

# ASPECTS CONCERNING THE STATE OF THE HEALTH SECTOR AT THE LEVEL OF NATURAL PROTECTED AREAS ROSCI0045 JIUL CORRIDOR, ROSPA0010 BISTREȚ AND NATURE RESERVES DRĂNIC FOSSIL SITE-2391 AND THE ZĂVAL FOREST- IV.33+A6

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## Abstract

The paper refers to some defining aspects of the medical sector for the Protected Areas ROSCI0045 Jiu Corridor, ROSPA0010 Bistreț and the Natural Reservations Locul Fosilifer Drănic-2391 and Pădurea Zăval- IV.33+A6, based on three particular indicators: health units (numerical), existing beds in health units (numerical) and medical and health personnel (numerical). The previously mentioned protected areas refer to 56 UATs (37 from Dolj County, 17 from Gorj County, one from Mehedinți County, one from Olt County).

The number of healthcare units increased from 2,023 in 2017 to 2,254 in 2021, the patient accommodation capacity increased from 3,988 to 4,793 beds, for the entire area, and the number of medical and healthcare personnel increased from 9,497 to 10,612 employees.

By providing adequate health services, the impact on fragile ecosystems can be reduced and an attitude of respect and care for the natural environment can be promoted. The large number of health facilities and the variety of types of health facilities within the protected area are essential for ensuring access to quality health care, protecting the health and well-being of the population, and conserving the environment.

**Key words:** *health facilities, number of beds, medical and healthcare personnel*

## INTRODUCTION

The protected areas ROSCI0045 Jiu Corridor, ROSPA0010 Bistreț and the Natural Reservations Drănic Fossil Site-2391 and Zăval Forest- IV.33+A6, are found in the counties of Dolj (37 ATUs of which: 1 municipality, 4 cities and 32 communes), Gorj (17 ATUs of which: 2 cities, 15 communes), Mehedinți and Olt (1 ATU each, respectively 1 commune each – Butoiești and Ianca).

Protecting natural areas and conserving biodiversity play an important role in preventing the emergence and spread of diseases. Intact ecosystems maintain a natural balance, reducing the risk of disease transmission from animals to humans, so the conservation of protected natural areas can have a significant impact on public health and can help prevent epidemics and pandemics. Moreover,

protected natural areas are a source of scientific study and research. This offers unique opportunities to understand the complex interactions between the environment, biodiversity and human health. Research carried out in such areas can contribute to the development of new medicines and treatments, based on natural resources and knowledge about wild ecosystems.

Health sector development can involve efforts to expand access to health services in rural or remote areas where protected areas are located. This can ensure adequate health care for local communities and visitors to the area. By promoting synergy and collaboration between the health sector and the conservation of protected areas, a broader framework can be created for promoting human health and protecting the

environment. This integrated approach can help ensure a sustainable and healthy future for present and future generations. Climate change can influence the distribution and prevalence of certain diseases, as well as the intensity and frequency of extreme events such as heat waves or floods. Improving the health sector involves strategies for adaptation and resilience to climate change, while conserving protected natural areas helps reduce greenhouse gas emissions and protect habitats essential for species to adapt to new conditions.

Health sector development also involves public health and prevention aspects. Health and environmental education and awareness can be promoted within the protected natural area to inform visitors about the impact of their actions on health and the environment.

The links between health sector development and implications for protected natural areas are complex and interdependent. Promoting a sustainable health sector that takes into account environmental protection and biodiversity conservation can contribute to improving human health, protecting natural areas and ensuring a better future for all life forms.

## METHOD AND MATERIAL

The work was prepared using the documentation method (office phase and field phase - official statistical data obtained by accessing specific sites and field trips to the ATUs within the analyzed area) and comparison. The analysis refers to the period 2017-2021, highlighting the changes specific to this period.

The following indicators are presented: the number of health units (hospitals - including all types of outpatient clinics; medical centers - all types; medical dispensaries; polyclinics; general medical offices; school and student medical offices; family medical offices - including

those of civil medical societies; dental offices - including those of civil medical dental societies; specialized medical offices - including those of specialized civil medical societies; pharmacies - including - pharmaceutical points; pharmaceutical warehouses; medical laboratories; dental technology laboratories; transfusion centers; other types of medical offices.), the number of beds in health units (with reference to the following categories of units: hospitals - including in health centers with hospital beds - beds for continuous hospitalization, health centers with hospital beds - beds for day cases ; medical and social units; diagnostic and treatment centers; specialized medical centers; dialysis center work points), medical and health personnel (doctors - including family doctors; dentists; pharmacists; average health personnel). The indicators are presented at county level, as well as by areas of residence (urban, rural - only at the general level of the area).

## RESULTS AND DISCUSSIONS

Table 1 contains information related to the number of health units.

In Dolj County, the total number of health units varied from 1,923 to 2,141, in which specialized medical offices, dental offices, pharmacies and family medical offices predominate (499 and 421 units in 2021 and 2017 respectively; 493 and 417 units, 360 and 334 units, 306 and 294 units respectively). It should be emphasized that we are talking about a relatively large number of medical laboratories (177 and 184 units in both years), followed by school and student medical offices, dental laboratories, hospitals, general medical offices, health centers, polyclinics, pharmaceutical warehouses, other types of medical offices, dispensaries medical and transfusion offices.

Table 1. Sanitary units \*

Specification	Year		2021/2017 ***** (%)
	2017	2021	
Dolj County			
Total, of which:	1923	2141	111.34
- hospitals **	33	43	130.30
- health centers ***	26	29	111.54
- medical dispensaries	4	4	100.0
- polyclinics	23	26	113.04
- general medicine clinics	37	39	105.41
- school and student medical offices	78	77	98.72
- family medical offices ***	294	306	104.08
- dental offices ****	417	493	118.23
- specialized medical offices *****	421	499	118.53
- pharmacies *****	334	360	107.78
- pharmaceutical warehouses	19	19	100.0
- medical laboratories	177	184	103.95
- dental technology laboratories	50	52	104.0
- transfusion rooms	1	1	100.0
- other types of medical offices	9	9	100.0
Gorj County			
Total, of which:	94	105	111.70
- hospitals **	3	2	66.67
- school medical offices	1	1	100.0
- family medical offices ***	35	46	131.43
- dental offices ****	12	17	141.67
- specialized medical office *****	4	5	125.0
- pharmacies *****	32	28	87.50
- medical laboratories	3	3	100.0
- other types of medical offices	3	3	100.0
Mehedinti County			
Total, of which:	2	4	200.0
- family medical offices ***	2	2	100.0
- pharmacies *****	-	2	-
Olt County			
Total, of which:	4	4	100.0
- family medical offices ***	2	2	100.0
- dental offices ****	1	1	100.0
- pharmacies **	1	1	100.0
grand total			
Total, of which:	2023	2254	111.42
- hospitals **	36	45	125.0
- medical centers ***	26	29	111.54
- medical dispensaries	4	4	100.0
- polyclinics	23	26	113.04
- general medicine clinics	37	39	105.41
- school and student medical offices	79	78	98.73
- family medical offices ***	333	354	106.31
- dental offices ****	430	511	118.84
- specialized medical office *****	425	504	118.59
- pharmacies *****	367	391	106.54
- pharmaceutical warehouses	19	19	100.0
- medical laboratories	180	187	103.89
- dental technology laboratories	50	52	104.0
- transfusion rooms	1	1	100.0
- other types of medical offices	12	12	100.0
- urban	1724	1951	113.17
- rural	299	303	101.34

processed after: <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>, SAN101B-Health care units by unit categories, forms of ownership, counties and localities (03.06.2023); \*\* including all types of outpatient clinics; \*\*\* all types of medical centers; \*\*\*\* including civil medical society; \*\*\*\*\* including civil medical dental society; \*\*\*\*\* including specialized civil medical society; \*\*\*\*\* including pharmaceutical points; \*\*\*\*\* own calculations;

Compared to 2017, in 2021, there are exceedances of: 3.95, 4.0, 4.08, 5.41, 7.78, 11.34, 11.54, 13.04, 18.23, 18.53 and 30.30% for medical laboratories, dental laboratories, family medical practices, general medical practices, pharmacies, total units, health centers, polyclinics, dental practices, specialized medical practices and hospitals.

Decreases are recorded only in the case of school and student medical practices (-1.28%), while for medical dispensaries, pharmaceutical warehouses, transfusion practices and other types of medical practices there are no changes in the case of the two years (2017 and 2021 respectively).

At the level of Gorj County, we are talking about a total number of 94 and 105 units in the years 2017 and 2021 (-1.32%). Of these, family medical practices predominate (35 and 46 units, respectively), pharmacies (32 and 28 units, respectively) and dental practices (12 and 17 units, respectively). For the rest, we find: 4 and 5 units in the case of specialized medical practices (2017 and 2021, respectively), 3 units each for medical laboratories and other types of medical practices (similar situations at the level of the two time sequences analyzed), 3 and 2 units at the level of hospitals, 1 unit each for school medical practices. The temporal variations of the indicator were: +41.67% for dental offices, +31.43% for family medical offices, +25.0% for specialty medical offices, +11.70% overall, -12.50% for pharmacies, -33.33% for hospitals. There were no numerical changes for school medical offices, medical laboratories and other types of medical offices.

In the case of Mehedinți County, the number of medical units varied from 2 to 4, we are talking about 2 family medical offices each year, as well as the appearance of two pharmacies in 2021.

At the level of Olt County, medical units do not show fluctuations from 2017 to 2021, regardless of type (4 units in total, of which two family medical offices, one dental office and one pharmacy).

For the general area level, we are discussing the increase in the total indicator, from 2,023 units in 2017 to 2,254 units in 2021 (+11.42% – Figure 1), a phenomenon (increase) that is also manifested for: rural areas (+1.34% from 299 to 303 units), medical laboratories (+3.89%, from 180 to 187 units), dental laboratories (+4.0%, from 50 to 52 units), general practice offices (+5.41%, from 37 to 39 units), family practice offices (+6.31%, from 333 to 354 units), pharmacies (+6.54%, from 367 to 391 units), medical centers (+11.54%, from 26 to 29 units), polyclinics (+13.04%, from 23 to 26 units), urban environment (+13.17%, from 1724 to 1951 units), specialized

medical offices (+18.59%, from 425 to 504 units), dental offices (+18.84%, from 430 to 511 units), hospitals (+25.0%, from 36 to 45 units). The decrease in the number of units is manifested only in the case of school and student medical offices (-1.27%, from 79 to 78 units – Figure 1), and for medical dispensaries, pharmaceutical warehouses, transfusion offices and other types of medical offices there are no changes between the two years analyzed.

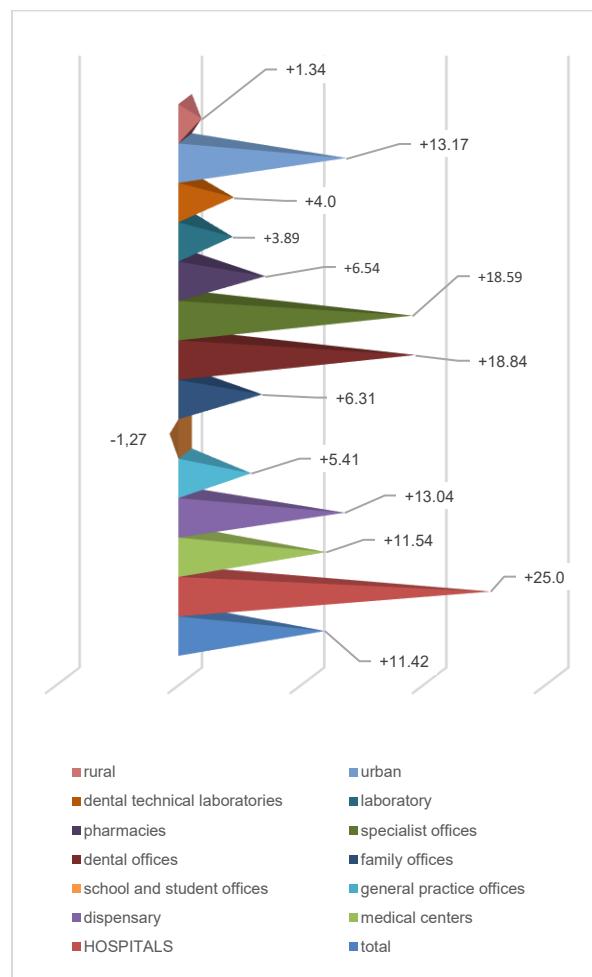


Fig. 1. Total area - Number of health units, comparative situation 2021vs2017  
(±% - processed after: [www.inse.ro](http://www.inse.ro))

It can also be noted the preponderance of units in urban areas compared to the existing situation in rural areas (85.22% in 2017 and 86.56% in 2021).

Table 2 presents the related data the number of beds in health facilities.

From the beginning, it should be noted that there are no reports at the level of

Mehedinți and Olt counties regarding this indicator.

Table 2. Beds in health facilities \*

Specification	Year		2021/2017 (%) ***
	2017	2021	
Dolj County			
Total, of which:	3805	4600	120.89
- hospitals **	3760	4086	108.67
- medical and social units	45	77	171.11
- diagnostic and treatment centers	-	30	-
- specialized medical centers	-	304	-
- dialysis center work points	-	103	-
Gorj County			
Total, of which:	183	193	105.46
- in hospitals **	183	193	105.46
grand total			
Total, of which:	3988	4793	120.19
- hospitals **	3943	4279	108.52
- medical and social units	45	77	171.11
- diagnostic and treatment centers	-	30	-
- specialized medical centers	-	304	-
- dialysis center work points	-	103	-
- urban	3834	4636	120.92
- rural	154	157	101.95

processed after: <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>, SAN102C-Beds in healthcare units by categories of healthcare units, forms of ownership, counties and localities (03.06.2023); \*\*including in healthcare centers with hospital beds - beds for continuous hospitalization, healthcare centers with hospital beds - beds for day cases, public and private ownership ; \*\*\* own calculations;

At the level of Dolj County, there is a total number of beds that increased from 3,805 to 4,600 places from 2017 to 2021 (+20.89%), of which at the level of hospitals there are 3,760 and 4,086 beds (+8.67%), 45 and 77 beds within medical and social units (+71.11%), while for diagnostic and treatment centers, specialized medical centers and dialysis center work points there are capacities only at the level of 2021 (30, 304 and 103 beds respectively).

In the case of Gorj County, the number of beds in health units varied from 183 in 2017 to 193 in 2021 (+5.45%), all of this capacity being found at the hospital level. At the general level of the area, the indicator increased from 3,988 to 4,793 beds from 2017 to 2021 (+20.19%), of which the urban area was predominant (3,834 and 4,636 beds respectively) compared to the rural area (154 and 157 beds respectively - 3.86 and 3.28% of the total for each year analyzed). Within hospitals, the number of beds increased by 8.52% from 2017 to 2021 (3,943 and

4,279 beds respectively), increases also being manifested for places in medical and social units.

The relative variations of the indicator are shown in Figure 2.

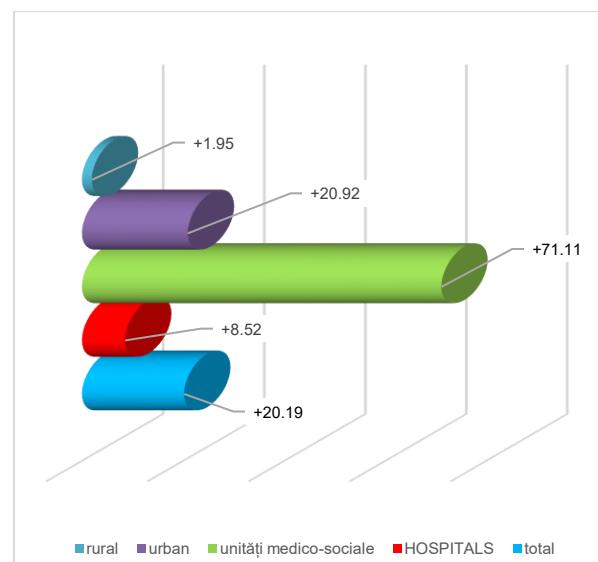


Fig. 2. Total area - Number of beds in health units, comparative situation 2021vs2017  
(±% - processed after: [www.insse.ro](http://www.insse.ro))

Table 3 contains data on medical and healthcare personnel.

In the case of Dolj County, the total number of employees increased from 9,219 to 10,289 people from 2017 to 2021 (+11.61%). The number of doctors increased by 16.86% (from 2,689 to 3,153 people), the number of dentists by 44.29% (from 569 to 821 people), the number of pharmacists by 39.20% (from 676 to 941 employees), and the number of average healthcare personnel by 1.86% (from 5,267 to 5,374).

At the level of Gorj County, we are talking about a total number of 266 employees in

2017, a number that increased to 308 in 2021 (+15.79%). By type of profession, things have evolved as follows: + 38.46% for dentists (from 13 to 18 people); + 21.02% for healthcare professionals (from 176 to 213 employees), stationary situations for doctors and pharmacists.

In the case of Mehedinți County, the total number of employees increased from 5 to 7 (40.0%), an aspect determined by the appearance of 2 pharmacists in 2021, while for doctors and average healthcare personnel the situations were stationary (2 and 3 employees respectively).

Table 3. Medical and healthcare personnel

Specification	Year		2021/2017 (%) ***
	2017	2021	
Dolj County			
Total **, of which:	9219	10289	111.61
- doctors ***	2698	3153	116.86
- dentists	569	821	144.29
- pharmacists	676	941	139.20
- average healthcare staff	5276	5374	101.86
Gorj County			
Total **, of which:	266	308	115.79
- doctors ***	66	66	100.0
- dentists	13	18	138.46
- pharmacists	11	11	100.0
- average healthcare staff	176	213	121.02
Mehedinți County			
Total **, of which:	5	7	140.0
- doctors ***	2	2	100.0
- pharmacists	-	2	-
- average healthcare staff	3	3	100.0
Olt County			
Total **, of which:	7	8	114.29
- doctors ***	2	2	100.0
- dentists	1	1	100.0
- pharmacists	2	2	100.0
- average healthcare staff	2	3	150.0
grand total			
Total **, of which:	9497	10612	111.74
- doctors ***	2768	3223	116.44
- dentists	583	840	144.08
- pharmacists	689	956	138.75
- average healthcare staff	5457	5593	102.49
- urban	8808	9946	112.92
- rural	689	666	96.66

<sup>\*</sup> processed after: <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>, SAN104B-Medical and health personnel by categories, forms of ownership, counties and localities (03.06.2023); \*\* existing staff in the public and private system; \*\*\* including family doctors; \*\*\*\* own calculations;

Inaca commune, Olt county, is characterized by a 14.29% increase in the total number of medical and healthcare personnel (from 7 to 8 people) from 2017 to 2021, a change based on the increase in the average number of healthcare personnel from 2 to 3 employees

(+50.0%), while doctors, dentists and pharmacists were stationary in terms of employees (two people each for doctors and pharmacists, 1 person for dentists). At the general level of the analyzed area, there are predominantly upward trends, with the exception of the specific situation

in rural areas (-3.34%, decrease from 689 people in 2017 to 666 people in 2021). The specific advances in 2021 compared to 2017 were: 1.02 times for average healthcare personnel (effective levels of 5,593 and employees 5,457), 1.11 times at the general level (10,612 and 9,497 people respectively), 1.12 times in urban areas (9,946 and 8,808 employees), 1.16 times for doctors (3,223 and 2,768 people respectively), 1.38 times for pharmacists (956 compared to 689 employees), 1.44 times for dentists (840 compared to 583 people). In terms of residence, urban areas predominate over rural areas (92.75 and 93.72% share of personnel from urban areas in 2017 and 2021, respectively).

Figure 3 presents the comparative situation of medical and healthcare personnel for the two time sequences included in the study.

## CONCLUSIONS

The importance of the existence of a large number of health facilities, their capacity (number of beds) and medical staff to ensure adequate care and health protection in such an environment is evident, noting that the existence of a well-developed health system within the protected natural area contributes to promoting sustainability and environmental conservation.

The capacity of healthcare facilities (by number of beds) is important to meet the demand for medical care, manage emergency situations and ensuring the safety and comfort of patients.

The adequate capacity of the health facilities allows for the efficient management of the flow of patients and ensures shelter and emergency medical assistance in case of need, and the medical staff serving the protected natural area plays a vital role, having specialized medical expertise, ensuring prompt and effective care, monitoring and preventing

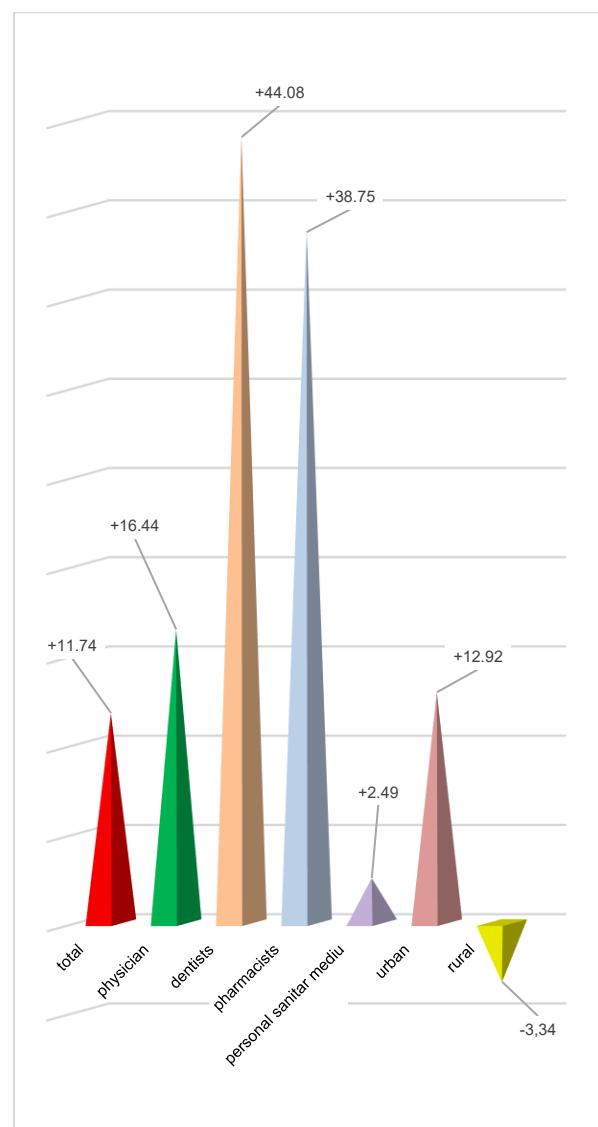


Fig. 3. Total area - Medical and sanitary personnel, comparative situation 2021vs2017  
(±% - processed after: [www.inse.ro](http://www.inse.ro))

diseases, providing education and counseling, contributing to sustainable development.

Finally, it should be highlighted that the development of the health sector within the ROSCI0045 Jiu Corridor protected natural area is essential for ensuring quality medical care, protecting health and preserving the environment. A solid infrastructure of health facilities and a well-trained medical staff are fundamental for ensuring access to medical services, protecting the health of the population and promoting sustainable development in a protected natural environment.

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