with the patient at the centre. The variability of the population's health needs is extremely complex, which explains the need for permanent adjustments. This reordering of priorities is necessarily carried out following specific determinations related to the health status of the population, based on scientific research and specialised analyses carried out by experts in the field. Public health assessment is the single most important criterion against which managerial decisions are made and community health strategies are devised, and this assessment needs to be done at all levels in a health system. Requiring permanent coordination with the needs of the beneficiaries, the analysis of the health status of the population correlates assessments of the predominant pathologies, risk factors or causes of death, but also the medical infrastructure, financing, treatments, investigations or available medical staff.

### III. STUDY ELEMENTS

#### *Abstract*

*This chapter presents the structure of the conducted study including the specific elements and providing results and proposals for action. The work is based on the observation of official documents from recent years related to the health status of the population in order to critically analyze the values obtained and try to find solutions for the situations found.*

#### **1. Working Hypothesis**

The hypothesis that we have analysed in this paper is that, evaluating the last decade, the population of Vâlcea County, Romania, has a satisfactory state of health and benefits from complex health services provided by sufficient and competent medical staff within an efficient and developed health infrastructure.

#### **2. Aim and Objectives**

The aim of this research is to assess the health status of the population in Vâlcea County in the last 10 years.

The objectives of this study are to assess the health status of the population by analysing several factors:

- Demographic analysis will take into account population dynamics (birth rate, mortality), life expectancy and structural elements
- Risk factors and specific behaviours (alcohol abuse, substance dependence, obesity)
- Prevalent pathologies in the population
- Structuring causes of death
- Healthcare infrastructure
- Healthcare-associated infections
- Highly specialised exams available
- Highly specialised procedures available
- Highly specialised facilities available
- Health insurance.

#### **3. Material and Method**

The study is descriptive in nature, with the data for Vâlcea County being analysed on the basis of information from the official websites of the authorities. The current research meets the criteria of a population-based study, looking for prevalence among the most common medical conditions in the analysed population.

Among the achievements of the work, we will also find elements of an analytical type of study due to the inferential operations created in the identification of the factual state of the medical situation, as described extensively in the specialised literature (20). Also, there are components of an observational examination by researching a group (cohort) consisting of the population of Vâlcea County.

We analysed cross-sectional aspects of the population through a comparative demographic and health and medical research. We looked at personal characteristics, various distributions and their determinants. The study is also correlational. Vâlcea County has a population of about 390,000 people (as of 01.01.2022) according to the National Institute of Statistics (INS) and represents a medium-level county for Romania in almost all respects.



Demographics and utilisation of health services were taken into account in assessing the health status of the group. Without claiming that the results can be extrapolated to the national level, the aim is to describe the demographic phenomena mentioned in the General Part and to assess the health status of the population through the prism of the elements characterising the health care system.

Romania's 2011 and 2021 population censuses were carried out by the National Institute of Statistics, an institution under the subordination of the Government. These aimed to establish the number and structure of the population together with its distribution, density, social and economic components. The censuses were carried out in accordance with the Romanian and European legislation in force and the official results were published in part or in full on the websites of the authorised institutions.

The 2021 census was the first census in digital format and the 13th census in Romania's history. The data collection was carried out with the assurance of confidentiality and protection of personal data, with multiple authorities across the country contributing to the process. Data were collected in accordance with the recommendations of the Council of Europe, the European Parliament and specialised international institutions. Data recording was based on the free self-declaration of the respondents. Some individuals did not provide all the requested information, so some characteristics were collected indirectly from administrative sources (21).

The characteristic elements of the medical system analysed were taken from the websites of the state institutions, official web pages and processed for the investigation. The results of official statistical bulletins were evaluated in order to carry out our own research on the evolution of the health status of the population over the last decade. This resulted in a critical analysis of the health system in Vâlcea, its positive and negative components.

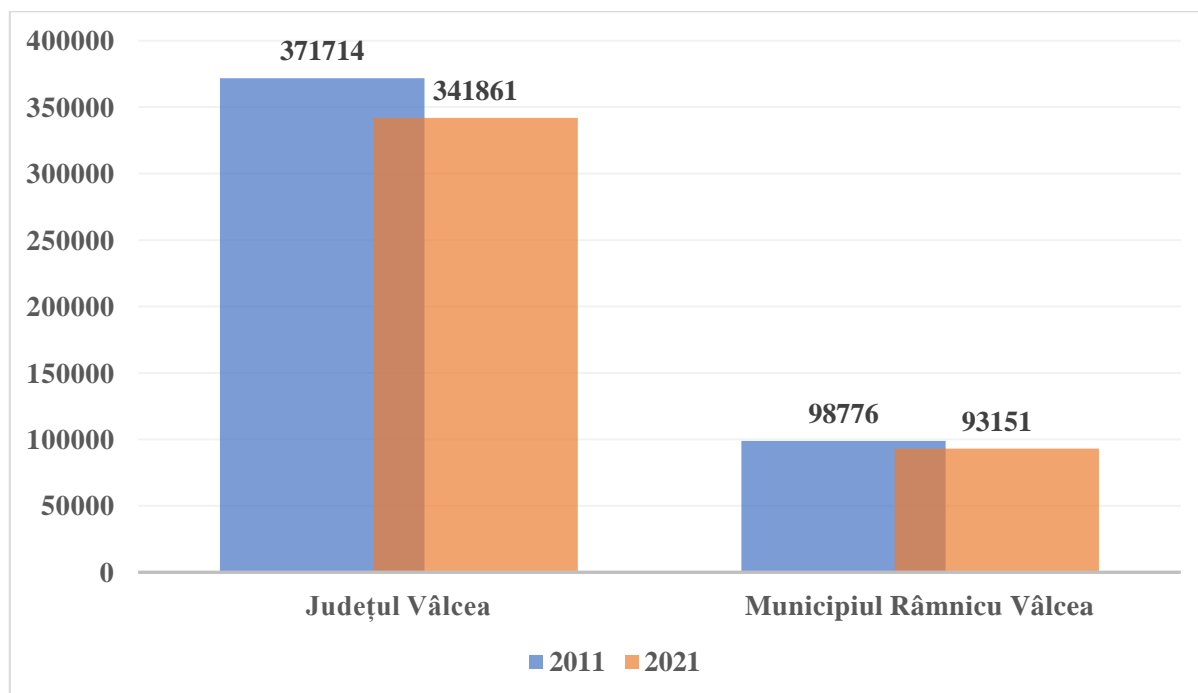
The official documents that we considered were published by the Public Health Department of Vâlcea, the Ministry of Health, the National Institute of Statistics, the National Institute of Public Health, the Prefect's Institution of Vâlcea County, the Health Insurance House of Vâlcea, the County Statistics Department of Vâlcea. Among them, I highlight the following:

- Activity Report DSP Vâlcea for 2014 (22)
- Activity Report DSP Vâlcea for 2015 (23)
- Activity Report DSP Vâlcea for 2016 (24)
- Activity Report DSP Vâlcea for 2018 (25)
- Activity Report DSP Vâlcea for 2019 (26)
- Activity Report DSP Vâlcea for 2020 (27)
- Activity Report DSP Vâlcea for 2021 (28)
- Activity Report DSP Vâlcea for 2022 (29)
- Analysis of the health status of the population of Vâlcea County in 2013; DSP Vâlcea (30)
- Analysis of the health status of the population of Vâlcea County in 2017; DSP Vâlcea (31)
- Analysis of the health status of the population of Vâlcea County in 2019; DSP Vâlcea (32)
- Activity Report CAS Vâlcea for 2015 (33)
- Activity Report CAS Vâlcea for 2016 (34)
- Activity Report CAS Vâlcea for 2017 (35)
- Activity Report CAS Vâlcea for 2018 (36)
- Activity Report CAS Vâlcea for 2019 (37)
- Activity Report CAS Vâlcea for 2021 (38)
- Activity Report CAS Vâlcea for 2022 (39)
- Report on the economic, social, cultural and administrative state of Vâlcea County 01.01.2019 - 31.12.2019; Vâlcea Prefecture (40)

- Integrated urban development strategy of Râmnicu Vâlcea municipality for the period 2021-2027; Râmnicu Vâlcea City Hall (41)
- National Population Health Report 2016; Ministry of Health and National Institute of Public Health (42)
- National Population Health Report 2020; Ministry of Health and National Institute of Public Health (43)
- Demographic events in 2020; National Institute of Statistics (44)
- Monograph of Vâlcea County; National Bank of Romania (45)
- Data published by the Ministry of Health (46)
- Data published by Vâlcea County Emergency Hospital (47)
- EUROSTAT dates (48, 49)
- Government data (50, 51)

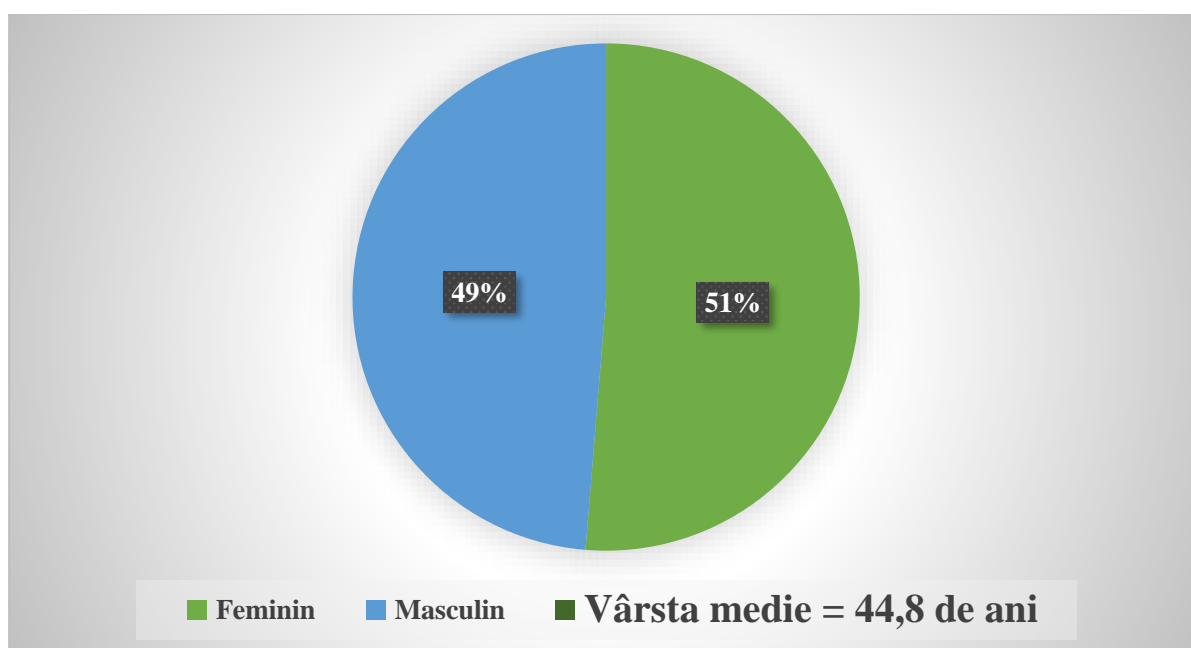
The data collected from these documents were used to form databases that could be operationalised, analysed and further processed using Microsoft Office software (Microsoft Word and Microsoft Excel together with their facilities).

#### 4. Results



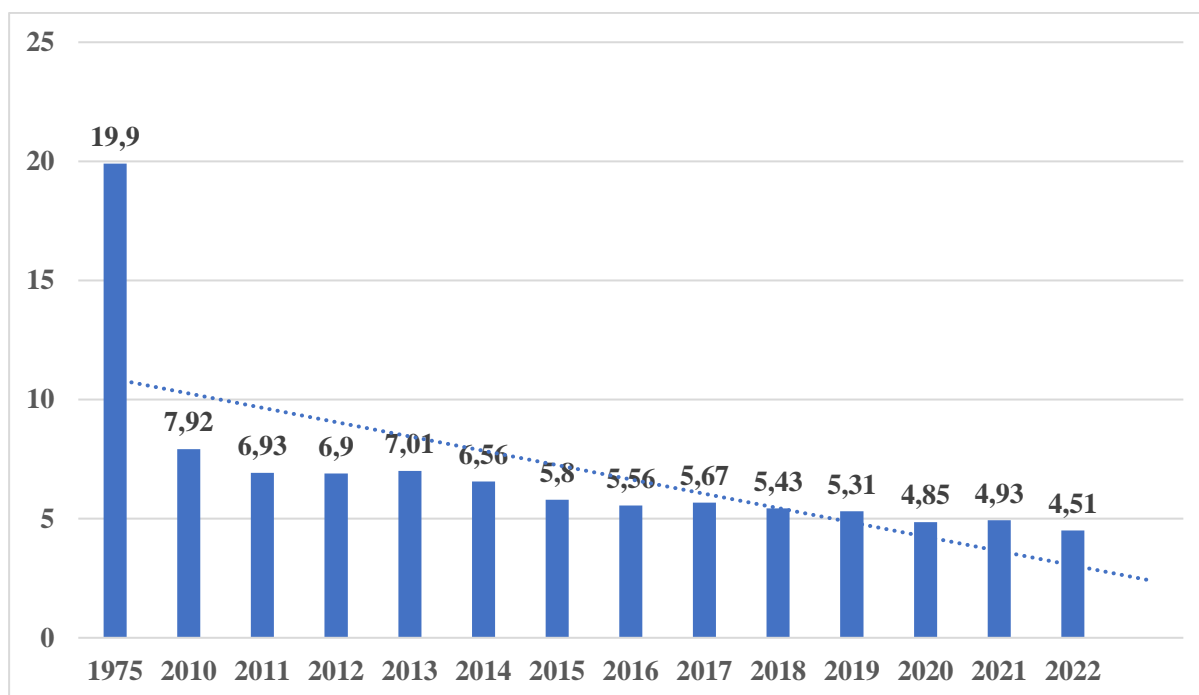
**Fig. 1.** Evolution of the population in Valcea County and Râmnicu Valcea Municipality 2011 vs 2021

In the first figure we have shown the decreasing evolution of the population of Vâlcea county over the last 10 years by reference to the official methods of calculation, through the official censuses carried out at national level.



**Fig. 2.** Gender structure of the population of Valcea county

Based on the data of the local Statistical Office, we obtained the sex ratio in the population and calculated the average age.



**Fig. 3.** Gross birth rate per 1000 inhabitants

The adjacent picture shows the figures on a strong downward trend in the birth rate in Vâlcea County, a trend in tune with national values, but obviously worrying.

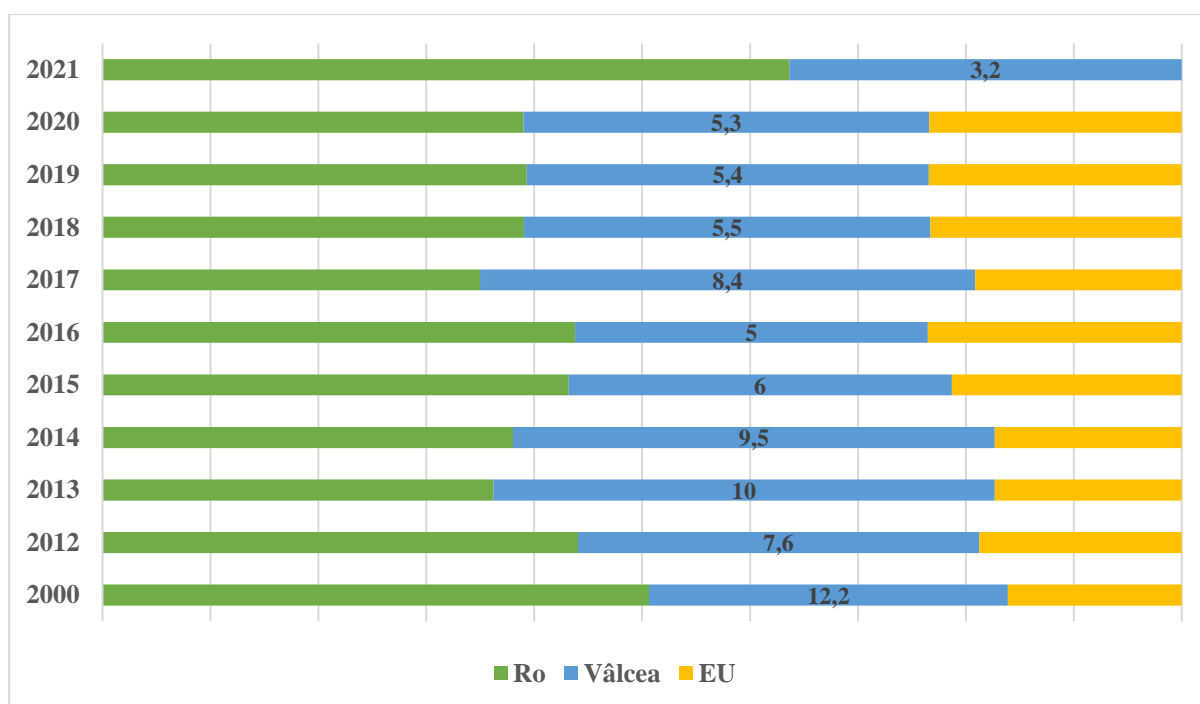


Fig. 4. Infant mortality expressed per 1000 live births

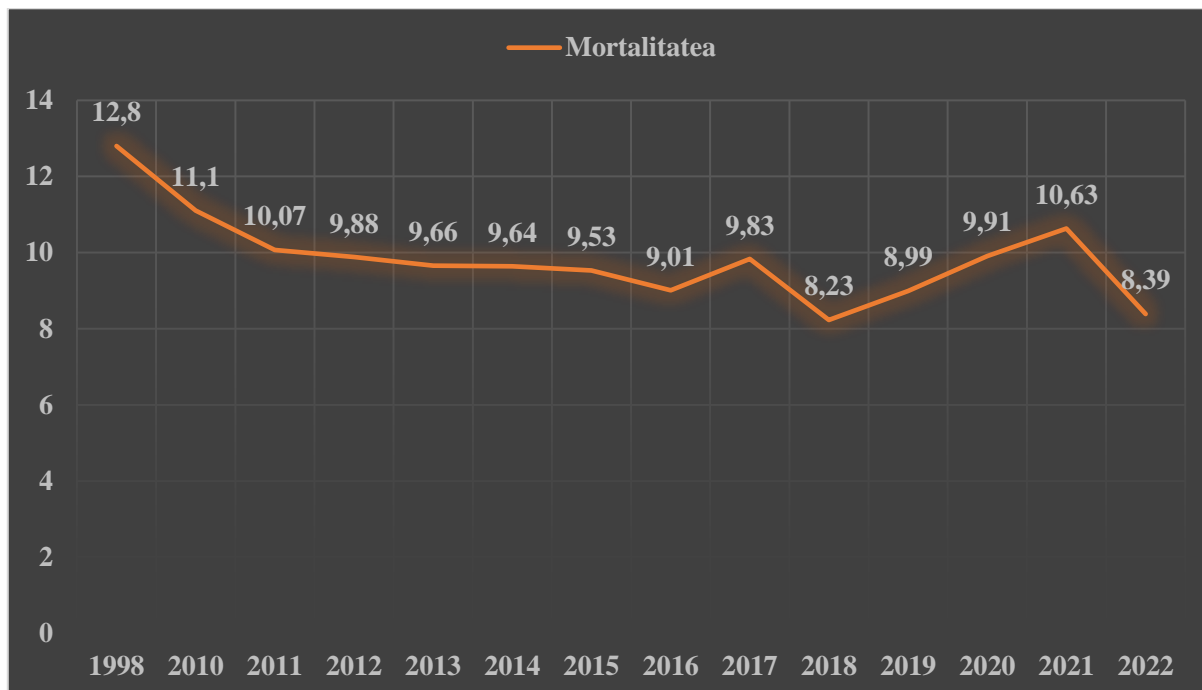
The previous figure compares infant mortality between the European, national and Vâlcea county averages, with the county managing to decrease more and approach the European average.

Table I. Maternal mortality in Vâlcea county

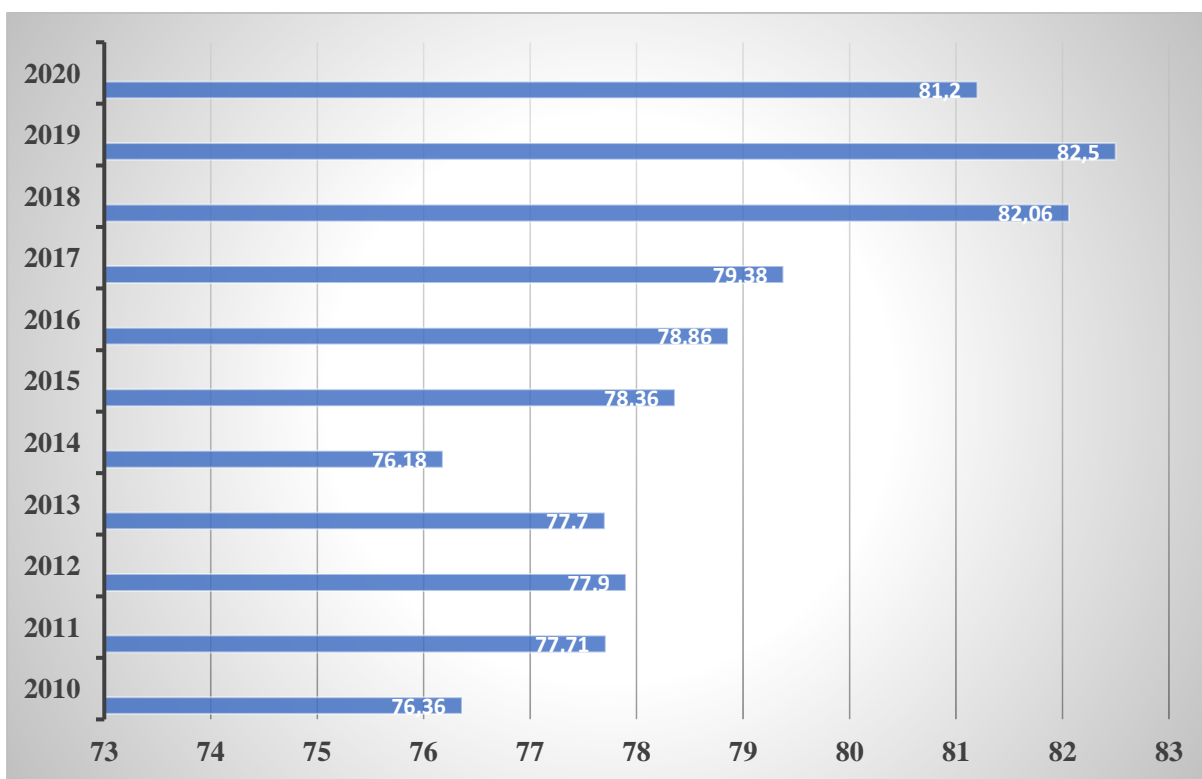
<b>2013</b>	3.5 ‰
<b>2014</b>	2 ‰
<b>2015</b>	0
<b>2016</b>	0
<b>2017</b>	0
<b>2018</b>	0
<b>2019</b>	0
<b>2020</b>	0
<b>2021</b>	0
<b>2022</b>	0

The above-mentioned table shows the good evolution of maternal mortality in recent years, expressing a neutral value since 2015.

The figure below shows the evolution of mortality in Vâlcea county, which followed decreasing figures before the Covid-19 pandemic, then a strong positive trend during the pandemic period and then a post-pandemic return to decreasing values.

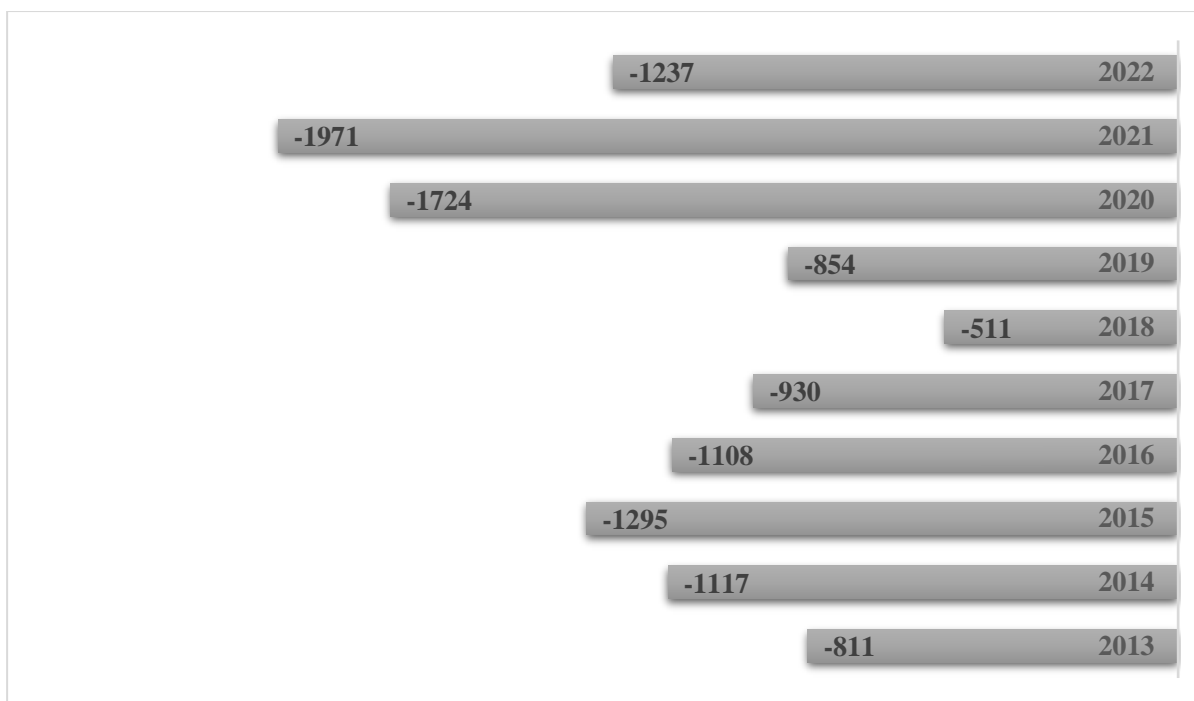


**Fig. 5.** Gross death rate per 1000 inhabitants



**Fig. 6.** Life expectancy in Valcea county

The figure above shows that Vâlcea county has a very high life expectancy, being even the highest nationally in recent years.



**Fig. 7.** Natural increase in Valcea county

The figure above shows the natural increase in Vâlcea county over the last 10 years, values which, unfortunately, have been negative over the whole period under study.

**Table II.** Alcohol consumption in Valcea county

Year	Pure alcohol consumption per person (litres)
2000	17.4
2005	15.8
2010	14
2011	<b>14.4 (10.4 purchased alcohol + 4 own production)</b>
2015	11.6
2018	11.7
2020	10.3

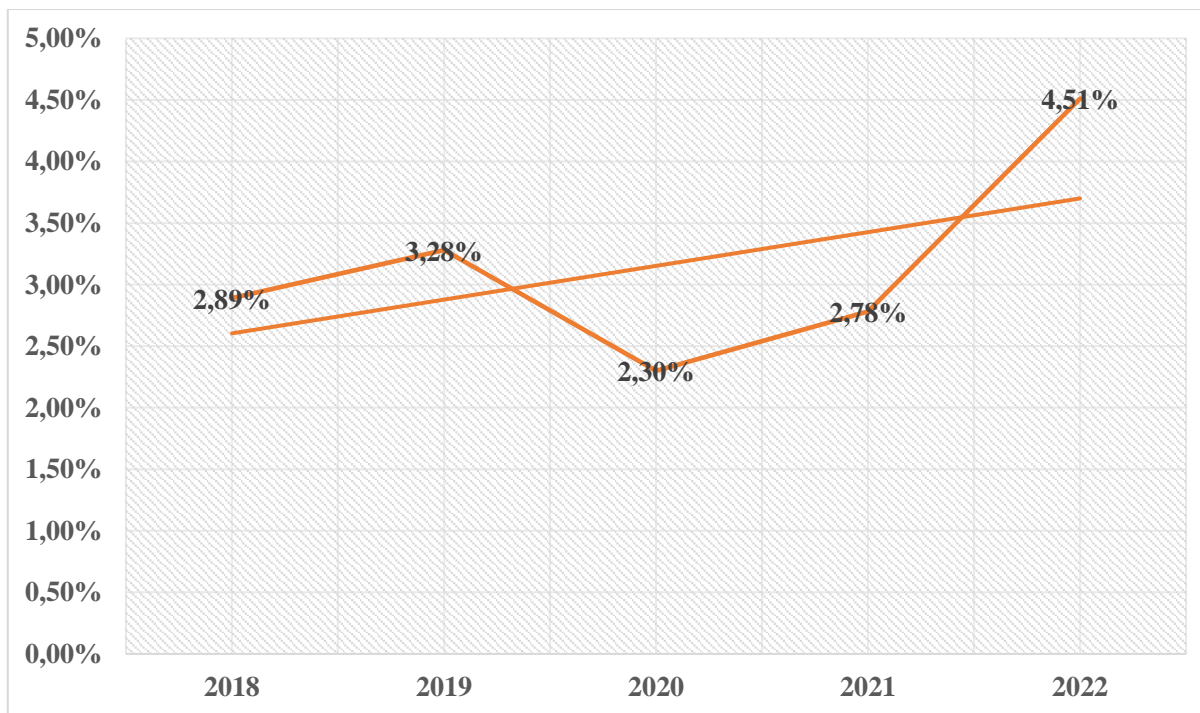
The previous table shows the decrease in the quantity of pure alcohol consumed per inhabitant in Vâlcea County, but it should also be taken into account the own production which cannot be quantified exactly.

**Table III.** Treatment demand, per cent, by drug used

<i>Type of drug</i>	<i>Apply for treatment</i>
<i>Cannabis</i>	56%
<i>Opioid</i>	24.4%
<i>New types of psychoactive substances</i>	11.1%
<i>Cocaine</i>	2.8%
<i>MDMA/Ecstasy</i>	2.3%
<i>Benzodiazepines</i>	1%
<i>Amphetamine</i>	0.8%
<i>Volatile substances</i>	0.5%
<i>Hallucinogens</i>	0.4%

The table above shows the trend in health care-seeking behaviour for different health problems caused by different substance use, nationally (2021).

The following figure shows the worrying figures and the need for specific health policies to limit and curb the rise in calorie-dominant obesity among children and young people. The upward trend is evident pre- and post-pandemic, the more favourable situation being due to the fact that education was mostly online and students no longer benefited from the adequate number of medical consultations.



**Fig. 8.** Childhood non-endocrine obesity

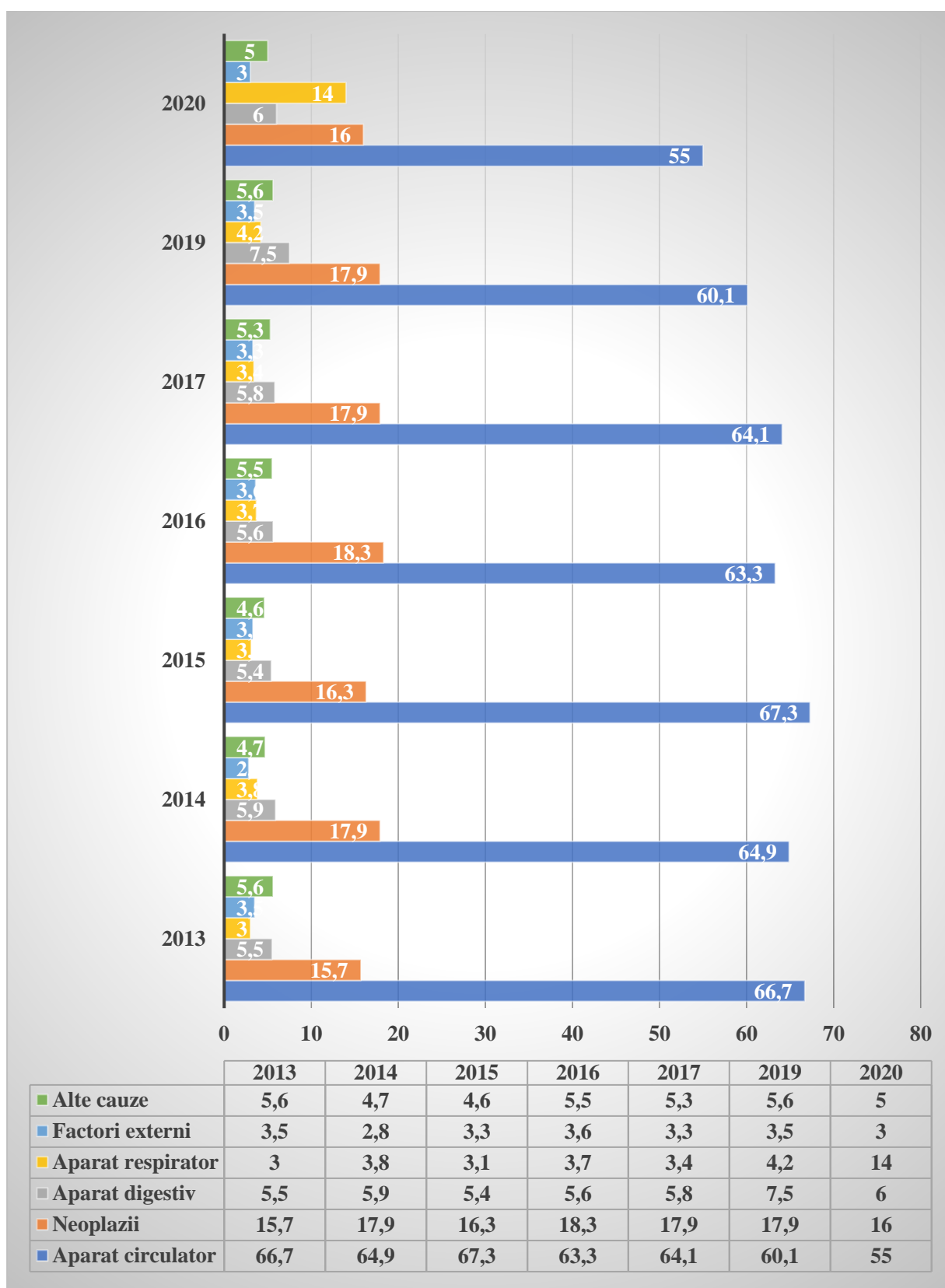
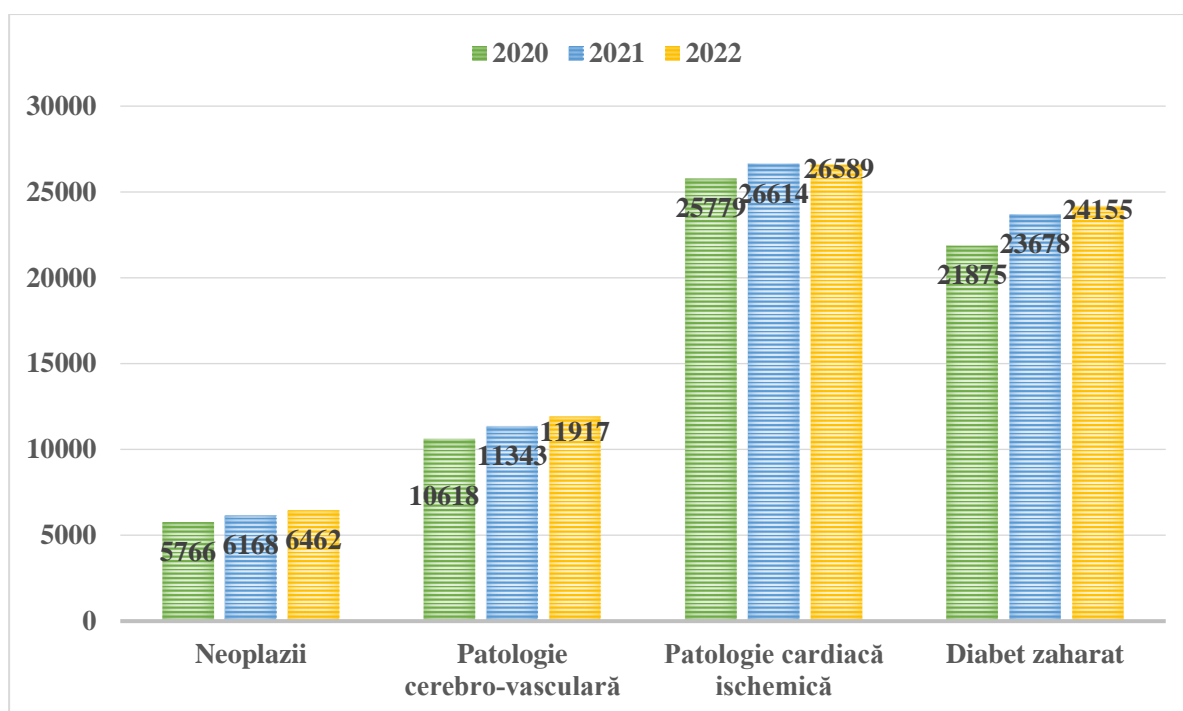


Fig. 9. Structure of mortality by causes in Vâlcea county (%)

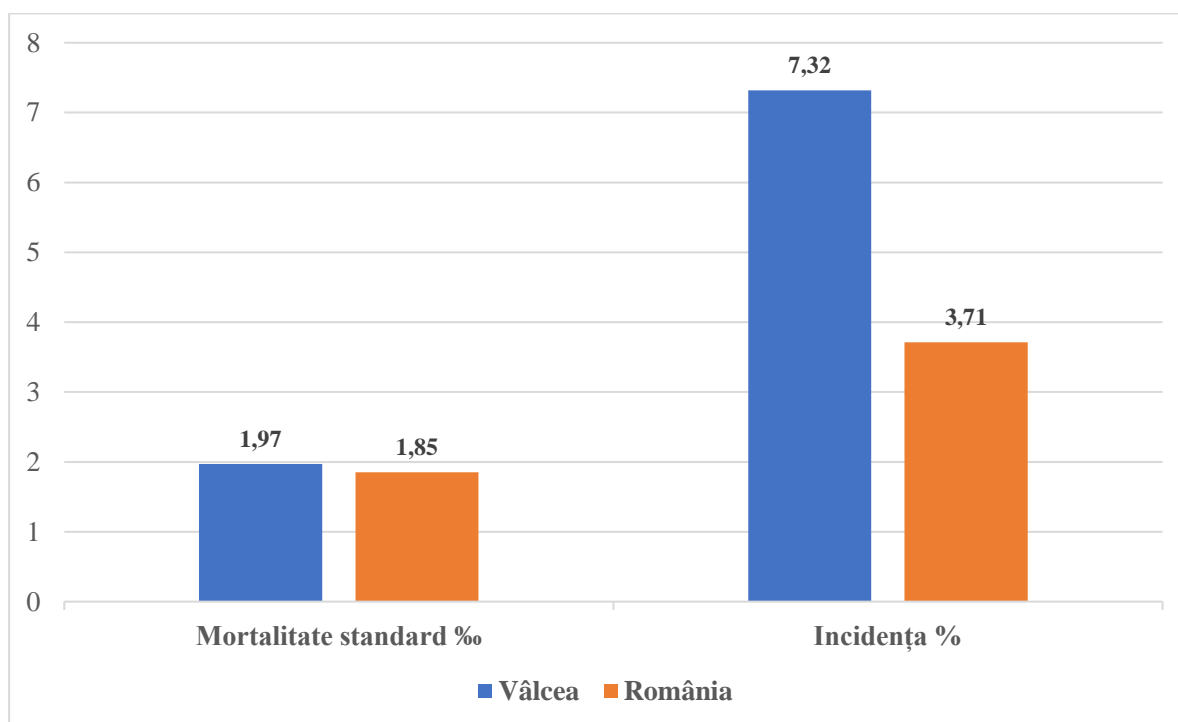
The adjacent figure demonstrates that the morbidity structure in Vâlcea county belongs to the national known framework in which the leading causes of death are cardio-circulatory and neoplastic pathologies, respectively.





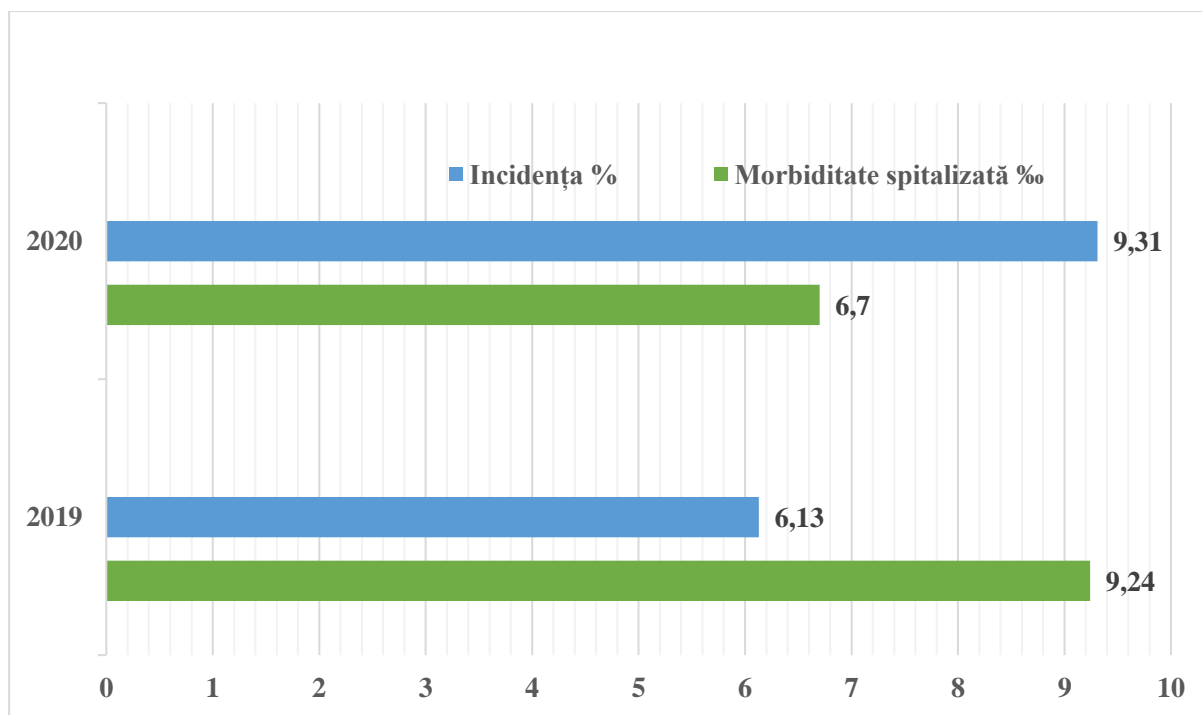
**Fig. 10.** Prevalence of most common pathologies (pathology dispensed)

In the previous figure we have exemplified by data the need for medical services dedicated to the most common pathologies in Vâlcea county given by the increasing numbers related to any of them.



**Fig. 11.** Structure of cerebro-vascular pathology in Vâlcea County for 2020

The figure above shows the characteristics of cerebro-vascular pathology in Vâlcea County, reinforcing the need for specific treatment procedures in these cases.



**Fig. 12.** Structure of ischaemic cardiac pathology in Vâlcea County for 2020

The previous figure expresses the need for specialised medical services given the results obtained by the inventory of ischaemic cardiac pathologies in Vâlcea County.

**Table IV.** Characteristics of cervical neoplasia (absolute numbers)

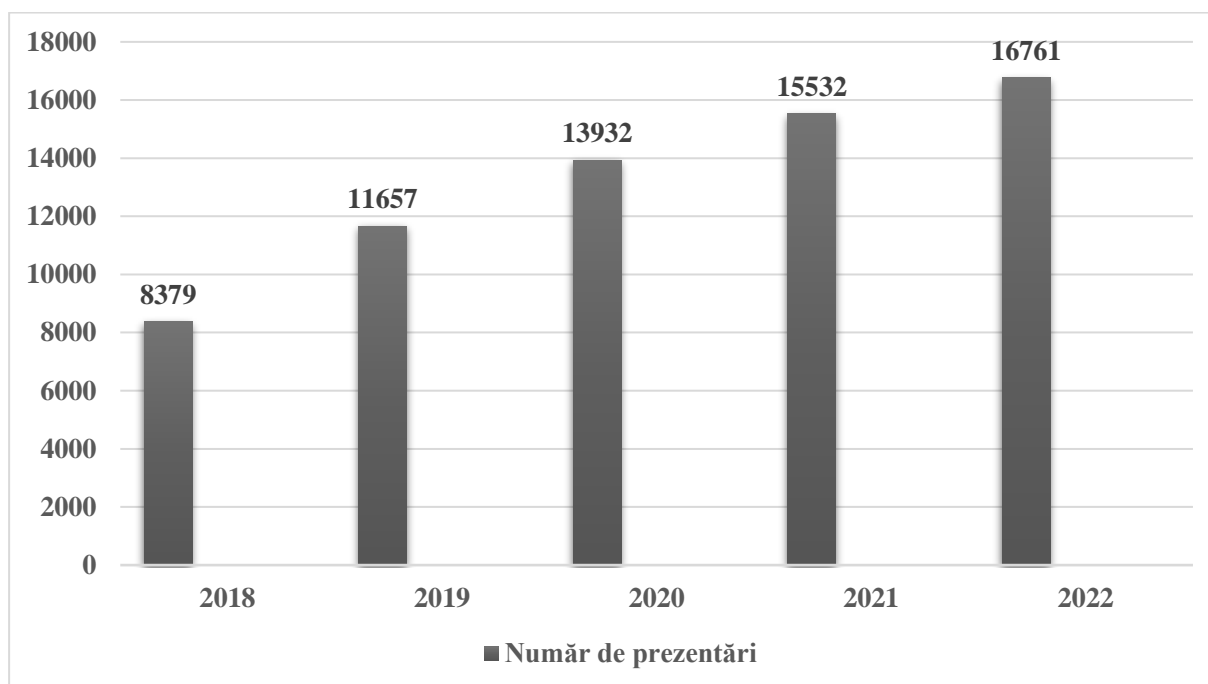
<b><i>CERVICAL NEOPLASM</i></b>				
<i>Year</i>	<b>Prevalence</b>	<b>Incidence</b>	<b>Deaths</b>	<b>Screening</b>
<i>2013</i>	<b>532</b>	<b>76</b>	<b>25</b>	<b>3995</b>
<i>2014</i>	<b>571</b>	<b>70</b>	<b>26</b>	<b>2463</b>
<i>2015</i>	<b>604</b>	<b>62</b>	<b>25</b>	<b>1565</b>
<i>2016</i>	<b>618</b>	<b>63</b>	<b>18</b>	<b>1440</b>
<i>2017</i>	<b>640</b>	<b>63</b>	<b>18</b>	<b>659</b>
<i>2018</i>	<b>645</b>	<b>42</b>	<b>18</b>	<b>1700</b>
<i>2019</i>	<b>646</b>	<b>43</b>	<b>17</b>	<b>2287</b>
<i>2020</i>	<b>668</b>	<b>48</b>	<b>11</b>	<b>1249</b>
<i>2021</i>	<b>696</b>	<b>39</b>	<b>18</b>	<b>1179</b>
<i>2022</i>	<b>683</b>	<b>33</b>	<b>18</b>	<b>1062</b>

The table above shows the raw units for cervical neoplasms, which are truly impressive by the sheer power of the numbers.

**Table V.** Number of healthcare associated infections reported in Valcea County

Year	Number of reported cases
2015	60
	102
2019	179
	48
2021	66
	131

In the above table we observe the fluctuating evolution of the number of healthcare associated infections in Vâlcea County according to the data published by the local Public Health Department, with the majority of the declared cases coming from the SJU Vâlcea.

**Fig. 13.** The activity of medical centres in Vâlcea county

In the figure above, we have presented the exponential increase in the number of patient presentations in the on-call centres organised in Vâlcea county, an activity that relieves the Emergency Reception Unit of the SJU.

The following figure illustrates the dynamics of the number of health facilities in the county, where the number of hospitals remains constant while other types of facilities have a sinusoidal evolution.

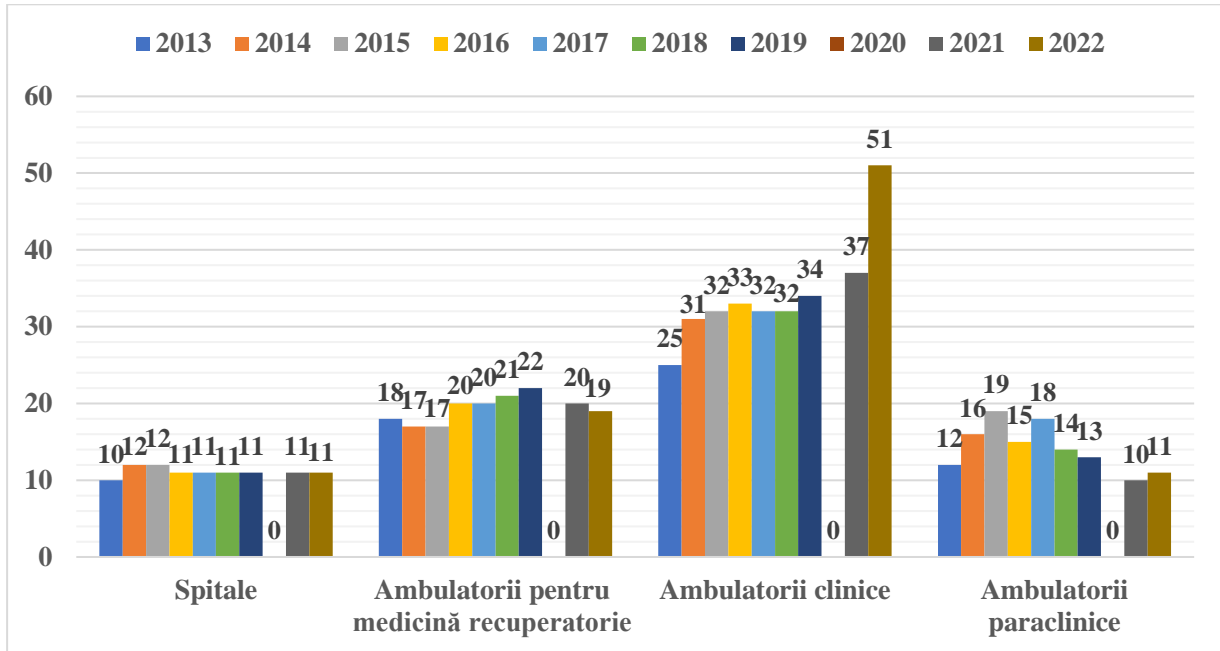


Fig. 14. Annual evolution of the number of health units in Vâlcea County

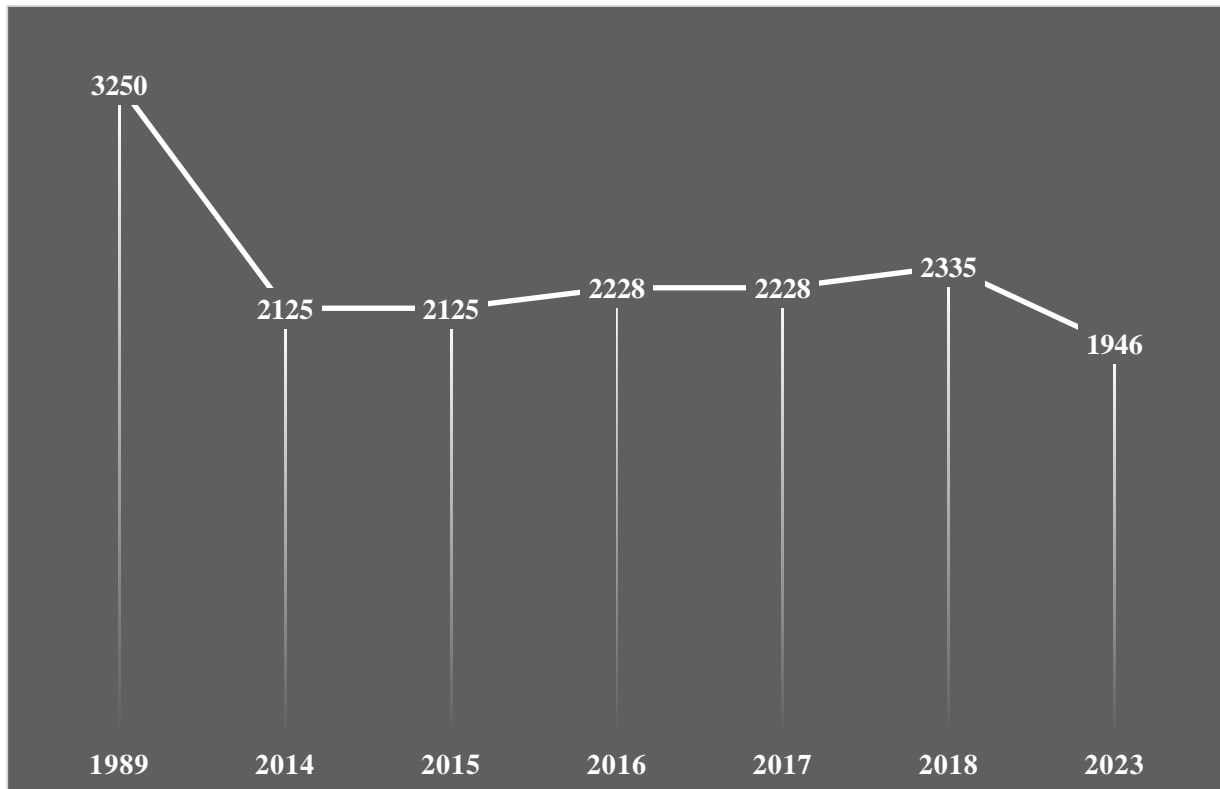
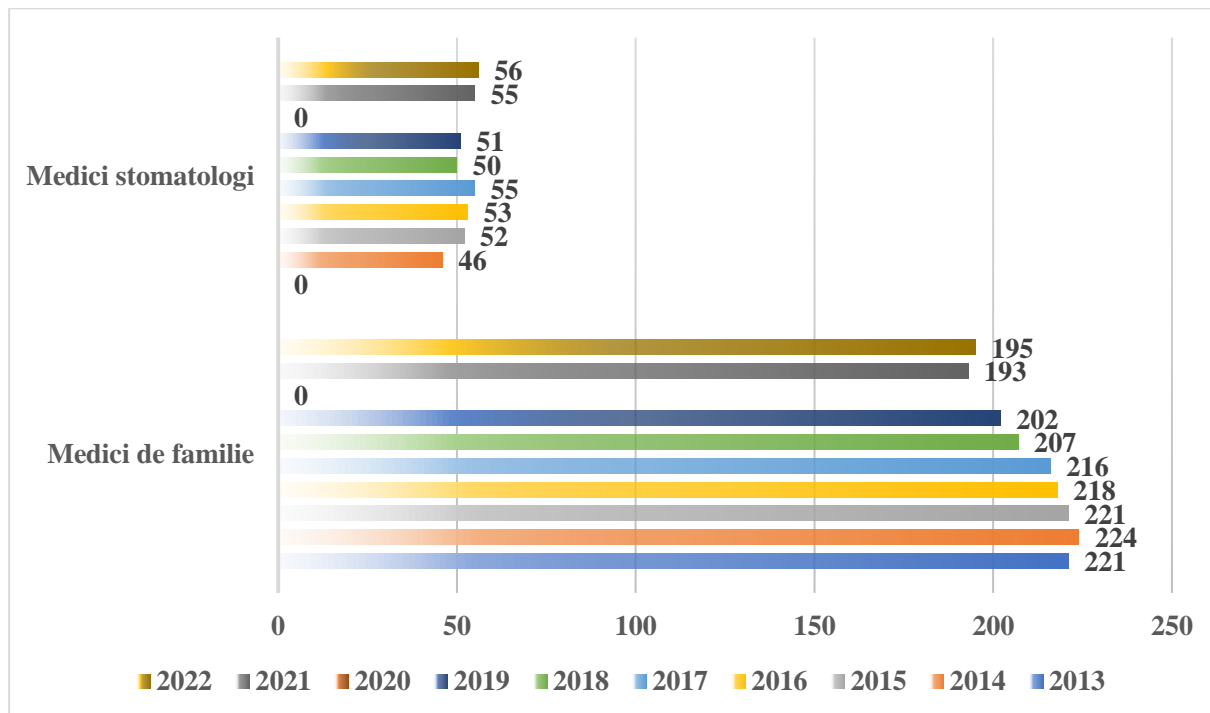


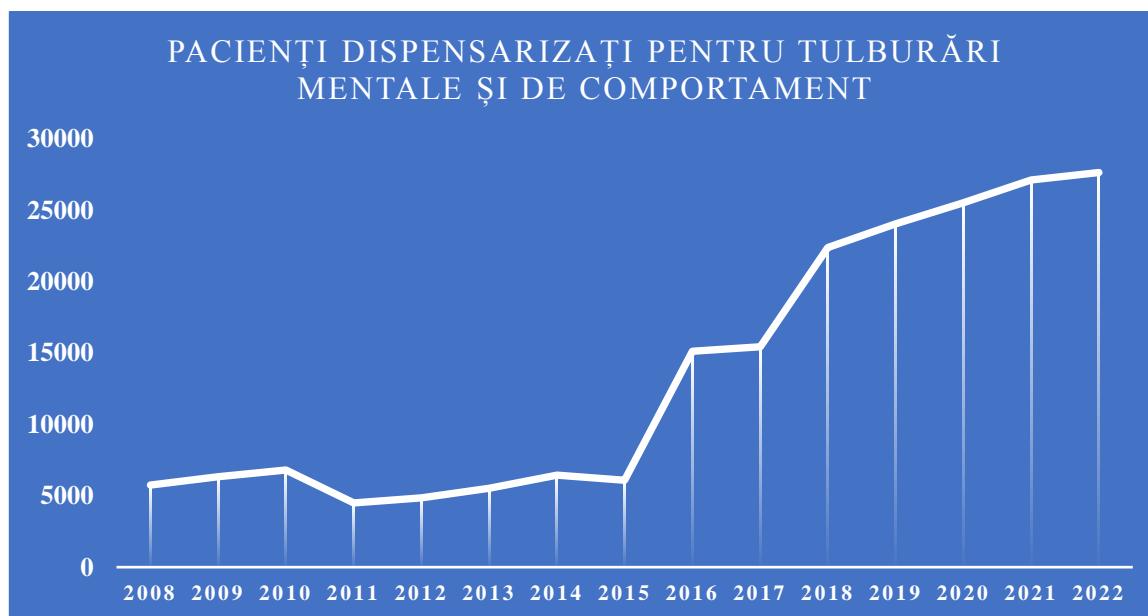
Fig. 15. Evolution of the number of hospital beds in Vâlcea county

The previous figure illustrates the dynamics of the number of beds that can be contracted for medical services in Vâlcea County from historical values until today.

In the following figure we have shown the visibly decreasing number of family doctors in recent years and a slight upward trend in the number of dentists in contractual relationship with the local health insurance organisation.



**Fig. 16.** The number of doctors in primary health care (family doctors) and dental doctors in Vâlcea county



**Fig. 17.** Evolution of the number of patients with mental and behavioural disorders in Vâlcea county

The previous figure shows the dynamics of the number of people with mental and behavioural disorders discharged from Vâlcea County. We have 2 obvious exponential increases, the first in 2015 and the second from 2019 onwards, coinciding with the Covid-19 pandemic.

The following figure shows the average number of patients discharged with mental and behavioural disorders. It is worth noting that in 2015, Vâlcea county had a huge rate of such patients discharged per 100,000 inhabitants.

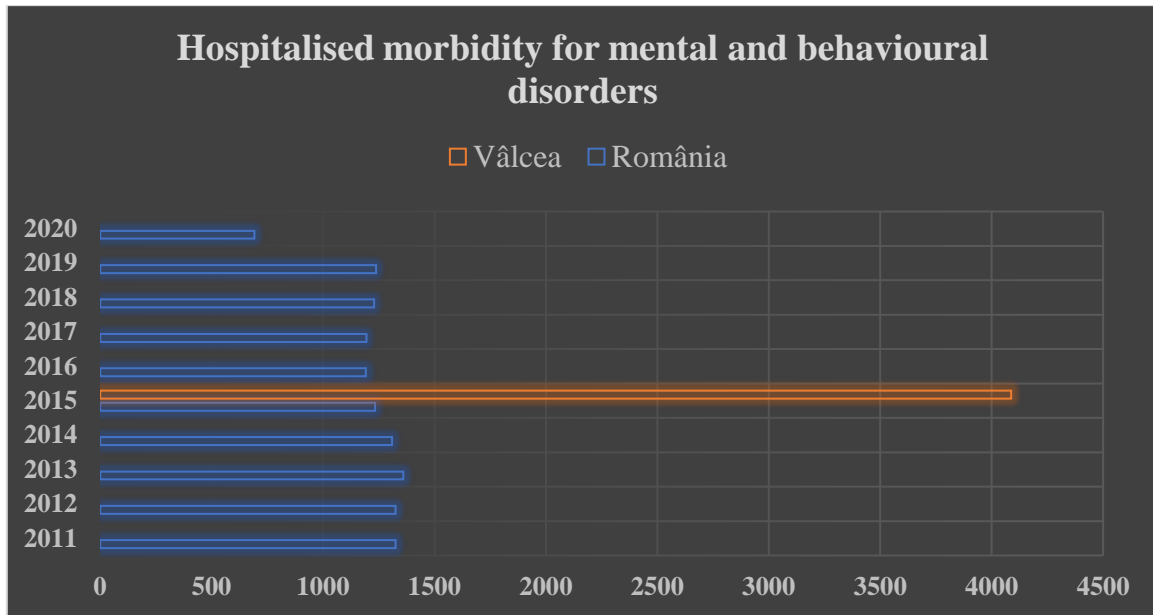


Fig. 18. Number of patients discharged per 100,000 inhabitants

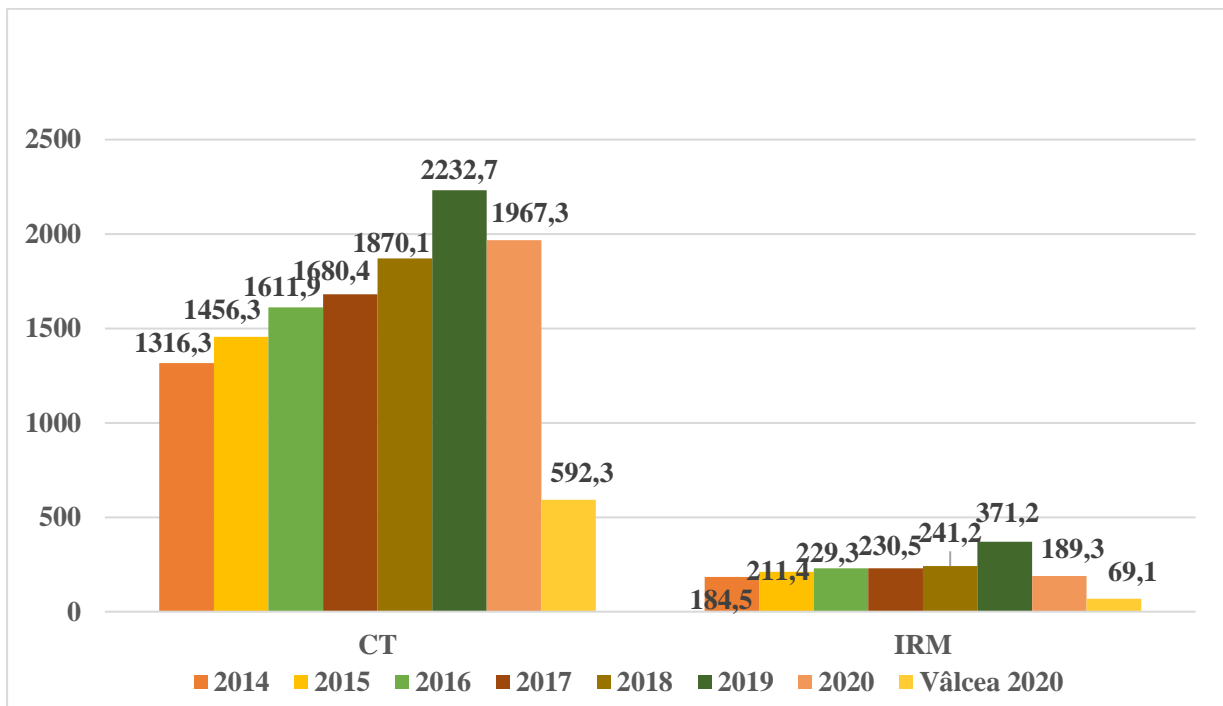
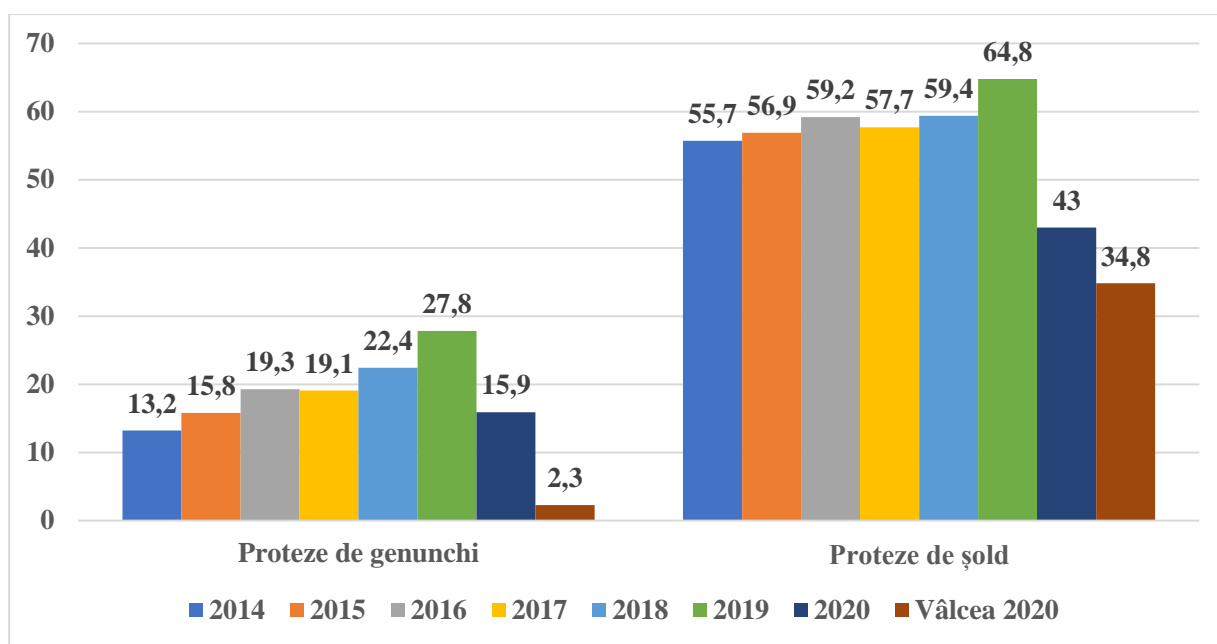


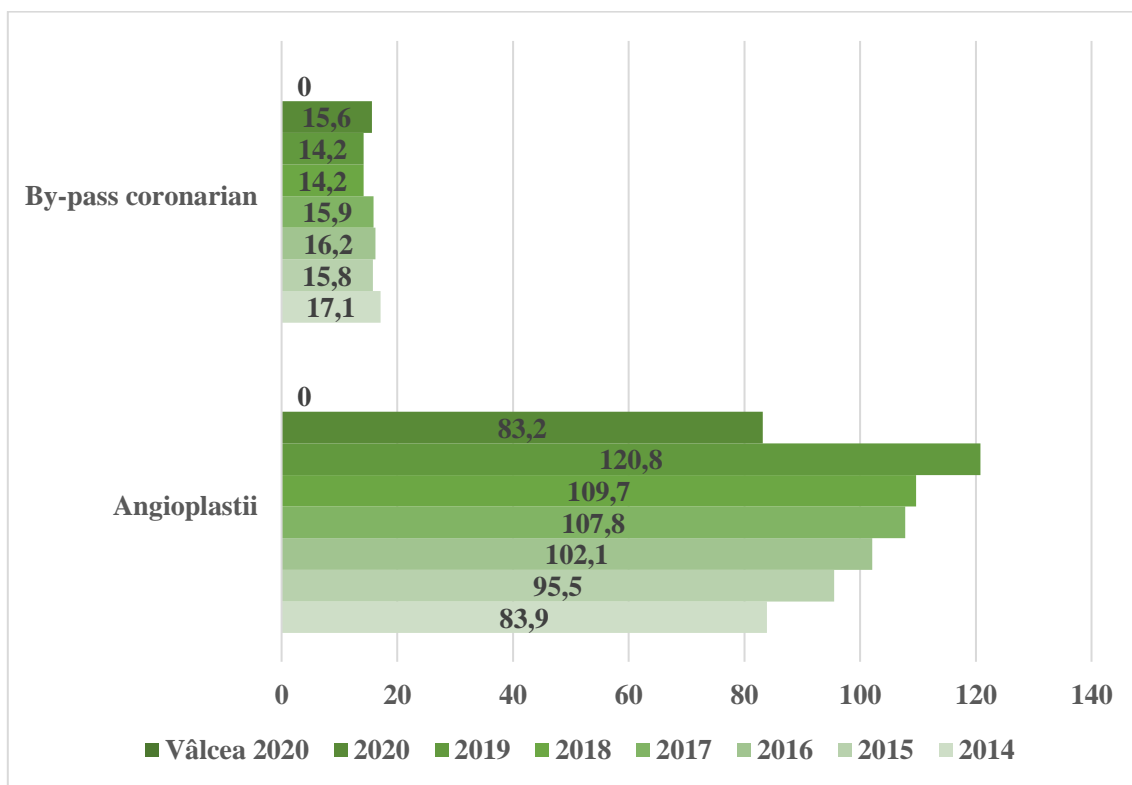
Fig. 19. Number of high precision imaging examinations/100000 inhabitants in Valcea County compared to the national average

The figure above shows the low number of high-performance radiology and imaging examinations performed in Vâlcea County in 2020 compared to the average of recent years in Romania.



**Fig. 20.** Number of orthopaedic procedures/100000 inhabitants in Vâlcea County compared to the national average

In the previous figure we have illustrated the number of orthopaedic procedures of knee and hip prosthesis implantation performed in Vâlcea in 2020 compared to the national average of the last years.



**Fig. 21.** Number of interventional cardiological procedures/100000 inhabitants in Vâlcea County compared to the national average

The previous figure shows the major difference between the level of specific cardiological interventions in 2020 in Vâlcea County compared to the average of the previous years in the country.

În temeiul [art. 7 alin. \(4\) din Hotărârea Guvernului nr. 144/2010](#) privind organizarea și funcționarea Ministerului Sănătății, cu modificările și completările ulterioare,

ministrul sănătății emite următorul ordin:

#### Articolul I

Articolul 24 din [Ordinul ministrului sănătății nr. 450/2015](#) privind aprobarea modului de administrare, finanțare și implementare a acțiunilor prioritare pentru tratamentul intervențional al pacienților cu accident vascular cerebral acut, publicat în Monitorul Oficial al României, Partea I, nr. 245 și 245 bis din 9 aprilie 2015, cu modificările și completările ulterioare, se completează după cum urmează:

**1.** La [litera a\)](#), după [punctul 44](#) se introduce un nou punct, punctul 45, cu următorul cuprins:

**45.** Spitalul Județean de Urgență Vâlcea

**2.** La [litera b\)](#), după [punctul 4](#) se introduc două noi puncte, punctele 5 și 6, cu

**Fig. 22.** Order on how to implement interventional treatment for acute stroke

In the previous figure, the Romanian Government's Decision introduces the Vâlcea County Emergency Hospital into the circuit of facilities with (limited) possibility of stroke treatment.



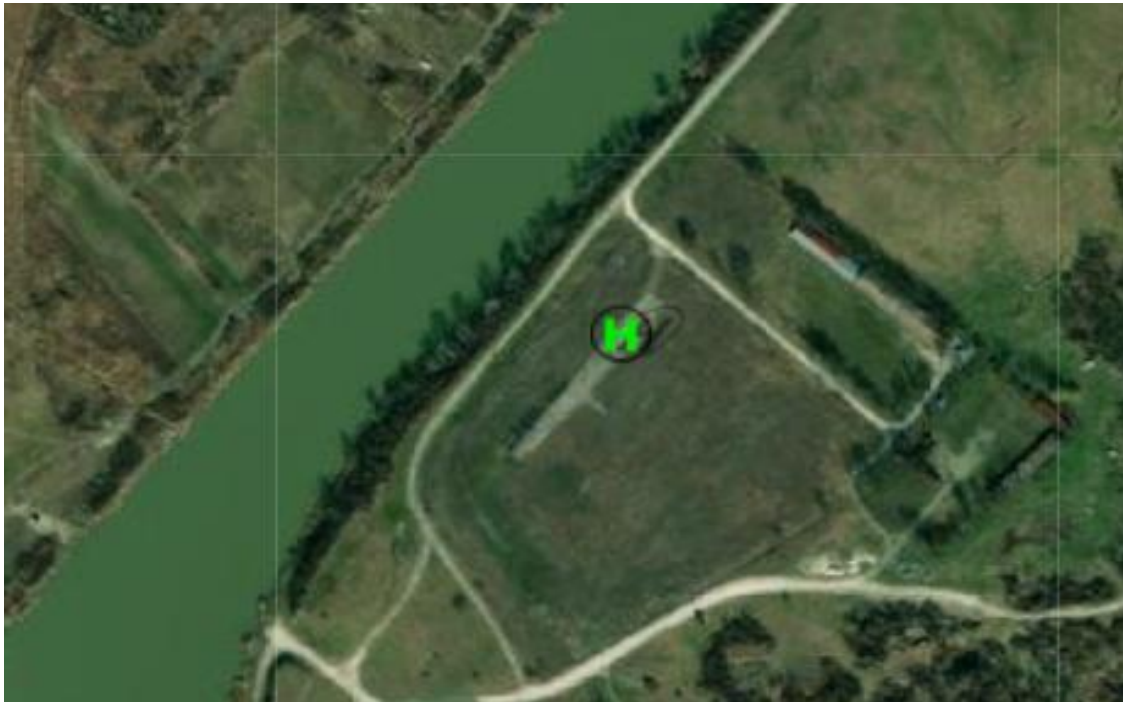
**38.** Spitalul Județean de Urgență VÂLCEA – ATI – acreditare prin Decizia ANT nr. 3/03.02.2016, valabilitate 5 ani (03.02.2021) – acreditare expirată

**Fig. 23.** Accreditation of SJU Vâlcea for identification and declaration of potential organ donors

The previous figure shows the accreditation status of Vâlcea County Emergency Hospital in the specific activities required for organ and tissue procurement, according to the National Transplant Agency.



The figure below shows the location on the map of the heliport currently in use in the municipality of Râmnicu Vâlcea, an almost unpopulated area, on the other side of the Olt-river and far from the actual activity of the city and the medical institutions in the city, but also with little operational utility.

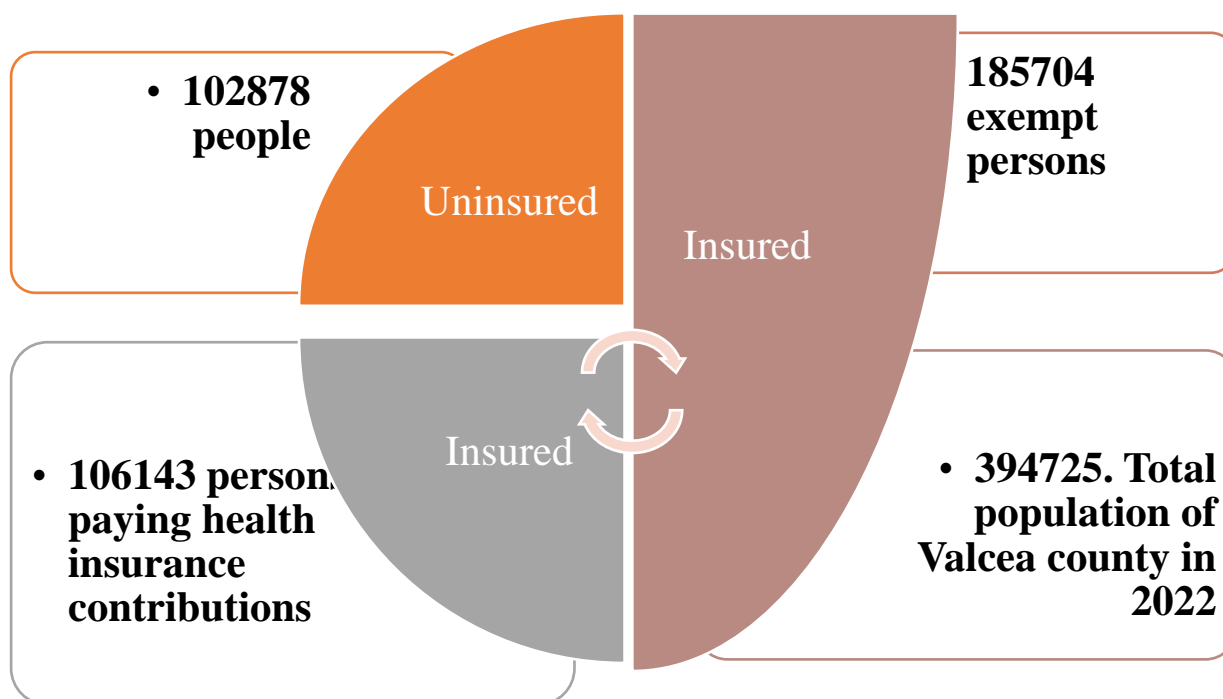


**Fig. 24.** The location of the heliport serving Rm. Vâlcea

**Table VI.** Number of sick leave days granted annually in Vâlcea county

Year	Sick leave days reported by employer and voluntarily insured individuals
2019	<b>281258</b>
2020	<b>292595</b>
2021	<b>292193</b>
2022	<b>351613</b>

Table VI shows the progressively and exponentially increasing number of days of sick leave granted in recent years in Vâlcea County, figures that give a justified concern about the health status of the population.



**Fig. 25.** Population structure of Vâlcea county in relation to health insurance payments

The previous figure presents the population structure of Vâlcea county according to the number of contributors to the Single National Fund for Social Health Insurance showing the major discrepancy between people who pay insurance and those who benefit from health services. It also expresses the huge number of people who are exempt from paying health insurance.

## 5. Discussions

Between the two population censuses of 2011 and 2021 respectively, there is a decrease of 8.03% among the inhabitants of Vâlcea county. The municipality of Râmnicu Vâlcea is also on the same demographic downward slope, both in trend with national indicators. It represents a major demographic decline with major implications for the socio-economic ecosystem. Another factor contributing to this worrying result is the equally steady decline in the county's natural increase. In these circumstances, European predictions show that between 2050-2075 the county's population will halve.

The low number of births and the high number of deaths are the main elements that lead us to another extremely alarming situation: the ageing of the population, which is evident not only at county level but also at state level. The increase in the number of people aged over 65 is clearly visible, although the average age of the population is 44.8 years. The population is mostly female, with a slight majority.

The birth rate is reaching crisis levels, accentuating the population decline. In the last year under study (2022) we found a value more than 4 times lower than a historical value (1975) - a situation that can be argued by the fact that the birth rate (19.9) was obtained during the communist regime when the famous presidential decree on demographic policy was in force.

The infant mortality study revealed that there is a visible downward trend in infant mortality, and this is due to developments in medicine (investigations and treatments available). However, this index also appears high due to the reporting of deaths 0-1 year. However, further efforts need to be made to catch up with Western European countries or the EU average. From a statistical point of view, the analyses have shown that Vâlcea county ranks better than the national average, despite the fact that in the county there is no maternity hospital with the highest level of endowment and professional competence, but there are 3 maternity hospitals, 2 of basic level - 1, Drăgășani and Horezu, one of level 2 - which has superior competences to the others, having in its structure 2 wards of Obstetrics-Gynaecology, neonatology, Premature and intensive care for newborns.

Thanks to the natural evolution of science, we can also appreciate the low level of maternal mortality over the period analysed. There are low values of this index, and in the last years taken in the study the null value of the measurement can be emphasised, thus counting among the positive elements discovered in the present research for the health status of the population of Vâlcea County. However, we also take into account that there is the possibility of patient transfer, and the waves of cases that ended unfavourably, with exitus, were registered in the county of the place of death so they did not enter our research.

The overall mortality in the population of the county has had a rather sinuous character in terms of figures. While there is an obvious downward trend, it is not very steep. This is mainly due to the development of the healthcare system and the services offered to the population. There are also periods when these numbers have increased, one of them being the pandemic period when there was a greatly increased mortality (a phenomenon found on a national scale) due to specific pathologies and due to both the population's lower accessibility to health services and the low addressability induced by media campaigns and the untruthful information dispersed in the public space on the subject, some of which is even harmful to health.

Natural increase is inferentially influenced by mortality, so we can observe a correlation between the two variables. If in the first period under study the increase was on the rise, in the middle of the decade it was on the decline, and then, during the health crisis caused by the SARS-CoV-2 virus, it started again on an undesirably steep slope, for the same reasons as we have listed above. It is only after the pandemic is over that we are seeing a positive trend - a similar situation for the whole country, and we will monitor this factor in the future.

However, life expectancy is high in Vâlcea county. It represents the county with the highest life expectancy in the country in recent years - over 80 years. As well as education, health care, behavioural habits and the economic level, this is also influenced by the environment. Vâlcea is a county in which all landforms are found, and in some areas, you can find the cleanest/cleanest air in the country.

When assessing the health status of the population, one aspect that needs to be taken into account is alcohol consumption. It is well-known that alcohol abuse leads to multiple somatic and mental pathologies. It can also aggravate present conditions or decompensate others. On this unhealthy consumption, we have uncovered data since 2000, and a beneficial element of the present analysis is that the burden of disease related to this behaviour is decreasing. While noting that the data presented in the Results chapter are validated for people over 15 years of age, we also found that binge drinking episodes are one of the highest in Europe, and overall, we are above the average of the European Union countries in terms of alcohol consumption per capita.

In roughly the same register, the use of psychoactive substances has been shown to be extremely harmful. By 2021, 33 deaths could be linked to these addictions, still an impressive number, perhaps unimaginable for our country. The phenomenon has also become more widespread in our country, even though the figures for Vâlcea county are lower than the national average, according to the documents studied. We have an obligation to take firm action to combat this catastrophe that is affecting communities.

Another guiding factor in assessing the health of the population is the level of childhood obesity. Obesity is also a trigger for many diseases, with psychological, social and economic implications. We found that, despite the health restrictions during the pandemic period when the school was video-conferenced and GP consultations could also be done through the telemedicine mechanism, the values obtained are constantly increasing, even though the number of children's examinations was lower. Thus, a new alarm signal that needs to be deeply reflected on is the non-endocrine childhood obesity revealed by consultations at school doctors' surgeries or by family doctors.

On the structure of mortality in Vâlcea County, extensive studies are needed to verify the multiple variables influencing this aspect. According to documents published by the Public Health Department of Vâlcea, the cause of death with the highest share in the total causes of death is cardiovascular diseases. Although we expected these values, a progressive decrease is visible. Important percentages also express mortality from neoplastic diseases. Other causes (digestive diseases, respiratory diseases, diseases caused by external factors or other causes) are less represented, but no less important. For the benefit of the population's state of health, the action will be in the direction of the risk factors and those influencing these pathologies, as well as the therapeutic and investigation possibilities specific to each disease.

In relation to the same aspects presented above, in terms of the morbidity dispensed we observe a steady increase in recent years of the most common and important pathologies: diabetes mellitus, neoplasms, cerebro-vascular diseases and ischaemic heart diseases. It is for these medical conditions that most people seek specialised care, and this is also due to the increasing prevalence of all the above-mentioned categories.

In relation to the evolution of the most dangerous pathologies for the health of the population, in Vâlcea county we have values higher than the national average for cerebro-vascular disease both in terms of standard morbidity and incidence. The compilation of data collected from several sources and the results presented in this report make it necessary to take measures to limit the effects of the above-mentioned diseases, given that there are national therapeutic programmes dedicated to diagnoses in this area.

Ischaemic heart disease also has established national health programmes. The pooled data clearly show a reversal in the ratio of incidence to hospitalised morbidity, which was under-unity before the pandemic and became over-unity during health restrictions. The reluctance to approach specialised medical services has increased during the health crisis, resulting in profoundly negative effects on the population's health status, as evidenced by cardiovascular diseases. Regaining trust in the healthcare system is about quality, efficient and timely healthcare products and services.

In terms of neoplasms, cervical neoplasia has two undeniable characteristics. It is one of the most widespread both in the country and in Vâlcea County, and it is also the most easily detectable, and consequently, prevented or treated with significant success rates. However, there are impressive figures for deaths, incidence and prevalence of cervical cancer in Vâlcea County. Although there have been and continue to be screening campaigns for early detection of this pathology, they have arguably failed miserably. To give an example, we give a value for a randomly chosen year - 2018, in which 1700 screening tests were done per county. This number is totally insignificant in order to make the campaign relevant and to generate results that will have an impact on the health of the population.

Another element investigated in this paper that characterises the performance of a health system is the number of healthcare-associated infections. Although it is well-known that it is also under-reported at national level, in Vâlcea county we found hospitals that reported 0 healthcare-associated acute infections per year, which is almost impossible and clearly shows that something is not working. It is interesting that the pre-pandemic level of such events reported is higher than after the pandemic, which demonstrates wilful omission or negligence on the part of staff and representatives in reporting such situations, even in the context where it

has been stated that the responsibility for such an event is not individual or personal and synergistic action must be taken to limit them.

In terms of the number of health facilities accredited to provide health care, for hospital facilities the number has remained constant over the last period. If it seems more and more difficult to build new public hospitals, we expect that the hospital infrastructure will evolve through the private sector. As Vâlcea County is among the regions with modest economic-financial results, probably the reasoning was to invest in lower-level structures, specialised in small interventions and not in complex systems organised departmentally with multiple and superior capacities of investigation and treatment. Thus, it can be observed in the last period an increase in the number of clinical and paraclinical outpatient clinics which are in relation with the Health Insurance House of Vâlcea. However, the state, through local authorities, has tried to make up for the shortcomings outlined above by setting up emergency centres to relieve the workload of emergency reception units and departments, where people can call in cases of reduced difficulty. Unfortunately, these centres were not set up where there was an obvious shortage of medical services, but rather in areas where medical staff were available. Even in these circumstances, this initiative represents an improvement in the local health system serving the population, as evidenced by the annually increasing number of visits to these clinics.

As regards the number of hospital beds available in the county, it remained relatively on an upward trend, but at most at 2/3 of the historical value that we found in the analysed documents from 1989, which was 3250 beds. It should also be borne in mind that the population was larger at the time. However, while there is a relatively satisfactory amount of hospital beds capable of serving the county health system, there are some shortcomings in that estimate. Vulnerabilities are given by medical units with a rehabilitation and psychiatric profile. Being a county with a predominantly tourist character, Vâlcea has numerous balneal-climatic resorts where there are multiple establishments and resorts specialising in balneal-physio-physio-kinetotherapy, respiratory recovery or for rheumatic, digestive, renal, metabolic or post-traumatic diseases. On the other hand, regarding psychiatric beds, this can be considered a gap in the national legislation as these beds are only in Romania still counted as hospital beds that can be used in cases of extreme emergency, in the rest of Europe they are registered separately. In total, there are 1946 beds in public and private health care facilities for which the local health insurance centre can conclude contracts for the provision of hospital medical services in Vâlcea County for 2023. This value puts the county in 7th place in the ranking of the number of inhabitants in relation to the number of beds financed by the FNUASS with a figure of 275 inhabitants per hospital bed, a situation that can clearly be improved by redistributing the number of beds by specialities and setting up new hospital units.

It has never been a secret that there is a significant shortage of medical staff, which characterises a health system and directly influences the health of the population. Romania has about 2 doctors per 1000 inhabitants, while Vâlcea County has only 1 and the European average is about 3.5. These values exclude primary care and dental practitioners. However, these are very low values. And if we look more closely at the problem, we see that there are a small number of dentists in relation with the Health Insurance House, and among family doctors, besides the fact that there are localities not covered from this point of view, the vast majority of doctors are over 50 years old, and their drain from the system will naturally accelerate in the coming period.

In assessing the health status of a population, it is necessary and mandatory to assess the mental state, especially in the context of global events that influence our lives in many ways. Personality disorders and psychiatric comorbidities play a determining role in individual and social behaviour. From the data available we could observe that, for example, in 2015, Vâlcea county had the highest rate in the country calculated per 100,000 inhabitants (more than 3 times higher) for morbidity dispensed in this area. Moreover, we have been able to observe two moments when the number of patients with such pathologies increased sharply: the first, in

2015, when several causes can be attributed to this reaction, and the second, with the beginning of the Covid-19 pandemic, which can certainly be attributed to this event.

Other characteristics of the health status of the population of Vâlcea County can be deduced from the highly qualified medical services provided to the population. The syllogism is so simple that it doesn't even need further explanation. Thus, radiologically, MRI and CT scans are about 3 times lower than the national average. This can be put down to both the shortage of specialised staff and the lack of medical infrastructure and the necessary dedicated equipment in adequate quantities.

Of the orthopaedic procedures, knee replacement operations are performed in low numbers and only hip replacement operations are close to the national average, which is due to the national programmes developed in this respect and the young medical staff specialised in these procedures.

Interventional cardiology is non-existent in Vâlcea although cardio-vascular pathology is supernumerary, as we have shown in the results obtained from the consultation of multiple public sources of information. The same can be said about the interventional treatment of patients with acute stroke because although in our county, the County Emergency Hospital was introduced at the beginning of 2022 on the list of health units where intravenous thrombolysis is performed, there is no public data (on the hospital, DSP or local CAS websites) on the number of procedures performed or the success rates and survival. Even so, less than a year after being placed on this list, in March 2023, the County Hospital took the decision to stop this procedure, without providing any justification.

Another mention to be indicated refers to the accreditation of the SJU by the National Transplant Agency as a competent unit for the identification and declaration of potential brain-dead donors for the procurement of organs, cells or tissues. The accreditation was obtained in 2016 with a validity of 5 years, so it expired in 2021 without any organ and/or tissue and/or organ procurement activity having been performed.

Clarifications can also be made regarding air medical service facilities. The absence of a dedicated medical helipad can complicate a patient's health, as demonstrated in medical situations exposed in the public space. From another point of view, it is self-evident and in accordance with all current medical standards that any county municipality or county hospital or emergency hospital or at least at county level must have such a structure of medical utility. At the moment, the SMURD aircraft (helicopters) land in a location outside the city of Râmnicu Vâlcea where land access (with SAJ or SMURD vehicles) can be difficult, as it happens in fact, due to the increasingly high traffic values.

Another statement that is absolutely imperative to point out and may become a revelation for decision-makers in the field is the analysis of sick leave days granted annually. The number has been steadily increasing. In the pandemic period it obviously increased, which is understandable due to the numerous illnesses among the population due to Covid and related pathologies, but inexplicable is the fact that in 2022 we have seen an incredibly high number of sick leave days. To have a term of comparison, they totalled practically 1000 years of sick leave for the population of Vâlcea county in 2022.

The financial side is always a consideration, so we looked into that too. I discovered other unlikely evidence. As explained in the first chapter of this paper, in Romania, the social health insurance contribution confers the benefits of the title of insured person. All these contributions to the Single National Health Insurance Fund are managed by the National Social Health Insurance House. In this way we can explain that health funds are not infinite and health is not free. In particular, the present analysis shows, in broad terms, that out of the county's population of about 390 000 inhabitants, only a quarter pay health insurance, about half are exempt from payment, and the last quarter are uninsured.

In other words, one-quarter of the population contributes to the fund and the other three-quarters either through the minimum package or through insurance (even if they are exempt). An important aspect to emphasise is the fact that in Romania there are 22 categories of people exempted from paying health insurance, an aspect that needs to be adjusted, especially when it comes to the influence of underfunding of the health system on the general health of the population.

## 6. Conclusions

The results obtained compel us to take action to minimise the adverse effects of the findings revealed in the paper. A national strategy for health and demography may be on the table. High mortality correlated with low birth rates produce demographic decline and are caused, among other things, by a sub-optimal health status of the population in Vâlcea County.

If the urban/rural and female/male percentages do not differ much, both within Vâlcea County and at national level, the demographic decline is accentuated compared to a decade ago. These changes are mainly due to migration, low birth rates and rising mortality. The ageing of the population is also evident. Failing to address this deficit in society will create numerous imbalances with multiple negative repercussions stemming from the consequences of demographic decline. National policies must be geared towards encouraging the formation of young families by granting administrative or fiscal incentives, and at local level, in order to support the birth rate, facilities linked to the health or educational conditions of society can be accommodated. In the same context, given the low number of births in Vâlcea County and due to the fact that many families choose to go to facilities in other counties just to give birth, it is necessary to consider the establishment of a higher-level maternity hospital in Vâlcea County.

Interesting information about the health status of the population of Vâlcea County was uncovered in this study. Unusually, there have been years in recent times when mortality has been higher in urban areas than in rural areas, even though access to health services is much easier. Also, life expectancy per county is the highest in the country, contrasting with the state of health infrastructure and medical services offered in the county; in this case, the explanation could be found in the local genome, but also in the structure of the environment or climate.

The data presented in the Results and Discussion chapters on population behaviours underline the need for more effective regulation of alcohol sales to young people and closer monitoring of the same. Given that the data collected were based on sales documents excluding alcohol produced in the household, the appropriate regulation of this situation will also take precedence. Non-endocrine obesity is mainly caused by a sedentary lifestyle and diet, and when it comes to young people, the responsibility in this case lies mostly with their parents. They need specialised counselling and programmes.

The use of psychoactive substances must not be allowed to become a public health problem because of the effects it can have. We have been able to observe increasingly younger ages at which consumption and even addiction to toxic products appears. In addition to the classic drugs, more and more classes of substances are appearing and new ways of importing, even producing, circulating and procuring them are astonishing even the elite structures of the judiciary.

The survey also found that the population's trust in and willingness to use health services has declined considerably, with a slight upward trend post-pandemic. This can be remedied with accurate, simple and plain-language information distributed through many communication channels and social media.

We appreciate that the pandemic period has been a strong influencing factor in the health status of the population, a phenomenon visible in an extremely negative trend, the most harmful effects being given by the consistently increased mortality. The overall morbidity has also increased markedly, as SARS-CoV-2 infection has the ability to decompensate any associated pathology of the person, even latent conditions.

The findings on the influence of the Covid-19 pandemic on the mental state of the population were also no surprise. The increase in the number of presentations and, implicitly, monitoring in specialised units has been evident and shows the urgent need for this type of services. At the same time, it is necessary to model the services offered on the specific pathologies in different global moments and events.

The characteristic negative elements of the health status of the population of Vâlcea county found in this research are also influenced by the local health system. The lack of specific procedures for certain pathologies is projected in the figures obtained from the study of the incidence, prevalence, monitoring, morbidity and mortality among the population in certain medical sectors. For example, interventional cardiology procedures must exist in every county to give equal, real and consistent chances of survival or limiting the sequelae of a cardiac event. The time window in which to act is narrow. The same findings are valid for cerebrovascular pathology related to interventional treatment of patients with acute stroke. These are procedures that are carried out swiftly in EU countries, but also in traditional university centres in Romania. Attracting specialists in the field is also the prerogative of local authorities, which must not neglect their duties. The risk of capping at the level of traditional imaging investigations (radiography and ultrasound) is huge, it has even reached this level in some units. This is a vulnerability to be taken into account. In relation to highly specialised imaging investigations, which are also related to the procedures mentioned above, the need for equipment and doctors involved is pressing.

Tackling niche issues will always be a challenge, and here the reference is specifically to the need for an EMS helicopter with a helipad and a base to service the county and neighbouring areas. Their necessity has been reinforced by every case with an unhappy ending in medical records. These requirements are also due to the many mountainous areas of the county, winter resorts or the county road infrastructure which is one of the most utilised in the country and has extremely high traffic values and, consequently, serious and numerous road accidents. The example of the helicopter stationed in Jibou, Sălaj county, could be a model to follow. In the same register, we can also introduce the collaboration with the National Transplant Agency, and the collaboration can also produce effects. For the success of this protocol, it would be mandatory to train doctors in the field, but also to transport specialised doctors extremely quickly to other health units in the country. Even when a patient's therapeutic resources are overwhelmed, other lives can be saved.

Another important area where we are not getting satisfactory results is oncological diseases. Data show increasing morbidity and mortality from this pathology. Unfortunately, there is no treatment service in the county that specialises in this area. Moreover, the data collected and processed show that there are no palliative care services either in hospital or at home, although there would be a great need for these services, which are also paid by the Health Insurance House.

Adjustments can also be made in the health insurance system. The truly mind-boggling numbers from examining sick leave and paid sickness insurance represent definite problems in the system. An over-analysis of diagnoses and a reduction in the number of categories of people who do not pay health insurance should be priorities for action in this respect. Other elements that can be introduced through the Insurance House and the Public Health Department are specific preventive and curative policies for common pathologies.



In the light of the results of the study, the best solution would be to build a new county-level hospital and thus divide the two large medical units in the patrimony by acute or chronic pathology profile in order to facilitate emergency care through highly qualified services, but also degenerative and recuperative diseases that will increasingly need the aging population of the county.

Taking into account all the aspects observed, in order to improve the health status of the population of Vâlcea County we can have the following objectives in perspective:

- ❖ Increase the managerial capacity of existing health facilities and optimise existing resources;
- ❖ Improving the medical infrastructure (both hospitals, outpatient clinics, surgeries, technologies, equipment and trained staff) - ideally by building a new dedicated county/municipal and emergency/chronic hospital; but also, by improving and diversifying the services offered by adding elements of supra-specialisation, at least through interventional cardiology and stroke management unit;
- ❖ Establishment of an air unit with a full working base, specialised staff and specific infrastructure;
- ❖ Recognising the problems of psychoactive substance use, substance abuse and substance misuse among young people and taking specific targeted actions (medical, administrative, legal, administrative, legal) to combat the phenomenon by setting them as strategic objectives;
- ❖ Raising awareness of psychiatric conditions as a priority need and facilitating specialised assessments;
- ❖ Implementation of mandatory annual screening programmes and/or standardised medical examinations targeting the main health problems of the population; additionally, participation in these programmes may be made conditional on the insured person's insurance status;
- ❖ Boosting the birth rate through administrative benefits, socio-professional facilities or tax deductions dedicated to young parents and their children, but also by supporting educational and sports activities as well as by establishing a strong education system;
- ❖ Effective health promotion through health education in campaigns and conferences for all age groups through specific programmes.

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