STATISTICS ON THE WORK OF GASTROENTEROLOGISTS IN THE RUSSIAN FEDERATION IN 2013–2017

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Abstract

In recent decades, increasing importance in modern diagnostic algorithms is given to techniques that use optical systems, including those with the ability to examine organs in various spectral ranges and in fluorescence modes. The rapid development of modern technologies and their implementation in the field of healthcare requires constant improvement of the organization of medical care to the population. Endoscopic services in Russia began to emerge in the 70s of the 20th century. In the early stages, it was represented by independent diagnostic rooms based on large medical clinics and research centers. Over the past decades, endoscopic methods of diagnosis and treatment have moved far forward. For the successful use of endoscopic technologies in clinical practice, qualified medical personnel are needed, including oncologists, gastroenterologists, and other specialists proficient in endoscopic techniques. The human potential of endoscopy was initially formed by part-timers, most often from surgeons and therapists. In this regard, it is necessary to analyze the activities of specialist doctors who provide medical care in outpatient conditions. The aim of the study was to analyze the activities of gastroenterologists providing outpatient medical care at the federal level and in the pilot regions of the Russian Federation. The multidirectionality of trends regarding the level of burden on gastroenterologists in the subjects of the Russian Federation is established. In all federal districts, a decrease in the number of visits per gastroenterologist and a decrease in the part-time coefficient was observed.

Keywords: endoscopic methods of treatment and diagnostics, gastroenterologists, photodynamic therapy (PDT), subjects of Russian Federation.

For citations: Guryanova N.E., Sachek O.I., Ivanova M.A. Statistics on the work of gastroenterologists in the Russian Federation in 2013–2017, *Biomedical Photonics*, 2020, vol. 9, no 2, pp. 36–44. (in Russian) doi: 10.24931/2413–9432–2020–9–2–36–44.

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СТАТИСТИЧЕСКИЕ ПОКАЗАТЕЛИ РАБОТЫ ВРАЧЕЙ-ГАСТРОЭНТЕРОЛОГОВ В РФ В 2013–2017 гг.

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Резюме

В последние десятилетия все большее значение в современных диагностических алгоритмах отводится методикам, использующим оптические системы, в том числе с возможностью осмотра органов в различных спектральных диапазонах и во флуоресцентных режимах. Стремительное развитие современных технологий и их внедрение в практическое здравоохранение требуют постоянного совершенствования организации медицинской помощи населению. Эндоскопическая служба в России начала зарождаться в 70-е годы XX столетия. На первых этапах становления служба была представлена разрозненными диагностическими кабинетами на базе крупных медицинских клиник и научно-исследовательских центров. За последние десятилетия эндоскопические методы диагностики и лечения шагнули далеко вперед. Для успешного использования эндоскопических технологий в клинической практике необходимы квалифицированные медицинские кадры, в том числе врачи-онкологи, гастроэнтерологи, другие специалисты, владеющие эндоскопическими методиками. Кадровый потенциал эндоскопии изначально формировался из числа совместителей, чаще из врачей-хирургов и терапевтов. В этой связи необходим анализ деятельности врачей–специалистов, оказывающих медицинскую помощь в амбулаторных условиях. Целью исследования явился анализ деятельности врачей-гастроэнтерологов, оказывающих медицинскую помощь амбулаторно, на федеральном уровне и в пилотных регионах Российской Федерации. Установлена разнонаправленность тенденций относительно уровня нагрузки на гастроэнтерологов в субъектах страны, вошедших в исследование. Во всех федеральных округах отмечено уменьшение числа посещений по заболеванию на 1 врачебную должность и снижение коэффициента совместительства.

Ключевые слова: эндоскопические методы лечения и диагностики, врачи-гастроэнтерологи, фотодинамическая терапия (ФДТ), субъекты Российской Федерации.

Для цитирования: Гурьянова Н.Е., Сачек О.И., Иванова М.А. Статистические показатели работы врачей-гастроэнтерологов в РФ в 2013–2017 гг. // Biomedical Photonics. – 2020. – Т. 9, № 2. – С. 36–44. doi: 10.24931/2413–9432–2020–9–2–36–44.

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Introduction

In recent decades, more and more importance in modern diagnostic algorithms is given to methods that use optical systems, including those which allow for examining organs in various spectral ranges and in fluorescent modes. Modern endoscopic technologies for diagnosis and treatment brought dramatic changes to the fight against gastrointestinal (GI) diseases [1-3].

Endoscopy has significantly enhanced its capacity recently due to the development and improvement of medical equipment and the appearance of innovative methods. The use of minimally invasive technologies allows for thorough endoscopic diagnostics of early gastrointestinal cancers [4]. One of the methods of treatment of GI diseases, including esophagus diseases, is photodynamic therapy (PDT) [5]. PDT has been approved for use in the United States since December 1998. The widespread use of PDT is due to its ability to have a therapeutic effect on large surfaces of the mucous membrane without the need for their full visualization. The therapeutic impact can be provided through a fiber that conducts light perpendicularly to the axis of the endoscope, which makes this technology ideal for use in gastroenterology [6, 7]. Diseases of the digestive system, among which the predominant part is liver disease [8], are one of the causes of mortality among the working-age population [9]. Due to the high incidence of digestive system diseases and related mortality, the analysis of the activities of gastroenterologists is highly relevant.

The issues of personnel security and the activities of medical specialists, as well as the organization of medical care for patients, are very important both for practical health care and for scientific research [10-15].

The purpose of the study was to analyze the activities of gastroenterologists providing medical care in outpatient settings.

Materials and methods

The method of descriptive statistics presents the results of calculating extensive and intensive indicators that characterize the activities of gastroenterologists. A comparative analysis of the dynamics of indicators for the period from 2013 to 2017 in the constituent entities of the Russian Federation was based on the Federal Statistical Reporting form No. 30 "Information about the medical organization".

Results and discussion

The results of the analysis of gastroenterologists' activity showed a predictable decrease in the dual job holding coefficient from 1.32 in 2013 to 1.2 in 2017, the Annual Growth Rate (AGR) being equal to - 9.1% (Fig. 1).

Due to the fact that the provision of medical organizations with gastroenterologists increased during the study period, it is natural to expect the workload per specialist doctor to have decreased. In the Russian Federation as a whole, the number of visits to gastroenterologists during the analyzed period decreased by 19.5% per 1 position (from 4750,9 to 3823,0). The workload indicators for gastroenterologists practicing in outpatient settings are observed to decrease every year. The maximum decrease in the annual growth indicators occurred in 2014. (AGR = -10.9%) (Fig. 2).

However, during the analyzed period, the share of visits in connection with diseases increased slightly from 94.3% in 2013 to 94.8 in 2017 (AGR = +0.6%). Nevertheless, it should be noted that the entire period of the study is characterized by fairly high values of the indicators. On average, the percentage of visits n connection with diseases was 94.4%. The minimum value of 93.6% was recorded in 2015, and the maximum value, 95.1%, was in 2016. As shown in Fig. 3, during the analyzed period, the percentage of gastroenterologist appointments in connection with diseases in the Russian Federation as a whole decreased every year until 2015. An unprecedented increase in the number of visits to specialist doctors in 2016 (95.1%) was followed by a decline to 94.8% in 2017.

We conducted an analysis of the dual job holding indicator for gastroenterologists, which revealed that in all Federal Districts (FOs) the AGR values are negative. The leading position is held by the North Caucasus Federal District (-20.2%), and the second by the Southern Federal District (-16.5%). In the Far Eastern Federal District, slight fluctuations in the indicator were observed, with similar values at the endpoints over the entire period of the study (Fig. 4).

A comparative analysis of the dual job holding coefficient for gastroenterologists providing medical care in outpatient settings was conducted for the pilot entities of the Russian Federation in respect of the period from 2013 to 2017. The results of the study allowed us to identify 5 regions with the highest and lowest values of the dual job holding indicator (Table 1).

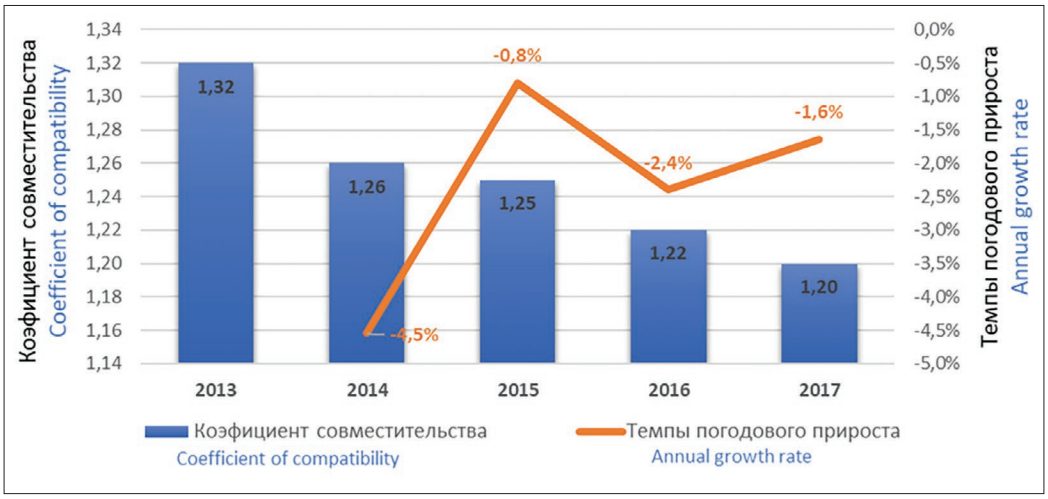

Рис. 1. Динамика коэффициента совместительства врачей-гастроэнтерологов и темпов погодового прироста в Российской Федерации за период 2013–2017 гг.
Fig. 1. Dynamics of the coefficient of gastroenterologists part-timing of in the Russian Federation and the rate of annual growth of indicators in 2013–2017

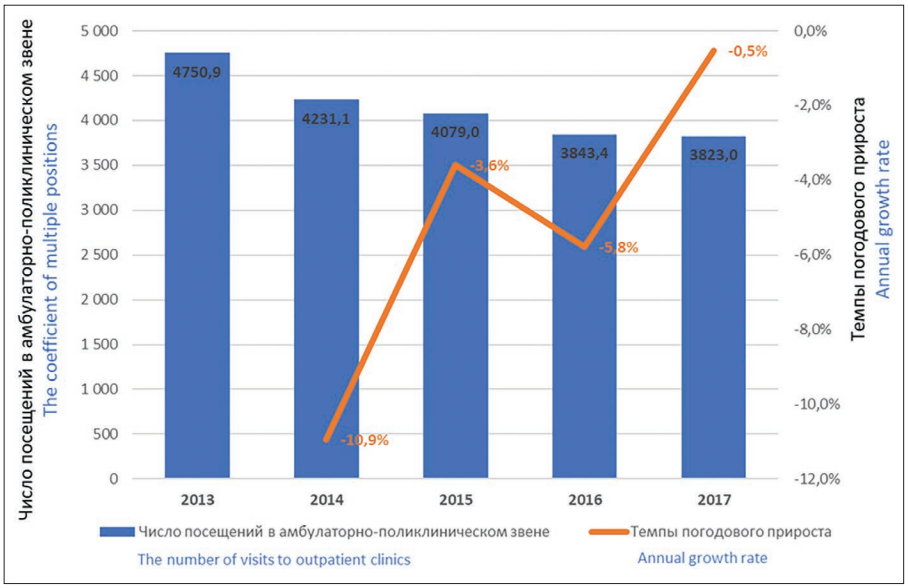

Рис. 2. Динамика числа посещений на 1 должность врача-гастроэнтеролога в амбулаторных условиях и темпы погодового прироста в Российской Федерации за период 2013–2017 гг.
Fig. 2. Dynamics of the number of visits of outpatients per gastroenterologist in the Russian Federation and the rate of annual growth of indicators in 2013–2017

It should be noted that in 2017, in such pilot entities as the Republic of Tatarstan, the Udmurt Republic and the Moscow Region, along with high dual job holding coefficients (1.92, 1.48 and 1.45, respectively), maximum AGRs were also observed (23.1%, 15.6%, and 10.7%). The minimum value of this indicator in 2017 was found in the Tomsk Region (0.93). At the same time, the Sverdlovsk Region was found to have the largest negative value of the indicator (-21.6%).

By 2017, a decrease in the number of visits per 1 gastroenterologist position was observed in most Federal Districts. A positive annual growth of the indicator (2.7%) was registered only in the far Eastern Federal district. The leading position in the number of visits to a gastroenterologist in 2013 was held by the Southern and Central Federal Districts, where the values of the indicator exceeded the national level by 15.1 and 13.8% (5466.9 and 5405.8 against 4750.9, respectively). By 2017, the Southern Federal district continued its lead, with the value exceeding the all-Russian average indicator by 13.0%. At the same time, the Central Federal district had the highest negative AGR of the indicator (-32.1%) and was one of the

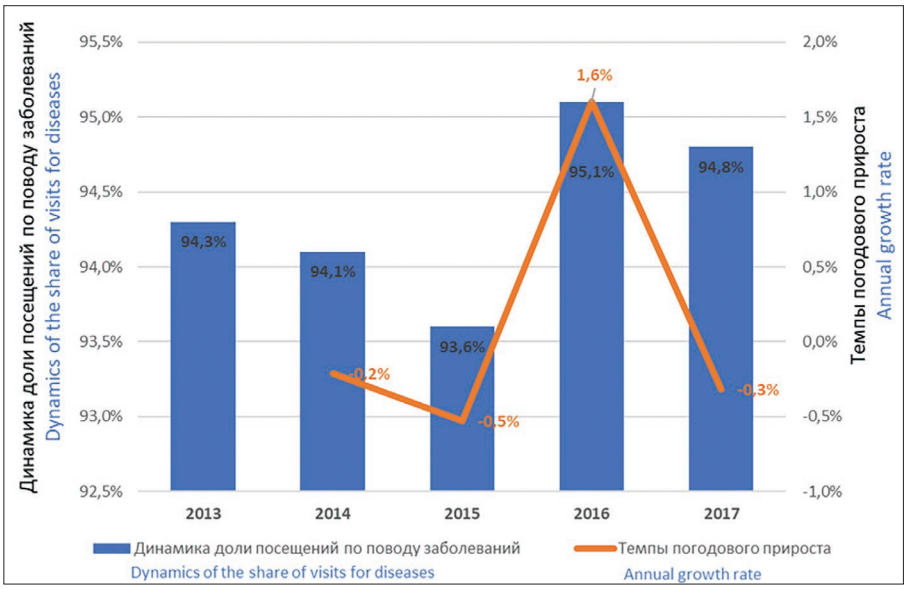

Рис. 3. Динамика доли посещений врачей-гастроэнтерологов и темпов погодового прироста в Российской Федерации за период 2013–2017 гг.
Fig. 3. Dynamics of the share of visits of gastroenterologists regarding diseases in the Russian Federation and the rate of annual growth of indicators in 2013–2017

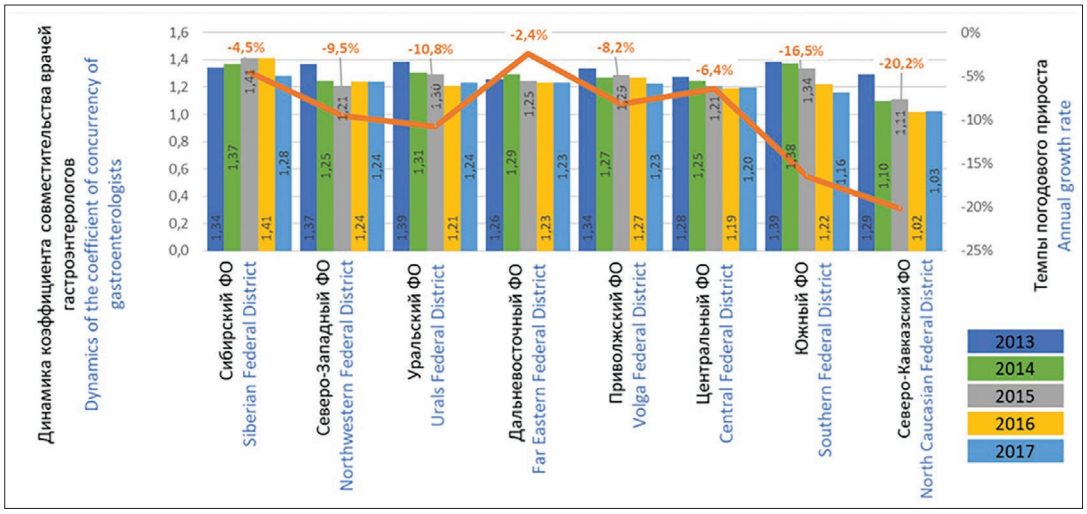

Рис. 4. Динамика коэффициента совместительства врачей-гастроэнтерологов и темпы погодового прироста показателя в федеральных округах Российский Федерации за период 2013–2017 гг.
Fig. 4. Dynamics of the coefficient of gastroenterologists part-timing in the Federal districts of the Russian Federation and the rate of annual growth of indicators in 2013–2017

Federal Districts with the lowest number of visits per 1 gastroenterologist position (Fig. 5).

Table 2 shows the subjects of the Russian Federation with the minimum and maximum values of the number of visits to gastroenterologists. The distribution of pilot entities by the lowest and highest values of the number of visits is based on 2017 data.

The study showed that individual entities where the indicators initially exceeded the average national level or were close to it, subsequently had a sharp decrease in the number of visits to gastroenterologists working on an outpatient basis. This was reflected in the AGR: the Ivanovo Region: 7367.3 in 2013 and 3581.5 in 2017, AGR = -51.4%; the Irkutsk Region: 6959.2 in 2013 and 3991.9 in 2017, AGR = -42.6%; Moscow: 6095.2 in 2013 and 3089.6 in 2017, AGR = - 49.3%. In contrast, the highest growth rates were in the Republic of Tatarstan (39.7%) and the Khabarovsk Territory (19.2%).

In 4 Federal District (Northwestern, Volga, North Caucasian, Far Eastern), a decrease in the specific weight of visits in connection with diseases was found (within the range from -0.6% to -1.7%). Despite that, the percent-

Таблица 1
Динамика коэффициента совместительства врачей-гастроэнтерологов, оказывающих медицинскую помощь в амбулаторных условиях, за период 2013–2017 гг. (данные пилотного исследования)
Table 1
Dynamics of the part-timing coefficient of gastroenterologists providing medical care in outpatient conditions in 2013–2017 (pilot study)

Субъекты РФ Subjects of the Russian Federation	2013	2014	2015	2016	2017	2013/2017 ТПП, % 2013/2017 AGR, %
Минимальные значения Minimum value						
Томская область Tomsk Oblast	1,11	1,21	1,13	0,93	0,93	–16,2
г. Москва Moscow	1,18	1,12	1,06	1,0	1,02	–13,6
Пермский край Perm Krai	1,23	1,09	1,23	1,1	1,06	–13,8
Новосибирская область Novosibirsk Oblast	1,19	1,13	1,27	1,49	1,07	–10,1
Свердловская область Sverdlovsk Oblast	1,39	1,29	1,15	1,06	1,09	–21,6
Максимальные значения Maximum value						
Московская область Moscow Oblast	1,31	1,38	1,35	1,35	1,45	10,7
Удмуртская Республика Udmurt Republic	1,28	1,39	1,8	1,48	1,48	15,6
Астраханская область Astrakhan Oblast	1,47	1,44	1,5	1,61	1,5	2,0
Иркутская область Irkutsk Oblast	2	1,97	1,64	1,46	1,68	–16,0
Республика Татарстан Republic Of Tatarstan	1,56	1,75	1,57	1,46	1,92	23,1

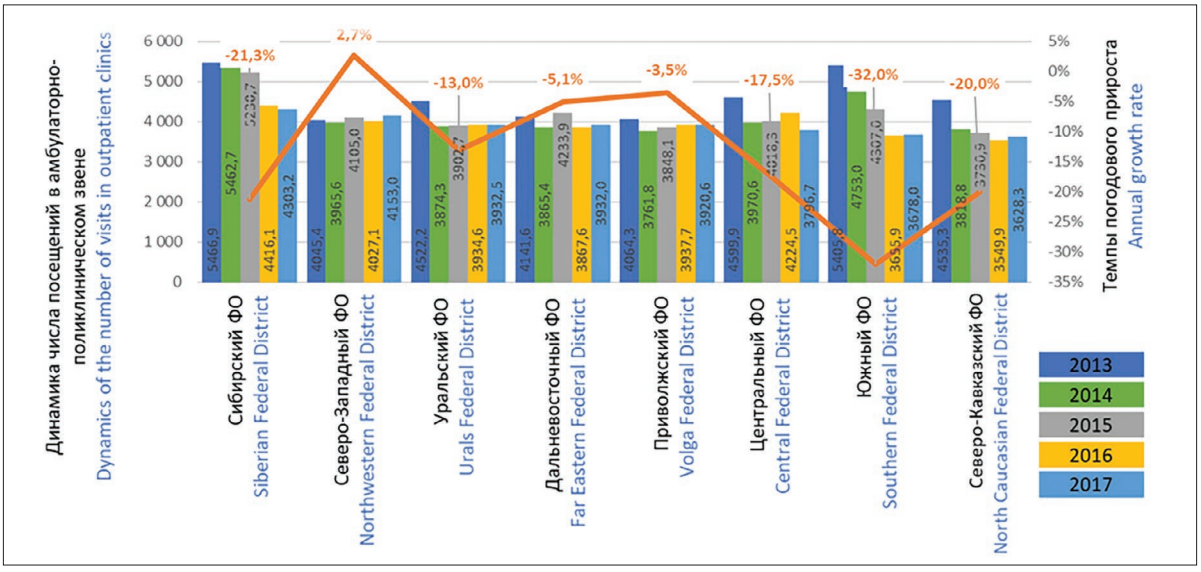

Рис. 5. Динамика числа посещений на 1 должность врача-гастроэнтеролога в амбулаторных условиях и темпы погодового прироста в федеральных округах Российской Федерации за период 2013–2017 гг.
Fig. 5. Dynamics of the number of visits of outpatients per gastroenterologist in the Federal districts of the Russian Federation and the rate of annual growth in 2013–2017

Таблица 2
Динамика числа посещений врачей-гастроэнтерологов, оказывающих медицинскую помощь в амбулаторных условиях, за период 2013–2017 гг., абс. ч. (данные пилотного исследования)
Table 2
Dynamics of the number of visits of gastroenterologists providing medical care in outpatient conditions in 2013–2017 (pilot study), number of patients

Субъекты РФ Subjects of the Russian Federation	2013	2014	2015	2016	2017	2017/2013 ТПП, % 2013/2017 AGR, %
Минимальные значения Minimum value						
Удмуртская Республика Udmurt Republic	3285,4	3150,6	3568,4	2446,1	2762,4	–15,9
Красноярский край Krasnoyarsk Krai	4779,1	3630,4	3400,8	3118,1	2943,8	–38,4
г. Москва Moscow	6095,2	5015,6	4020,9	3191,4	3089,6	–49,3
Новосибирская область Novosibirsk Oblast	3004	2828,6	3068,4	4052,5	3222,5	7,3
Пермский край Perm Krai	4371,7	3656,4	4061,3	3595,5	3309,3	–24,3
Максимальные значения Maximum value						
Хабаровский край Khabarovsk Krai	3998,1	4222,2	4690,8	4526	4764,2	19,2
Алтайский край Altai Krai	6316,4	5348,1	5561,7	5318	4783,8	–24,3
Астраханская область Astrakhan Oblast	6798,3	6130,8	5410	5603,9	5404,7	–20,5
Ставропольский край Stavropol Krai	4860,6	3698,6	4843,1	4418,5	5429,6	11,7
Республика Татарстан Republic Of Tatarstan	4312,8	5457,2	4675,6	4463,5	6024,3	39,7

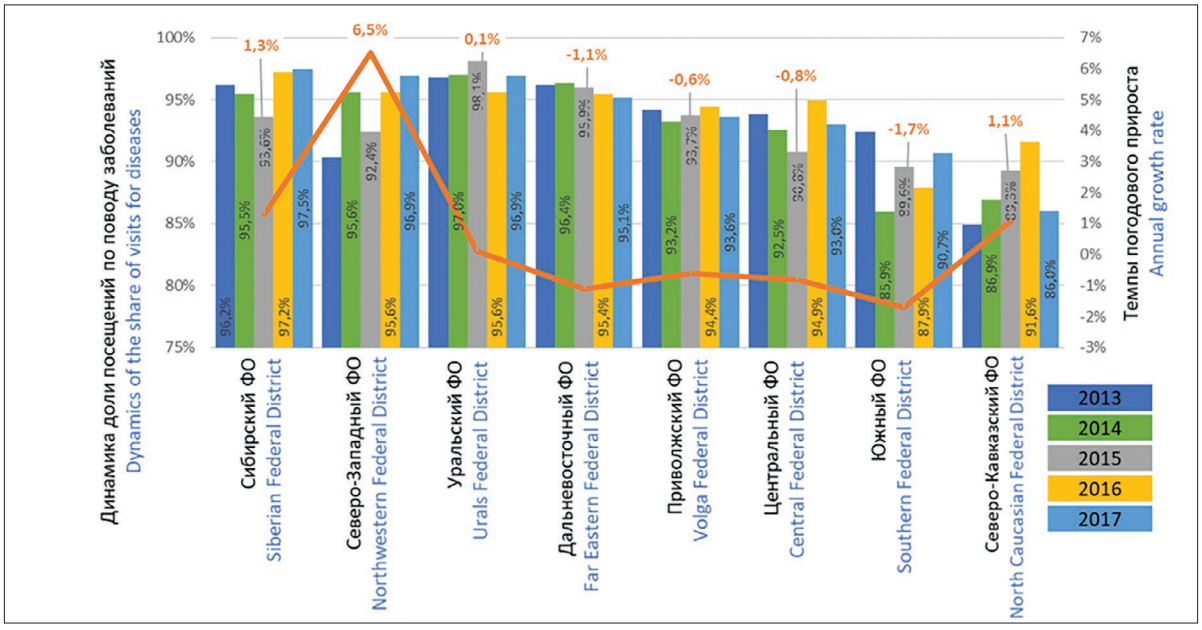

Рис. 6. Динамика доли посещений по поводу заболеваний гастроэнтерологов и темпы погодового прироста в федеральных округах Российской Федерации за период 2013–2017 гг.
Fig. 6. Dynamics of the share of visits regarding diseases in the Federal districts of the Russian Federation and the rate of annual growth in 2013–2017

Таблица 3
Динамика доли посещений по заболеванию врачей-гастроэнтерологов в 2013–2017 гг., % (данные пилотного исследования)
Table 3
Dynamics of the share of visits to gastroenterologists regarding diseases in 2013–2017 (pilot study), %

Субъекты РФ Subjects of the Russian Federation	2013	2014	2015	2016	2017	2017/2013 ТПП 2013/2017 AGR,%
Минимальные значения Minimum value						
Алтайский край Altai Krai	64,7	73,9	70,4	76,7	58,1	–6,5
Хабаровский край Khabarovsk Krai	94,5	84,6	87,9	80,3	82,3	–12,2
Республика Татарстан Republic Of Tatarstan	95,3	85,3	89,1	90,4	89,9	–5,4
Томская область Tomsk Oblast	94,8	86,4	86,3	98,3	90,7	–4,1
Ставропольский край Stavropol Krai	92,6	93,9	92,7	93,3	91,2	–1,4
Максимальные значения Maximum value						
г. Москва Moscow	98,4	98,6	99,4	99,8	99,9	1,6
Удмуртская Республика Udmurt Republic	99,9	99,8	99,3	99,9	100,0	0,1
Пермский край Perm Krai	99,8	99,4	98,6	99,9	100,0	0,1
Новосибирская область Novosibirsk Oblast	92,6	98,9	100,0	100,0	100,0	7,4
Московская область Moscow Oblast	94,0	95,5	81,9	100,0	100,0	6,0

age of visits to gastroenterologists in connection with diseases in these districts remained high (90.7 to 95.1%). The highest rates were registered in the Central (97.5%), Southern (96.9%), and Ural (96.9%) Federal Districts. In the Southern Federal District, the largest increase in the proportion of visits in connection with diseases was registered: from 90.4% in 2013 to 96.9% in 2017 (AGR=6.5%). The lowest indicator during the study period was observed in the Siberian Federal district: 84.9% in 2013 and 86.0% in 2017 (Fig. 6).

The analysis of the data provided in the federal statistical observation forms showed that during the study period, there was an increase in the share of gastroenterologist attendance in connection with diseases. The Astrakhan region had the most significant growth of 15.4%. A decrease in the medical appointments was observed in the 9 pilot subjects, especially significant in the Khabarovsk Territory (-12.2%).

In 2017, in 4 pilot subjects, the share of gastroenterologist attendance in connection with diseases was 100%. During the 5-year observation period in the Ivanovo region, the Udmurt Republic, the Perm Region and Moscow, this indicator exceeded 99.0%.

The distribution of entities by maximum and minimum indicators as of 2017 is shown in table 3.

Conclusion

The results of a study of gastroenterologists' activities for the period 2013-2017 revealed a natural decrease in the workload per doctor. During the analyzed period, in the Russian Federation as a whole, the number of visits to gastroenterologists per 1 position decreased by 19.5%. The dual job holding coefficients tend to decrease in all FOs of the country, especially in the North Caucasian (-20.2%) and Southern (-16.5%) FOs. At the same time, the share of visits to gastroenterologists in connection with diseases increased insignificantly: from 94.3% in 2013 to 94.8 in 2017 (AGR = 0.6%).

The number of visits per 1 medical position tends to decrease, with the exception of the Far Eastern Federal District. At the same time, the share of visits to gastroenterologists in connection with diseases in the North-

Western, Volga, North Caucasus, and Far Eastern Federal districts remains at a high level (from 90.7% to 95.1%). The highest rates were registered in the Central (97.5%), Southern (96.9%), and Ural (96.9%) Federal Districts. Among the country's regions, the highest growth rates were registered in the Republic of Tatarstan (39.7%) and in the Khabarovsk territory (19.2%).

The percentage of visits in connection with diseases during the 5-year observation period in the Ivanovo Region, the Udmurt Republic, the Perm Region and Moscow exceeded 99.0%. The results of the study of gastroenterologist activities in the Russian Federation in 2013-2017 showed the need for managerial decisions aimed at optimization of the specialists' workload.

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