Babeș-Bolyai University Cluj-Napoca
Faculty of Political, Administrative and Communication Sciences
Doctoral School of Administration and Public Policies

PhD Thesis Summary

PUBLIC POLICIES IN EMERGENCY MEDICINE

Scientific coordinator:
University Professor Doctor Cătălin Ovidiu Baba

PhD student:
Radu-Marin Moisin

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CONTENTS OF THE SUMMARY OF THE DOCTORAL THESIS

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CHAPTER 1

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CHAPTER 2

ARGUMENTATION, OBJECTIVES AND RESEARCH METHODOLOGY

Romania is a state undergoing systemic transformations in all areas of social, economic and administrative life more than three decades after the Revolution of December 1989. The health system could not be bypassed by the wave of reforms specific to the democratic regime, therefore this area of vital importance to the population was fully subjected to structural changes.

Of all the branches of medicine, emergency medical care is the most important, because it aims to save a life in real and/or imminent danger. This system is the one with which all the inhabitants of the country (but not only Romanian citizens, if we think of tourists, people on delegation or studies) interact in borderline situations, which is why we chose to do an imaging analysis of the system, the term chosen by us not being a random one. Our research is not meant to be an emergency medicine x-ray, but rather a complex, CT (computed tomography) analysis that gets to the heart of how the system works and interprets the results in a comparative way with similar systems in other countries.

This rigorous, overall analysis is the first objective of the research. The second objective is the sectoral analysis, in which we will see how each component of the complex chain of emergency medical assistance works: the system for taking emergency calls, public and private ambulances, other methods of intervention (air, sea or in special), emergency reception

structures and minor emergency treatment structures. If in the framework of the second objective we will analyze theoretical data or statistical figures, the third objective aims to bring us closer to both the practitioners of this system and the beneficiaries, better said the former or potential beneficiaries because this type of research is only possible in periods of lack of acute, urgent moments.

The fourth and certainly the most important objective is to generate possible solutions for reforming this system in a clear direction of efficiency, effectiveness and resilience. This objective is also closely related to the originality of the work because the author is not emotionally or professionally involved in the emergency medicine system, cannot be accused of subjectivism or personal or group interests, and has not only a theoretical training in the field of public administration, but also a previous practical experience in a management component of a municipal clinical hospital with an emergency reception structure. Throughout his career in the local public administration, the author of this paper has constantly supported the Cluj medical system and emergency medicine.

Our research involved reading a lot of specialized papers and articles, especially from Europe, but we are not only referring to all the member states of the European Union, but also to partner states outside of it or candidates for accession, either more developed or less developed than the EU average.

Also, in order to analyze the emergency medical care system and from the perspective of effectiveness and efficiency, we requested official statistical and financial data from some public institutions in the field.

At the same time, we did not stop only at documentation from bibliographic sources, but we resorted to a modern and high-quality tool, i.e. a representative sociological research at the national level, addressing exactly the questions necessary to achieve the objectives of the paper. In the framework of this sociological research, we called on the services of highly experienced professionals in the field.

In order to better understand, from practice, the operation of the system, its problems and possible solutions, we applied the interview method to specialists and practitioners both from Romania and from countries such as France, Germany and the United Kingdom of Great Britain and Northern Ireland, on externally, calling on the expertise of Romanian doctors who practiced emergency medicine at the beginning of their careers in Romania. I chose these

countries both because they are models of good practice worldwide, and because of the chance to have the opportunity to discuss based on the theory and data identified in the doctoral research with Romanian specialists who work in these systems and, thus, I can look at the current system in which they work with the Romanian one in a comparative perspective.

There is also another sound scientific reason that led to the selection of these countries for the comparative analysis. Many opinions from the specialized doctrine talk about the Franco-German system ("stay and play") and the Anglo-Saxon ("scoop and run") in the management of emergency medicine, especially how the ambulance system is organized. In short, the Franco-German system encourages the treatment of the patient on the spot by the ambulance crew almost always accompanied by a doctor, while the Anglo-Saxon model involves bringing the patient to the hospital as quickly as possible by a crew consisting of usually only paramedics [1]. Reading multiple articles on this topic, we wanted to find out which model Romania adopted and if it is the optimal one from a managerial point of view.

The doctoral thesis was structured in six chapters: the first was dedicated to the technical aspects specific to the elaboration of a doctoral thesis, and the following three chapters analyzed, from a theoretical point of view, but also comparatively, the three major components of the emergency medicine system: emergency calls, ambulance systems and emergency departments.

We chose not to use the term prehospital emergency services because some minor emergencies can be treated in specialist facilities outside hospitals, not just by ambulance crews, and in relation to emergency departments we used this term to denote emergency reception structures in Romania (UPU - emergency reception unit, CPU - emergency reception compartment and CPU-S - specialized emergency reception compartment) and their equivalents in France, Germany and the United Kingdom, as well as in other countries.

During the theoretical research, I discovered many other examples of good practices from other member states of the European Union such as Italy, the Netherlands, Sweden, Finland, which I presented as such, but also the efforts of the European Union to improve the

[1]Synthesized information from source: Scott Davison , Elizabeth Karpinski , Michael Levy, Christian Strobel , " A Modified EMS System : Transport Ambulance " , 2016, Worchester Polytechnic Institute, article available at the Internet address https://web.wpi.edu/Pubs/E-project/Available/E-project-050316-182351/unrestricted/A_Modified_EMS_System_-_Transport_Ambulance.pdf, pp. 37-39

emergency medicine system at the European level, primarily by improving the quality and efficiency of the single emergency number 112, but also by the recent efforts to create emergency intervention teams at the European level, including emergency medical teams in case of disasters or other situations of high gravity.

In our research, we studied the emergency medicine system intended for the general population, without analyzing the elements belonging to the networks of other ministries because they are few in number and influence to a small extent the final component of the emergency medicine system, namely the emergency departments.

In the fifth chapter, which represents the practical part of the paper, our work developed on three components that we considered absolutely necessary to achieve the objectives of the paper:

- the original sociological research dedicated exclusively to emergency medicine and which, to our knowledge, is the first in the history of Romania (May 2023). Previously, we presented the conclusions of a recent sociological research dedicated to the state of the health system in Romania (December 2022), in which there are some questions related to emergency medicine that also come from us;
- interviews with emergency medicine specialists, starting with family doctors who coordinate emergency centers (we consider that these centers are in some sui generis situations, on the border between primary and emergency medicine), continuing with specialists (who currently work or have worked in Romania and now work in other countries) from SAJ, SMURD, UPU-SMURD, CPU, CPU-S, private structures and ending with decision-makers at the central level;
- the rigorous analysis of the emergency medicine system in Cluj County, which also made it possible to argue and detail a proposal for a pilot project.

The last chapter of the paper is dedicated to the final conclusions and recommendations, in which I presented the synthesis of the theoretical data on each level of the emergency medicine system, to which I added the sociological conclusions and the qualitative component from the interviews addressed to the specialists. On each of these levels, we formulated our own opinions and recommendations that, at any moment, can be used for new public policies in the field.

The complexity of the data obtained led us to publish the summary of this PhD thesis and to build on the laborious work so far with subsequent articles that would be a useful tool from a sectoral point of view, on each component of the system.

CHAPTER 3
EMERGENCY CALLS, AMBULANCE AND EMERGENCY RECEIVING STRUCTURES

Emergency calls

In the chapter dedicated to emergency calls, we analyzed the situation in Romania, as well as the situation in France, Germany and the United Kingdom, studying and models of good practice at the level of the European Union.

Regarding the use of the number 112 in Romania, we presented statistical data for the period 2018-2022, as well as the solutions identified for reducing the percentage of non-urgent calls, but also for increasing the quality of the service through the use of advanced technologies that allow the accurate identification of the location. We also consider the fact that we presented for the first time in Romania the situation of accesses to the emergency number 113 intended for people with hearing and speech impairments, based on the data received under Law no. 544/2001 regarding access to information of public interest from the Service for Special Telecommunications.

I have described at length the debates taking place in France regarding keeping only the number 112 or also the other emergency numbers that historically work in parallel: 15 (Ambulance - SAMU), 17 (Police and Gendarmerie) and 18 (Firefighters).

In the continuation of our analysis, we have shown that Germany has an emergency number 112, in addition to which the 110 number of the Police also operates in parallel, and we have identified impressive technological solutions available to victims of violent crimes, such as breaking into the home people.

Analyzing information from the United Kingdom, we found that there is only one emergency number, 999, as well as the recent moves to outsource emergency dispatchers to private companies, and we made a judgment about the dangers of this strategy. The United Kingdom also has a number, 111, dedicated to non-emergency medical situations.

The single emergency number 112 is an achievement of the European Union and we have shown the major differences between European states based on European Commission reports, including the number of countries where the number 112 is used in parallel with other emergency numbers.

We presented the consistent efforts of the Union to improve the possibility of locating the caller in difficulty.

The emergency dispatch centers in the member states do not act uniformly, in many of them doctors are missing, and we demonstrated the consequences this fact has on the quality of the intervention and the state of the person with health problems.

We extensively analyzed the situation of abusive, non-urgent calls, both in Romania and in other European countries, specifying the possible solutions to reduce them .

Ambulance systems

As part of our research, we also analyzed the second level of emergency medicine, namely the ambulance service , the first to intervene in medical emergencies after calling 112.

We carried out a rigorous investigation on the history of the public Ambulance service, on the number of interventions and on its equipment, analyzing the wear and tear of the SAJ/SABIF car fleet. We also thoroughly analyzed the existing situation at the SMURD level, the car park and the efficiency of the medical interventions of its crews compared to those of the SAJ/SABIF crews.

We also studied the performance of the SMURD crews that use the helicopters of the General Aviation Inspectorate, as well as that of the Salvamont- Salvaspeo services . Instead, we justified the futility of the separate existence of the Romanian Agency for Saving Human Life at Sea, which should be absorbed within the SMURD from our point of view. At the same time, we also presented relevant information about private ambulances, despite the little public information available on this subject.

France represented a model for us in the organization of the emergency medicine system, which is why we analyzed this system in detail from the point of view of the ambulance service , on all its components: SAMU ambulances, those of the Fire Department, the airborne service and the private " SOS" ambulances Médecins ".

We studied the German system that uses ambulances that are both state-owned and private, the situation of helicopters and co-payments in emergency medicine, volunteer paramedics and volunteer firefighters, as well as the "rendez-vous " model , where the

emergency doctor arrives to many more cases by traveling separately in a fast vehicle and leaving for another case after the patient is stabilized, which is picked up by the ambulance[2].

At the same time, I carefully studied the UK system, especially the "rapid response vehicle" model.

At European level, we have presented the states that have gone further by giving first aid skills to the police or training many volunteers to use the automatic defibrillators available in large numbers in public spaces. We also studied the role of the European Union's Civil Protection Mechanism in the establishment of emergency medical teams at European level, as well as the states that have cross-border cooperation agreements regarding ambulances.

We studied the necessary measures to improve the activity of emergency crews such as the use of telemedicine and the provision of psychological support for personnel affected by Burnout .

As for the great doctrinal debate of "stay and play" and "scoop and run", our theoretical research could not reach a firm conclusion regarding the type of strategy to be followed, instead the practical part of the paper will issue the conclusions and recommendations on this topic.

Emergency reception structures

Being aware of the high degree of overloading of the emergency reception structures in Romania, even before the start of this scientific project, we tried and managed to find out to what extent minor emergency reception structures are found in other states as examples of good practices and to what extent they could be implemented in Romania.

I discovered the fact that many European states have resorted more and more to such solutions, such as France in the case of " maisons médicales de garde ", the United Kingdom which used, in the first phase, "minority injury unit " and "walk -in centers", which have now been replaced by "urgent treatment centers" and explained the novelties of this new system.

We also analyzed the Italian system which uses centers called "guardia medicale" and the Hungarian one, which uses a network of centers called "központ".

In Romania, a similar concept was adopted at the national level in the form of permanent residence centers.

[2] P. Sefrin , "The Rendezvous Syst Using Emergency Doctors ' Vehicles in the Federal Republic of Germany ", 2012, article available at the Internet address https://www.cambridge.org/core/journals/prehospital-and-disaster-medicine/article/abs/rendezvous-system-using -emergency-doctors-vehicles-in-the-federal-republic-of-germany-

Based on the information received from the Ministry of Healt [3], at the end of 2022 Romania had 352 permanent care centers served by family doctors or general practitioners by rotation, assisted by medical assistants. There are 130 centers in urban areas and 222 in rural areas, of which, in the period 2018-2022, only 23 centers were opened in urban areas and 36 in rural areas. There is a very large discrepancy between the counties, the development of the centers being completely non-unitary at the level of the country. For example, Bihor has 32, Neamț 26, Timiș and Iași 23 each, while Covasna, Brăila and Ialomița have only one center each, and Prahova and Ilfov none. We were surprised to learn that there are only 2 centers in the City of Bucharest, the most recent being opened in 2018.

The most important conclusion that we drew emerges from the fact that, in 2022, 1,257,258 cases were managed by the permanent centers, of which 744,608 on working days and 513,424 on non-working days. Treatments were applied in 849,543 cases, and 448,507 cases were not an emergency. The more serious situations that could not be resolved at the level of the permanent centers and it was necessary for the SAJ/SMURD to take over the patients were in the number of 9,614 [4]. Here, then, is the fact that over 99% of the cases managed by the emergency centers either did not represent emergencies, or were emergencies that could be solved at the level of these units.

This means that over 1,200,000 cases in the last year no longer ended up congesting the UPU, CPU and CPU-S structures.

We analyzed the statistical data on accessibility to medical services, public health expenditures, disparities in life expectancy between regions of the country, the shortage of doctors and hospital beds.

Starting from these data, we analyzed several specialized studies that dealt with the problem of accessibility to hospitals, including emergency structures in several areas in Romania: Timiș, Caraș-Severin, Mehedinți and Botoșani counties, the Metropolitan Area of the City of Bucharest, the North region East (Suceava, Botoșani, Neamț, Iași, Bacău, Vaslui counties) and North West region (Cluj, Bihor, Sălaj, Bistrița Năsăud, Maramureș and Satu Mare counties). Although it was an extremely laborious approach, we developed the mentioned studies and proposed solutions to cover the deficient areas in terms of access to hospitals with the establishment of permanent centers, using information related to the distances between localities from the OpenStreetMap.org website , but also taking into account the difficult relief

[3]The answer of the Ministry of Health no. 176/2023 to our request for information of public interest.

[4]Idem.

in some areas, especially the mountainous one after I researched additional data about the localities in the areas analyzed in detail.

As for the emergency departments (emergency reception structures), they are the most well-known by the population because they are also used by patients who can move, not only those brought by ambulance.

As part of our research, both from the analysis of multiple materials on this subject, as well as through discussions with Romanian doctors working in France, Germany and the United Kingdom, we have noticed a growing pressure on these structures and have extensively presented the solutions identified in these countries for reducing DU overcrowding, as well as issues with social and ethical impact in the case of private structures in these countries.

We have also studied the solutions identified in Italy, the Netherlands, Denmark and Sweden and have stated in a reasoned manner which of these we do not agree with, especially on ethical grounds.

We also analyzed data from reports of the European Society for Emergency Medicine, the World Health Organization and the Organization for Economic Co-operation and Development and analyzed the reasons for a lower number of DU presentations in certain countries.

Going further, we carried out a rigorous analysis of the emergency reception structures in Romania: UPU, CPU and CPU-S , using public statistical data, but also obtained through individual efforts to request public information. We particularly analyzed the number of presentations in DU on their own and the number of code blue or white cases, some of which have the potential to be resolved in other medical structures.

CHAPTER 4
ORIGINALITY OF THE WORK. THE VIEW OF THE BENEFICIARIES OF THE SYSTEM AND THE SPECIALISTS. PROPOSAL FOR CLUJ COUNTY

First of all, in this chapter, I specified the fact that, throughout the years of doctoral research, I observed multiple sociological studies carried out by the Romanian Institute for Evaluation and Strategy (IRES) regarding the public health system in Romania . I contacted the representatives of this institute in 2022 and found out that the documentation was being finalized for the launch of a sociological research on the state of health of Romanians (an arc in time compared to the previous complex research from 2010) and I managed to I propose to them for inclusion in the study some questions related to emergency medicine . We agreed with

the representatives of this institute that, during 2023, we will resume research efforts by jointly carrying out a sociological research dedicated exclusively to the emergency medicine system in Romania.

From the first sociological research carried out by IRES in December 2022, we analyzed the degree of self-medication or with the help of the pharmacist, the situations when the family doctor is requested and to what extent there is permanent access to it.

Other relevant responses that were analyzed are those related to the presentation in the UPU, visits to the emergency centers, calls to emergency rooms in private hospitals, the time in which the ambulance crew presented itself in case of emergency, as well as the self-reported use of private ambulance services.

The original sociological research carried out by us in collaboration with IRES is not published on the Internet and, according to the signed scientific cooperation agreement, it will not be published on the Internet until our doctoral thesis has undergone the necessary legal reviews. Until then, the sociological research can be viewed in Appendix 2 of the printed paper, the intellectual property rights being fully and independently owned by both us and the institute.

The sociological research was scheduled for May 2023 to be as close as possible to the completion date of our work, but also to allow both its analysis in comparison with the theoretical models already in-depth, as well as with the results of the qualitative research carried out together with the specialists in the system of medicine emergency from Romania.

The title of this research is " Perceptions, access and behaviors regarding emergency medicine in Romania ". The sociological research was carried out between May 11-26, 2023 on a sample of 1192 Romanian citizens, adults, using the CATI method and having a maximum error of +/- 2.9%.

The first element we learned from the sociological study is the fact that 45% of the respondents had either personally or in the case of a family member, a medical emergency in the last 3 years, of which almost a third went to the Reception Unit Emergencies, 28% called 112, 13% called the family doctor, 5% called a private emergency service, and 3% went to an emergency center.

Other questions asked were related to presentation in the last three years to the UPU/CPU, estimation of the degree of urgency of the medical problem that led to this presentation, and the time spent before the initial assessment, to be seen by a doctor, for treatments and medical investigations . We also checked the degree of satisfaction of the

patients or their relatives on several relevant components. The same type of questions was asked for the permanent centers, with additional questions for rural permanent centers.

We also studied the situation of calls to 112 in case of a medical emergency, observing in what proportion SAJ, SMURD and the Police are present on the scene (this last important aspect for the concept of Integrated Emergency Stations that we are going to develop).

Other questions were aimed at knowing the response time of the SAJ, SMURD and IPJ crews, as well as the degree of satisfaction for the way of intervention on relevant components at each of these specialized agencies. We wanted to know the same data about the situation in which the 112 dispatcher sent a private ambulance under contract with CNAS to the scene, but we got few answers in this regard.

We also wanted to find out the behavior of the respondents in case of a minor medical emergency and we found out that more than 15% of the respondents would go directly to the hospital. On the other hand, 80% of respondents would prefer to call on-call centers if they were well-equipped and close to home. Through an open question, we also found out solutions proposed by citizens for increasing the number of family doctors/general practitioners in rural areas.

Finally, we wanted to find out how many of the respondents and for what reasons used private ambulance services on their own.

In carrying out our research, we did not stop at the rigorous analysis of the specialized literature and to collect the opinions and perceptions from the experiences of the beneficiaries of the emergency medicine system, which we described previously .

On the contrary, we wanted to go further and find out how the system is seen by those who work within it, and honest discussions held in an academic environment can also lead to the identification of solutions to improve the organization and the work.

Having said that, we mention the fact that we have covered the entire spectrum of specialists called to intervene after the emergency call has been made or even without this call. The model of the questions in the interviews was adapted from case to case (for example, we asked additional questions to Romanian doctors who are now working in other countries). We mention the fact that we requested and received the right to use the names of the interviewees in this doctoral thesis. Where we did not obtain this consent, we used the name " Expert no. ... " .

Although emergency centers are not formally part of emergency medicine, our research showed us that they are sometimes in the front line of emergencies, especially in rural areas, we wanted to find out the opinion of the coordinators of these centers, both from urban and

rural areas. Thus, we managed to find out the opinion of Dr. Călin Pop, Coordinator of the Permanence Center in Cluj-Napoca, Aleea Băița, no. 9 (hereafter "Doctor Pop"), as well as that of Mrs. Major Judith , Coordinator of the Permanence Center in Mociu Commune, Principală str., no. 88, Cluj county (hereinafter " Doctor Major"). This is the first step in our qualitative research.

The second level addressed was that of the ambulance, in which I discussed with the Head of the Cluj Ambulance Service, Mr. Dr. Horia Simu (hereinafter " Doctor Simu"), as well as with the head of UPU-SMURD Cluj, but until recently only the coordinator of SMURD Cluj, Dr. Cristian Ursu (hereinafter "Doctor Ursu"). At the same time, I also obtained the conclusions of the Commander of ISU Cluj, Mr. General Ion Moldovan (hereinafter "General Moldovan"). I had the pleasure of talking again with Dr. Nicolae Moldovan, an exceptional specialist in emergency medicine, former head of SMURD Cluj and who currently works in SAMU/SMUR at the Mont de Marsan Hospital in the south of France (hereafter "Doctor Moldovan doctor). At the same time, I asked for the opinion of Dr. Raluca Treacy (previous name Ionescu) who worked for 3 years as a doctor at SAJ Cluj, 10 years as a paramedic at SMURD Cluj and is now an Emergency Medicine Specialty Doctor at Accident and Emergency Department (UK equivalent of the UPU), "The Hillingdon Hospitals NHS Foundation Trust" (hereafter " Doctor Treacy"). I had the honor to talk with Prof. Univ. Dr. Diana Cimpoeșu, chief physician of UPU-SMURD Iași and coordinator of SMURD in the North-East region (hereinafter "Doctor Cimpoeșu").

We also received the opinions of Dr. Amedeo Mazilu, former chief paramedic at SMURD Cluj and, currently, cardiologist in Germany at "Helios Klinik Erlenbach am Main" (hereinafter "Doctor Mazilu").

After an experience of over 15 years as head physician of UPU-SMURD Brașov, Mrs. Dr. Cristina Vecerdi , gave us her time in our research, wanting to be mentioned only from this practical perspective (hereinafter "Doctor Vecerdi").

I also talked with a specialist who works in the private Ambulance system, namely Mr. Horațiu Bojan, one of those who monitors the activity of transporting patients and emergency consultations at home in the Private Medical Assistance Service "Black Shield" in the Municipality of Cluj-Napoca ("hereafter Mr. Bojan, medical assistant").

Going further, we wanted to know the vision and problems encountered by the coordinators or managers of emergency reception structures, as well as by the doctors who work within them. Here we also have most of the answers within what I have called the third tier. In this regard, we obtained the opinions of a CPU Head doctor, who did not wish to reveal

his identity to the public, whom we will hereinafter refer to as "Expert no. 1 - CPU Manager". At the same time, we also managed to talk with a Manager of a private hospital that has a Guard Room, who wished to remain anonymous and whom we will call "Expert no. 2 - Manager of Private Guard Room". I also talked with the Manager of a hospital that has a CPU-S in its composition, namely Dr. Mihai Mlești ț e , the Manager of the Regional Institute of Gastroenterology-Hepatology "Prof. Dr. Octavian Fodor" from Cluj-Napoca Municipality (hereinafter "Doctor Mlești ț e") .

I also talked with the Manager of the Cluj-Napoca Children's Emergency Clinical Hospital, Dr. Cornel Aldea (hereinafter "Doctor Aldea").

I exchanged impressions and opinions with Mr. Dr. Ritish Shunkur , an extraordinary specialist who worked including in the emergency area at the Municipal Clinical Hospital in Cluj-Napoca and is now a doctor at "Centre Hospitalier d'Auch" in the south of France (hereafter "Doctor Shunkur"). Also in France, I talked with another doctor from Romania, doctor Cătălin Muntean, emergency doctor in the "Centre H ospitalier Public du Contentin" hospital (hereafter "Doctor Muntean").

In order to have territorial relevance in this analysis, we also talked with an emergency doctor from a large UPU in the Municipality of Bucharest, whom we will call "Expert no. 3 – Physician UPU Bucharest" and the head of the CPU from Pașcani Municipality, Iași County, Mrs. Dr. Maria Timofte (hereinafter " Doctor Timofte"). I also talked with an expert in emergency medicine from Mureș county, former practitioner at the Emergency County Clinical Hospital and teaching staff at the University of Medicine and Pharmacy in Târgu-Mureș, hereinafter referred to as "Expert no . 4 - Mureș".

During the fourth stage, in which I talked with decision-makers in the system, I had the honor of having a long-term interview with Dr. Raed Arafat, Head of the Department for Emergency Situations, Secretary of State in the Ministry of Internal Affairs (hereinafter "Doctor Arafat"). At the same time, Dr. Alexandru Rafila, the Minister of Health (hereinafter "Doctor Rafila") honored us with his answers . I also discussed with two former Ministers of Health, the President of the Health and Family Committee of the Chamber of Deputies, Mr. Nelu Tătaru (hereinafter "Mr. Tătaru") and the Secretary of the same Commission, Mr. Patriciu Achimaș Cadariu (hereinafter "Mr. Achimaș"). We also had the pleasure of speaking with the Secretary of the Health Commission of the Romanian Senate, Mr. Dr. Laszlo Attila, who is a family doctor by profession and is well acquainted with the emergency medicine system in the neighboring country to the West, Hungary (further "Mr. Doctor Laszlo").

The summary of the aforementioned can be found in the following table:

Landing number	Work structure/activity	Specialist name and surname
Level 4	current and former governmental and parliamentary decision-makers	1. Doctor Raed Arafat (coming from level no. 2 and no. 3) 2. Doctor Alexandru Rafila 3. Doctor Nelu Tătaru 4. Doctor Patriciu Achimaș 5. Doctor Laszlo Attila (coming from landing no. 1)
Level 3	UPU, UPU children, CPU, CPU-S, Camera de Gardă, including Romanian doctors who worked in this field and went to work outside the country	1. Doctor Mihai Mlesnițe 2. Expert no. 1 - CPU Manager 3. Expert no. 2 - Hospital Manager with Private Guard Room 4. Doctor Cornel Aldea 5. Doctor Ritish Shunkur 6. Doctor Cătălin Muntean (coming from level 2) 7. Expert no. 3 - Physician UPU Bucharest (with activity in level no. 2) 8. Expert no. 4 - Mures 9. Doctor Maria Timofte
Level 2	SAJ, SMURD, including Romanian doctors who worked in this field and went to work outside the country	1. General Ion Moldovan 2. Doctor Horia Simu 3. Doctor Cristian Ursu (with activity in level no. 3) 4. Doctor Cristina Vecerdi with activity in level no. 3) 5. Doctor Diana Cimpoeșu (with activity in level no. 3) 6. Doctor Nicolae Moldovan

		7. Doctor Raluca Treacy 8. Doctor Amedeo Mazilu 9. Horațiu Bojan, medical assistant
Level 1	Centers of permanence	1. Doctor Călin Pop 2. Doctor Major Judith

After obtaining all these theoretical, but also practical, qualitative and original data, we analyzed the existing situation at the level of the emergency medicine system in Cluj county (starting from the demographic data from the most recent census), but we also analyzed the situation of the organization of the Police because, as we saw in the theoretical research and in the practical part, the presence of the Police crew alongside the Ambulance and Firemen is often necessary.

More precisely, I presented the activity of the 112 dispatch center (including the situation of the number 113), of the SAJ and the SMURD from the period 2018-2022, as well as the indicative territorial division of the two services. I used the indicative term because both SAJ and SMURD are flexible when they have to intervene, the principle being to respond the fastest and most appropriately to an emergency, which is why the 112 dispatcher allocates crews from Cluj and other counties if they are closer case by case (situation existing at national level). On the other hand, the territorial division of the Romanian Police is stricter, and this is also presented.

We also presented the list of UPU, CPU and CPU-S from Cluj County and data on their activity in the period 2018-2022. I presented the same information for the four existing permanence centers, two of which are in the Municipality of Cluj-Napoca, one in the Municipality of Turda and one in the commune of Mociu.

From what I have presented previously, it appears that Cluj county has a reasonable number of emergency reception structures, especially in Cluj-Napoca Municipality. However, the flag system of the hospitals in Cluj puts a lot of pressure on SAJ Cluj, which has to transport patients from the UPU/CPU to specialized clinics, which means less crews available for new emergencies that may arise in the meantime.

Also, the number of care centers is extremely small compared to counties with similar populations.

At the end of the paper we presented our conclusions and recommendations regarding each component of the emergency medicine system. We mention the fact that we have not achieved a consensus among the specialists regarding their opinions on the development of each component, with the sole exception of the co-payment, which is excluded by all the specialists who have pronounced on this subject, an opinion to which we agree without any doubt. Co-payment has not led to a decrease in DU presentations in the countries where it has been introduced, and emergency medicine must address the entire population, regardless of personal circumstances.

Regarding the single emergency number 112, we accept the current way of operation, but it is also necessary to introduce a telephone number for remote consultations served by the public ambulance service. Instead, as the specialists mentioned to us, this number should only be accessed for certain types of medical situations, for all others the 112 dispatcher filter is necessary to ensure that the medical situation does not, in fact, represent a health emergency. We also presented our solutions to improve the functioning of the 112 system, including the expansion of the technology of exact caller location, the development of the eCall system , solutions to reduce the percentage of abusive calls and the need to improve the media coverage of the associated number 113 for people with hearing and/or speech impairments .

In the area of pre-hospital medical intervention crews, we need to develop the network of helicopters, on the German model, but also the network of rapid response vehicles on the British model. At the same time, we need to develop a national network of volunteer health workers, volunteer firefighters (adequately trained) and get first aid skills assigned to the police. Regarding the role of private ambulances in Romania in the national emergency medicine system, it must be preserved in its current form, namely that of support for the State in situations where the SAJ resources are insufficient for patient transport or for emergency consultations at home.

The debate regarding the choice of the Franco-German or the Anglo-American system in the intervention of ambulances proved to be an ideological matter, even of pride, because the reality in Romania requires the use of both systems. Even if the patient needs to get to the hospital quickly, he often needs to be stabilized on the spot by the doctor. At the same time, in less serious cases, the patient can be treated at home.

Structures that represent an alternative to emergency departments work very well in the United Kingdom, Italy and Hungary, and original sociological research showed us the receptivity of respondents to the use of emergency centers in conditions of proximity and provision of medical equipment. We have not reached a consensus among specialists regarding

the location of the centers, there are proposals to position them in or near hospitals or completely independently. We prefer the opinion of the specialists who indicated the need to expand the "fast track" type system in hospitals for a very quick triage, but which ensures the quality of the medical act since a family doctor in a permanent center would hardly recognize a situation of heart attack even if the patient moves on his own feet. Instead, we believe that the British model regarding "urgent treatment centers" can also be applied in Romania: patients know that they can call such centers only in certain medical situations, after having previously discussed with the dispatchers of the emergency number 999, and such a medical protocol could also be implemented in Romania and then publicized.

Some specialists have proposed equipping the permanent centers with a home consultation vehicle, the possibility of activation within them by internists, or the provision of periodic consultations by specialist doctors, the establishment of the obligation to carry out a number of visits to the patient's home, in particular in the rural environment, on the German model, better equipping of centers and telemedicine, equipping with ambulances for the transport of patients, the mandatory establishment of rotating guards and the development of centers based on objective geographical criteria and related to the number of inhabitants .

Emergency departments face many presentations that are not an emergency (we demonstrated a percentage of more than 20% using official statistical data), which is why we studied the Swedish experience that places the family doctor at the center of the health system and who precisely knows the state of health of the patients, urging them to have their regular medical tests and investigations at specialist doctors. It is also necessary to eliminate the discrepancies on the salary side, the staff in large hospitals having, in some situations, the same or lower incomes than the staff in small hospitals.

Primary medicine, ambulatory and medical investigation structures must be developed because there are situations in which patients present themselves at the DU just to have their analyzes or medical investigations and no longer be put in the situation of waiting even months for appointments from outpatient clinics.

At the same time, in order to improve staff training, but also its more efficient management, especially in areas of deficit, it would be necessary for all human resources attributions to be transferred to the DSU, as well as the funding of the entire emergency medicine system, including CPU and CPU-S.

Other solutions for improving the emergency medicine system in Romania are: to manage the state of physical and mental exhaustion of many medical personnel in the front line of emergency medicine, regulating the possibility of emergency doctors reaching a certain age

(we proposed at 55 years) either to change their specialty to an easier one, or to be able to reduce the number of hours on guard duty, to no longer do guard duty on helicopters, switching to home consultation ambulances or dispatchers . It is also necessary to ensure security services in all DUs to prevent aggression against medical personnel, as well as psychological support for medical personnel, as well as ambulance personnel , who face the phenomenon of burnout.

We need to make full use of technological advantages such as telemedicine, which would especially help patients in remote areas who would present themselves at a walk-in center and be able to talk to a specialist, and as artificial intelligence evolves, we need to look at to what extent this could help in triage and diagnostic procedures.

In the ideal scenario in which the activity of family doctors could be regulated in such a way that it is mandatory to carry out part of the activity on call, we consider that Cluj County would need at least 18 more emergency centers (equipped with an ambulance for consultation at domicile) distributed as follows:

- In Cluj-Napoca, in the Mănăștur, Grigorescu, Dâmbu Rotund neighborhoods (this or the one in Grigorescu also serving the Gruia neighborhood), Iris (including the Bulgaria neighborhood), Mărăști (also serving the Someșeni neighborhood) and Zorilor (which also serves the Bună Ziua and Europe), each area representing at least 20,000 inhabitants;
- In each of the Municipalities of Dej, Gherla and Câmpia Turzii and the City of Huedin;
- In the metropolitan area of the Municipality of Cluj-Napoca, in the communes of Florești, Baciu, Apahida, each with a population of at least 14,000 inhabitants but to which the citizens of the neighboring communes could also call, and outside of it in the commune of Ciucea (to serve and the communes of Negreni and Poieni, the option of the hospital in Huedin being more difficult to access due to multiple traffic jams on the E60 road);
- In other rural localities, in addition to integrated emergency stations to be established: in Beliș commune (to serve the mountainous area in the southwest of the county), in Vultureni commune (to serve the communes in the northern part of the county), in Gilău commune (with a large population and there are nearby communes that could be served) and in Băișoara commune (for the south of the county which is further from Cluj-Napoca and Turda).

I showed the fact that, during the research, I went to the field in Mociu commune in Cluj County where there is a SMURD and Firefighter substation next to a permanent center, but the Rural Police crew has to arrive, many times, from Apahida commune , located at a

distance of 26 kilometers, which complicates interventions in which the support of the Police is also necessary (medical emergencies in case of violent conflicts or road accidents).

Regarding our proposal for integrated emergency stations (to have Police, SAJ/SMURD and Fire crews), we believe that the current SMURD crew distribution model is the starting point and we appreciate that these integrated emergency stations are necessary in all 6 localities in the urban environment and in the following rural areas as follows (where type A station means advanced integrated emergency station with Police, Fire, first aid or mobile intensive care SAJ/SMURD crews and, if it is necessary, SAJ type A patient transport crew, as well as a permanence center equipped with a home consultation vehicle, and the basic type B station has all these features minus a permanence center equipped with a home consultation vehicle) :

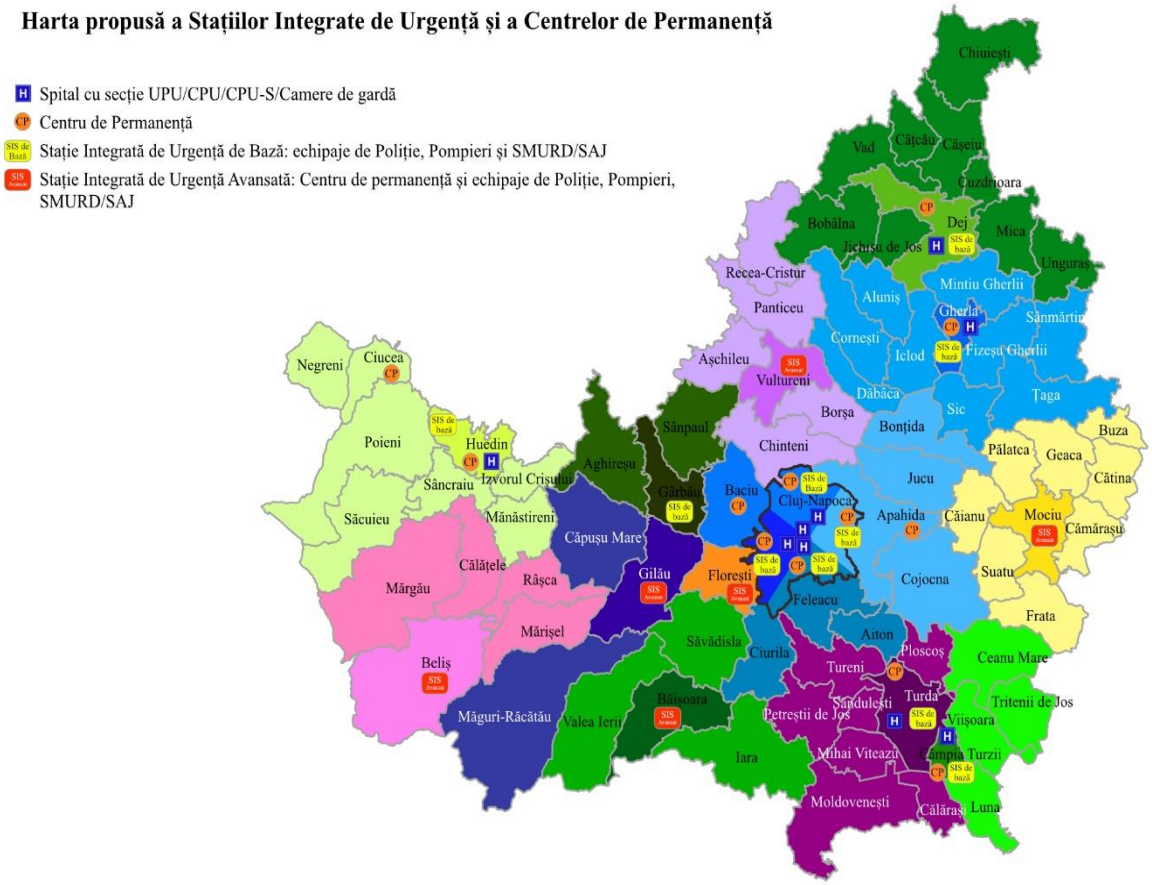
Station location	Location type	Type	Circled areas	Remarks
Cluj-Napoca 1 (West Center)	Existing (SMURD and Firefighters)	B	West of the City	
Cluj-Napoca 2 (East Center)	Existing (SMURD and Firefighters)	B	East of the City	
Cluj-Napoca 3 (North Center)	Existing (SAJ headquarters)	B	North of the Municipality and Baciu commune	
Cluj-Napoca 4 (Zorilor)	Proposed	B	South of the Municipality, Feleacu, Ciurila and Aiton communes	During peak traffic hours, the travel time in the Zorilor, Bună-Ziua or Europa neighborhoods is very long from the location on 21 Decembrie 1989 Blvd., and from the other two locations traveling

				within the legally regulated time is difficult
Vultureni	Proposed	A	The communes of Chinteni, Vultureni, Borșa, Așchileu, Panticeu, Recea-Cristur	To better cover emergencies in the northern part of the county
Dej	Existing location (SMURD and Firefighters, but also SAJ)	B	The municipality of Dej, the communes of Bobâlna, Cășeiu, Chiuiești, Câtcau, Cuzdrioara, Jichișu de Jos, Mica, Unguraș, Vad	Compared to the ISU arrondissement, the Recea-Cristur commune passes to the Vultureni Station
Gherla	Existing location (SMURD and Firefighters, but also SAJ)	B	The municipality of Gherla, the communes of Aluniș, Cornești, Dăbâca, Fizeșu Gherlii, Iclod, Mintiu Gherlii, Sânmartin, Sic, Țaga	No change to ISU rounding
Mociu	Existing location (SMURD and Firefighters)	A	The communes of Mociu, Buza, Căianu, Cămărașu, Cătina, Frata, Geaca, Palatca, Suatu	No change to ISU rounding
Turda	Existing location (SMURD and	B	Turda Municipality, communes of Moldovenești, Călărași, Mihai	Compared to the SAJ arrondissement, we eliminated the communes

	Firefighters, but also SAJ)		Viteazu, Săndulești, Petreștii de Jos, Tureni, Ploscoș	of Aiton, Baișoara, Iara and Valea Ierii
Câmpia Turzii	Existing location (SAJ only)	B	Turzii Plain, the communes of Luna, Viișoara, Tritenii de Jos, Ceanu Mare	According to the SAJ arrondissement, less Frata commune
Băișoara	Existing location (SMURD and Firefighters)	A	The communes of Băișoara, Iara, Săvădisla, Valea Ierii	According to the ISU arrondissement, less Ciurila
Gârbău	Existing location (SMURD and Fire Department) in Aghireșu, we propose its relocation	A	Gârbău, Aghireșu, Sânpaul communes	The relocation of the Fire Brigade located in the Aghireșu commune is proposed because the travel time to the Sânpaul commune, which is assigned to it, is very long, the Gârbău commune having a more advantageous position compared to the other two towns and closer to the A3 highway
Floreşti	Existing location (SMURD and Firefighters)	A	Florești commune	Large population served over an extensive territory

Gilău	Existing location (SMURD and Firefighters)	A	Gilău, Căpușu Mare, Măguri-Răcătău communes	According to the ISU arrondissement, less Mărișel
Huedin	Existing location (SMURD and Firefighters, but also SAJ)	B	Huedin, the communes of Ciucea, Poieni, Negreni, Săcuieu, Sâncraiu, Izvoru Crișului, Mănăstireni	The communes in the similar arrondissement SAJ and ISU, less those that are passed in the location Beliș
Beliș	Proposed		The communes of Beliș, Mărișel, Râșca, Călățele, Mărgău	For a faster service to the towns in the mountain area

It is certain that such a proposal must be studied and approved by the decision-makers, at the central level the most important of them are gathered in the structure called the Interministerial Commission for Technical Support. The purpose of this structure, established by Government Decision no. 144/2014 , is to coordinate the entire activity related to the National Emergency Medical Assistance System and qualified first aid . This structure brings together representatives from the Ministry of Internal Affairs: DSU, IGSU, IGAv , UPU-SMURD, from the Ministry of Health, but also from SAJ, hospital managers, UPU chief doctors and even union members. This structure, together with the IGPR, could analyze the feasibility of such a pilot project.



Graphics made by the author

We mention the fact that there were specialists who, in the answers given during the interviews, excluded the positioning of these permanence centers near the intervention crews due to past practices in which some family doctors used the first aid ambulances available nearby to transport patients. We believe that our proposed solution, which includes both a home consultation vehicle and an SAJ type A ambulance where necessary, is able to prevent a repeat of the negative pattern of the past.

This pilot project and its future expansion will be possible with legislative changes leading to:

- the rotation of family doctors in providing guards (around 5 guards per month according to European models);
- the transfer of family medicine funding from CNAS to the state budget;
- the transfer of the financing of emergency medicine and related human resource management powers from the Ministry of Health to the Ministry of Internal Affairs through the Department for Emergency Situations;

- internal regulations of the Ministry of Internal Affairs for the territorial redistricting of certain Rural Police crews;
- the establishment at the level of the Prefectures of an Interdepartmental Council for Emergency Medicine to decide the location of the establishment of the basic or advanced integrated emergency stations, as well as of the permanent centers that will be composed of: the County Prefect, the President of the County Council, DSP Director, SAJ Manager, ISU Commander and IPJ Chief Inspector. The decisions of the Council will be approved accordingly by the Interministerial Commission for technical support.

We believe that, after the implementation and then the evaluation of the operation of this pilot project in Cluj county, the data obtained and the experience gained will be able to be used at the level of the entire country.

In conclusion, **we would like to thank** all the teaching staff who supported us in our endeavor, the collaborators from the sociological institute, the respondents from our sociological research, as well as the specialists from the emergency medicine system, in which sense we particularly appreciate the effort of Doctor Arafat for the interview and which was a particularly complex and very long-lasting one.

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