

## POPULATION ACCESS TO PHARMACEUTICAL CARE IN ARAD COUNTY

Claudiu Morgovan<sup>1</sup>, Ioana Cuc Hepcal<sup>1\*</sup>, Steliana Ghibu<sup>2</sup>, Simona Ardelean<sup>1</sup>, Claudia Crina Toma<sup>1</sup>,  
 Monica Ardelean<sup>1</sup>, Adrina Dărbăban<sup>1</sup>, Lavinia Morgovan<sup>3</sup>, Neli Kinga Olah<sup>1</sup>, Teodora Olariu<sup>3</sup>, Maria Orodan<sup>3</sup>

<sup>1</sup>"Vasile Goldiş" Western University of Arad, Departament of Pharmaceutical Sciences, 86 Liviu Rebreanu st.,  
 Arad, 310045, Romania

<sup>2</sup>University of Medicine and Pharmacy "Iuliu Hațieganu" Cluj-Napoca, Faculty of Pharmacy  
 13, E. Isac st., 400023 Cluj-Napoca, România

<sup>2</sup>"Babeş Bolyai" University Cluj-Napoca, Faculty of Business, 7 Horea st., 400174 Cluj-Napoca, Romania

\*corresponding author: [me\\_is\\_soarele@yahoo.com](mailto:me_is_soarele@yahoo.com)

<sup>3</sup> Western University of "Vasile Goldis" Arad, Faculty of Medicine Pharmacy and Dental medicine, Department  
 of General Medicine, 86 Liviu Rebreanu st, Arad 310045 Romania

**ABSTRACT:** In Arad County, the pharmaceutical care is realized through 174 community pharmacies, 4 hospital pharmacies and 18 pharmacies' local dispensaries. According to the current legislation, another community pharmacies cannot be founded in the urban communities, therefore, since 2012, pharmacies have been founded only in the rural communities. At this moment, at the county level, a pharmacy is opened at 2,475 inhabitants. While in the whole country, the pharmacies networks have an important percentage (over 40%) of the total number of open circuit pharmacies, in Arad county, they represent only 27.6% of the pharmacies (48 pharmacies). Eight national pharmacy networks have 18 pharmacies in Arad town and 2 in Ineu, and 2 regional networks own 3 pharmacies in Arad town, 1 in Chişineu Criş and 5 in the rural communities. Local pharmacy networks (4) own 15 pharmacies in Arad town and 3 in the rural communities. In this study, it has been observed that over 91,000 of the population does not have access to pharmaceutical care in their home town or village, and over 26,000 inhabitants do not have access to either of the localities from their residence villages. From the 415 member pharmacists of the Pharmacists College, Arad Branch, 29% work in the rural communities and 71% in the urban communities, and over 25% in the pharmaceutical networks. Even though, the ratio of the pharmacists/pharmacy number, in the pharmaceutical networks is under the county's average (2.23 vs. 2.38). Despite the fact that over 82% of the town pharmacies and 59% of the countryside pharmacies can prepare, only 50% of the national pharmacy networks can do that. Thus, it can be observed that at the level of Arad county, the independent pharmacies or the ones of the national networks have an important role in assuring the population's pharmaceutical care.

**KEYWORDS:** *pharmaceutical care, community pharmacy, pharmaceutical legislation, pharmacies network, Arad county*

### 1. INTRODUCTION

The population's pharmaceutical care aims at preparing the health products, assuring population's access to drugs and other safe, efficient and qualitative health products [1], as well as ensuring proper patient counseling. Thus, pharmacies are part of the health care system, and the pharmacists are authorized professionals to develop their activity according to the current legislation, having a decisive role in the increase of the patients' life quality [1, 2, 3, 4].

After 1990, the criteria to establish pharmacies have been related to the population ascribed to the respective unit. Since 1995, the pharmacies, the drug warehouses or the laboratories for the production of drugs, hygienic and cosmetic products or medical devices could be established only by specialist pharmacists or by pharmacists with at least 5 years of seniority. Compared to this, the same normative act was foreseeing that a druggist' shop authorisation could be requested by the pharmacy assistants with at least 5 years of seniority [5]. The

druggist' shop is the pharmaceutical enterprise where are sold OTC but no medicines based on prescription [4].

Once that the Health Minister's Order 201 from 1999 has been legally admitted, the pharmacists with no specialty, but with the right to free practice could request functioning authorisations only for the rural pharmacies. For urban pharmacies enterprises (pharmacies, pharmaceutical warehouses or production units) the autorisation could be requested only by specialist pharmacists, primary pharmacists or doctors in pharmacy [6]. This criterion has remained still valid for pharmacies and warehouses for the period when the Health Minister's Order 626/2001 was applied. The same order was foreseeing that in the rural environment the pharmacies and warehouses could be led by the pharmacists with free practice right and no additional training [7]. In 1999 and in 2001 too, the druggist' shop could be founded in the urban environment only by the principal pharmacy assistants, and in the rural environment only by the assistants with at least 3 years of seniority [6, 7]. By the application of Health Minister's Order 1199 from 2004, the pharmacies

functioning authorisations in the rural or urban environment could be requested by the pharmacists with free practice right, and for the druggist' shop by the pharmacy assistants with the free practice right [8]. This provision has remained valid in the Pharmacy Law 266 from 2008, too [4].

Over the time, there has been no demographical or territorial restriction to found a pharmacy in the rural environment, excepting a short period of time (january-june 2009) until the legal application of a republished form of the 266/2008 Law from 2009. On the other hand, in the urban environment a pharmacy could be established until 1999 just in case of a population higher than 7,000 habitants (having into account also the population of the neighboring villages and subordinated of the towns). Moreover, in the Health Minister's Order 2234 from 1994, there was a recommendation to avoid founding the pharmacies in an apartment in blocks of flats. Between the pharmacies there had to be at least 500 m distance [5]. Since 1999, a pharmacy could be founded in the urban environment for 5000 inhabitants (including the population of the neighboring or subordinate rural regions), and the minimum distance between pharmacies had to be only 250 m. Exceptionally, pharmacies could be established in big regions of urban agglomerations (markets, railway stations) without respecting the demographical or geographical criterion mentioned above [6]. By the application of the OMS 626 from 2001, the minimum distance between the pharmacies is eliminated, being kept the demographic criterion mentioned in the former order [7]. Since 2004, the demographic criterion, valid nowadays too, is differentiated according to the locality category, thus: [4, 8]: a) in Bucharest a pharmacy can be established for minimum 3000 inhabitants; b) in cities residence of county, a pharmacy can be established for minimum 3500 inhabitants; c) in the rest of the towns, a pharmacy can be established for minimum 4000 inhabitants.

The exception from the former normative act, referring to railway stations is extended to high surface commercial complexes [8].

The exception and missing details regarding the commercial complex (i.e. the surface, the location in one single building) made possible the opening of numerous pharmacies during the order's validity. By the legal application of the pharmacy Law 266 from 2008, the parameters of the demographic criterion are maintained, and the exception is precisely defined: *'By exception to the provisions of (1) paragraph, a community pharmacy can be founded in railway stations, air stations, as well as in commercial centres with a minimum 3000 m<sup>2</sup> selling surface, where the detailed products and public alimentation commercial activities are developed, located in only one building which uses a common infrastructure*

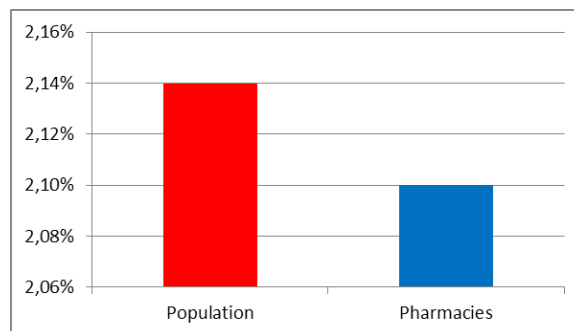
*and adequate utilities.'* By the application of the emergency Ordinance 130 from 2010, the 2<sup>nd</sup> paragraph from 12 art. is repealed, and the exception could not be applied anymore [9].

## 2. MATERIAL AND METHOD

In this study realized in April-October 2014, there have been used methods such as: logical analysis, retrospective analysis, method of comparison. The pharmaceutical legislation has been studied, and furthermore there have been analyzed the situations published by the public institutions in Romania, such as those published by: The Health Minister (The community pharmacies' situation updated on the 11<sup>th</sup> of August 2014), The National Statistics Institute (Residence and population census 2011-Final results), Pharmacists College-Arad Branch (Pharmacists Situation from Arad county).

## 3. RESULTS

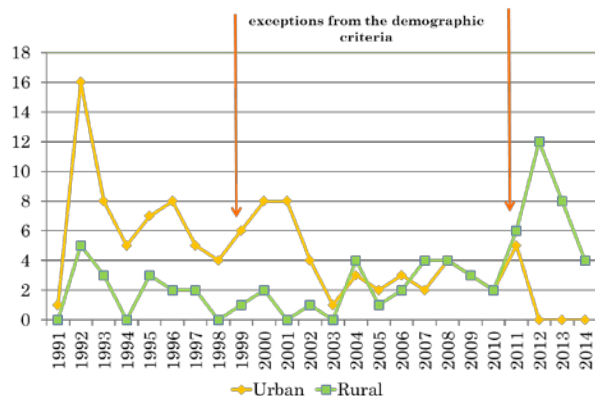
According to the official published data, the 430,629 inhabitants of Arad county represent 2.14% of Romania's population, and the 174 community pharmacies represent 2.10% of Romania's pharmacies.



**Figure 1. Population and pharmacies number from Arad County vs. Romania**

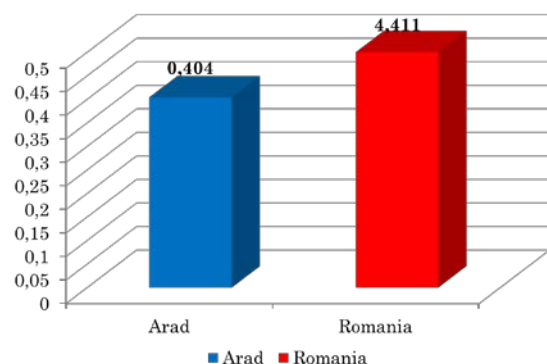
Until 1999, the community pharmacies have been established: (1) according to the 15/1991 Government Decision through which the former pharmacy Offices are transformed in commercial pharmaceutical societies based on stocks[13] or (2) respecting the current demographic criteria. After 1999, the urban pharmacies, especially in Arad town, have been founded basically according to the exceptions from the demographic criterion, which was valid until the 31<sup>st</sup> of December 2010 [4]. The pharmacies opening in the rural environment has been constantly done

until 2011, when it has been observed a growing tendency following the stop in pharmacies opening in the urban environment [10].



**Figure 2. The evolution of Community pharmacies number according to their founding year**

The pharmacies number in Arad county reported to 1,000 inhabitants is slightly under the national average.



**Figure 3. Pharmacies number for 1000 inhabitants**

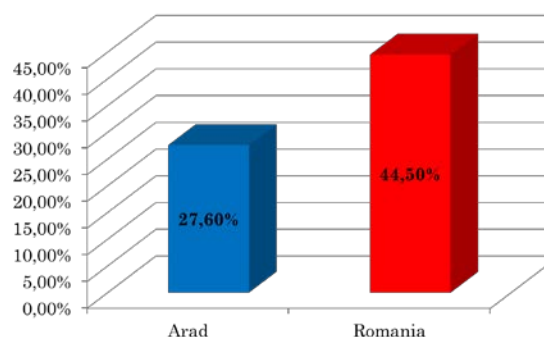
In three towns a pharmacy is opened for a smaller number of inhabitants than in the county's residence town (1 pharmacy for 2,121 inhabitants) [10, 11].

Another study objective has been to quantify the networks' presence in Arad county. For this indicator, it can be noticed that there is a significant difference.

**Table 1. Pharmacies situation in the urban environment**

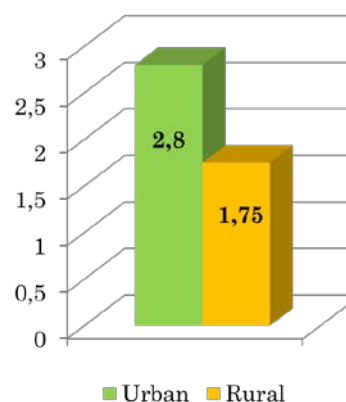
Locality	Population	Pharm.no. acc. to demographic criterion	Existing pharmac ies no.	Population reported to pharmacy
ARAD	159,074	46	75	2,121
RESTUL ORASELOR	68,723	21	29	2,370
CHIȘINEU-	6,194	2	5	1,239

CRÎȘ				
CURTICI	7,453	2	2	3,727
INEU	8,377	3	4	2,095
LIPOVA	7,292	2	5	1,458
NĂDLAC	7,398	2	2	3,699
PÂNCOTA	5,526	2	2	2,763
PECICA	11,266	3	4	2,817
SÂNTANA	10,134	3	3	3,378
SEBIȘ	5,083	2	2	2,542



**Figure 4. Comparison regarding pharmaceutical networks**

Over 41% of the pharmacists work in the urban environment, and because of this a pharmacy in the urban environment needs, on average, a pharmacist more than in a pharmacy in the rural environment. Thus, in the urban environment the percentage pharmacist: inhabitants number is of 1:812, and in the rural environment doubles, being 1:1,677 [13].



**Figure 5. Pharmacists vs. pharmacies report**

One of the basic activities of the pharmacy assistance is represented by the realization of preparations in pharmacies on the basis of the functioning authorization released by the Health Minister. Starting with the year 2009, the pharmacies can function without laboratory, and

because of this many pharmacies are not authorized anymore for this activity.[10].

**Table 2. Population access to the preparations made in pharmacies**

<i>Indicator</i>	<i>Urban</i>	<i>Rural</i>
Pharmacies total number	104	70
Number of pharmacies which can prepare	86	42
% Pharmacies which can prepare	81.90%	60.87%
Number of localities where it is possible to prepare	10	34
The served population	238,600	71,153
Number of authorized pharmacies without laboratory	22	28
Number of localities where it is impossible to prepare	0	239
Population in localities where it is impossible to prepare	0	131,679

#### 4. DISCUSSIONS

The 430,629 inhabitants of Arad county (2.14% of the total population), have access to: a) 174 community pharmacies, that is 2.10% of the total number of pharmacies in Romania; b) 4 hospital pharmacies and 3 of their local dispensaries; c) 18 local dispensaries of the community pharmacies (Figure 1) [10, 11].

If, of the total population of the county, 45% have residence in the rural environment (273 localities vs. 10 municipalities and towns), the percentage of the community pharmacies in this environment is of only 40% [10, 11].

Regarding the authorization of pharmacies in Arad county, it can be noticed that until 2003 inclusively, the pharmacies number opened in the urban environment was superior to those in the rural environment.

After the legal application of the demographic criterion (the 5th of October 2004), there have been established 21 more pharmacies in the urban environment

such as : 1) Arad Town - 17 of which 11 by exception; 2) Chişineu Criş - 1 by exception; 3) Lipova – 1 by exception; 4) Ineu, Sântana si Sebis – one pharmacy each respecting the demographic criterion. In the same period, the pharmacies number opened in the rural environment reported to the urban environment was over 130% higher (49 pharmacies) [10, 11].

From 2004 to 2011 inclusively, the pharmacies establishing ratios are similar in the urban and rural environment. On the other hand, after 2012, pharmacies have been opened only in the rural environment ; this situation was caused by the blocking of establishing pharmacies in the urban environment by the elimination of the demographic criterion since the 1st of January 2011. (Figure 2) [10, 11].

Regarding the report of the pharmacies number for 1,000 inhabitants, there has been observed a similarity between the situation of Arad county (0.404 pharmacies for 1,000 inhabitants) at the situation at the national level (0.411 pharmacies for 1000 inhabitants) (Figure 3).

If at the county level one pharmacy is opened for 2,475 inhabitants, in four towns one pharmacy serves a smaller number of inhabitants: Arad, Lipova, Ineu şi Chişineu Criş.

In Chişineu Criş, the inhabitants number served by a pharmacy is 1,239. According to the data presented in Table 3, at the opposite side is Curtici (one pharmacy for 3,737 inhabitants) [10, 11].

Regarding the pharmacy networks presence in Arad county, it has been observed that of the 14 networks, 8 are national (Sensiblu, Catena, Sibpharmamed, Centrofarm, Dona, Belladonna, Help Net, Farmaceutica Remedia), 2 regional (Arcatim, Pharmalife Med) and 4 local (Libro pharma, Sinapis, Farmina, Derryfarm). There have been considered pharmacy networks, those structures which have at least three pharmacies and the same owner [10].

The percentage of network pharmacies in Arad county is only 27.6% compared to the national average which is 45.5%, Arad county being placed on the 7th place regarding the independent pharmacies percentage (Figure 4) [10].

The urban environment has been more attractive to the networks, because 40 of the 48 owned pharmacies have been opened here (37 Arad, 2 Ineu, 1 Chişineu Criş). Only 3 networks have 8 pharmacies in the rural environment, 5 being owned by Arcatim [10].

There is no national network to have opened pharmacies in the rural environment, and in other towns than Arad they have only 2 pharmacies. This fact shows the national networks orientation to high agglomeration urban

regions and the lack of interest to offer pharmaceutical care to the population in the rural regions.

Concerning the rural environment, it has been noticed that of the 273 localities, only 47 have pharmacies (17%) [10].

Related to the population, the 70 pharmacies opened in villages serve over 93 thousands inhabitants, that is 46% of the population in the rural environment [10, 11]. The rural population of Arad county has the residence in 273 localities and represents 45% of the total. This population has access only to 40% of the pharmacies functioning only in 17.2% of the villages. Additionally, in 14 localities in the rural environment 18 local dispensaries are opened (16,571 inhabitants) [10, 11].

Thus, of the 68 county communes only 52 benefit from the services of a pharmaceutical enterprise.

Despite all of these, in Arad county, over 91,000 inhabitants do not have access to the pharmaceutical care in their residence locality.

Moreover, over 26,000 inhabitants of Arad county do not have access to pharmaceutical care in either of the localities which enter in the communes structure [10, 11]. Regarding the specialty personnel, it has been observed that in the urban environment work over 2/3 pharmacists. Thus, in the urban environment, a pharmacy has 2.8 pharmacists employed; and in the rural environment only 1.75 pharmacists (Figure 5) [10, 12].

In the urban environment, the ratio pharmacist:inhabitants number is of 1:812, and in the rural environment the ratio is of 1:1,677 [10, 12]. According to the data presented by WHO, in European Health for All database (HFA-DB), in the European Union, in 2011, the ratio is of 1:1,308 [14]. The statistics published by INS, in the paper '*Economic and socio-regional landmarks: Territorial statistics*' [15], it has been shown that at the Arad county level 245 pharmacists were working, which represents a ratio of 1:1,785 (pharmacists vs. inhabitants number), which furthermore represents a good covering reported to the European average [15].

In Arad county, on average, a pharmacy has 2.38 pharmacists employed. The ratio pharmacists/pharmacy in the national networks as well as in the independent pharmacies are over the county's average (2.68 and 2.44 respectively) [12].

Thus, the independent pharmacies and the local networks assure a pharmaceutical care with pharmacists over the county's average.

In Table 2 it is detailed the population access to the preparations made in pharmacies. There can be noticed that 27% of the pharmacies are authorized without laboratory (22 in the urban environment and 28 in the rural environment) [10].

The data show that 131,000 people live in the 239 localities where it is not possible to realize pharmaceutical preparations.[10, 11].

Referring to the network pharmacies it has been observed that of the 48 pharmacies, 31.25% are not authorized with receipt. Only 1 regional network pharmacy 4 local network pharmacies cannot prepare, compared to the 10 national network pharmacies which represent 50% of the total number of national network pharmacies [10].

## 5. CONCLUSION

In Arad county a pharmacy is opened for 2,475 inhabitants; the independent pharmacies having an over 70% ratio.

In 216 localities in the county there is no pharmaceutical unit, that is 91,000 inhabitants do not have direct access to pharmaceutical care.

The independent pharmacies and the local networks assure a pharmaceutical care with pharmacists over the county's average.

131,000 people live in 239 localities where it is not possible to realize pharmaceutical preparations.

Regarding the national networks it can be noticed that at the level of Arad county: 1) they preferred only the big regions with high urban agglomerations, 2) they have the smallest ratio pharmacists/pharmacy, 3) they do not have opened pharmaceutical dispensaries and 4) they have the smallest ratio of pharmacies where it is possible to prepare.

## 6. REFERENCES

1. Legea 95/2006 privind reforma în domeniul sănătății, publicată în Monitorul Oficial nr. 372 din 28 aprilie 2006
2. Hepler, D.D. & Strand, L.M. Opportunities and Responsibilities in Pharmaceutical Care, Am.J. Pharm. Educ., 1989, **53**, 7S-15S
3. World Health Organization, The role of pharmacist in the health care system, Report of a WHO Consultative Group, New Delhi, 13-16 December 1988
4. Legea farmaciei 266/2008, publicată în Monitorul Oficial nr. 765 din 13 noiembrie 2008
5. Ordinul Ministrului Sănătății nr. 2.234 din 29 decembrie 1994 pentru aprobarea Normelor privind eliberarea autorizațiilor de functionare a unitatilor farmaceutice, precum și a regulamentelor de organizare și functionare a acestor unitati, publicat în Monitorul Oficial 44 din 8 martie 1995
6. Ordinul Ministrului Sănătății nr. 201 din 5 aprilie 1999, pentru aprobarea Normelor privind autorizarea de functionare a unitatilor farmaceutice, precum și a Normelor tehnice privind functionarea farmaciei,

- depozitului farmaceutic si a drogheriei, publicat în Monitorul Oficial nr. 278 din 17 iunie 1999
7. Ordinul MSF nr. 626 din 11 septembrie 2001, pentru aprobarea Normelor privind înființarea si autorizarea unitatilor farmaceutice, precum si a Condițiilor de organizare si functionare a acestora, publicat în Monitorul Oficial nr. 629 din 8 octombrie 2001
  8. Ordinul Ministrului Sănătății nr. 1199 din 23 septembrie 2004, privind modificarea și completarea Ordinului ministrului sanătății și familiei nr. 626/2001 pentru aprobarea Normelor privind înființarea și autorizarea unităților farmaceutice, precum și a Condițiilor de organizare și funcționare a acestora, publicat în Monitorul Oficial nr. 904 din 5 octombrie 2004
  9. Ordonanța de Urgență a Guvernului nr. 130 din 2010 pentru modificarea Legii farmaciei nr. 266/2008 din 28 decembrie 2010, publicată în Monitorul Oficial nr. 890 din 30 decembrie 2010
  10. Ministerul Sănătății, Situația farmaciilor comunitare actualizată în 11 august 2014, available on <http://www.ms.ro/?pag=131>, cited at 21<sup>st</sup> of August 2014
  11. Institutul Național de Statistică, Recensământul populației și locuintelor 2011 – Rezultate definitive, available on <http://www.recensamantromania.ro/rezultate-2/>, cited at 21<sup>st</sup> of August 2014
  12. Colegiul Farmacistilor Filiala Arad, Situatia farmacistilor din jud. Arad, cited at 5<sup>th</sup> of October 2014
  13. Hotararii Guvernului nr. 15/1991 privind infiintrea societatilor comerciale farmaceutice – SA, publicată în Monitorul Oficial nr. 8 din 16 ianuarie 1991
  14. WHO Regional Office for Europe, European Health for All database (HFA-DB), updated April 2014, disponibil pe <http://data.euro.who.int/hfadbf/>, cited at 15<sup>th</sup> of June 2014
  15. Institutul National de Statistica, Repere economice și sociale regionale: Statistică teritorială, 2013, 255-259