GEORGIAN MEDICAL NEWS

ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman (Кириллица)**, для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman (Cyrillic)**, print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf

In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

**Articles that Fail to Meet the Aforementioned
Requirements are not Assigned to be Reviewed.**

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგ-ლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**,ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმების (ინგლისურ,რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენ-ტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ,რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი,მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემა-ჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები,ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტო-სურათების წარწერებში საჭირო მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი,ანათლების შედგების ან იმპრეგნაციის მეთოდი და აღნიშნოთ სუ-რათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხო-ური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამული, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი,წელი,ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანე-ლის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა,მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა,რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შე-ჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

Содержание:

IMPROVEMENT OF THE MODEL OF PREVENTION OF MALIGNANT NEOPLASM OF THE GASTRIC

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Abstract.

Introduction: The fight against malignant neoplasms is one of the most important problems of health care in Ukraine; its relevance is due to the continuous growth of oncological morbidity in the population, the complexity of timely diagnosis and treatment, high cost, as well as quite high levels of disability and mortality of such patients. Gastric cancer, which remains one of the most common and deadly neoplasms in the world, occupies one of the leading positions among cancer.

Aim: Scientifically substantiate and develop a model for improving the organization of prevention of malignant neoplasms of the gastric.

Materials and methods: A study of performance indicators of oncology health care facilities and a survey of respondents was conducted: 180 respondents of patients with gastric cancer and precancerous diseases of the stomach using medical-statistical, sociological methods and questionnaires.

Results and discussion: A functional and organizational model for improving the prevention of malignant neoplasms of the stomach has been scientifically substantiated and developed. The features of the proposed model were the inclusion in it, in addition to the previously existing, innovative elements (an algorithm for early diagnosis and prevention of negative consequences of malignant neoplasms of the stomach at the level of primary medical care, reminders for primary medical care doctors regarding monitoring of risk factors and predictors of malignancy of precancerous stomach diseases, the allocation of a dynamic monitoring group due to the increased risk of precancerous gastric diseases becoming oncological), as well as previously existing, but functionally changed components (optimization of the functions of the primary care physician in relation to the information provision of the patient and his relatives; monitoring of risk factors for precancerous and cancerous stomach diseases, control and accounting for the implementation of the recommendations of specialist doctors and rehabilitation specialists), the interaction between which provided the model with a qualitatively new focus on achieving its strategic goal - preventing the occurrence and progression of the development of malignant neoplasms of the gastric.

Conclusions: The proposed functional and organizational model will lead to a positive medical and social effect for the improvement of the organization of the prevention of gastric cancer in the main areas: systematicity, comprehensiveness and preventive direction. Its implementation will lead to an increase in early detection, coverage of dynamic monitoring of patients, as well as a projected economic effect due to a decrease in the specific weight of neglected forms of gastric cancer, improvement in survival and reduction in mortality.

Key words. Functional-organizational model, gastric cancer, prevention, precancerous diseases of the gastric.

Introduction.

According to the International Agency for Research on Cancer (UARC), the rate of increase in oncological diseases significantly outstrips the growth of the world population (2.1% and 1.7% per year, respectively) [1]. In our country, as well as in all countries of the world, except for Japan, in which mortality from cancer ranks first, oncology ranks second in the structure of population mortality, second only to diseases of the circulatory system [2]. At the same time, the risk of getting sick with malignant neoplasm is currently 28% for men and 18% for women and is constantly increasing [3]. The annual increase in morbidity associated with oncological pathology is 1.5-2%. The highest levels of cancer incidence are characteristic of the regions of the South and East of Ukraine, which scientists attribute to the more intensive aging of the population and pollution of the environment with carcinogenic substances in these regions [4,5].

The incidence of gastric malignant neoplasms (MNG) in the world, including in Ukraine, ranks fifth among all malignancies (5.7% of all new cancer cases) and ranks second in the structure of cancer incidence of digestive organs [6]. In particular, in economically developed countries, the specific weight of gastric cancer reaches 50% of all tumors of the gastrointestinal tract and 10-15% of the total number of gastric cancers [7].

According to the Global Cancer Observatory (GLOBOCAN, 2018), lung cancer is the third leading cause of death from cancer worldwide, after total mortality from lung cancer and colorectal cancer. Approximately 1 in 12 of all deaths from oncology is due to MNG [6-8]. At the same time, high mortality from MNGs is characteristic of most countries of Eastern Europe, and its lowest levels are noted in the USA, Canada, New Zealand, as well as in the countries of Western and Northern Europe. Obviously, this picture is largely explained by the high average 5-year survival of patients with MNG in economically developed countries: in Western Europe - 18%, in the USA - 21% and the highest - 53%, recorded in Japan as a result of mass screening in this country. In the world, in general, the 5-year survival rate from SNS ranges from 10 to 20% [9,10].

The special medico-social significance of MN caused the creation of a state system for the organization of oncology care for the population, namely specialized oncology care — a system of measures for the organization of cancer diagnosis, treatment and rehabilitation of oncological patients, and accounting of lesions of the MN population. The basis of the organization of this oncology care is the principle of dispensation, which involves active dynamic monitoring of the health of patients,

providing them with the necessary medical and diagnostic assistance.

Organizationally, the oncology service is subordinate to the Ministry of Health of Ukraine. The main oncology institution of the Ministry of Health of Ukraine is the National Cancer Institute, which carries out scientific and methodical management of oncological institutions, develops and implements modern methods of diagnosing oncological diseases and treating patients with this pathology, and organizes oncological care for the population. The National Cancer Register of Ukraine, created in accordance with the order of the Ministry of Health of Ukraine dated January 22, 1996, No. 10 "On the creation of the National Cancer Register of Ukraine", functions on its basis. The National Cancer Registry combines a network of regional registries on the basis of regional (city) oncology institutions that work using a single information technology.

Numerous studies have shown that the incidence and mortality from MNG increase with age [11]. People over 60 years of age suffer from MN much more often [7]. Also, MNG affects men more often [4,5]. Thus, in developed countries, the incidence of MNG among them is 2.2 times higher than among women, and in developing countries - 1.83 times [7]. The incidence rate in countries with a high average human development index is about 20 per 100,000 for men, while among countries with a low and medium HDI it is 6.6 per 100,000 of the corresponding population [12].

Ukraine ranks 8-9 in the list of 49 countries with registered morbidity. Every year, 6-8 thousand new cases of MNG are registered in the country (among men - 22.3 per 100 thousand population, women - 12.6%) [5]. According to the official statistical data given in the Bulletin of the National Cancer Registry of Ukraine (No. 21 "Cancer in Ukraine, 2018-2019") [4], esophageal cancer is among the 10 main nosological forms in the structure of both morbidity and mortality from malignant neoplasms. Thus, in the structure of the incidence of gastric cancer in the population of Ukraine, stomach cancer ranks 4th in men and 8th in women. Mortality rates from cervical cancer are even more depressing: among men in the structure of mortality from oncological diseases, it ranks 2nd, second only to cancer of the trachea, bronchi and lungs, and among women it ranks 3rd [4,5]. Unfortunately, in Ukraine, 82-85% of patients are diagnosed in the III-IV stages of the disease, and the diagnosis of «early» cancer is a rare coincidence, so only a third of patients live for 5 years or more after radical treatment [4].

The presented data give a reason to consider the problem of MN in Ukraine as an important medical and socio-economic phenomenon, the acuteness and relevance of which is growing significantly due to the unfavorable demographic situation (pronounced aging of the population) against the background of adverse environmental conditions, including the negative impact of the consequences of the accident at the Chernobyl nuclear power station, as well as the unstable socio-economic and political situation, which became incredibly acute during the COVID-19 pandemic (as well as in other countries of the world) [13], as well as in the conditions of military aggression of the Russian Federation.

The aim of the study to substantiate, develop and implement in the health care system a functional and organizational model for improving the organization of prevention of malignant neoplasms of the gastric.

Materials and Methods.

With the help of medical-statistical and sociological methods, a study of the performance indicators of oncological health care institutions (on the example of Chernivtsi region) was carried out according to the data of the state system for collecting medical statistical information (the National Cancer Register [4,5] for 2006-2020; «Reports on the network and activities of medical institutions for the year 20__», form No. 47-health and «Reports on patients with malignant neoplasms», form No. 35-health for 2016 and 2020), as well as according to the data of the survey of respondents: 130 patients with gastric cancer (MNG) (main group) and 50 people with precancerous diseases of the gastric (PCDG) (comparison group).

Results.

The evaluation of the oncology service based on the study of the data of the National Cancer Registry [4,5] revealed shortcomings in the organization of prevention and medical care, in particular, regarding early detection and prevention of malignancy of precancerous diseases in gastric cancer. Over the past fifteen years, there has been deterioration in the indicators of early detection of gastric cancer, more accentuated in the Chernivtsi region, and a forecast of a further increase in the indicators of neglect has been made: the detection of pathology in stages III-IV and mortality up to one year from the moment of diagnosis. It is clear that these organizational shortcomings of preventive technologies should be eliminated first of all at the level of primary medical care (PMC), since it is the duties of a PMC doctor to ensure the preventive component through screening, including malignant neoplasms [14]. As for the performance indicators of the actual oncology service, their analysis showed that, despite the course for reforming the financing of the health care system determined in 2016 with the aim of optimizing its resources and the related reduction in the number of hospital beds in the country, the oncology the profile was slightly affected, especially at the national level.

In our opinion, one of the most important points for the timely detection and positive results of treatment of PCDG and MNG is the patient's referral to doctors both about the disease and about medical examinations and control visits within the scope of dispensary observation. Survey data of respondents regarding the frequency of visits to various doctors for the specified reasons are presented in the table 1, from which it follows that the medical activity of the respondents of both comparison groups was characterized by unevenness.

As can be seen in Fig. 1, which presents the number of cases of at least one visit to a doctor during the year up to the time of the survey per 100 respondents, the respondents mainly, visited doctors for illness. It is logical that in this case, patients with MNG mostly used the services of oncologists (79.0%), although they often turned to primary care doctors (50.0%) or doctors of other specializations (23.3%). At the same time, patients with PCDG most often turned to PMC doctors about the disease (87.2%, including 10.6% - 2 times a year or more often) and much less often - to an oncologist (5, 7%) or another specialist (5.9%).

Table 1. Frequency of different types of visits by respondents to doctors during the year up to the time of the interview (per 100 respondents).

Doctor	Reason for visit	Comparison group	Number of visits over the last year			Total	p
			0 times	1 time	2 times and more often		
Primary medical care	disease	main	50,0	48,4	1,6	100,0	<0,001
		control	12,8	76,6	10,6	100,0	
	basic preventive examination	main	83,2	16,8	0,0	100,0	<0,001
		control	56,8	38,6	4,5	100,0	
	basic dispensary observation	main	88,4	11,6	0,0	100,0	>0,05
		control	83,3	16,7	0,0	100,0	
Oncologist	disease	main	21,0	76,6	2,4	100,0	<0,001
		control	94,3	5,7	0,0	100,0	
	basic preventive examination	main	95,0	5,0	0,0	100,0	>0,05
		control	93,9	6,1	0,0	100,0	
	basic dispensary observation	main	14,8	84,4	0,8	100,0	<0,001
		control	97,0	3,0	0,0	100,0	
Another one	disease	main	76,7	23,3	0,0	100,0	<0,05
		control	94,1	5,9	0,0	100,0	
	basic preventive examination	main	94,3	5,7	0,0	100,0	>0,05
		control	100,0	0,0	0,0	100,0	
	basic dispensary observation	main	93,4	6,6	0,0	100,0	>0,05
		control	87,5	9,4	3,1	100,0	
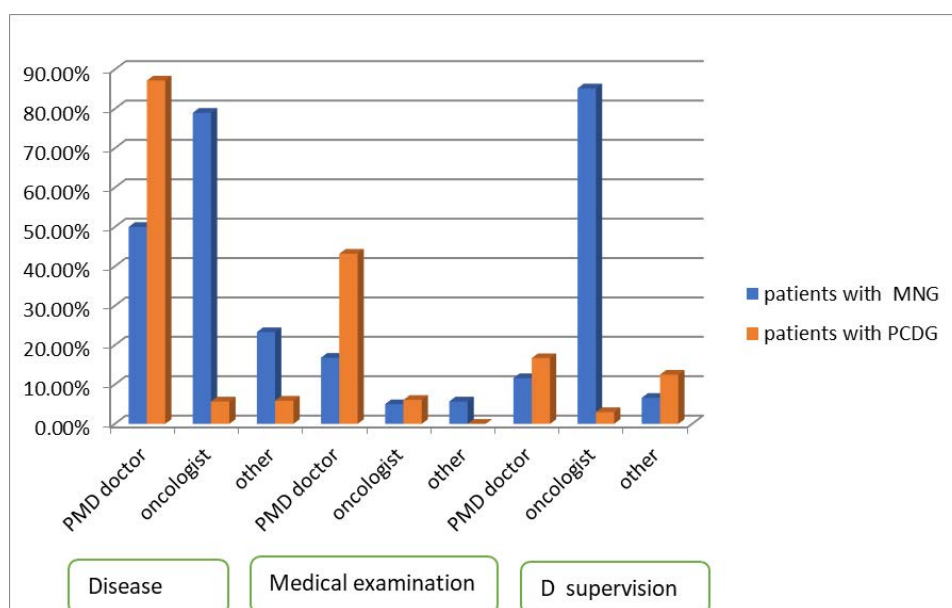
Figure 1. Frequency of at least one visit during the year to doctors for various reasons among the respondents of the comparison groups.

At the same time, the medical activity of the preventive direction was clearly insufficient, in particular with regard to the respondents' appeals to doctors regarding medical examinations. It is possible that the low frequency of screenings among the surveyed patients with MNG (16.8% of such visits to PMD doctors, 5.0% to oncologists and 5.7% to doctors of other specialties) can be explained by the high percentage of their control visits to oncologists in within the limits of dispensary observation (85.2% and another 11.6% to PMC doctors and 6.6% to doctors of other specialties). However, less than half (43.2%) of the respondents of the comparison group (and these are patients with precancerous diseases of the stomach) underwent preventive examinations by their PMC doctor (although this is precisely their duty - to ensure coverage of

screenings of the population from risk groups), and at all a small share (6.1%) – they were referred by him for a consultation with an oncologist. At the same time, it has been proven that not undergoing preventive examinations by a PMC doctor is a significant risk factor for the malignancy of the PCDG (OR=3.76; 95%CI=1.75-8.09; p<0.001). The specific weight of patients with PCDG who visited doctors for dispensary follow-up turned out to be insignificant: PMD doctor - 16.7%, another specialist - 12.5%, oncologist - 3.0%.

Respondents' answers regarding which doctor they would like to be constantly monitored and treated by indicate a lack of trust in PMC doctors in particular. Thus, the absolute majority of respondents preferred a specialist doctor (90.6% of the main and 89.8% of the control group, p>0.05) and only about 10%

(9.4% and 10.2%, respectively) - a PMC doctor. At the same time, the study proved that improper visit to the PMC doctor is a risk factor for the malignancy of the PCDG (OR=6.83; 95%CI=2.71-17.25; p<0.001).

Also, special attention should be paid to the type of medical care that patients need. Therefore, it was established that the respondents of the main group more often needed expensive inpatient treatment. As can be seen in fig. 2, there are almost three times more respondents who were hospitalized for an existing disease more than four times during the year than among respondents from the comparison group (18.0% vs. 6.4%, p<0.05). On the other hand, in both groups, individual respondents indicated that they had not yet been hospitalized for their current illness (3.3% and 2.1%, respectively), and most of the responses were for one-time hospitalization (40.2% and 48 .9%). Obviously, this distribution was influenced by the methodology of our research, since the interview was conducted in hospital conditions. However, it is worth noting that almost a fifth of the interviewees of the comparison group - patients with PCDG (23.4% versus 26.2% of the main group) stated that they had been in the hospital twice in the last year, and almost the same proportion (19.1% against 12.3%) - three times. In our opinion, this indicates the shortcomings of dispensary monitoring in the post-hospital period, which, as already indicated, is a risk factor for malignancy.

The duration of treatment is also one of the important factors in the assessment of dispensary supervision of patients. From the data presented in fig. 3, it follows that approximately one in four patients with MNG (27.6% versus 6.5% of the comparison group) was hospitalized for a short time - up to 7 days. At the same time, more than half of the interviewees of the main group (52.6%) required long-term treatment; three weeks (17.2%) or more (35.3%) in total during the last year. In the comparison group, the largest share of respondents (52.2%) spent a total of 8-14 days in a hospital over the past year. However, more than 40% of respondents were in the hospital for three (15.2%) or even more (26.1%) weeks, which once again emphasizes the medical and organizational shortcomings of post-hospital examination and rehabilitation of patients with PCDG.

Evaluating the answers of the respondents regarding the form of ownership of healthcare institutions (HCI) in which they
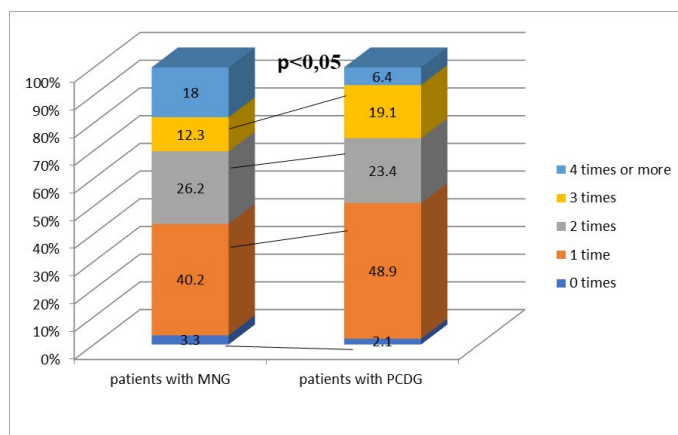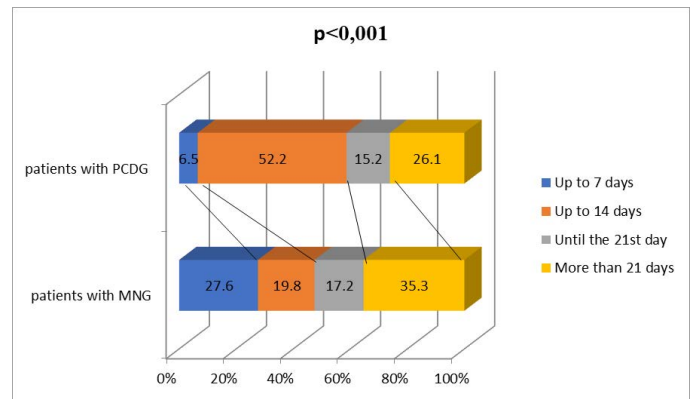

Figure 3. *Distribution of respondents by length of stay in hospital (in total for the last year before the survey).*

would like to be observed and treated, the absolute majority of respondents of both groups (93.0% of the main and 95.9% of the control group, p>0.05) would choose for this, a state or communal HCI and only 6.3% and 4.1% - a private one, another 3.1% of respondents only from the main group would like to be treated abroad. The majority of respondents of both groups are dissatisfied with the results of treatment - 84.9% and 93.8%, which indicates the benefit of financial motives. Only 15.1% of respondents of the main and 6.3% of the control group (p>0.05) assessed the effects of treatment as positive.

Therefore, the obtained research results required the development of a new functional and organizational model for improving the prevention of malignant neoplasms of the stomach.

The strategic direction of the model was determined to prevent the occurrence of malignant neoplasms of the stomach, early detection and improvement of the organization of medical care to ensure that patients with precancerous diseases of the stomach and MNG have access to the necessary, in accordance with modern world standards, quality medical services.

The features of the developed model were the inclusion in it, in addition to the existing components, of previously existing but functionally changed, as well as innovative elements (Table 2), the interaction between which gave the system a qualitatively new direction in relation to the prevention of the occurrence and prevention of the negative consequences of gastric cancer.

The proposed functional-organizational model is focused on the implementation of measures to prevent MNGs mainly at the level of primary medical care. After all, as you know, only the doctor of the first contact is able to provide comprehensive, integral, continuous and accessible medical care of the population, to be a bridge between national systems of public health and health care, a person, his family and community, to become a manager of individual health each patient. That is why the reform of the financing of the health care system in Ukraine began in 2018 with PMC, and the newly created National Health Service of Ukraine began to purchase the services of PMC doctors using the capitation method, one of the most important reasons for using which was the need to strengthen the preventive component.

However, as shown in our research, among the inhabitants of the country, the attitude towards the priority of turning to PMC

Figure 2. *Multiplicity of hospitalizations of respondents of the compared groups.*

Table 2. *Peculiarities of structural construction of the model.*

Existing elements of the health care system	Functionally improved components	Qualitatively new elements
• management apparatus, structural subdivisions, staff of health care institutions. • regulatory and legal support. • medical technologies.	• preventive technologies at the PMD level: - information provision for the patient and his relatives. - monitoring of risk factors for precancerous and cancerous diseases of the stomach. - allocation of risk groups, incl. patients with chronic obstructive pulmonary disease. - control and accounting of the implementation of the recommendations of specialist doctors and rehabilitation specialists. - involving, if necessary, other stakeholders.	• an algorithm for early diagnosis and prevention of the negative consequences of gastric cancer at the level of PMD • note for PMD doctor regarding monitoring of risk factors and predictors of malignancy of the prostate gland. • allocation of a group of dynamic monitoring due to the increased risk of transformation of precancerous diseases of the stomach into oncological ones.
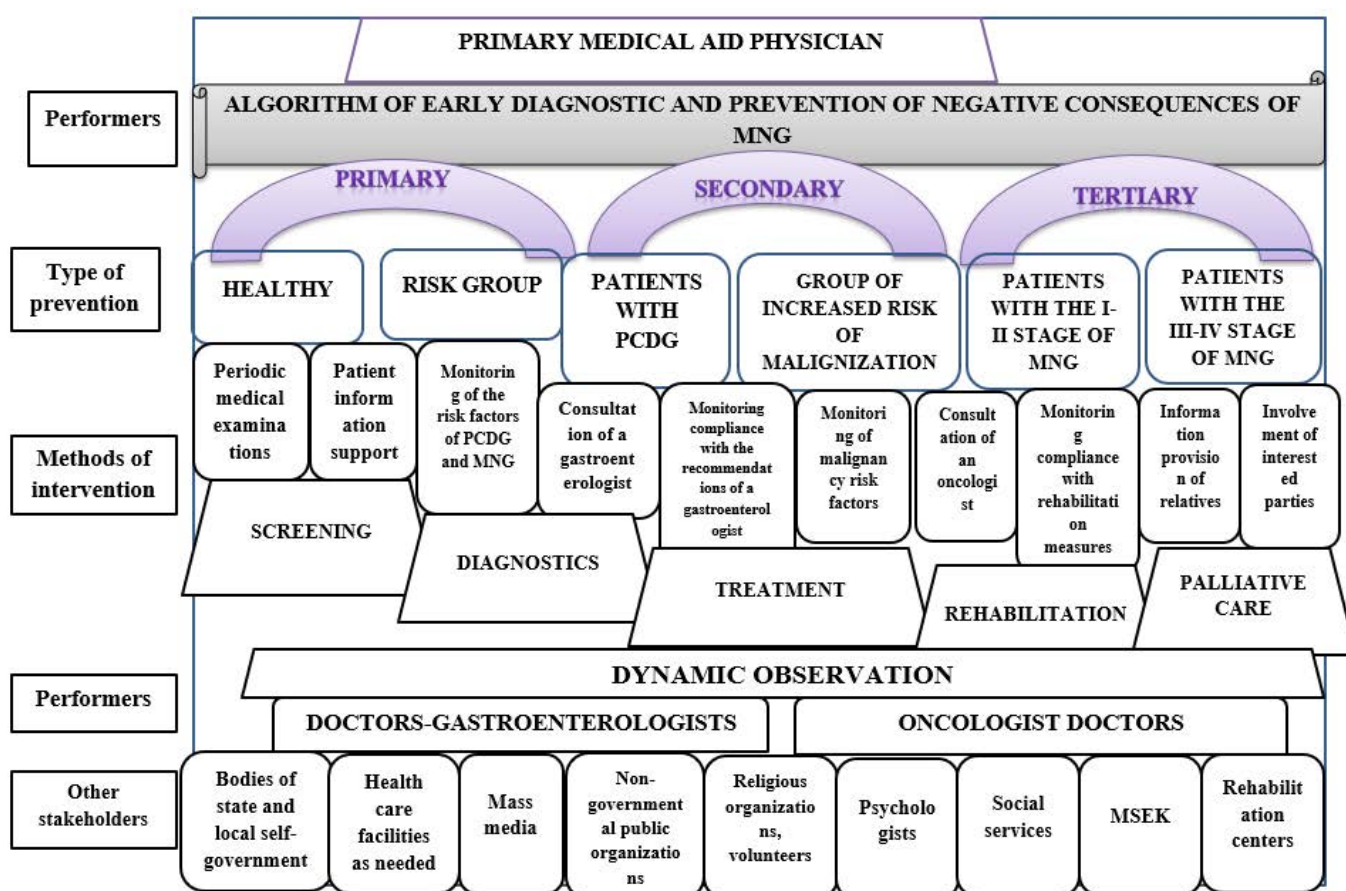
Figure 4. *Functional-organizational model of improving the prevention of gastric cancer.*

doctors is not yet sufficiently formed, which negatively affects the coverage of the population with preventive examinations. At the same time, it has been proven that not visiting the doctor of the first contact in the event of complaints or illness increases the chances of malignancy by 2.7-17.3 times, failure to undergo periodic medical examinations increases them by 2-8 times.

In order to facilitate the implementation of primary, secondary and tertiary prevention measures by the PMC doctor in the case of MNG, we have developed an algorithm of his sequential actions regarding early diagnosis and prevention of negative consequences of the pathology (Fig. 5).

When monitoring the presence of risk factors, it is important, in our opinion, to form cancer awareness through appropriate communication technologies in those patients who have such factors, especially of a behavioral nature.

It should be emphasized that junior specialists with medical education (as members of the PMC team and physician's assistants) can and should play an important role in organizing and ensuring the coverage of patients with preventive examinations, spreading medical knowledge, which is not yet sufficiently realized in Ukraine.

If there is the slightest suspicion of gastric cancer, such a person should be referred to an oncologist for consultation.

In our opinion, in order to motivate and improve the early detection of malignant neoplasms of the National Health Service, it is worth considering and finding an opportunity to

PRIMARY MEDICAL AID TEAM

Figure 5. Algorithm for early diagnosis and prevention of the negative consequences of MNG at the PMC level.

introduce this indicator as an indicator of the quality of the PMC doctor's activity and to pay additional funds for each case of diagnosis of MNG at stages I-II.
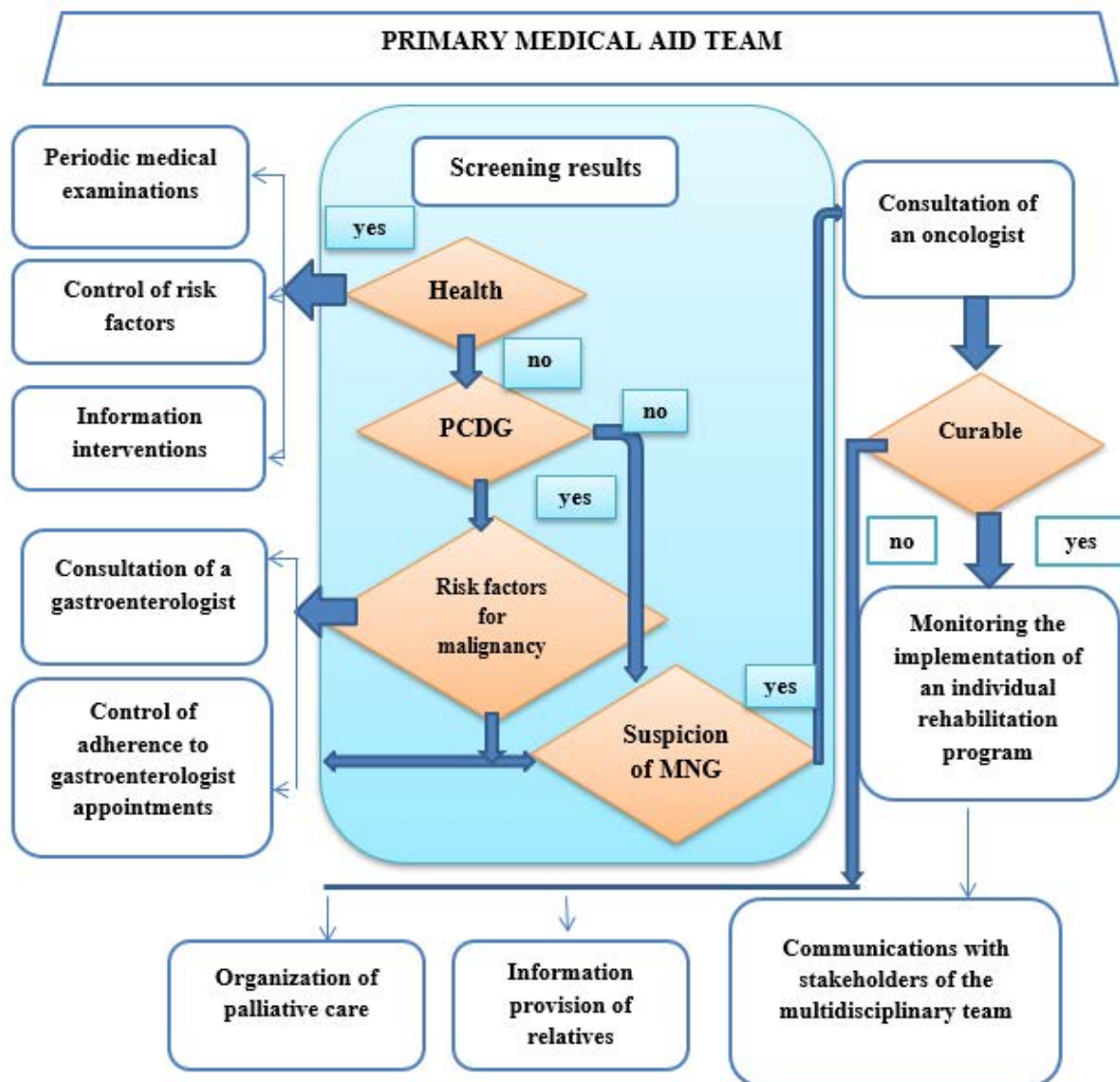
Discussion.

During the years of independence, three state targeted programs aimed at combating cancer in children and adults were implemented in Ukraine - the state program "Oncology" for 2002-2006, the state program «Children's Oncology» for 2006-2010, the «National Program fight against oncological diseases for the period until 2016» [15]. In addition, in 2008, the program "50 steps to fight cancer in Ukraine" was developed, and in 2010, the Interstate Plan to fight cancer in the CIS countries was adopted. However, all the listed measures, more precisely the funds allocated for the implementation of the listed programs, related only to the purchase of medicines, high-value equipment and consumables. A significant number of tasks related to primary and secondary prevention of malignant neoplasms, screening, early diagnosis, development of scientific research, social, labor and psychological rehabilitation, control of the

onco-epidemiological situation remained behind the scenes. As a result, despite quite large amounts of funding, indicators characterizing the effectiveness of the anti-cancer fight for more than 30 years left much to be desired.

The analysis of the dynamics of the incidence of certain forms of tumors at that time indicated a steady increase in the population affected by stomach cancer, while significant fluctuations in the incidence rate were observed in different regions of the country. An important parameter that reflects the neglect of the disease is mortality within a year from the moment of diagnosis, that is, in fact, more than a third of patients died within one year. This indicator was very high precisely in the case of stomach cancer (58.1%). The share of patients with the IV stage of the disease, who sought medical help for the first time, was 22.6% of all cases. At the same time, only 49.4% of patients received special treatment in oncology institutions, and only 14.7% of primary patients were detected during preventive examinations, which were carried out rather superficially and not in full. It should be noted that at that time, high neglect among primary patients was

associated with a low level of early diagnosis, lack of screening programs and financing of any preventive measures [16].

30 years have passed. During this period, in fact, an oncology service was formed in the country, which provided highly specialized care and included, in addition to surgical aspects of the cancer problem, drug and radiation therapy. Expensive equipment has been significantly updated; the arsenal of chemotherapy drugs has expanded. How did all this affect the statistical data reflecting the effectiveness of oncologists working in medical institutions and the state as a whole? Despite the development of strategic programs to improve the effectiveness of oncology care, the increase in the level of financing of the health care system in general and oncology in particular, the incidence of stomach cancer has increased, unlike the mortality rate. When considering the dynamics of the prevalence indicator of the MNG (coefficient of patient contingents) during the studied time period, it was established that its levels were characterized by some upward trend. Thus, the nationwide coefficients of the contingents of patients with MNG gradually increased from 73.5 cases per 100,000 population in 2007 to 78.1%ooo in 2020 (growth rate +6.3% to the level of 2007) [7]. Regional indicators were higher and also increased from 81.8%ooo to 92.2%ooo respectively. Despite some fluctuations of the considered indicators, their downward trend is clearly visible, which is obviously a consequence of progress in cancer treatment technologies. Thus, the crude mortality rate of the population of Ukraine from MNGs has decreased by almost half over the past 15 years: from 21.2 cases per 100,000 inhabitants in 2006 to 14.5%ooo in 2019 (rate of decline: -1.2-5 .0%) and up to 12.4%ooo (-14.5% compared to 2019) during the COVID-19 pandemic in 2020. Other researchers also note the decrease in mortality rates from HCV in the last five linking this to the success of screening programs and medical treatment technologies [17]. However, a possible reason for the rapid decrease in the indicator in 2020 may be that cancer is a proven risk factor for higher mortality from coronavirus disease [18]. Therefore, part of such cases, including those with gastric cancer, was obviously included in the mortality statistics from COVID-19.

Numerous scientific studies have proven that clarification and advice on lifestyle changes received from a health professional is a more effective method in influencing some clinically significant outcomes and quality of life than receiving the same information from other sources. Therefore, in terms of correcting bad habits and lifestyle, consultations of medical professionals - doctors and/or nurses, mainly primary medical care (PMC) - are of great importance today. This applies to consultations on physical activity, diet, smoking cessation, weight correction, etc. [19,20]. That is, ideally, primary cancer prevention should be carried out in practically healthy people, but it is especially necessary for persons with a high risk of developing malignant neoplasms of the gastrointestinal tract, who have several risk factors or precancerous diseases [21,22]. In particular, according to the recommendations of the US Preventive Services Task Force, adults >18 years of age with overweight, obesity, and other risk factors should be offered intensive (>360 min.) behavioral counselling on healthy eating and physical activity to prevent chronic noncommunicable diseases and their complications. It is recommended to pay special attention to the prevention of stomach cancer in old age [23,24].

Despite the fact that the indicated measures of primary prevention are quite general in nature, their effectiveness in practice has been confirmed in a number of countries in Europe, North America, etc. [25,26]. In particular, in the United States, the incidence of cervical cancer has decreased several times over the past 70 years and is only 3% of all malignant diseases, which, according to scientists, is the result of many years of promoting a healthy lifestyle and significant changes in the diet and lifestyle of the population [27,28].

The strategic goal of secondary prevention of cancer is to detect the pathology as early as possible. After all, if detected in time, modern methods of treatment allow to significantly extend the patient's life, and in some cases, to defeat the disease. Successes in the development of methods of diagnosis and treatment of early forms of the disease have made it possible to distinguish the so-called "early MNG" (T1N0M0) as a practically curable disease [29]. Radical surgical treatment at this stage ensures 10-year survival of 80-95% of patients [30]. In this regard, regular medical examinations and diagnostic studies play an important role, the implementation of which depends both on the responsibility of the citizens themselves for their own health, and on the actions of medical workers, primarily PMD [31].

Conclusion.

As a result of insufficiently developed preventive skills among the population and the priority of addressing complaints to primary care physicians, there is a low coverage of preventive examinations (16.8%) and dynamic monitoring (18.2%). Medical-organizational risk factors for the transformation of precancerous diseases of the stomach into oncological ones are not contacting doctors, primarily primary medical care, about the disease (6.83%), screenings (3.76%), dynamic monitoring (29.18%) , low adherence to recommendations for drug treatment (21.00%) and diet (4.73%).

The results of the expert evaluation by qualified independent experts of the proposed innovations of the functional and organizational model proved their feasibility and importance for the improvement of the organization of the prevention of MNGs according to the main directions: systematicity, comprehensiveness and preventive direction. Their implementation will lead to a positive medical and social effect due to an increase in early detection, coverage of dynamic monitoring of patients, as well as a projected economic effect due to a decrease in the specific weight of neglected forms of gastric cancer, improvement in survival and reduction in mortality, which allows recommending a functional and organizational model for improving the prevention of malignant diseases neoplasms of the stomach for implementation in the practice of health care institutions of Ukraine.

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РЕЗЮМЕ
СОВЕРШЕНСТВОВАНИЕ МОДЕЛИ ПРОФИЛАКТИКИ ЗЛОКАЧЕСТВЕННЫХ НОВООБРАЗОВАНИЙ ЖЕЛУДКА

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Введение. Борьба со злокачественными новообразованиями является одной из важнейших проблем здравоохранения Украины; ее актуальность обусловлена непрерывным ростом онкологической заболеваемости населения, сложностью своевременной диагностики и лечения, высокой стоимостью, а также достаточно высоким уровнем инвалидности и смертности таких больных. Рак желудка, остающийся одним из самых распространенных и смертоносных новообразований в мире, занимает одну из лидирующих позиций среди онкологических заболеваний.

Цель. Научно обосновать и разработать модель совершенствования организации профилактики злокачественных новообразований желудка.

Материалы и методы. Проведено исследование показателей деятельности онкологических учреждений здравоохранения и опрос респондентов: 180 респондентов больных раком желудка и предраковыми заболеваниями желудка с использованием медико-статистических, социологических методов и анкетирования.

Результаты и обсуждение. Научно обоснована и разработана функционально-организационная модель совершенствования профилактики злокачественных новообразований желудка. Особенностями предложенной модели было включение в нее, помимо существовавших ранее, инновационных элементов (алгоритма ранней диагностики и профилактики негативных последствий злокачественных новообразований желудка на уровне первичной медицинской помощи, памяток для первичной медицинской помощи). заботы врачей относительно мониторинга факторов риска и предикторов злокачественности предраковых заболеваний желудка, выделения группы динамического наблюдения в связи с повышенным риском перерастания предраковых заболеваний желудка в онкологические), а также ранее существовавших, но функционально измененных компонентов (оптимизация функции врача-терапевта по информационному обеспечению пациента и его родственников, мониторинг факторов риска предраковых и раковых заболеваний желудка, контроль и учет выполнения рекомендаций врачей-специалистов и специалистов по реабилитации), взаимодействие между ними; что обеспечило модели качественно новую направленность на достижение ее стратегической цели – предотвращение возникновения и прогрессирования развития злокачественных новообразований желудка.

Выводы. Предложенная функционально-организационная модель приведет к положительному медико-социальному эффекту для совершенствования организации профилактики рака желудка по основным направлениям: системности, комплексности и профилактической направленности. Ее реализация приведет к повышению уровня ранней диагностики, охвата динамическим наблюдением за больными, а также прогнозируемому экономическому эффекту за счет снижения удельного веса запущенных форм рака желудка, улучшения выживаемости и снижения смертности.

Ключевые слова: функционально-организационная модель, рак желудка, профилактика, предраковые заболевания желудка.