

Article

Improving the Provision of Surgical Dental Care in a Polyclinic

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Abstract: Determination of the effect of a gel with natural astaxanthin on the timing of adaptation of the oral mucosa to removable dentures. The gel made from a natural antioxidant reduces the risk of stomatitis, values of hygienic indices and traumatic factor.

Keywords: natural astaxanthin, partially removable denture, hyperemia, anti-inflammatory effect, antioxidant.

1. Introduction

The organization of dental care is important in the field of public health protection as the widest range of medical dental services. The frequency of dental diseases among the population in Russia, as in other countries of the world, ranks first. However, the structure of the organization of dental care in our country does not meet the needs of the population in public and high-quality care.

Purpose of work: To improve the work of the surgical department in the structure of the dental clinic.

2. Materials and methods

The work of two shifts of the dental polyclinic of Moscow was considered. An additional office for acute medical care was introduced in one of the shifts. The efficiency of a shift with an office for acute medical care and a shift without an office for acute medical need was considered.

3. Research results and their discussion

The introduction of an acute medical care office into the structure of a dental polyclinic allowed to distribute the workload of dental surgeons and therapists. The effectiveness of medical work has increased in the shift with the introduction of an acute medical care office, which is proved by the provision of more treatment assistance, as well as tooth extraction. During the shift, the number of completed complex treatment of patients increased during the six months of work of the office for acute medical care.

The provision of medical dental care in Russia has a clear organization, it is provided in specialized dental clinics of cities, dental departments and offices of polyclinics, hospitals and most large general education schools, industrial enterprises, etc. In addition to stationary medical dental institutions, there are mobile dental offices [3]. Dental clinics and schools provide medical



care, where simple medical manipulations are performed. In various institutions, such as hospitals, large multidisciplinary polyclinics, a separate dental appointment is held. In large city hospitals, as well as in military hospitals, assistance is provided for inflammatory, purulent processes, traumatic injuries in the maxillofacial region, including operations on soft tissue neoplasms, where cosmetic surgery is required. In any medical institution, control over the work of all staff is carried out by the chief physician. In each region, city, the work is organized by the chief dentist, who is often the chief physician of the corresponding medical dental institution [4].

Dental care is one of the most widespread types of medical care. The most important tasks of dental organizations are to carry out a complex of dispensary measures for the prevention, early detection, treatment and rehabilitation of patients with diseases of the oral cavity, salivary glands and maxillofacial region.

Medical care for adults with dental diseases is provided in the form of: primary health care; specialized medical care [16].

Dental organizations in which patients receive general and specialized dental care include:

— state and municipal (republican, regional, district, regional, city, district) dental clinics for adults and children;

— educational, research institutes at their clinical bases;

— dental departments and departments of maxillofacial surgery for adults and children as part of multidisciplinary hospitals, medical and sanitary units, departmental institutions, etc.;

— dental offices in dispensaries, women's consultations, centers of general medical (family) practice, health centers of industrial enterprises, educational institutions, etc.;

— private dental organizations (polyclinics, offices, etc.)

The main volume of dental care to the population is provided by dental polyclinics, which are medical and preventive institutions whose activities are aimed at the prevention of dental diseases, timely detection and treatment of patients with diseases of the oral cavity, salivary glands and maxillofacial region.

The most effective is considered to be the provision of dental care to the population according to the precinct principle. The mode of operation of the polyclinic is set by the health authorities according to subordination, considering the needs of the population and specific conditions.

The main tasks of the dental clinic are:

— carrying out measures for the prevention of diseases of the maxillofacial region among the population and in organized groups;

— organization and implementation of measures aimed at early detection of patients with diseases of the maxillofacial region and their timely treatment;

— provision of qualified outpatient dental care to the population.

To solve these problems, the dental clinic carries out:

— provision of timely therapeutic, surgical, orthopedic and other types of dental care to persons who have applied to the polyclinic;

— provision of emergency dental care to patients with acute diseases of the oral cavity, salivary glands and maxillofacial region;

— conducting medical examinations in preschool and school educational institutions, at enterprises with oral cavity sanitation to all those in need;

— dispensary observation of patients with active dental caries, periodontal diseases and oral mucosa, chronic osteomyelitis of the jaws, malignant neoplasms of the face and oral cavity, anomalies of development and deformity of the jaws and other diseases;

— examination of temporary disability of patients, referral to the ITU of persons with signs of permanent disability;

— introduction into practice of modern methods of diagnosis, treatment, new medical equipment, medicines;

— development of territorial targeted programs for the prevention, timely diagnosis and treatment of diseases of the oral cavity, salivary glands and maxillofacial region;

— carrying out sanitary and educational work on the prevention of diseases of the oral cavity, salivary glands and jaws among adults and children [15].

The availability of dental care to the population depends on many factors: organizational forms of its provision, pricing policy, provision of the population with dentists (dentists), etc. Currently, dental care is provided to the population in centralized, decentralized and field organizational forms.

More than 90% of the population begin and finish treatment of dental and oral diseases in outpatient clinics, therefore, the level of medical dental care largely depends on the quality of work. The successful functioning of any medical organization in modern conditions is possible only with the optimal interaction of all departments (links), all elements of the healthcare system [5,7].

The registry plays an important role in the proper organization of admission, regulating the flow of patients by issuing coupons or making an appointment. Primary coupons are issued for an appointment with a dentist-therapist, dentist-surgeon, orthopedic dentist or a specialist of a narrow profile (periodontist, orthodontist, hygienist) [14].



In the organization of the reception of patients in the dental clinic, a major role belongs to the dentist on duty, who examines the patient, determines the type and volume of necessary dental care, directs to other specialists. The dentist on duty provides emergency dental care to patients in emergency cases. Repeated visits to the polyclinic patients are prescribed by the attending physician. With the proper organization of the work of the polyclinic, the patient is observed by one doctor who draws up a treatment plan and, if necessary, directs the patient for consultation and treatment to other specialists [13].

Surgical dentistry is directly connected with other dental specialties — therapeutic, orthopedic, pediatric dentistry and uses common diagnostic and treatment methods with them. This connection is due to the anatomical, topographic and physiological unity of teeth, oral organs, tissues of the maxillofacial region and the pathological processes developing in them.

Diagnostic treatment of dental diseases often consists of consistently performed therapeutic manipulations by methods of therapeutic, surgical and orthopedic dentistry [10].

Primary patients can be admitted to the surgical department both from the registry and from the therapeutic and orthopedic departments; seriously ill and patients with elevated body temperature should be admitted first of all with mandatory registration of the outpatient patient's medical history [11].

If surgical treatment is necessary, the timing, scope and nature of the patient's preoperative preparation are established.

Separately, it is worth noting cases requiring polyclinic dental surgery – removal of retained, dystopian eighth teeth, operations for the formation of an alveolar process and osteotomy for the possibility of subsequent prosthetics, excision of benign formations of the oral mucosa. This required additional laboratory studies, consultations with specialists of other profiles. Thus, the stage of inclusion and examination of patients showed that the most common reason for contacting a dentist-surgeon are complications of caries and purulent-inflammatory diseases of the jaws. In order to assess the clinical status, an anamnesis was collected with the registration of patient complaints, as well as patient examination data. All information was recorded in a dental chart specially compiled by the World Health Organization in 1997 (Appendix 4). Dental surgical treatment was not started only if there were certain contraindications [7].

On an outpatient basis, only such dental manipulations can be performed, after which the patient can go home alone or accompanied by relatives. The patient's examination data, all manipulations and doctor's appointments, the results of treatment should be noted in the outpatient patient's medical history. The patient's visit is always registered in federal Form No. 37. All medical activities or services are registered in the nomenclature of medical services in healthcare.

The dental range of services is a kind of professional medical services focused on a special benefit - human health. At the same time, in order to maintain, strengthen and restore human health, dentists carry out special interventions, use various invasive and non-invasive methods of influencing organs and tissues of the maxillofacial region.

The provision of high-quality medical dental care is influenced by the number of people who need affordable, free medical care, as well as the number and degree of training of specialists working in medical and preventive institutions [9].

The quality of a dental service is a set of its properties and characteristics related to the ability of the service to meet the needs of the patient in medical dental care. Ensuring the quality of dental care is a very complex problem of organizing a whole complex of administrative, medical and technical measures aimed at achieving and maintaining the normative level of quality [2]. At the same time, the specified regulatory quality level is determined by mandatory standards. In relation to dentistry, a quality standard is a normative document developed on the basis of consensus and approved by an officially recognized body. The quality standard for universal and repeated use establishes rules, general principles or characteristics concerning the provision of medical dental services and (or) its result. One of the factors affecting the quality of dental care is the time of a doctor's appointment per patient. The more time is allocated to one patient, the better the doctor conducts his treatment to the patient [10].

For the population attached to a territorial polyclinic with first-level dental care, a number of advantages are obvious, since it is possible, while visiting doctors of various specialties, to also visit a dentist. The territorial location is of great importance - the bulk of the serviced population are pensioners and disabled people, and the district dental clinic is located at a considerable distance from their place of residence. Institutions of the first level of dental care improve the availability of dental care, including surgical care [11].

In a large medical institution, the dental department works closely with all other departments of the institution. Dental treatment can be carried out in a complex treatment with otorhinolaryngologists, general therapists, endocrinologists and hematologists, surgeons. The therapeutic department itself provides therapeutic, orthopedic, surgical and orthodontic care.



Large dental clinics are divided into adult and children's departments. In turn, the adult is divided into therapeutic, surgical, orthopedic departments. The Children's Department provides therapeutic, orthodontic and surgical care.

The dental department is in close contact with almost all departments of the polyclinic: consultations are held, patients are treated together with doctors: therapist, neurologist, otolaryngologist, endocrinologist, surgeon.

The need for three-level medical dental care of the population in a large city for surgical dental services is important. In the first-level institutions (dental department of the territorial polyclinic), free medical care is provided in the scope of the CHI Program, and more complex types of surgical dental care (including surgical interventions) are provided by the second-level institution (surgical department of the dental polyclinic of the administrative district), both free of charge under the CHI system and on a paid basis [1].

According to Kulikov P.V., most of the patients of the surgical department of the dental polyclinic seek medical help already with complaints of pain (68%), that is, as a rule, with advanced and complicated forms of pathology, which is confirmed by the high level of their caries infestation (on average, 4.1 ± 0.2 carious teeth per person), periodontitis (83.6%) and pulpitis (13.1%). The "burdened" composition of patients in the surgical department of the dental polyclinic is due not only to the insufficient availability of medical care due to its high cost (only 27.7% of patients regularly visit a dentist), but also to the low sanitary culture of those who applied, whose CPI index is on average 18.4 ± 0.4 , which means a decompensated state of dental status [12].

At the second level of dental care of the population (surgical department of the district dental polyclinic), secondary and tertiary prevention of diseases of the maxillofacial region is carried out: the number of postoperative complications and hospitalizations in hospitals of the city (departments of maxillofacial surgery, otolaryngological departments, etc.) is less than 1%.

The organization of first-level surgical dental care in dental clinics is advisable in geographically remote neighborhoods from the district dental clinic, which will ensure the availability, first of all, of emergency surgical dental care, as well as dispensary observation of a certain number of patients with chronic dental pathology after surgical interventions or at certain stages of treatment of such patients.

To carry out planned preventive and therapeutic measures in organized groups, the dental clinic uses premises provided for these purposes by the administration of industrial enterprises and other organizations, as well as dental offices (at industrial enterprises with 1,500 employees and above and in higher and secondary educational institutions with 800 students and above) [4].

Most often, a dentist-surgeon is treated with dental problems, as well as complications due to neglect of cases, less often they are treated due to diseases of the oral mucosa and other diseases. Separately, it is worth noting cases requiring outpatient surgery – removal of retained, dystopian eighth teeth, operations for the formation of an alveolar process and osteotomy for the possibility of subsequent prosthetics, excision of benign formations of the oral mucosa. This requires additional laboratory studies, consultations with specialists of other profiles. Thus, the stage of inclusion and examination of patients showed that the most common reason for contacting a dentist-surgeon are complications of caries and purulent-inflammatory diseases of the jaws. In order to assess the clinical status, an anamnesis was collected with the registration of patient complaints, as well as patient examination data. All information was recorded in a dental chart specially compiled by the World Health Organization in 1997 (Appendix 4). Dental surgical treatment was not started only if there were certain contraindications.

Improving the provision of dental care is an urgent issue today, which was the object of our study.

Materials and methods: In total, 48,615 people applied to the dental clinic in 2021. Of these, 2,497 people were treated for acute pain. In a month, 211 people applied to the polyclinic for acute pain. Of these, 189 people applied to the adult department. The number of people who applied to the polyclinic was registered: for a month, half a year and a year.

The composition of patients of the surgical department of the dental polyclinic was studied by the method of tracing information from official medical documents (medical card of a dental patient - F.No. 043/y;).

The patients of the adult surgical and therapeutic department of the dental polyclinic were distributed with the need for urgent treatment. We compared the number of people who applied in two shifts: without an office for acute dental care and a shift with the introduction of an office for acute dental care. Patients from the registry who applied for acute pain were admitted to the office of acute medical care. The doctor receiving in the office of acute dental care assessed the clinical situation of each patient, conducted an examination. In accordance with the diagnosis, he provided therapeutic treatment for urgent need and referred those patients to whom surgical treatment was indicated for tooth extraction.

The number of patients admitted by doctors in a shift with an introduced acute pain room and the number of patients in a shift without an acute emergency medical care room were



compared (Table 1). Thus, we received information about the state of dental health and the level of sanitary culture of those who applied for medical help, about their opinion about the organization and quality medical care in the appropriate dental institutions.

Table 1. Distribution of patients of the adult surgical and therapeutic department of the dental polyclinic with an urgent need for 2021.

Time period, addresses	The number of people who applied. Shift with an office for acute dental care	The number of people who applied for a shift without an office for acute dental care
Month	118	71
Six months	684	401
Year	1368	687

The number of patients who have applied for acute dental care is shown in Figure 1.

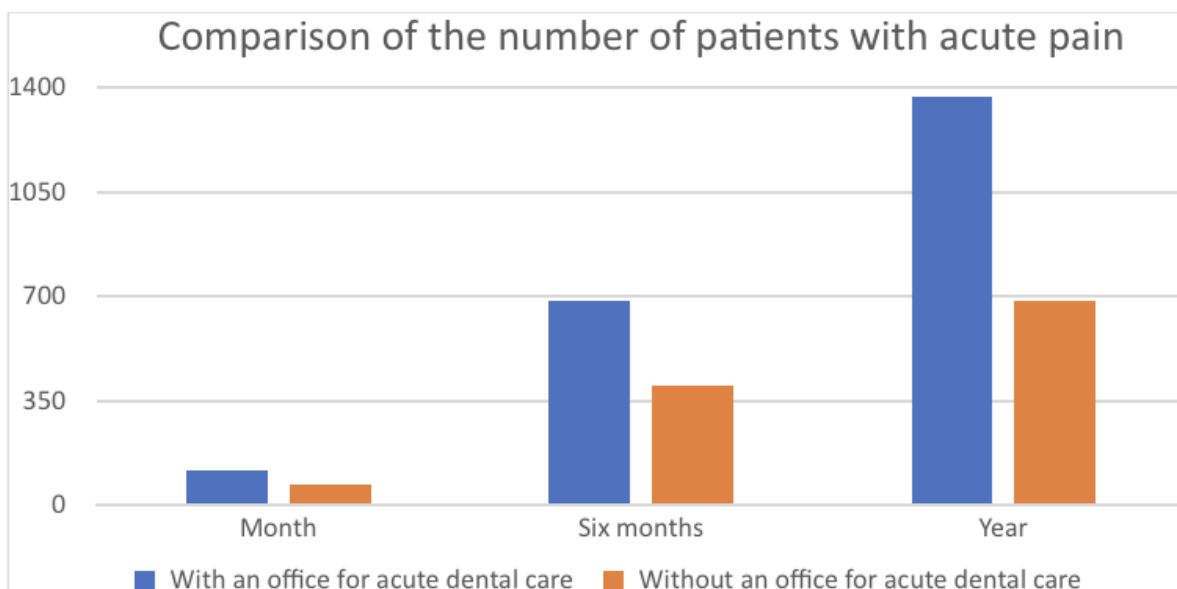


Figure 1. Comparison of patients with acute pain in a shift with an acute medical care office and a shift without an acute medical care office.

The total number of patients who applied for acute pain was 2,497 people.

The number of patients who applied to the adult therapeutic and surgical department was: 189 people per month (February);

1085 in six months;

2055 people for 2021.

The calculation of the number of patients who applied in a shift with an acute pain office and in a shift without an acute medical care office was carried out according to the formula:

Six months:

$$(118+114+99+126)/4*6=684$$

$$1085-684=401$$



Year:
 $(118+114+99+126)/*12=1368$
 $2055-1368=687$
 To calculate the average number of patients who applied to a shift with an acute dental care office for 1 month, statistical indicators for 4 months were taken as a basis – one from each quarter:
 February – 118 patients
 May – 114 patients
 August – 99 patients
 November – 126 patients
 With these data, the average number of patients per month was calculated using the formula: $(118+114+99+126)/4=114,25$ (round it up to 114).
 Then it was calculated:
 The number of patients who applied for a shift with an acute pain office for six months:
 $(118+114+99+126)/4*6=684$;
 The number of patients who applied for a shift without an office for acute pain for six months: $1085-684=401$;
 The number of patients who applied for a shift with an acute pain office per year:
 $(118+114+99+126)*12=1368$;
 The number of patients who applied to the shift without an office for acute pain for the year:
 $2055-1368=687$.
 In the course of the study, the following results were obtained.

4. Research results:

Thus, we received information about the state of dental health and the level of sanitary culture of those who applied for medical help, about their opinion about the organization and quality of medical care in the relevant dental institutions.

The number of patients admitted in 2021 at Dental polyclinic No. 66 for 2021 for the provision of surgical and therapeutic care by dental surgeons and dental therapists was compared (Table 2). The number of patients admitted in both shifts at surgical and therapeutic appointments for a month, for six months and for a year was considered (Figure 2 and figure 3.).

Table 2. Distribution of the number of patients of the adult surgical and therapeutic department of the dental polyclinic admitted in 2021.

Time interval	Therapeutic Department		Surgical Department	
	I shift without an office for acute dental care	II shift with an office for acute dental care	I shift without an office for acute dental care	II shift with an office for acute dental care
Month	588	684	260	282
Six months	3187	3733	1285	1423
Year	6591	7667	2496	2789



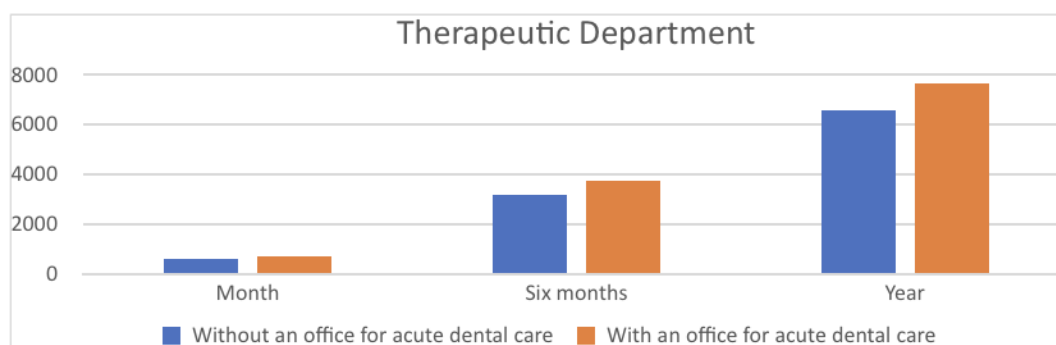


Figure 2. Distribution of the number of patients of the therapeutic department in a shift with an office for acute dental care and without an office for acute dental care.

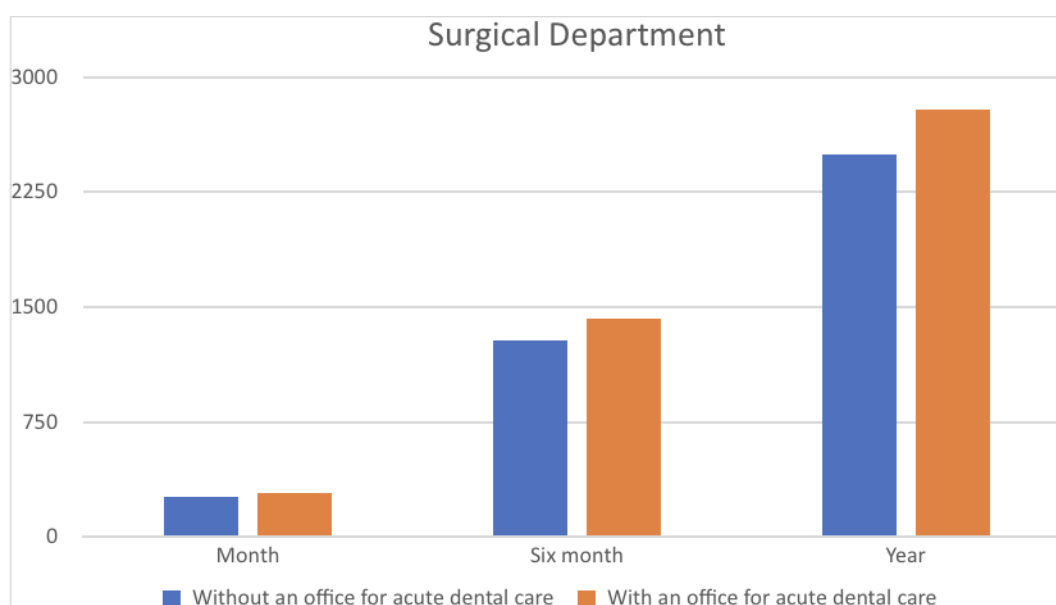


Figure 3. Distribution of the number of surgical department patients in a shift with an acute dental care office and without an acute dental care office.

Thanks to the introduction of the office for acute acute medical care, it allows the number of patients to be received by dentists, therapists and surgeons less and more qualitatively. The number of completed complex treatment for 2021 of work in shifts with an acute medical care office and shifts without an acute medical care office was calculated (Table 3).

Table 3. Distribution of patients with completed complex treatment of the adult surgical and therapeutic department of the dental polyclinic accepted for 2021.

Time period, addresses	The number of patients who applied for a shift with an acute dental care office	The number of patients who applied for a shift without an office for acute dental care
Month	243	128
Six months	1292	727



Year | 2749 | 1412

The efficiency of dental surgeons and dental therapists is higher in a shift with an acute medical care office compared to another shift.

The number of patients with completed complex treatment of the adult department of the dental polyclinic with an office for acute medical care was more by 1,337 people (Figure 4) than the number of patients per shift without an office for acute medical need in 2021.

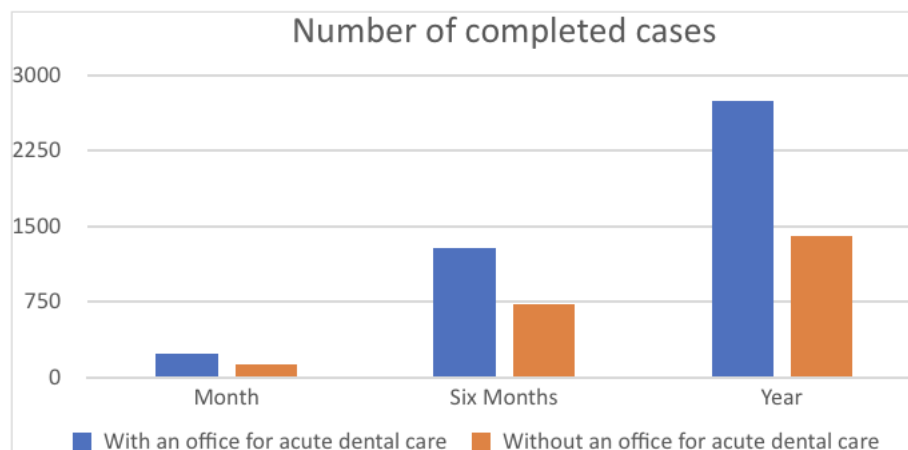


Figure 4. The difference in the number of patients with completed treatment shifts with an office for acute dental care and shifts without an office for acute dental care.

5. Conclusion

In conclusion, we can say that the provision of sufficient scale and range of dental services should be combined with the proper volume and level of quality. The correct distribution of patients affects the effectiveness of doctors. The office of acute medical care allows you to receive a larger number of patients and perform a larger amount of medical work, which directly affects the amount of completed complex treatment.

1. The office for acute medical care allows you to unload dentists-surgeons and dentists - therapists.

2. The number of patients admitted to a shift with an acute medical care office was 1369 more than patients admitted to a shift without an acute pain office.

3. In 2021, the number of patients with completed treatment amounted to 2,749, which exceeded the number of patients per shift without an office for acute pain by 1.95 times.

Application of artificial intelligence: The article is written without the use of artificial intelligence technologies.

Conflicts of Interest: The authors declare no conflict of interest

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