

# GEOGRAPHIC DISTRIBUTION OF SANITARY RESOURCES IN ROMANIA AND ITS CONSEQUENCES ON INDIVIDUAL AND PUBLIC HEALTH

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The paper is aiming to analyze the distribution of sanitary resources in Romania and the consequences of its features on individual and public health. The main objectives of the study are being: to overall asses the sanitary activity in Romania; to analyze through an evolutionary and comparative perspective the Health Care delivery components, mainly the medical personnel and medical units; to identify the territorial inequalities in the distribution of sanitary resources and to evaluate the consequences derived from the present inequalities existing at the level of sanitary resources.

**Key-words:** Health status, Health care, Sanitary resources, Romania

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## Introduction

Health Status refers to population health state of a particular country or area which normally is a complex reality due to action, characteristics and performance of its specific determinants. Regardless to their (direct or indirect) action, characteristics and performance, determinants such as the economic ones or the health stock, the health behaviour, the health care and the social and physical environment are responsible for the condition of population health state at national or regional level.

Among the determinant factors of population health state, the health care seems to play an important role. In addition, frequently when referring to population health state, the health care system is considered as a component part of the concept. Within health care system realities such as distribution of sanitary resources, accessibility to sanitary resources, quality of sanitary resources can contribute to appreciation of population health state.

## The Health Care System Reform in Romania

Before 1990 the Romanian health care system was organised according to the Semasko model, totally centralised, and state owned. This type of model was characteristic for all former communist countries.

The reform of the Romanian health care system (HCS) has initially started in 1990 clearly focusing on several identified priorities: to decentralise the HCS, to restructure the primary health care and separate it from secondary care (the polyclinics) and tertiary care (hospitals), to change the doctor – patient relationship by introducing the family doctor/general practitioner (GP), to improve the quality and efficiency of sanitary services.

Among the first steps which had taken place being also the main transformation of the reform occurred at the financing level of the medical services. This measure has been implemented through introducing *the health social insurances* (Bismarck-ian model) as compulsory, in addition to the concept of seeking of,

or turning to other sources of financing (Health Insurance Law – 1998) for the HCS. The most significant occurring changes were concerning and focused on the health care system *infrastructure* and *medical personnel* structure, due to gradual directing of health activities towards *primary care*.

Despite aiming to improve deficiencies the reform experienced many difficulties due to legislative inconsistency, insufficient and misplaced finance, increasing health care costs which have led the system in numerous situations of crisis.

### The Health Care Activity

The performance of any health care system is given by its activity which is known to be determined by its two main components: the health care infrastructure and its medical personnel. Their quality is highly determining the *quality of sanitary services*.

As a result of the reform some of the most significant services occurred have concerned the

health care system infrastructure and medical personnel structure due to gradual directing of health activities towards primary care; medical units have been changed according to the new needs and an incipient form of private sector has been added to the existing but reformed public sector (Fig 1).

The Romanian health care network is currently organised in an infrastructure of units comprising: hospitals, dispensaries and enterprise dispensaries (which after 1998 have been transformed into individual medical offices), polyclinics and pharmacies. In terms of medical personnel the Romanian health care activity is relying on the following categories: physicians, stomatologists/dentist, pharmaciens/chemists, ancillary medical staff, and auxiliary medical staff.

Within an international context the Romanian health care activity compared to selected European countries and assessed through its specific indicators is revealing acceptable and comparable levels of standards to those countries (Table 1)

Table 1: Indicators of Health Care in selected European Countries

	Hospitals	Hospital beds (1000 inhab)	Physicians	Ancillary medical personnel	Pharmacists
Bulgaria	3,3	7,6	342	734	24,5
Cezch.Rep.	3,6	6,5	545	887	41,3
France	7,1	4,3	315	506	96,5
Germany	4,5	7,1	338	948	56,8
Hungary	1,7	5,8	345	355	40,7
Italy	2,7	4,6	554	....	101,4
Netherlands	1,5	3,4	251	863	16,5
Poland	1,9	5,1	230	527	49,8
Romania	1,8	7,3	182	416	12,0
Switzerland	5,9	5,2	322	779	60,0
GBr		2	160	...	65,9

Source: Anuar de statistica sanitara 2001, CCSSDM, Bucuresti and Anuarul statistic al Romaniei, 2000, Bucuresti

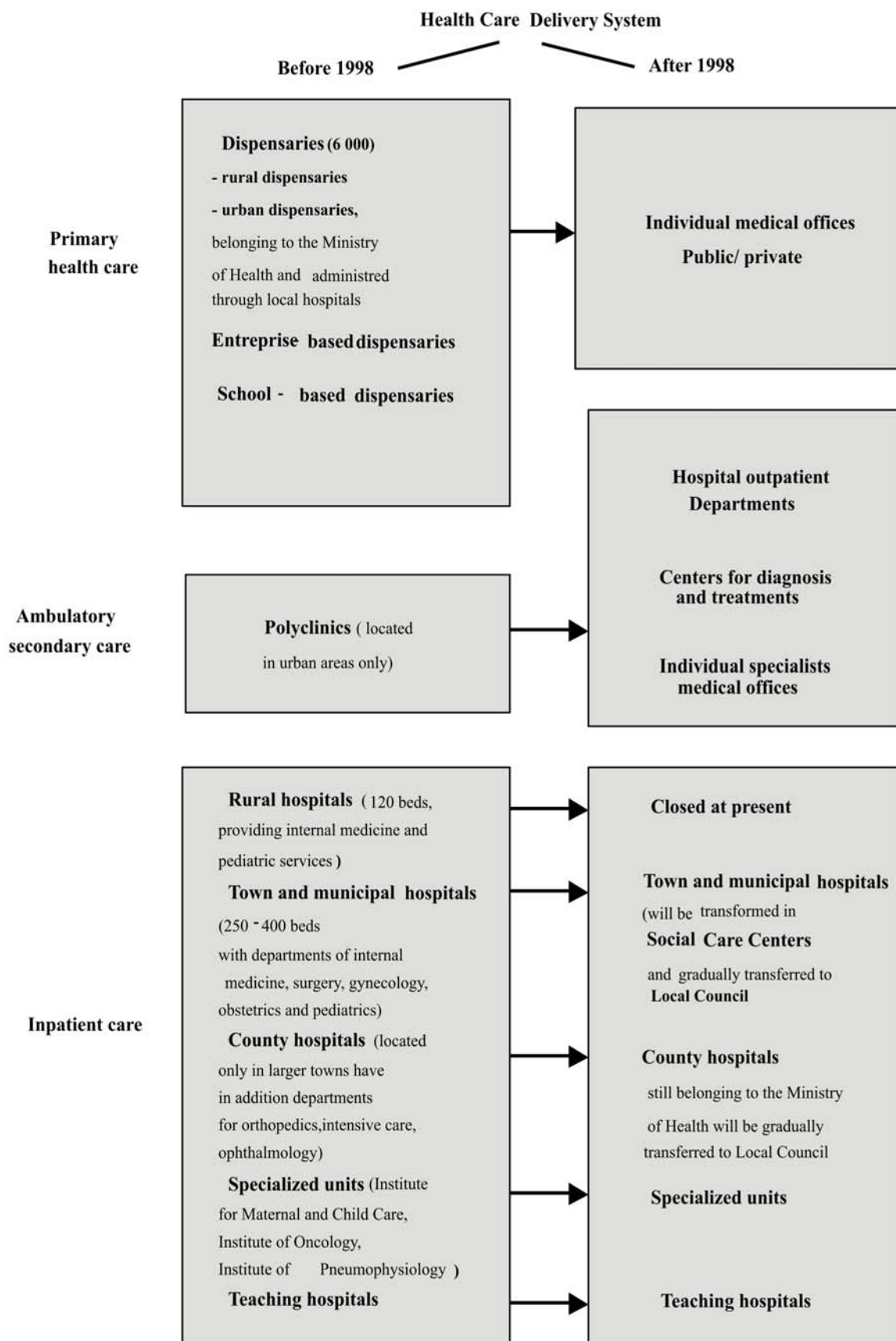


Fig. 1 The Health Care Delivery System

An in depth examination of the reality is also revealing significantly high number of hospital beds and specialised physicians indicating a health care system directed towards treatment rather than prevention, a typical feature for a former communist country. The same reality is also indicating a significantly reduced number of GPs due to a historical lack of specific training programs inside the medical educational system doubled by the considerable length of these programs. Therefore an analysis of dynamics of both medical infrastructure and medical personnel related forms of ownership, structure and territorial distribution might help to

put the whole situation into a slightly more complex perspective.

According to the data presenting the evolution of medical units and number of inhabitants/medical staff one could easily notice that:

- the number of hospital remained constant while the number of pharmacies has increased. The decrease in number of dispensaries and enterprise dispensaries is related to their change mostly into individual medical offices
- the rate kept constant, slightly decreasing for pharmacists and stomatologists (Fig. 2, 3).

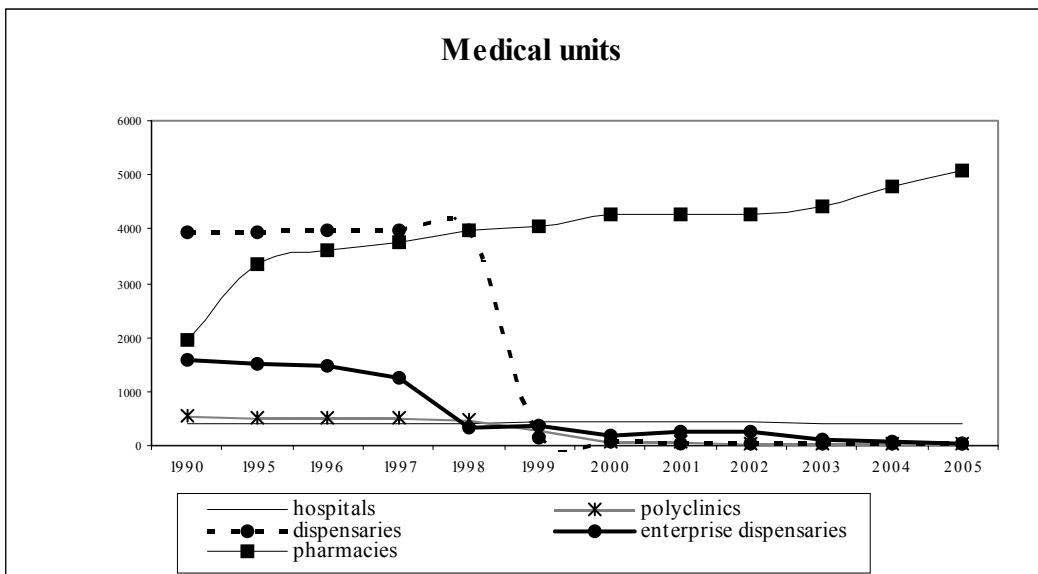


Fig. 2: Evolution of medical units

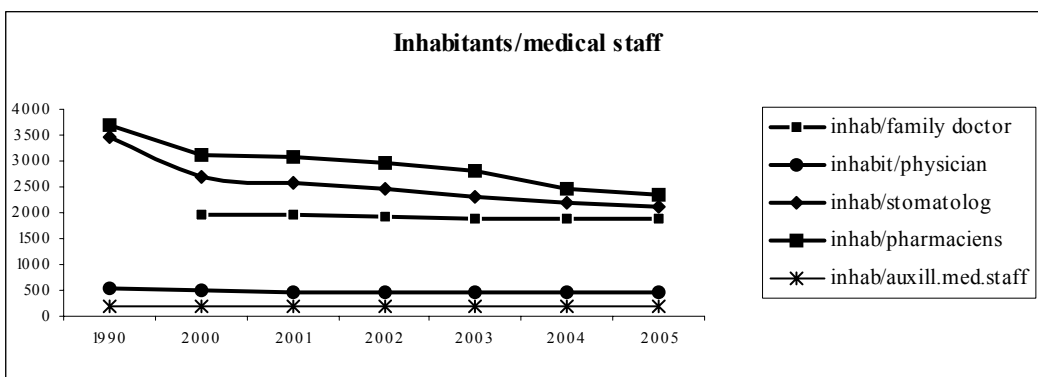


Fig. 3: Evolution of medical personnel

With an entirely state owned HCS before 1989, after 1990 the private sector has started to develop, targeting mainly pharmacies and dental practices while hospitals and individual medical offices remained almost exclusively within the public

sector. In addition the distribution of medical personnel by sector shows that over 80% physicians and auxiliary medical staff are practising within the public sector while pharmacists and stomatologists are mostly practicing in the private sector (Fig. 4, 5)

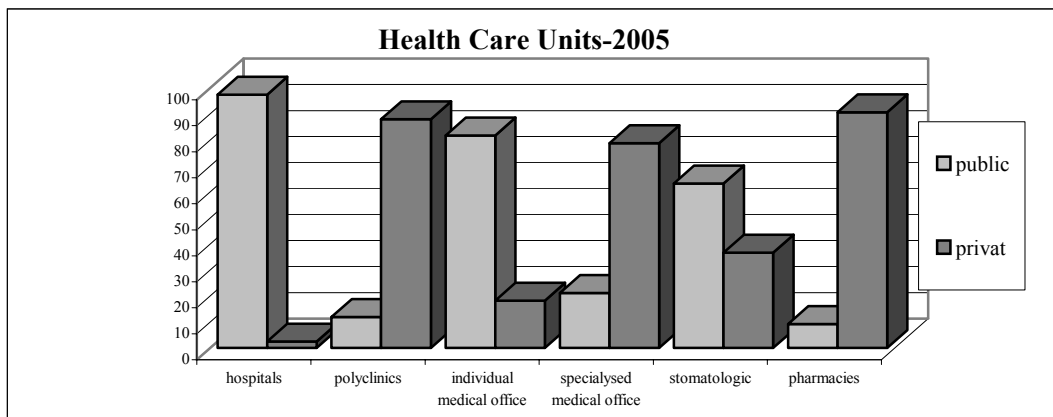


Fig. 4: The distribution of Health Care Units by sector

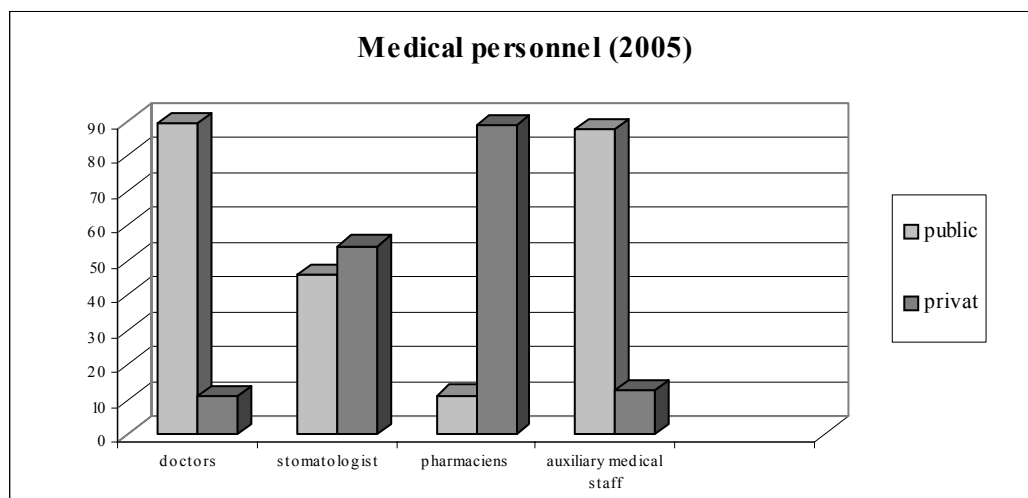


Fig. 5: The distribution of medical personnel by sector

Territorial distribution of both units of medical infrastructure and medical staff is a very complex and important reality when it comes to assessing health status in Romania. The distribution of medical personnel is strictly related to the distribution of medical units, as result over 80% of medical personnel is located in the urban area

The changes within the structure and the number of the health care units have determined the change in the number of *hospital beds*. Analysing the ratio beds/1000 inhabitants (see Fig 6), a territorial unequal distribution can be noticed, with significant disadvantaged regions being eastern and southern counties of the country (Fig. 6).

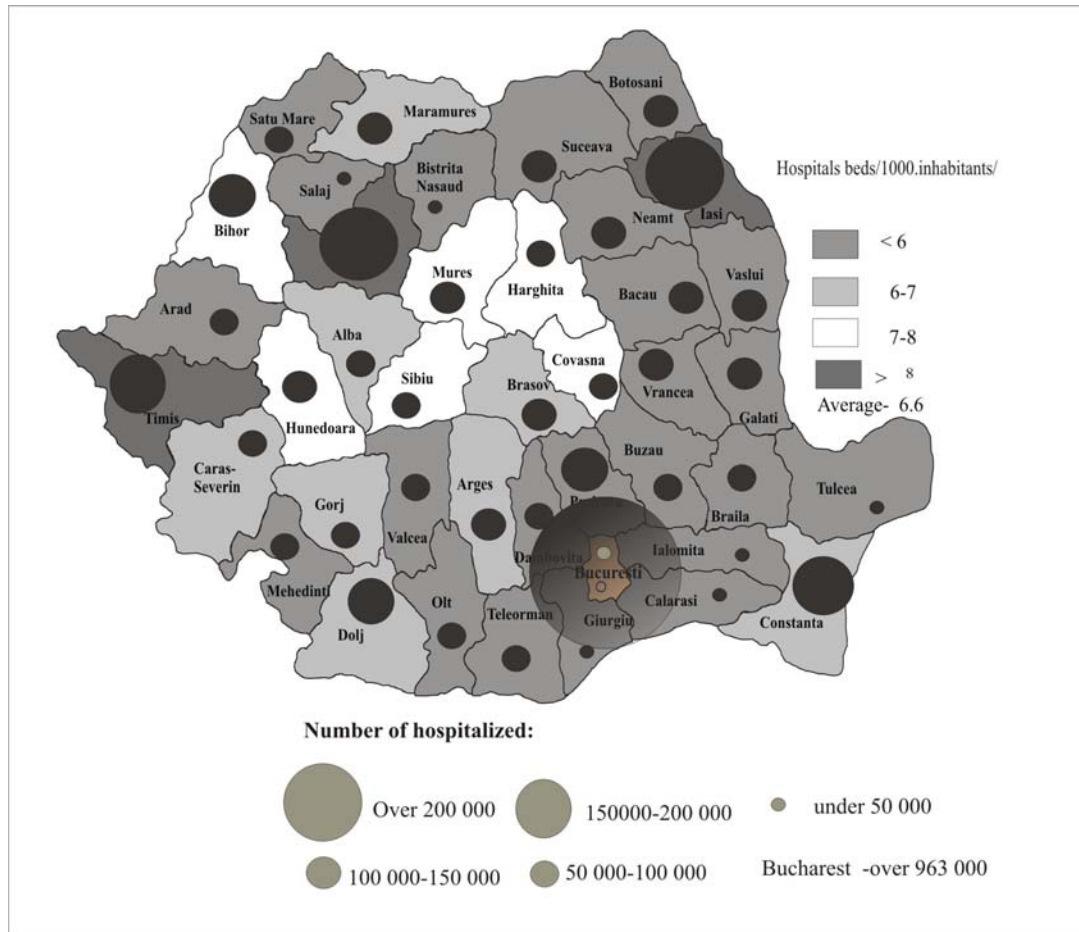


Fig. 6: Distribution of hospital beds/hospitalized people ratio

Correlation between this indicator and the number of hospitalised patients also shows territorial discrepancies, mainly expressed into 3 situations:

- higher than average number of beds/ high number of hospitalised patients (Iasi, Cluj, Timis) **moderate acceptable situation**
- higher than average number of beds/ low number of hospitalised patients (Sibiu, Harghita, Covasna) **underused and waste of resources situation**
- lower than average number of beds/ high number of hospitalised patients (Bucuresti, Dolj, Prahova) **overcrowded hospitals situation.**

In terms of medical staff Romanian health care system benefits of about 41 000 physicians, which

would give a ration of about 182 physicians/100 000 inhabitants or about 718 inhabitants./physician. Their distribution at territorial level shows many inequalities with some regions clearly disadvantaged (Fig. 7).

There are also differences by *rural* and *urban* areas where the rural ratio can reach 1.475 inhabitants./physician while the urban ratio decreases up to 300 inhabitants./physician.

This situation is the result of the lack of financial motivation for physicians in the rural areas, medical personnel migration towards the urban areas along with the former communist strategy of producing only specialized physicians in medical schools.

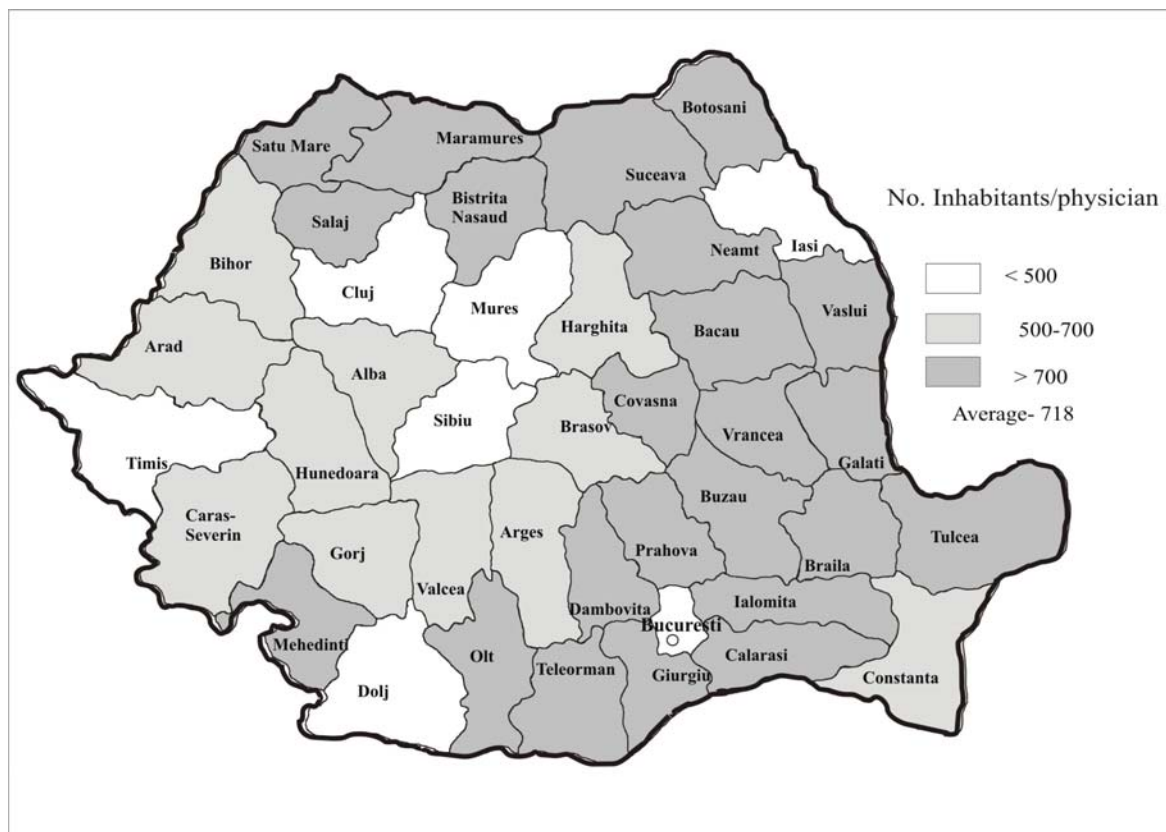


Fig 7: Territorial distribution of physicians

In addition the number of population per ancillary medical person is generally of 199 with reduced differences at county level. Southern and North Eastern regions are noticeably disadvantaged within which counties such as: Giurgiu (297), Călărași (284) or Suceava (245) with values significantly higher than the national average.

One main aspect one can emphasise is the fact that discrepancies/inequalities in population provision with medical personnel have a negative impact on both the balance of service providing and reform fulfilling

An intermediate hypothesis for this stage of the study could be that even if in an international context, Romania presents acceptable values when it comes to its two important supporting components, medical units and medical personnel, the

geographical distribution of sanitary resources is inadequate and fails to meet the local and regional needs.

### Territorial disparities of sanitary resources

To assess the sanitary resources at a general level, a complex index, named health care index has been calculated. The Health Care Index (HCI) normally registers values between '0' and '1' where values close to '1' are suggesting a decent level of sanitary resources provision.

The territorial distribution of its values indicates that the sanitary resources are unequally distributed with particular regions of concentration in while in the rest of the country they are low or they lack partially or completely. Where low values mean records of under 0.350, high values mean records of

over 0.400 with an average of 0.356. Low values of the *Health Care Services Index* are recorded exactly by the areas with precarious health state - southern and eastern regions of the country.

Its evolution between 1990 and 2004 does not suggest significant changes with the exception of 1998, year when the health care system reform has been implemented. The HCI values are suggesting that in effect at the level of sanitary resources there hasn't taken place significant appreciation.

However a more in depth analysis, taking into consideration the territorial evolution of HCI is contouring two main categories of situations: positive ones – where the index values have improved over given period of time, implying an appreciation of the sanitary resources (Bucharest,

and the counties of Iasi, Cluj, Maramures); and negative situations – where the index values have deteriorated, implying a depreciation of the sanitary resources (counties such as of Bacau, Olt, Vaslui) (Fig. 8).

In addition correlating sanitary resources distribution and evolution trends of population health state, results also show that both, sanitary resources and health care system investments are reduced exactly within the regions where the population health state is actually depreciating.

In other words all the above mentioned existing discrepancies in providing population with sanitary resources proved to have a negative impact on fairness of provision with services but also on successfully finalizing Health Care System reform.

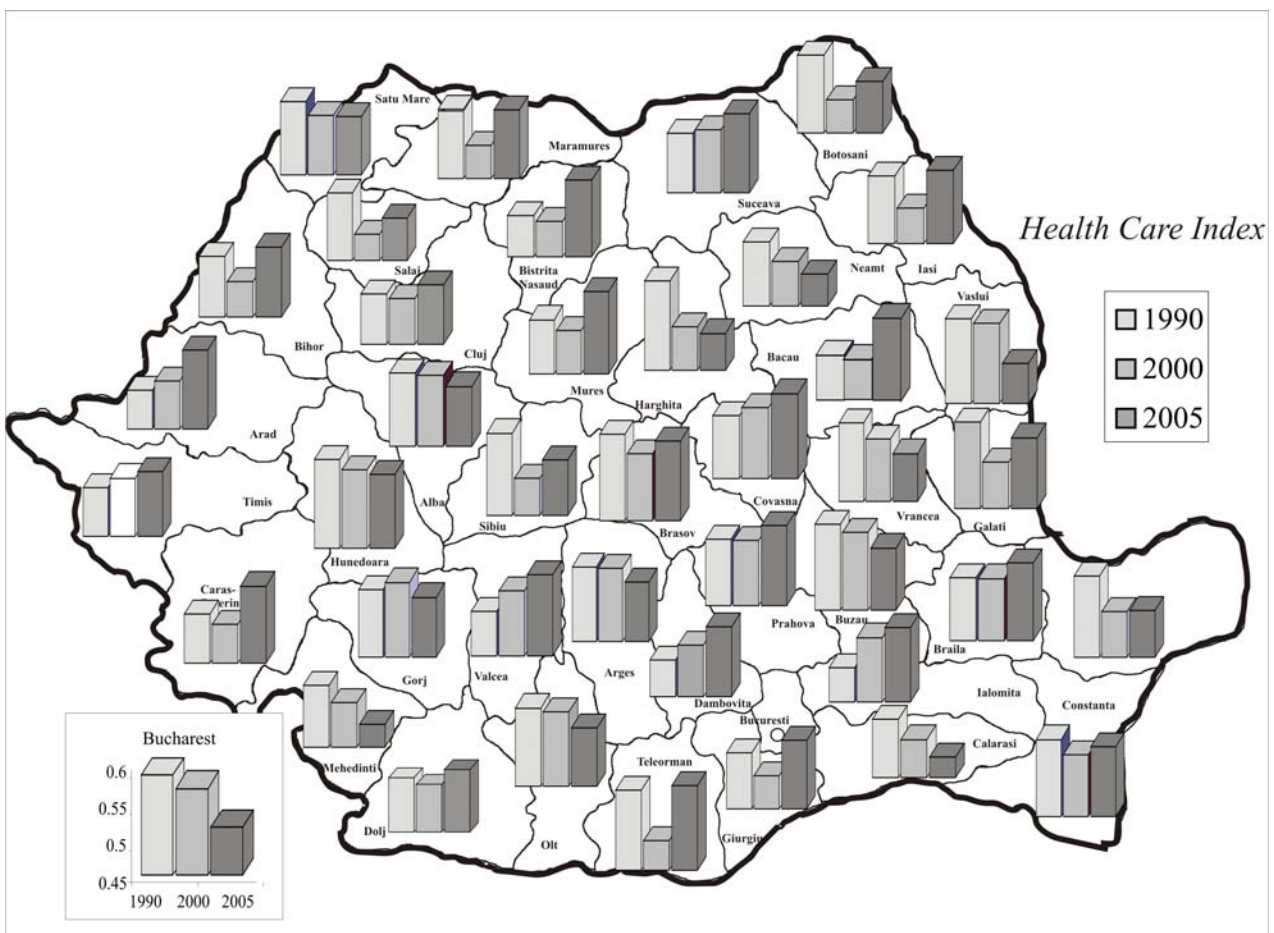


Fig. 8: Territorial evolution of Health Care Index



Therefore, in time, the inadequate placement of sanitary resources and medical personnel nationally, has led to an exclusivist concentration of infrastructure and highly specialised personnel in particular areas, especially inside important cities. (Bucharest, Iasi, Timisoara, Cluj)

Further more the lack of specialists and medical infrastructure from some areas, (where investigation, diagnosis, illnesses treatment possibilities are reduced) in addition to existence of relatively highly equipped hospitals inside cities coupled with a high degree of specialisation in doctors, plus fame of some specialists or medical centres at national levels are the main causes generating the *sanitary migration* (Fig 9).

Basically the precarious distribution of sanitary resources at the national level, in time, has led to high concentration in terms of infrastructure and ultra-specialized staff within a few cities. The lack

of specialists and medical equipments in the disadvantaged regions has reduced and limited the access to correct diagnosis and also the trustworthy attitude of patient in the treatment they may have benefited of. As a result, considerable fluxes of patients have directed themselves towards medical centers which have had previously achieved national recognition, even under conditions of significantly high costs.

### The consequences

The disparity between increased demand and low offer in sanitary services results in several effects:

- *Increasing costs of health* due to the *extra costs* attributed to the *family* who has the responsibility of looking after on the patient away from home and from *public funds* (due to the high hospital costs covered partially by the social medical insurances).



Fig. 9: Sanitary resources areas of concentration

- *Reducing accessibility* for certain population segments, usually the ones with financial restraints.
- *Decreasing of sanitary services demand* within disadvantaged regions, a paradoxical situation due to lack of trust in the medical infrastructure and quality of care provision
- *Increasing pressure on the medical personnel and the infrastructure* inside the large medical centres which have to overtake the lack of sanitary resources from other disadvantaged regions
- *Overcrowded hospitals* in the medical centres nationally recognised due to the fact that they overtake treatment of patients who would normally go to local and regional medical centres.
- *Psychological effects.* Treatment long distance away from home and family frequently causes anxiety and panic in patient's state which can only be balanced

by trust into quality and efficiency of treatment and care.

### Conclusions

Since the collapse of communism, the Health Care System has had difficulties to adapt to the changing conditions and is finding difficult to cope with new health problems.

Inadequate placement of sanitary resources and medical personnel at national level, in time, have led to concentration of infrastructure and highly specialised personnel in particular regions only, while other regions are being disadvantaged.

Existing discrepancies in population assistance with sanitary resources have a negative impact on equal provision of services, limiting the access and in the mean time raising the health costs at both public and individual level.

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