MEDICAL UNIVERSITY – PLEVEN

FACULTY OF PUBLIC HEALTH

DEPARTMENT OF GENERAL MEDICINE, FORENSIC MEDICINE AND DEONTOLOGY

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ABSTRACT

Interaction between General Practitioners and Emergency Medical Centers: Problems and Perspectives

dissertation work for awarding the educational and scientific degree

"DOCTOR"

Doctoral Program "General Medicine"

Scientific supervisor:

Prof. Dr. Tsvetelina Valentinova, MD

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The dissertation work contains 224 standard pages, including 37 tables, 48 figures and 3 appendices.

The bibliography contains 216 literary sources, of which 19 are in Cyrillic and 197 in Latin.

The appendices include: №1- Patient's path through the healthcare system, №2-Patient's path for emergency care, №3 Survey forms for GPs, doctors from EMC, directors of EMC and patients.

In connection with the dissertation work, 6 full-text publications and 5 scientific reports and presentations at national forums have been made.

The dissertation work was approved and directed for public defense by the extended Department Council of the Department of "General Medicine, Forensic Medicine and Deontology", Faculty of "Public Health", at the Medical University-Pleven, held on 30.10.2025.

The official defense of the dissertation will take place on January 19, 2026 at 11:30 a.m. in the Ambroise Pare Hall of the Medical University of Pleven, in accordance with the regulations on the conditions and procedure for acquiring scientific degrees and occupying academic positions at the Medical University of Pleven and based on the Rector's Order No. 4060/28.10.2025 before a scientific jury composed of:

Chairman: Prof. Dr. Pencho Tonchev Tonchev, MD

Members: Prof. Dr. Radost Spiridonova Asenova, MD

Prof. Dr. Boryana Mitkova Parashkevova - Simeonova, MD

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The materials for the defense are published on the MU-Pleven website:http://www.mu-pleven.bg/index.php/bg

Contents

Abbreviations

HIA - Health Insurance Act

HA - Health Act

MIP - Mandatory Insured Persons

MF - Medical Facility

MH - Ministry of Health

NHIF - National Health Insurance Fund

NHIS- National Health Information System

NFC - National Framework Contract

GP - General Practitioner

OECD - Organization for Economic Cooperation and Development

POAC - Primary Outpatient Care

PHC - Primary Health Care

RCC – Regional coordination center

RHIF - Regional Health Insurance Fund

ERD-Emergency Reception Department

SOAC - Specialized Outpatient Care

EMC - Emergency Medical Care

EMC - Emergency Medical Center

I. INTRODUCTION

Scientific publications show that Emergency Care worldwide is under strong pressure from constant and growing demand from patients. Most countries in Europe are facing an increase in chronic diseases and a shortage of medical care, especially in the hours outside GPs' working hours. It is established that a significant part of the reasons for the problems of emergency medical care and medical care for health-insured persons due to acute and exacerbated chronic diseases and conditions are universally valid, while others are specific to the health systems of individual countries.

Reforms in the healthcare system after the democratic socio-political and economic changes in Bulgaria began with primary outpatient care (POAC) and Emergency Medical Care. So far, no comprehensive scientific study has been conducted on the results after the changes regarding interactions between GPs and the emergency medical care system.

By Ordinance of the Ministry of Health, dated May 31, 1994, emergency medical care was separated from urgent medical care. The newly formed urgent medical care units provided care in patients' homes (upon receipt of a call for urgent medical care) and in polyclinic offices (when the unit was based in a health facility where no emergency reception department or sector was established). With the creation of the NHIF in 1999 and the beginning of the execution of contracts between RHIF and providers of outpatient care from July 1, 2000, urgent care became the obligation of GPs. With these changes in ownership and organization of the activities of part of the medical facilities, the impossibility of one GP to provide permanent round-the-clock access (24/7) to medical care for all health-insured persons in need from their active patient list with the NHIF was not taken into account. Acute professional relationships and poor interaction between GPs and EMC were created in providing emergency medical care and medical care to health-insured persons due to acute and exacerbated chronic diseases and conditions, where medical care cannot be postponed in time in order to be performed within the approved work schedule of the doctor in POAC.

From 01.01.2013, certain types of medical facilities were given the opportunity to open "duty offices" for access to medical care during the night and on rest days. The idea of "duty offices" was implemented with single offices in large cities, but it did not solve the problem of round-the-clock access to medical care for citizens. Part of the non-emergency medical care of patients, mainly outside the working hours of GPs' outpatient offices, was taken over by the Emergency Medical Centers (EMC).

During the Covid pandemic, new problems emerged in the interaction between GPs and EMC in providing medical care to patients.

The lack of functional and organizational-structural coordination between GPs and emergency care led to unsatisfactory quality of medical care for citizens. For these reasons, it is necessary to reconsider the possibilities for providing adequate medical care by GPs and Emergency Care units in ensuring the health needs of the population.

II. AIM, TASKS AND METHODOLOGY:

1. The aim of the study is to investigate the problems in providing primary outpatient emergency medical care and medical care that cannot be postponed in time, arising from insufficient and incomplete interaction between GPs and EMC, and to develop scientifically based solutions for their elimination.

2. Study tasks

To achieve the objectives of the study, we set the following tasks:

- To investigate the factors reducing the job satisfaction of GPs and doctors from EMC.
- To investigate the regulatory gaps and inconsistencies regulating the round-the-clock provision of quality emergency and non-emergency medical care to patients from PHC and EMC.
- To investigate the problems of interaction between GPs and doctors from EMC.
- To investigate patients' motives for choosing a medical facility for receiving medical care and the factors influencing them.
- To prepare proposals for solutions to overcome the problems of interaction between GPs and EMC with the aim of optimizing the provided medical care.

3. Scientific ideas (working hypothesis):

The normatively regulated over the last three decades right to accessible medical care and free choice and treatment by a doctor increased public expectations for quality and timely medical services, but proved practically unachievable for some of the most needy patients.

According to our direct observations and studies:

- Over the last decade, the key role of GPs in providing basic, equally accessible, sustainable medical care for all patients has changed;
- Public shortcomings due to insufficient (functional and organizational-structural) mutual connectivity and coordination of actions between GPs and the emergency medical care system have become more frequent;
- A significant proportion of Bulgaria's poor and aging population, carriers of chronic, periodically exacerbating and acute diseases, remained with a deficit of medical services from the overloaded, decreasing in number GPs, withdrawing from settlements distant from large cities, and medical services from doctors at emergency medical centers;
- The reduced scope and quality of POAC for patients in emergency and non-emergency conditions, especially outside the working hours of GPs' medical offices, was taken over by emergency medical care structures, hindering their activities.

Given the mutual connection and causal dependence of activities for providing medical care and relations between GPs and EMC, we decided to direct the study in the bidirectional direction, relationships → interaction → satisfaction of certain health needs. For this purpose, we adopted the following **empirical (working) hypothesis:**

Insufficient interaction between GPs and doctors from EMC in serving patients in emergency conditions and the overloading of emergency medical structures with non-emergency patients exacerbates and worsens professional relationships between providers and additionally deepens the vicious practice of incomplete interaction.

4. MATERIALS AND METHODS

4.1. Object of the study

The object of the conducted study is GPs, doctors in EMC, directors of EMC and patients who received medical services from GPs and EMC, normative and reporting documents for the activities of GPs and EMC, national and international publications on non-emergency and emergency medical care.

4.2. Units of observation

Technical units of observation:

The technical units of the conducted study are Outpatient clinics for primary medical care - individual and/or group practices, located on the territory of the Republic of Bulgaria, EMC in the regions of Pleven, Vratsa and Lovech.

Logical units of observation

The logical units of observation are GPs working in individual or group practices, working on the territory of the Republic of Bulgaria, doctors from EMC, directors of EMC and patients.

Characteristics of observation units

For each observation unit, the following factorial and resultant characteristics were used:

Factorial characteristics: For GPs - gender, age, years of medical experience, acquired specialty or specialties, specialization in General Medicine, number of patients served by the practice, type of practice - group or individual. For doctors from EMC - gender, age, years of medical experience, acquired specialty or specialties. For directors in the EMC system - years of medical work experience, acquired specialty. For patients - gender, age, location of the GP's practice.

Resultant characteristics:

- Criteria regarding knowledge of normatively regulated activities, interactions/relationships between EMC and GPs and how they affect the provision of medical care to patients.
- Criteria regarding the lack of information exchange about patients' health status and good communication between GPs and EMC, which are major problems of relationships and interaction in providing emergency medical care.
- Criteria regarding the assessments of surveyed doctors from EMC about professional relationships between them and GPs.
- Criteria regarding the need for current, precisely written rules and procedures for obligations and relations between EMC and GPs in the implementation of emergency medical care and medical care for health-insured persons due to acute and exacerbated chronic diseases and conditions, where medical care cannot be postponed in time in order to be performed within the approved work schedule of the doctor in primary outpatient care.
- Criteria regarding the overloading of EMC with patients in non-emergency conditions.
- Criteria regarding the provision of medical care that cannot be postponed until the working hours of the personal doctor.

- Criteria regarding the need to improve the quality of medical services in emergency medical care.

4.3. Study methodology

A. Methods for collecting information -- sociological methods

- **Documentary method**

An analysis was made of 216 Bulgarian and foreign-language literary sources related to the present work, as well as normative documents in the country regulating the organization of activities in general medical practice and emergency medical care.

Systematic analysis of published literary data - "Content analysis", content analysis method. We determined the categories (significant units) of analysis using features that characterize essential problems in providing PHC and interdependencies with major problems of Emergency medical care.

During the study, data available in PUBMED were used.

- **Direct individual surveys among GPs, doctors from EMC, directors from EMC**

The survey method was implemented through the use of an individual anonymous questionnaire sent via the Google forms platform to a sample of General practitioners and distributed on site at EMC to doctors and directors from EMC. The study was approved by the Commission on Ethics of Scientific Research Activities at the Medical University - Pleven with Protocol/Decision No. 718-KENID/ 20.03.2023.

The questionnaire forms are composed of two sections **(Appendix 3)**:

- The first part contains **socio-demographic data** of the surveyed doctors: gender, age, years of professional experience, information on professional qualifications, data on the structure of the practice.
- The special, second part contains questions regarding knowledge of normatively regulated activities, interactions/relationships between EMC and GPs. The second group of questions concerns professional relationships between them. Questions follow regarding the provision of medical care that cannot be postponed until the working hours of the personal doctor. The survey concludes with questions regarding the need to improve the quality of medical services in emergency medical care.

Inclusion criteria:

- contract with NHIF for the implementation of Primary medical care and working doctors from EMC
- voluntariness

Exclusion criteria:

- refusal of persons
- Direct individual survey among patients

The survey method was implemented through the use of an individual anonymous questionnaire distributed to GPs in 16 POAC facilities, who provided them on a random basis to their patients.

The questionnaire form is composed of two sections:

- The first part contains **socio-demographic data** of the surveyed patients: gender, age, information on level of education, data on the location of the chosen GP.

The special, second part contains questions about satisfaction with the activities of GPs and emergency medical care teams in providing emergency medical care to patients. Difficulties of patients in seeking and receiving health services, organizational-structural and social problems in providing primary emergency medical care. The survey concludes with questions about patients' difficult access to GPs.

Inclusion criteria:

- permission from 16 GPs who provide the survey to randomly selected patients

- voluntariness

Exclusion criteria:

- refusal of persons

B. Methods for data processing - statistical methods

The collected primary information was checked, coded, entered and checked again in the computer database for statistical processing, recoding and analysis.

The processing of the data obtained in the study was performed with specialized statistical software package SPSS 22 and EXCEL for Windows.

The results are described through tables, graphs and numerical indicators for structure, frequency and dependency coefficients between the studied variables.

The collected primary information was analyzed using the following statistical analyses:

In analyzing the results, since almost all studied variables are qualitative and are presented on weak scales (nominal/ordinal), to test hypotheses and investigate statistically significant relationships between any two variables of interest, mainly **non-parametric test χ^2 - test (Chi-square analysis)** was applied. The significance of results, conclusions and findings was determined at **error risk α=0.05**. This value was used to test the stated hypotheses. Using the statistical package SPSS for fast and accurate data processing, if when conducting Chi-square, the obtained significance level **Asymp. Sig. (2-sided)** is less than the error risk (**α=0.05)**, the null hypothesis is rejected and the alternative is accepted as true, i.e., this is what actually represents interest for more in-depth observation and analysis - the presence of a statistically significant relationship.

Cramer's coefficient (Cramer's V) was used to measure the strength of dependence, which is normalized in the range from 0 to 1. It is conventionally accepted that when it is in the range from 0 to 0.3, the relationship is **weak**, from 0.3 to 0.7 - **medium**, and above 0.7 - **strong**. Cramer's coefficient is used only after successful application of the Chi-square test.

5. Place and time of the study, stages.

Implementation stages:

A literature review on the topic was made

- Preparation of 4 survey forms - questionnaires
- Permission was obtained to start the study from the Ethics Committee of the Medical University-Pleven Protocol/Decision No. 718-KENID/ 20.03.2023.
- A total of 1008 survey forms were distributed. Surveys for GPs - 300 were distributed via Google forms randomly in the country. We received completed questionnaires from 88 GPs, from the regions of Pleven, Lovech, Veliko Tarnovo, Sofia, Plovdiv and Stara Zagora. Surveys for doctors from EMC were distributed on site at EMC-Pleven, Lovech and Vratsa - 200. 123 questionnaires

were completed. Surveys for directors were distributed via Google forms - 28, with 22 responding. Surveys for patients were distributed by 16 GPs, with 30 copies given to each - 480 total and 168 responded.

The surveys were conducted voluntarily, anonymously and online for the period April-September 2023 and include 401 persons.

No questionnaires were excluded in the statistical processing. According to NSI data for 2023, at the time of the study, GPs in Bulgaria numbered 3790. Based on this, the number of respondents was calculated - 2.3% of all GPs in the country.

The study was planned, organized and conducted personally by the researcher.

6. Limitations of the obtained information

The study examined the attitude of GPs and emergency care doctors regarding the possibility for better interaction between them in providing medical care to patients. The obtained results largely reflect their subjective understanding and attitude. Patients consider by subjective assessment that their condition is always urgent and the necessary medical care must be provided immediately.

III. RESULTS

1. Demographic characteristics of the surveyed groups

1.1. GPs-demography

In the conducted survey, GPs with individual practices (89.8%) predominate over GPs co-founders of group practice (10.2%), which is characteristic of the entire country. The number of GPs with acquired medical specialty (79 with a relative share - 89.8% of all GPs) working in individual practices coincides with the number of individual practices (79 with a relative share - 89.8% of all general practices).

The number of doctors without acquired medical specialty (9 with a relative share - 10.2% of all GPs) working as co-founders of group practice coincides with the number of group practices (9 respectively with a relative share - 10.2% of all general practices).

The ratios of the number of GPs and individual practices for primary medical care correspond to the indicators and criteria (3.1.2.1.) for staff requirements in general medical practice (3.1.2.) of the medical standard "General Medicine", but at their minimum values.

With two acquired medical specialties are 23 (26.9%). The relative share of GPs with acquired specialty in general medicine is the largest - 48.9%, followed by internal diseases - 23.9%. Without acquired medical specialty are 9 doctors - 10.2%. A second acquired medical specialty - general medicine is held by 19 (21.6%) doctors. In the surveyed group, there is not a single case of a second doctor with or without acquired medical specialty in individual practices for POAC, which excludes the possibility of improving patients' access to medical care by extending the daily work schedule of their medical offices to the working hours of "duty offices". This problem can be partially solved by stimulating the unification of individual POAC practices into large group practices.

The practices of respondents with 1000 to 1500 registered health-insured persons per GP are 31 (35.2%), with up to 1000 registered health-insured persons per GP are 22 (25%), with over 2000 registered health-insured persons per GP are 19 (21.6%), and practices with 1500 to 2000 registered health-insured persons per GP are 16 (18.2%).

Table 1 Age, gender, settlement, medical specialty, type of practice and number of patients (respondents-GPs)

Characteristics	n=88
Age, years *(Mean±SD)*	56.1±9.752
Gender *(number, %)*	
women	58 (65.9%)
men	30 (34.1%)
Settlement *(number, %)*	
village	13 (14.8%)
city	75 (85.2%)
Medical specialty *(number, %)*	
has medical specialty	79 (89.8%)
no medical specialty	9 (10.2%)
First medical specialty *(number, %)*	
Obstetrics and Gynecology	1 (1.1%)
Nervous Diseases	1 (1.1%)
Pediatrics	13 (14.8%)
Internal Diseases	21 (23.9%)
General Medicine	43 (48.9%)
No answer	9 (10.2%)
Second medical specialty *(number, %)*	

Cardiology	1 (1.1%)
Pulmonology	1 (1.1%)
Emergency Medicine	1 (1.1%)
Occupational Medicine	1 (1.1%)
General Medicine	19 (21.6%)
No answer	65 (73.9%)
You have: *(number, %)*	
Individual practice	79 (89.8%)
I am a co-founder of a group practice	9 (10.2%)
Your practice has: *(number, %)*	
Up to 1000 patients	22 (25.0%)
From 1000 to 1500 patients	31 (35.2%)
From 1500 to 2000 patients	16 (18.2%)
Over 2000 patients	19 (21.6%)

The socio-demographic characteristic of the sample shows aging of GP doctors. The overall average medical work experience for GP respondents is 30.2 years. The analyzed data show that due to the aging age structure of GP doctors, after 5 years a severe staff deficit and difficult access to POAC may occur, especially in small settlements.

Table 2 Work experience, with and without medical specialty (respondents - GPs)

Characteristic	N /number of GPs/	Mean /experience in years/	SD
Overall medical work experience	88	30.2	10.174
Without medical specialty	59	8.8	9.645
With specialty "General Medicine"	28	15.3	6.617
With two medical specialties	30	13.5	9.616

1.2. Emergency care doctors --demography

In the survey, 123 doctors participated, randomly covered, from the Emergency Medical Centers in three administrative-territorial regions of the Northwestern planning region of Bulgaria, Pleven - 78, Lovech - 29 and Vratsa - 16, characterized by different levels of provision of the population with higher medical personnel.

The surveyed women from EMC are 52 (relative share 42.3%), and men are 71 (relative share 57.7%). The overall average age of the surveyed is 54.5 years.

Table 3 Age, gender, settlement and medical specialty (EMC doctors)

Characteristics	n=123
Age, years *(Mean±SD)*	54.5±10.257
Gender *(number, %)*	
women	52 (42.3%)
men	71 (57.7%)
Settlement *(number, %)*	
village	0 (0.0%)
city	123 (100.0%)
Medical specialty *(number, %)*	
has medical specialty	75 (61.0%)
no medical specialty	48 (39.0%)
First medical specialty *(number, %)*	
Internal Diseases	28 (22.8%)
Pediatrics	6 (4.9%)
Endocrinology and Metabolic Diseases	1 (0.8%)
Clinical Laboratory	1 (0.8%)
Neurology	7 (5.7%)
Diagnostic Imaging	1 (0.8%)
General Medicine	15 (12.2%)
Emergency Medicine	4 (3.3%)
Ears nose and throat diseases	4 (3.3%)
Physiotherapy and Rehabilitation	1 (0.8%)
Surgery	6 (4.9%)
Obstetrics and Gynecology	1 (0.8%)
No answer	48 (39.0%)
Second medical specialty *(number, %)*	
Gastroenterology	1 (0.8%)
Cardiology	2 (1.6%)
Disaster, Accident and Catastrophe Medicine	1 (0.8%)
General Medicine	1 (0.8%)
Emergency Medicine	1 (0.8%)
No answer	117 (95.1%)

The majority, 75 in number (61.0%), of the surveyed doctors from EMC have one acquired medical specialty. Doctors with two specialties are 6 - (5% of all doctors and 8% of doctors with a specialty), and 48 (39%) have no specialty. Most are doctors who acquired the specialty "Internal Diseases" - 28 (22.8% of all doctors) and "General Medicine" - 15 (12.2%). In descending order follow those who acquired specialties in "Pediatrics" 6 - doctors (4.9%), "Nervous Diseases" - 5.7% and "Surgery" - 6 doctors each (4.9% each), Emergency Medicine - 4 doctors (3.3%), "Ear-Nose-Throat Diseases" - 4 doctors (3.3%), "Cardiology" - 2 (1.6%). One each are doctors with specialties in "Obstetrics and Gynecology", "Endocrinology and Metabolic Diseases", "Clinical Laboratory", "Physical and Rehabilitation Medicine"

and "Disaster, Accident and Catastrophe Medicine". There are doctors with many different specialties and a large number of doctors without acquired specialties.

The socio-demographic characteristic of the sample shows aging of doctors in EMC. The overall average medical work experience for respondents from EMC is 27.1 years. The analyzed data show that due to the aging age structure of doctors in EMC, after 5 years a severe staff deficit may occur in the emergency outpatient medical care system.

Table 4 Work experience, with and without medical specialty (EMC doctors)

Characteristic	N	Mean	SD
Overall medical work experience	118	27.1	9.552
In EMC without medical specialty	66	13.5	10.883
In EMC with one medical specialty	69	14.3	9.144
In EMC with two medical specialties	9	9.2	8.628

1.3. EMC directors - demography

In the survey, 22 doctors in management positions from the Emergency Medical Centers in the regions of Pleven, V. Tarnovo, Vidin, Vratsa, Gabrovo, Kardzhali, Lovech, Montana, Sliven and Shumen participated. The majority, 90.1%, of the surveyed doctors from EMC in management positions answer that they have a medical specialty, 9.1% have two specialties of all doctors in management positions, and 9.1% have no specialties. Most doctors in management positions acquired the specialty "Internal Diseases" - 45.5%, followed by Emergency Medicine 22.7% and 4.5% each with specialties in "General Medicine", Otorhinolaryngology, Pediatrics, Surgery and Neurology. The overall medical work experience of the same doctors from EMC at the time of the survey is an average of 29.8 years.

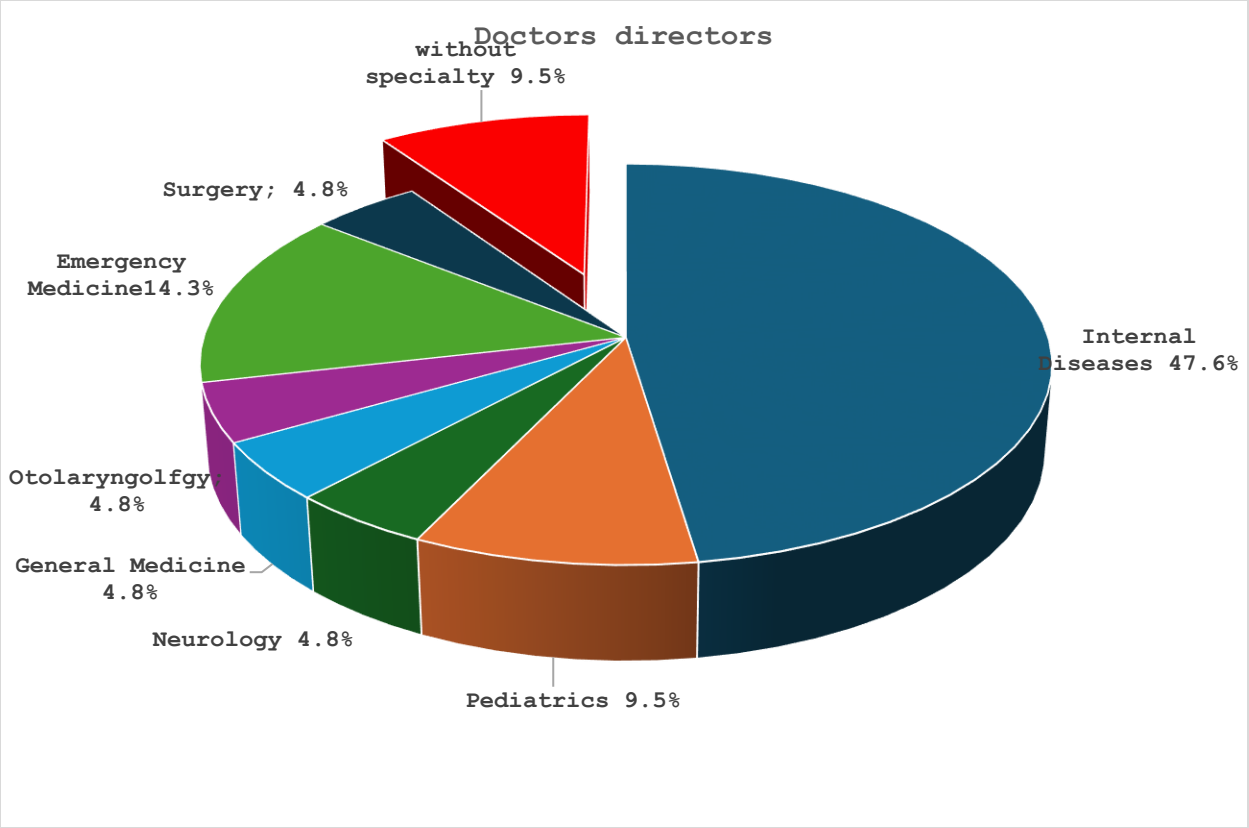

Fig. 1 Specialties of doctors-directors in EMC

Table 5 Work experience, with and without medical specialty - Directors in EMC

Work experience (in years)	N	Mean	SD	Median	Min	Max
Overall medical work experience	**22**	**29.8**	**5.828**	**30**	**11**	**40**
In EMC						
without medical specialty	13	11.4	8.723	8	2	30
with one medical specialty	18	12.0	5.370	20	14	34
with two medical specialties	2	14.5	0.707	15	14	15

The surveyed directors in regional cities are 31.8%, those holding management positions in FEMC are 63.6%, and 4.5% are in Regional coordination center (RCC).

The socio-demographic characteristic of the sample shows aging of doctors-directors in EMC as well. The overall average medical work experience for respondents-directors is 29.8 years.

The experience as directors in the Emergency Medical Care system of the respondents is an average of 11.2 years with minimum and maximum values of 1 to 29 years, respectively. The age status of the sample shows aging of doctors occupying management positions in EMC.

1.4. Patients -demography

In the conducted survey, 168 patients from the regions of Pleven, Lovech, Svishtov participated with an average age of 51.5 years. The surveyed women are 101 (relative share - 60.1%), and men are 67 (relative share - 39.9%).

The educational level of respondents is presented in Table 6. Masters predominate, followed by bachelors and those with secondary specialized and secondary education.

The surveyed patients - 95.8% live in cities and only 4.2% in villages. The practices of the personal doctors of 97.6% of the surveyed are in cities, and the remaining 2.4% are in villages. All patients who completed the questionnaire are health insured. Those working among them have the largest relative share - 84.5%; unemployed are 1.2%; pensioners - 11.3%, with 10.7% having pensions for insurance length and age, and 0.6% - for illness, 3.0% of the surveyed patients are students.

Table 6 Age, gender, education, settlement, health insurance status, employment – patients

Characteristics	n=168
Age, years *(Mean±SD)*	51.5±12.319
Gender *(number, %)*	
women	101 (60.1%)
men	67 (39.9%)
Level of education *(number, %)*	
Primary education	2 (1.2%)
Secondary education	23 (13.7%)
Secondary specialized education	29 (17.3%)
Professional bachelor	10 (6.0%)
Bachelor	33 (19.6%)
Master	61 (36.3%)
Doctor	10 (6.0%)
Settlement *(number, %)*	
village	7 (4.2%)
city	161 (95.8%)
Health insured *(number, %)*	168 (100.0%)
Employment *(number, %)*	
Working	142 (84.5%)
Unemployed	2 (1.2%)
Pensioner	19 (11.3%)
By age	18 (10.7%)
By illness	1 (0.6%)
Student	5 (3.0%)

2. Factors reducing job satisfaction of GPs and doctors from EMC.

To the question "Are you satisfied with your work as a GP?" slightly over half of the respondents answer positively - "I am satisfied", 35.2% - answer "I am slightly satisfied" and 9.1% - "I am not satisfied".

The reasons for the significant low satisfaction and existing dissatisfaction of GPs with their duties to provide POAC are indicated in the subsequent answers to the main questions of the survey with them. The essential reasons for respondents' satisfaction with work as GPs, after financial remuneration, relate to relationships between GPs and EMC and are mainly related to the implementation of emergency medical care and medical care for health-insured persons due to acute and exacerbated chronic diseases and conditions.

Table 7 Satisfaction with work as a GP

Question	N=88
Are you satisfied with your work as a GP?	
– satisfied	49 (55.7%)
– slightly satisfied	31 (35.2%)
– not satisfied	8 (9.1%)

To the question "Are you satisfied with your work at EMC?" a larger part of the respondents answer positively - "I am satisfied", 26.8% - answer "I am slightly satisfied" and only 3.3% - "I am not satisfied".

Table 8 Satisfaction with work at EMC (EMC doctors)

Question	N=123
Are you satisfied with your work at EMC?	
– satisfied	86 (69.9%)
– slightly satisfied	33 (26.8%)
– not satisfied	4 (3.3%)

To the same question asked to respondents in management positions at EMC - 77.3% answer positively - "I am satisfied", 18.2% - answer "I am slightly satisfied" and only 4.5% - "I am not satisfied". The answers about satisfaction with work of doctors in management positions are in unison with numerous different positive answers about motivation and are 7-8% higher than those of regular doctors-implementers of emergency calls.

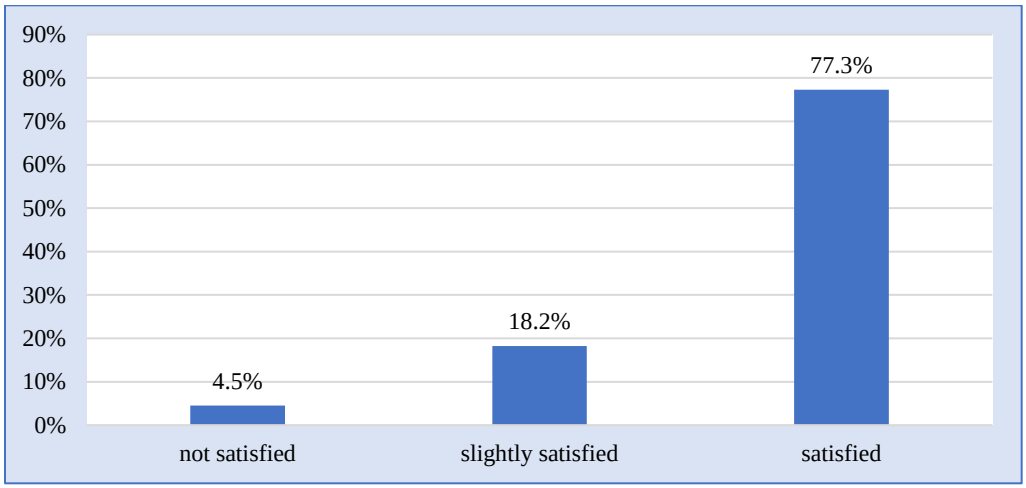

Fig. 2 Are you satisfied with your work at EMC? (respondents-directors)

To the question "What about work in emergency medical care satisfies you?", the majority of respondents - directors answer - "I can be useful to people", fewer answer "the team and good relationships in it", "the pay", "the nature of the work". The reasons for satisfaction are in the area of motives for working at EMC.

Table 9 What about work in emergency medical care satisfies you? (respondents-directors)

	Number	**%**
I can be useful to people	11	50.0
The team and good relationships in it	4	18.2
The pay	3	13.6
The organization of work	4	18.2
Total	**22**	**100.0**

According to the answers of all surveyed doctors working in the EMC system to the question "Are you satisfied with your work at EMC?" with the highest share (77.3% positive answers) are doctors-directors. In the group of doctors from EMC, satisfaction decreases to 69.1%. The smallest is the share of professionally satisfied among the surveyed GPs - 55.7%. Conversely, the relative share of slightly satisfied and dissatisfied with work doctors in the individual groups is lowest in the group of directors, higher in the group of doctors from EMC and highest among GPs.

No statistically significant difference is observed in the opinion of GPs and doctors from EMC on the question **"Are you satisfied with your work?"** (χ^2=5.893, df=2, Cramer's V=0.167, p=0.053). The results are presented graphically:

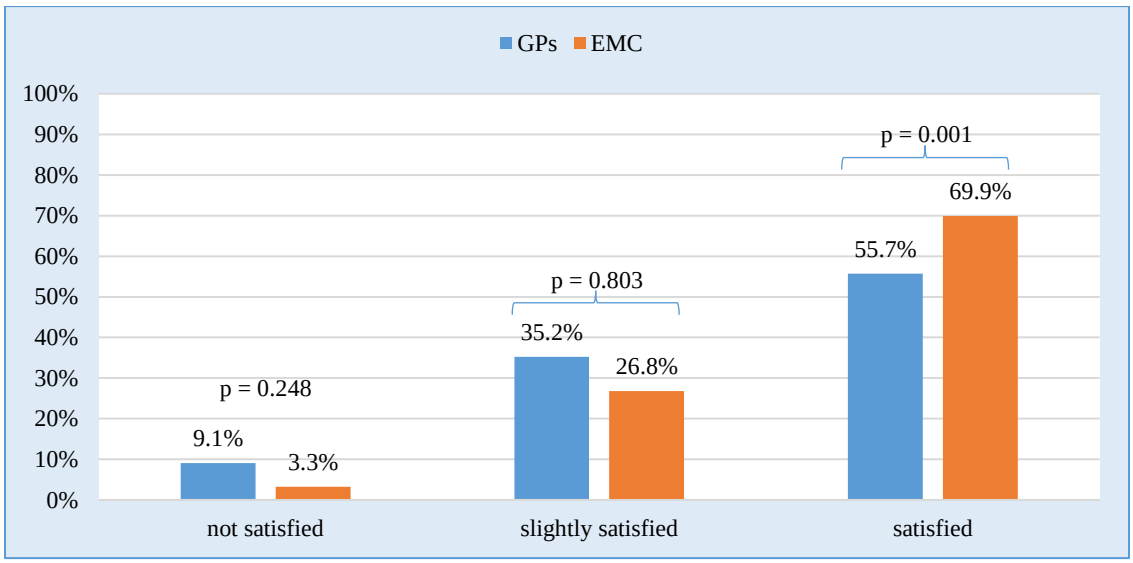

Fig. 3 Are you satisfied with your work?

The results from the applied non-parametric method χ^2 are:

- Not satisfied - χ^2=1.333, df=1, p=0.248;
- Slightly satisfied - χ^2=0.063, df=1, p=0.803;
- Satisfied - χ^2=10.141, df=1, p=0.001

Working with patients under extreme conditions and continuous 24-hour regime based on 12-hour duty shifts is not attractive on the European and Bulgarian medical labor market.

To the semi-structured question "What motivates you to work in EMC?", 66.1% of the answers of the surveyed doctors are - "The pay". Placing this motive in first place reflects the attitude of the surveyed towards the significantly improved remuneration of work at EMC during the Covid-19 pandemic and afterwards, when society, albeit partially, recognized the importance of EMC for the health security of the population. In second place with 47.9% relative share of all answers is "The organization of work". Taking into account the unsatisfactory answers about gaps, inconsistencies and proposals for changes in normative documents concerning the activities of emergency medical care and regulating relations between EMC and GPs, probably the choice of "organization of work" was motivated by the twelve-hour schedule with more

days off. In interpreting the answers, we must take into account that the surveyed doctors are at an average age of 54.5 years, the work experience of 37.5% of them is over 30 years, 35.8% lack acquired medical specialty, only 3.3% are motivated to work at EMC because of "Good working conditions" and only 4.1% have acquired specialties Emergency Medicine or Disaster, Accident and Catastrophe Medicine.

The question about motivation to work in the subsystem of outpatient emergency medical care in the aspect of medical personnel shortage and direction towards the conditions under which medical care is carried out and requirements for organizational and specialized medical abilities and skills for solving professional problems in the activity of the emergency doctor is topical and urgent.

The numerous different positive answers about motivation are in unison with the answers about satisfaction with work at EMC.

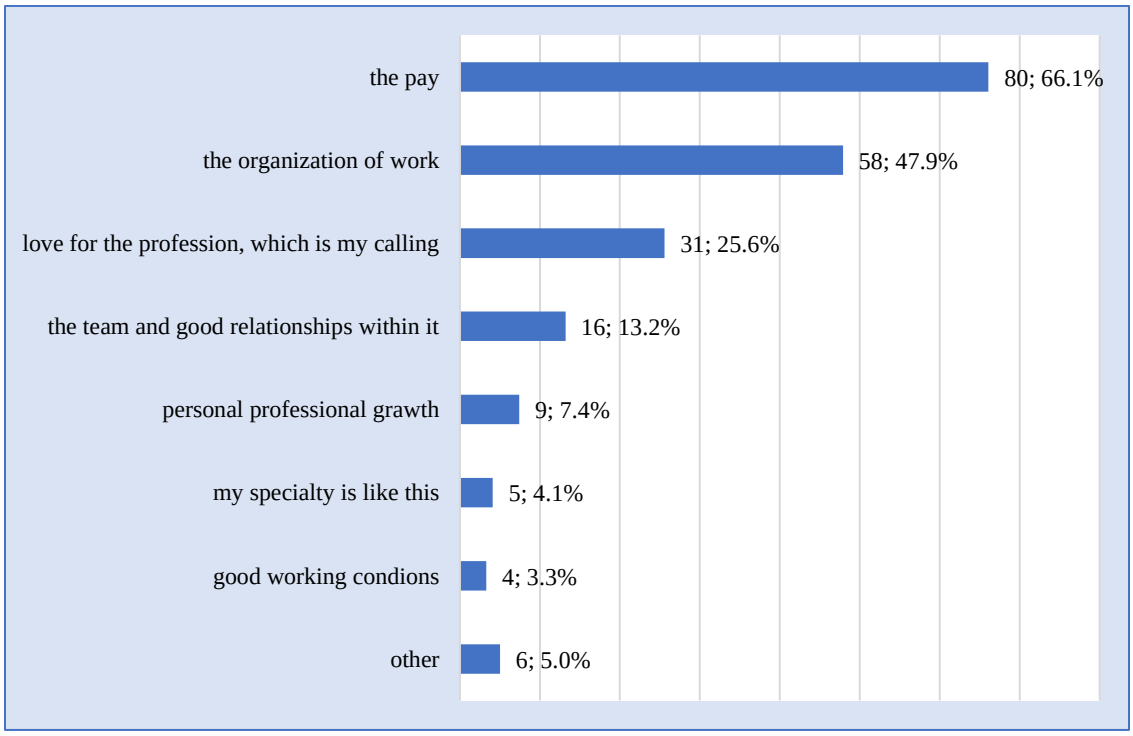

Fig. 4 What motivates you to work in emergency medical care? (doctors at EMC)

To the semi-structured question "What motivates you to work in EMC?", doctors in management and responsible positions at EMC indicated 4 of the seven structured answers. With the highest relative shares are "Love for the profession, which is my calling" and "The pay". Follow "Personal professional growth" and "The organization of work" at 13.6% each; and "The team and good relationships in it" - 9.1%.

Table 10 What motivates you to work in emergency medical care? (respondents-directors)

	Number	%
love for the profession, which is my calling	7	31.8
the pay	7	31.8
personal professional growth	3	13.6
the organization of work	3	13.6
the team and good relationships in it	2	9.1
Total	**22**	**100.0**

An emergency doctor in a management position is required to have good organizational abilities and specialized medical knowledge and skills for solving specific professional problems and for managing the activities of EMC and Filial emergency medical care (FEMC). Communication abilities and relationships that management staff from EMC are required to carry out are of particular importance.

Regardless of the results shown from the answers to this question and despite the improved remuneration of work during the Covid-19 pandemic, for motivation to work at EMC it is necessary to improve working conditions, including interaction and cooperation with implementers of POAC, hospital ERD and other units of the healthcare and public system.

To the closed question "Is there fatigue/overloading of EMC teams with inappropriate duties?" with two alternative answers ("yes" and "no"), a significant part of respondents - doctors at EMC answered "Yes", the remaining 24.4% with "No".

Table 11 Is there fatigue/overloading of EMC teams with inappropriate duties (according to doctors from EMC)

Question	N=123
Is there fatigue/overloading of EMC teams with inappropriate duties?	
– yes	93 (75.6%)
– no	30 (24.4%)

Reasons for fatigue in providing emergency medical care are not well tought-out normative documents for organizing activities. For example, point IX of Appendices No. 1 to Art. 1 of Ordinance No. 9 of December 10, 2019 (issued on the basis of Art. 45, para. 2 of the HIA) for determining the package of health activities guaranteed by the NHIF budget. Point IX, concerning "Ensuring access to medical care for

mandatory health-insured persons outside the announced work schedule of the practice" is a formal and uncritical obligation of GPs, fulfilled through documents necessary for concluding a contract with NHIF.

According to normative provisions, GPs must ensure the indicated access to medical care, including medical care for health-insured persons due to acute and exacerbated chronic diseases and conditions, where medical care cannot be postponed in time in order to be performed within the approved work schedule of the doctor in primary outpatient care, in one of the following ways:

- Personally provide 365 days a year 24-hour POAC to the Public Health Insurance Fund from his patient list (Practice in Bulgaria proved the impossibility of implementation);
- Through a duty office of the group practice for POAC in which they are a co-founder;
- Through a duty office organized on a functional basis based on a concluded contract with other medical facilities for POAC and an approved schedule;
- By contract with the nearest located medical facility for hospital care that has opened a duty office:
- By contract with a medical facility for outpatient care as defined by the Medical Facilities Act (group practice for primary medical care, group practice for specialized medical care, medical center and medical-dental center, and diagnostic-consultative center) that has opened a duty office;
- By contract with EMC with opened branches for emergency medical care.

Medical facilities for hospital care and medical facilities for outpatient care as defined by the Medical Facilities Act should not be more than 40 km from the location of the GP's practice. Normatively regulated, doctors from "duty offices" do not perform the entire package of GP activities including home visits to patients. Practice proved the impossibility of real individual implementation of 24-hour POAC. GPs who themselves provide 24-hour service to their patients are few in number, most often far from patients outside their working hours and cannot provide the necessary medical services.

Individual practices for POAC in Bulgaria for 2022 are 2823, and group practices for POAC are - 187 for the same year and with few doctors to maintain a duty office outside working hours.

Duty offices organized on a functional basis based on a concluded contract with other medical facilities for POAC and those opened in medical facilities for hospital care and in medical facilities for outpatient care (as defined by the Medical Facilities Act for this purpose) proved insufficient, according to the surveyed doctors. Very rarely are there contracts between GPs and EMC to ensure access to medical care for mandatory health-insured persons outside the announced work schedule of the practice from branches for emergency medical care. Between the working hours of "duty offices" from 8 PM and 8 AM on working

days and the work schedule of GPs during the day, there remain 2 to 6 hours during which the health-insured patient has nowhere to receive primary health service for which they are insured.

Patients with acute and exacerbated chronic diseases and conditions where medical care cannot be postponed in time in order to be performed within the approved work schedule of the doctor in primary outpatient care, may become emergency or miss the "golden hours" and reach a fatal outcome. Faced with such problems in receiving medical care, patients, from whom it cannot be expected to determine their health status as emergency or non-emergency, seek the services of EMC or reach the hospital ERD by other transport. On the other hand, a patient who has nowhere to receive medical consultation and decides that their condition is emergency and makes an emergency call to EMC cannot be refused medical service.

A consequence of these normatively conditioned organizational weaknesses are permanently strained relationships and poor interaction between doctors from EMC and GPs.

3. Regulatory gaps and inconsistencies regulating the round-the-clock provision of quality emergency and non-emergency medical care to patients.

To the question: "Are you familiar with the normative documents regulating the relationships between EMC and GPs?" we received unexpected answers: most GPs (62.5% of those surveyed from this group) marked - "I am familiar to a certain extent" and even more unexpectedly - 8.0% answer that they are not familiar at all. Only 29.5% consider that they are fully familiar with the normatively regulated relationships related to their interaction with EMC in the implementation of a stage of interconnected medical activity - emergency medical care. It is alarming that the results "insufficiently familiar" and "completely unfamiliar" with normative documents are from respondents with high educational status and significant medical experience (89.8% have acquired medical specialty, and 93.2% have work experience from 10 to over 40 years).

Table 12 (respondents-GPs)

Question	N=88
Are you familiar with the normative documents regulating the relationships between Emergency Medical Centers and GPs?	
Fully familiar	26 (29.5%)
Familiar to a certain extent	55 (62.5%)
Not familiar at all	7 (8.0%)

In the answers of doctors from EMC to the question "Are you familiar with the normative documents concerning the activities of emergency medical care?" the possibility to answer "not familiar at all" was not included out of consideration for perceiving it as an offensive attitude towards respondents, demotivation for serious behavior during the survey and thwarting the tasks and purpose of the survey. Our reasoning was confirmed by the given answers, which include only the first two of the possible three. The answer "fully familiar" was preferred by 78.9% of the surveyed doctors from EMC, and "familiar to a certain extent" by 21.1% - more than one fifth of the surveyed. The answer "not well familiar" was not indicated by any of the surveyed doctors.

The degree of knowledge of normative documents concerning the highly responsible for doctors and life-saving for patients activity - emergency medical care, shared by the surveyed doctors at EMC, is not sufficient for the necessary interaction and professional relationships with GPs.

The question "Are you familiar with the normative documents regulating the relationships between Emergency Medical Centers and GPs" asked to doctors from EMC complements the question about knowledge of normative documents concerning the activities of emergency medical care. According to respondents' answers, 35.8% are fully familiar with the normative documents regulating the relationships between EMC and GPs, 55.3% - to a certain extent and 8.9% are not familiar at all.

From the high overall relative share (64.2%) of those who answered "familiar to a certain extent"; and "not familiar at all", as well as from the significant difference in the percentage ratio of answers, gaps in knowledge of normatively established rules for work are evident. These gaps are a reason for incorrect relationships and interaction between EMC and GPs in providing emergency care.

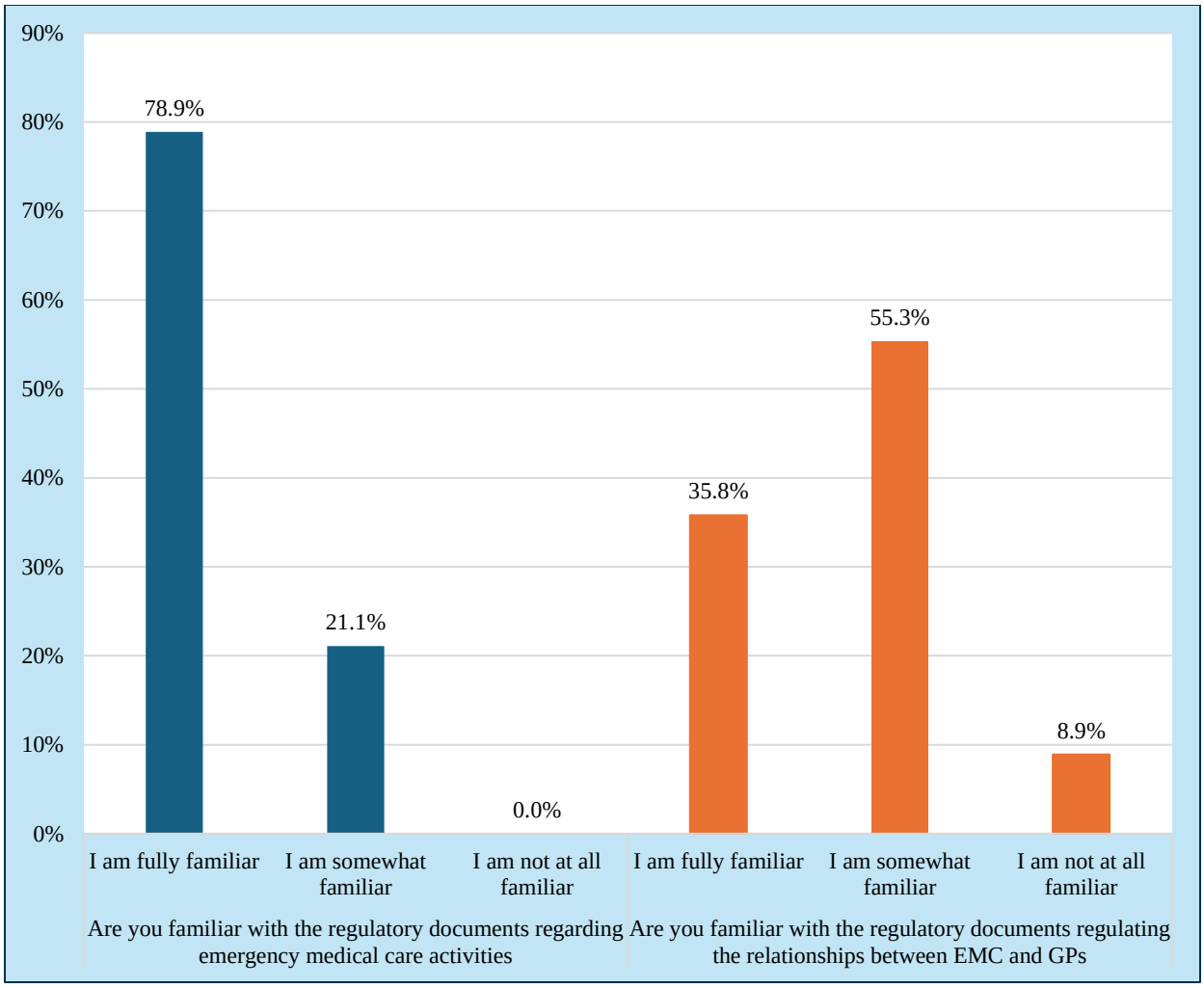

Fig. 5 Knowledge of normative documents concerning the activities and documents regulating the relationships between EMC and GPs (n=123) (respondents-EMC)

Asked to indicate according to them what gaps and inconsistencies exist in the normative documents regulating the relationships between Emergency Medical Centers and GPs, respondents - GPs gave the following categories of free answers, indicated in Table 13.

Without an answer about gaps and inconsistencies in normative documents are the questionnaires of 62.5% of GP respondents. The lack of answers is related to the high relative share (70.5%) of GPs "insufficiently familiar" or "completely unfamiliar" with normatively regulated relationships/interaction with EMC.

Table 13 Please indicate, according to you, what gaps and inconsistencies exist in the normative documents regulating the relationships between Emergency Medical Centers and GPs (respondents-GPs)

Answers	Number	Rel. share
The relationships between EMC and GPs are not well regulated	9	10.2%
Information is missing in a format suitable for patients: when to seek their personal doctor, when a "duty office" and when emergency care	9	10.2%
The medical conditions "emergency" and "non-emergency" and activities for them are not clearly normatively specified	7	8.0%
The transfer of information from EMC to GPs about their served patient is not regulated	5	5.7%
no gaps	3	3.4%
no answer	55	62.5%
Total	**88**	**100.0%**

The unstructured question (request), "Please indicate, according to you, what gaps and inconsistencies exist in the normative documents regulating the relationships between EMC and GPs", giving the possibility for a free answer, free expression of opinion, is related to the question about knowledge of normative documents regulating the relationships between EMC and GPs. More than half (61%) of the surveyed doctors from EMC also did not indicate gaps and inconsistencies existing in the normative documents regulating the relationships between EMC and GPs", 22.8% answered "There are no regulated relationships", and 7.3% - "The activities of GPs in emergency conditions are not regulated", 5.7% - I cannot judge, for 3.2% - "There are no inconsistencies".

It is logical to assume a connection between the lack of answer to this question from 61% of respondents with those 64.2% of surveyed doctors who answered the question regarding knowledge of the same documents - "Are you familiar with the normative documents regulating the relationships between Emergency Medical Centers and GPs?" with answers - familiar to a certain extent (55.3%) and not familiar at all (8.9%). In the context of this connection, some respondents had difficulty indicating gaps in normative documents.

Regulated relationships between EMC and GPs, regardless of their incompleteness, must be known and implemented by doctors from EMC, because of the necessary interaction, coordination and consultative help also in implementing emergency and non-emergency medical care to patients.

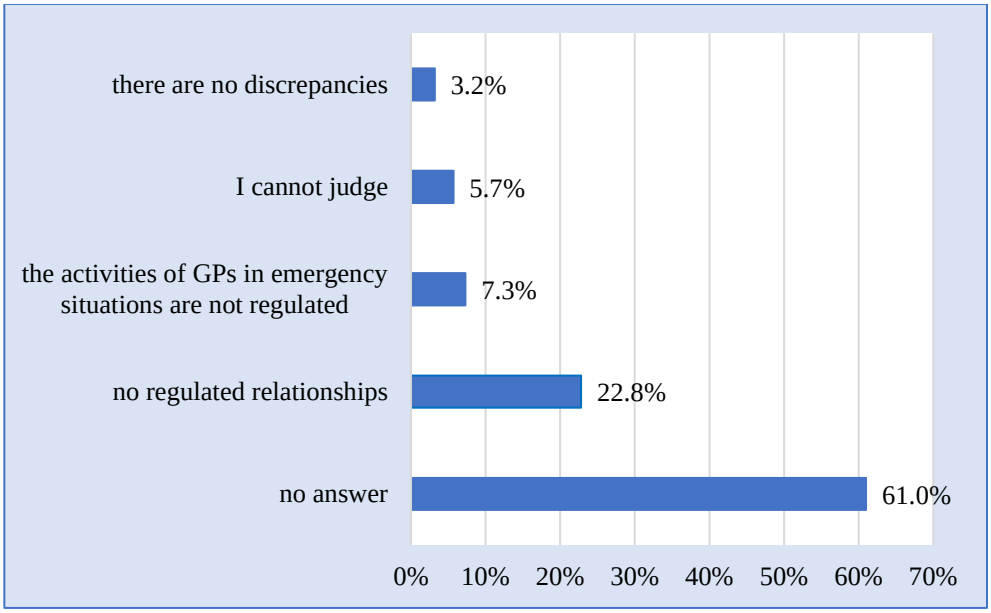

Fig. 6 Gaps and inconsistencies in normative documents regulating the relationships between EMC and GPs (n=123) (respondents-EMC)

To the question "Are you familiar with the normative documents concerning the activities of emergency medical care?", 100% of respondents in management positions answer "fully familiar". With such one hundred percent certainty of answers from doctors occupying management and responsible positions, the results from a similar survey conducted among regular doctors from EMC will be useful for their management practice. To this question, 21.1% of doctors-implementers of emergency care answer: "familiar to a certain extent".

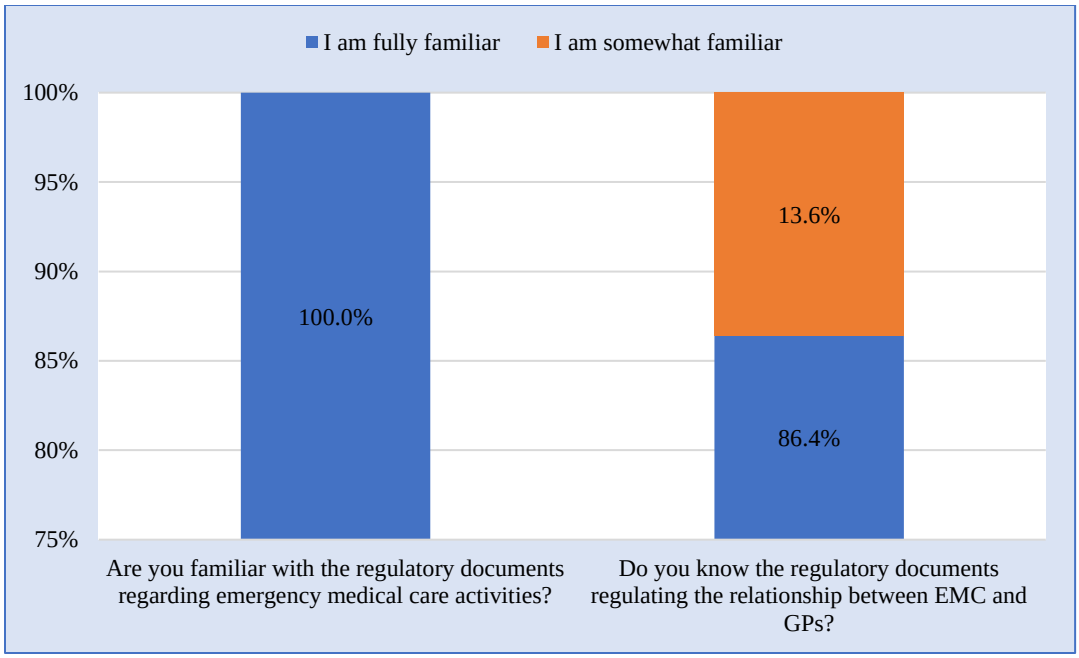

Fig. 7 Knowledge of normative documents concerning the activities of emergency medical care and normative documents regulating the relationships between EMC and GPs?" (respondents - directors)

Regulated relationships determine activities and interaction. According to answers - 86.4% of respondents in management positions are fully familiar with the normative documents regulating the relationships between EMC and GPs, and 13.6% - to a certain extent.

The unstructured question "Please indicate, according to you, what gaps and inconsistencies exist in the normative documents regulating the relationships between EMC and GPs", giving the possibility for a free answer, free expression of opinion, is related to the question about knowledge of normative documents regulating the relationships/interaction between EMC and GPs.

It is logical to assume a connection between this question and the previous question - "Are you familiar with the normative documents regulating the relationships between Emergency Medical Centers and GPs?", according to whose answers, 86.4% of respondents are fully familiar with the normative documents. Contrary to expectations, to the question about gaps - 68.2% of the surveyed doctors from EMC occupying management and responsible positions answered that there are no regulated relationships, and the remaining 31.8% did not answer.

To the question: "Are you familiar with the normative documents regulating the relationships between EMC and GPs?", a total of 70.5% of the surveyed GPs answered "familiar to a certain extent" or "not familiar at all".

In the group of surveyed doctors from EMC, the total sum of relative shares of those who answered with the same two answers is 64.2%.

From respondents - directors 13.6% mark "familiar to a certain extent". As expected, the remaining 86.4% of respondents, given their official duties, answer "fully familiar".

We collected the relative shares of the two unsatisfactory answers in each of the groups of GPs and regular doctors from EMC, because in the answer "familiar to a certain extent" the extent is not at all known. Our other basis is that in implementing such a responsible activity as medical care for a life-threatening condition of a patient, all requirements, obligations, algorithm of actions and interaction must be completely clear, known and precisely executed.

Not knowing or insufficiently knowing the normatively established rules for organizing primary and emergency outpatient medical practice and for interaction (relationships) between GPs and doctors from EMC leads to hesitations and organizational and medical errors with unfavorable consequences for patients.

No statistically significant difference is established in the opinions of GPs and EMC on the question: **"Are you familiar with the normative documents regulating the relationships between Emergency Medical Centers and GPs?"** (χ^2=1.116, df=2, Cramer's V=0.073, p=0.572). The results are presented graphically:

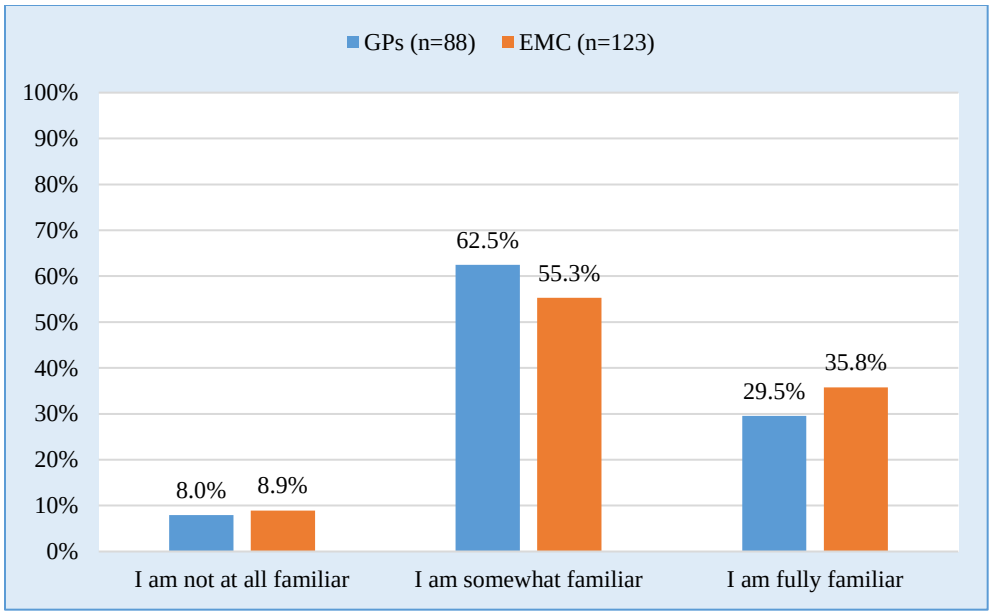

Fig. 8 Are you familiar with the normative documents regulating the relationships between EMC and GPs?

4. Problems of interaction between GPs and doctors from EMC

The main question "How do you proceed when patients contact you by phone during your working hours for medical care at home?" from the survey with GPs we presented with seven closed and one open answer. We made an attempt to show the maximum number of cases from "menu-answers" and on a "other" line we gave the opportunity to express personal understanding and attitude of the respondent to the problem.

The formulation of the question is "for medical care at home", but with "menu answers" it was directed oriented mainly towards actions of GPs when called to provide emergency medical care to patients. The idea is to gradually enter the survey into the most acute problems in interaction between GPs and EMC. All surveyed GPs answered. They gave a total of 318 answers - an average of 3.6 per respondent, which is why their relative share towards the surveyed GPs is 361.4%. Highest is the number and relative share (70.5%) of answers "I assess their health condition and consult by phone". From the phone inquiry, the GP can determine to a significantly high degree the life-threatening condition of the patient and the need for emergency care. In descending order follow the answers: "In non-emergency condition, I perform a home visit" - 65.9%; "In emergency condition, I direct the patient to tel. no. 112 for Emergency care - 64.8%". The data are shown in Table 14.

There are choices of both provocative closed answers and free answers ("other"), including unregulated, incorrect actions such as:

- "In emergency condition, I direct the patient to ERD". Independent movement or transportation from homes to ERD without the possibility of providing medical care and maintaining vital functions in emergency conditions is dangerous for patients' lives.
- "If the condition and time allow, I direct the patient to a duty office". The regulated (by Ordinance 9 of December 10, 2019 for determining the package of health activities guaranteed by the NHIF budget) working hours of "duty offices" is between 8 PM and 8 AM on working days and round-the-clock during rest and holiday days. In the same normative document it is indicated that doctors in these offices provide medical care to health-insured persons due to acute and exacerbated chronic diseases and conditions where medical care cannot be postponed in time. Regardless that in such cases the patient's life is not directly threatened, medical care is provided in a short time to prevent further development and complication of the disease. According to Art. 45 para. 1 item 5 of the HIA, NHIF pays for providing this medical care. That is why, if the condition requires it, during the working hours of the GP the patient must receive the health service from the personal doctor, and not be redirected after 8 PM to a doctor from a "duty office", according to Appendix No. 9 ("NHIF Requirements for concluding a contract with medical facilities for providing primary outpatient care" to NFC 2023-2025 for medical activities, item IX. Ensuring access to medical care for mandatory health-insured persons outside the announced work schedule of the practice). Hospital and outpatient medical facilities (that have opened "duty offices"), with which the general practitioner can conclude a contract, as well as EMC branches, "must be located no more than 40 km from the location of the general practitioner's practice (applicable for each of the practice addresses simultaneously)". The indicated distance is very large for some socially weak patients. Moreover, doctors in "duty offices" are always in a different work schedule, differing from the GP's schedule by 2 to 6 hours depending on the morning or afternoon shift of the GP.

Patients in non-emergency condition often save themselves the distance and waiting time in front of the overloaded "duty offices" and prefer the medical services of EMC and ERD, thereby causing difficulties for their work. These circumstances are contrary to good relationships and interaction between GPs and EMC and ERD. It is evident from the chosen answers that most, but not all GPs know their duties when called for medical care at the patient's home.

Table 14 Please indicate how you proceed when patients contact you by phone during your working hours for medical care at home? (respondents-GPs)

Answers	Responses N	Percent	Percent of Cases
I assess their health condition and consult by phone	62	19.5%	70.5%
in emergency condition, I direct the patient to tel. 112 for Emergency care	57	17.9%	64.8%
in emergency condition, I direct the patient to ERD	18	5.7%	20.5%
in emergency condition I make a call for Emergency medical care	42	13.2%	47.7%
in non-emergency condition, I perform a home visit	58	18.2%	65.9%
if the condition is not emergency, I set an appointment time for a visit to my office	53	16.7%	60.2%
if the condition and time allow, I direct the patient to a duty office	26	8.2%	29.5%
other	2	0.6%	2.3%
Total	**318**	**100.0%**	**361.4%**

To the question "Please indicate how you proceed when patients visit you in the office for emergency care during your working hours?" similar to the previous question, GPs assess the patient's health condition in 40.2%, and 29.9% comply with normative requirements to perform the necessary manipulations to maintain the patient's vital functions until the arrival of a team from EMC.

Table 15 Please indicate how you proceed when patients visit you in the office for emergency care during your working hours? (respondents-GPs)

Answers	Responses N	Percent	Percent of Cases
I perform an examination to assess the patient's health condition	74	40.2%	88.1%
if the condition requires, I call for an emergency team from EMC	55	29.9%	65.5%
if the condition necessitates, I seek an emergency team from EMC and perform the necessary manipulations to maintain the patient's vital functions until the team arrives	55	29.9%	65.5%
Total	**184**	**100.0%**	**219.0%**

In the answers to the question "How do you ensure access to medical care for patients outside the announced work schedule of the practice?" the surveyed GPs show that most (47.7%) of them ensure access of their patients to medical care outside the announced work schedule of the practice through a duty office organized on a functional basis based on a concluded contract with other medical facilities for primary outpatient care and a schedule approved by medical facilities for ensuring the office's activity. This is applicable for cities where such offices are opened and unfortunately the GPs who responded to the survey

are mainly from cities. The access of MIPs from small settlements and villages is limited to GPs (personally individually through 24-hour provision) outside their working hours and on rest days, especially for those who are distant from a large city.

Medical care to patients outside the announced work schedule of the practice for POAC, whether emergency or non-emergency, can be performed timely, efficiently and effectively only by EMC and their branches. An important condition for the result of medical care is the correct orientation of the mandatory health-insured patient or people close to them for initial contact with medical facilities to receive primary outpatient medical service.

Medical facilities - outpatient clinics for individual practice for primary medical care , Outpatient clinics for group practice for primary medical care , "duty offices" according to Ordinance 9 for determining the package of health activities guaranteed by the NHIF budget, are the main "entrance" and "guide" of patients for EMC, ERD and other levels of the health system. The timeliness, adequacy and quality of provided medical care depend to a high degree on the interaction between GPs, EMC and ERD at this level of the system.

Table 16 How do you ensure access to medical care for patients outside the announced work schedule of the practice?

Answers	N=88
Personally (individually through 24-hour provision of consultations by phone, carrying out necessary activities in the outpatient clinic or at the patient's home at my discretion)	20(22.7%)
Through a duty office of the group practice for primary outpatient care in which I am a co-founder	9 (10.2%)
Through a duty office organized on a functional basis based on a concluded contract with other medical facilities for primary outpatient care and a schedule approved by medical facilities for ensuring the office's activity	42(47.7%)
By contract with the nearest located medical facility for hospital care that has opened a duty office	11(12.5%)
By contract with the nearest located medical facility for outpatient medical care that has opened a duty office Group practice for specialized medical care Medical center and medical-dental center Diagnostic-consultative center	2 (2.3%) 0 (0.0%) 2 (2.3%) 0 (0.0%)
By contract with EMC that has branches for emergency medical care	4 (4.5%)

To clarify the reasons for problems between the three subjects - patients, GPs and EMC in distinguishing the need for emergency medical care or medical care for health-insured persons due to acute and exacerbated chronic diseases and conditions, we asked the question "Do you inform your patients in

which cases to seek their personal doctor or their substitute for medical care and in which cases EMC?" We received one closed answer from all surveyed GPs. The answer "Thoroughly, during medical service" was given by 36.4% of respondents, the answer "When the issue arises" - by 33.0% and "I have placed written information in a visible place" - 30.7%.

In our opinion, it is difficult to satisfactorily teach the patient or their relatives to distinguish emergency conditions from those where medical care cannot be postponed in time in order to be performed within the approved work schedule of the doctor in primary outpatient care. Such expertise can be reached in repeated cases of exacerbations of chronic diseases. It is even more impossible to achieve this by placing written information in a place visible to the patient. Our expectations for personal attitude and ideas from GPs on this issue in the given opportunity for a free answer - "in another way: /what/..." were not realized.

Determining the emergency and non-emergency conditions of patients in outpatient conditions is a serious problem with medical and social significance. In addition to the lack of sufficiently current health information, it is also aggravated by the divergent interests of providers of emergency and non-emergency medical care and the personal benefit of patients who, in order to obtain quick access to medical care and free transport, sometimes abuse by aggravation (deliberately exaggerating symptoms).

To two of the three closed scaled answers to the semi-structured question "What is the usual behavior of GPs in emergency cases?", 67.0% of the surveyed GPs answer that they "Comply with normative requirements", and 20.5% that "Normative requirements are not always complied with". Without answer - 6.8% and other answer - 5.7%. No respondent chose the closed scaled answer "Normative requirements are never complied with".

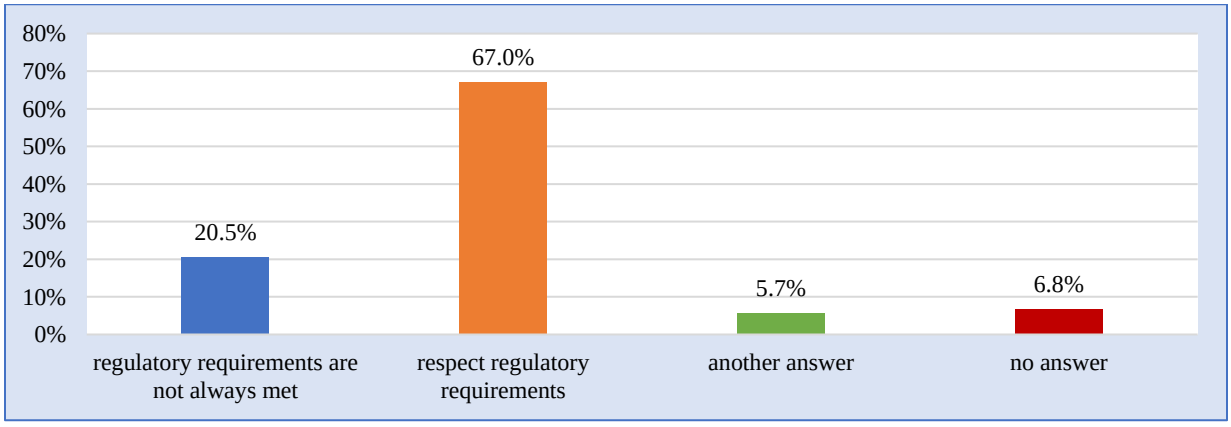

Fig. 9 What is the usual behavior of GPs in emergency cases? (n=88) (respondents -GPs)

To the same question "What is the usual behavior of GPs in emergency cases?", 58.5% of the surveyed doctors from EMC answer that GPs do not always comply with normative requirements, 27.6% - that they never comply with them and only 6.5% consider that GPs comply with normative requirements.

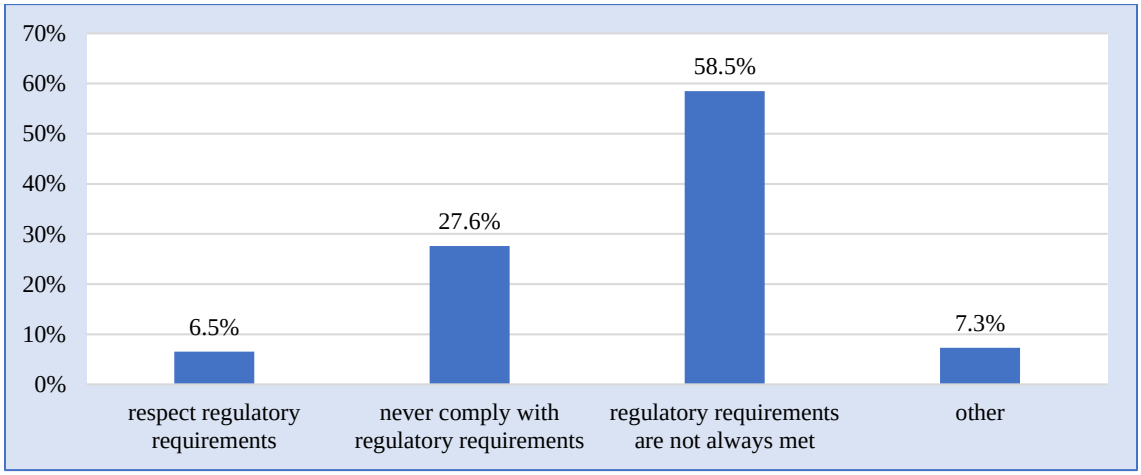

Fig. 10 What is the usual behavior of GPs in emergency cases? (n=123) (respondents - EMC)

To the same question: "What is the usual behavior of GPs in emergency cases?", 68.2% of the surveyed respondents in management positions at EMC answer that GPs do not always comply with normative requirements, 18.2% - that they never comply with them and only 9.0% consider that GPs comply with normative requirements.

The answers about the usual behavior of GPs in emergency cases are in a high-degree connection with the answers to the question "How do you assess the relationships between EMC and General Practitioners?".

Table 17 What is the usual behavior of GPs in emergency cases? (respondents - directors)

	Number	**%**
normative requirements are not always complied with	15	68.2
normative requirements are never complied with	4	18.2
most often the GP cannot be reached outside working hours or directs the patient by phone without having examined them	1	4.5
normative requirements are complied with	2	9.0
Total	**22**	**100.0**

To the question "What is the usual behavior of GPs in emergency cases?" there are very different results in the answers of the surveyed GPs and doctors from EMC. 67.0% of GPs mark that they comply with normative requirements in providing medical care to patients in emergency conditions, but only 6.5%

of the surveyed doctors from EMC confirm such behavior of GPs. 27.6% of emergency doctors consider that GPs "never comply with normative requirements" in emergency cases, but not a single GP chose such an answer. Other respondents from both groups mark that in such cases "normative requirements are not always complied with", with 20.5% of them being GPs and almost three times more (58.5%) being doctors from EMC.

The divergence of answers shows poor relationships and interaction between GPs and EMC. When discussing the divergent results, we took into account the possibilities of not knowing the normative regulation, professional and material interests, subjective moods and behavior due to different ownership of medical facilities, work overload, disinformation and other factors. If the real answers are closer to those shown, we still must take into account that the situation is alarming and risky for patients' health. We believe that only by clarifying the reasons for inadequate behavior in emergency medical services and the truth about the answers, will the processes not become satisfactory for providers and patients.

A statistically significant difference is observed in the opinion of GPs and EMC on the question "What is the usual behavior of GPs in emergency cases?" (χ^2=49.829, df=4, Cramer's V=0.486, p=0.000). The results are presented graphically:

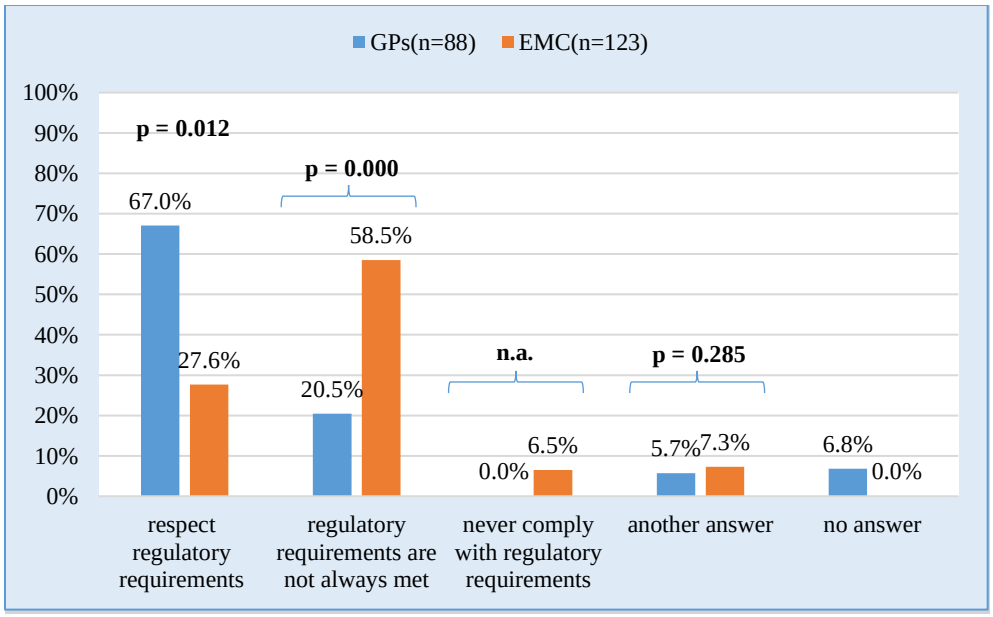

Fig. 11 What is the usual behavior of GPs in emergency cases?

The results from the applied non-parametric method χ^2 are:

- No answer
- Normative requirements are never complied with -- n.a.;
- Normative requirements are not always complied with - χ^2=32.400, df=1, p=0.000;
- Normative requirements are complied with - χ^2=6.720, df=1, p=0.012;
- Other answer - χ^2=1.143, df=1, p=0.285;

The results from the question "How do you assess the relationships between EMC and GPs?" are presented in figures 12, 13, and 14. GPs and doctors from EMC assess the relationships between them "as insufficiently effective" with respective relative shares of 65.9% and 68.35. The relative share of respondent directors who gave the assessment "insufficiently effective" is highest - 72.7%. Those who preferred the other two answers: "as effective" are predominant among GPs (27.3%) and "as completely ineffective" are predominant for doctors from EMC (23.6%). Doctor-directors showed the assessment completely ineffective - with a relative share of 22.7% and with the lowest relative share for assessing relationships "as effective" - 4.5%.

The strongly stretched number of answers of the three surveyed groups towards insufficiently effective relationships between GPs and EMC shows the presence of serious problems in interaction in providing emergency and medical care that cannot be postponed in time.

The answers about the usual behavior of GPs in emergency cases are in a high-degree connection with the answers to the question "How do you assess the relationships between EMC and General Practitioners?" and with the answers to the question "Are you familiar with the normative documents regulating the relationships between Emergency Medical Centers and GPs?", as well as with the indicated "specific problems in relationships between EMC and general practitioners" and proposals for "changes that would improve relationships between GPs and EMC".

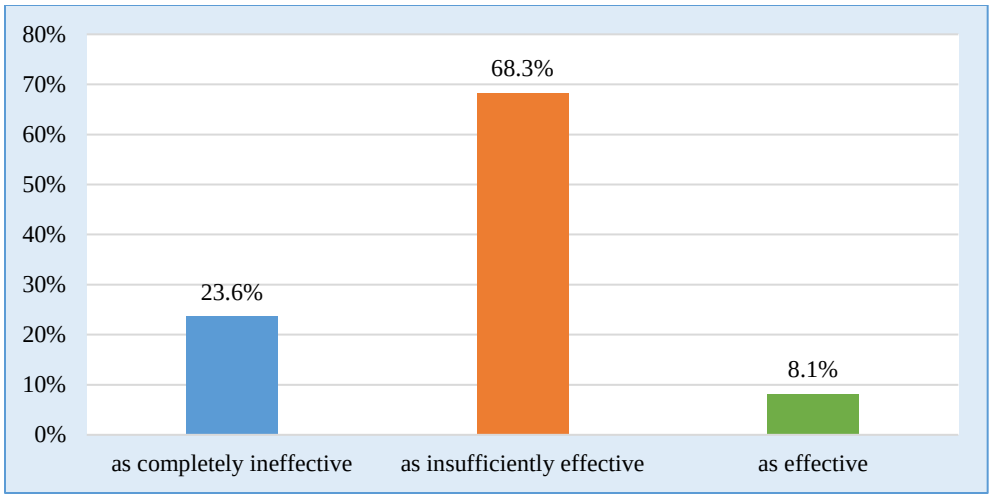

Fig. 12 How do you assess the relationships between EMC and General Practitioners? (n=123) (respondents-EMC)

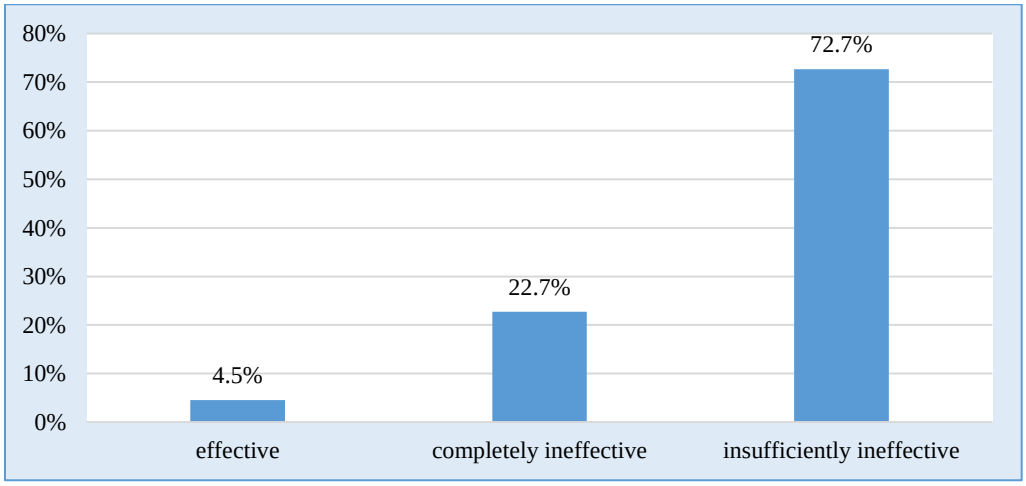

Fig. 13 How do you assess the relationships between EMC and General Practitioners? (respondents-directors)

A statistically significant difference is observed in the opinion of GPs and EMC on the question **"How do you assess the relationships between EMC and General Practitioners?"** (χ^2=20.395, df=2, Cramer's V=0.311, p=0.000). The results are presented graphically:

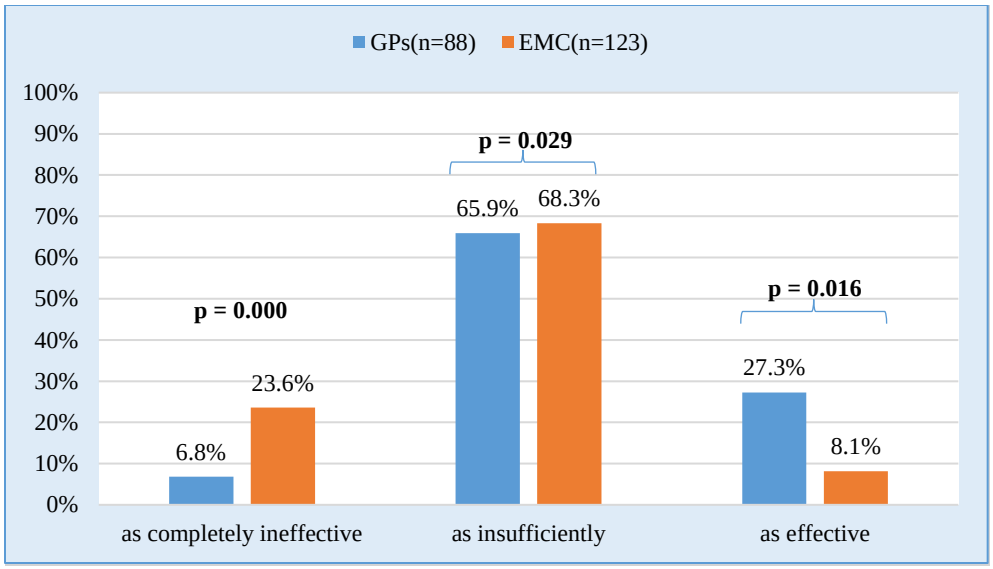

Fig. 14 How do you assess the relationships between EMC and General Practitioners?

The results from the applied non-parametric method χ^2 are:

- As completely ineffective - χ^2=15.114, df=1, p=0.000;
- As sufficiently effective - χ^2=4.761, df=1, p=0.029;
- As effective - χ^2=5.765, df=1, p=0.016.

With an open question, we gave the opportunity in the survey for free expression of specific problems of relationships in interaction between EMC and GPs in connection with ensuring health care for the population. Only 34.1% of GP respondents shared their personal opinion and attitude, position or interests. The indicated problems are grouped into several categories presented in Fig. 15.

From the given answers with the highest share is the opinion that "EMC refuses examinations and directs patients to GPs" - answered by 9.1% of all GP respondents, without specifying, however, for patients in what health condition the indicated problem is. The low relative share of indicated problems is due to the large number - 65.9% of GPs who did not share an opinion on this issue.

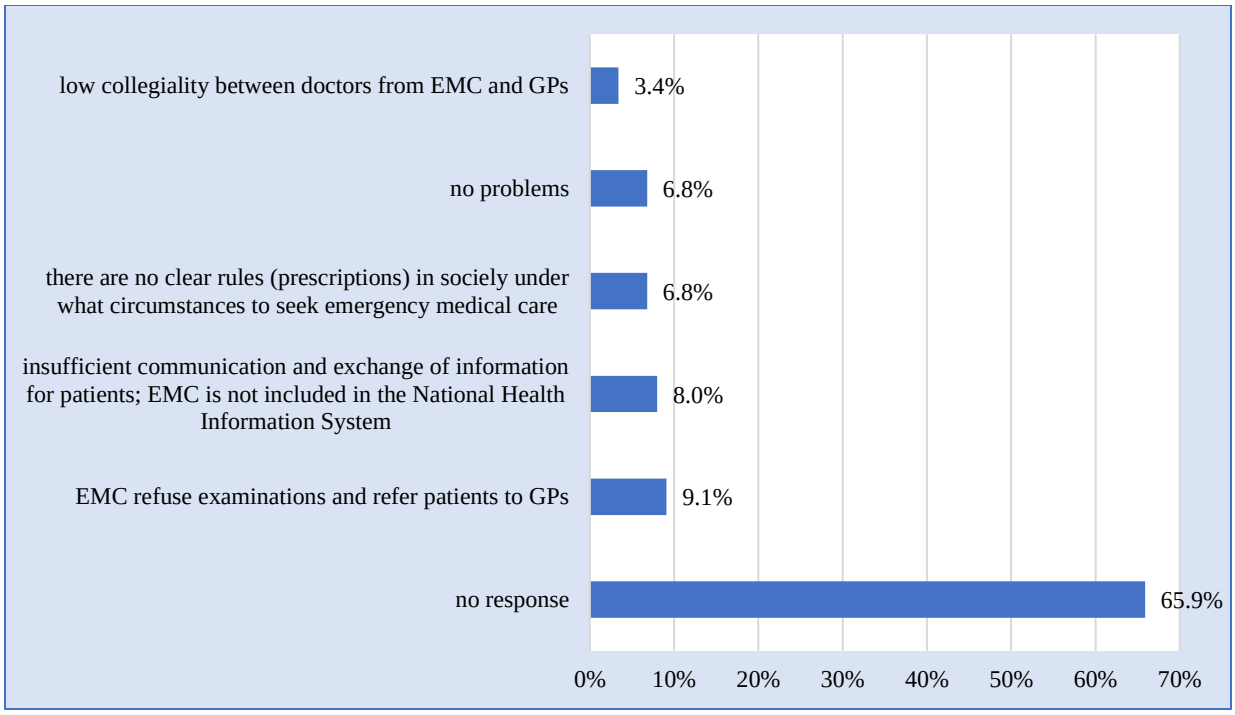

Fig. 15 Specific problems indicated by GPs in relationships between EMC and GPs (respondents - GPs)

To the question "Please indicate specific problems in relationships between EMC and general practitioners" respondents - doctors from EMC are motivated to freely share personal attitude related to their place and interests in interaction with GPs.

More than half (52.0%) indicate as a problem the lack of information exchange about patients' health status. In second place with a relative share of 20.3% of answers is placed a problem close to the informational one, namely - the lack of good communication, without taking a position on the reasons. Follow the lack of regulated relationships with 8.9%. An extremely small share of the surveyed (1.6%) consider that there are no problems in relationships and 17.2% did not answer.

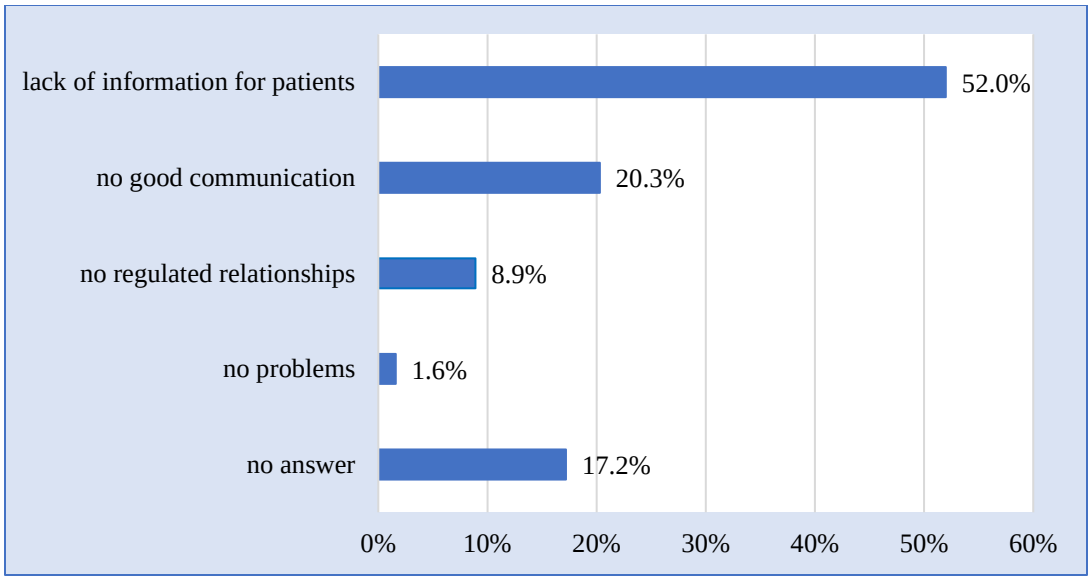

Fig. 16 Please indicate specific problems in relationships between EMC and general practitioners: (n=123) (respondents - EMC)

As the most serious negative factor for relationships, 27.3% of the surveyed directors mark "Insufficient interaction between GPs and EMC, especially on holidays and rest days". In second place with a relative share of 22.7%, they indicate as a problem "Lacks 24/7 patient service". Follow the answers: "Not performing home visits" - 18.2% and "Directing straight to tel. 112" - 13.6% of the surveyed.

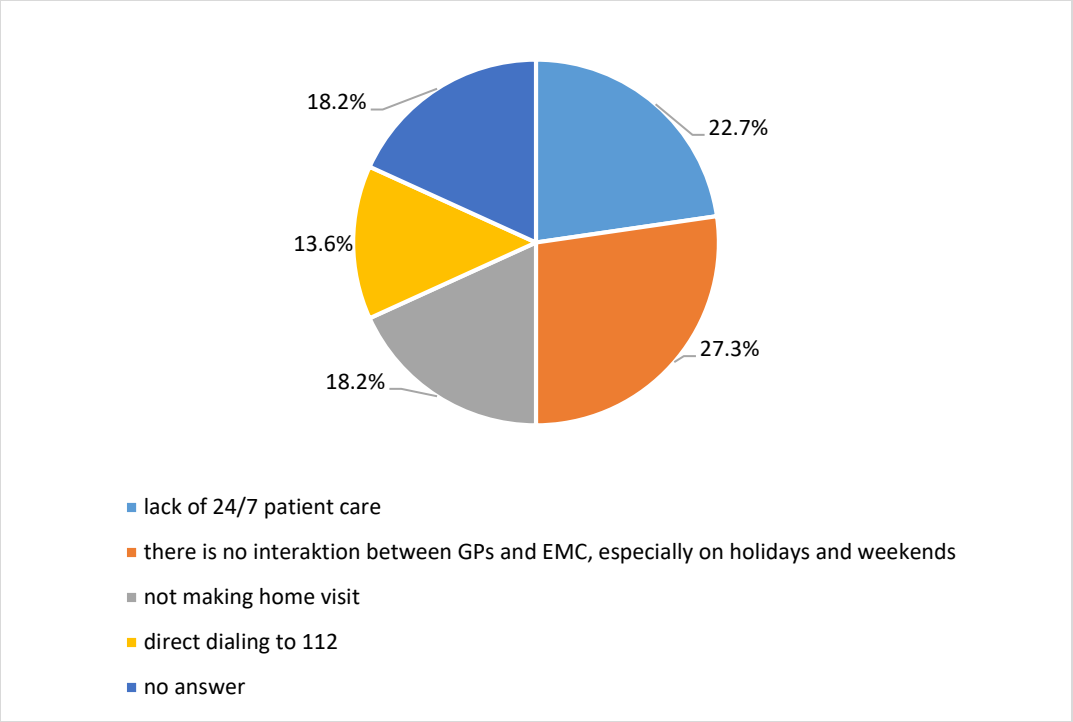

Fig. 17 Problems in relationships between EMC and GPs (respondents-directors)

From the given survey answers it is understood that in Bulgaria the problems of insufficient information and lack of good communication between GPs and EMC are major weaknesses in providing quality emergency and non-emergency medical care to patients.

From the review made of official publications (reports) from the series "Health systems in transition" of the "European Observatory on Health Systems and Policies" we established that the information problem of insufficient exchange of health information between individual subsystems of healthcare, including between POAC and EMC, is topical to varying degrees for almost all European countries.

5. Patients' motives for choosing a medical facility

To the semi-structured question "Did you have to call an ambulance with an emergency medical care team during 2022?" from respondent-patients 75.0% gave the answer "I did not have to" and 25.0% alternative answers "Yes, I had to". To the clarifying sub-question "If you had to - how many times?" the average number of calls is 1.3±0.612 for 42 respondents who used emergency medical care services.

Of those who sought emergency medical care from a team with an ambulance, a total of 131 surveyed patients, 45% always contacted their personal doctor, their substitute or a "duty office" before calling tel. 112. Those who answered "I always seek Emergency care directly at tel. 112" are 35.9% and 19.1% mark "I tried, but they did not always answer me".

Respondents who directly sought emergency medical care through tel. 112 and patients with not always successful attempts for phone consultation with the personal doctor, their substitute or "duty office" patients, have a high overall relative share - 55%. 22.0% of the entire group of 168 surveyed patients did not answer the survey question, who probably did not need emergency medical care.

With frequent incorrect self-determination or determination by close people of the emergency nature of patients' conditions, incorrect calling of an ambulance from EMC or self-direction to ERD is reached. The activities of the indicated emergency care structures are unnecessarily burdened, mistrust and tension in professional relationships and interaction between GPs and emergency teams of EMC and ERD are provoked.

Table 18 (n=168 - respondents-patients)

Questions	Answers
Did you have to call an ambulance with an emergency medical care team during 2022?	
I did not have to	126 (75.0%)
Yes, I had to	42 (25.0%)
Before calling tel. 112 for emergency medical care from a team with an ambulance, did you contact your personal doctor, their substitute or a duty office?	
I always contacted them	59 (35.1%)
I tried, but they did not always answer me	25 (14.9%)
I always seek Emergency care directly at tel. 112	47 (28.0%)
no answer	37 (22.0%)

From the answers to the question "At what time did you use the service of a team with an ambulance from EMC during 2022?" it is seen that the largest share (35.8%) of respondent-patients used the services of a team with an ambulance during the night, followed by those who used these services on Saturday and Sunday - 30.5%, during the day - outside the working hours of their personal doctor - 25.3%, during the personal doctor's vacation - 12.6% and during the day in the working hours of your personal doctor - 9.5%.

During 2022, the sums of working hours of EMC teams corresponding to the time indicated in the closed "menu answers" to this question, in descending order are as follows:

"During the night" - 4380 h.;

"On Saturday/Sunday" - 2808 h.;

"During the day, outside the working hours of your personal doctor" - 1488 h.;

"During the day, in the working hours of your personal doctor" - 1488 h.;

"During the personal doctor's vacation" - 120 h. (during the day - average 6 hours for 20 working days of vacation).

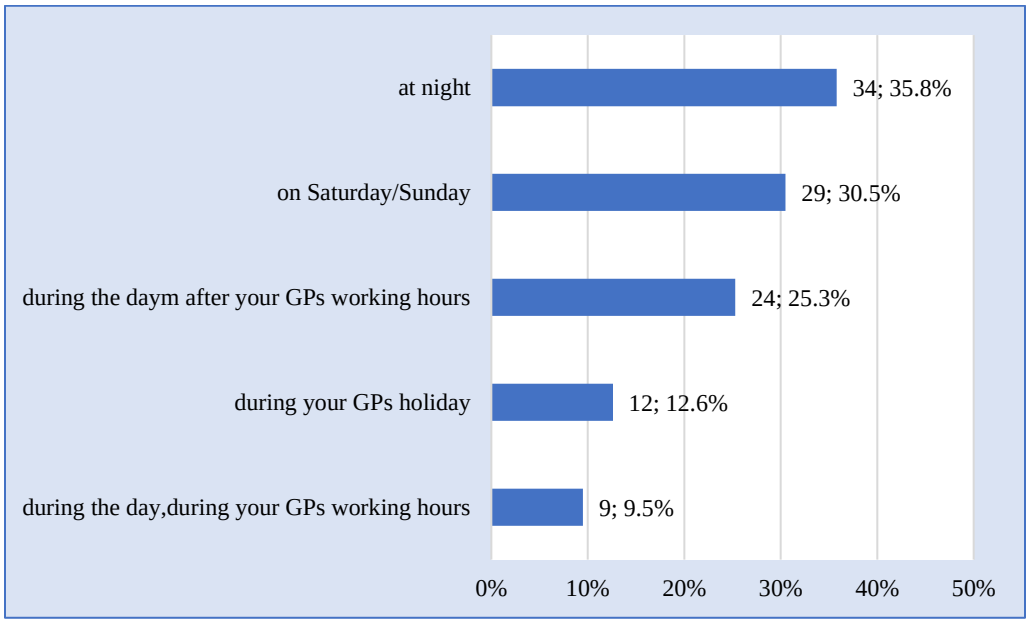

Fig. 18 At what time did you use the service of a team with an ambulance from the Emergency Medical Center during 2022? (n=95) (respondents-patients)

The difference in calls for emergency medical care made to EMC by patients outside the working hours of the personal doctor are not to such a degree emergency, since the GP during the day for the same time manages to provide the necessary medical care without the assistance of an emergency team and ambulance and to reduce the demand for an ambulance from EMC 2.7 times.

Outside the working hours of GPs, there is no equal substitute for consultations and distribution of patients in emergency and non-emergency conditions in POAC and direction to EMC and ERD. As evident from the data from the study, the substitute of the personal doctor during vacation is less preferred, and the "duty office" (during the night and on Saturday and Sunday) even less.

From the analysis of data from the survey we established that consultations of patients with GPs during their working hours (by phone, in the outpatient clinic or at the patient's home) reduce the use of emergency teams with ambulance from EMC and examinations in ERD.

Satisfaction with emergency medical care is one of the most frequently discussed health-related issues due to medical and social significance, relatively easy accessibility and expectations of all citizens towards emergency services. The closed answers to the structured question "Are you satisfied with the medical care provided by the Emergency Medical Center?" were not preferred by 34.5% of the surveyed patients, despite their easy-to-understand three-level scale. The lack of answers from slightly over a third of respondents may be due to patients' tolerance towards shortcomings of doctors in service, lack of recent impressions, mistrust of the survey's anonymity for sharing personal dissatisfaction.

We believe that "always satisfied" patients with the provided medical care from EMC 56.3% versus 34.5% without answer, 8.3% not always satisfied and 3.6% dissatisfied are grounds for investigating the reasons and seeking solutions for better results.

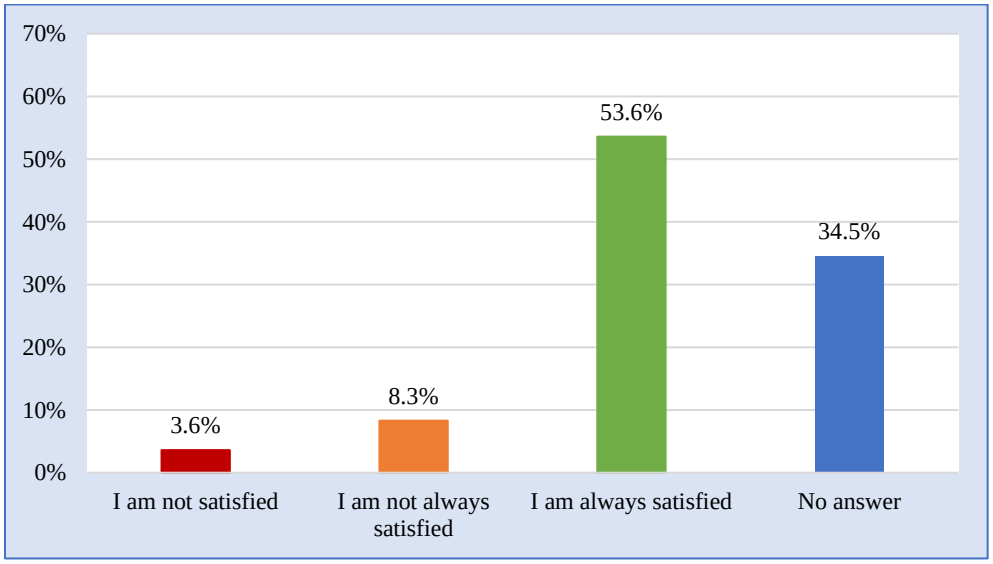

Fig. 19 Are you satisfied with the medical care provided by the Emergency Medical Center? (n=168)

The character and severity of problems that patients and their close relatives and accompanying persons encounter when providing emergency medical care depend on the performance of duties by general practitioners and emergency doctors and on the possibilities of legislative and executive power to regulate the public sector "Healthcare".

As a main problem when needing emergency medical care, the surveyed patients indicate with a relative share of 68% of answers that sometimes they cannot contact their personal doctor or their substitute. Follow the problems "sometimes it takes a long time until the personal doctor arrives" - 17.6% and "sometimes it takes a long time until the emergency care team arrives" - 12%.

The high relative share (68%) of the first answer shows that many patients are not informed that consultations outside working hours do not fall within the normative duties of the personal doctor (or their substitute) if they have ensured access to medical care for patients outside the announced work schedule of the practice. Providing emergency care at home is not an obligation of GPs, which some patients also do not know.

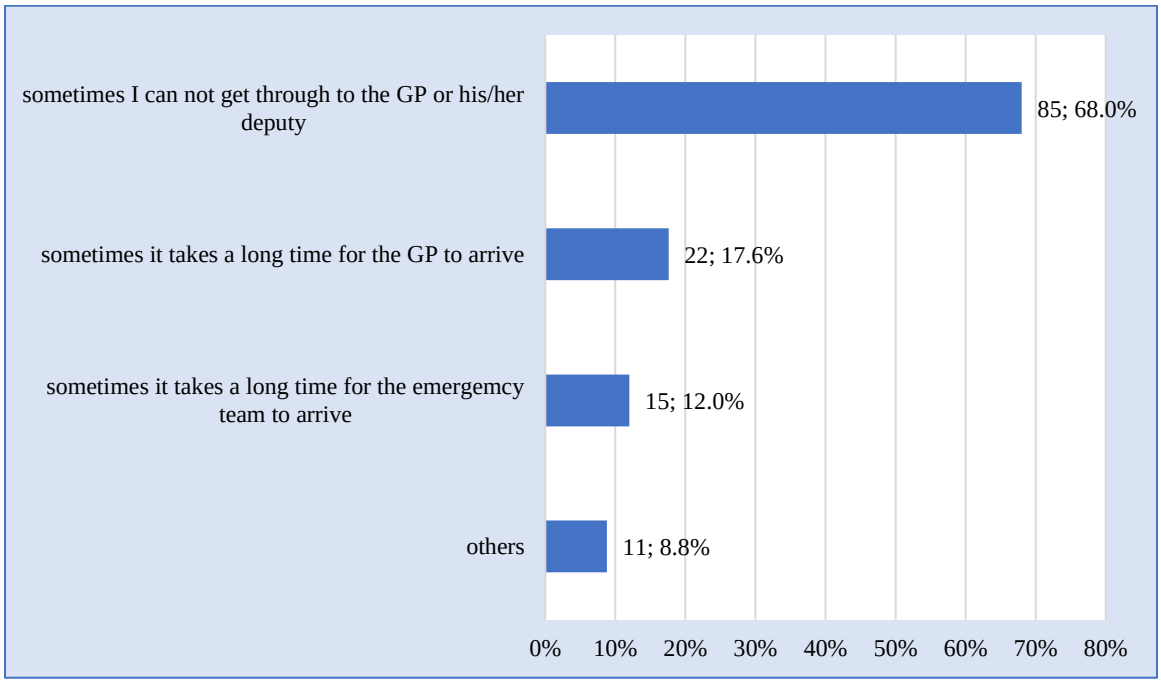

Fig. 20 What problems have you encountered when needing emergency medical care? (n=125)

The structured question "Do you have problems with your personal doctor's schedule"... with clarification - "are the hours for examinations convenient?" is also related to access to primary medical care during/outside the working hours of GPs. Two closed alternative answers are given, of which "yes" - they

are convenient was chosen by 54.8% of the surveyed, "no" by 41.7% and 3.6% did not answer. In our opinion, the inconvenience with examination hours for a significant part of those experiencing it can be corrected with daily change of the GP's work schedule and with increasing the number of group practices for POAC.

18.5% of the surveyed patients had to request a home visit from the personal doctor or their substitute during the time they have had one. 76.2% did not have to, and 5.4% did not answer the question.

To the question "If you had to request home visits from the personal doctor, were they performed or were they refused?": 23.8% of patients from the survey sample answer "yes - they were performed", 7.7% - they were not performed, 2.4% - I was sometimes refused and 66.1% - did not choose an answer.

Satisfaction with the personal doctor's service at patients' homes is marked by 29.2% of all patients from the sample. Dissatisfied are 4.2% and 66.7% did not answer. Some of the surveyed patients - 7.7% who did not receive the requested home visits and some of those dissatisfied with the personal doctor's service at home - 4.2% probably bypass POAC providers and find the direct path to EMC and ERD with all the negative consequences.

More than a third (35.7%) of the surveyed patients were directed by phone by their personal doctors to call the emergency call number 112.

It happens that the assessment of the emergency condition made by the GP at a distance from the patient is not precise and the direction to EMC and ERD is motivated by inevitable overinsurance. For this reason and because the directions are an unknown number and for an indefinite period, we cannot interpret quantitatively and qualitatively this indicator, but we can recommend a more in-depth parallel study with information from triage and patient movement from EMC and ERD. The remaining cases such as: rest and holiday days, outside working hours, when on vacation or when sick, when outside the settlement, are not related to determining the emergency and nature of the disease, but patients are not correctly directed to their substitute or medical facility, "duty office" to ensure access to medical care for patients outside the announced work schedule of the practice.

In our considerations for facilitating the specific activities of EMC and ERD from overloading with non-emergency patients enters the need to create in close proximity to them a permanently functioning unit for medical care of health-insured persons with acute and exacerbated chronic diseases and conditions where medical care cannot be postponed in time (in order to be performed within the approved work schedule of the doctor in primary outpatient care).

The purpose of the survey with the target group of patients was to establish whether there is a connection and influence of health condition, path of movement, access and receipt of medical care and attitude towards the patient, on professional interaction and relationships between GPs, EMC, ERD and patient satisfaction with the provided medical service.

The shortage of medical referrals from GPs for consultation with a specialist and for medical-diagnostic activity is a permanent debate in society. We posed the question "Do you consider that GPs have sufficient resources for issuing medical referrals for consultation or conducting joint treatment (form MH-NHIF No. 3) and for medical-diagnostic activity (form MH-NHIF No. 4)?" to GP respondents and received the following two types of different but categorical answers: "No, they do not have enough medical referrals" was given by 62.5% of the surveyed GPs; "Yes, they have enough medical referrals" - the remaining 35.2%.

GP answers are related to the need for referrals for consultations and examinations depending on morbidity and sickness, on the ratio of age groups in the patient list, on the GP's specialty, on the remoteness of the settlement from medical facilities for SOAC, on social and other factors. It is seen that for two thirds of POAC practices of the surveyed GPs there are problems with the possibilities for consultations at a higher level and medical-diagnostic examinations, which find solutions in incorrect interactions with EMC, ERD and other medical facilities.

To the semi-structured question "Mandatory health-insured patients who sometimes in non-emergency conditions "bypass" GPs, where do they turn for medical services?" respondents - GPs answered with one of the closed answers: 33.0% of them consider that patients turn for medical care to EMC; 26.1% that they seek medical service from SOAC providers; 14.8% that they turn to duty offices; according to 12.5% they turn to hospital ERD; according to 8.0% - to other (except ERD) providers of hospital medical care and 5.7% expressed other possibilities.

Choosing only one answer per respondent and significant variety (according to answers) with not particularly large difference in relative share between the first two and separately between third and fourth preferred by patients medical facilities are indicative of GP uninformedness on the issue.

Table 19 (respondents - GPs)

Question	N=88
Do you consider that GPs have sufficient resources for issuing medical referrals for consultation or conducting joint treatment (form MH- NHIF No. 3) and for medical-diagnostic activity (form MH-NHIF No. 4) ... (respondents-GPs)	
– no, they do not have enough medical referrals	55 (62.5%)
– I do not know	2 (2.3%)
– yes, they have enough medical referrals	31 (35.2%)
Mandatory health-insured patients who sometimes in non-emergency conditions "bypass" GPs, where do they turn for medical services? (respondents-GPs)	
– at EMC	29 (33.0%)
– at other providers of specialized outpatient care	23 (26.1%)
– duty offices	
– at hospital emergency room	13 (14.8%)
– at other providers of hospital medical care (HMC)	11 (12.5%)
– other	7 (8.0%)
	5 (5.7%)

The question "Do you consider that GPs have sufficient resources for issuing medical referrals for consultation or conducting joint treatment (form MH- NHIF No. 3) and for medical-diagnostic activity (form MH-NHIF No. 4)?" was posed in connection with the chronic shortage of funds for therapeutic-diagnostic activity among GPs.

The results from the survey of doctors from EMC are in Fig. 21.

Sometimes the shortage of referrals among GPs and financial possibilities among patients are compensated by using EMC, ERD and often hospital inpatient departments that report clinical procedures and clinical pathways. Such provoked and vicious interaction spends more than the actually necessary budget funds of NHIF and deepens the shortage. Some of the answers may be influenced by the "compensations" of the shortage of medical referrals with the use of EMC and ERD and by the superimposed negative relationships in unequal and non-collegial working interaction between GPs and EMC.

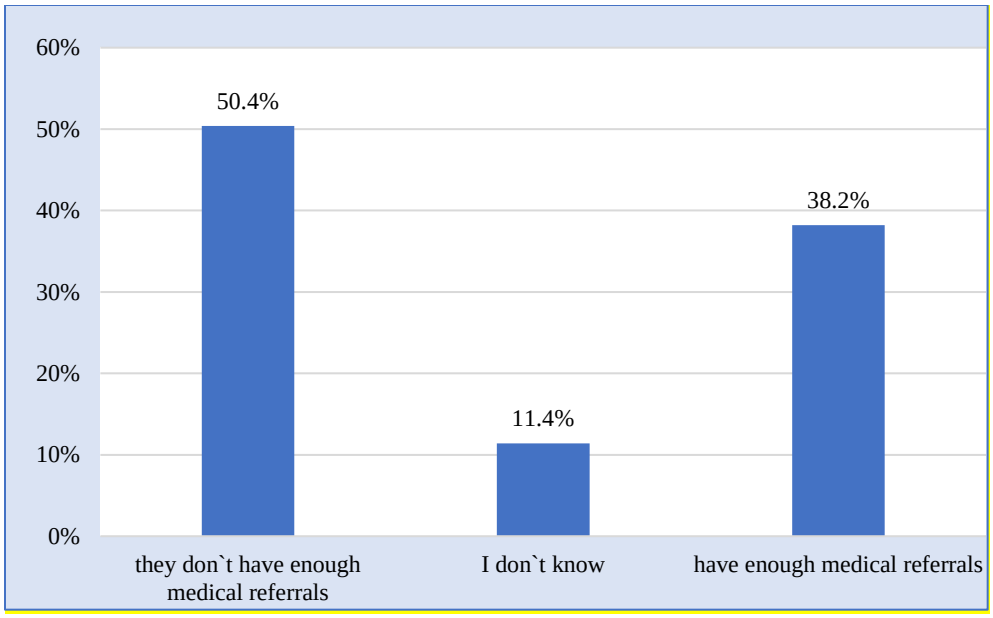

Fig. 21 Do you consider that GPs have sufficient resources for issuing medical referrals for consultation or conducting joint treatment (form MH-NHIF No. 3) and for medical-diagnostic activity (form MH-NHIF ... (n=123) (respondents - EMC)

To the semi-structured question "Where do mandatory health-insured patients who sometimes in non-emergency conditions "bypass" GPs seek medical services?" all respondents from EMC answered. (The total sum of relative shares is more than 100% because of more than one chosen answer by some respondents).

It is possible that the relative share of answers of emergency doctors is influenced by the limited opportunity to receive information about other places, except EMC and ERD, where patients receive medical care after "bypassing" GPs or by bias towards EMC, but the difference is drastic after the second provider of medical care - ERD.

Taking into account also the ranking of reasons for "bypassing" GPs during working hours and for "bypassing" "duty offices" outside the working hours of GPs, we accept the ranking as sufficiently reliable for analysis and management decisions.

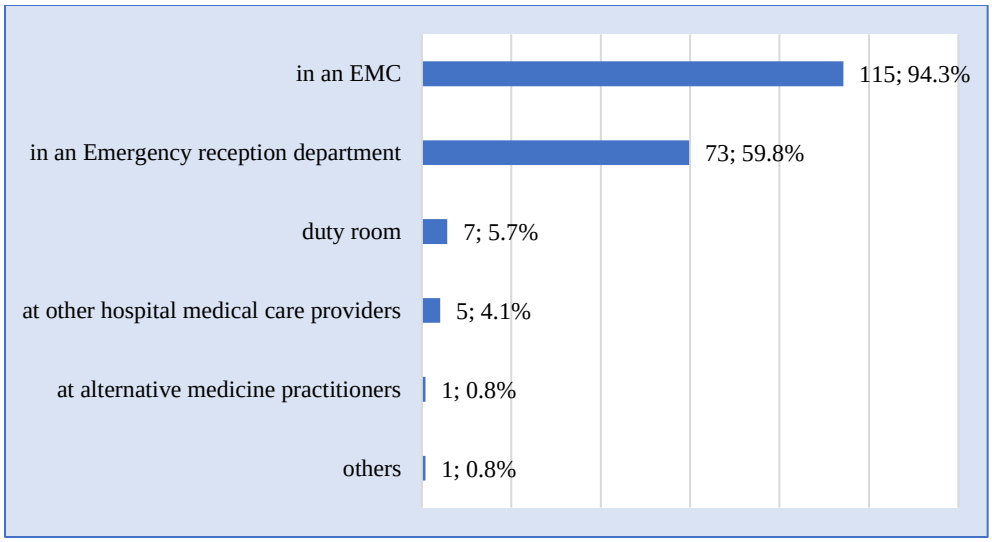

Fig. 22 Where do mandatory health-insured patients who sometimes in non-emergency conditions "bypass" GPs seek medical services? (respondents - EMC)

With questions from the survey with directors, we mainly sought the conditioning of factors with unsatisfactory interaction, respectively unsatisfactory professional relationships between GPs and providers of emergency medical care.

The answers of doctors occupying management positions at EMC to the question "Do you consider that GPs have sufficient resources for issuing medical referrals for consultation or conducting joint treatment and for medical-diagnostic activity", ranked by relative share are as follows:

- 63.6% answer with "Yes, they have enough medical referrals";
- 27.3% - "No, they do not have enough medical referrals";
- 9.1% - I do not know.

Regardless of respondents' subjective assessment and the difference in percentages, the shortage of referrals among GPs and financial possibilities among patients are compensated by using health services of EMC, ERD and often hospital inpatient departments, which admit and report them by clinical procedures and clinical pathways. This practice spends more than the actually necessary budget funds of NHIF, deepening their shortage in outpatient care.

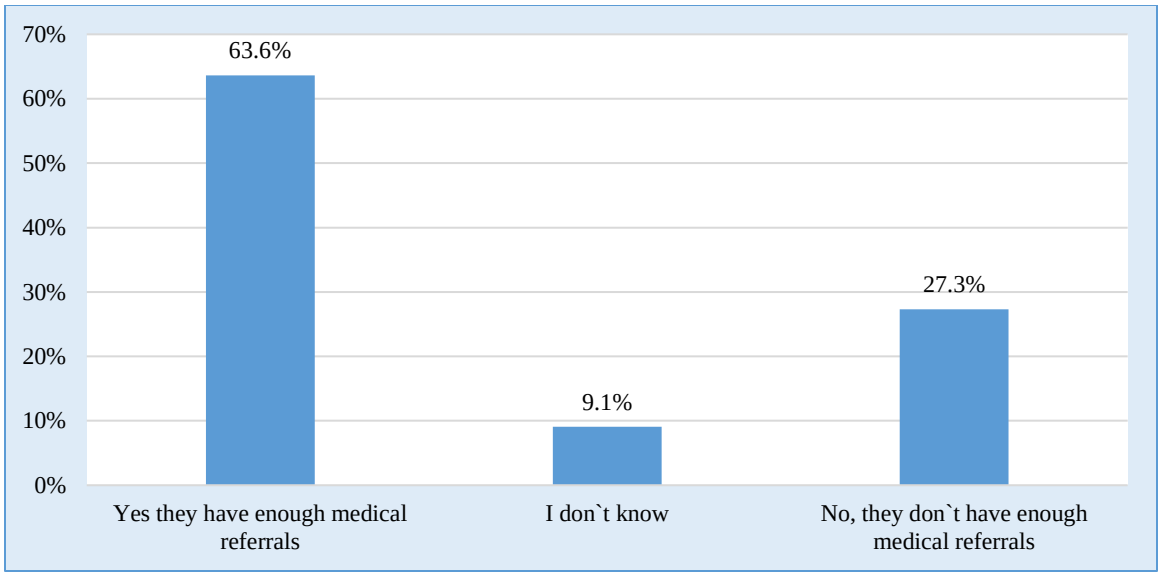

Fig. 23 Do you consider that GPs have sufficient resources for issuing medical referrals for consultation or conducting joint treatment (form MH- NHIF No. 3) and for medical-diagnostic activity (form MH-NHIF ...(respondents - directors)

To the semi-structured question "What are the reasons for mandatory health-insured patients in non-emergency conditions to "bypass" their personal doctor during their working hours and seek medical services from EMC and ERD?", the surveyed GPs and doctors from EMC chose between 3 and 4 of the eight closed answers. Respondents from the groups of patients and directors are with much lower activity. More than three quarters of doctors from EMC marked 4 main reasons "anxiety, due to inability to assess the emergency nature of my condition" and "my health insurance rights are interrupted", "saving time from waiting in front of the personal doctor's office, specialists for consultations and in front of laboratories for examinations" and "it is difficult to contact my personal doctor". Also three quarters of GPs assumed the reasons "anxiety, due to inability to assess the emergency nature of my condition" and "interrupted health insurance rights" and with 44.8% - "saving time from waiting in front of the personal doctor's office, specialists for consultations and in front of laboratories for examinations".

Among patients "anxiety, due to inability to assess the emergency nature of my condition" with 53.8% is the most frequent reason from answers in their group followed by "in the emergency reception department I will receive more consultations and examinations". Despite respondents' subjective opinion in defense of their own position, there are also answers approaching each other by relative share. We consider that we can accept the results from different viewpoints as useful information for conclusions.

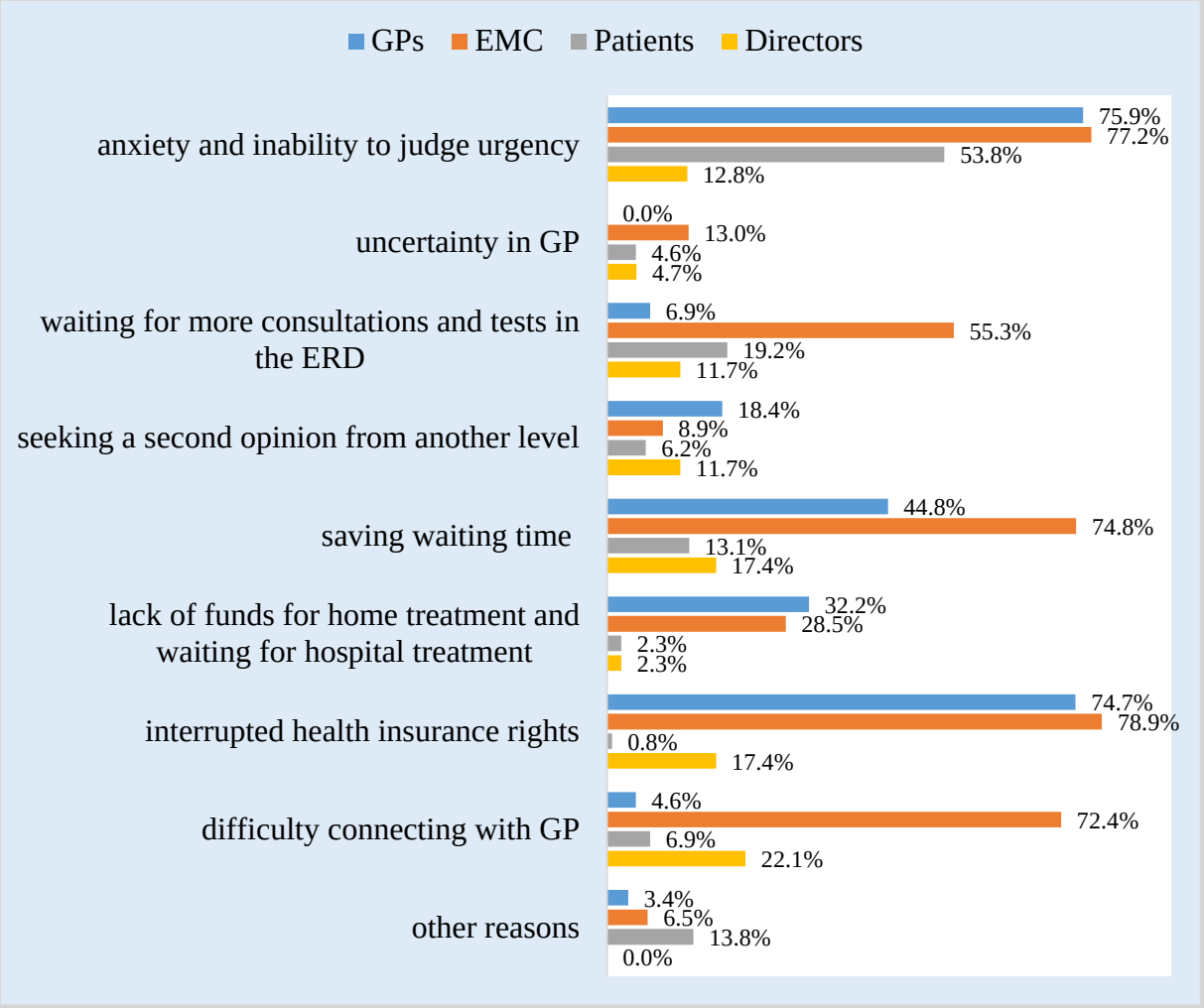

Fig.24 Reasons for mandatory health-insured patients in non-emergency conditions to "bypass" their personal doctor during their working hours and seek medical services from EMC and ERD?

There is a statistically significant difference in the answers of the 4 studied groups regarding reasons for bypassing GPs during their working hours by MIPs and seeking medical services at EMC and ERD ($\chi 2 = 234.42$, df = 24, p=0.000). The correlation dependence is weak (Cramer's V = 0.173).

The most frequent reason for difficult access of mandatory health-insured patients to general practitioners according to more than respondents from the surveyed groups is "uneven territorial distribution of GPs". An exception is the group of patients, where this reason is in second place, and in first with a small lead is the overall shortage of GPs. In second place among GPs and the group of directors is the overall shortage of GPs, and among doctors from EMC are the social inequalities of MIPs.

The overall shortage of GPs and their uneven territorial distribution is characteristic not only for all European countries but is also a worldwide problem in healthcare. The increasing shortage of GPs in Bulgaria is combined with population aging and increased morbidity from chronic diseases. The frequent exacerbation of chronic diseases, especially in elderly and socially weak patients, combined with territorial disproportions in the location of POAC outpatient clinics, aggravates the problem of access to timely medical care. Consequences of these processes are burdening of emergency medical units and hospital medical facilities with transport and medical costs for emergency and non-emergency patients and difficult interaction with GPs.

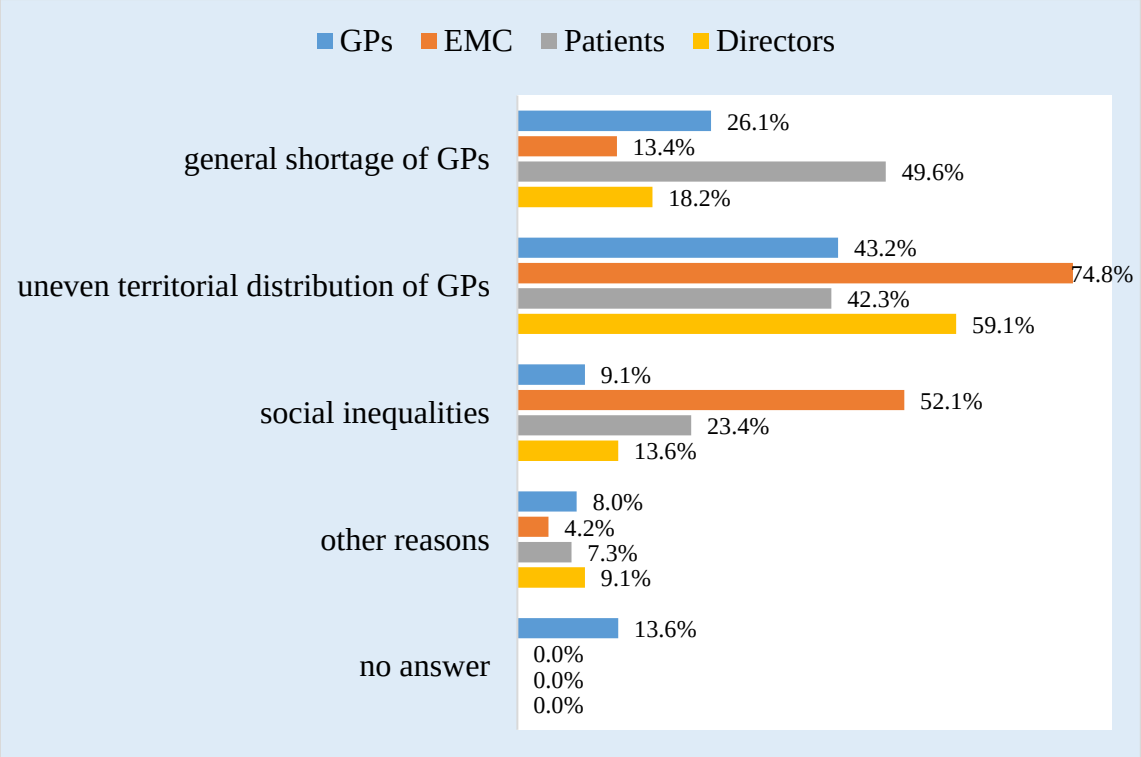

Fig. 25 Reasons for difficult access of MIPs to GPs

$\chi 2 = 156.28$, df = 9, Cramer's V = 0.286, p = 0.000

There is a statistically significant difference in the answers of the 4 groups of studied persons regarding reasons for difficult access of MIPs to GPs ($\chi 2 = 156.28$, df = 9, p = 0.000). The correlation dependence approaches moderate (Cramer's V=0.286).

To the semi-structured question "What are the reasons for mandatory health-insured patients in non-emergency conditions, outside the working hours of their personal doctor, to "bypass" the duty office

ensured by the GP and seek medical services from EMC and ERD?" the surveyed GPs, doctors from EMC and patients chose more than one of the ten closed answers. Three quarters of doctors from EMC and GPs marked in their answers as the most frequent reason for bypassing the duty office ensured by the GP "anxiety, due to inability to assess the emergency nature of my condition". Patients also report in first place "anxiety, due to inability to assess the emergency nature of my condition", but with a smaller share of answers - 57.6%,

Among surveyed directors, answers are fewer and more scattered. Most frequent is "my health insurance rights are interrupted" - 20.8%, followed by the reason "there are insufficient "duty offices" to reduce waiting in front of them" - with 16.6%.

It is seen that the reasons for "bypassing" the duty office ensured by the GP and seeking medical services from EMC and ERD in quantitative and qualitative terms are close to the reasons for "bypassing" GPs during their working hours and seeking medical services from EMC and ERD. The difference is that duty offices are many times fewer and are much more overloaded than GPs' outpatient clinics.

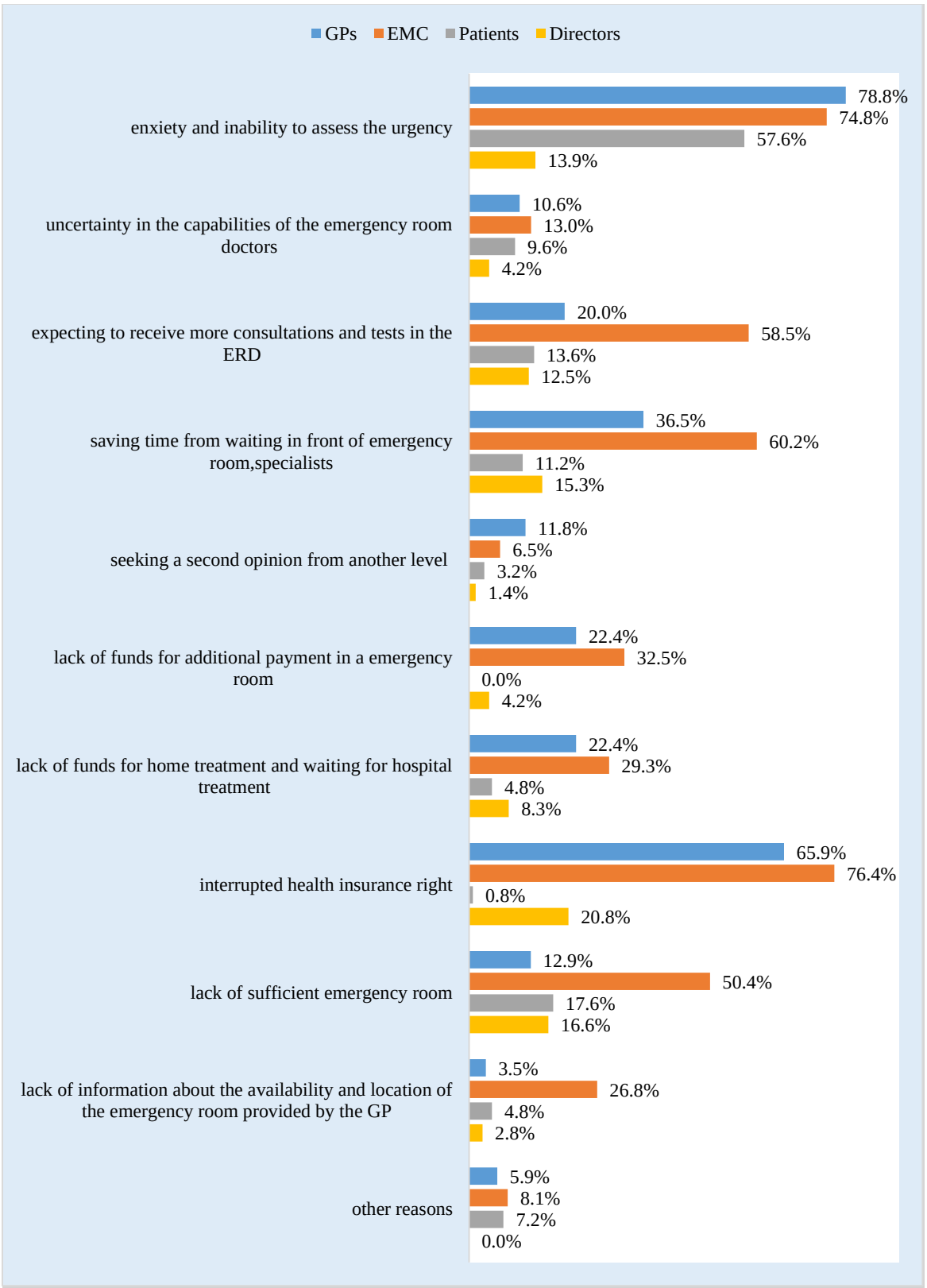
GPs
EMC
Patients
Directors
enxiety and inability to assess the urgency
78.8%
74.8%
57.6%
13.9%
uncertainty in the capabilities of the emergency room doctors
10.6%
13.0%
9.6%
4.2%
expecting to receive more consultations and tests in the ERD
20.0%
58.5%
13.6%
12.5%
saving time from waiting in front of emergency room,specialists
36.5%
60.2%
11.2%
15.3%
seeking a second opinion from another level
11.8%
6.5%
3.2%
1.4%
lack of funds for additional payment in a emergency room
22.4%
32.5%
0.0%
4.2%
lack of funds for home treatment and waiting for hospital treatment
22.4%
29.3%
4.8%
8.3%
interrupted health insurance right
65.9%
76.4%
0.8%
20.8%
lack of sufficient emergency room
12.9%
50.4%
17.6%
16.6%
lack of information about the availability and location of the emergency room provided by the GP
3.5%
26.8%
4.8%
2.8%
other reasons
5.9%
8.1%
7.2%
0.0%

Fig. 26 Reasons for which mandatory health-insured patients in non-emergency conditions, outside the working hours of their personal doctor, "bypass" the duty office ensured by the GP and seek medical services from EMC and ERD

There is a statistically significant difference in the answers of the 4 studied groups regarding reasons for bypassing the duty office ensured by the GP and seeking medical services at EMC and ERD ($\chi 2=110.21$, df=40, p=0.000). The correlation dependence is weak (Cramer's V = 0.144).

To the semi-structured question "Mandatory health-insured patients who sometimes in non-emergency conditions "bypass" GPs, where do they turn for medical services?" all respondents-directors answered. They place by relative share of answers EMC - 81.8% and ERD - 13.6%, respectively in first and second place between medical facilities and structures of medical facilities where patients seek medical services, bypassing GPs in non-emergency conditions. Even if the relative share of answers of emergency doctors is influenced by the limited opportunity to receive information about other places, except EMC and ERD, where patients receive medical care after "bypassing" GPs or by preference in favor of EMC, the difference in the number of answers after the second provider of medical care is significant.

Taking into account also the ranking of reasons for "bypassing" GPs during working hours and "bypassing" "duty offices" outside the working hours of GPs, we accept the ranking as sufficiently reliable.

Table 20 Mandatory health-insured patients who sometimes in non-emergency conditions "bypass" GPs, where do they turn for medical services? (respondents - directors)

	Number	**%**
in a EMC	18	81.8
in a ERD hospital	3	13.6
with other providers of specialized medical care	1	4.5
Total	**22**	**100.0**

To the question "Where do mandatory health-insured patients who sometimes in non-emergency conditions "bypass" GPs seek medical services?", doctors from EMC gave more than one answer, with 94.3% of them answering that patients who "bypass" GPs seek medical services from EMC.

The surveyed GPs chose one of the closed answers and 33.0% of them consider that patients turn for medical care to EMC, 26.1% that they seek medical service from SOAC providers, 14.8% that they turn to ensured duty offices and only 12.5% of GPs mark that patients go to hospital ERD.

There is divergence in most answers of respondents due to uninformedness or personal biases, but also due to poor professional relationships and interaction between GPs and doctors from EMC.

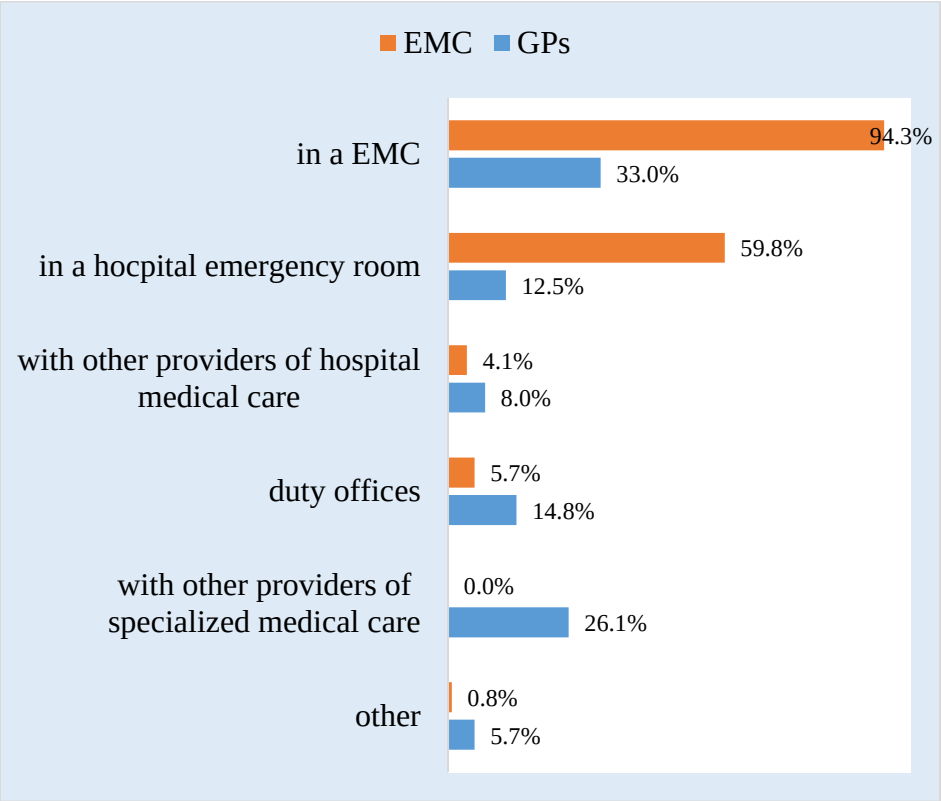

Fig.27 Where do mandatory health-insured patients who sometimes in non-emergency conditions "bypass" GPs seek medical services?

There is a statistically significant difference in the answers of GPs and doctors from EMC regarding the place of seeking medical services by MIPs who in non-emergency conditions bypass GPs ($\chi 2$ = 75.47, df = 5, p = 0.000). The correlation dependence is weak (Cramer's V = 0.225).

Significantly more than half of the surveyed employees from EMC (doctors -70.7% and directors - 63.6%) answer that very often "health-uninsured patients in non-emergency conditions unlawfully use the medical services of EMC and ERD". Almost half (48.8%) of the surveyed GPs are of the same opinion. The remaining respondents from both groups from EMC (doctors - 29.3% and directors - 36.4%) and 21.6% of GPs answer - "often". Although the number and share of health-uninsured patients who in non-emergency conditions unlawfully use the medical services of EMC and ERD are unknown, this practice additionally burdens the teams of EMC and ERD and creates tension in their functioning.

A statistically significant difference is observed in the opinion of GPs and EMC on the question **"Do you consider that health-uninsured patients in non-emergency conditions unlawfully use the medical services of EMC and ERD?"** (χ^2=33.628, df=3, Cramer's V=0.399, p=0.000). The results are presented graphically:

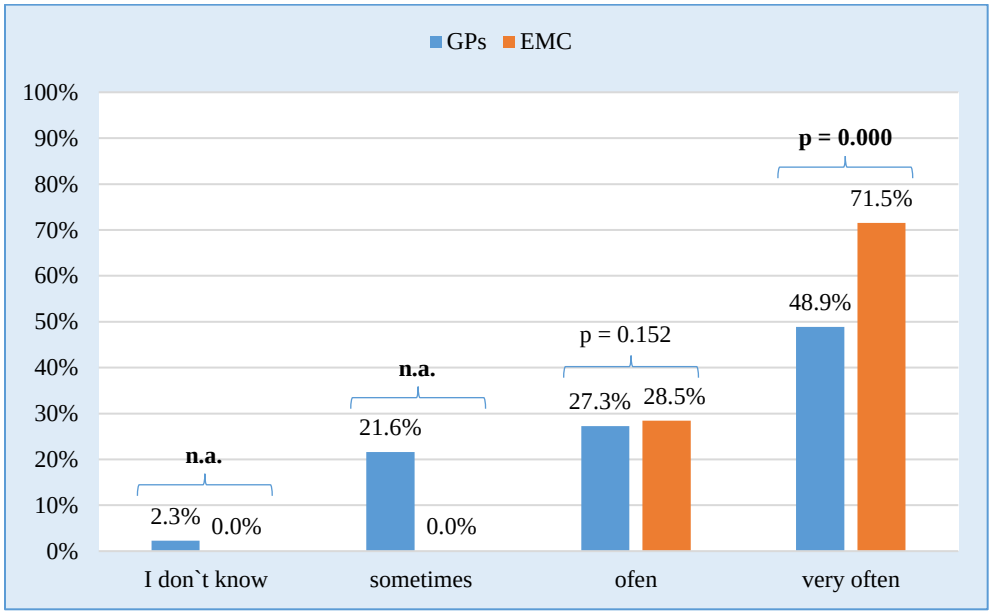

Fig.28 Do you consider that health-uninsured patients in non-emergency conditions unlawfully use the medical services of EMC and ERD?

The results from the applied non-parametric method χ^2 are:

- Very often - χ^2=15.458, df=1, p=0.000;
- Often - χ^2=2.051, df=1, p=0.152;
- Sometimes - n.a.;
- I do not know - n.a.

Comparison of answers to the question "Do GPs have sufficient resources for issuing medical referrals for consultation or conducting joint treatment and for medical-diagnostic activity?", asked to respondent doctors from the three groups, shows the following results: 62.5% of the group of most interested and familiar with the problem -- GPs mark that they do not have enough medical referrals. Of the opposite opinion "yes, they have enough medical referrals" are 63.5% of doctor-directors and 50.4% of the group of

regular doctors from EMC, victims of emergency calls for non-emergency patients, answer "no, they do not have enough medical referrals". Those who answered "I do not know" are in the range of about 2 to 11% for different groups.

In discussing the results, we took into account that the medical-diagnostic needs of MIPs in the patient lists of primary practices are different and depend on many factors, such as age and social structure, predominance of urban or rural population, cultural-educational level, ethno-religious composition and others. With a slightly exceeding number of negative answers, we accepted that there are permanent problems from the shortage of limited resources of referrals for consultation or conducting joint treatment and for medical-diagnostic activity. These problems partially find solutions for patients, but at the expense of correctness and good professional interactions and relationships with EMC, ERD and other medical facilities.

A statistically significant difference is observed in the opinion of GPs and EMC on the question **"Do you consider that GPs have sufficient resources for issuing medical referrals for consultation or conducting joint treatment (form MH- NHIF No. 3) and for medical-diagnostic activity (form MH-NHIF ..."** (χ^2=7.090, df=2, Cramer's V=0.183, p=0.029). The results are presented graphically:

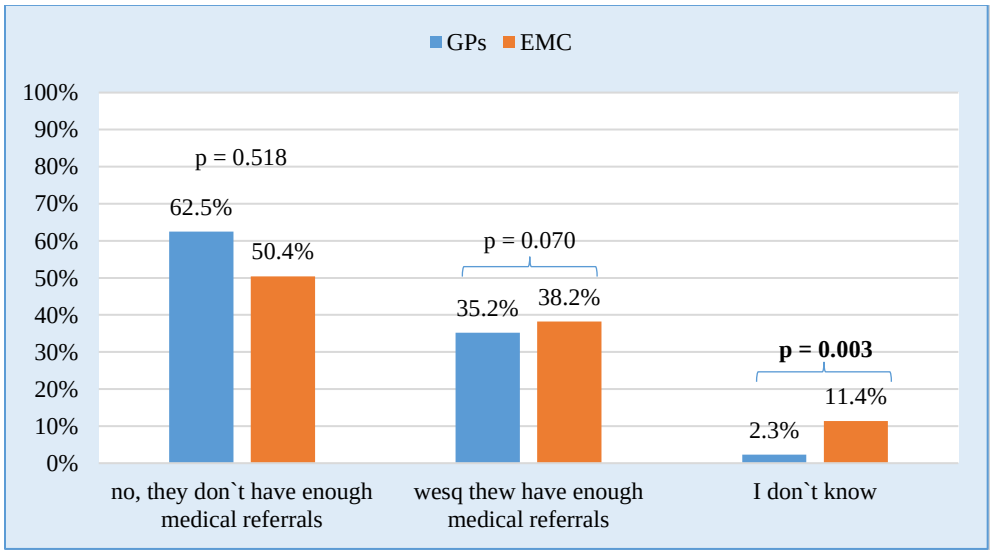

Fig.29 "Do you consider that GPs have sufficient resources for issuing medical referrals for consultation or conducting joint treatment

The results from the applied non-parametric method χ^2 are:

- No, they do not have enough medical referrals - χ^2=0.419, df=1, p=0.518;
- Yes, they have enough medical referrals - χ^2=3.282, df=1, p=0.070;
- I do not know - χ^2=9.000, df=1, p=0.003;

6. Proposals for overcoming problems between GPs and doctors from EMC from the surveyed respondents

The open proposals of GPs "for changes that would improve relationships between GPs and EMC" were grouped into four categories, ranked by descending relative share as follows in Table 21. The low relative share of indicated problems compared to those surveyed is due to the large number - 64 (72.7%) GPs who did not express an opinion on the issue.

From the stated problems and made proposals of GPs for changes that would improve relationships with EMC it is understood that the lack of information exchange about patients' health status is a negative factor in providing emergency medical care and in subsequent monitoring of the condition and treatment of patients.

Table 21 If you have proposals for changes that would improve relationships between GPs and EMC, please write them? (respondents-GPs)

Answers	Number	%
To improve communication between GPs and EMC	7	8.0%
EMC to have access to the National Health Information System	7	8.0%
To normatively regulate relationships between GPs and EMC	5	5.7%
To transfer information to GPs about patients served by EMC	5	5.7%
No answer	64	72.7%
Total	**88**	**100.0%**

To the open question "What according to you is most necessary for improving the quality of medical services in emergency care?" all surveyed GPs answered.

The ranked answers in descending order by relative share to the total number of surveyed GPs look like this in Table 22:

Table 22 What according to you is most necessary for improving the quality of medical services in emergency care? (Respondents-GPs)

Answers	Number	Rel. share
More personnel	21	23.9%
Periodic courses for improving qualifications, incl. with practical orientation	15	17.0%
Financing and material provision	12	13.6%
Better pay	9	10.2%
New young staff	7	8.0%
Regulation of interaction between GPs and EMC, exchange of information about patients between them	7	8.0%
Unification of EMC with duty offices, with corresponding financial, personnel and resource provision	6	6.8%
Professionalism and medical ethics	5	5.7%
I cannot judge	6	6.8%
Total	**88**	**100.0%**

The open answers "proposals for changes that would improve relationships between GPs and EMC" according to doctors from EMC were collected into three categories, whose ratios are as follows in Fig. 30:

20.3% propose - GPs to receive information about patients who received medical services from EMC - through NHIS, 13.0% propose - to normatively regulate, determine relations between GPs and EMC, 9.8% propose - GPs to provide information about their patients upon request from EMC.

When comparing the written in the previous "question" specific problems in relationships and the made in this "question" proposals, a parallel is established between the diagnostic analyticity of problems with subsequent proposals for changes towards improving interaction, respectively relationships between GPs and EMC. The difference is only in the quantitative ratio - a larger number of respondents who indicated specific problems compared to a smaller number of respondents who took a position with their proposals for changes. This sequence confirms the firmness of the surveyed doctors regarding the relevance of the answers they wrote in the two questions.

The three categories of proposals made by doctors from EMC for changes that would improve relationships are of essential importance for improving interaction between GPs and EMC in providing emergency and non-emergency medical care.

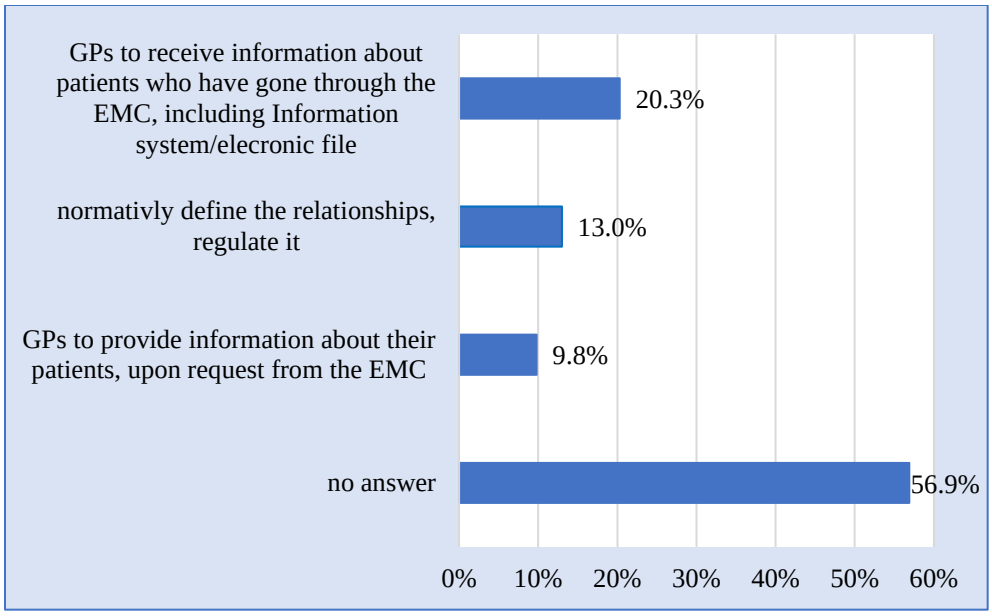

Fig. 30 If you have proposals for changes that would improve relationships between GPs and EMC, please write them? (n=123) (respondents - EMC)

To the open question "What according to you is most necessary for improving the quality of medical services in emergency care?", 182 answers were given assigned to 9 categories by doctors from EMC. The answers, arranged in descending order by relative share to the total number of respondents look like this in Fig. 31.

From the made (answers) proposals, the four with the highest relative share are: Periodic courses for improving qualifications, including with practical orientation; Better pay; New young staff; Better working conditions.

From the review made of publications "Health systems in transition" we established that measures for improving the quality of medical services in emergency care and for the health systems of EU countries are in this direction.

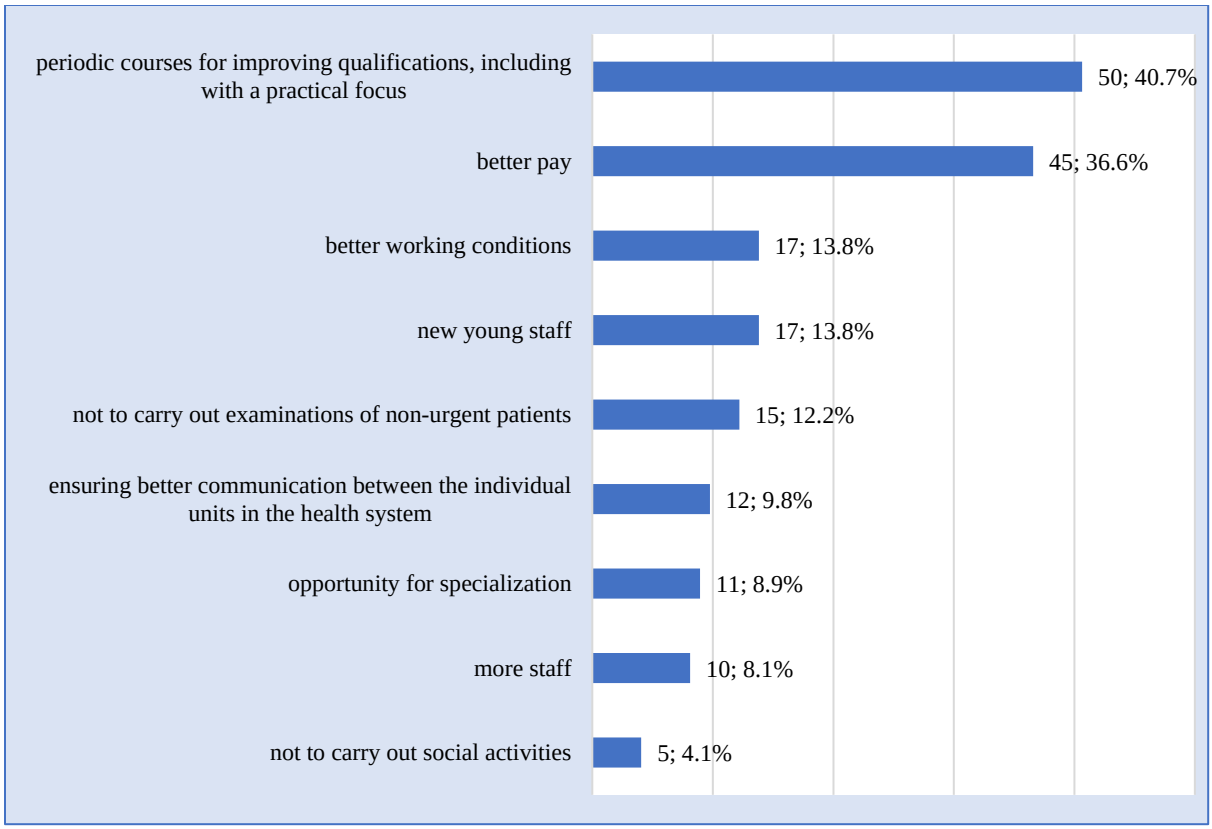

Fig. 31 What is most necessary for improving the quality of medical services in emergency care? (doctors from EMC)

The free answers given by respondents-directors "proposals for changes that would improve relationships between GPs and EMC" were close, collected into two categories with the following relative weight:

The majority (63.6%) are unspecific proposals for "updating normative documents". The remaining 36.4% propose "to normatively regulate medical care that cannot be postponed in time (in order to be performed within the approved work schedule of the doctor in POAC)".

These categories of proposals are directed towards a very essential part of providing POAC to patients in clinical conditions changing in a short time from subacute, acute to emergency, life-threatening. Besides difficulties in diagnostics, not knowing and not using unified systematic medical triage for these patients, there are also many uncertain normative changes and inaccuracies leading to time inconsistencies, overloaded patient flow to insufficient, inappropriate or difficult-to-access providers of necessary timely medical care. The created imbalance worsens relationships between GPs, EMC, ERD and MIPs with negative consequences for everyone, most risky for patients.

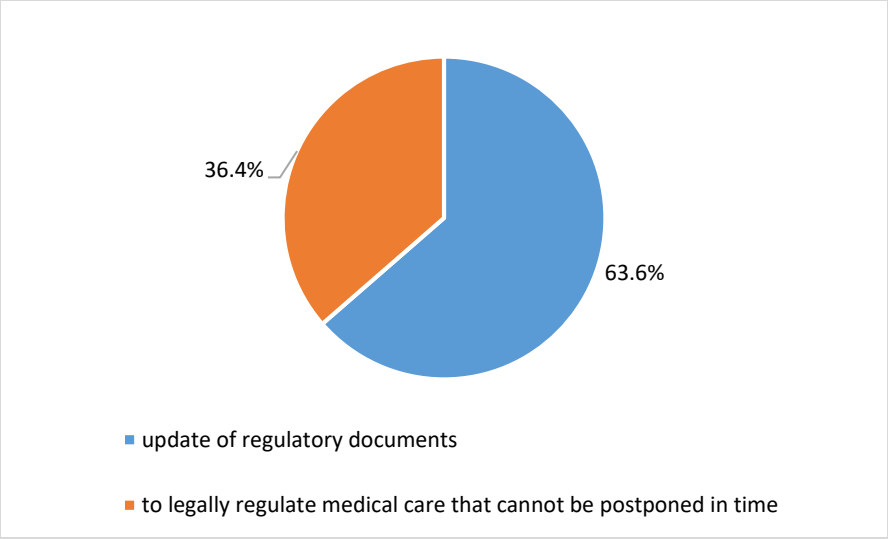

Fig. 32 Proposals for changes that would improve relationships between GPs and EMC (respondents - directors)

To the open question "What according to you is most necessary for improving the quality of medical services in emergency care?" 22 respondents in management positions at EMC answered. 32 free answers were given assigned to 3 categories. The total sum of relative shares is more than 100% because of more than one answer given by some respondents. In the larger group of answers (63.6%) it is marked that most necessary for improving the quality of medical services in emergency care is the appointment of new staff. In 54.5% of answers, better pay is among the most necessary conditions for higher quality medical services at EMC. Qualification of staff is with a relative share of 27.3% as a condition for improving the quality of medical services.

The problems of interaction between general practitioners and emergency care centers and consequences for patients who received POAC and primary EMC that we established from the analysis of survey results we found in the studied documents also for EU countries and the report "Realising the potential of primary health care" for OECD member countries.

IV. DISCUSSION

Normative acts regulate social relations in the state, including between institutions, legal entities and individuals. With laws and subordinate normative acts in healthcare, the order and legality of activities, relationships and interaction between institutions, health and medical facilities, providers of medical care and patients are regulated (established). Guided by this understanding, we investigated professional

relationships and interaction between structures in one of the most significant (by the criterion of general accessibility) areas of society - healthcare. Our study is oriented towards problems in providing primary outpatient medical care and primary emergency outpatient medical care by GPs and EMC. This care is related to specific medical activities and interactions directed towards:

- Medical care in a short time to prevent further development and complication of the disease;
- Providing medical care in emergency conditions and maintaining vital functions on the territory of the medical facility until the arrival of an EMC team or hospitalization of the patient;
- Restoring acutely occurring life-threatening disorders and maintaining the vital functions of patients' organisms.

The indicated medical activities are applied to:

1. Health-insured persons due to acute and exacerbated chronic diseases and conditions where medical care cannot be postponed in time in order to be performed within the approved work schedule of the doctor in primary outpatient care. Refers to medical care under Art. 45. (1) item 5 of the HIA, paid by NHIF.
2. Patients in emergency condition, to whom every medical facility is obliged to perform the possible volume of medical activities, regardless of their citizenship, address or health insurance status. Refers to emergency medical care under Art. 100. (2) of the HA, which is financed from the Republican budget.

We investigated the interaction between GPs and EMC in providing medical care to the population and its reflection towards satisfying the health needs of patients.

Relationships between GPs and EMC arise and are carried out mainly due to and when providing medical care to patients in emergency condition and patients where medical care cannot be postponed in time.

The assessment of the influence of established factors towards professional relationships and interaction between GPs and EMC in providing medical care, we have shown in the analysis of data from answers to each of the survey questions.

Summarized evidence from the empirical study is presented for the reasons and significance of major problems of interaction between GPs and EMC in providing medical care to patients.

The socio-demographic characteristic of GPs by age in the survey is 56.1 years, and of doctors at EMC -- 54.5 and shows an aging age structure, which is characteristic of the entire country. In the next 5 years, a severe staff deficit and painful problems in ensuring primary non-emergency and emergency medical care to the population in Bulgaria may occur.

The existing or impending shortage of sufficient number of general practitioners is found in the publications we studied for 17 European countries with health systems in transition: Bulgaria, Netherlands, United Kingdom, Belgium, Austria, Poland, Slovenia, Czech Republic, Spain, Romania, Greece and Croatia. The shortage of GPs is mainly in rural areas unattractive to them and there creates difficulties in providing medical care. (Kroneman M, Anderson M, Biois M, Franc C, Bachner F, Bobek J, Gerkens S, Merkur S, Polin K, Bryndova L, Bernal-Delgado E, Vladescu C, Flokou A)

Aging of GPs and insufficient replenishment from young doctors is observed both in Bulgaria and in the United Kingdom, Belgium, Austria, Greece and Croatia. This fact is important for timely planning of measures in the human resources sector and requires special attention and study in countries like Bulgaria with significant shortage and high relative share of aging GPs and population. The decrease in the number of GPs will increase pressure on emergency centers, emergency departments and hospital care as a whole. (Fritzen A, Radulov B, Hinkov H, Asenova R, Mihaylova V, Shopov D, Dzakula A, Myloneros T, Anderson M,)

Medical services performed by GPs with individual practices and acquired medical specialties in General Medicine, Internal Diseases and Pediatrics (total 87.6%) are efficient and effective only with easily accessible diagnostic examinations, consultations and joint treatment with SOAC medical facilities and good interaction with EMC. In settlements distant from SOAC medical facilities, the burden of POAC falls on EMC and ERD.

In the sample of respondents from EMC, there are doctors with many different specialties and a large number of doctors (39%) without acquired specialties. The high relative share of doctors without a specialty and the presence of few doctors (4.1%) with the most suitable specialties for EMC - "Emergency Medicine" and "Disaster, Accident and Catastrophe Medicine" are a problem for satisfying the needs for providing emergency medical care by EMC.

The question regarding insufficient motivation and satisfaction for work in POAC and in outpatient emergency medical care with medical personnel shortage and under the conditions in which activities are performed is radical and topical. The essential reasons for them, after financial remuneration, concern

unsatisfactory professional relationships, respectively interaction, between GPs and EMC, related to implementing emergency and medical care for patients in non-life-threatening condition.

The wide-ranging work with multifaceted obligations of GPs and with patients under extreme conditions and continuous 24-hour regime based on 12-hour duty shifts at EMC is not attractive on the Bulgarian and European medical labor market.

As problems in providing primary and emergency medical care in most European countries and motives for reorganization of GP practices and developing integration and cooperation between GPs and Emergency Departments, the following are reported: the impossible twenty-four hour, seven days a week quality medical service to patients by their personal general practitioners; the dissatisfaction expressed by personal doctors from lack of time for rest and personal life due to providing care for patients outside working hours (24 hours on holidays and during the night on weekdays). (Giesen P, Smits M, Engeltjes B, Kroneman M, Biezen M, Rutten M, Schols A, Engeltjes B, Manten A, O'Donnell C, Morton K, Kreienmeyer L, Gaillard A, Sowada C, Sagan A)

The high share of self-directing patients (in their greater part with insignificant problems, inappropriate for emergency care) to hospital emergency departments during working and outside working hours of GPs is observed in most European countries. (O'Cathain A, Dickinson A, Metelmann C, Schmiedhofer M, Metelmann B, Heede K, Karam M, Naouri D, Ghazali D, Naouri D)

In analyzing the reviewed publications, we established that there is no health system that has solved the main problems of primary health and emergency medical care to patients. Finding places for useful interaction of providers of medical services in PHC and primary emergency care is of particular importance in making management decisions for improving the timeliness, continuity and quality of provided medical care in these areas with positive effect for all levels of the health system.

Respondents from the three surveyed groups of doctors indicate as main normative gaps and inconsistencies:

- Relationships between EMC and GPs are not well regulated;
- The medical conditions "emergency" and "non-emergency" and activities for them are not clearly normatively specified;
- The activities of GPs in emergency conditions are not regulated;
- The transfer of information from EMC to GPs about their served patient is not regulated;

- Information is missing in a format suitable for patients: when to seek their personal doctor, when a "duty office" and when emergency care.

Despite the indicated common problems from unaccomplished interaction in providing emergency medical care, in the short time of the survey respondents do not formulate specific gaps in normative documents. As evident from the answers to the questions, the reasons for violated professional relationships, interaction in providing emergency and non-emergency medical care are attributed to unworthy incorrect behavior of the other provider side and the interests and preferences of patients.

It is incorrect not to specify that some of the main problems of relationships between GPs and doctors from EMC are a consequence of normative gaps such as:

- The "urgent medical care" provided by medical facilities and paid according to Art. 45. para. 1 item 5 of the HIA for health-insured persons is not defined in the HIA. In other current healthcare normative acts it is not found as "urgent care".

The indicated "urgent medical care" (medical care for health-insured persons due to acute and exacerbated chronic diseases and conditions) sought by patients during the day is performed outside the working hours of GPs (including during the night) by ERD and EMC, not according to ordinances, regulations, standards or other normative acts. It is not the subject of ERD and EMC activities, but is performed by necessity, because of the dynamic health condition of patients and impossibility and danger to be diverted. It is incorrect that the urgency of performing medical care for persons in unstable health condition, where life is not directly threatened, but who need medical care in a short time to prevent further development and complication of the disease, be determined in an indefinite in time, imprecise way.

The declared (approved) and announced work schedule of the doctor from primary outpatient care is for consultations in the outpatient office from 4 to 6 hours daily. The daily schedule of GPs is not the same for the five working days of the week. The schedule has intervals of 2 to 6 hours non-working time, from or to the working hours of "duty offices" ensured by GPs for consultations outside the personal doctor's work schedule.

The results from the lack of a POAC provider from 2 to 6 hours daily, outside the personal doctor's work schedule, for health-insured persons from the GP's patient list are:

- Non-emergency medical care that cannot be postponed until the personal doctor's working hours is not provided timely and without refusal to a large part of MIPs in need of it during the indicated time.
- Danger is created for patients' lives and sometimes can and does reach a fatal outcome.
- Patients' needs for more expensive emergency outpatient and hospital medical care increase.

From the results it appears imperative to define and regulate with a normative act the conditions and procedure for the round-the-clock implementation of medical "care for health-insured persons due to acute and exacerbated chronic diseases and conditions where medical care cannot be postponed in time in order to be performed within the approved work schedule of the doctor in primary outpatient care".

Given the unstable health condition of patients whose life is not directly threatened but who need medical care (which can be postponed in time) to prevent further development and complication of the disease, we recommend that care be performed functionally integrated with common coordination between GPs, EMC and ERD and in territorial proximity or in organizational structural connection between EMC and ERD.

From the studied literary sources, direct patient access to ERD is most often established -- for the following countries: Bulgaria, Netherlands, United Kingdom, Germany, Belgium, France, Austria, Finland, Poland, Czech Republic, Spain, Romania, Greece, Portugal, Croatia, from seventeen countries. For a large part of patients oriented about their life-threatening condition, this is the fastest way to receive necessary medical care. The right to direct access to emergency care cannot be prohibited in any country. The problem arises from non-emergency patients who self-direct to emergency centers and hospital ERDs and hinder providing emergency care to patients in need of it. Overloading of ERDs by non-emergency, self-directing patients is reported in the studied publications for European countries from the series "Health systems in transition". (Kroneman M, Tikkanen R, Cylus J, Anderson M, Blumel M, Gerkens S, Gerkens S, Chevreul K, Or Z, Bachner F, Alexa J, Bryndova L, Bernal-Delgado E, Economou C).

Trends for increasing attendance of non-emergency patients at emergency departments, prolonged waiting for medical service and professional overloading of emergency doctors have not been significantly changed after reforms conducted in primary outpatient and emergency medical care in most European countries. Despite 24-hour coverage with primary health and primary emergency medical care by GPs and specialists, many patients often use hospital emergency departments directly or seek emergency care in conditions of insignificant or no emergency for relatively mild diseases. The consequences are - overloading of emergency departments and worsening of medical service quality. Emergency departments replace personal doctors outside their working hours (during the night or during national holidays). Organized initiatives to

relieve pressure on emergency departments by creating round-the-clock hotlines for patients to discuss their health condition and needs with a doctor who gives advice on further steps are palliative care towards the problem of patient-overloaded emergency care.

Unlawful use of medical services for health-uninsured patients in non-emergency conditions by EMC teams and ERD hinders the implementation of activities for providing emergency medical care.

It is necessary to expand the scope, under Art. 82 of the Health Act, of those needing services in outpatient medical care for socially weak health-uninsured persons. This medical care should be paid from the state budget.

The economic effect of the normative change will be expressed in reducing the costs of:

- The state for emergency medical care;
- NHIF for paying expensive clinical pathways and procedures from hospital medical care;
- Municipalities for payment under Art. 82a of the HA from own revenues for activities on prevention and treatment of socially weak, unemployed and other persons.

The health-organizational effect will be reported in reducing the overloading of EMC and ERD with non-emergency and emergency patients and transport and improving the timeliness and quality of provided hospital and outpatient medical care.

Relationships between GPs and EMC arise and are carried out mainly due to and when providing medical care to patients in emergency condition and patients where medical care cannot be postponed in time.

Respondents from the three surveyed groups of GPs, doctors from EMC and directors from EMC subjectively answer that there is inappropriate and incorrect transfer of common, similar or inappropriate activities to GPs or EMC and ERD, but it is significant from where they are in their work position. Answers are also influenced by the separately unreported unlawfully used medical care at EMC and ERD by health-uninsured patients in non-emergency conditions, which is actually not sanctioned, as in other European countries.

Orally, in writing or "When the issue arises" all GPs inform their patients in which cases to seek their personal doctor or their substitute for medical care and in which cases EMC. Determining the emergency and non-emergency conditions of patients in outpatient conditions is a serious problem with medical and social significance. Besides the lack of accessible current health information, it is also aggravated by the

divergent interests of providers of emergency and non-emergency medical care and the personal benefit of patients who, in order to obtain quick access to medical care and free transport, sometimes abuse by aggravation (deliberately exaggerating symptoms).

Gaps are established with lack of announcement in a visible place to inform patients during the GP's absence from work - during vacation, which indicates also a substitute of the chosen doctor, their location, phone and other ways of contact. These violations of requirements of the Ordinance for exercising the right to access to medical care violate relationships and interaction between GPs and EMC.

All GPs mandatorily ensure access to POAC for their patients outside the announced work schedule of the practice to conclude a contract with NHIF. From the possibilities approved by Ordinance No. 9 of 2019 for determining the package of health activities guaranteed by the NHIF budget for GPs to ensure MIPs access to medical care outside their announced work schedule, only the schedule of emergency medical centers with opened branches for emergency medical care corresponds to patients' 24-hour needs. The remaining possibilities are: individual 24-hour provision, through a duty office of the group practice for POAC, duty office organized on a functional basis with other medical facilities for POAC, duty offices of other outpatient and hospital medical facilities. All of them, due to their working hours, territorial locations, shortage of personnel and equipment are not able to provide for the needs of "medical care for health-insured persons due to acute and exacerbated chronic diseases and conditions where medical care cannot be postponed in time or "providing medical care in emergency conditions and maintaining vital functions on the territory of the medical facility until the arrival of an emergency medical center team or hospitalization of the patient.

Direction by GPs by phone (according to GP answers) of patients in emergency condition from homes to ERD, without the possibility of providing medical care and maintaining vital functions, is proof of poor interaction with EMC.

When patients in non-emergency condition seek GPs during working hours by phone for medical care at home, they should not be redirected after 8 PM to a doctor from a "duty office". Patients often save themselves costs and time until 8 PM and for waiting in front of overloaded "duty offices", seeking medical services from EMC and at ERD, hindering their work. These circumstances contribute to poor relationships and interaction between GPs and EMC and ERD.

Direct patient access to specialized medical care is noted in 8 of the studied European countries: Germany, Belgium, France, Austria, Czech Republic, Romania, Greece, Portugal. In most of the remaining 9 countries

(including Bulgaria), some patients also find a way for direct access to higher levels of medical care unregulated, on their own initiative. (Blumel M, Gerkens S, Gerkens S, Chevreul K, Or Z, Bachner F, Alexa J). Compensatory and life-saving, because of the deepening staff insufficiency of PHC and because of patients' mistrust and preferences, direct access to specialized medical care requires in-depth scientific study for solving part of the main problems of PHC and emergency medical care.

When discussing the divergent results regarding the usual behavior of GPs in emergency cases, we take into account not knowing the normative regulation, professional and material interests, subjective moods and behavior due to workplace, work overload, disinformation and other factors. The difference in relative shares of answers in individual survey groups also shows poor relationships and interaction between GPs and EMC, which hinder the quality and timeliness of medical care.

The assessment of relationships between GPs and EMC imposed by GPs and doctors from EMC with highest weight is "insufficiently effective". The general agreement is indicative that serious problems exist in interaction when providing emergency and medical care that cannot be postponed in time.

These results confirm our working hypothesis that:

Insufficient interaction between GPs and doctors from EMC in serving patients in emergency conditions and overloading of emergency medical structures with non-emergency patients exacerbates and worsens professional relationships between providers and additionally deepens the vicious practice of incomplete interaction.

The main reasons for MIPs in non-emergency conditions to "bypass" their personal doctor during their working hours and the ensured "duty office" outside the personal doctor's working hours and seek medical services from EMC and ERD?", indicated in slightly different relative shares by all surveyed groups are:

- "anxiety, due to inability to assess the emergency nature of my condition";

-"my health insurance rights are interrupted";

-"saving time from waiting in front of the personal doctor's office, specialists for consultations and in front of laboratories for examinations".

To patients' answers is added also "it is difficult to contact my personal doctor", and to the part about the ensured "duty office" outside the personal doctor's working hours - "saving time from waiting in front of "duty offices".

Difficult access to PHC due to regional and social inequalities is characteristic for: Bulgaria, United Kingdom, Germany, Belgium, France, Austria, Norway, Finland, Poland, Slovenia, Czech Republic, Spain, Romania, Greece, Portugal, Croatia. The presence of difficult patient access to GPs as a result of regional and social inequalities in 16 of the studied countries (including Bulgaria), five of which do not have a general shortage of GPs for the country, shows that doctors' preferences and interests are to a greater extent for practice in larger cities. Preservation and subsequent deepening of regional inequalities in the distribution of personal doctors and unattractiveness of their specialty will affect increasing general morbidity and aggravation of chronic morbidity of the aging rural population. (Cylus J, Blumel M, Gerkens S, Chevreul K, Bachner F, Keskimaki I, Sowada C, Albreht T, Alexa J, Vladescu C, Dzakula A)

On the problem of difficult patient access to GPs due to regional disproportions in the location of doctors and social inequalities, there is no information from any country about the scope of population, territory, health map and the relative weight of social reasons. Information about theoretical and successful real compensatory possibilities for satisfying the needs of the population in difficult access with health services from providers of emergency, non-emergency or other type of medical care is almost lacking. Measures with improved material stimulation have not given expected results.

The reasons for difficult access of mandatory health-insured patients to GPs, both in Bulgaria and in other European countries, are due to overall shortage of general practitioners, uneven territorial distribution of GPs with shortage in settlements distant from larger cities and social inequalities limiting patients. These reasons in our country also determine the choice of EMC and ERD as an easier way to receive medical care.

From the stated problems and made proposals of GPs for changes in surveys that would improve relationships with EMC it is understood that the lack of information exchange about patients' health status is a negative factor in providing emergency medical care and in subsequent monitoring of the condition and treatment of patients.

In surveys, doctors from EMC propose - GPs to receive information about patients who received medical services from EMC -- through NHIS, to normatively regulate, determine relations between GPs and EMC, GPs to provide information about their patients upon request from EMC.

Respondent directors propose "to normatively regulate medical care that cannot be postponed in time (in order to be performed within the approved work schedule of the doctor in POAC)".

These categories of proposals are directed towards a very essential part of providing POAC to patients in clinical conditions changing in a short time from subacute, acute to emergency, life-threatening. Besides difficulties in diagnostics, not knowing and not using unified systematic medical triage for these patients, there are also many uncertain normative changes and inaccuracies leading to time inconsistencies, overloaded patient flow to insufficient, inappropriate or difficult-to-access providers of necessary timely medical care. The created imbalance worsens relationships between GPs, EMC, ERD and MIPs with negative consequences for everyone, most risky for patients.

In studied literature in the Netherlands, strengthened cooperation between providers of primary and emergency medical care outside working hours optimizes the use of emergency departments and relieves their overloading. Access to health records of 50% of Dutch patients is allowed, which is reported as good practice.

In the United Kingdom, general practitioners who work in or together with emergency departments provide treatment to patients who are not emergency, which relieves pressure on emergency care. Access to information from general practice is provided to all emergency and primary medical care services.

Good practice of interaction we found in literary sources in Belgium by improving cooperation between GPs and hospital emergency departments through one location, synchronizing working hours to facilitate patients, unified telephone triage for primary medical care outside working hours. There is an electronic healthcare platform allowing electronic exchange of protected data between health workers.

In Slovenia, a unified triage system was introduced for emergency medical care units responsible for life-threatening situations and primary health care centers also providing emergency care, which is reported as good practice.

Elimination of some problems, achieving medical and economic effectiveness and satisfying patient expectations through improving the effectiveness and quality of provided medical services from primary health care and emergency care are the goal of organizational-structural changes in all European countries. Reforms in emergency and non-emergency medical care systems aim to reduce the growing number of patients in emergency department offices who are not in emergency condition.

In the future, rethinking models of providing primary health and emergency medical care to patients, coordination and interaction between them is necessary.

We accepted the results from different viewpoints when discussing as useful information for conclusions towards problems of relationships and interaction between GPs and EMC.

V. CONCLUSIONS

1. The aging age structure of GPs and doctors at EMC are indicators of a deepening staff problem in ensuring primary non-emergency and emergency medical care to the population in Bulgaria. The high relative share of doctors without a specialty and the presence of few doctors with the most suitable specialties for EMC - "Emergency Medicine" and "Disaster, Accident and Catastrophe Medicine" are a problem in satisfying the needs for providing EMC from EMC.
2. The shortage of referrals among GPs for consultations and diagnostic examinations and patients' financial difficulties are compensated by using health services of EMC, ERD and hospital inpatient departments, which leads to spending more than the actually necessary funds from the national budget and NHIF budget.
3. The short-term (six-hour) working hours for outpatient reception of GPs in insufficient, disproportionately located individual GP practices limits the access of children of school age and MIPs of working age to POAC. The absence of a second doctor in the practices of surveyed GPs excludes the possibility of improving patients' access to medical care by extending the daily work schedule of medical offices to the working hours of ensured duty offices for POAC.
4. There is no analogue of GPs outside their working hours for consultations and distributing patients in emergency and non-emergency conditions in POAC and direction to EMC and ERD. Duty offices ensured by GPs for consultations outside their work schedule are not able to improve the access of mandatory health-insured patients to primary medical care, respectively to higher levels of specialized outpatient and hospital medical care. The wide choice of reasons why patients "bypass" the ensured "duty office" shows its functional insufficiency.
5. The lack of two-way information exchange about the current health status of patients and poor professional communication between GPs and EMC are main negative factors for interaction in providing emergency medical care and for subsequent monitoring of the condition and treatment of patients, for reducing emergency recurrences.
6. Patients' informedness is insufficient about access to medical care outside the announced work schedule of GPs, about the reasons and way of seeking emergency medical care. Patients who incorrectly determined their condition as emergency and did not receive requested home visits from

GPs bypass POAC providers and seek medical care from EMC and ERD. The consequences are burdening of emergency teams and aggravation of professional relationships and interaction between GPs and EMC.

7. The "urgent medical care" indicated in Art. 45. para. 1 item 5 of the HIA, sought by patients during the day is performed outside the working hours of GPs and in significant volume during the night by ERD and EMC, not according to rules, standards or norms. It is not the subject of ERD and EMC activities, but is performed by necessity and impossibility to be diverted.
8. Some GPs and a smaller part of doctors from EMC do not know and do not comply with normative requirements in providing emergency medical care, which is a precondition for poor interaction between them and risky medical practice for the health of patients in emergency conditions.

VI. RECOMMENDATIONS:

1. To motivate and stimulate the choice of work at EMC and specialization of doctors in most suitable for the character of activity medical specialties, including by improving working conditions, interaction and cooperation with POAC providers, hospital ERDs and other units of the healthcare system.
2. To reduce overloading of EMC and ERD with patients in non-emergency conditions and improve the quality and timeliness of provided emergency medical care by them, it is imperative to increase by NHIF the resource of referrals among GPs for consultations and diagnostic examinations, as well as allocating resources for implementing PHC for health-uninsured patients.
3. To stimulate the unification of individual POAC practices into large group practices with many doctors with the aim of improving patients' access to medical care by extending the daily work schedule of medical offices for POAC to the working hours of "duty offices" for providing medical care to health-insured persons due to acute and exacerbated chronic diseases and conditions where medical care cannot be postponed in time in order to be performed within the approved work schedule of the doctor in primary outpatient care.
4. To improve interaction between GPs and EMC, a model can be created where medical care for patients in the eighteen-hour non-working time of GPs can be successfully carried out in cooperation with "duty offices" for POAC and SOAC, located in proximity to ERD and EMC or integrated into their structures for providing medical care to health-insured persons due to acute and exacerbated chronic diseases and conditions.
5. The problem of transferring health information about patients served by EMC and ERD to GPs and vice versa can be solved with modern information and communication technologies. To improve

diagnostic and therapeutic processes of emergency patients, a connection between the information system of EMC and ERD and NHIS is necessary, which has updated individual data about patients' health condition.

6. The introduction of unified medical triage is a reserve for improving the effectiveness and quality of medical care for patients in emergency and non-emergency conditions.
7. It is necessary to increase patients' health knowledge by GPs regarding their own diseases, conducting secondary and tertiary prevention, timely examinations and planned treatment to prevent disease exacerbation and seeking medical care from medical facilities corresponding to health condition.
8. To define in a normative act "...medical care for health-insured persons due to acute and exacerbated chronic diseases and conditions where medical care cannot be postponed in time. To regulate with a normative act the conditions and procedure for the round-the-clock implementation of medical "care for health-insured persons due to acute and exacerbated chronic diseases and conditions where medical care cannot be postponed in time in order to be performed within the approved work schedule of the doctor in primary outpatient care".
9. Given the unstable health condition of patients whose life is not directly threatened but who need medical care in a short time to prevent further development and complication of the disease, we recommend: medical care to be performed functionally integrated with common coordination between GPs, EMC and ERD and in territorial proximity or in organizational structural connection between EMC and ERD -- in the form of emergency duty offices in ERD.
10. To investigate the state of knowledge of normative acts concerning the activities of emergency medical care by doctors at EMC and GPs through empirical diagnostic scientific methods -- tests and surveys.
11. In the short term, with the curriculum of fifth-year students and forms of continuing education to increase the level of knowledge of activities for providing emergency medical care by GPs and doctors at EMC, according to proper normative acts (laws, ordinances, standards, regulations, orders).
12. To increase control of the implementation of activities for providing emergency medical care by GPs and doctors at EMC according to prescriptions in normative acts.
13. It is necessary to prepare current, precisely written rules for the procedure, obligations and interaction between doctors from EMC and GPs in implementing emergency medical care and medical care that cannot be postponed in time in order to be performed within the approved work schedule of the doctor in primary outpatient care.

VII. CONTRIBUTIONS:

Contributions of theoretical character:

- The only comprehensive in-depth study was made of professional interaction and relationships in implementing medical care between GPs and doctors from EMC, simultaneously surveyed consulting the opinion of doctors in management positions at EMC and patients who received medical services from GPs and doctors from EMC.
- Problems were established in professional relationships between GPs and doctors from EMC, significant for interaction in providing medical care and relatable to patients' satisfaction and motives for choosing a medical facility.

Contributions of practical-applied character:

- Specific, substantiated proposals were made for normative changes with the aim of overcoming significant organizational gaps and errors with dangerous health consequences for patients.
- Practical recommendations were given for most established problems concerning the implementation of emergency and non-emergency medical care to the population.
- Socially and health-significant topics are proposed for scientific research and for inclusion in the curriculum for training fifth-year students and residents in "General Medicine".

VIII. PUBLICATION AND SCIENTIFIC ACTIVITY IN CONNECTION WITH THE DISSERTATION WORK

Scientific publications in peer-reviewed Bulgarian journals and collections

1. Hristova M, Valentinova Tsv. "Weaknesses of the existing organization for implementing Primary health care in European countries" General Medicine 2023, 25(4).3-12, ISSN:1311-1817
2. Hristova M, Valentinova Tsv. "Weaknesses of the existing organization of emergency medical care in European countries" Medical University-Pleven Journal of Biomedical and Clinical Research 2024 17 (1):79-87, ISSN:1313-6917
3. Hristova M, Valentinova Tsv. "Good practices of interaction between primary health care units and emergency medical care" Proceedings Collection Sixth Scientific Conference of BNSPH -- Public Health: Challenges to the Health System, MU-Pleven 2023, 244-248, ISBN978-954-756-335-3

Scientific reports and presentations

1. Participation with presentation report at Sixth Scientific Conference on "Public Health-challenges to the health system" 26-27 May 2023, Pleven - topic "Good practices of interaction between primary health care units and emergency medical care".
2. Participation with presentation report at Sixth Scientific Conference on "Public Health-challenges to the health system" 26-27 May 2023, Pleven - topic "Human resources in General medical practice-status, trends, risks".
3. Participation with poster abstract at XX International medical scientific conference for students and young doctors Medical University-Pleven "Problems of interaction between primary health care and emergency medical care providers in Bulgaria" 16-20.10.2023. P146, ISBN 978-954-756-303-2
4. Participation with presentation report at Jubilee Scientific Conference with International Participation, "50 Years of Medical Education and Science in Pleven" 01-03.11.2024 topic "Problems of interaction between general practitioners and doctors from emergency medical centers according to general practitioners".
5. Participation with report at XIX National Congress on Surgery 10-12.10.2024 on the topic "Role of EMC and Multiprofessional Department for hospitalizations in surgical departments of UMHAT "Dr. G. Stranski" JSC in the period 2013-2023." Proceedings Collection with reports and abstracts 2024, 437-444. ISBN:978-619-93018

Participation in scientific conferences, congresses in the country

1. Sixth Scientific Conference on "Public Health-challenges to the health system" Medical University Pleven 26-27 May 2023.
2. International Medical Scientific Conference for Students and Young Doctors, Pleven 16-20.10.2023.
3. XIX National Congress on Surgery, Sofia 10-12.10.2024.