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IMPROVING THE ORGANIZATION OF RESCUE AND EMERGENCY GYNECOLOGICAL CARE IN A MULTIDISCIPLINARY EMERGENCY HOSPITAL

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INTRODUCTION

Research relevance. The United Nations developed and endorsed the Global Strategy for Improving Women's Health 2016-2030, which makes the economic and social case for funding improvements in women's health that provide a 10-fold return on investment, as 25% of income growth in low- and middle-income countries came from improved health outcomes. According to WHO, the issue of women's health in the leading countries of the world is becoming increasingly relevant, the adopted programs focus on the main causes of morbidity, mortality, economic and social factors influencing women's health (Kurmanbaeva A. O., 2017).

An important social and demographic problem of modern Russia is the low birth rate, which does not ensure the population reproduction (Rosstat, Demography). Women's health problems receive special attention when providing emergency medical care (EMC). The current stage of development of the emergency medical care system is characterized by the improvement of its provision in emergency and urgent form at the pre-hospital and hospital stages, regulated in the Procedure for the provision of emergency, including specialized emergency medical care (Order of the Ministry of Healthcare of the Russian Federation dated June 20, 2013 No. 388n). While the trend towards a reduction in hospital bed capacity continues associated with a steady increase in hospitalization, improving organizational technologies for providing emergency care at the hospital stage is an important component of improving the quality of medical care, including emergency care, to the population of the country (Bagnenko S.F. et al., 2012, 2013, 2014; Miroshnichenko A.G., 2013; Barsukova I.M., 2017, 2020-2023; Alimov R.R. et al., 2013, 2018; Teplov V.M., 2022; Khominets V.V. et al., 2022fg, 2023cf). The main direction of improving emergency medical care while ensuring the functional unity of the pre-hospital and hospital stages should be the provision of emergency care on the basis of well-equipped multidisciplinary hospitals (Suslonova N.V., 2010).

Today, the high level of hospitalization is accompanied by a significant increase in the intensity of work of hospitals, work beyond the standard load level. Admission departments of institutions, experiencing overload, sometimes cannot cope with the growing incoming flow of sick and injured people. Considering a shortage of hospital beds and limited financial resources, this creates a real threat to the accessibility, efficiency and quality of medical care.

At the same time, modern requirements for the technology of providing emergency medical care at the hospital stage of emergency medical care provide for medical triage of the flow of calls; early syndromic treatment, starting in parallel with diagnosis; hospitalization of patients with an established nosological diagnosis (confirmed by instrumental and laboratory methods), requiring the use of high-tech methods of treatment (and/or diagnosis) or dynamic observation to clarify the diagnosis and short-term non-specialized treatment (I.M. Barsukova, 2017, 2018; Teplov V.M. ., 2022; Khominetz V.V. et al., 2022bcd, 2023f).

A significant part of the incoming flow to the emergency hospital consists of obstetric and gynecological patients. Continuity at the stages of emergency medical care, reduction of diagnostic time (including differential), determination of optimal treatment tactics, early initiation of pathogenetically based therapy in specialized departments are the key to favorable outcomes for urgent diseases of the abdominal cavity and pelvis, including in women of reproductive age (Bakulev N.V., 2008; Valeev Z.G., Belyakov V.G., Salyakhova L.Ya., 2013; Minnullin R.I. et al., 2014). All this requires a revision of organizational approaches when providing medical care to obstetrics and gynecology patients.

Thus, the above mentioned circumstances dictate the need to study issues related to the organization of medical care for patients with obstetric and gynecological pathology in a large multidisciplinary hospital, providing emergency medical care, and determine the relevance, purpose and objectives of the study.

The degree of the research topic development.

The issues of improving the medical care organization in rescue and emergency forms, emergency medical care in the Russian Federation are given special attention,

both in scientific research and in federal and regional target programs (Boev V.A., 2008; Bagnenko S.F. et al., 2014; Shlyafer S.I., 2015; Ershova E.V., 2014; Parfenov V.E., 2015; Barsukova I.M., 2017, 2018, 2019). A significant part of the work is devoted to individual medical and social issues of organizing the medical care provision (Kopetsky I.S., 2012; Sidorov M.G., 2011; Evzelman M.A., 2006; Myasnikov A.O., 2009, Bagretsova I.A., 2019), solve problems on the scale of a large city, a subject of the Russian Federation (Savelyev, O.V., 2003; Sukhin V.V., 2004; Mater A.A., 2006; Boykov A.A., 2007) or countries (Barsukova I.M., 2017), others are related to various aspects of organizing emergency medical care in case of road accidents (Stozharov V.V. et al., 2007; Zakaryan A.A. et al., 2008; Bagnenko S. F. et al., 2009; Lysenko K.I. et al., 2010).

The works of Chernova A.V., 2005 are devoted to the problems of reproductive health care; Stozharova S.I., 2010; Belikova M.A., 2011; Mitkovskoy E.V., 2014; Kaygorodova T.V. et al., 2007; Komlichenko E.V., 2010; Starodubova V.I. and Sukhanova L.P., 2012; Sukhikh G.T. et al., 2013; Tsivyana B.L. et al., 2013ab, 2015; Toniyan K.A. et al., 2017. A number of studies are related to the analysis of morbidity, modern methods of treatment and diagnosis of gynecological diseases (Demidov A.V., 2014; Minnullin R.I., 2016; Rukhlyada N.N., Biryukova E.I., 2017; Dobrokhotova Yu.E. et al., 2018; Bezhenar V.F., 2019, 2022; Burova N.A., 2020), infertility treatment (Kogan I.Yu. et al., 2015, 2021), issues of gynecological oncology (Chernobrovkina A.E., 2022f
ab, 2023; Maistrenko D.N. et al., 2022).

Since 2010, the issues of developing the theory and introducing into practice the technology of an inpatient emergency department have become particularly relevant (Miroshnichenko A.G. et al., 2014, 2015, 2016; Alimov A.A. et al., 2014, 2018; Barsukova I.M., 2017, 2020a-c; Teplov V.M., 2022; Khominets V.V. et al., 2022ah, 2023afh). At the same time, despite sufficient attention to the issues of organizing emergency medical care, there are still no comprehensive studies on the provision of obstetric and gynecological medical care in a multidisciplinary hospital that has introduced modern technology in an inpatient emergency department.

All of the above mentioned determines the relevance and timeliness of this study, the need for a detailed study and analysis of the identified problems in order to improve the organization of medical care for patients with obstetric and gynecological pathology in an emergency hospital, to find and justify the most optimal ways for further development.

The aim of the study: to improve the system of providing gynecological medical care in a multidisciplinary emergency hospital.

Achieving the goal involves solving the following **problems**:

1. To study the special aspects of the demographic situation in the Russian Federation and St. Petersburg, the facilities provided for obstetric and gynecological medical care.

2. To analyze the organizational aspects of hospitalization of obstetrics and gynecology patients in a multidisciplinary emergency hospital.

3. To present medical and statistical characteristics of patients with obstetric and gynecological pathology in a multidisciplinary emergency hospital.

4. To study issues of continuity in the provision of obstetric and gynecological care in emergency and urgent forms at the pre-hospital and hospital stages.

5. To analyze the economic aspects of medical care of this profile in an emergency hospital.

6. To develop organizational measures to improve medical care for patients with obstetric and gynecological pathology in an emergency hospital.

Scientific novelty of the research. For the first time in domestic healthcare, on the background of the current demographic situation in the country and an analysis of the existing system for providing obstetric and gynecological care, a scientific justification for the system of organizing medical care for patients with obstetric and gynecological pathology in a multidisciplinary emergency hospital is presented:

- a low birth rate is noted that does not ensure population reproduction: in the Russian Federation over 5 years the birth rate decreased by 21.6%, and in St. Petersburg - by 25.4%; the natural population growth of the Russian Federation since 2016 has been negative;

- it was revealed that the number of obstetric and gynecological beds in the Russian Federation decreased by almost a third (2000-2022): gynecological - by 20.9 thousand (-32.4%), for pregnant women, women in labor and postpartum - by 25.1 thousand beds (-32.4%), accordingly, the provision of beds for the female population decreased (per 10,000 female population); in St. Petersburg, the number of hospitalizations in beds for pregnant women and women in labor decreased by 21.3%, in gynecological beds for adults - by 30.7%;

- it has been established that a significant proportion of obstetrics and gynecology patients do not require medical care in 24-hour beds, both due to the severity of their condition and the need for specialized therapeutic and diagnostic measures; every fifth (20.4%) was in the hospital for less than 1 day, 38.9% - for 1 day, 54.2% - up to 3 days; 22.9% of patients received the required amount of medical care in an inpatient emergency department;

- medical and statistical analysis revealed a predominance of patients aged 25-39 years (54.6%), an increase in the proportion of patients in older age groups and middle age who were admitted to the emergency hospital for emergency reasons; the vast majority (88.1%) were admitted with pathology of classes XIV and XV of diseases (Diseases of the genitourinary system (N00-N99), 46.3%) and pregnancy, childbirth and the postpartum period (O00-O99), 41.8%);

- data from the pre-hospital stage of EMC provision indicate a decrease in the total number of visits (EMC calls) for obstetrics and gynecology patients (by 20.6%) and emergency hospitalizations to the maternity hospital (by 30.4%); high proportion (93-95%) of hospitalization of those who applied;

- statistics from antenatal clinics indicate an increase in the absolute number of emergency hospitalizations of patients in the direction of gastrointestinal tract (more than 1.5 times, by 57.3%) and the number of hospitalizations per 1000 women (by 48.1%); a significant decrease in the proportion of women hospitalized for a normal pregnancy: their share decreased from 8.4% to 1.7% (2018-2022);

- it has been established that the use of emergency medical care tariffs for short-term obstetrics and gynecology patients who require urgent and emergency medical care is economically justified and appropriate;

- what is new is the scientific substantiation and development of organizational mechanisms that ensure the availability, efficiency and quality of obstetric and gynecological medical care in a multidisciplinary emergency hospital: the features and prospects for the development of a system for providing medical care to obstetric and gynecological patients in an emergency hospital are presented, the Patient routing algorithm and Technological worksheet for improving the organization of rescue and emergency gynecological care in a multidisciplinary emergency hospital are developed, and a training manual has been prepared.

The theoretical and practical significance of the dissertation lies in improving the system for organizing specialized medical care for patients with gynecological pathology in a multidisciplinary emergency hospital.

The scope of application is the system of emergency medical care in the Russian Federation (inpatient settings), both in the practical part and in the field of healthcare organization, as well as the system of professional training of healthcare organizers, emergency medical specialists and obstetricians-gynecologists.

The results of the study were introduced into the educational process of educational departments: the Department of Emergency Medical Care and Injury Surgery, the Department of Public Health and Healthcare with a course in economics and healthcare management of the Federal State Budgetary Educational Institution of Higher Education "Academician I.P. Pavlov First St. Petersburg State Medical University" of the Ministry of Healthcare of the Russian Federation, the Training Center of the State Budgetary Institution "I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Medicine", as well as in the scientific and practical activities of the State Budgetary Institution "I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Care", St. Petersburg State Budgetary Institution "Antenatal Clinic No. 33", St. Petersburg State Budgetary Institution "Antenatal Clinic No. 44 of the Pushkin District" (implementation certificates, training manual).

Methodology and research methods. The theoretical and methodological basis of the study are the works of domestic and foreign scientists in the field of healthcare organization, and regulatory legal acts of the Russian Federation. When developing and implementing the research program, the methodology of a systemic and situational approach was used to study the state of the emergency medical and obstetric-gynecological care system in an emergency hospital setting, and individual issues of emergency medical care units (pre-hospital stage) and antenatal clinics. The object of the study is the activities of medical organizations in providing emergency medical care to patients with obstetric and gynecological pathology. The subject of the study is the structure, resources and technology of the emergency medical care system functioning. The study used content analysis, historical-analytical, regulatory, economic, organizational experiment and statistical (calculation of relative and average values, determination of the reliability of their differences, correlation analysis) methods.

Research materials: official data from the Federal State Statistics Service of the Russian Federation (2000-2022), regulatory legal acts of the Russian Federation, scientific literary sources; data from medical records of inpatients of the State Budgetary Institution “St. Petersburg Research Institute of Emergency Medicine named after. I.I. Dzhanelidze (n=36,400), data from MIS antenatal clinic (n=256,132) and emergency medical care (n=272,554), total number of observations for the period 2015-2022. amounted to 565,086 units.

The reliability degree and testing of the results obtained and conclusions made is determined by sufficient volumes of databases; using modern research methods that correspond to the methodology, aim and objectives of the dissertation work; using a continuous method in almost every fragment of the study; a set of methods and an adequate statistical apparatus, as well as approbation of the main research results at scientific conferences and congresses.

The statistical significance of the compared indicators with a normal distribution was established using the Student's t-test (t). The testing of statistical hypotheses was carried out using generally accepted methods in statistics. The critical level of

significance when testing statistical hypotheses (p) was taken equal to 0.05. Statistically significant differences were recorded when the specified level of statistical significance was reached ($p<0.05$). The applied research methodology confirms the reliability of the results obtained; complex techniques made it possible to solve the assigned problems.

Approbation of work. The main provisions, preliminary and final results of the study were reported and discussed at the All-Russian Scientific and Practical Conference with international participation “Emergency Medical Care - 2020” (St. Petersburg, 2020); Scientific and practical conference with international participation “Dzhanelidze Readings – 2021” (St. Petersburg, 2021); All-Russian scientific and practical conference with international participation “Emergency Medical Care - 2021” (St. Petersburg, 2021); All-Russian scientific and practical conference with international participation “VIII St. Petersburg Septic Forum” (St. Petersburg, 2021); Congress of the Association for Emergency Surgery (St. Petersburg, 2021); Scientific and practical conference with international participation “Dzhanelidze Readings – 2022” (St. Petersburg, 2022); All-Russian scientific and practical conference with international participation “Emergency Medical Care - 2022” (St. Petersburg, 2022); VI week of education at the Elizabeth Hospital (St. Petersburg, 2022); Scientific and practical conference “Current problems of organizing emergency medical care: innovations in emergency medicine” (Republic of Uzbekistan, Namangan, 2022); International Medical Forum of Donbass “Science of defeating... disease” (Donetsk, 2022); Scientific and practical conference “Dzhanelidze Readings – 2023” (St. Petersburg, 2023); 22nd All-Russian Scientific and Practical Congress with international participation “Emergency Medical Care - 2023” (St. Petersburg, 2023).

The author's personal contribution lies in the personal development of the concept, methodology, main directions and program of research, determination of goals and objectives, analysis of results, scientific substantiation and evidence base of all provisions of the dissertation research, formulation of conclusions and practical recommendations. The author’s participation in the collection and processing of

statistical material is 90%. The author plays a decisive role in the implementation of the results of the work, scientific publications and reports on research materials.

Compliance with the passport of the scientific specialty. The scientific provisions of the thesis correspond to the specialty passport 3.2.3. “Public health, organization and sociology of healthcare, medical and social expertise” (paragraphs 12-15, 18).

Publications. The main provisions of the thesis are reflected in 35 scientific publications, of which 3 are in peer-reviewed scientific publications recommended by the Higher Attestation Commission of the Ministry of Education and Science of Russia, 1 textbook.

Structure and scope of the thesis. The thesis is presented on 244 pages of typewritten text, consists of an introduction, five chapters, a summary, conclusions and proposals, and 6 appendices. The list of references includes 315 sources (69 foreign and 244 domestic). The work is illustrated with 25 drawings and 60 tables.

The work was carried out in accordance with the plans of research work of the Department of Public Health and Healthcare with the course of economics and healthcare management of the Federal State Budgetary Educational Institution of Higher Education “Academician I.P. Pavlov First St. Petersburg State Medical University" of the Ministry of Healthcare of the Russian Federation, Department of Emergency Medical Care of the State Budgetary Institution "I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Care".

Main scientific results

1. In the course of the study to improve the organization of rescue and emergency gynecological care in a multidisciplinary emergency hospital, a detailed analysis of resource, operational and financial management was carried out in accordance with the triad: structure (resources) – process (technology) – result (Kim I.V. et al., 2021f., 80%; Barsukova I. M. et al., 2022c., 50%; Manukovsky V.A. et al., 2023, 50%; Khominets V.V. et al., 2023a, 40%; P. 88-90, 133-137, 171-172).

2. Based on the results of the work in accordance with the purpose, objectives and program of the study, features and prospects for improving the system

of providing medical care to obstetric and gynecological patients in an emergency hospital are presented, which have scientific, methodological and practical significance (Kim I.V. et al., 2021f., 80%; Barsukova I. M. et al., 2022c., 50%; Manukovsky V.A. et al., 2023, 50%; P. 181).

3. An Algorithm for routing patients in a multi-profile emergency hospital have been developed, a training manual has been prepared (Kim I.V. et al., 2021f., 80%; Manukovsky V.A. et al., 2023, 50%; P. 175-176).

4. A technological worksheet has been developed for improving the organization of rescue and emergency gynecological care in a multidisciplinary emergency hospital, including activities of a supervisory, regulatory, legal, organizational and economic nature, the qualitative and quantitative effects of these activities have been noted (Kim I.V. et al., 2021f., 80%; Manukovsky V.A. et al., 2023, 50%; P. 177-178).

5. A training manual has been prepared (Manukovsky V.A. et al., 2023, 50%; P. 157-162).

Main provisions submitted for defense:

1. An important social and demographic problem of modern Russia is the low birth rate, which does not ensure the reproduction of the population: over 5 years, the birth rate in the country decreased by 21.6%, in St. Petersburg - by 25.4%. The natural population growth of the Russian Federation since 2016 has been negative. One of the current areas for improving reproductive health is improving the organization of obstetric and gynecological care, increasing its accessibility and quality.

2. Reducing the volume of specialized obstetric and gynecological care (number of specialized beds, availability of beds, hospitalization rates, staff shortages) allows us to reasonably consider alternative options for providing medical care to patients of this profile.

3. The current state of multidisciplinary emergency hospitals requires the development of new models and principles for organizing the treatment and diagnostic process in order to optimally use available resources. The development of inpatient emergency departments opens up new opportunities for providing medical care to

patients in the field of obstetrics and gynecology. These opportunities have not only promising medical, social, organizational, treatment and diagnostic, but also financial and economic aspects.

CHAPTER 1. MODERN MEDICAL, SOCIAL AND ORGANIZATIONAL ISSUES OF PROVIDING OBSTETRIC AND GYNECOLOGICAL CARE TO PATIENTS OF A MULTIDIFILINARY EMERGENCY HOSPITAL

(LITERATURE REVIEW)

The current stage of development of domestic healthcare, which is based on the principles of medical and economic efficiency, is characterized by increasing requirements for the quality and timing of medical care, the development and implementation of high-tech diagnostic and treatment methods, reducing the time for starting etiopathogenetic treatment and requires a revision of the functioning of the medical care system. The concept of demographic policy of the Russian Federation (2007) is designed for the period until 2025 and is aimed at stabilizing and growing the population, 1.5-fold increasing the total fertility rate, and increasing life expectancy. To achieve these indicators, effective government measures are required to improve the medical care system in the Russian Federation.

1.1. The main directions of modern demographic policy in the Russian Federation

In modern conditions, a global socioeconomic problem in both developed and developing countries is the decline in the level of “demographic security”. The development of the demographic crisis is one of the pressing problems of modern Russia, taking into account the vast territories it occupies and the low population density compared to other economically developed countries. In this regard, studies concerning demographic problems and finding ways to solve them deserve special attention. Political and socioeconomic disasters in Russia in the 20th century had a significant impact on demographic indicators. Some stabilization of the political and socioeconomic situation in the country in the 21st century, unfortunately, did not lead

to a significant and stable improvement in the main demographic indicators of fertility, mortality and vital statistics (Alexandrova O.Yu. et al., 2020; Dolgova A.A., Fursov V.A., 2020; Ryazantsev S.V., Rybakovsky L.L., 2021).

According to Rosstat, compared to 1990, the population in Russia decreased by 1.4% in 2020 (from 148,274 to 146,171 people). The birth rate in 2020 compared to 1990 decreased by 26.9% (from 13.4‰ to 9.8‰), and the mortality rate increased by 30.4% (from 11.2‰ to 14.6‰). Natural population growth, which amounted to 2.2 ‰ in 1990, had negative values throughout the first decade of the 21st century. At the beginning of the second decade (2013-2015), a very modest positive natural population growth was observed due to a slight decrease in mortality and an equally insignificant increase in the birth rate. By the end of the second decade, negative natural population growth was observed. The situation is aggravated by population decline associated with the corona virus pandemic (2020-2021).

Data from the Federal State Statistics Service of the Russian Federation indicate negative dynamics of the birth rate over a five-year period in both the Russian Federation and St. Petersburg. In the Russian Federation, over 5 years, the birth rate decreased by 21.6% (from 12.5 ‰ in 2016 to 9.8 ‰ in 2020). In St. Petersburg, the level of this indicator decreased from 13.8 ‰ in 2016 to 10.3 ‰ in 2020 (-25.4%). It should be noted that the total fertility rate has decreased: from 1,892 in 1990 to 1,505 in 2020 (-20.4%). The low level of this indicator does not ensure population reproduction and remains an important social and demographic problem in modern Russia (Barsukova I.M. et al., 2021b).

An undoubted achievement in Russia is the reduction in maternal and infant mortality. Maternal mortality decreased from 47.4 cases per 100,00 live births in 1990 to 11.2 cases per 100,00 live births in 2020 (4.2 times). Infant mortality in 2020 compared to 1990 decreased by 3.9 times (from 17.4 ‰ to 4.5 ‰). The number of abortions per 100 births decreased by 5.3 times (from 206 in 1990 to 39 in 2020). The absolute number of abortions decreased by 7.4 times (from 4103.4 thousand in 1990 to 553.5 thousand in 2020). In 2020, the number of births exceeded the number of

pregnancy terminations by 2.5 times. However, the absolute number of births in 2020 compared to 1990 decreased by 27.8% (Rosstat).

Artificial termination of pregnancy is one of the pressing problems of modern healthcare in the Russian Federation due to the fact that the scale of the problem under consideration is not comparable with a similar problem in other countries (Oboskalova T.A. et al.; 2003; Denisov B.P., Sakevich V.I., 2014; Chizhova G.V. et al., 2014; Petrov Yu.A., Baykulova T.Yu., 2016ab; Sinitsa A.L., 2017). It is known that abortions lead to numerous complications of pregnancy, childbirth, and the development of gynecological diseases (Chizhova G.V. et al., 2014; Petrov Yu.A., Baykulova T.Yu., 2016; Sinitsa A.L. 2017; Oboskalova T. A. et al., 2003; Filippov O.S. et al., 2016), their prevention is one of the tasks in preserving a woman's reproductive health (Filippov O.S. et al., 2014; Tarasova E.V., Sannikov A. L., 2019; Denisov B., Sakevich V., 2014).

As part of the implementation of the National Health Project, birth certificates were introduced in 2006 (Order of the Ministry of Healthcare and Social Development dated November 28, 2005 No. 701 "On birth certificate"), ensuring the availability of medical care during pregnancy and childbirth, as well as additional financial support for institutions providing obstetric and gynecological care (Rastegaeva I.N., 2012). An important direction of the National Project "Health" was the construction of perinatal centers (Rastegaeva I.N., 2012). Federal Law of the Russian Federation dated December 29, 2006 No. 256-FZ "On additional measures of state support for families with children" introduced the concepts of "maternity (family) capital" and "state certificate for maternal (family) capital." The Maternity Capital program contributed to some improvement in the demographic situation in Russia and an increase in the birth rate (Absava T.A. et al., 2014).

The "Action Plan for the implementation in 2021-2025 of the Concept of Demographic Policy of the Russian Federation until 2025", approved by Order of the Government of the Russian Federation dated September 16, 2021 No. 2580-r, includes three sections, including activities aimed at popularizing traditional family values and active longevity ; increasing the birth rate and well-being of families with children;

reducing maternal mortality, improving reproductive health. O.I. Apolikhin (2015) emphasizes that, along with socioeconomic measures aimed at increasing the birth rate, the level of this indicator is significantly influenced by the reproductive health of the population. The author proposed a three-level system of reproductive health care: at the first level, the key element should be reproductive health rooms based on Health Centers and Children's Health Centers, the second includes Reproductive Health Centers based on Perinatal Centers, and federal research institutes should become third-level institutions.

1.2. The role of gynecological diseases in the formation of reproductive health

An important feature of the reproductive process that shapes public health in the present and in the future is its demographic significance (Starodubov V.I., Sukhanova L.P. 2012; Apolikhin O.I., 2015). The definition of "reproductive health" was proposed at the International Population Conference (Cairo, 1994): the governments of 179 countries adopted the Cairo Program of Action, which provides for universal access to sexual and reproductive health services. Within the WHO definition of health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity," reproductive health includes reproductive processes, functions and systems at all stages of human life. Reproductive health means that people have the ability to have responsible and safe sex lives, the ability to produce offspring, and the ability to decide for themselves whether, when, and how often to have offspring. This also includes the right to adequate health care.

The problem of reproductive health is relevant all over the world. In May 1995, in a resolution of the 48th World Health Assembly, reproductive health was identified by WHO as a global priority: a resolution was adopted that called on Member States to develop and strengthen national reproductive health programs. In 2001, the WHO Regional Strategy for Sexual and Reproductive Health was formulated in Copenhagen and the Reproductive Health and Pregnancy Program was developed. In May 2004, the 57th World Health Assembly adopted the WHO Global Strategy for Reproductive

Health, which focuses on 5 priority areas for promoting reproductive and sexual health: improving antenatal, childbirth, postpartum and newborn care; providing high-quality family planning services, including infertility services; eliminating unsafe abortion; combating sexually transmitted infections, including HIV, cervical cancer and other gynecological diseases; strengthening sexual health.

The main risk factors that cause certain disorders in the health of modern man, in particular, their reproductive health, are heredity, abortion, the use of contraceptives, inflammatory diseases of the female genital organs, working and living conditions, medical and social factors, and the state of the environment (Kaygorodova T.V. et al., 2007; Dzhamaludinova A.F., Gonyan M.M., 2017).

Despite the development of assisted reproductive technologies, infertility remains a pressing problem (Kirokosyan E.V. et al., 2021; Borght M.V., Wyns C., 2018; Arias-Sosa L.A., 2019; Cariati F. et el., 2019). According to WHO, if the rate of infertility in a country exceeds 15%, this is not only a medical, but also a socio-demographic problem (Borght., M.V., Wyns C., 2018, Arias-Sosa L.A., 2019. Cariati F. et.al., 2019; Janssen F. et.al., 2016).

One of the most urgent and significant tasks is to protect the health of the female population - a key factor in the health of the future generation (Shvyreva E.A. et al., 2014). According to the Scientific Center for Obstetrics and Gynecology of the Ministry of Healthcare of the Russian Federation, 7–8 million Russian women are infertile today (Kirokosyan E.V. et al., 2021).

An important indicator of reproductive health is the level of gynecological morbidity (Kostereva V.S. et al., 2012). A clear understanding of the nature of gynecological diseases is extremely important for favorable obstetric and perinatal outcomes. Conventionally, all gynecological diseases can be divided into three groups (Toniyan K.A. et al., 2017; Llata E. et al., 2015): diseases associated with intra-abdominal bleeding (ruptured ectopic pregnancy, ovarian apoplexy, rupture of an ovarian cyst, perforation of the uterus); diseases associated with circulatory disorders in the organ and its necrosis (torsion of the pedicle of a cyst or ovarian tumor, torsion of the uterine appendages, torsion and necrosis of the myomatous node); inflammatory

diseases of the internal genital organs involving the pelvic peritoneum (pyosalpinx, tubo-ovarian inflammatory formations, primary peritonitis in gonorrhea, acute inflammation of the uterine appendages). The most common gynecological diseases that increase the risk of reproductive failures include: endometriosis, adenomyosis, polycystic ovary syndrome, uterine fibroids (Hunanyan A.L. et al., 2018).

A multi-factorial pathology of the gestational process is recurrent miscarriage (Borzova N.Yu., Ivanenkova N.I., 2015), among the most significant causes of which are inflammatory diseases of the pelvic organs (51.2%), a history of gynecological operations (23,2%), chronic somatic diseases, including chronic pyelonephritis (26.8%), nasolabial herpes (23.2%). The authors note the importance of such factors as early onset of sexual activity and termination of the first pregnancy by abortion.

Inflammatory diseases are an important socioeconomic problem, since chronicity and relapses of these diseases significantly worsen the prognosis for reproductive health (Bebneva T.N., Damirova K.K., 2019). In Russia, women with inflammatory diseases of the pelvic organs make up 60-65% of the total number of patients at the antenatal clinic and 30% of their number sent to the hospital (Serov V.N. et al. 2013; Pestrikova T.Yu. et al., 2012, 2015; Chappell C.A., Wiesenfield H.C., 2005, 2012; Ziganshin A.M. et al., 2019). This pathology accounts for 60-65% in the structure of gynecological morbidity in patients with ectopic pregnancy (Toniyan K.A. et al., 2017; Malak M. et al., 2011; Yurasov I.V. et al., 2013; Naumova N.V. et al., 2020; Blake D.R., 2003; Sweet R.L., 2009). In etiopathogenesis, infections that are predominantly sexually transmitted are extremely relevant (Ventskovsky B.M. et al., 2021; Althaus C.L. et al., 2014). Untimely treatment can lead to serious long-term consequences for women’s health with the emergence of obstacles to a woman’s implementation of reproductive plans (Dobrokhotova Yu.E. et al., 2016). Inflammatory diseases can significantly reduce a woman’s quality of life due to the development of chronic pelvic pain syndrome (Haggerty C.L., et al., 2003). Purulent forms of inflammatory diseases of the female genital organs are often the cause of “organ-loss” operations in women of reproductive age (Trussell J., Jordan B., 2006; Gradison M., 2012; Vanthyne A., Pittrof R., 2016).

The connection between endometriosis and sub-fertility has been proven: 30-40% of patients with endometriosis have difficulty conceiving (Zhabitskaya L.A., Guzhevskaya I.V., 2021; Hediger M.L. et al., 2005; Harris H.R. et al., 2018; Biryukova E.I., 2019; Krylov K.Yu. et al., 2022; Kunz G. et al., 2005; Salim R. et al., 2012), it is observed in 6-10% of women in the premenarcheal, reproductive and postmenopausal hormonal stages, symptoms can vary from minimally expressed to severe (Zhabitskaya L.A., Guzhevskaya I.V., 2012). The disease is associated with an increased risk of pregnancy complications and unfavorable obstetric outcomes: spontaneous miscarriages, ectopic pregnancy, vomiting of pregnancy, premature birth, cesarean section, pathological placental attachment (Hediger M.L. et al., 2005; Giuliani E. et al., 2014; Harris H.R. et al., 2018). In 18-25% of women with endometriosis of the pelvic organs, various parts of the intestine are involved in the pathological process (Pechenikova V.A. et al., 2021).

The results of studies of populations of women suffering from infertility associated with adenomyosis after in vitro fertilization, as well as after surgical treatment, showed that adenomyosis in both cases has a negative impact on reproductive outcome (Biryukova E.I., 2019; Krylov K.Yu. et al., 2022; Kunz G. et al. 2005; Salim R. et al., 2012). To date, there are no uniform standards for diagnosing the disease. S.V. Nagorneva and co-authors (2021) developed and tested a comprehensive ultrasound diagnostic technique, including six traditional ultrasound techniques (assessment of the homogeneity of the echostructure of the myometrium, assessment of the thickness of the anterior and posterior walls of the uterus, compression elastography, assessment of the transition zone in 3D mode, assessment of the uniformity of the thickness of the transition zone and myometrial vascularization) and a scoring system for each criterion. R.A. Akopyan and V.A. Pechenikova (2017) identify a group of patients with a combination of adenomyosis and leiomyomatous proliferation, requiring histological and immunohistochemical analysis.

Data from G.T. Mustafina et al. (2013ab) also indicate an increase in the incidence of gynecological diseases in women: the level of primary incidence in the Republic of Bashkortostan with salpingitis and oophoritis increased from 598.9 to

747.1 per 10,000 women, endometriosis - from 49.5 to 69.6 per 10,000 women (2002-2011). According to E.A. Solovyova (2018), the overall incidence of endometriosis in the Orenburg region increased by 60.3% (from 20.4 to 32.7 per 10,000 female population, 2011-2017), the prevalence of infertility increased during the study period by 4.7 times (from 30.3 to 117.0 per 10,000 women of fertile age).

Numerous clinical studies indicate the negative impact of ectopic pregnancy on a woman's reproductive health (Torchinov A.M. et al., 2012; Fetishcheva L.E., Ushakova G.A., 2017; Olina A.A. et al., 2019; Masukume G., 2014; Berry J. et al., 2016; Parker V.L., Srinivas M., 2016). The main treatment method for this pathology is surgical; the method of choice is laparoscopy, which allows organ-preserving operations on the fallopian tubes. It is a great achievement compared to radical tubectomy, which leads to infertility in 70-80% of women. According to various studies, the cause of the development of tubal infertility in 55-85% is the lack of timely treatment of inflammatory diseases of the pelvic organs, which increases the risk of developing an ectopic pregnancy by 7-10 times (Buralkina N.A. et al, 2018).

Among gynecological diseases, endometrial hyperplastic processes occur in 15-40% of patients, they are accompanied by uterine bleeding, often leading to anemia, often recur, on their background precancerous processes and endometrial cancer can develop (Breusenko V.G. et al., 2013; Vilos G.A., 2002; Vinko K.K., 2003). Incidence of uterine cancer in the Russian Federation in the period 2005-2015 increased from 22.47 to 30.08 per 100,000 population. Moreover, about 40% of patients with endometrial cancer are women in the reproductive and perimenopausal periods (Kravets B.B. et al., 2017). T.V. Bogomazov and T.N. Chimitdorzhieva (2020) also note an increase in incidence and mortality from cervical cancer.

Research data in the Omsk region showed that among patients with cervical cancer, women aged 50–54 years predominate; the "rejuvenation" of the pathology is confirmed by the growth rate of the disease in the age group of 20–24 years (Goleva O.P. et al., 2016; Klinyshkova T.V. et al., 2017).

One of the most common benign tumors of the female genital area is uterine fibroids, it occurs in 20-40% of women of the reproductive period, the maximum

incidence rate occurs in the perimenopausal period (Dobrokhotova D.E. et al., 2019; Ventskovskaya I.B., Proshenko O.N., 2021; Kakhiani E.I. et al., 2017). A new era in gynecology was marked by significant technological changes, including the development of organ-preserving methods of treating uterine fibroids: hysteroresectoscopy, myomectomy, uterine artery embolization, laparoscopic myomectomy (Korennaya V.V. co-author, 2015; Reza M. et al., Lau S. et al. ., 2012; Clair K.N., Tewari K.S., 2020; Bezhenar V.F. et al., 2012; Korennaya V.V. et al., 2015; Reza M. et al., 2010; Lau S. et al., 2012; Clair K.H., Tewari K.S., 2020). The use of a differentiated approach to the choice of method of radical surgical treatment of uterine fibroids and the use of improved technology for individual stages of minimally invasive hysterectomy allowed A.N. Plekhanov et al. (2014) to reduce the number of complications by 3 times: the frequency of complications with abdominal hysterectomy was 36.4%, and with laparoscopically assisted vaginal hysterectomy - 1.04%; with vaginal hysterectomy, no complications were noted at all. Results of the study by E.I. Kahiani et al. (2017) showed that after hysterectomy, the psychological state of the examined patients was characterized by an increase in hypochondriacal, anxious-depressive, hysterical and anxious-hypnotic manifestations, requiring a complex of drug and psychological rehabilitation. The introduction of high-tech operations into gynecological practice contributed to the active use of laparoscopy in the treatment of endometrial malignancies (Nekrasova E.A. et al., 2012; Popov A.A. et al., 2017; O.A. Melkozerova, A.V. Murzin, 2022).

Modern diagnosis of ovarian tumors requires a whole range of diagnostic measures (Podzolkova N.M. et al, 2020). The search continues for a method that would allow for reliable differential diagnosis of benign and malignant ovarian tumors at the stage of preoperative examination. Along with the determination of tumor-associated biomarkers, an integrated approach is used, including clinical, laboratory, and instrumental research methods, computed and magnetic resonance imaging, radioisotope studies, laparoscopy (Gerfanova E.V. et al, 2015; Egunova M.A. , Kutsenko I.G., 2016; Podzolkova N.M. et al., 2020; Dodge J.E. et al., 2012; Bast R.C. Jr. et al., 2012). Unfortunately, obstetricians-gynecologists and gynecological

oncologists often encounter cases of common pelvic tumors; in such cases, pelvic evisceration still remains in the arsenal of doctors. The original technique of such an operation was described back in 1948 by A. Brunschwig and over the years it has been improved and supplemented with reconstructive technologies. More than 40% of patients who survived such operations have a chance to survive the five-year follow-up period (Kostyuk I.P., 2012; Maystrenko D.N. et al., 2022; Chernobrovkina A.E. et al., 2022ab, 2023).

Of particular concern is the increase in the incidence of gynecological diseases among adolescents. Research by Solovyova E.A., Saydasheva A.T. (2015) indicate that in the structure of primary morbidity among girls under 14 years of age and adolescents aged 15-17 years, the largest share was vulvovaginitis (33.5%), second place was fusion of the labia (28.4%), third place - dysmenorrhea (16.1%), fourth - premature puberty (5.2%).

Due to the fact that many patients with gynecological diseases are admitted to inpatient facilities for emergency reasons, an urgent problem is prompt differential diagnosis, which requires highly qualified doctors and modern medical and technical equipment.

Acute abdominal pain syndrome is one of the most common reasons for seeking emergency, including specialized, medical care. At the same time, women of reproductive age present the greatest diagnostic difficulty among patients with acute abdominal pain due to the need to additionally exclude acute gynecological pathology (Minnullin R.M. et al., 2015). A study of the nosological structure of the “acute abdomen” of patients of reproductive age admitted to the hospital showed that the largest part of them (29.5%) were patients with complicated ovarian cysts (apoplexy, rupture, torsion) and purulent-inflammatory diseases of the uterus and its appendages (26.5%). Ectopic pregnancy caused hospitalization in 6.4% of cases (Minnullin R.I. et al., 2014).

According to B.M. Ventskovsky et al. (2021) almost a third of women with ovarian apoplexy are admitted to surgical hospitals with various diagnoses of urgent pathology, the clinical treatment algorithm depends on the reproductive intentions of

the patient (Ventskovsky B.M. et al. 2021; Song T. Et al., 2015; Zhang C.H., 2016; Somigliana E., 2018; Ata B. et al., 2015; Kang J.H. et al., 2015).

Patients with combined pathology requiring surgical treatment require special attention (Makhovsky V.Z. et al., 2012). In 24.2% of cases there was an unchanged ovarian cyst or uterine fibroid; compared to 1990, in 2011 the proportion of such patients increased from 2.6 to 6.7%. In such cases, according to the authors, it is necessary to determine the degree of operational risk based on an assessment of 4 factors: the volume and traumatic nature of the combined operation; features of surgical diseases (nature of diseases, degree of functional, metabolic and organic damage to organs and tissues caused by concomitant diseases or their complications); the nature and severity of concomitant diseases; age of the patient.

In recent years, the diagnosis and treatment of abnormal uterine bleeding has changed significantly (Zaidieva Ya.Z., 2018; Palomba S. et al., 2007; Varma R. et al., 2009; Kang J.H et al., 2015; McPherson K., 2004; Rashid S. et al., 2010; Manyonda I. T. et al., 2012). Minimally invasive surgeries (including uterine artery embolization) are used for abnormal uterine bleeding, for which hysterectomy has been performed for many years.

It should be noted that in the pathology department of any multidisciplinary hospital, intravital studies concerning diseases of the female genital area make up about half of all studies, and surgical material prevails over biopsy material (Povzun S.A., et al., 2019). In general, the bulk of intravital studies consist of analyzes of endometrial scrapings for uterine bleeding (74.7%).

The quality of diagnosis of gynecological diseases in the emergency department of a hospital is evidenced by the results of a study by E.V. Komlichenko (2010): a complete coincidence of the diagnosis of the emergency department with the main clinical diagnosis occurred in 51.4% of cases, partial - in 33.3%, and in 15 In 3% of cases, a complete mismatch of diagnosis was revealed. According to A.V. Sakhno (2004, 2005ab), when consulting urgently hospitalized patients, per 100 gynecological patients, 273.72 consultations are performed with doctors of related specialties.

1.3. Modern problems of organizing medical care for obstetric and gynecological patients

As noted above, an important task of the obstetrics and gynecology service is to strengthen reproductive health, early detection and treatment of gynecological diseases (Balashova L.A., Samoshkina L.K., 2013).

It should be emphasized that among the features of the formation of a network of medical organizations providing medical care to the population in the field of obstetrics and gynecology is its variability. Thus, a medical organization that provides primary specialized obstetric and gynecological health care can be an independent antenatal clinic (AC) or be part of a maternity hospital, a central district or city hospital, or a perinatal center. Gynecological departments can be part of a maternity hospital, perinatal center and multidisciplinary hospitals. Therefore, when studying the network of medical institutions providing specialized medical care to patients with gynecological diseases, it is advisable to consider this important sector as part of the system of organizing medical care for women in the field of obstetrics and gynecology.

A special role in this system is given to the antenatal clinic, which is charged with providing primary specialized obstetric and gynecological care to women, preserving their reproductive health, and preventing diseases of the female genital organs. T.V. Kozlova and Yu.A. Pivovarova (2017) emphasize that the following areas of work are possible at the level of the antenatal clinic: the formation of medical literacy, full coverage of young women with prenatal preparation, preparation of the body of each parent for conception and women for pregnancy, determination of optimal days for conception. The goal of preventive work on breast cancer should be to minimize negative health risk factors for both the expectant mother and her child (Nuzhenkova M.V. et al, 2014).

Particular attention should be paid to medical and social prevention of inflammatory gynecological diseases in girls and adolescents, taking into account the nosological structure (Loveless M., Myint O., 2017). Absolute primacy in the structure

of gynecological pathology at this age belongs to vulvovaginitis (more than 50% of calls) (Mingazova E.N., Zhelezova P.V., 2020).

Order of the Ministry of Healthcare of the Russian Federation dated June 1, 2007 No. 389 “On measures to improve the organization of medical and social assistance in antenatal clinics” approved the Regulations on the organization of the activities of the office of medical and social assistance in antenatal clinics, one of the tasks of which is the implementation of measures to prevent abortions, the formation of women awareness of the need to bear a child and further support during pregnancy. The key role in fulfilling this task belongs to the psychologist (Tarasova E.A., Sannikov A.L., 2019).

Due to increasing life expectancy, age-related diseases are becoming increasingly important. This also applies to menopausal syndrome in women in the perimenopausal and postmenopausal periods (Mazitova M.I., Mardieva R.R., 2020). Taking into account the characteristics of gynecological pathology in women of different ages, L.Yu. Chuchalina (2018) proposes to organize specialized offices for mature women in cities with a population of more than 250,000 people.

Data from a sociological survey of pregnant women in the antenatal clinic showed that 20.4% of respondents rated the work of antenatal clinics as “excellent”, 27.6% as “good”, 24.9% as “satisfactory”, and 27.1% were dissatisfied with the work of the antenatal clinic (Atlasov V.O. et al., 2012). At the same time, the results of a survey of obstetrician-gynecologists of the AC showed that the majority of them (65.0%) rated the work of the AC as “good” and 7.5% - as “excellent”, every fourth - as “satisfactory”, and 2.5% of respondents did not answer this question (Tsivyan B.L., 2014a-d).

The results of a survey of patients with benign neoplasms of the female genital area conducted by B.L. Tsivyan (2015ab) showed that most often the dissatisfaction of patients with the organization of the work of the gastrointestinal tract was due to the presence of queues during diagnostic and treatment procedures and tests (37.8%), 26.7% of respondents noted inconvenience when making an appointment with a doctor, and 24.4% indicated problems when receiving diagnostic services prescribed by the

attending physician. Almost a quarter (24.2%) of the interviewed patients noted unsatisfactory equipment of the antenatal clinic. The results of a survey of hospital doctors in St. Petersburg are as follows: only 3.6% of respondents rated the work of obstetricians-gynecologists in providing medical care to women with benign neoplasms of the genital area at the pre-hospital stage (in the AC) as “excellent”, 38.2% - as “good”, 45.4% - "satisfactory"; Among the main comments regarding AC are inaccurate diagnosis (38.2%), untimely hospitalization (34.5%), and incorrect therapy (32.0%).

According to B.L. Tsivyan and M.V. Okulov (2015ab), 19.9% of visits to the AC by women with benign neoplasms of the female genital organs were carried out on the recommendation of hospital doctors after hospital treatment, this is 22.9% among all visits with treatment - diagnostic purpose.

One of the directions of the national project “Health” was the construction of Perinatal centers in the constituent entities of the Russian Federation. In the Republic of Bashkortostan, specialized medical care for women with infertility is mainly provided in the Republican Perinatal Center (Sharafutdinova N.Kh. et al., 2013), which includes an outpatient service for 300 visits per shift (medical genetic consultation, outpatient department, Republican Center for Family Planning and Reproduction), an inpatient service with 180 beds includes 2 pregnancy pathology departments with 40 beds each, a reconstructive and plastic surgery department with 40 beds and a gynecology department with 60 beds, including 20 beds for adolescent gynecology.

Ambulance stations play a special role in providing emergency medical care to pregnant women and women with gynecological diseases. When analyzing the results of emergency medical calls in St. Petersburg, it was found that 93-95% of those who applied for emergency medical services with obstetric and gynecological pathology were subject to hospitalization, about 2/3 of which were in a hospital, 1/3 in a maternity hospital, and only about 2.0% of those who applied stayed at home (at the place where the EMC team was called). The presented data also indicate a significant risk of developing life-threatening conditions in this category of applicants and the extremely limited treatment and diagnostic capabilities of the staff of EMC teams in the obstetrics

and gynecology profile at the pre-hospital stage, taking into account, among other things, a significant proportion of paramedic teams in the EMC structure (Barsukova I.M. et al., 2021ac).

Among women hospitalized in the gynecological department, half (50.9%) were sent to the hospital by the gastrointestinal tract and polyclinic, 24.4% were delivered by emergency medical services, 6.8% were sent by private clinics, 6.4% were sent by other hospitals and 0.8% - Republican Family Planning Center; every tenth patient went to the hospital independently (Mustafina G.T., 2013b).

The system of obstetric and gynecological care includes gynecological departments of multidisciplinary hospitals. In the 60-70s, a significant proportion of patients in inpatient gynecological departments were women admitted for abortion; currently their share has decreased (Yakhtyeva Z.I., Bataev Kh.M., 2017).

The nosological composition of patients in gynecological departments differs significantly in inpatient facilities. The main reason for these differences is the different ratio of emergency and planned care. Thus, in a study by E.V. Komlichenko (2010), among patients in the gynecological department, 44.3% were patients with uterine fibroids; 18.4% - with conditions caused by pregnancy (of which 8.5% - with tubal pregnancy); 8.7% - with inflammatory diseases; 6.2% - with malignant neoplasms; 4.7% - with prolapse and prolapse of the genital organs; 3.3% - with menstrual irregularities; 14.4% - with other pathologies. According to K.A. Toniyan et al. (2017) almost 26% of the total number of patients in a gynecological hospital need emergency surgical care. Moreover, in the structure of acute gynecological diseases, ectopic pregnancy accounted for 42%, ovarian apoplexy - 19%, torsion of the uterine appendages - 8%, acute inflammatory diseases of the uterine appendages - 25%.

An analysis of the nosological composition of patients in gynecological departments of a large multidisciplinary emergency hospital showed that in departments of this profile the largest proportion (42.1%) were patients with various complications of pregnancy, childbirth and the postpartum period (Stozharova S.I., 2010), 27.3% - patients with non-inflammatory diseases of the female genital organs; patients with inflammatory diseases of the female pelvic organs - 16.9%, and with

benign neoplasms - 11.1%; the smallest proportion were patients treated for malignant neoplasms (2.6%).

N.A. Burova (2020) conducted a retrospective analysis of 1465 hospital records of women of reproductive age with inflammatory diseases of the pelvic organs and found that salpingitis and oophoritis were diagnosed in 521 (35.6%), endometritis - in 658 (44.9%), a combination of salpingoophoritis with endometritis – in 286 (19.5%) examined. Exacerbation of the inflammatory process in the pelvic organs was observed in 1098 (74.9%) patients, while the first inflammatory reaction was noted only in 367 (25.1%) women. A significant group of emergency hospitalized patients are patients with ovarian apoplexy (Ventskovsky B.M. et al., 2021; Zhegulovich Y. et al., 2011; Zhang C.H. et al., 2016).

A.V. Demidov (2014) notes the need to create a computer-based database for monitoring the health status of patients at the regional level in order to make science-based management decisions.

The expert assessment findings showed that performing the required volume of diagnostic studies in compliance with the frequency of their implementation recommended by the standards of medical care significantly depends on the length of the patient's stay in the hospital (Stozharova S.I., 2010). A study of the distribution of patients with inflammatory diseases of the female pelvic organs according to the duration of treatment in the hospital showed that every fifth patient was in the hospital for no more than one day, 6.0% - within 24 hours, 46.4% - from 2 to 5 days, almost every fourth - from 6 to 10 days. A small proportion (1.9%) were patients with a duration of inpatient treatment of 10 days or more. Among the most important reasons causing a significant reduction in the duration of inpatient treatment, it is necessary to note unauthorized departure from the hospital, which completed every ninth case (11.3%) of inpatient treatment for inflammatory diseases of the female pelvic organs, subjected to examination.

A comparison of the treatment duration of patients with conventional (laparotomy) and laparoscopic interventions showed their significant difference (Komlichenko E.V., 2010). In the first cases, they are significantly higher: with

hysterectomy and myomectomy - 2.2 times; when removing the ovaries and fallopian tubes - 1.6 times; with ovarian resection - 2.5 times. These differences are associated with a reduction in the duration of the postoperative period (and in the case of myomectomy, the preoperative period). The treatment time when using the vaginal access for hysterectomy is also significantly ($p < 0.05$) lower compared to traditional extirpation (both preoperative and postoperative treatment duration), but slightly higher (in the postoperative period) compared to a similar laparoscopic operation.

A.V. Chernov (2005) draws attention to the fact that along with the increase in the total number of gynecological patients who underwent inpatient treatment, the absolute and relative number of patients treated in emergency departments increases.

An urgent healthcare task is to increase the readiness of the hospital stage of emergency medical care and specialized departments of multidisciplinary hospitals for the growing flow of hospitalization. In this regard, the efficiency of using hospital beds is of particular importance, including due to the concentration of patients requiring differential diagnosis and short-term treatment in inpatient emergency departments (Stozharov V.V. et al., 2013; Parfenov V.E. et al, 2013).

In accordance with the order of the Ministry of Healthcare and Social Development of the Russian Federation dated 02.08.2010 No. 586n “On introducing changes to the Procedure for providing emergency medical care, approved by the Order of the Ministry of Healthcare and Social Development of the Russian Federation dated 01.11. 2004 No. 179”, concepts such as “hospital stage of emergency medical care” and “inpatient emergency department” were introduced. These departments are intended to clarify the diagnosis and dynamic monitoring of the patient’s condition, as well as short-term treatment. An important role in improving the organization of emergency medical care at the hospital stage was played by the order of the Ministry of Healthcare and Social Development of the Russian Federation dated May 17, 2012 No. 555 “On approval of the nomenclature of beds according to the profiles of medical care” (Miroshnichenko A.G. et al., 2013). The Nomenclature of Bed Funds included emergency beds for daily (dynamic observation) and short-term treatment (up to 3 days).

According to A.G. Miroshnichenko et al., (2015), in 2012, in the emergency department of the I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Medicine admitted 1.09% of patients in serious condition, 29.96% in moderate condition, 67.86% in satisfactory condition. In order to clarify the diagnosis, 37.44% of patients were hospitalized, 58.91% of patients were hospitalized for short-term treatment, and in 3.65% of cases, non-core hospitalization of patients in these beds was noted due to the lack of free places in specialized departments of the institute. It should be noted that among patients admitted to the emergency department, patients with inflammatory gynecological diseases and menstrual irregularities accounted for only 1.4%.

V.M. Teplov et al., (2017, 2022) note that the creation of a hospital emergency department with a resuscitation and intensive care ward makes it possible to halve the hospitalization of patients in the hospital's ICU, reducing the flow of non-core patients admitted to them, without increasing ICU bed capacity of the hospital is expanding their capabilities.

Studying the experience of the inpatient emergency department of the I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Medicine allowed the group of authors to develop scientifically based standards for the need for beds for daily and short-term (up to 3 days inclusive) stay of patients: in total it is recommended to have 1.11 beds per 10,000 population, including 0.21 emergency medical beds daily stay care and 0.90 short-stay emergency medical beds (Parfenov V.E. et al., 2013; Alimov R.R. et al., 2013).

However, the lack of extensive experience in the practical implementation of the important direction of reforming emergency medical care and the creation of emergency departments in multidisciplinary hospitals forces us to approach their organization with the utmost care, since errors made at the design stage can have a significant impact on the functioning of the entire hospital. One of the tools that can minimize errors is object-oriented simulation modeling systems, which make it possible to predict possible project problems at the computer model stage (Teplov V.M. et al., 2019).

Timely and correct distribution of patients into groups depending on the severity of the condition and the need for medical care allows to ensure effective treatment of incoming patients and optimize the work of department staff. For this purpose, you can use various sorting (triage) scales (Iserson K.V., Moskop J.C., 2007). The most common and well-known scales in world practice are: RETTS (the Rapid Triage and Treatment System), FRENCH (FRench Emergency Nurses Classification at Hospital), SATS (the South African Score), CTAS (the Canadian Emergency Department Triage and Acuity Scale).

The five-level RETTS scale (Nissen L., et al. 2014) triages patients based on vital signs, complaints, and symptoms; the red level of the scale is emergency, orange is urgent, yellow is urgent, green is planned, blue does not require urgent intervention (these are outpatient patients).

The FRENCH scale is also five-level, taking into account the needs for resources necessary to provide assistance to a given patient (Taboulet P. et al., 2009). The CTAS scale (Rosedale K., 2011) involves the identification of five levels, for each of which there is a certain time limit during which the doctor must examine the patient: resuscitation - blue level (the patient is examined immediately), urgent - red level (examination within 15 minutes from the moment of admission), emergency - yellow level (30 minutes from the moment of admission), less urgent - green (60 minutes from the moment of admission) and non-emergency - white level (120 minutes from the moment of admission).

Based on the CTAS scale, the Republican Scientific Center for Emergency Medical Care of the Republic of Uzbekistan uses a three-level UTAS scale (Uzbekistan Triage and Acuity Scale), which distinguishes 3 zones: red, yellow and green (Mirvarisova L.T., Anvarov H.E., 2020). Sorting (triage) of patients admitted to the emergency department of an emergency hospital is necessary for the timely provision of emergency medical care. Prioritization of patients is especially important in conditions of increasing hospitalization (Mirvarisova L.T., Anvarov H.E., 2021).

An important direction for improving obstetric and gynecological care in a multidisciplinary hospital, according to O.G. Frolova and I.A. Ilyicheva (2002), is the

development of evidence-based approaches based on standards of medical care and quality control using information technology. An analysis of the reasons for hospitalization of women in gynecological departments showed that before the opening of an outpatient department at the hospital, more than 65.8% of all hospitalizations were due to the need for an in-depth examination (Shvyreva E.A., 2014).

Piven D.V. et al. (2017) emphasize that medical care is organized and provided in accordance with the procedures for the provision of medical care, mandatory for implementation in the territory of the Russian Federation by all medical organizations, as well as on the basis of standards of medical care (Part 1 of Article 37, Part 1 of Art. 79 of the Federal Law of November 21, 2011 No. 323-FZ "On the fundamentals of protecting the health of citizens in the Russian Federation"), one of the forms of ensuring uniform requirements for the characteristics of medical care (services, interventions), as well as a tool for managing the quality of medical care are clinical recommendations. From the point of view of V.I. Perkhov et al. (2017) it is impossible to ensure a high level of quality by organizing its control by any services external to the manufacturer of goods and services: the desired result can only be obtained through independent control of the quality of work by direct performers.

V.V. Mitkovskaya (2014) notes the importance of developing regional or adapting international clinical protocols for the treatment of emergency conditions in obstetrics and gynecology, based on evidence-based medicine. Various studies provide examples of the use of patient management protocols in gynecology. So, Lindekhovsky Yu.D. et al., at the beginning of the 21st century, developed a protocol for the management of patients with uterine leiomyoma (Lindekhovsky Yu.D. et al., 2002).

The issues of organizing and standardizing perioperative support are of high relevance (Popov A.A. et al., 2019). A promising direction is the use of the "Fast track" accelerated recovery program in gynecology, the key points of which are: refusal of premedication, use of minimally invasive surgical technologies, regional or multi-modal analgesia without systemic use of opioids, early enteral nutrition and early activation of the patient (Sulima A.N. , Basnaeva A.D., 2019; Kehlet H., 2008; Carter J. et al., 2010). The implementation of a multi-modal protocol for patient management

at the stage of preparation for surgery and in the postoperative period significantly reduces the severity of surgical stress, maintains a stable condition of the patient, promotes his early mobilization in the postoperative period and, ultimately, leads to a reduction in financial costs (Dobrokhotova Yu. E. et al., 2018). Enhanced recovery after surgery (ERAS), or fast-track-surgery, provides a set of measures in the pre- and postoperative period aimed at accelerating the rehabilitation of patients and reducing the length of hospitalization after planned surgical interventions. The term “fast-track-surgery” was proposed back in the late 90s of the last century by the Danish physiologist Henrik Kehlet, whose studies showed that the key factor in postoperative complications is the disruption of physiological processes caused by surgical trauma (Dobrokhotova Yu.E. et al. 2018; Puchkov K.V. et al., 2015). Data from domestic and foreign studies indicate that the use of this program for early rehabilitation of patients after surgery helps reduce the length of hospital treatment, reduce the incidence of postoperative complications and the economic costs of treatment (Popov A.A. et al., 2019; Kondo, W.et al. ,2014; Minig, L., 2015). The implementation of an accelerated recovery program does not require special technical and material support, optimizing the process before surgery, during surgery and after surgery, but requires the coordination and involvement of medical personnel at all stages of treatment. The implementation of the accelerated recovery program leads to a significant reduction in the duration of hospitalization, without leading to an increase in the incidence of perioperative complications (Idashkin A.D., 2021).

Current trends in the development of inpatient medical care suggest the maximum possible reduction in the length of stay of patients in a 24-hour hospital. However, a significant proportion of patients after short-term treatment in gynecological departments of hospitals require rehabilitation measures. The results of a survey of obstetricians and gynecologists (Tsivyan B.L., 2014) showed that 65% of respondents consider restorative treatment effective after surgical treatment for benign neoplasms of the female genital organs, 5% consider sanatorium-resort treatment effective, and 30% noted the expediency combinations of rehabilitation and sanatorium-resort treatment. K.A. Toniyan et al. (2017) also emphasize that patients of

fertile age with gynecological diseases, especially after surgical treatment, need specialized rehabilitation care. Complex restorative treatment is indicated for patients with chronic inflammatory diseases of the pelvic organs and patients after undergoing organ-preserving operations (Davydov A.I. et al., 2011; Khutieva S.V. et al., 2017; Tsivyan B.L., 2014a).

Since the end of the twentieth century, one of the main directions of reforming domestic healthcare has been to reduce the number of beds in inpatient institutions. Thus, compared to 2005, in 2014 their number decreased by 30% (from 81.7 thousand to 57.5 thousand). The provision of beds in this profile decreased from 110.9 to 86.6 beds per 10,000 women. It is important to note that, against the background of the continued high incidence of pelvic inflammatory diseases and other gynecological diseases in women, by the end of the second decade of the 21st century, the number of gynecological beds decreased by 10% (Fomina A.V. et al., 2020). V.N. Tregubov and A.A. Bovina (2020) note that in the period from 2016 to 2018 there was a significant reduction in hospital beds and a decrease in the provision of hospital beds to the population, as well as a reduction in the number of days of bed use per year, the average number of days of patient stay on the bed against the background of increasing bed turnover. The results of research by V.A. Solovyova and N.Yu. Perepelkina (2013ab), carried out in the Orenburg region, showed that for the period 2005-2011. the number of gynecological beds decreased by 23.1% (from 1831 to 1587 beds), the average length of stay of a patient on a gynecological bed decreased from 8.3 bed days in 2005 to 5.4 bed days in 2011 (-34. 9%).

In this regard, the development of day hospitals is a promising form of providing medical care to patients with gynecological diseases (Dzidzaria F.G., Fomina A.V., 2017). In accordance with the order of the Ministry of Healthcare of the Russian Federation dated December 9, 1999 No. 438 “On the organization of day hospitals in medical institutions,” one of the promising forms of hospital-replacing technologies is the day hospital. In 2012, in the compulsory medical insurance system of St. Petersburg, 34 hospitals provided inpatient care to patients with benign neoplasms of the female genital organs, and 9 of them had day hospitals. Day hospitals for this group of patients

were organized both in antenatal clinics and in clinics. In 2012, in St. Petersburg, medical care for patients with benign neoplasms of the female genital organs was provided by 36 day hospitals (Tsivyan B.L., Strogonova O.B., 2013). In 2021, in St. Petersburg, obstetric and gynecological medical care in a day hospital was already provided by 71 medical organizations (Bezhenar V.F. et al., 2022).

The most important component of the resource provision of the obstetrics and gynecology service is the medical workforce. Obstetrician-gynecologists of specialized gynecological departments of St. Petersburg hospitals had a fairly high level of professional training: the majority of doctors (76.3%) received it in residency, 21.8% - in internship and only 1.9% - within the framework of “primary specialization” "; almost half had the highest qualification category, 14.6% had the first and 7.5% had the second (Tsivyan B.L., 2014d).

In accordance with the recommended staffing standards (Order of the Ministry of Healthcare of the Russian Federation dated November 1, 2012 No. 572), in gynecological departments during their planned operation of 1.0, the position of an obstetrician-gynecologist is designed for 10 beds and an additional 4.75 positions for the provision of emergency medical care. The results of a survey of obstetricians and gynecologists in hospitals in St. Petersburg showed that, on average, one doctor simultaneously monitors 20.1 ± 2.7 patients; only 3.6% of respondents noted that their working day is 6 hours (Tsivyan B.L., 2014c).

It should be emphasized that obstetrician-gynecologists of multidisciplinary hospitals, in addition to medical work, perform a significant amount of advisory work. A study by M.A. Belikova (2010, 2011) showed that, on average, during a working day, a doctor consults 5-6 patients in a hospital (5.74 ± 0.41), the average time of one consultation is 28.6 ± 1, 0 min., the majority of those consulted on the main disease were treated in the surgical (59.2%) and therapeutic (25.8%) departments, patients from the neurological department accounted for 12.5%.

The professional activities of obstetricians and gynecologists are associated with great psychological stress due to the specific nature of their activities, with a high frequency of ordering forensic medical examinations and conducting trials in this

profile, which is often due to systemic defects in the organization of the treatment and diagnostic process against the backdrop of a shortage of personnel and equipment (Lazarev V.N., Filonenko I.S., 2016; Mateikovich E.A., 2018).

Great hopes are placed on professional standards developed for doctors of various specialties. In accordance with Part 1 of Article 4 of the Federal Law dated May 2, 2015 No. 122-FZ “On Amendments to the Labor Code of the Russian Federation and Articles 11 and 73 of the Federal Law “On Education in the Russian Federation” (No. 273-FZ dated December 29, 2012) The Government of the Russian Federation has been granted the right to establish the specifics of the application of professional standards (Kadyrov F.N., 2016ab), implemented in the Decree of the Government of the Russian Federation dated June 27, 2016 No. 584 “On the specifics of the application of professional standards...”. The professional standard of an obstetrician-gynecologist was approved by order of the Ministry of Labor and Social Protection dated April 19, 2021 No. 262n.

A.Yu. Davydov and G.B. Artemyeva (2017), among the priority areas for organizing obstetric and gynecological care, indicate the need to develop a scheme for routing patients at various stages of providing obstetric and gynecological care.

The organizational, financial and economic aspects of providing medical care in the field of obstetrics and gynecology are of undoubted importance. The most important condition for regulating the healthcare system is understanding the structure and volume of requests from the population for medical care, as well as the necessary conditions for its provision. In accordance with the order of the Ministry of Healthcare of the Russian Federation dated October 20, 2020 No. 1130n “On approval of the Procedure for providing medical care in the field of obstetrics and gynecology,” obstetric and gynecological care is provided in outpatient and inpatient settings, as well as in a day hospital. Territorial state guarantee programs provide medical care in the compulsory health insurance (CHI) system. In 2021, it was provided by 140 medical organizations in St. Petersburg (126 on an outpatient basis, 71 on a day hospital basis and 39 on an inpatient basis). According to data in St. Petersburg for 2021, more than 2.5 million cases were paid under the compulsory medical insurance program for

patients of this profile for a total amount of 6,352.9 million rubles. Moreover, more than 60% of care was provided outside the hospital (in an outpatient setting and in a day hospital); in 69.7% of cases these were patients with gynecological pathology and only 30.3% with obstetric pathology (Bezhenar V.F. et al., 2022).

Russian state policy in the field of maternal and child health in its long term is aimed at increasing the availability and quality of medical care for mothers and children; development of prenatal and neonatal diagnostics, neonatal and fetal surgery; reducing the level of primary disability in children; prevention and reduction of the number of abortions (Sukhikh G.T. et al., 2013).

Thus, problems of a demographic nature are inextricably linked with issues of resource provision for obstetric and gynecological units, including bed capacity, logistics, financial, economic and personnel support, as well as with the tasks of technological improvement. Increasing the efficiency of domestic healthcare is the main goal that determines the relevance of this study, taking into account the characteristics of the current level of development of the industry. One of the most important areas for improving women's reproductive health is improving the organization of obstetric and gynecological care, increasing its accessibility and quality.

CHAPTER 2. MATERIALS AND METHODS

Determining factors that contribute to the optimization of public health indicators, searching for ways to increase the medical, social and economic efficiency of the activities of medical organizations is possible by conducting comprehensive social and hygienic studies, which make it possible to comprehensively analyze the positive and negative aspects of their activities, evaluate the effectiveness of ongoing reforms, and outline areas for further improvement.

The materials for the study were:

1. Regulatory legal acts of the Russian Federation.

2. Scientific literary sources (domestic and foreign) on the topic of the thesis.

3. Official data of the Federal State Statistics Service of the Russian Federation (Healthcare in Russia, official publication; Federal Statistical Observation Forms (hereinafter referred to as FSO) No. 30 (annual) for the Russian Federation), 2000-2022.

4. Information on the activities of a multidisciplinary hospital (I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Medicine), operating as an emergency hospital (form No. 14 (annual), approved by order of the Federal State Statistics Service dated July 29, 2009 No. 154), 2015 -2022

5. Reporting forms No. 30 “Information about the medical organization for the year” of the State Budgetary Institution “I.I. Jpnelidze St. Petersburg Research Institute of Emergency Medicine, State Budgetary Institution "City Emergency Medical Care Station", State Budgetary Institution "Antenatal Clinic No. 33" and "consolidated" reporting forms No. 30 of medical organizations of St. Petersburg of city and federal subordination, providing specialized obstetric and gynecological care in inpatient settings, 2015-2022.

6. Medical records of an inpatient (form No. 033/u, approved by Order of the USSR Ministry of Health dated October 4, 1980 No. 1030 (as amended on December

31, 2002) “On approval of forms of primary medical documentation of healthcare institutions”) of a basic emergency hospital, including electronic ones medical history of the medical information system (MIS) of a medical organization, n=36400, 2015-2022.

7. Statistical data of the MIS of medical organizations (I.I. Jpnelidze St. Petersburg Research Institute of Emergency Medicine - n=36400, 2015-2022; State Budgetary Institution "City Emergency Medical Care Station" - n=272554, 2015-2022. ; State Budgetary Institution "Antenatal Clinic No. 33" - n=256132, 2015-2022.

Various groups of observation units were used, the total number of which in this study was 565,086 units.

The object of the study is the activities of medical organizations related to the provision of medical care in emergency and urgent forms at the pre-hospital and hospital stages (emergency medical care outside a medical organization, inpatient emergency department, antenatal clinic) in the field of obstetrics and gynecology, the subject of the study is structure, resources and technology of their functioning.

The complex nature of this study determined the need for scientific observation and analysis:

- special literature (normative, legal, scientific) devoted to the provision of medical care in the fields of obstetrics and gynecology, emergency medical care, health care organization and public health, insurance medicine, quality management of medical care and other sources, including the Internet-resources on the research topic;

- statistical medical (resources, technologies, resulting indicators) and financial and economic indicators of the activities of medical organizations in providing medical care to patients in the field of obstetrics and gynecology.

Characteristics of the research setting.

The main setting for the study was the I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Medicine, which is a state budgetary institution, the main medical institution of St. Petersburg, a large scientific, medical and educational center that provides multidisciplinary, highly qualified specialized medical care 24/7/365 both in daily activities and in emergency situations. The base hospital has 37 medical

departments covering 19 medical care profiles. Over the course of a year, over 80 thousand people turn to the Institute for help, with daily visits reaching up to 250-350 patients. The profile order of the Institute for 2021 has undergone changes twice (Orders of the Health Committee of St. Petersburg dated September 27, 2021 No. 605-r and dated December 30, 2021 No. 923-r), and in 2022 897 beds were approved and 113 intensive care beds were deployed.

To perform this study, it should be noted that there are 14 beds for pregnancy pathology and 44 gynecological beds for adults, 20 overnight emergency medical beds and 20 short-term emergency medical beds.

The unique feature of the Institute is the combination of a significant clinical base, research potential and educational platform, combined with modern equipment, rich experience of clinicians, scientists and teaching staff. Today it is represented by more than 2 thousand employees, including 34 professors, 59 doctors of medical sciences, 97 candidates of medical sciences. Specialized city and regional clinical centers have been deployed on the basis of the institute. The institute's multidisciplinary clinical base and high level of interdisciplinary interaction make it possible to provide high-quality training for specialists in basic (residency) and additional professional education programs.

The study used materials from the City Emergency Medical Service Station (EMS). This is the largest ambulance station in St. Petersburg, employing more than 2 thousand employees working at 26 substations in different areas of the city. Its arsenal includes more than 170 teams of various profiles (general medical and paramedic, psychiatric, specialized anesthesiology-reanimation teams). Every day, the operational department by phones 103 and 03 records up to 8,000 requests from the population, and field teams carry out up to 1,800 visits per day.

Data from the pre-hospital stage are presented by the St. Petersburg State Budgetary Healthcare Institution “Antenatal Clinic No. 33” (AC), which performs work (services) in the provision of primary pre-hospital and medical health care in an outpatient setting and in a out-patient hospital, primary specialized health care in an out-patient hospital and on an outpatient basis, during medical examinations and

examinations. The antenatal clinic serves more than 70 thousand female population of St. Petersburg, of which more than 42 thousand are women of fertile age, the amount of visits is more than 50 thousand per year, and includes obstetric and gynecological areas (10-12 during the observation period), out-patient hospital beds.

Research program. To organize the thesis research, a program was developed (Figure 2.1; Table 2.1) aimed at achieving the stated aims and objectives. The program included the consistent implementation of the main stages. Objects of research, methods and units of observation, sources of information corresponded to a certain stage.

Рисунок 2.1 – Программа исследования (АГ – акушерско-гинекологическая, СМП – скорая медицинская помощь)
Особенности демографической ситуации в Российской Федерации и в Санкт-Петербурге
Обеспеченность ресурсами для оказания медицинской помощи АГ профиля
Медико-статистическая характеристика пациентов стационара СМП с АГ патологией

Figure 2.1 – Research program (OG - obstetrics and gynecology, EMC - emergency medical care)
Aspects of the demographic situation in the Russian Federation and St. Petersburg
Availability of resources to provide OG medical care
Medical and statistical characteristics of EMC patients with OG pathology

Система организации мед. помощи пациентам АГ профиля	System for organizing medical care for OG patients
Ресурсы (структура)	Resources (structure)
Экономические аспекты мед. помощи АГ профиля в стационаре СМП	Economic aspects of OG medical care in an EMC hospital
Организационные особенности госпитализации пациентов АГ профиля в стационар СМП	Organizational aspects of of OG patients hospitalization to the EMC hospital
Технология (процессы)	Technology (processes)
Результаты (эффективность)	Results (efficiency)
Вопросы преемственности при оказании АГ помощи	Continuity issues in the provision of OG care
Организационные мероприятия по совершенствованию мед. помощи пациентам с АГ патологией в стационаре СМП	Organizational measures to improve medical care for OG patients in the EMC hospital

Table 2.1 Research program

Goal: to improve the system of gynecological medical care in a multidisciplinary emergency hospital (EMC)		
Stages/ Aims	**Materials**	**Methods**
1. Study regulatory legal documents, scientific literature sources, official data from Rosstat on the research topic in order to determine the relevance, aims and objectives, and develop a research program (Chapter I)	- regulatory legal documents - official data of the Federal State Statistics Service of the Russian Federation, 2000-2022. - statistical data (forms No. 14, No. 30, No. 016/u – 02 (annual)*), 2000-2022. - scientific literature sources (n=321)	historical and statistical methods, content analysis method
2. To study the aspects of the demographic situation in the Russian Federation and St. Petersburg, the facilities to provide OG medical care (Chapter III)	- regulatory legal documents - official data of the Federal State Statistics Service of the Russian Federation, 2000-2022. - statistical data (forms No. 14, No. 30, No. 016/u – 02 (annual)*), 2000-2022. - scientific literature sources	historical and statistical methods, content analysis method

End of figure 2.1

3. To analyze the organizational aspects of hospitalization of obstetrics and gynecology patients in a multidisciplinary EMC hospital and their medical and statistical characteristics (Chapter IV)	- regulatory documents; - information on the activities of the multidisciplinary hospital for emergency medical services (forms No. 14 and 30 (annual)), 2015-2022. - medical records of an inpatient (form No. 033/u), including electronic medical records of the MIS medical organization, n=36400 (2015-2022)	historical, content analysis, statistical and analytical methods
4. To study the issues of continuity in the provision of hypertension care in rescue and emergency forms at the pre-hospital and hospital stages, the economic aspects of OG medical care in the EMC hospital (Chapter V)	statistical data of MIS of medical organizations (2015-2022): - State Budgetary Healthcare Institution "City Emergency Medical Care Station", n=272551 (2015-2022), - State Budgetary Institution "Antenatal Clinic No. 33", n=256132 (2015-2022), - MIS statistics State Budgetary Institution "I.I. Jpnelidze St. Petersburg Research Institute of Emergency Medicine: n=1367 (2021, short-term stay patients), n=219 (2022, short-term stay patients); - General Tariff Agreement of the Compulsory Medical Insurance Fund of St. Petersburg	method of economic analysis, organizational experiment, statistical and analytical methods
5. Develop organizational measures to improve medical care for OG patients in an EMC hospital setting (Chapter V)	All above mentioned	All above mentioned

*medical documentation forms:
"Medical record of an inpatient" (form No. 003/u); "Summary record of the movement of patients and the bed capacity of a 24-hour hospital, an out-patient hospital at a hospital institution (form No. 016/u - 02); "Information about the medical organization for ... year" (form No. 30); "Information on the activities of units of a medical organization providing medical care in inpatient settings" (form No. 14)

The first stage of the study (Chapter I) included an analysis of scientific literature, regulatory legal documents and statistical forms of Rosstat, scientific literary sources on the research topic in order to determine the relevance, goals and objectives, and the formation of a research design.

Stage II of the study (Chapter III) is associated with the study of the characteristics of the demographic situation in the Russian Federation and St. Petersburg, the formation of a network of medical organizations providing obstetric

and gynecological care to the female population of St. Petersburg, the provision of obstetrician-gynecologists, hospital beds for obstetrics and gynecology, the performance indicators of gynecological departments of medical organizations in St. Petersburg, providing specialized medical care in the field of obstetrics and gynecology in inpatient settings.

Stage III of the study (Chapter IV) – study of the organizational aspects of hospitalization of obstetrics and gynecology patients in a multidisciplinary emergency hospital: analysis of patient distribution flows, routes and timing of hospitalization, time of admission and time of stay of patients in the inpatient department of emergency medical services.

An in-depth analysis of the medical and statistical characteristics of the patients was carried out: the age characteristics of the patients, the nosological structure of the pathology, the severity of the patients' condition, and the outcome of the disease. For this purpose, a statistical worksheet was developed ("Worksheet of the medical care case study in an obstetrics and gynecology patient in a multidisciplinary hospital" - Appendix A), onto which all the necessary information was copied from the medical records of inpatients, and an electronic database of patients was formed. A total of 36,400 case histories have been filled.

Determination of the required volume of observations when forming a sample population to obtain representative results was carried out according to the generally accepted formula (2.1):

$$n = \frac{N}{\frac{N\Delta^2}{t^2}+1} \qquad (2.1),$$

where

n – reasonable number of selection of observation units,

N – general population,

Δ – accuracy coefficient equal to 0.03 (=0.015×2),

T – reliability criterion (=2).

Calculations of the required volume of observations. During the study period, 37,767 patients were hospitalized at the base hospital (complete sample). The required number of medical records for an inpatient, determined using the above formula, was:

$$n= \frac{37767}{\frac{37763 \text{ X } 0{,}0009}{4} +1} = 3975,$$

which indicates sufficient reliability of the sample.

Stage IV of the study (Chapter V) is devoted to the study of issues of continuity in the provision of obstetric and gynecological care in emergency and urgent forms at the pre-hospital and hospital stages of emergency medical care: the peculiarities of the organization of medical care in the conditions of the pre-hospital stage of emergency medical care, antenatal clinics, and the inpatient stage of emergency medical care. To study the composition of patients hospitalized by doctors at the antenatal clinic for emergency indications, a “worksheet for studying the case of emergency hospitalization of a patient at the antenatal clinic” was developed (Appendix B).

The economic aspects of hospitalization of obstetrics and gynecology patients in an emergency hospital are considered: economic indicators of the work of a medical organization are used (analysis of invoices issued by a medical organization and tariffs of the General Tariff Agreement of the Federal Compulsory Medical Insurance Fund of St. Petersburg).

Stage V of the study (Chapter V). Based on the results of the study, organizational measures were developed to improve medical care for patients with gynecological pathology in an emergency hospital: the features and prospects for the development of the system of providing medical care to obstetric and gynecological patients in an emergency hospital were presented, an Algorithm for routing patients and a Technological worksheet for improving the organization of emergency gynecological care in a multidisciplinary emergency hospital were developed, a training manual has been prepared. The results of the study are introduced into the practical work of scientific, medical and educational organizations (acts of implementation).

As a result, during the course of the study, the continuous observation method was widely used in almost every fragment of the study, including when studying the level of hospitalization and indicators of bed utilization in obstetrics and gynecology departments in medical organizations in St. Petersburg; results of emergency medical calls to patients with obstetric and gynecological pathology; structures of nosology of patients hospitalized for emergency reasons by doctors at the antenatal clinic; nosological and age composition of obstetric and gynecological patients treated in an emergency hospital; payment for the treatment of patients treated at the I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Medicine in the inpatient emergency department (in comparison with the level of payment for the treatment of patients in specialized obstetrics and gynecology departments).

Thus, the research design made it possible to study and evaluate the activities of medical organizations (inpatient emergency medical care, pre-hospital emergency medical care, antenatal clinic) emergency medical services in providing medical care to obstetrics and gynecology patients , to develop and justify mechanisms for improving their work. She defined the methodology for conducting a comprehensive study.

The design of the study consists of a sequential study of the system of providing emergency and emergency obstetrics and gynecology medical care at different levels and in different conditions of its provision: at the level of primary health care (in outpatient settings - antenatal clinic), at the level of ambulance, including emergency specialized medical care (outside a medical organization - pre-hospital stage of emergency medical care), at the level of specialized, including high-tech medical care (in inpatient conditions - emergency medical care hospital). The greatest attention is paid to the modern technology of the inpatient emergency department, as an important link in this system.

The logical diagram of the study is presented in Table. 2.2.

Thus, the study used modern methodology with the integrated use of system analysis and situational approach, a number of methods: content analysis, historical, economic analysis, the method of organizational experiment, modern methods of

processing statistical material. The applied research methodology confirms the reliability of the results obtained.

Table 2.2 Logical diagram of the study

Topic	Improving the organization of emergency and urgent gynecological care in a multidisciplinary emergency hospital
Scientific specialty	3.2.3. “Public health, organization and sociology of healthcare, medical and social expertise” (paragraphs 12-15, 18)
Aim	improving the system for providing gynecological medical care in a multidisciplinary emergency hospital
Scientific hypotheses	1. An important social and demographic problem of modern Russia is the low birth rate, which does not ensure the reproduction of the population: over 5 years, the birth rate in the country decreased by 21.6%, in St. Petersburg - by 25.4%; The natural population growth of the Russian Federation since 2016 has been negative. One of the current areas for improving reproductive health is improving the organization of obstetric and gynecological care, increasing its accessibility and quality. 2. Reducing the volume of specialized obstetric and gynecological care (number of specialized beds, availability of beds, hospitalization rates, staff shortages) allows us to reasonably consider alternative options for providing medical care to patients of this profile. 3. The current state of multidisciplinary emergency hospitals requires the development of new models and principles for organizing the treatment and diagnostic process in order to optimally use available resources. The development of inpatient emergency departments opens up new opportunities for providing medical care to patients in the field of obstetrics and gynecology. These opportunities have not only promising medical, social, organizational, treatment and diagnostic, but also financial and economic aspects.
Study design	1. Studying the characteristics of the demographic situation in the Russian Federation and St. Petersburg, the provision of resources for the obstetric and gynecological medical care. 2. Analysis (medical-statistical, economic, organizational) of the characteristics of hospitalization of obstetrics and gynecology patients in a multidisciplinary emergency hospital. 3. Analysis of continuity in the provision of obstetric and gynecological care in emergency and emergency forms at the pre-hospital and hospital stages. 4. Development of organizational measures to improve medical care for patients with obstetric and gynecological pathology in an emergency hospital.

End of figure 2.2

Effect	Quantitative 1. rational use (optimization) of the bed capacity of a medical organization (due to the efficiency of organizing the treatment and diagnostic process, reducing the time of patients' stay in the hospital when deploying emergency medical beds for daily and short-term stay, releasing specialized bed capacity); 2. increasing the economic efficiency of a medical organization (using emergency medical care tariffs in inpatient settings); Qualitative 3. increasing the availability and quality of medical care, patient satisfaction with the level of medical care; 4. improvement of medical care technology - implementation of treatment and diagnostic algorithms and optimal logistics for patients and personnel of a medical organization.
Result	organizational measures have been developed to improve medical care for patients with gynecological pathology in an emergency hospital: – scientific and methodological provisions and conclusions are substantiated, – practical recommendations are given, – development prospects are presented, – algorithms for routing patients in a multidisciplinary emergency hospital were developed, – a technological worksheet has been developed for improving medical care for patients with gynecological pathology in an emergency hospital, – a textbook was prepared (and published), – the research results are introduced into the practical work of scientific, medical and educational organizations (acts of implementation)

Statistical processing of the research materials was carried out in the department of computer technology of the Federal State Budgetary Educational Institution of Higher Education "Academician I.P. Pavlov First St. Petersburg State Medical University", Department of Emergency Medical Care of the State Budgetary Institution "I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Care". During the research, methods were used for statistical processing of research results using a personal computer (ACER Aspire MC605 using the Windows 10 operating system) and application packages for creating databases and statistical processing (Microsoft Office Excel 2007.Irk). The results obtained during the work were also processed using the STATISTICA for Windows software system (version 10 Lits. BXXR310F964808FA–V), SPSS Statistics 17.0.

The degree of reliability of the results obtained and conclusions is determined by the sufficient volume of databases; using modern research methods that correspond

to the methodology, purpose and objectives of the dissertation work; using a continuous method in almost every fragment of the study. The statistical significance of the compared indicators with a normal distribution was established using the Student's t-test (t). The testing of statistical hypotheses was carried out using generally accepted methods in statistics. The critical level of significance when testing statistical hypotheses (p) was taken equal to 0.05. Statistically significant differences were recorded when the specified level of statistical significance was reached ($p<0.05$). The results of statistical summaries and groupings are presented in the form of statistical tables and presented in graphical form. The assessment of time series in some fragments of the study was carried out using the Pearson correlation coefficient (r) when calculating monthly indicators for each year of observation (which made it possible to increase the statistical array and obtain reliable data); trend lines were used in graphical form in the analysis (to identify trends, forecast phenomena) with calculation of the fitting reliability coefficient (R^2) to assess the degree of correspondence of the trend model to the original data.

A set of methods and techniques was used in combination with the study of different general populations, continuous observation at all stages of the study, which made it possible to realize the aim and objectives of the study.

CHAPTER 3. DEMOGRAPHIC PROBLEMS AND ORGANIZATION OF OBSTETRIC AND GYNECOLOGICAL CARE FOR THE POPULATION OF ST. PETERSBURG

3.1 Dynamics of demographic indicators in Russia and St. Petersburg

An important social and demographic problem of modern Russia is the low birth rate, which does not ensure the reproduction of the population. This is evidenced by data from the Federal State Statistics Service of the Russian Federation (Rosstat, Demography, https://rosstat.gov.ru/folder/12781) (Table 3.1).

Compared to 1990, the population in Russia decreased in 2020 by 1.4% (from 148,274 to 146,171). Moreover, to a large extent, the increase in population in 2014 was associated with the reattachment of Crimea, and not with an increase in the birth rate and a decrease in mortality. The birth rate in 2020 compared to 1990 decreased by 26.9% (from 13.4‰ to 9.8‰), and the mortality rate increased by 30.4% (from 11.2‰ to 14.6‰). Natural population growth, which amounted to +2.2 ‰ in 1990, had negative values throughout the first decade of the 21st century. At the beginning of the second decade (2013-2015), a very modest positive natural population growth was observed due to a slight decrease in mortality and an equally insignificant increase in the birth rate. By the end of the second decade, negative natural population growth is observed, and the values are lower than at the beginning of the first decade of the 21st century (Table 3.1).

After many years (2001-2012) of a decline in natural population growth, stabilization of the situation in 2013-2015, since 2016 negative dynamics have been observed again, which continues to this day.

Attention should also be paid to the decrease in the total fertility rate: from 1.892 in 1990 to 1.416 in 2022 (-25.2%).

Table 3.1 Dynamics of population, fertility, mortality and natural population movement in the Russian Federation in 1990-2022*

Year	Population at the end of the year, thousand of people	Birth rate, ‰	Total fertility rate (number of children born per woman)	Mortality rate, ‰	Natural population growth, ‰
1990	148,274	13.4	1.892	11.2	2.2
2001	145,649	9.0	1.223	15.6	- 6.6
2002	144,964	9.7	1.286	16.2	- 6.5
2003	144,168	10.2	1.319	16.4	- 6.2
2004	143,474	10.4	1.344	15.9	- 5.5
2005	143,236	10.2	1.294	16.1	- 5.9
2006	142,863	10.3	1.305	15.1	- 4.8
2007	142,748	11.3	1.416	14.6	- 3.3
2008	142,737	12.0	1.502	14.5	- 2.5
2009	142,833	12.3	1.542	14.1	- 1.8
2010	142,865	12.5	1.567	14.2	- 1.7
2011	143,056	12.6	1.582	13.5	- 0.9
2012	143,347	13.3	1.691	13.3	0
2013	143,667	13.2	1.707	13.0	0.2
2014	146,267	13.3	1.750	13.1	0.2
2015	146,545	13.3	1.777	13.0	0.3
2016	146,804	12.9	1.762	12.9	- 0.01
2017	146,880	11.5	1.621	12.4	- 0.9
2018	146,781	10.9	1.579	12.5	- 1.6
2019	146,749	10.1	1.504	12.3	- 2.2
2020	146,171	9.8	1.505	14.6	- 4.8
2021	145,557	9.6	1.505	16.7	-7.1
2022	146,447	8.9	1.416	12.9	-4.0

*(Rosstat, Demography, https://rosstat.gov.ru/folder/12781)

The situation is aggravated by the population decline associated with the corona virus pandemic (2020-2021): the overall increase in the resident population (in this case, decline) amounted to 577,575 cases in 2020, 613,439 in 2021, the negative trend continued 2022 - 532,637 cases.

The natural population growth of the Russian Federation (the absolute value of the difference between the number of births and the number of deaths over a certain period of time) has been negative since 2016 (Fig. 3.1).

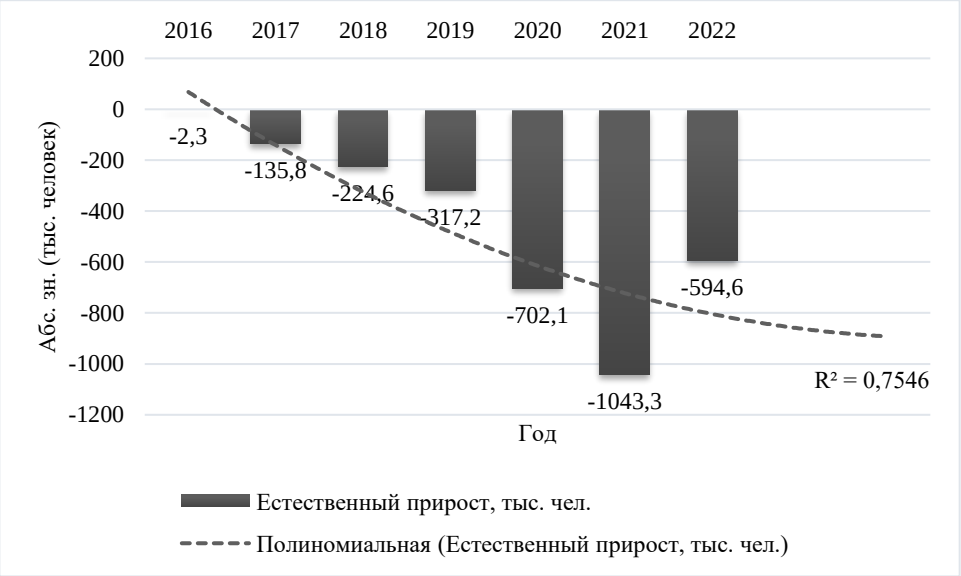


Figure 3.1 Dynamics of natural population growth in the Russian Federation, thousand people

Абсолютное значение (тыс. человек)	Absolute value (thousands of people)
Естественный прирост, тыс. чел.	Natural increase, thousands of people
Полиноминальный (Естественный прирост, тыс. чел.)	Polynomial (Natural increase, thousands of people)
Год	Year

Compared to the “pre-pandemic” year (2019), there is a decrease in the indicator by 2.2 times (in 2020) and 3.3 times (in 2021) with some stabilization of the situation in 2022.

An undoubted achievement is the reduction in maternal and infant mortality rates. Maternal mortality decreased from 47.4 cases per 10,000 live births (1990) to 11.2 cases per 10,000 live births (2020), that is, 4.2 times; In 2021, there was an increase in the indicator to 34.5 cases against the backdrop of the COVID-19 pandemic, with a subsequent decrease to 13.0 cases (2022) as the epidemiological situation stabilized. Infant mortality in 2022 compared to 1990 decreased by 4.0 times: from 17.4‰ to 4.4‰ (Table 3.2).

The number of abortions per 100 births decreased by 5.3 times (from 206 in 1990 to 39 in 2022). The absolute number of abortions decreased by 8.1 times (from 4103.4 thousand in 1990 to 503.8 thousand in 2022). In 2022, the number of births exceeded

the number of pregnancy terminations by 2.6 times. However, the number of births in 2022 compared to 1990 decreased by a third (34.4%).

Table 3.2 Dynamics of infant and maternal mortality, ratio of abortions and childbirth in the Russian Federation in 2001-2020*

Year	Infant mortality (per 1000 live births)	Maternal mortality (per 100,000 live births)	Number of abortions (thousands)	Number of abortions per 100 births	Number of births (thousands)
1990	17.4	47.4	4,103.4	206	1,988.9
2000	15.3	39.7	2,138.8	169	1,266.8
2001	14.6	36.5	2,014.7	154	1,311.6
2002	13.3	33.6	1,944.5	139	1,397.0
2003	12.4	31.9	1,865.0	129	1,477.3
2004	11.6	23.4	1,797.6	122	1,502.5
2005	11.0	25.4	1,675. 7	117	1,457.4
2006	10.2	23.7	1,582. 4	107	1,479.6
2007	9.4	22.0	1,479.0	92	1,610.1
2008	8.5	20.7	1,385.6	81	1,714.0
2009	8.1	22.0	1,292.4	74	1,761.7
2010	7.5	16.5	1,186.1	67	1,788.9
2011	7.4	16.2	1,124.9	63	1,796.6
2012	8.6	11.5	1,064.0	56	1,902.1
2013	8.2	11.3	1,012.4	54	1,895.8
2014	7.4	10.8	930.0	48	1,942.7
2015	6.5	10.1	848.2	44	1,940.6
2016	6.0	10.0	836.6	45	1,888.7
2017	5.6	8.8	779. 8	46	1,690.3
2018	5.1	9.1	661.0	42	1,604.3
2019	4.9	9.0	621.6	42	1,481.1
2020	4.5	11.2	553.5	39	1,436.5
2021	4.6	34.5	517.7	37	1,398.3
2022	4.4	13.0	503.8	39	1,304.1

*(Rosstat, Demography, https://rosstat.gov.ru/folder/12781)

Reducing reproductive losses due to a significant reduction in infant mortality and the number of abortions did not have a significant impact on the birth rate and natural population growth.

A five-year analysis of the birth rate in St. Petersburg in the “pre-pandemic” (2016-2020) period also indicates negative dynamics (Fig. 3.2).

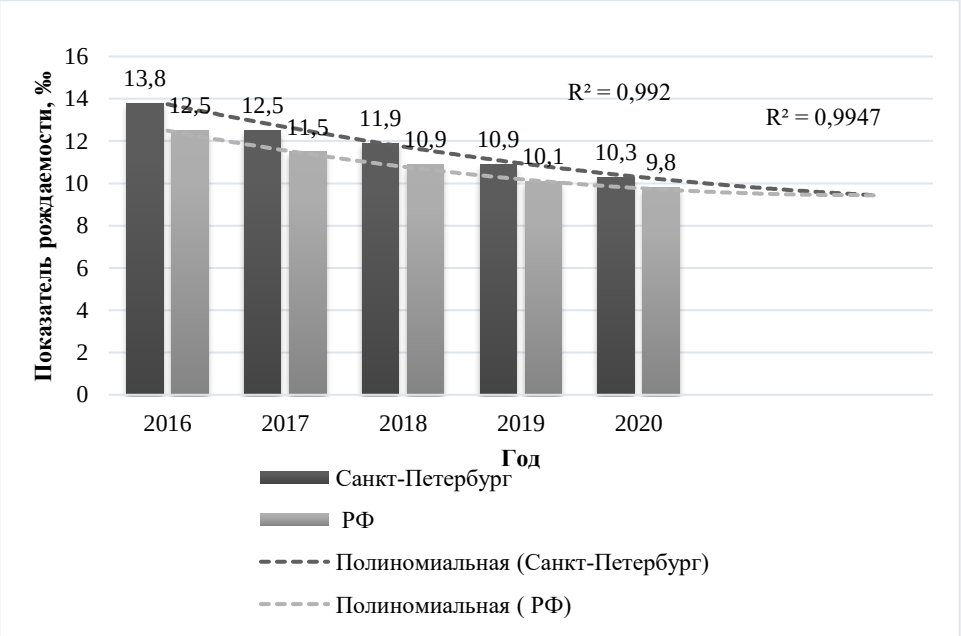


Figure 3.2 Dynamics and trends of birth rates in the Russian Federation and St. Petersburg, 2016 – 2020, ‰

Показатель рождаемости, ‰	Birth rate, ‰
Год	Year
Санкт-Петербург	St. Petersburg
РФ	RF
Полиноминальный (Санкт-Петербург)	Polynomial (St. Petersburg)
Полиноминальный (РФ)	Polynomial (RF)

In the Russian Federation, over this 5-year period, the birth rate decreased by 21.6% (from 12.5 ‰ in 2016 to 9.8 ‰ in 2020), and in St. Petersburg - by 25.4% (from 13.8‰ in 2016 to 10.3‰ in 2020). At the same time, the overall increase in the permanent population of St. Petersburg since 2020 has had negative dynamics (Fig. 3.3).

Figure 3.3 Total increase in the permanent population of St. Petersburg, 2016-2022, people

Абсолютное значение (человек)	Absolute value (people)
Год	Year
Общий прирост постоянного населения, чел.	Total increase in permanent population, people
Полиноминальный (Общий прирост постоянного населения, чел.)	Polynomial (Total increase in permanent population, people)

In this regard, the demographic policy of the state is of great importance.

3.2. Formation mechanisms aspects of a medical organizations network providing obstetric and gynecological care to the female population of St. Petersburg, and the provision dynamics of obstetric and gynecological beds to the population

The “Action Plan for the Implementation in 2021-2025 of the Concept of Demographic Policy of the Russian Federation until 2025”, approved by Order of the Government of the Russian Federation dated September 16, 2021 No. 2580-r, included activities aimed at: popularizing traditional family values and active longevity; increasing the birth rate and well-being of families with children; reducing maternal mortality, improving reproductive health. One of the most important areas for improving reproductive health is improving the organization of obstetric and gynecological care, increasing its accessibility and quality.

Among the the formation aspects of a medical organizations network that provide obstetrics and gynecology medical care to the female population of St. Petersburg in a hospital setting is its variability. Gynecological departments and pregnancy pathology departments may be part of the structure of a maternity hospital, perinatal center and multidisciplinary hospitals. It is necessary to note that the subordination of these organizations is not only to different governing bodies, but also to different government agencies. In this regard, the methodology for planning various types of obstetric and gynecological care, including bed capacity, becomes more complicated.

The regulatory framework governing the organization of medical care in the field of obstetrics and gynecology in Russia has been radically revised several times in just the second decade of the 21st century. During 2010-2012 the “Procedure for the provision of obstetric and gynecological care” was in effect, approved by order of the Ministry of Healthcare and Social Development of the Russian Federation dated October 2, 2009 No. 808. In 2013-2020. The procedure approved by the order of the Ministry of Healthcare dated November 1, 2012 No. 572n “On approval of the procedure for providing medical care in the field of obstetrics and gynecology (except for the use of assisted reproductive technologies)” was relevant. On January 1, 2021, the order of the Ministry of Healthcare of the Russian Federation dated October 20, 2020 No. 1130n “On approval of the Procedure for providing medical care in the field of obstetrics and gynecology” came into force.

Medical organizations that provide medical care to women during childbirth and the postpartum period, depending on bed capacity, equipment, and staffing, are divided into three groups (levels). In addition, criteria have been defined for determining the stages of medical care and referral of pregnant women to obstetric hospitals at different levels.

The principle of phasing is also used in the organization of specialized, including high-tech, medical care provided to women with gynecological diseases in inpatient settings. Medical organizations providing medical care to patients with gynecological diseases in inpatient settings are divided into 3 groups (levels), taking into account bed

capacity, equipment and staffing. The first level includes medical organizations that have gynecological wards as part of surgical departments, as well as central district, city and departmental hospitals that have gynecological departments. The second level includes gynecological departments of city hospitals, including specialized ones, emergency hospitals, medical units, interdistrict perinatal centers, etc. The third A-level includes gynecological departments of city, regional, regional, republican, district, clinical hospitals, perinatal centers, maternal and child health centers and other medical organizations. Women with gynecological pathology combined with severe concomitant somatic pathology, with severe purulent-septic complications of abortion and childbirth are sent to medical organizations of the third A-level, if necessary, to provide high-tech medical care, including for the purpose of preserving and restoring the anatomical and functional state of the reproductive system . The third B-level includes gynecological hospitals of federal medical organizations that provide specialized, including high-tech, medical care in the field of obstetrics and gynecology (Appendices C, D, E).

On the territory of St. Petersburg, the Order of the Committee of the Government of St. Petersburg dated December 3, 2019 No. 644-r is in force (as amended by the Orders of the Committee on Health Care of the Government of St. Petersburg dated December 27, 2019 N 722-r, and dated September 22, 2021 N 594-r) “On the organization of medical care in St. Petersburg in the field of obstetrics and gynecology.” In accordance with this Order, groups of medical organizations are defined that provide ((Appendices C, D, E):

- medical care for women during pregnancy and the postpartum period, women with gynecological diseases in accordance with groups (levels) of outpatient medical care in St. Petersburg (Appendix C);

- medical care in the field of obstetrics and gynecology, depending on the possibility of providing medical care during pregnancy, childbirth and the postpartum period (Appendix D);

- medical care for women with gynecological diseases in accordance with groups (levels) of inpatient medical care in St. Petersburg (Appendix E).

The list of medical organizations providing medical care in the field of obstetrics and gynecology, depending on the capabilities of providing medical care during pregnancy, childbirth and the postpartum period (in inpatient settings), includes 17 medical organizations. Of these, the second level includes 14 medical organizations: 7 maternity hospitals, maternity wards of 4 city hospitals, as well as the Federal State Budgetary Institution “D.O. Ott Research Institute of Obstetrics, Gynecology and Reproductology", Federal State Budgetary Educational Institution of Higher Education "Academician I.P. Pavlov First St. Petersburg State Medical University", Federal State Budgetary Educational Institution of Higher Education "S.M. Kirov Military Medical Academy". Level III A included the State Budgetary Institution "Maternity Hospital No. 18", and Level III B included the Federal State Budgetary Institution "V.A. Almazov National Medical Research Center" and the Federal State Budgetary Educational Institution of Higher Education "St. Petersburg State Pediatric Medical University".

The list of medical organizations providing medical care to women with gynecological diseases, in accordance with the groups (levels) of inpatient medical care in St. Petersburg, includes 8 second-level medical organizations and 11 third-level medical organizations (Appendix I). The third level is represented only by the largest multidisciplinary city hospitals and the State Budgetary Institution “I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Medicine”.

An important component of the resource provision for obstetric and gynecological care is the bed capacity of medical organizations providing specialized obstetric and gynecological care. When planning the number of beds for pregnant women and women in labor, as well as the number of beds for pregnancy pathology, the number of women of fertile age (15–49 years) should be taken into account. The number of gynecological beds is calculated based on the number of all women in the territory.

According to Rosstat, in recent years the dynamics of the number of women in the Russian Federation is insignificant: 78.5 million people in 2015, 78.6 million people in 2020 and 2022, 78.3 million people in 2021 and 2023, they make up a stable

54% of the total population, this share has not changed since 2006. In St. Petersburg, the same figure varied in the range of 2.8 – 3.1 million people. The number of women of childbearing age in the Russian Federation decreased by 3.4%: from 35.7 million people. in 2015 to 34.5 million people. in 2020, in St. Petersburg this figure for the same period remained virtually unchanged and amounted to 1.3 million people.

A study of the dynamics of the number of obstetrics and gynecology beds operating in medical organizations of the Russian Ministry of Healthcare showed that in the country, over the last decade, despite minor changes in the total female population, the number of obstetrics and gynecology beds has decreased by almost a third: 20.9 thousand (-32.4%), for pregnant women, women in labor and postpartum – for 25.1 thousand beds (-32.4%). (Fig. 3.4).

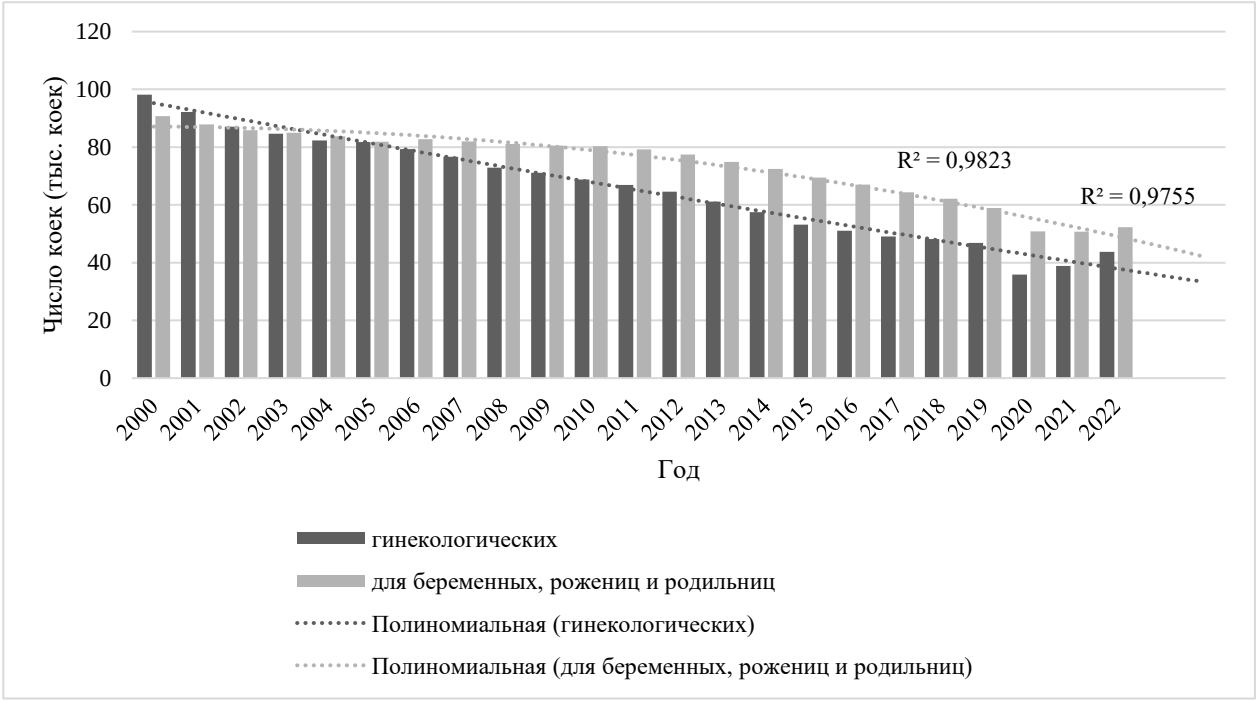


Figure 3.4 Dynamics of obstetrics and gynecology bed capacity in the Russian Federation, 2000-2022, thousand of beds

Число коек (тыс. коек)	Number of beds (thousand of beds)
Год	Year
Гинекологических	Gynecological
Для беременных, рожениц и родильниц	For pregnant women, women in labor and postpartum women
Полиноминальный (гинекологических)	Polynomial (gynecological)
Полиноминальный (для беременных, рожениц и родильниц)	Polynomial (for pregnant women, women in labor and postpartum women)

2020-2021 – a special period in the life of the country associated with the pandemic of a new corona virus infection, sanitary and epidemiological restrictions, quarantine measures, repurposing of hospital beds, changes in patient routing schemes. The statistics of the healthcare system of these years characterize the peculiarities of the work of medical organizations in an emergency situation (emergency situation) of a medical and biological nature, do not always correspond to work in the mode of daily activities, are dynamic, and in some cases are temporary in nature. Therefore, the most indicative for assessing the success of the development of the system is the "pre-pandemic" period (2015-2020).

For the period 2015-2020 the number of pregnancy pathology beds decreased by 28.9% (from 32,120 to 22,827 beds); the number of beds for pregnant women and women in labor decreased by 25.3% (from 35,775 to 26,730 beds); the number of gynecological beds for adults and children decreased by 34.4% (from 48,564 to 31,835 beds) (Table 3.3).

Table 3.3 Dynamics of the provision of obstetrics and gynecology beds for the female population of the Russian Federation and St. Petersburg, 2015 – 2020*

Indicators	Year						Dynamics 2015 - 2020	
	2015	2016	2017	2018	2019	2020	abs.value	%
Number of beds for pregnant women and women in labor in the Russian Federation (absolute number)								
Russian Federation	35,775	35,373	34,190	32,739	30,814	26,730	- 9,045	- 25.3
St. Petersburg	1,104	1,137	1,161	1,131	1,111	1,083	- 21	- 1.9

End of figure 3.3

Number of beds for pregnant women and women in labor per 10,000 women of fertile age (15-49 years)								
Russian Federation	10.01	10.07	9.73	9.44	8.88	7.71	- 2.3	- 23.0
St. Petersburg	8.35	8.57	8.75	8.47	8.32	8.22	- 0.13	- 1.6
Number of beds for pregnancy pathologists (absolute number)								
Russian Federation	32,120	30,523	29,022	28,159	26,848	22,827	- 9,293	- 28.9
St. Petersburg	976	839	865	924	889	805	- 171	- 17.5
Number of pregnancy pathology beds per 10,000 women of fertile age (15-49 years)								
Russian Federation	8.99	8.69	8.26	8.12	7.74	6.62	- 2.37	- 26.4
St. Petersburg	7.38	6.32	6.52	6.92	6.66	6.07	- 1.31	- 17.7
Number of gynecological beds for adults and children (absolute number)								
Russian Federation	48564	46781	45033	44136	42810	31835	-16729	- 34.4
St. Petersburg	1061	997	1041	1046	1043	722	- 339	-31.9
Number of gynecological beds per 10,000 women								
Russian Federation	6.19	5.94	5.72	5.61	5.44	4.05	- 2.14	- 34.6
St. Petersburg	3.74	3.44	3.60	3.55	3.54	2.44	- 1.30	- 34.8

* taking into account beds in medical organizations of the Ministry of Healthcare of the Russian Federation

Statistics for 2022 indicated some stabilization of indicators, however, the number of beds in the interval 2015-2022 decreased: for gynecological beds by 8.5 thousand beds (-17.9%), for beds for pregnant women, women in labor and postpartum – by 17.1 thousand beds (-24.6%).

Accordingly, the provision of beds for pregnant women and women in labor for the female population of the Russian Federation decreased from 10.01 beds per 10,000 female population of fertile age in 2015 to 7.71 beds per 10,000 female population of fertile age in 2020 (-23.0%). The provision of pregnancy pathology beds for the female population of Russia decreased from 8.99 in 2015 to 6.62 beds per 10,000 women of fertile age in 2020 (-26.4%). There was a decrease in the provision of gynecological beds for the female population, including beds for adults and children by 34.6%: from 6.19 in 2015 to 4.05 beds per 10,000 female population in 2020. Statistics for 2022 indicated some stabilization of indicators, however, negative dynamics of the indicator in the interval 2015-2022 amounted to: in terms of the provision of the female

population with gynecological beds per 10,000 female population - 16.4%, beds for pregnant women, women in labor and postpartum - 22.2%.

In St. Petersburg, the dynamics in the number of beds for pregnant women and women in labor was insignificant: 1,104 beds in 2015 and 1,083 beds in 2020 (- 1.9%). In 2020, compared to 2015, the number of pregnancy pathology beds decreased: from 976 beds to 805 beds (-17.5%). The number of gynecological beds has decreased significantly: from 1061 beds to 722 beds (-31.9%). The level of provision of women in St. Petersburg with beds for pregnant women and women in labor decreased insignificantly from 8.35 beds to 8.22 beds per 10,000 women (-1.6%). The provision of pregnancy pathology beds for women in St. Petersburg decreased more significantly: from 7.38 beds per 10,000 women in 2015 to 6.07 beds per 1,000 women in 2020 (-17.7%). The provision of women with gynecological beds per 10,000 female population decreased from 3.74 beds in 2015 to 2.44 beds in 2020 (- 34.8%).

It should be noted that the decrease in obstetrics and gynecology bed capacity noted during the study is in line with the general optimization of the country’s bed capacity, aimed at rational use of available resources and increasing the efficiency of healthcare: for the period 2015-2022 there was a general decrease in the country's bed capacity by 80.1 thousand beds (- 6.6%; from 1,222.0 thousand beds to 1,141.9 thousand beds), while the rate of provision of population with beds per 10,000 people decreased by 6.0% - from 83.0 to 78.0 beds.

Along with the provision of obstetric and gynecological beds for the female population, bed utilization indicators and the dynamics of these indicators play a huge role in ensuring the availability of obstetric and gynecological care.

3.3. Dynamics of the obstetric and gynecological beds use and hospitalization rate of females in obstetric and gynecological departments of inpatient institutions in St. Petersburg

To provide specialized medical care in the field of obstetrics and gynecology in inpatient settings, until 2012, several types of beds functioned, including beds for pregnant women and women in labor, beds for pregnancy pathology, gynecological beds, and beds for abortions.

In accordance with the order of the Ministry of Healthcare dated May 17, 2012 No. 555n "On approval of the nomenclature of hospital beds according to medical care profiles," two profiles of medical care are distinguished: "obstetrics" and "obstetrics and gynecology." Accordingly, according to the "obstetrics" profile, there are beds for pregnant women and women in labor, pregnancy pathology beds, and nursing care beds. The "obstetrics and gynecology" profile includes beds for pregnant women and women in labor, beds for pregnancy pathologies, gynecological beds for adults, including gynecological beds for assisted reproductive technologies, and gynecological beds for children.

Analysis of data from St. Petersburg indicated an increase in the number of women in St. Petersburg (+4.0%, 2015-2020). At the same time, the total number of all beds in the "obstetrics and gynecology" profile in 2020 compared to 2015 decreased by 516 beds (-16.4%). A significant reduction in obstetric and gynecological beds for adults began almost in 2016. In the first year of the spread of the new corona virus infection (2020), on the background of the repurposing of the bed fund, gynecological beds for adults were mainly reduced: in 2020, their number was compared to 2015, decreased by a third (by 336 beds; - 32.6%; $p<0.05$). The number of pregnancy pathology beds in 2020 compared to 2015 decreased by 171 beds (-17.5%). The number of beds for pregnant women and women in labor was reduced by 21 beds (-1.9%). It should be noted that the number of gynecological beds for children in 2020 compared to 2015 decreased by 3 beds (- 10.3%) (Table 3.4).

Table 3.4 Dynamics of the obstetrics and gynecology beds number in hospitals of St. Petersburg in 2015 – 2020

Year	Number of beds deployed at the end of the year, abs. value				Number of women in St. Petersburg, people
	gynecological		for pregnant women and women in labor	pregnancy pathologies	
	for adults	For children			
2015	1,032	29	1,104	976	2,835,667
2016	973	24	1,137	839	2,864,222
2017	997	44	1,161	865	2,894,765
2018	1,002	44	1,131	924	2,929,860
2019	1,002	41	1,111	889	2,945,964
2020	696	26	1,083	805	2,948,268
Dynamics 2015-2020, abs. value	-336	-3	-21	-171	112,601
Dynamics 2015-2020, %	-32.6	-10.3	-1.9	-17.5	4.0

Already starting in 2017, there has been a reduction in the number of hospitalizations to beds for pregnant women and women in labor: compared to 2015, in 2020 the number of admissions to beds of this profile decreased by 21.3% (from 51,073 to 40,208 hospitalizations) (Table 3.10). The number of hospitalizations for pregnancy pathology beds decreased in 2020 compared to 2015 by 12.9%: from 42,657 to 37,494 cases.

The decrease in the flow of hospitalizations of patients to beds for pregnant women and women in labor and to beds for pregnancy pathologies is associated with a decrease in the birth rate (by 24.3%; 2015-2020; $p<0.05$): in 2015 in St. Petersburg it was 13.6‰, in 2016 - 13.8‰, in 2017 - 12.5‰, in 2018 - 11.9‰, in 2019 - 10.9‰ and in 2020 - 10.3‰.

The flow of hospitalizations to gynecological beds decreased significantly (by 30.7%; from 76,865 cases to 53,246 cases; 2015-2020; $p<0.05$) due to a reduction in their number amid the COVID-19 pandemic, which caused the repurposing of beds, deployment of additional beds for "COVID" departments, reduction (and in some cases, complete cessation) of planned hospitalization (Table 3.5).

Table 3.5 Dynamics of the number of patients admitted to obstetrics and gynecology beds of medical organizations in St. Petersburg in 2015-2020

Bed profile	Number of hospitalizations of patients in obstetrics and gynecology beds, absolute value						Dynamics of indicators, 2015-2020	
	2015	2016	2017	2018	2019	2020	Abs. value	%
Beds for pregnant women and women in labor	51,073	53,029	48,054	46,561	41,900	40,208	-10,865	-21.3
Pregnancy pathology beds	42,657	40,910	39,726	44,388	45,235	37,494	-5,163	-12.1
Gynecological beds for adults	76,865	76,246	74,066	74,186	74,616	53,246	-23,619	-30.7
Gynecological beds for children	1,279	1,171	1,162	1,397	1,636	1,006	-273	-21.3

Due to the reduction in obstetrics and gynecology beds (-16.4%) on the background of an increase in the female population of St. Petersburg (+4.0%), one could expect an increase in the average annual occupancy of beds in this profile. However, the data presented in table 3.6 indicates the opposite.

Table 3.6 Average annual occupancy of obstetrics and gynecology beds in medical organizations in St. Petersburg in 2015 – 2020 (days)

Bed profile	Average annual bed occupancy, days						Dynamics of indicators, 2015-2020	
	2015	2016	2017	2018	2019	2020	Abs. value	%
Beds for pregnant women and women in labor	307.4	303.0	270.6	274.0	252.7	241.8	-65.6	-21.3
Pregnancy pathology beds	278.5	298.0	279.6	285.0	287.6	239.2	-39.3	-14.1
Gynecological beds for adults	330.1	353.4	344.9	329.4	334.4	290.5	-39.6	-12.0
Gynecological beds for children	274.3	352.5	294.0	217.6	283.2	235.5	-38.8	-14.1

Since 2017, the average operation duration per year of beds for pregnant women and women in labor ($p<0.05$) and pregnancy pathology beds has begun to decrease significantly. If in 2015 a bed for pregnant women and women in labor was occupied for 307.4 days, then in 2017 it was occupied for 270.6 days (-12.0%), and in 2020 - 241.8 days (-21.3%). Of course, this is largely due to a decrease in the incidence of hospitalization of patients due to a decrease in the birth rate.

Birth rates have virtually no direct impact on the need for hospitalization in gynecological beds. However, the average annual occupancy of a gynecological bed for adults in 2020 compared to 2015 decreased by 12.0% (from 330.1 to 290.5 days).

It must be emphasized that the average annual bed occupancy depends not only on the number of hospitalizations, but also on the average length of stay of the patient in the bed. Compared to 2015, in 2020 the average length of stay of patients in pregnancy pathology beds decreased (by 20.3%). The average length of stay of patients in beds for pregnant women and women in labor decreased slightly (by 3.6%). The average length of stay of patients in gynecological beds for adults in 2015 and 2020 was 4.4 days. (Table 3.7).

Table 3.7 Dynamics of the average length of stay of patients in obstetrics and gynecology beds of medical organizations in St. Petersburg in 2015 -2020

Bed profile	Average length of stay of patients in bed, days						Dynamics of indicators, 2015-2020	
	2015	2016	2017	2018	2019	2020	Abs. value	%
Beds for pregnant women and women in labor	5.6	5.5	5.6	5.6	5.7	5.4	-0.2	-3.6
Pregnancy pathology beds	7.9	7.8	7.3	7.0	6.8	6.3	-1.6	-20.3
Gynecological beds for adults	4.4	4.7	4.5	4.5	4.4	4.4	0	0.0
Gynecological beds for children	6.3	6.8	6.5	6.8	7.2	8.0	1.7	27.0

Standards for the average length of stay are established in accordance with the letter of the Ministry of Healthcare of the Russian Federation “On the formation and

economic justification of the territorial program of state guarantees of free medical care to citizens." It should be noted that the average length of stay of patients in gynecological beds in inpatient facilities in St. Petersburg during the entire observation period is significantly lower than the recommended standard of 6.6 days.

Among the indicators of bed use, special attention is traditionally paid to bed turnover. Study of the dynamics of obstetrics and gynecology bed turnover in hospitals in St. Petersburg in 2015 – 2020. showed that the level of this indicator decreased significantly in departments for pregnant women and women in labor: from 54.2 in 2015 to 44.1 in 2020 (-18.6%) (Table 3.8). At the same time, as already noted, the average length of stay of patients in beds of this profile has remained virtually unchanged.

Table 3.8 Average turnover of obstetrics and gynecology beds
in medical organizations in St. Petersburg in 2015 – 2020 (days)

Bed profile	Average bed turnover, days						Dynamics of indicators, 2015-2020	
	2015	2016	2017	2018	2019	2020	Abs. value	%
Beds for pregnant women and women in labor	54.2	55.5	48.1	48.6	44.4	44.1	-10.1	-18.6
Pregnancy pathology beds	35.1	38.3	38.2	40.8	38.1	42.5	7.4	21.1
Gynecological beds for adults	75.7	75.9	76.6	73.3	75.5	65.7	-10.0	-13.2
Gynecological beds for children	43.8	51.8	44.9	32.0	29.4	39.2	-4.6	-10.5

The turnover of gynecological beds for children has decreased significantly (from 43.8 children treated on one bed in 2015 to 39.2 children treated on one bed in 2020, i.e. by 10.5%). Adult gynecology bed turnover rates varied during 2015-2019 insignificantly. Only in 2020 was there a significant decrease in the turnover of beds in this profile, and compared to 2015, the level of this indicator decreased by 13.2% (from 75.7 to 65.7 patients treated per bed per year).

Among the indicators of bed use, a special place is occupied by the average bed downtime, which shows the average time from the moment a patient is discharged until the next patient is admitted to the bed. This indicator characterizes not only the rational use of bed capacity. It is of great importance for obstetrics and gynecology beds and from the point of view of compliance with the requirements of the sanitary and epidemiological regime (the need for sanitary treatment of beds and wards, cyclic filling of postpartum wards, etc.). One of the highest standards is set for obstetric beds: 2.5 - 3 days. For gynecological beds, the bed turnover rate is 0.5 days. The dynamics of this indicator indicate that the actual average bed downtime for pregnant women and women in labor approached the standard only in 2019–2020. It is also important to note that during 2015 – 2019 the actual level of gynecological bed downtime was below the standard. Moreover, in 2016, the actual turnover of gynecological beds was more than 3 times less than the standard. At the same time, the average downtime of a gynecological bed for children, with the exception of 2016, significantly exceeded the standard (Table 3.9).

Table 3.9 Average downtime of obstetrics and gynecology beds
in medical organizations in St. Petersburg in 2015 – 2020 (days)

Bed profile	Average bed idling time, days						Dynamics of indicators, 2015-2020	
	2015	2016	2017	2018	2019	2020	Abs. value	%
Beds for pregnant women and women in labor	1.06	1.12	1.96	1.87	2.55	2.77	1.71	161.3
Pregnancy pathology beds	2.46	1.58	2.24	1.96	1.82	3.30	0.84	34.1
Gynecological beds for adults	0.46	0.15	0.26	0.49	0.40	1.13	0.67	145.7
Gynecological beds for children	2.07	0.24	1.58	4.61	2.09	4.40	2.33	112.6

A comprehensive analysis of all indicators of the gynecological beds use for adults in hospitals of St. Petersburg allows us to conclude: from 2015 to 2017, there

was a high level of average annual occupancy of a gynecological bed and bed turnover, with a low level of the average length of stay of patients on a gynecological bed.

The data obtained indicate that during these years the gynecological bed worked with “overload”, and the treatment time for patients was reduced (Table 3.10).

Table 3.10 Dynamics of indicators of the gynecological beds use for adults and hospital mortality in 2015 – 2020

Year	Average duration of bed operation per year, days	Bed turnover	Average length of stay of a patient in bed, days	Average bed downtime, days	Mortality (%)
2015	330.1	75.7	4.4	0.46	0.03
2016	353.4	75.9	4.7	0.15	0.03
2017	344.9	76.6	4.5	0.26	0.02
2018	329.4	73.3	4.5	0.49	0.02
2019	334.4	65.7	4.4	0.40	0.02
2020	290.5	75.5	4.4	1.13	0.05
Dynamics 2015-2020, abs. value	-39.6	-0.2	0	0.67	0.02
Dynamics 2015-2020, %	-12.0	-0.3	0.0	145.7	66.7

2015 was exceptional, when the average bed downtime was close to the recommended standard (0.5 days), in 2016–2017 the level of this indicator was significantly below the standard. In 2018-2019 the average bed downtime is practically consistent with the standard. However, with a relatively low level of average duration of work per year of a gynecological bed, the average length of stay of patients on a gynecological bed is significantly lower than the recommended standards.

Thus, the trend towards reducing treatment time in these years was unjustified, and some beds were empty for several days. In 2020, against the backdrop of the lowest average bed operating time in 6 years, there was the highest level of average bed downtime – 1.13 days.

Gynecological departments are among the departments with the lowest mortality rate. However, in 2020, compared to 2015, mortality in gynecological departments increased 1.7 times: from 0.03% to 0.05%.

3.4. Comparative analysis of the bed capacity use indicators in gynecological departments in hospitals of city and federal subordination

As noted earlier, gynecological beds in St. Petersburg are deployed not only in medical organizations of the city, but also in clinics of federal educational institutions, research institutes and research centers of federal subordination.

During 2015-2020 most of the gynecological beds in St. Petersburg were concentrated in medical organizations of the city subordination. However, the share of gynecological beds in city hospitals for the period 2015-2020 decreased from 83.4% to 69.5%, and in federal institutions, accordingly, increased from 16.6% to 30.5%. In a number of cases, this was due to the repurposing of hospital beds and the deployment of infectious diseases departments against the backdrop of the new corona virus infection pandemic (Fig. 3.5).

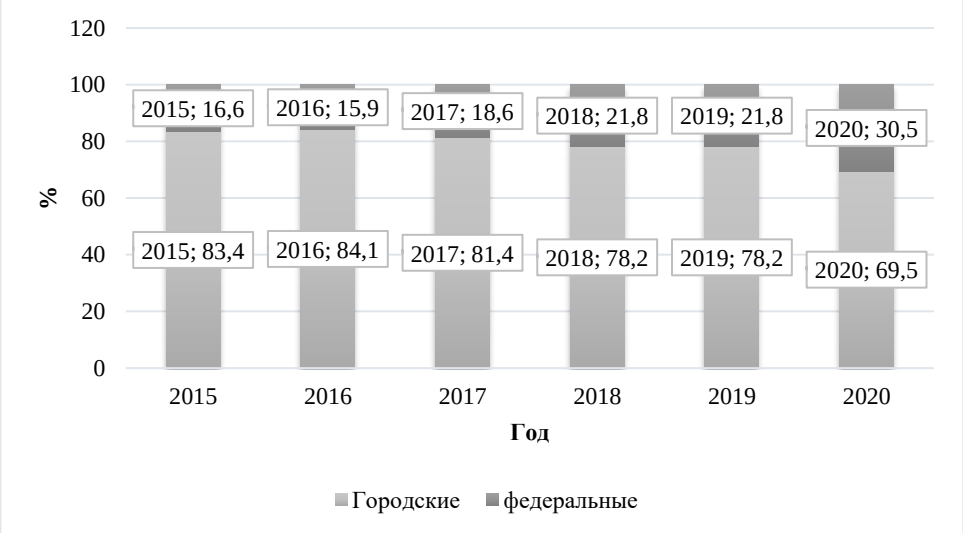


Figure 3.5 Distribution of gynecological beds among medical organizations of St. Petersburg of various subordination, 2015-2020, %

Год	Year
Городские	City
Федеральные	Federal

Analysis of the number of gynecological beds operating in medical organizations of various subordination over time indicates opposite trends. Thus, at the end of the reporting year, the number of gynecological beds for adults in medical organizations of federal subordination increased in 2020 compared to 2015 by 24.0% (from 171 beds to 212 beds). At the same time, the number of beds of this profile in city hospitals decreased by 56.2% (from 861 beds in 2015 to 484 beds in 2020) ($p<0.05$) (Table 3.11).

The number of patients admitted to gynecological beds in city hospitals in 2020 compared to 2015 decreased by 35.9% (from 69,331 to 44,457 patients). And the number of patients admitted to gynecological beds in federal clinics in 2020 compared to 2015 increased by 16.7% (from 7534 people in 2015 to 8789 people in 2020).

Table 3.11 The number of gynecological beds in medical organizations of St. Petersburg of various subordination and the number of patients admitted to them in 2015 - 2020

Year	Number of gynecological beds at the end of the year, abs. values		Number of admitted patients, people	
	city medical organizations	federal medical organizations	city medical organizations	federal medical organizations
2015	861	171	69,331	7,534
2016	818	155	68,875	7,371
2017	812	185	66,186	7,880
2018	784	218	64,476	9,710
2019	784	218	64,126	10,490
2020	484	212	44,457	8,789
Dynamics 2015-2020, abs. value	-377	41	-24,874	1,255
Dynamics 2015-2020, %	-43.8	24.0	-35.9	16.7

Of course, in 2020, due to the repurposing of a number of departments and even entire hospitals for the hospitalization of patients with corona virus infection, the volume of planned hospitalization, including in gynecological departments, decreased significantly. Moreover, mainly the repurposing of gynecological departments took place only in city hospitals, and the reduction of planned hospitalization took place in hospitals of city and federal subordination.

However, it should be noted that already in 2018-2019. Compared to 2015, in city hospitals both the number of gynecological beds (-8.9%) and the number of patients admitted to these beds decreased significantly. In 2018, compared to 2015, the number of admitted patients decreased by 7.0%, and in 2019 – by 7.5%. In federal clinics, the number of patients admitted to gynecological beds in 2018 compared to 2015 increased by 28.9%, and in 2019 – by 39.2%.

A comparison of the indicators of the dynamic series indicates not only multi-directional dynamics of both the number of gynecological beds in inpatient institutions of different subordination and the number of patients admitted to them, but also the different rates of these changes. Thus, the maximum rate of loss of gynecological beds in city hospitals was observed in 2020 (-38.3%), and in federal clinics in 2016 (-9.4%). At the same time, in 2020, the maximum rate of decline in admitted patients was observed both in urban (–30.7%) and federal medical organizations (–16.2%) (Table 3.12).

Table 3.12 Dynamics of the number of gynecological beds in medical organizations of St. Petersburg of various subordination and the number of patients admitted to them in 2015 - 2020

Year	Absolute increase in the number of gynecological beds at the end of the year in medical organizations of various subordination, abs. value		Growth (loss) rate of gynecological beds in medical organizations of various subordination, %		Absolute increase in patients admitted to gynecological beds of medical organizations of different subordination, abs. value		Growth rate of patients admitted to gynecological beds of medical organizations of different subordination, %	
	city	federal	city	federal	city	federal	city	federal
2015	-	-	-			-		-
2016	- 43	- 16	- 5.0	- 9.4	- 456	- 163	- 0.7	- 2.8
2017	- 6	+ 30	- 0.7	+ 19.3	- 2,689	+ 509	- 3.9	+ 6.9
2018	- 28	+ 33	- 3.4	+ 17.8	- 1,710	+ 1,830	- 2.6	+ 23.2
2019	0	0	0	0	- 350	+ 780	- 0.5	+ 8.0
2020	- 300	- 6	-38.3	- 2.8	19,669	- 1,701	- 30.7	- 16.2

In general, a situation is emerging that indicates the redistribution of patients with gynecological diseases from medical organizations of the second, and even first

level, to the highest third level. It is important to note that hospitalization of patients within the framework of the Territorial Compulsory Health Insurance Program in federal clinics is carried out in accordance with state assignments (in certain established volumes). At the same time, it is important to ensure the referral of patients with gynecological diseases to hospitals of the third A and B levels, who need, first of all, high-tech treatment methods on specialized gynecological beds.

When redistributing patients between city and federal medical organizations, it is necessary not only to take into account the indications for hospitalization in medical organizations of different levels, but also to ensure the rational use of bed capacity.

Against the backdrop of a constant reduction in gynecological beds in city hospitals, almost until 2019 inclusive, the gynecological bed worked with great "overload": in 2016, the actual average annual occupancy of a gynecological bed in city hospitals exceeded the number of calendar days per year, amounting to 367 bed days. Only in 2020, for the reasons mentioned earlier, the average annual bed occupancy rate was 304.2 days, i.e. was less than the recommended standard (Table 3.13).

Table 3.13 Average annual occupancy of a gynecological bed and the average length of stay of a patient on a gynecological bed in medical organizations of St. Petersburg of various subordination in 2015 – 2020

Year	Average duration of work of a gynecological bed per year, days		Average time a patient spent on a gynecological bed, days	
	city hospitals	federal hospitals	city hospitals	federal hospitals
2015	345.3	256.8	4.2	6.0
2016	367.0	278.1	4.5	5.8
2017	354.6	295.9	4.3	5.9
2018	342.7	278.6	4.3	6.0
2019	346.8	287.6	4.2	5.6
2020	304.2	247.1	4.2	5.4

End of figure 3.13

Dynamics 2015-2020, abs.value	-41.1	-9.7	0	-0.6
Dynamics 2015-2020, %	-11.9	-3.8	0.0	-10.0

Compared to the average annual occupancy of gynecological beds in city hospitals, the level of this indicator in federal clinics is significantly lower.

In accordance with the requirements of SanPiN 2.1.3.2630-10 “Sanitary and epidemiological requirements for organizations engaged in medical activities” (part IV., clause 2.4.), the obstetric hospital (department) must be closed at least once a year for routine disinfection, including, if necessary, for routine repairs (at least 14 calendar days). Due to the periodic closure of gynecological beds operating as part of federal obstetrics and gynecology clinics for annual repairs, a gynecological bed in federal hospitals was out of service on average in 2015 - 44.2 days, in 2016 - 35.7 days, in 2017 – 28.4 days, in 2018 – 30.5 days, in 2019 – 23.2 days, and in 2020 – 28.4 days. (Table 3.14).

Table 3.14 Dynamics of the average annual actual occupancy of a gynecological bed in federal medical organizations, taking into account the days of bed closures for repairs in 2015 – 2020

Year	Number of average annual gynecological beds in federal hospitals, abs. values	Actual number of bed days, days	Actual average annual occupancy of gynecological beds in federal hospitals, days	Total number of bed days for repairs, days	Number of bed days for repairs per 1 bed, days	Average annual occupancy of a gynecological bed in federal hospitals, taking into account bed days for repairs, days
2015	176	45,193	256.8	7,788	44.2	301.0
2016	154	42,821	278.1	5,506	35.7	313.8
2017	160	47,351	295.9	4,538	28.4	324.3
2018	211	58,780	278.6	6,447	30.5	300.1
2019	206	59,246	287.6	4,784	23.2	310.8
2020	194	47,937	247.1	5,520	28.4	275.5

End of figure 3.14

Dynamics 2015-2020, abs.value	18	2,744	-9.7	-2268	-15.8	-25.5
Dynamics 2015-2020, %	10.2	6.1	-3.8	-29.1	-35.7	-8.5

Taking into account the days of "downtime" due to repairs, the average annual occupancy of a gynecological bed increases significantly, and with the exception of 2020, during the entire observation period the level of this indicator exceeds 300 days.

Among the indicators of bed capacity utilization, a special place is occupied by the average time a patient spends in a bed. A comparison of these indicators in medical organizations of different subordination indicates that during 2015-2020 the level of this indicator is significantly higher in medical organizations of federal subordination, i.e. in third-level hospitals, largely focused on providing high-tech medical care. However, in federal clinics, the average length of stay of a patient on a gynecological bed in 2019–2020 was decreased significantly compared to 2015: in 2019 – by 6.7%, in 2020 – by 10.0%; in 2019, the maximum rate of decline of this indicator was noted (- 6.7%) (Table 3.15).

Table 3.15 Dynamics of the average length of stay of a patient on a gynecological bed in federal medical organizations of St. Petersburg and taking into account the days of bed closures for repairs in 2015 - 2020

Year	Average length of stay of a patient on a gynecological bed in hospitals of different subordination, days		Absolute increase (decrease) in the average length of stay of a patient on a gynecological bed in hospitals of different subordination, days		Rate of increase (decrease) in the average length of stay of a patient on a gynecological bed in hospitals of different subordination, %	
	city	federal	city	federal	city	federal
2015	4.2	6.0	-	-	-	-
2016	4.5	5.8	+ 0.3	- 0.2	+ 7.1	- 3.3
2017	4.3	5.9	- 0.2	+ 0.1	- 4.4	+ 1.7
2018	4.3	6.0	0	+ 0.1	0	+ 1.7
2019	4.2	5.6	- 0.1	- 0.4	- 2.3	- 6.7
2020	4.2	5.4	0	- 0.2	0	- 3.6

The level of intensification of bed use is largely evidenced by bed turnover. A comparative analysis of the level of this indicator in city and federal medical organizations of St. Petersburg that provide specialized medical care to patients with gynecological diseases indicates a higher level of this indicator in city hospitals. The maximum differences in this indicator occurred in 2015, when the turnover of gynecological beds in city hospitals exceeded the turnover of gynecological beds in federal clinics by 1.9 times (81.4 and 42.9, respectively). In subsequent years, the level of this indicator in St. Petersburg hospitals of different subordination differed by 1.6 - 1.7 times (Table 3.16).

In 2020, compared to 2015, the turnover of gynecological beds in city hospitals decreased by 11.5%, and in federal hospitals the level of this indicator increased by 6.1%. The average downtime of a gynecological bed in city and federal medical organizations differs even more significantly.

Table 3.16 Dynamics of turnover and average downtime of a gynecological bed in medical organizations of federal subordination of St. Petersburg in 2015 – 2020

Year	Bed turnover in medical organizations of various subordination		Average bed downtime in medical organizations of various subordination, days	
	city	federal	city	federal
2015	81.4	42.9	0.24	2.5
2016	81.0	48.0	0.02	1.8
2017	81.9	49.7	0.13	1.4
2018	80.3	46.5	0.28	1.9
2019	81.8	51.6	0.22	1.5
2020	72.0	45.5	0.84	2.6
Dynamics 2015-2020, abs.value	-9.4	2.6	0.6	0.1
Dynamics 2015-2020, %	-11.5	6.1	250.0	4.0

It is important to emphasize that the level of this indicator in urban hospitals is significantly lower than the recommended standard for the average downtime of a gynecological bed (0.5 days). The exception was 2020, when the average downtime of a gynecological bed in city hospitals increased to 0.84 days. An analysis of the average

downtime of a gynecological bed in federal clinics indicates a significant excess of the actual indicators of the established standard.

The most important indicator characterizing the quality of inpatient medical care is hospital mortality. This indicator largely depends not only on the quality of inpatient care, but also on the composition of those treated, the timing of their admission to the hospital, the quality of medical care at the pre-hospital stage, etc. Over 6 years of observation, deaths in gynecological departments of federal clinics were recorded only in 2015 (3 cases), the mortality rate was 0.04%. In gynecological departments of city hospitals, mortality in 2020 increased by 3 times compared to 2015 and amounted to 0.02% and 0.06%, respectively.

3.5 Analysis of staffing indicators for full-time positions of obstetricians and gynecologists in medical organizations in St. Petersburg and their qualification characteristics

Considering the backdrop of an increase in the total number of medical personnel in the Russian Federation for 2015-2022 by 10.6% (by 71.1 thousand people, from 673.0 to 744.1 thousand people) and the supply of medical personnel in the Russian Federation by 11.2% (from 45.7 to 50.8 per 10,000 population) there is a slight positive trend for obstetricians and gynecologists: their number increased by 1.2% (by 0.5 thousand people, from 24.8 to 43.3 thousand people), and the supply of personnel - by 1.9% (from 5.4 to 5.5 per 10,000 population).

In St. Petersburg, the number of individual obstetricians and gynecologists in the “pre-pandemic” period (2015-2019) increased from 1,559 to 1,697 (+8.8%), and the provision of the female population with doctors of this specialty increased from 5.44 to 5.76 per 10,000 women (+5.9%) (Table 3.17).

Table 3.17 Dynamics of obstetricians and gynecologists availability to the female population in the Russian Federation and St. Petersburg in 2015 – 2019

Indicators	2015	2016	2017	2018	2019	Dynamics 2015-2019	
Number of obstetricians-gynecologists, people:						abs.value	%
Russian Federation	36574	36638	36603	36120	35657	-917	-2.5
St. Petersburg	1559	1569	1589	1644	1697	138	8.9
Number of obstetricians and gynecologists per 10,000 women, people:							
Russian Federation	4.65	4.65	4.65	4.59	4.53	-0.12	-2.6
St. Petersburg	5.44	5.42	5.49	5.58	5.76	0.32	5.9

The higher level of availability of obstetricians and gynecologists in St. Petersburg for the period 2015-2019 is due to the characteristics of the network of medical organizations providing primary specialized health care and specialized, including high-tech medical care in the field of obstetrics and gynecology. First of all, this is due to the presence of third-level federal medical organizations that provide not only specialized, but also high-tech obstetric and gynecological care, including as part of testing methods of prevention, treatment and rehabilitation. In modern conditions, the staffing standards of medical organizations and their departments are determined by the relevant Procedures for the provision of medical care. It is important to note that significant changes in the Procedures for the provision of medical care in the field of obstetrics and gynecology, approved in the last decade, mainly affected organizational aspects and practically did not concern the revision of staffing standards for obstetricians and gynecologists. In accordance with the current Procedure for the provision of obstetric and gynecological care, obstetrician-gynecologists work:

- in medical organizations and departments of medical organizations providing the population with primary specialized medical care in the field of obstetrics and gynecology;

- in medical organizations providing specialized, including high-tech obstetric and gynecological care.

In antenatal clinics of different levels, both the structure of the institution and the staffing table are different. In accordance with the staffing standards recommended by the Procedure for the provision of medical care in the field of obstetrics and gynecology, it is possible to use two methods of forming a staff of obstetricians and gynecologists for medical organizations that provide primary specialized health care to the population in the field of obstetrics and gynecology. When using the first method, 1.0 position of an obstetrician-gynecologist is allocated to 2,200 women of childbearing age. The second method involves allocating 1.0 obstetrician-gynecologist positions per 3,500–4,000 female population. Per 10,000 children, 1.25 pediatric obstetrician-gynecologist positions are allocated. In relatively large antenatal clinics (not lower than the second level), positions of specialized obstetrician-gynecologists are allocated. Thus, for every 10.0 positions of medical specialists, 1.0 position of obstetrician-gynecologist is provided for identifying diseases of the mammary glands. In addition, for every 8 positions of obstetrician-gynecologists, there is 1.0 position of gynecologist-endocrinologist, 1.0 position of obstetrician-gynecologist for miscarriage, 1.0 position - for the treatment of cervical pathology, and 1.0 position for obstetrician-gynecologist to preserve and restore reproductive function being introduced. Staffing standards for medical organizations providing specialized, including high-tech medical care in inpatient settings are determined for each type of medical organization based on a certain number of beds.

A study of the dynamics of the number of full-time positions in all medical organizations of city and federal subordination for 2015-2020 showed that, starting from 2017, there has been a clear trend towards an increase in the total number of full-time positions of obstetricians-gynecologists and the number of full-time positions of specialists in this profile in outpatient institutions (divisions). During 2015-2020, almost 3/5 of all full-time positions of doctors in this specialty were concentrated in medical organizations and outpatient departments (Table 3.18).

In medical organizations providing obstetric and gynecological care in inpatient settings, the dynamics of the number of full-time positions was ambiguous: their number decreased in 2016 compared to 2015 by 3.4%, then, over the course of two

years, the number of full-time positions increased (in 2017 - by 8.3%, in 2018 – by 2.1%).

In 2019, there was a slight decrease in the number of obstetricians and gynecologists (-0.4%) working in maternity hospitals and hospitals in the city, and at the end of 2020, the number of full-time positions of doctors in this specialty in inpatient institutions increased by 1.1% (Table 3.19).

Table 3.18 Number of full-time positions of obstetrician-gynecologists in medical organizations of St. Petersburg in 2015-2020

Indicators	Year						Dynamics 2015-2020, abs. value	Dynamics 2015-2020, %
	2015	2016	2017	2018	2019	2020		
The number of full-time positions of obstetricians and gynecologists in medical organizations providing medical care in inpatient settings	824.0	796.25	862.25	880.25	876.75	886.00	62	7.5
The number of full-time positions of obstetricians and gynecologists in medical organizations providing medical care in outpatient settings	1,250.25	1,279.5	1,282.5	1,286.25	1,310.5	1,318.0	67.75	5.4
The number of full-time positions of obstetricians and gynecologists in medical organizations in St. Petersburg providing medical care in inpatient and outpatient settings	2,074.25	2,075.75	2,144.75	2,166.50	2,187.25	2,204.00	129.75	6.3
Total	4,148.5	4,151.5	4,289.5	4,333	4,374.5	4,408	259.5	6.3

Table 3.19 Dynamics of the number of full-time positions of obstetricians and gynecologists in medical organizations in St. Petersburg providing medical care in inpatient settings

Year	Number of full-time positions of obstetricians and gynecologists in medical organizations in St. Petersburg providing medical care in inpatient settings, people	Abs. growth	Demonstration Score %	Growth rate %	Rate of increase %
2015	824.0	-	100.0	-	-
2016	796.25	- 27.75	96.6	96.6	- 3.4
2017	862.25	+ 66.0	104.6	108.3	+ 8.3
2018	880.25	+ 18.25	106.8	102.1	+ 2.1
2019	876.75	- 3.75	106.4	99.6	- 0.4
2020	886.00	+ 9.75	107.5	101.1	+ 1.1

Compared to 2015, by the end of 2020 there was a slight increase in the number of individuals obstetrician-gynecologists in inpatient facilities in St. Petersburg (+5.2%) (Table 3.20).

Table 3.20 Dynamics of the number of obstetricians and gynecologists (individuals) in medical organizations in St. Petersburg providing medical care in inpatient settings in 2015 – 2020

Year	Number of obstetricians and gynecologists (individuals) in medical organizations in St. Petersburg providing medical care in inpatient settings, people	Abs. growth	Demonstration Score %	Growth rate %	Rate of increase %
2015	656	-	100.0	-	--
2016	657	+ 1.0	100.2	100.2	+ 0.2
2017	658	+ 1.0	100.3	100.2	+ 0.3
2018	672	+ 14.0	102.4	102.1	+ 2.1
2019	707	+ 35.0	107.8	105.2	+ 5.2
2020	690	- 17.0	105.2	97.6	- 2.4

Moreover, in 2019, the absolute increase in the number of obstetricians and gynecologists was the maximum (35 doctors). In the same year, the maximum rate of increase in the number of obstetricians and gynecologists (+ 5.2%) was noted. However,

already in 2020, the number of individuals working as obstetricians and gynecologists decreased by 17 doctors (2.4%).

Changes in the number of full-time positions and individuals of obstetrician-gynecologists in hospital-type medical organizations in 2015 – 2020 could not but affect the level of staffing indicators for regular positions (Table 3.21).

Table 3.21 Dynamics of staffing indicators for full-time positions of obstetricians and gynecologists in medical organizations in St. Petersburg providing medical care in inpatient settings, in 2015-2020

Year	Staffing levels of obstetrician-gynecologists in inpatient institutions, %		Part-time ratio	Number of 1.0 full-time positions per individual obstetrician-gynecologist, rates	Shortage of obstetricians and gynecologists, people
	taking into account all occupied positions	by individuals			
2015	90.4	79.6	1.14	1.26	168
2016	92.4	82.5	1.12	1.21	139
2017	88.7	76.3	1.16	1.31	204
2018	85.9	76.3	1.12	1.31	208
2019	89.0	80.3	1.10	1.24	170
2020	87.0	77.9	1.11	1.28	196
Dynamics 2015-2020, abs.value	-3.4	-1.7	-0.03	0.02	28
Dynamics 2015-2020, %	-3.8	-2.1	-2.6	1.6	16.7

Of great importance for analyzing the supply of doctors to the population is the study of the shortage of individual doctors over time (Table 3.22). The presented data indicate that the maximum shortage of obstetrician-gynecologists in medical organizations providing medical care in inpatient settings was identified in 2017 – 2018 (204 and 208 people, respectively).

Table 3.22 Dynamics of the obstetricians and gynecologists shortage in medical organizations in St. Petersburg providing medical care in inpatient settings, in 2015 – 2020

Year	Shortage of obstetrician-gynecologists (individuals) in medical organizations in St. Petersburg providing medical care in inpatient settings, people	Abs. growth	Demonstration Score %	Growth rate %	Rate of increase %
2015	168	-	100.0	-	-
2016	139	- 29	82.7	82.7	+ 17.3
2017	204	+ 65	121.4	146.8	+ 46.8
2018	208	+ 4	123.8	102.0	+ 2.0
2019	170	- 38	101.2	81.7	- 18.3
2020	196	+ 26	116.7	115.3	+ 15.3

It should be noted that the need of medical organizations for obstetricians-gynecologists may increase not only due to the increase in the female population, especially the number of women of fertile age, and with an increase in the birth rate; additional personnel of obstetrician-gynecologists are also required in clinics involved in the development of reproductive technologies.

The level of need of the female population for outpatient obstetric and gynecological care is also influenced by the standards for medical examination (Order of the Ministry of Healthcare of the Russian Federation dated April 27, 2021 No. 404n "On approval of the procedure for conducting preventive medical examination and medical examination of certain groups of the adult population"), establishing the frequency, number and structure of medical examination. The list of medical examinations includes an examination by an obstetrician-gynecologist. In addition, Order of the Ministry of Healthcare of the Russian Federation dated August 10, 2017 No. 514 n defines the "List of studies and examinations during preventive medical examinations of minors," which includes examination by an obstetrician-gynecologist of girls aged 3, 6 and 14 years.

When analyzing the supply of personnel, it is necessary to take into account the features of the personnel training system, designed to provide healthcare with qualified personnel and fill the labor market. Therefore, when planning the training of highly

qualified personnel in specialties that can only be obtained in residency, it is necessary to take into account the dynamics of the shortage of these specialists and the prospects for the development of the types of medical care in which these specialists are involved.

The quality of medical care depends not only on the staffing of regular doctor positions with individuals, but also on the level of qualifications of the medical staff (Fig. 3.7 and 3.8).

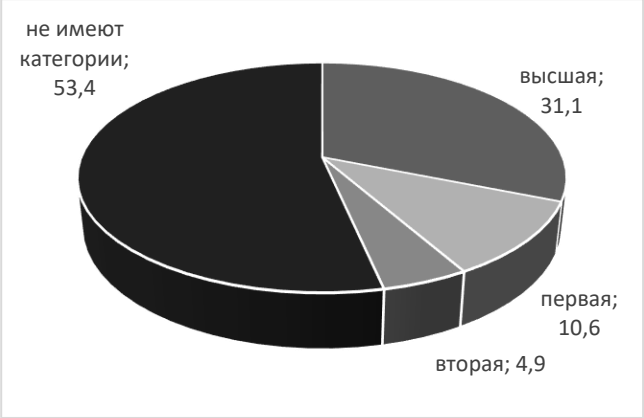


Fig. 3.7 Qualification composition of all doctors in medical organizations of St. Petersburg in 2020, %

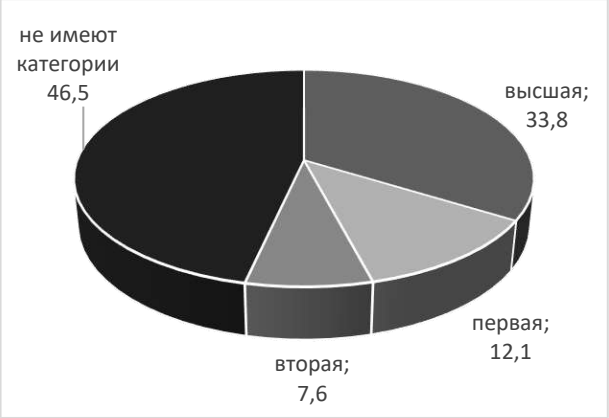


Fig. 3.8 Qualification composition of obstetricians and gynecologists in medical organizations of St. Petersburg in 2020, %

Не имеют категории
высшая
первая
вторая

Don't have a category
highest
first
second

It should be noted that due to the need to have a certain length of experience to obtain a qualification category, the presence of a significant proportion of doctors certified to the highest qualification category indicates the presence of a large number of experienced specialists with at least 7 years of experience in their specialty.

A study of the qualification composition of obstetrician-gynecologists working in medical organizations in St. Petersburg in 2020 showed that the proportion of obstetrician-gynecologists who had qualification categories exceeds the proportion of doctors of all specialties who had a qualification category at the end of the year (53.5% and 46.6%, respectively).

Moreover, basically, the higher proportion of obstetrician-gynecologists certified for qualification categories is due to a larger share of obstetrician-gynecologists certified for the second category compared to doctors of all specialties (7.6% and 4.9%, respectively) . At the same time, the share of doctors of all specialties and the share of obstetricians-gynecologists with the highest category are practically the same (31.1% and 33.8%, respectively). No significant differences were identified when comparing the proportion of doctors of all specialties and obstetricians-gynecologists certified in the first category: 10.6% and 12.1%, respectively. By the end of 2020, 53.4% of doctors of all specialties and 46.5% of obstetricians and gynecologists did not have qualification categories.

Conclusions on Chapter III:

1. An important social and demographic problem of modern Russia is the low birth rate, which does not ensure population reproduction: in the Russian Federation over 5 years the birth rate decreased by 21.6%, and in St. Petersburg - by 25.4%, the natural increase in the population of the Russian Federation since 2016 has a negative value. One of the current areas for improving reproductive health is improving the organization of obstetric and gynecological care, increasing its accessibility and quality.

2. The provision of medical care in inpatient settings during pregnancy, childbirth and the postpartum period is carried out on the basis of regional routing schemes, providing for the possibility of providing a differentiated scope of examination and treatment, taking into account the degree of risk of complications, taking into account the structure, bed capacity of medical organizations, level of equipment and availability of qualified medical personnel.

3. Among the aspects of St. Petersburg, it should be noted not only the presence of medical organizations providing obstetric and gynecological care at different levels, but also the presence of medical organizations with different levels of subordination. In this regard, the methodology for planning various types of obstetric and gynecological care, including bed capacity, becomes more complicated.

4. A study of the the number of obstetric and gynecological beds dynamics in the Russian Federation (2000-2022) showed that in the country the number of obstetric and gynecological beds decreased by almost a third: gynecological - by 20.9 thousand (-32.4%), for pregnant women, women in labor and postpartum – by 25.1 thousand beds (-32.4%), respectively, the provision of beds for the female population decreased (per 10,000 female population).

5. An assessment of the use dynamics of obstetric and gynecological beds and the level of hospitalization of women in obstetric and gynecological departments of inpatient institutions in St. Petersburg in 2015-2020 indicates a decrease in the birth rate by 24.3%, the number of hospitalizations in beds for pregnant women and women in labor – by 21.3%, for gynecological beds for adults - by 30.7%.

6. A comparative analysis of the use indicators of bed capacity in gynecological departments in hospitals of city and federal subordination indicated a multidirectional redistribution of patients between medical organizations: a decrease in volumetric indicators in city hospitals with an increase in those in federal ones.

7. An analysis of the doctors workforce in the Russian Federation revealed a slight positive trend in obstetrician-gynecologists: in 2015-2022, their number increased by 1.2% (by 0.5 thousand people, from 24.8 to 43.3 thousand people), and the supply of personnel - by 1.9% (from 5.4 to 5.5 per 10,000 population). In St. Petersburg, the number of individuals who were obstetricians and gynecologists in the “pre-pandemic” period (2015-2019) increased from 1,559 to 1,697 (+ 8.8%), and the provision of the female population with doctors in this specialty increased from 5.44 to 5.76 per 10,000 women (+ 5.9%).

8. A study of the number dynamics of full-time positions in all medical organizations of city and federal subordination for 2015-2020 showed that, starting from 2017, there has been a clear trend towards an increase in the total number of full-time positions of obstetricians and gynecologists (+6.3%, 2015-2020). During 2015-2020, almost 3/5 of all full-time positions of doctors in this specialty were concentrated in medical organizations and outpatient departments.

9. The number of full-time positions of obstetricians and gynecologists in medical organizations in St. Petersburg, providing medical care in inpatient and outpatient settings, also has a positive trend (+6.3%, 2015-2020). However, the shortage of obstetricians and gynecologists in medical organizations in St. Petersburg that provide medical care in inpatient settings remains; the staffing level (for individuals) is 77.9% (2020). The share of obstetricians and gynecologists who had qualification categories exceeds the share of doctors of all specialties who had a qualification category at the end of the year (53.5% and 46.6%, respectively, 2020).

CHAPTER 4. ORGANIZATIONAL ASPECTS OF HOSPITALIZATION OF OBSTETRICS AND GYNECOLOGY PATIENTS IN A MULTIDIFILINARY EMERGENCY CARE HOSPITAL AND THEIR MEDICAL AND STATISTICAL CHARACTERISTICS

Specialized obstetric and gynecological medical care in the Russian Federation is an important component of the country's healthcare system. For many years in Russia there has been a tendency towards an increase in the number of patients hospitalized for emergency reasons. Among patients in need of urgent and emergency medical care, a significant proportion are obstetric and gynecological patients. In the conditions of a large multidisciplinary emergency hospital, they require special approaches to optimally ensure the organizational, treatment and diagnostic components of the process, which necessitates a detailed analysis of this category of patients and the results of the activities of medical organizations (Kim I.V. et al., 2020ab, 2021a-h, 2022).

In order to improve the system of providing medical care to obstetric and gynecological patients, an analysis of the current state of the organization of medical care in emergency and urgent forms in a metropolis was carried out using the example of a large multidisciplinary emergency hospital with departments of the corresponding profile (I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Medicine), pre-hospital emergency medical care service (St. Petersburg State Budgetary Healthcare Institution "City Emergency Medical Care Station") and primary health care (St. Petersburg State Budgetary Healthcare Institution "Antenatal Clinic No. 33").

4.1 Special aspects of an emergency hospital functioning

Information on the work of the base hospital for the period 2015-2022 is presented in Table 4.1. The study presents the dynamics of the institution's performance indicators both in the "pre-pandemic" period (2015-2019) and in the most difficult period of work during the epidemic of the new corona virus infection COVID-19 (2020-2021).

Table 4.1 Main performance indicators of a multidisciplinary (base) emergency hospital, 2015-2022

Indicators	Year					Dynamics, 2019-2021*	
	2015	2019	2020	2021	2022	Abs. value	%
Total number of patients delivered to the Institute, people	66,078	78,096	76,240	84,091	71,189	5,995	7.7
Average annual number of beds, total (including intensive care units), units	905	877	877	897	897	20	2.3
Number of bed days spent by patients in the hospital, days	31,4527	32,2685	26,8425	30,0840	29,2098	-21,845	-6.8
Average annual bed occupancy, days	348	368	306	335	325	-33	-9.0
Total number of patients who left the hospital, people	38,357	49,284	39,414	41,259	36,041	-8,025	-16.3
Number of outpatients. people	27,721	28,812	36,826	42,832	35,148	14,020	48.7
Average length of stay of a patient in bed, days	8.2	6.5	6.8	7.3	8.1	1	12.1
Bed turnover	42.4	56.2	44.9	46.0	40.2	-10	-18.1
Mortality, %	5.1	4.1	6.2	7.4	5.8	3.0	80.5

*The dynamics of indicators are calculated for the period 2019-2021 (with an emphasis on the difficult period of the pandemic of the new corona virus infection COVID-19).

The COVID-19 pandemic has made significant adjustments to the work of medical organizations in the city, associated with huge flows of infectious patients and

concomitant corona virus infections, the repurposing of a number of hospitals in the city, changes in hospitalization and patient routing algorithms, redistribution of patient flows that have developed over the years, the peculiarities of working under quarantine measures and strict adherence to the anti-epidemic regime (Khominets V.V. et al., 2023bde).

It should be noted that the hospital under study was not repurposed to receive infectious patients (for patients with COVID-19) in the period 2020-2021, but continued to operate as usual, taking into account the peculiarities of the sanitary and epidemiological situation. However, when studying the period 2015-2022, statistics for 2020-2021 were not taken into account in a number of fragments when analyzing medical care in the field of obstetrics and gynecology, since they reflected the peculiarities of the work of a medical organization not in the mode of everyday activities, but in an emergency mode of a medical and biological nature (COVID-19 pandemic), which was not the scope of this study.

Over the past years, there has been a steady increase in the number of patients delivered to the Institute (Table 4.1): if in 2015 there were 66.1 thousand people, then in 2018 their number exceeded 75 thousand, in 2019 – 78 thousand, and in 2021 – 84 thousand people. The number of outpatients is increasing: in 2018-2019 it reached the level of 30 thousand per year, and in 2021 it exceeded 40 thousand (+48.7% for 2019-2021, r = 1.0), which confirms the continued excess load on the inpatient emergency department.

A number of indicators recorded negative dynamics, which is associated, first of all, with the spread (pandemic) of corona virus infection (2020-2021), the work of the hospital under strict quarantine measures limiting the flow of hospitalization (a decrease in the number of patients leaving the hospital, treated in a day hospital, reduction (cessation) of planned hospitalization). And on this background, there is an increase in the condition severity of the hospitalized patients (an increase in the average number of days a patient stays in bed, the mortality rate) (Khominets V.V. et al., 2023be).

Mortality increased to 7.4 (2021) due to the current epidemiological situation. Total deaths - 3,051 cases (80.5% increase, 2019-2021, r=1.0), of which COVID-19 - 13.8% (419 cases), the structure is presented in Table 4.2.

Table 4.2 Mortality structure in emergency hospital care, 2019-2021

Nosological group (ICD-10 code)	Share by year, %			Dynamics, %
	2019	2020	2021	
Diseases of the circulatory system (I00-I99)	43.2	44.3	43.8	0.6
Injuries, poisoning and some other consequences of external causes (S00-T98)	16.4	14.9	11.2	-5.2
Neoplasms (C00-D48)	16.8	15.7	14.0	-2.8
Diseases of the digestive system (K00-K93)	8.4	10.7	8.0	-0.4
Respiratory diseases (J00-J99)	1.1	1.8	1.8	0.7
Some infectious and parasitic diseases	0.49	0.45	0.56	0.07

The structure of deceased patients was largely determined by the characteristics of the hospital bed capacity (the presence of regional vascular, burn, toxicology, septic centers, a center for the treatment of severe combined trauma, a significant proportion of surgical beds). In the structure of deaths, first place is occupied by patients with diseases of the circulatory system (I00-I99) - 43.8%, second place by patients with neoplasms (C00-D48) - 14.0%, third place by patients with injuries, poisoning and some other consequences of external causes (S00-T98) – 11.2%. The increase in the overall mortality rate is due to a number of reasons, the main of which are the epidemic of the new corona virus infection COVID-19 (detection of infection among incoming patients, late referral of patients due to fear of infection, admission of patients with stages III-IV oncological diseases due to limitations in the volume of specialized care), a high proportion of elderly patients (more than doubled in recent years). Among the deaths, it should be noted the high proportion of patients from the group of Respiratory diseases (J00-J99) in the absence of pulmonary and therapeutic beds in the hospital - by 0.7% ($p < 0.05$), due to the COVID-19 pandemic.

Data for 2022 are characterized by a stabilization of the situation after the “COVID” period of 2020-2021, a return of a number of indicators to the “pre-COVID” level (2019): a decrease (compared to the previous year 2021) in circulation (by 12.9

thousand people), level of hospitalization (by 5.2 thousand people), hospital days spent by patients (by 8.7 thousand/day), number of outpatients (by 7.7 thousand people), mortality (by 1. 6%).

4.2 Analysis of obstetrics and gynecology patient distribution flows in an emergency hospital

Analysis of the distribution flows of obstetrics and gynecology patients admitted to the emergency hospital in 2015-2022 allowed us to establish (Table 4.1, Fig. 4.1) that only 76.9% of those who applied were hospitalized in specialized departments of the emergency hospital since they required specialized methods of diagnosis and treatment, and medical supervision. Every fifth (22.9%) received medical care in the inpatient department of emergency medical care (inpatient department of emergency medical care, reception and diagnostic department) with beds for daily and short-term observation (in outpatient and inpatient settings) and were subsequently sent to an outpatient clinic with a specified diagnosis and recommendations.

Table 4.3 Distribution flows of obstetrics and gynecology patients in an emergency hospital (medical triage), 2015-2022

Year	Row number	2015		2016		2017		2019		2022		M±m	Dynamics 2015-2022		**Total**	
Indicators		Abs. value	%	Abs. value	%	Abs. value	%	Abs. value	%	Abs. value	%		Abs. value	%	Abs. value	%
Gynecological departments	1	5,584	73.6	4,835	70.3	4,620	66.3	5,673	74.3	5,317	72.5	5,205.8 ±462.2	-267	-4.8	26,029	71.5
Surgical departments	2	322	4.2	377	5.5	328	4.7	298	3.9	264	3.6	317.8 ±41.6	-58	-18.0	1,589	4.4
Therapeutic departments	3	5	0.1	6	0.1	63	0.9	3	0.0	2	0.03	15.8 ±26.4	-3	-60.0	79	0.2
Departments of Anesthesiology and Reanimation	4	127	1.7	37	0.5	58	0.8	48	0.6	41	0.6	62.2 ±37.1	-86	-67.7	311	0.9
EMCD (IEMCD)[1]	5	130	1.7	132	1.9	198	2.8	75	1.0	106	1.4	128.2 ±45.3	-24	-18.5	641	1.8
Reception and diagnostic department (IEMCD)[2]	6	1,395	18.4	1,477	21.5	1,684	24.2	1,532	20.1	1,603	21.9	1,538.2 ±111.5	208	14.9	7,691	21.1
Transferred to other hospitals	7	20	0.3	18	0.3	15	0.2	5	0.1	2	0.03	12 ±8.0	-18	-90.0	60	0.2
Total	8	**7,583**	100.0	**6,882**	100.0	**6,966**	100.0	**7,634**	100.0	**7,335**	100.0	7,280 ±345.4	-248	-3.3	**36,400**	100.0

[1] EMCD (IEMCD) – emergency medical care department (short-stay inpatient emergency medical care department).

[2] Reception and diagnostic department (IEMCD room for less than a daily stay).

Significance of differences (p) of indicators by row: $p_{1\text{-}4\text{-}7}<0.01$; $p_{2\text{-}3}<0.01$; $p_{5\text{-}6}<0.01$; $p_{8\text{-}9}<0.01$

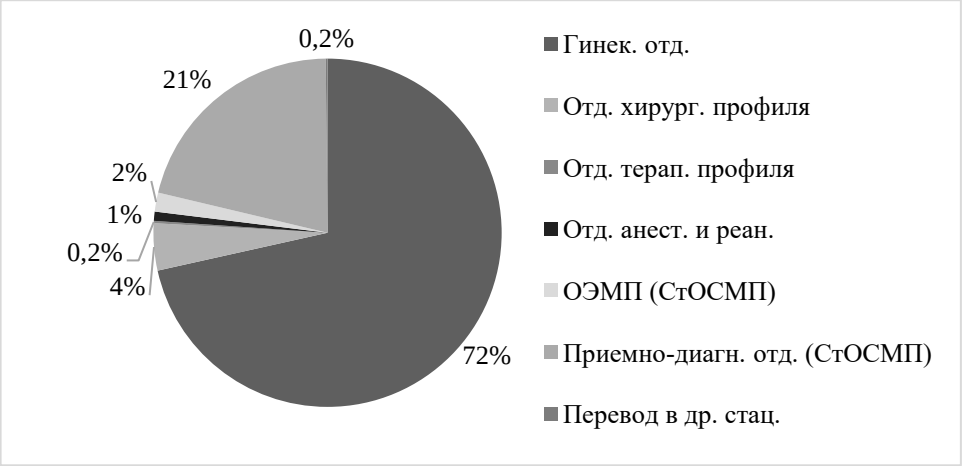


Figure 4.1 Flows of distribution of patients according to the profile “obstetrics and gynecology” in an emergency hospital (medical triage), total indicator for 2015-2022

Гинекологическое отделение	Gynecological department
Отделение хирургического профиля	Department of surgical profile
Отделение терапевтического профиля	Department of therapeutic profile
Отделение анестезиологии и реаниматологии	Department of Anesthesiology and Intensive Care Medicine
ОЭМП (СтОСМП)	EMCD (IEMCD)
Приемно-диагностическое отделение (СтОСМП)	Reception and diagnostic department (IEMCD)
Перевод в другой стационар	Transfer to another hospital

Of those admitted to the emergency hospital with a diagnosis of obstetrics and gynecology (discharge diagnosis), only 71.5% of patients were initially admitted to specialized departments of obstetrics and gynecology (gynecology departments).

4.4% of patients were sent to a hospital with a surgical diagnosis and were admitted to surgical departments, 0.9% to anesthesiology and intensive care departments, 0.2% to therapeutic departments

In the dynamics of 2015-2022, there was a decrease in non-core hospitalization by 22.8% (r = -0.7), including: admission of obstetric and gynecological patients under the guise of surgical and therapeutic pathology (by 18.0% and 60.0% , respectively), in general - by 17.7% (r= -0.7), as well as a decrease in the proportion of patients requiring transfer to other hospitals - by 90.0% (r= -0.7)); reduction in the heavy contingent of patients sent to anesthesiology and intensive care departments by 67.7% (r= -0.9). During the observation period, there was an increase in the proportion of people who received medical care in the Admission and Diagnostic Department (State

Emergency Department for daily stay, in dynamic observation beds and in outpatient settings) by 14.9% (r = 0.7).

4.3 Routes for hospitalization of obstetrics and gynecology patients in an emergency hospital

Analysis of the incoming flow of patients admitted to the multidisciplinary emergency hospital for the period of 2015-2022 for emergency indications (36.4 thousand) with a diagnosis of obstetrics and gynecology showed that the majority of them - 50.6% ($p< 0.01$), were referred by emergency medical organizations (public and private health care systems), 36.3% - by outpatient medical organizations (city clinics, antenatal clinics), 3.2% - by inpatient medical organizations (hospitals of other profiles, maternity hospitals), and 9.8% independently went to the admission and diagnostic department of an emergency hospital (inpatient department of emergency medical care, IEMCD) for emergency and emergency medical care (Fig. 4.3, Table 4.2).

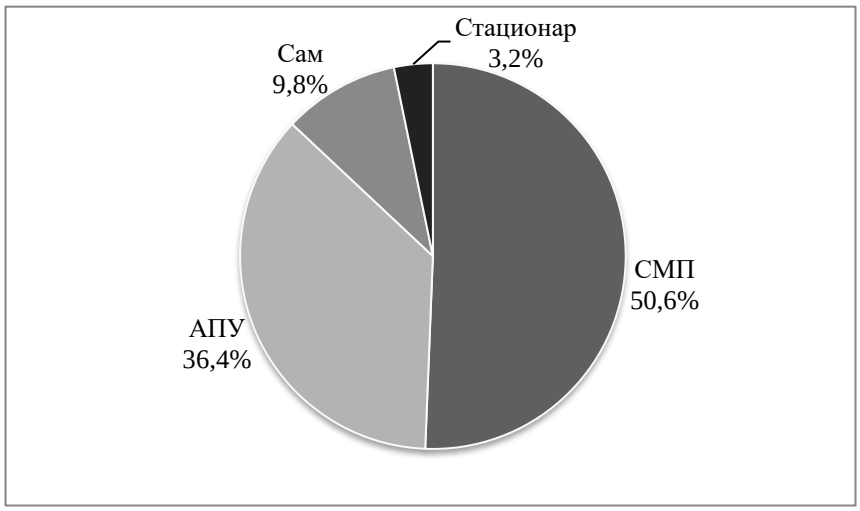


Figure 4.2 Distribution of obstetrics and gynecology patients by admission route of an emergency hospital, total indicator for 2015-2022

Сам	On their own
Стационар	Inpatient hospital
СМП	EMC
АПУ	Outpatient clinic - OPC

Table 4.4 Distribution of obstetrics and gynecology patients by route of admission to an emergency hospital, 2015-2022

Year	Indicator	Routes of admission to EMC				Total	P[1]
		EMC	OPC	on their own	From other inpatient hospital		
Column number		1	2	3	4	5	6
2015	Abs. value	4,170	2,621	633	159	**7,583**	$p_{1-2,3,4}<0.01$ $p_{2-3,4}<0.01$ $p_{3-4}<0.01$
	%	55.0	34.6	8.3	2.1	100.0	
2016	Abs. value	3,763	2,468	617	34	**6,882**	
	%	54.7	35.9	9.0	0.5	100.0	
2017	Abs. value	3,576	2,755	563	72	**6,966**	
	%	51.3	39.5	8.1	1.0	100.0	
2019	Abs. value	3,990	2,428	790	426	**7,634**	
	%	52.3	31.8	10.3	5.6	100.0	
2022	Abs. value	2,934	2,959	951	491	**7,335**	$p_{1,2-3,4}<0.01$ $p_{3-4}<0.01$
	%	40.0	40.3	13.0	6.7	100.0	
Всего	Abs. value	**18,433**	**13,231**	**3,554**	**1,182**	**36,400**	$p_{1-2,3,4}<0.01$ $p_{2-3,4;\ 3-4}<0.01$
	%	**50.6**	**36.3**	**9.8**	**3.2**	100.0	
Dynamics 2015-2022	Abs. value	-1236	338	318	332	-248	
	%	-29.6	12.9	50.2	208.8	-3.3	
M±m		3,686.6±477.0	2,646.2 ±217.8	710.8 ±158.6	236.4 ±209.0	7,280 ±345.4	

[1] Reliability of differences (p) of indicators across columns

In the dynamics of 2015-2022, it should be noted an increase in the proportion of patients transferred from other hospitals (by 208.8%; r = 0.8) due to the peculiarities of routing patients in the city, as well as persons who independently applied to the emergency hospital (by 50.2% ; r =0.81).

An analysis of the incoming flow of obstetrics and gynecology patients (reference diagnosis) showed (Fig. 4.3, Table 4.5) that the vast majority of patients – 85.0% (30.9 thousand) – are residents of St. Petersburg (p< 0.01), among whom the population of the Frunzensky district predominated (16.7 thousand, p <0.01), which is the service area of the basic hospital of the Emergency Medical Service. There were 9 times fewer patients from other cities (p<0.01), they made up 9.5% (3.4 thousand), among whom patients from other constituent entities of the Russian Federation were

1/3 more prevalent than residents of the Leningrad region immediately adjacent to the borders of St. Petersburg (2.1 thousand and 1.3 thousand, respectively, p<0.01).

Citizens of foreign countries were represented in the smallest number - 5.5% (2.0 thousand, p <0.01), among them the vast majority were patients from the CIS countries (1.9 thousand, p <0.01).

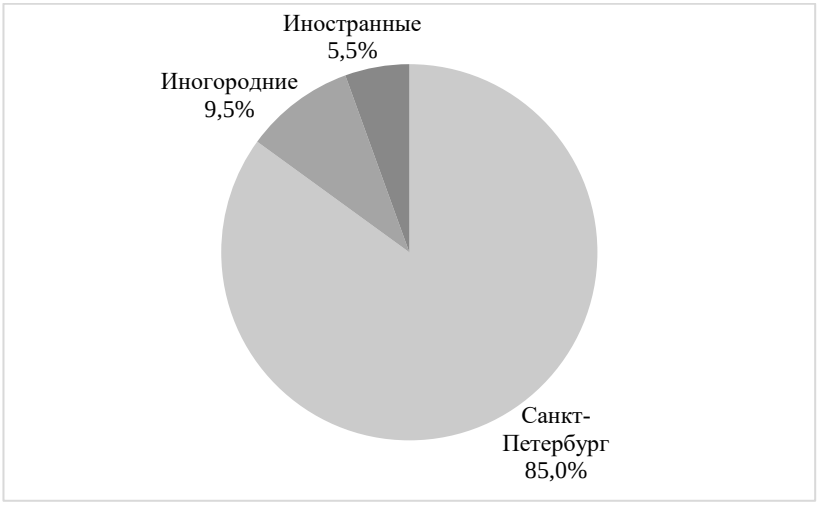


Figure 4.3 Distribution of obstetrics and gynecology patients in an emergency hospital at the place of registration, total indicator for 2015-2022

Иногородние	Nonresidents
Иностранные	Foreign
Санкт-Петербург	St. Petersburg

In the dynamics of 2015-2022, it should be noted that the share of residents of St. Petersburg decreased by 8.5% (r= -0.7) and, above all, the Frunzensky district (by 14.9%; r= -0.8; p<0.01), with an increase in the proportion of nonresident (by 43.4%) and foreign (by 2.0%) patients.

The presented data corresponds to both the actual growth of tourism and labor migration in St. Petersburg (except for the period of the COVID-19 pandemic, 2020-2021), and the peculiarities of patient routing approved in the city.

Table 4.5 Distribution of obstetrics and gynecology patients in an emergency hospital at the place of residence, 2015-2022

Year	Row number	2015		2016		2017		2019		2022		Dynamics 2015-2022		M±m	Total	
Indicators		Abs. value	%	Abs. value	%	Abs. value	%	Abs. value	%	Abs. value	%	Abs. value	%		Abs. value	%
St. Petersburg	1	6,503	85.8	6,054	88.0	6,210	89.1	6,223	81.5	5,952	81.1	-551	-8.5	6,188.4 ±208.9	30,942	85.0
St. Petersburg, Frunzensky district[1]	2	3,651	48.1	3,236	47.0	3,361	48.2	3,311	43.4	3,106	42.3	-545	-14.9	3333 ±202.1	16,665	45.8
St. Petersburg, other districts[2]	3	2,852	37.6	2,818	40.9	2,849	40.9	2,912	38.1	2,846	38.8	-6	-0.2	2,855.4 ±34.4	14,277	39.2
Nonresidents	4	679	9.0	450	6.5	375	5.4	968	12.7	974	13.3	295	43.4	689.2 ±280.6	3,446	9.5
Leningrad region[3]	5	255	3.4	196	2.8	162	2.3	350	4.6	373	5.1	118	46.3	267.2 ±92.6	1,336	3.7
other subjects of the Russian Federation	6	424	5.6	254	3.7	213	3.1	618	8.1	601	8.2	177	41.7	422 ±188.7	2,110	5.8
Foreign	7	401	5.3	378	5.5	381	5.5	443	5.8	409	5.6	8	2.0	4,02.4 ±26.2	2,012	5.5
CIS countries	8	395	5.2	375	5.4	377	5.4	439	5.8	400	5.5	5	1.3	397.2 ±25.8	1,986	5.5
foreign countries	9	6	0.1	3	0.0	4	0.1	4	0.1	9	0.1	3	50.0	5.2 ±2.4	26	0.1
Total	**10**	**7,583**	100.0	**6,882**	100.0	**6,966**	100.0	**7,634**	100.0	**7,335**	100.0	-248	-3.3	7,280± 345.4	**36,400**	100.0

[1] Frunzensky district of St. Petersburg - service area of the basic hospital of the EMC; [2] Other districts of St. Petersburg; [3] Leningrad region

Significance of differences (p) of indicators by row: $p_{1\text{-}4\text{-}7}<0.01$; $p_{2\text{-}3}<0.01$; $p_{5\text{-}6}<0.01$; $p_{8\text{-}9}<0.01$

4.4. Time of admission of obstetrics and gynecology patients to the emergency hospital

Analysis of the distribution flows of obstetrics and gynecology patients admitted to an emergency hospital in 2015-2022, according to the time of admission, made it possible to establish (Fig. 4.4, Table 4.6) daily fluctuations in the intensity of the flow of patients, highlighting priority values and ranking them (by reducing the number of patients admitted in a certain 3-hour time interval):

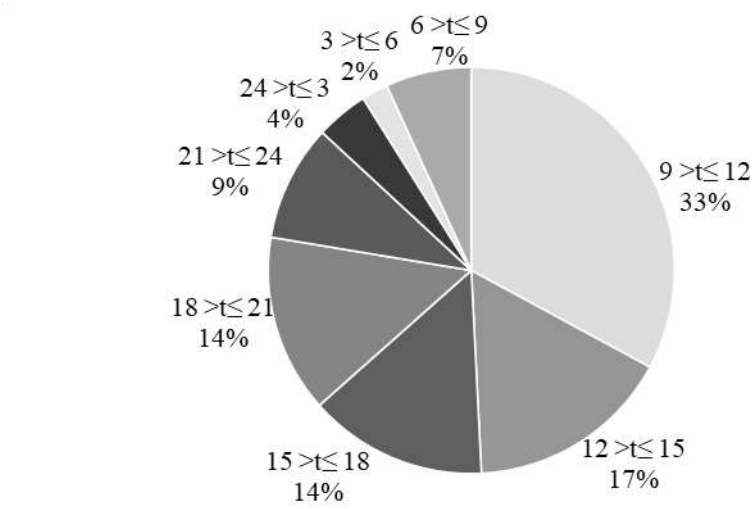


Figure 4.4 Distribution of obstetrics and gynecology patients by time of admission to the emergency hospital, total indicator for 2015-2022

1. the overwhelming number of patients (2.4 thousand; 32.9%, $p<0.01$) were admitted in the interval $9 < t \leq 12$ (1st place);

2. in 2nd place by the number of admissions are patients hospitalized in the intervals $12 < t \leq 15$, $15 < t \leq 18$, $18 < t \leq 21$ (1.0-1.3 thousand; 14.2%-16.3%; $p<0.01$);

3. in 3rd place – patients admitted in the range $21 < t \leq 24$ (0.7 thousand; 9.3%; $p<0.01$);

4. in 4th place – $6 < t \leq 9$ (0.5 thousand; 6.8%; $p<0.01$);

5. in 5th place – $24 < t \leq 3$ (0.3 thousand; 4.2%; $p<0.01$);

6. the smallest flow of patients arrives in the interval $3 < t \leq 6$ (0.2 thousand; 2.1%% $p<0.01$) – 6th place.

Table 4.6 Distribution of obstetrics and gynecology patients by time of admission to the emergency hospital, 2015-2022

Time interval, hour	Indicator	Row number	Year					Total	M	m	Rating	Dynamics 2015-2022	
			2015	2016	2017	2019	2022					Abs. value	%
9 <t≤ 12	Abs. value	1	2,274	2,258	2,237	2,667	2,538	11,974	2,394.8	195.5	**1**	264	11.6
	%	2	30.0	32.8	32.1	34.9	34.6	32.9	32.9				
12 <t≤ 15	Abs. value	3	1,327	1,121	11,34	1,190	1,165	5,937	11,87.4	82.5	**2**	-162	-12.2
	%	4	17.5	16.3	16.3	15.6	15.9	16.3	16.3				
15 <t≤ 18	Abs. value	5	1,116	1,004	963	1,115	986	5,184	1,036.8	73.3	**2**	-130	-11.6
	%	6	14.7	14.6	13.8	14.6	13.4	14.2	14.2				
18 <t≤ 21	Abs. value	7	1,120	948	989	1,076	1,024	5,157	1,031.4	68.3	**2**	-96	-8.6
	%	8	14.8	13.8	14.2	14.1	14.0	14.2	14.2				
21 <t≤ 24	Abs. value	9	723	652	643	675	682	3,375	675.0	31.2	**3**	-41	-5.7
	%	10	9.5	9.5	9.2	8.8	9.3	9.3	9.3				
24 <t≤ 3	Abs. value	11	343	311	296	309	262	1,521	304.2	29.3	**5**	-81	-23.6
	%	12	4.5	4.5	4.2	4.0	3.6	4.2	4.2				
3 <t≤ 6	Abs. value	13	163	143	147	149	164	766	153.2	9.7	**6**	1	0.6
	%	14	2.1	2.1	2.1	2.0	2.2	2.1	2.1				
6 <t≤ 9	Abs. value	15	517	445	557	453	514	2,486	497.2	47.2	**4**	-3	-0.6
	%	16	6.8	6.5	8.0	5.9	7.0	6.8	6.8				
Total	Abs. value	17	7,583	6,882	6,966	7,634	7,335	36,400	7,280.0	345.4		-248	-3.3
	%	18	20.8	18.9	19.1	21.0	20.2	100.0	20.0				

Significance of differences (p) in rating indicators: $p_{1\text{-}2,3,4,5,6}<0.01$; $p_{2\text{-}3,4,5,6}<0.01$; $p_{3\text{-}4,5,6}<0.01$; $p_{4\text{-}5.6}<0.01$; $p_{5\text{-}6}<0.01$; $p_{6\text{-}1,2,3,4,5}<0.01$

Analysis of dynamics revealed an increase in the proportion of visits (hospitalizations) in the morning ($9 < t \leq 12$) by 11.6% ($r = 0.8$), i.e. during an outpatient clinic (OC) opening hours and a decrease in hospitalizations at night ($24 < t \leq 3$) by 23.6% ($r = -0.9$), which indicates a positive trend - an increase in the role of primary health care institutions in organizing emergency hospitalizations of patients.

4.5. Time spent by obstetrics and gynecology patients in the inpatient emergency department

Analysis of the incoming flow of patients admitted to the multidisciplinary emergency hospital for the period 2015-2022 for emergency indications (36.4 thousand) with an obstetrics and gynecology diagnosis showed (Fig. 4.5, tables 4.7 and 4.8) that the average stay in the IEMCD (reception and diagnostic) was about 2 hours (121.2±117.0 minutes).

According to the priority ranking, the most significant intervals should be identified:

1. the vast majority of patients (1st place) spent from 1 to 2 hours in IEMCD (8.4 thousand; 23.0%; $p<0.01$);

2. in 2nd place are patients who received help in the interval from 2 to 3 hours (8.1 thousand; 22.1%; $p<0.01$);

3. in 3rd place - patients who received help within an interval of up to 2 hours (6.0-6.2 thousand; 16.6-17.0%; $p<0.01$);

4. in 4th place - in the interval from 3 to 4 hours (4.0 thousand; 11.0%; $p<0.01$);

5. in 5th place – from 4 to 5 hours (1.9 thousand; 5.1%; $p<0.01$).

The remaining intervals are definitely of lesser significance (less than 1.0 thousand patients over 5 years; less than 2.5% each in the total population; $p < 0.01$).

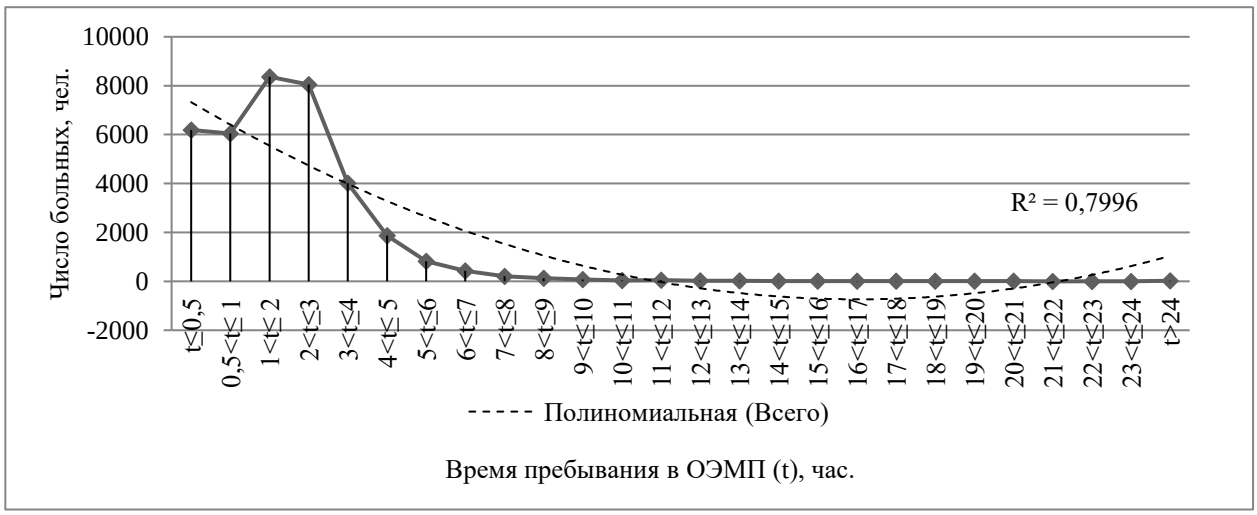


Figure 4.5 Distribution of obstetrics and gynecology patients by time of stay in the emergency hospital, general indicator for 2015-2022

Число больных, чел.	Number of patients, people
Полиноминальный (Всего)	Polynomial (Total)
Время пребывания в ОЭМП (t), час	Time spent in the EMCD (t), hour

In the dynamics of 2015-2022, there is a decrease in the average time of stay of patients in the emergency hospital (r = -0.7), an increase in the proportion of patients with the time of receiving medical care in the emergency hospital in the range from 1 to 3 hours (r = 0.7-0.9) with a decrease in those in the vast majority of intervals ($p<0.01$) exceeding a 3-hour stay in the emergency room.

Table 4.7 Distribution of obstetrics and gynecology patients by time of stay in the emergency medical care (reception and diagnostic) emergency hospital, 2015-2022

Year		Time spent in the EMCD (t), hour																										Total
		t≤0.5	0.5<t≤ 1	1<t≤ 2	2<t≤3	3<t≤4	4<t≤ 5	5<t≤6	6<t≤7	7<t≤8	8<t≤9	9<t≤10	10<t≤11	11<t≤12	12<t≤13	13<t≤14	14<t≤15	15<t≤16	16<t≤17	17<t≤18	18<t≤19	19<t≤20	20<t≤21	21<t≤22	22<t≤23	23<t≤24	t>24	
Column number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
2015	Abs. val.	1,447	949	1,802	1,562	858	459	212	119	62	36	23	12	14	7	7	2	1	3	4	1	0	1	0	0	0	2	7,583
	%	19.1	12.5	23.8	20.6	11.3	6.1	2.8	1.6	0.8	0.5	0.3	0.2	0.2	0.09	0.09	0.03	0.01	0.04	0.05	0.01	0.00	0.01	0.00	0.00	0.00	0.03	100.0
2016	Abs. val.	1,153	899	1,662	1,556	816	418	181	82	46	26	12	5	10	3	4	1	0	1	1	1	2	0	0	0	0	3	6,882
	%	16.8	13.1	24.1	22.6	11.9	6.1	2.6	1.2	0.7	0.4	0.2	0.1	0.1	0.04	0.06	0.01	0.00	0.01	0.01	0.01	0.03	0.00	0.00	0.00	0.00	0.04	100.0
2017	Abs. val.	1,048	1,105	1,584	1,531	808	401	193	112	46	40	24	11	17	9	8	7	5	3	3	0	0	2	2	0	1	6	6,966
	%	15.0	15.9	22.7	22.0	11.6	5.8	2.8	1.6	0.7	0.6	0.3	0.2	0.2	0.13	0.11	0.10	0.07	0.04	0.04	0.00	0.00	0.03	0.03	0.00	0.01	0.09	100.0
2019	Abs. val.	1,656	1,298	1,725	1,709	695	299	112	59	30	11	7	6	6	3	3	1	0	3	1	2	2	2	1	0	0	3	7,634

End of figure 5.7

Dynamics 2015-2022		Total		2022		
Abs. val.	%	Abs. val.	%	Abs. val.	%	
-555	-38.4	6,196	17.0	892	12.2	21.7
846	89.1	6,046	16.6	1,795	24.5	17.0
-211	-11.7	8,364	23.0	1,591	21.7	22.6
135	8.6	8,055	22.1	1,697	23.1	22.4
-24	-2.8	4,011	11.0	834	11.4	9.1
-169	-36.8	1,867	5.1	290	4.0	3.9
-94	-44.3	816	2.2	118	1.6	1.5
-60	-50.4	431	1.2	59	0.8	0.8
-43	-69.4	203	0.6	19	0.3	0.4
-19	-52.8	130	0.4	17	0.2	0.1
-19	-82.6	70	0.2	4	0.1	0.1
-10	-83.3	36	0.1	2	0.0	0.1
-12	-85.7	49	0.1	2	0.0	0.1
-5	-71.4	24	0.07	2	0.03	0.04
-6	-85.7	23	0.06	1	0.01	0.04
-2	-100.0	11	0.03	0	0.00	0.01
0	0.0	7	0.02	1	0.01	0.00
-3	-100.0	10	0.03	0	0.00	0.04
-3	-75.0	10	0.03	1	0.01	0.01
0	0.0	5	0.01	1	0.01	0.03
0	-	4	0.01	0	0.00	0.03
0	0.0	6	0.02	1	0.01	0.03
0	-	3	0.01	0	0.00	0.01
2	-	2	0.01	2	0.03	0.00
1	-	2	0.01	1	0.01	0.00
3	150.0	19	0.05	5	0.07	0.04
-248	-3.3	36,400	100.0	7,335	100.0	100.0

Table 4.8 Generalized indicators of the distribution of obstetrics and gynecology patients by time of stay in EMCD (IEMCD) of the emergency hospital 2015-2022

Year	Total number of patients	Average stay time, min (M)	m	Median	Mode
2015	7,583	126.8	121.6	105	5
2016	6,882	126.0	110.0	112	5
2017	6,966	132.5	133.4	112	41
2019	7,634	107.0	101.7	92	40
2022	7,335	113.2	113.3	101	41
Всего	36,400	121.2	117.0	104	41

An interesting observation is the change in Mode in the period 2015-2022 (r = 0.9). In 2015-2016, it was equal to 5 minutes, that is, in fact, it only included registration of the fact of admission, then patients in transit underwent emergency medical care, entering specialized departments of the hospital. Since 2017, it increased to 40-41 minutes, remained so based on the totality of data for the entire observation period (general indicator), and already included a whole range of organizational (medical triage, dynamic observation) and therapeutic and diagnostic measures related to determining indications for hospitalization , level and place of medical care.

4.6. Duration of hospitalization of obstetrics and gynecology patients in an emergency hospital

An analysis of the length of hospitalization of patients admitted to an emergency hospital with a specialization in obstetrics and gynecology in 2015-2022 allowed us to establish (Fig. 4.6, Table 4.9) that the vast majority of patients (95.7%) were in the hospital up to 10 days ($p<0.01$), of which every fifth (20.4%) - less than 1 day, 38.9% - within 1 day, 54.2% - up to 3 days, 71.7% - less than 5 days.

The number of patients with pre- and daily hospital stays (7,417 and 6,757, respectively) significantly exceeded (2 or more times, $p<0.01$) the number of patients with other periods of hospitalization. There was a strong inverse correlation between

the length of hospitalization (k/day) and the number of patients (r = -0.8) for all 5 years of observation.

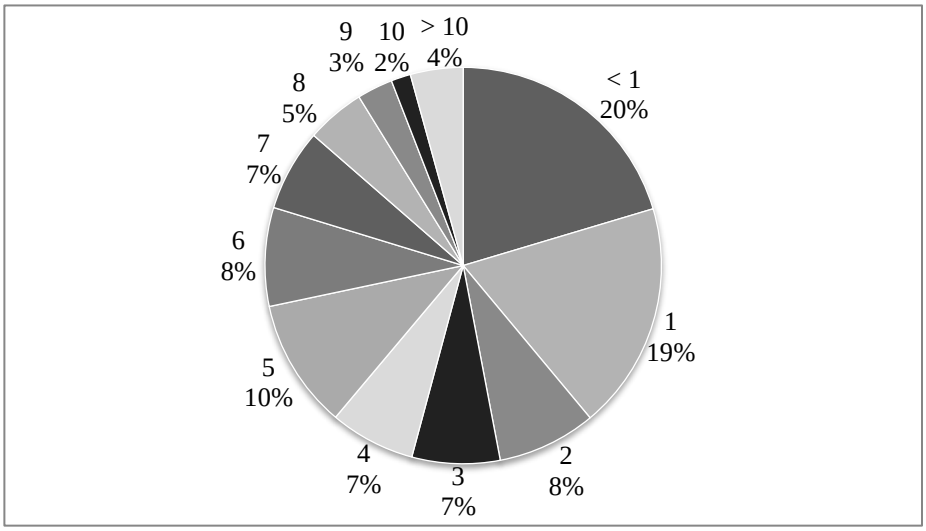


Figure 4.6 Distribution of obstetrics and gynecology patients by length of hospitalization in an emergency hospital, total indicator for 2015-2022, bed-day/%

In the dynamics of 2015-2022, there was an increase in the number of patients with less than a day stay (by 8.1%; r= 0.7), 2 bed-days stay (by 22.4%; r= 0.9) and 4 bed-day stay (by 24.7%; r= 0.9) with a significant decrease in those with a stay of 8 and 9 bed-days (by 45.9%; r= -0.9 and by 61.0%; r= -1.0, respectively). which indicated a tendency to reduce hospitalization periods.

Table 4.9 Distribution of obstetrics and gynecology patients by length of hospitalization in an emergency hospital, 2015-2022

Indicators		Length of hospitalization, bed/day												Total	M	m	Pearson correlation coefficient r (bed-day/number of patients)
		<1	1	2	3	4	5	6	7	8	9	10	>10				
Column number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2015	Abs. val.	1,464	1,530	523	525	466	813	602	500	471	315	99	275	**7,583**	237.0	404.4	-0.8
	%	19.3	20.2	6.9	6.9	6.1	10.7	7.9	6.6	6.2	4.2	1.3	3.6	100.0			
2016	Abs. val.	1,414	1,298	529	499	454	750	538	406	374	272	121	227	**6,882**	215.1	367.7	-0.8
	%	20.5	18.9	7.7	7.3	6.6	10.9	7.8	5.9	5.4	4.0	1.8	3.3	100.0			
2017	Abs. val.	1,378	1,192	555	524	474	683	583	475	318	175	119	490	**6,966**	217.7	350.9	-0.8
	%	19.8	17.1	8.0	7.5	6.8	9.8	8.4	6.8	4.6	2.5	1.7	7.0	100.0			
2019	Abs. val.	1,580	1,420	686	561	557	780	605	520	324	176	139	286	**7,634**	238.6	409.5	-0.8
	%	20.7	18.6	9.0	7.3	7.3	10.2	7.9	6.8	4.2	2.3	1.8	3.7	100.0			
2022	Abs. val.	1,582	1,317	640	504	581	815	600	528	255	123	105	285	**7,335**	229.2	400.1	-0.8
	%	21.6	18.0	8.7	6.9	7.9	11.1	8.2	7.2	3.5	1.7	1.4	3.9	100.0			
Total	Abs. val.	**7,418**	**6,757**	**2,933**	**2,613**	**2,532**	**3,841**	**2,928**	**2,429**	**1,742**	**1,061**	**583**	**1563**	**36,400**	1,137.5	1,927.2	-0.8
	%	20.5	18.6	8.1	7.2	7.0	10.6	8.0	6.7	4.8	2.9	1.6	4.1	100.0			
Dynamics 2015-22	Abs. val.	118	-213	117	-21	115	2	-2	28	-216	-192	6	10	-248	-7.2		
	%	8.1	-13.9	22.4	-4.0	24.7	0.2	-0.3	5.6	-45.9	-61.0	6.1	3.6	-3.3	-3.0		
Pearson correlation coefficient r (year/number of patients)		0.7	-0.4	0.9	0.1	0.9	0.1	0.4	0.5	-0.9	-1.0	0.3	0.1	0.3	0.2		

Significance of differences (p) of indicators in columns: $p_{1,2\text{-}3,4,5,6,7,8,9,10,11}<0.01$; $p_{1,2,3,4,5,6,7,8,910,11\text{-}12}<0.01$ (Total line).

The information presented indicates:

- about the low length of hospitalization of patients specializing in obstetrics and gynecology who were admitted to the emergency hospital on an emergency basis: with a predominance of patients in need of short-term medical care, and every fifth of those admitted - up to 24 hours, every second - up to 3 days of stay;

- about a trend towards a further reduction in length of hospital stay.

4.7. Age characteristics of obstetrics and gynecology patients in an emergency hospital

Age characteristics of patients admitted with a diagnosis of obstetrics and gynecology (2015-2022) are presented in Figures 4.7 and Table 4.10.

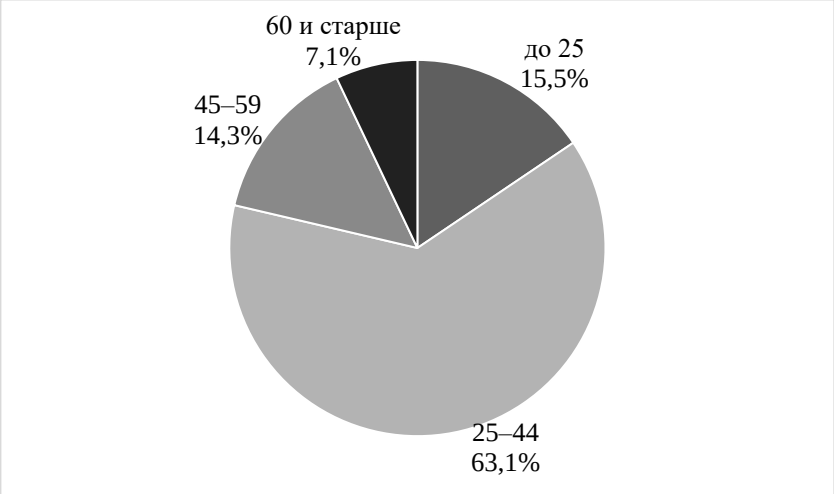


Figure 4.7 – Distribution by age of obstetrics and gynecology patients in an emergency hospital, general indicator for 2015-2022

The age range of the patients was from 18 to 97 (36.2±10.0) years (Table 4.10).

Table 4.10 Distribution by age of obstetrics and gynecology patients in an emergency hospital, 2015-2022

Year		Age, years				Total	Average age, years	m	Median	Mode
		< 25	25–39	40–54	≥ 55					
Column number (age group)		1	2	3	4	5	6	7	8	9
2015	Abs. val.	1,297	4,215	1,437	634	**7,583**	35.3	9.8	32	27
	%	17.1	55.6	19.0	8.4	100.0				
2016	Abs. val.	1,094	3,973	1,273	542	**6,882**	35.1	9.3	32	30
	%	15.9	57.7	18.5	7.9	100.0				
2017	Abs. val.	1,069	3,713	1,375	809	**6,966**	36.9	10.7	33	30
	%	15.3	53.3	19.7	11.6	100.0				
2019	Abs. val.	1,088	4,152	1,585	809	**7,634**	36.7	10.1	33	30
	%	14.3	54.4	20.8	10.6	100.0				
2022	Abs. val.	1,111	3,825	1,648	751	**7,335**	36.9	10.2	34	31
	%	15.1	52.1	22.5	10.2	100.0				
Итого	Abs. val.	**5,659**	**19,878**	**7,318**	**3,545**	**36,400**	36.2	10.0	33	30
	%	**15.5**	**54.6**	**20.1**	**9.7**	**100.0**				
Dynamics, 2015-2022	Abs. val.	-186	-390	211	117	-248	0.9	0.4	2	4
	%	-14.3	-9.3	14.7	18.5	-3.3	2.5	4.1	6.3	14.8

Significance of differences (p) indices across columns: $p_{2\text{-}1,3,4}<0.01$; $p_{4\text{-}1,2,3}<0.01$

The presented data indicate the absence of significant differences in general age-related quantitative indicators by year (Table 4.10, column 5; r=0.1). However, there are changes in certain age groups. There is an increase in the number of patients in the 3rd (40–54 years) and 4th (≥ 55 years) age groups by 14.7% and 18.5%, respectively (r=0.8 and 0.7 - strong relationship, straight). The average age of patients also increased significantly (by 2.5%, r=0.8), as well as the median and mode of the continuous sample (by 6.3% and 14.8%; r=0.9 and 0.8, respectively).

During the observed years (2015-2022), patients aged 25-39 years ($p<0.01$) predominated significantly (2 or more times), which is associated with the greatest burden on the reproductive sphere of women during this age period; they accounted for more than half of the incoming flow (54.6%). The smallest number (9.7%) included older patients (55 years or more, previously considered retirement age for women) ($p<0.01$).

4.8. Characteristics of the pathology nosological structure in obstetrics and gynecology patients in an emergency hospital

Comparing the results obtained during the study with all-Russian data from the Ministry of Healthcare of the Russian Federation (Rosstat: Morbidity of the population by main classes of diseases in 2000-2022), it should be noted that for the period 2015-2022 there has been a decrease in the number of registrations of diseases in the Russian Federation:

- for diseases of the genitourinary system - from 6,792.9 thousand to 5,529.2 thousand cases (-1,263.7 thousand cases; -18.6%; $p<0.05$);

- for complications of pregnancy, childbirth and the postpartum period - from 2,617.8 to 1,824.7 thousand cases (-793.1 thousand cases; -30.3%; $p<0.05$).

Taking these trends into account, an analysis of the flows of distribution of obstetrics and gynecology patients admitted by nosology to an emergency hospital in 2015-2022 was carried out, which made it possible to identify 5 main classes of diseases (according to ICD-10) and their structure: the vast majority (88.1%; $p<0.01$)

patients were admitted with pathology of classes XIV and XV of diseases: XIV. Diseases of the genitourinary system (N00-N99) – 16.9 thousand patients, 46.3%; XV. Pregnancy, childbirth and the postpartum period (O00-O99) – 15.2 thousand patients, 41.8%. Other ICD-10 classes: II were represented in significantly smaller numbers ($p<0.01$). Neoplasms (C00-D48) – 3.6 thousand patients, 9.9%; IV. Diseases of the endocrine system, nutritional disorders and metabolic disorders (E00-E90) – 0.7 thousand patients, 1.9%; XVII. Congenital anomalies [malformations], deformations and chromosomal disorders (Q00-Q99) – 4 patients, 0.01% (Fig. 4.8, Table 4.11).

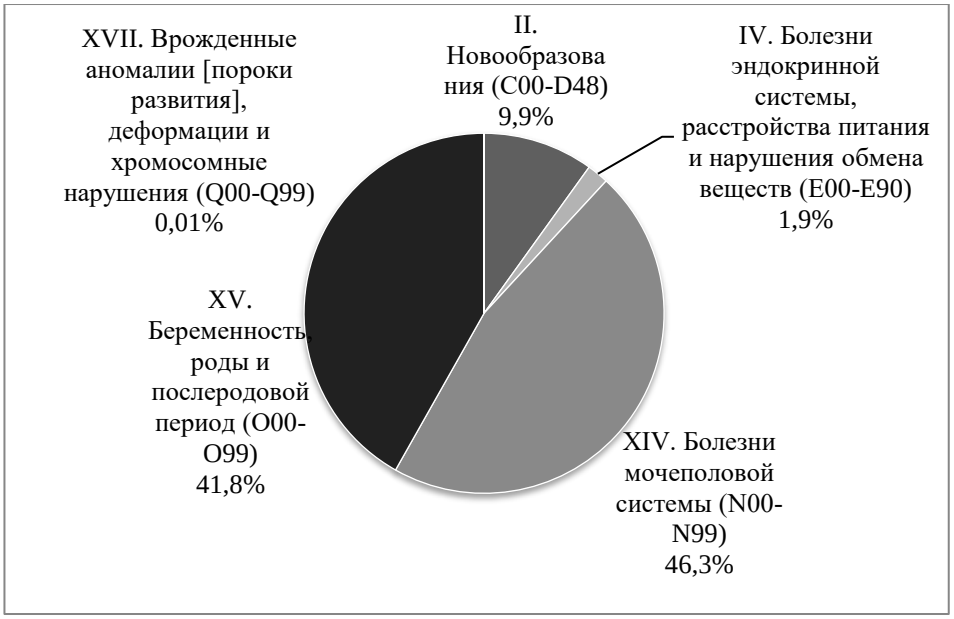


Figure 4.8 Distribution of obstetrics and gynecology patients by nosology (ICD 10 class) in an emergency hospital, total indicator for 2015-2022

XVII. Врожденные аномалии [пороки развития], деформации и хромосомные нарушения (Q00-Q99)	XVII. Congenital anomalies [malformations], deformities and chromosomal disorders (Q00-Q99)
II. Новообразования (C00-D48)	II. Neoplasms (C00-D48)
IV. Болезни эндокринной системы, расстройства питания и нарушения обмена веществ (E00-E90)	IV. Diseases of the endocrine system, nutritional disorders and metabolic disorders (E00-E90)
XV. Беременность, роды и послеродовой период (O00-O99)	XV. Pregnancy, childbirth and the puerperium (O00-O99)
XIV. Болезни мочеполовой системы (N00-N99)	XIV. Diseases of the genitourinary system (N00-N99)

Table 4.11 Distribution by nosology of obstetrics and gynecology patients in an emergency hospital, 2015-2022

ICD-10		Indicator	Row number	Year					Total	M	m	Dynamics 2015-2022	
				2015	2016	2017	2019	2022				Abs. val.	%
Column number				1	2	3	4	5	6	7	8	9	10
II. (C00-D48)[1]	Total, C,	Abs. val.	1	**162**	**157**	**137**	**174**	**171**	**801**	160.2	14.7	9	5.6
	including	%	2	20.2	19.6	17.1	21.7	21.3	100.0				
	C 53	Abs. val.	3	71	56	51	76	64	318	63.6	10.3	-7	-9.9
		%	4	22.3	17.6	16.0	23.9	20.1	100.0				
	C 56	Abs. val.	5	58	68	56	64	78	324	64.8	8.8	20	34.5
		%	6	17.9	21.0	17.3	19.8	24.1	100.0				
	Total, D,	Abs. val.	7	**611**	**521**	**603**	**693**	**383**	**2,811**	562.2	117.2	-228	-37.3
	including	%	8	21.7	18.5	21.5	24.7	13.6	100.0				
	D 25	Abs. val.	9	606	515	595	675	375	2,766	553.2	114.7	-231	-38.1
		%	10	21.9	18.6	21.5	24.4	13.6	100.0				
IV. (E00-E90)[2]	E 28	Abs. val.	11	203	136	109	129	129	706	141.2	36.0	-74	-36.5
		%	12	28.8	19.3	15.4	18.3	18.3	100.0				
XIV. (N00-N99)[3]	Total,	Abs. val.	13	**3,348**	**3,014**	**3,230**	**3,498**	**3,771**	**16,861**	3372.2	284.6	423	12.6
	including	%	14	19.9	17.9	19.2	20.7	22.4	100.0				
	N 64	Abs. val.	15	50	44	44	34	62	234	46.8	10.3	12	24.0
		%	16	21.4	18.8	18.8	14.5	26.5	100.0				
	N 70	Abs. val.	17	434	389	374	367	317	1,881	376.2	42.1	-117	-27.0
		%	18	23.1	20.7	19.9	19.5	16.9	100.0				
	N 71	Abs. val.	19	110	59	40	42	65	316	63.2	28.3	-45	-40.9
		%	20	34.8	18.7	12.7	13.3	20.6	100.0				
	N 73	Abs. val.	21	341	276	159	96	82	954	190.8	113.6	-259	-76.0
		%	22	35.7	28.9	16.7	10.1	8.6	100.0				
	N 75	Abs. val.	23	83	77	102	135	79	476	95.2	24.4	-4	-4.8
		%	24	17.4	16.2	21.4	28.4	16.6	100.0				
	N 80	Abs. val.	25	153	129	76	105	87	550	110.0	31.3	-66	-43.1

End of figure 4.11

		%	26	27.8	23.5	13.8	19.1	15.8	100.0				
	N 83	Abs. val.	27	413	384	428	418	481	2,124	424.8	35.4	68	16.5
		%	28	19.4	18.1	20.2	19.7	22.6	100.0				
	N 84	Abs. val.	29	564	417	446	453	428	2,308	461.6	59.0	-136	-24.1
		%	30	24.4	18.1	19.3	19.6	18.5	100.0				
	N 85	Abs. val.	31	121	128	243	318	337	1,147	229.4	102.0	216	178.5
		%	32	10.5	11.2	21.2	27.7	29.4	100.0				
	N 92	Abs. val.	33	768	836	946	1115	794	4,459	891.8	142.1	26	3.4
		%	34	17.2	18.7	21.2	25.0	17.8	100.0				
	N 93	Abs. val.	35	21	14	14	20	564	633	126.6	244.5	543	2585.7
		%	36	3.3	2.2	2.2	3.2	89.1	100.0				
	N 95	Abs. val.	37	121	107	148	151	162	689	137.8	22.9	41	33.9
		%	38	17.6	15.5	21.5	21.9	23.5	100.0				
XV. (O00-O99)[4]	Total,	Abs. val.	39	**3,257**	**3,054**	**2,887**	**3,139**	**2,880**	**15,217**	3043.4	162.8	-377	-11.6
	including	%	40	21.4	20.1	19.0	20.6	18.9	100.0				
	O 00	Abs. val.	41	104	117	125	168	102	616	123.2	26.8	-2	-1.9
		%	42	16.9	19.0	20.3	27.3	16.6	100.0				
	O 02	Abs. val.	43	557	501	440	482	514	2,494	498.8	42.9	-43	-7.7
		%	44	22.3	20.1	17.6	19.3	20.6	100.0				
	O 03	Abs. val.	45	282	274	236	322	301	1,415	283	32.2	19	6.7
		%	46	19.9	19.4	16.7	22.8	21.3	100.0				
	O 20	Abs. val.	47	2,194	2,055	2,003	2,103	1,900	10,255	2051	109.9	-294	-13.4
		%	48	21.4	20.0	19.5	20.5	18.5	100.0				
XVII. (Q00-Q99)[5]	Total	Abs. val.	49	**2**	**0**	**0**	**1**	**1**	**4**	0.8	0.8	-1	-50.0
		%	50	50.0	0.0	0.0	25.0	25.0	100.0				
Total		Abs. val.	51	**7,583**	**6,882**	**6,966**	**7,634**	**7,335**	**36,400**	7,280	345.4	-248	-3.3
		%	52	20.8	18.9	19.1	21.0	20.2	100.0				

Note to table 4.11:

[1] II. Neoplasms (C00-D48): C53 Malignant neoplasm of the cervix; C56 Malignant neoplasm of the ovary; D25 Leiomyoma of the uterus
[2] IV. Diseases of the endocrine system, nutritional disorders and metabolic disorders (E00-E90): E28 Ovarian dysfunction
[3] XIV. Diseases of the genitourinary system (N00-N99): N 64 Other diseases of the breast; N70 Salpingitis and oophoritis; N71 Inflammatory diseases of the uterus, except the cervix; N73 Other inflammatory diseases of the female pelvic organs; N75 Diseases of the Bartholin gland; N80 Endometriosis; N 83 Non-inflammatory lesions of the ovary, fallopian tube and broad ligament of the uterus; N 84 Polyp of female genital organs; N 85 Other non-inflammatory diseases of the uterus, with the exception of the cervix; N 92 Heavy, frequent and irregular menstruation; N 93; N 95 Menopause disorders and other disorders in the perimenopausal period
[4] XV. Pregnancy, childbirth and the puerperium (O00-O99): Pregnancy with abortive outcome (O00-O08): O00 Ectopic pregnancy; O02 Other abnormal products of conception; O03 Spontaneous abortion; O20 Bleeding in early pregnancy
[5] XVII. Congenital anomalies [malformations], deformities and chromosomal disorders (Q00-Q99)
Reliability of differences (p) of indicators by row: $p_{13\text{-}39,7,1}<0.01$; $p_{39\text{-}7.1}<0.01$

The most common nosological forms in patients specializing in obstetrics and gynecology in 2015-2022 were:

- O20 (Bleeding in early pregnancy) – about 1/3 (28.2%) of patients in the total flow of patients admitted for this profile (2051±109.9 per year; $p<0.01$);

- N92 (Heavy, frequent and irregular menstruation) – 12.3% of patients (891.8±142.1 per year; $p<0.01$);

- D25 (Uterine leiomyoma) – 7.6% of patients (553.2±114.7 per year; $p<0.01$).

- Considering the largest group of diseases in terms of the number of patients ($p<0.01$) - class XIV Diseases of the genitourinary system (N00-N99) (16.9 thousand patients, 46.3%), it should be noted that the prevailing ones ($p<0.01$) nosological forms, including:

- Among the nosological forms, the most common ones are presented (more than 300 cases over 5 years).

- N92 (Heavy, frequent and irregular menstruation; 26.4% in class XIV) – ranked 1st by the number of patients;

- N84 (Polyp of the female genital organs; 13.7% in class XIV) – 2nd place;

- N83 (Non-inflammatory lesions of the ovary, fallopian tube and broad ligament of the uterus; 12.6% in class XIV) – 3rd place;

- N70 (Salpingitis and oophoritis; 11.2% in class XIV) – 4th place;

- N85 (Other non-inflammatory diseases of the uterus, with the exception of the cervix; 6.8% in class XIV) – 5th place.

- In the group of patients with class XV pathology Pregnancy, childbirth and the postpartum period (O00-O99) (15.2 thousand patients, 41.8% of the total structure) the most significant were:

- O20 (Bleeding in early pregnancy; 67.4% in class XV) – 1st place;

- O02 (Other abnormal products of conception; 16.4% in class XV) – 2nd place;

- O03 (Spontaneous abortion; 9.3% in grade XV) – 3rd place;

- O00 (Ectopic pregnancy; 4.0% in class XV) – 4th place.

In the dynamics of 2015-2022, there is an increase in the number of patients with class XIV pathology by 12.6% (r = 0.7), with a slight decrease in the number of patients in class XV by 11.6% (r = -0.6).

A detailed examination of ICD class XIV: there is an increase in the number of patients with non-inflammatory pathologies: N 85 (Other non-inflammatory diseases of the uterus, with the exception of the cervix; by 178.5%; r = 1.0) and N 83 (Non-inflammatory lesions of the ovary, fallopian tube and broad ligament of the uterus; by 16.5%; r = 0.8), as well as N 93 (Other abnormal bleeding from the uterus and vagina; by 2,585.7%; r =0.7) and N 95 (Menopausal disorders and other disorders in the perimenopausal period; by 33.9 %; r = 0.9) with a decrease in the number of patients with inflammatory pathology - N70 (Salpingitis and oophoritis; by 27.0%; r = -1.0), N73 (Other inflammatory diseases of the female pelvic organs; by 76.0%; r = -1.0), as well as patients with N80 (Endometriosis; by 43.1%; r = -0.8). In the dynamics of the structure of class XV pathology, it should be noted that there was a significant decrease only in the proportion of patients diagnosed with O20 (Bleeding in early pregnancy; by 13.4%; r = -0.8).

A not so numerous, but most significant in medical and social terms, group of diseases that is directly related to mortality rates in a hospital deserves special attention: II. class ICD-10 - Neoplasms (C00-D48) – 3.6 thousand patients, 9.9% in the total structure of admissions according to the profile, with a total and average annual number of hospitalized 801 in total, 160.2 ± 14.7 patients per year (C00-C97 Malignant

neoplasms) and 2,811 in total, 562.3±117.2 patients per year (D10-D36 Benign neoplasms).

Assessing the dynamics of indicators II. ICD-10 class during the observation period, it should be noted: an increase in the proportion of patients with malignant neoplasms by 5.6% ($p>0.01$, $r = 0.4$) does not have convincing statistical differences. At the same time, the decrease in the proportion of patients with benign neoplasms by 37.3% ($p <0.01$, $r = -0.4$) is statistically significant.

4.9. Condition severity in obstetrics and gynecology patients upon admission to an emergency hospital

Analysis of the distribution of patients according to the severity of their condition upon admission to the emergency hospital (2015-2022) allowed us to state that, despite the emergency procedure for hospitalization, the condition of the majority of those who applied in 94.3% of cases was assessed as satisfactory ($p <0.01$) (Fig. 4.9, Table 4.12). They did not have clinical signs of a threat to life, did not require emergency medical care, and during medical triage they were classified as a “green” stream. And only 5.3% of patients were of moderate severity (“yellow” stream), and 0.4% were severe (“red” stream).

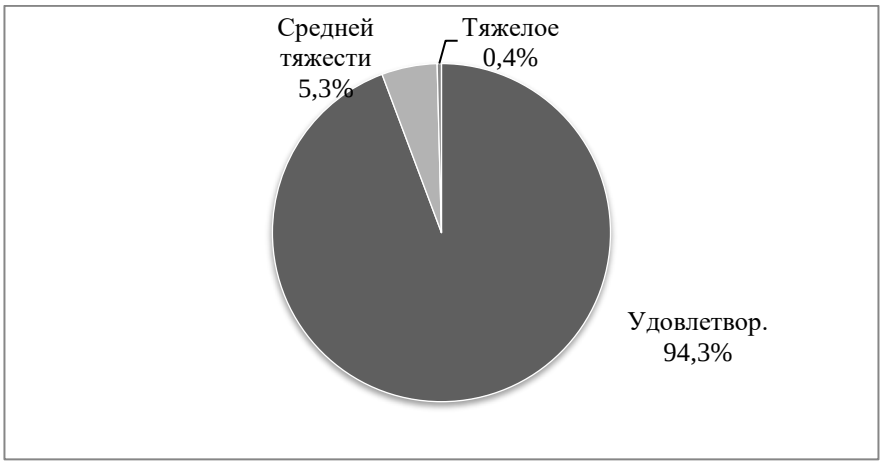


Figure 4.9 – Distribution of obstetrics and gynecology patients according to the severity of their condition upon admission to an emergency hospital, total indicator for 2015-2022

Средней тяжести	Moderately severe
Тяжелое	Severe
Удовлетворительное	Satisfactory

Table 4.12 Distribution of obstetrics and gynecology patients according to the severity of their condition upon admission to an emergency hospital, 2015-2022

Year	Indicator	Severity of the patient's condition upon admission			Total	P[1]
		Satisfactory	Moderately severe	Severe		
Column Number		1	2	3	4	5
2015	Abs. val.	7,261	305	17	**7,583**	$p_{1-2,3}<0,01$ $p_{2-1,3}<0.01$
	%	95.8	4.0	0.2	100.0	
2016	Abs. val.	6,554	316	12	**6,882**	
	%	95.2	4.6	0.2	100.0	
2017	Abs. val.	6,504	430	32	**6,966**	
	%	93.4	6.2	0.5	100.0	
2019	Abs. val.	7,156	433	45	**7,634**	
	%	93.7	5.7	0.6	100.0	
2022	Abs. val.	6,845	447	43	**7,335**	
	%	93.3	6.1	0.6	100.0	
Итого	Abs. val.	**34,320**	**1,931**	**149**	**36,400**	
	%	**94.3**	**5.3**	**0.4**	100.0	
Dynamics2015-2022	Abs. val.	-416	142	26	-248	
	%	-5.7	46.6	152.9	-3.3	
M±m		6,864.0±34.4	386.2±69.5	29.8±14.9	7,280±345.4	

[1] Significance of differences (p) indicators by columns

In the dynamics of 2015-2022, there was an increase in the proportion of moderately severe patients by 46.6% (r=0.9) and severe patients by 152.9% (r=0.9).

4.10. Flow features in the obstetrics and gynecology patients with fatal outcome in an emergency hospital

Particular attention is paid to the outcomes of the disease, which are the result of the process of providing medical care and reflect, on the one hand, the state of health of the population, and on the other, the effectiveness of the organizational, treatment and diagnostic measures carried out. In this regard, mortality rates among obstetric and gynecological patients admitted to an emergency hospital and the factors that determine them are important.

Taking into account the analysis of the total incoming flow of patients admitted to the multidisciplinary emergency hospital for the period (2015-2022) for emergency indications (36.4 thousand) with a obstetrics and gynecology diagnosis with certain fluctuations in the number of patients, we also observed annual fluctuations in the number of patients with a fatal outcome (177 people in total) (Table 4.13), while their average annual number was 35.4±5.7 patients per year, and the mortality rate varied in the range of 0.4 - 0.6 (in average 0.5±0.03) in the absence of a pronounced tendency to increase or decrease during the observation period.

A significant proportion of patients (85.9%) were sent to the hospital by medical organizations of the outpatient clinic network and EMC (46.9% and 39.0%, respectively, $p>0.05$), while in the general flow of obstetrics and gynecology patients, most of them - 50.6% ($p <0.01$), were referred by EMC (public and private health care systems) and only 36.3% - by OC (city clinics, antenatal clinics). There were no patients in the group with a fatal outcome who independently sought help at IEMCD (Table 4.14, Fig. 4.10).

Table 4.13 Distribution of obstetrics and gynecology patients with fatal outcomes by year and mortality in an emergency hospital, 2015-2022

Indicator		Year					Total	M	m	Dynamics 2015-2022	
		2015	2016	2017	2019	2022				Abs. val	%
Column number		1	2	3	4	5	6	7	8	9	10
Total patients	Abs. val.	7583	6882	6966	7634	7335	36400	7280	345.4	-248	-3.3
	%	20.8	18.9	19.1	21.0	20.2	100.0	20.0	3.2	-0.6	
including, Fatal outcome	Abs. val.	**35**	**36**	**27**	**43**	**36**	**177**	35.4	5.7	1	2.9
	%	19.8	20.3	15.3	24.3	20.3	100.0	20.0	2.9	1	
Mortality,%		0.5	0.5	0.4	0.6	0.5	0.5	0.5	0.07	0.03	6.3

Significance of differences (p) of indicators in columns (death in the row): $p_{3-4}<0.05$

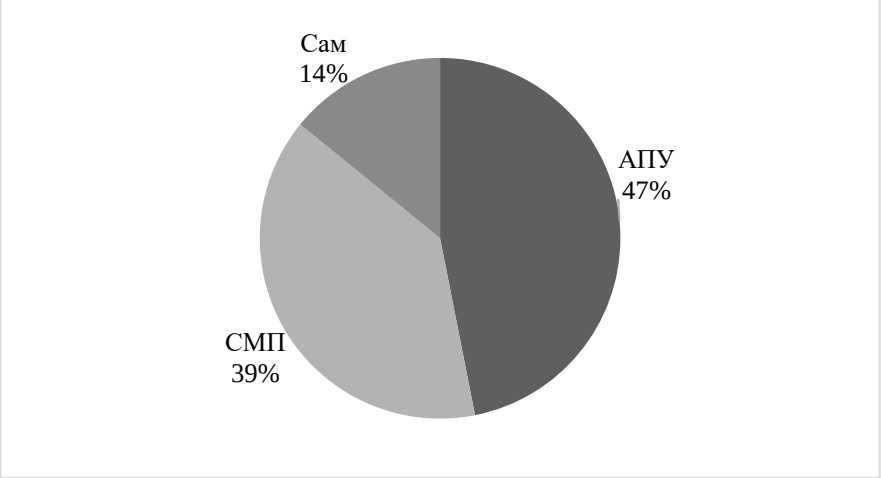


Figure 4.10 Distribution of obstetrics and gynecology patients with a fatal outcome and with a fatal outcome by route of admission to an emergency hospital, total indicator for 2015-2022

Сам — By their own
СМП — EMC
АПУ — OC

Table 4.14 Distribution of obstetrics and gynecology patients with a fatal outcome and with a fatal outcome by route of admission to an emergency hospital, 2015-2022

Indicator	Routes to EMC hospital admission			Total	P[1]
	EMC	OC	By their own		
Column number	1	2	3	5	6
Abs. val.	69	83	25	177	$p_{1-3}<0.01$
%	39.0	46.9	14.1	100,0	$p_{2-3}<0.01$

[1] Significance of differences (p) of indicators across columns

Analysis of the incoming flow at the place of registration of patients with a fatal outcome (2015-2022) showed (Table 4.15) that the vast majority of patients - 89.8% (159 people) - are residents of St. Petersburg (p <0.01). There were 11.4 times fewer nonresident patients (p <0.01), they made up 7.9% (14 people), among whom patients from other constituent entities of the Russian Federation were 3.7 times more prevalent than residents of the Leningrad region immediately adjacent to the borders of St. Petersburg (11 and 3 people, respectively, p<0.01). Citizens of foreign countries were represented in the smallest number - 2.3% (4 people), among them all were from the CIS countries.

Table 4.15 Distribution of obstetrics and gynecology patients with a fatal outcome and with a fatal outcome at the place of registration in an emergency hospital, 2015-2022

Residency	Row number	Indicators, 2015-2022	
		Abs. val.	%
St. Petersburg	1	**159**	**89.8**
St. Petersburg, Frunzensky district[1]	2	89	50.3
St. Petersburg other districts	3	70	39.5
Nonresidents	4	**14**	**7.9**
Leningrad region	5	3	1.7
other subjects of the Russian Federation	6	11	6.2
Foreign (CIS countries)	7	**4**	**2.3**
Total	**8**	**177**	100.0

[1] Frunzensky district of St. Petersburg - service area of the basic hospital of the EMC

Significance of differences (p) of indicators by row: $p_{1-4-7}<0.01$; $p_{5-6}<0.01$

An analysis of the patients flows distribution with a fatal outcome admitted to an emergency hospital by obstetrics and gynecology nosology in 2015-2022 made it possible to identify 3 main classes of diseases (according to ICD-10) and their structure: the vast majority (65.0%; $p<0.01$) patients were admitted with pathology of class II diseases - Neoplasms (C00-D48, 115 people). Other ICD-10 classes: XIV were represented in significantly smaller numbers ($p<0.01$). Diseases of the genitourinary system (N00-N99) - 61 people, 34.5%; XV. Pregnancy, childbirth and the postpartum period (O00-O99) – 1 person, 0.6% (Table 4.16).

Table 4.16 Distribution of obstetrics and gynecology patients with fatal outcome by nosology in an emergency hospital, 2015-2022

ICD-10		Row number	Abs. val.	%
II. (C00-D48)[1]	Total C-D,	1	**115**	**65.0**
	including	2		
	C 52	3	1	0.6
	C 53	4	36	20.3
	C 54	5	30	16.9
	C 56	6	47	26.6
	D 25	7	1	0.6
XIV. (N00-N99)[2]	Total N,	8	**61**	**34.5**
	including	9		
	N 64	10	60	33.9
	N 95	11	1	0.6
XV. (O00-O99)[3]	Total (O 06)	12	**1**	**0.6**
Total		13	**177**	**100.0**

[1] II. Neoplasms (C00-D48): C52 Malignant neoplasm of the vagina; C53 Malignant neoplasm of the cervix; C54 Malignant neoplasm of the uterine body; C56 Malignant neoplasm of the ovary; D25 Leiomyoma of the uterus

[2] XIV. Diseases of the genitourinary system (N00-N99): N 64 Other diseases of the breast; N95 Menopausal and other perimenopausal disorders

[3] XV. Pregnancy, childbirth and the puerperium (O00-O99): Pregnancy with abortive outcome (O00-O08): O06 Abortion, unspecified

Significance of differences (p) of indicators by row:

$p_{1\text{-}8\text{-}12}<0.01$; $p_{4,5,6\text{-}1,7}<0.01$; $p_{10\text{-}11}<0.01$; $p_{10\text{-}4,5}<0.01$

The most common nosological forms in obstetrics and gynecology patients with a fatal outcome were:

- N 64 Other breast diseases (33.9%, 60 people, $p<0.01$);
- C56 Malignant neoplasm of the ovary (26.6%, 47 people $p<0.01$);
- C53 Malignant neoplasm of the cervix (20.3%, 36 people, $p<0.01$);
- C54 Malignant neoplasm of the uterine body (16.9%, 30 people, $p<0.01$).

All other nosological forms were represented in single numbers (0.6%, 1 person each, $p<0.01$).

Thus, the main cause of death in an emergency hospital in the field of obstetrics and gynecology in 2015-2022 was malignant neoplasms of the female genital area (vagina, uterus, ovaries and mammary glands).

The age characteristics of the patient population made it possible to note the following: if among patients in general diagnosed with obstetrics and gynecology (2015-2022), it should be noted the predominance of patients aged 25-39 years (they made up more than half of the incoming flow - 54.6%), which is due to the greatest burden on the reproductive sphere of women is precisely during this age period, an increase in the proportion of patients in older age groups and an increase in the average age of patients admitted to the emergency hospital for emergency indications, then in the group of patients with a fatal outcome, the predominance of patients in the older age group (≥ 55 years) is clearly visible ; $p<0.05$) – they amounted to 69.5%. The proportions of patients in the groups of 40-54 years old (24.3%; $p<0.05$) and 25-39 years old (6.2%; $p<0.05$) were significantly smaller, with a tendency towards a further increase in age: the number of patients in the group of 40-54 decreased over 5 years by 41.7% ($r = -0.8$), and in the group of ≥ 55 years old - increased by 28.6% ($r = 0.5$) (Fig. 4.11, Table 4.17).

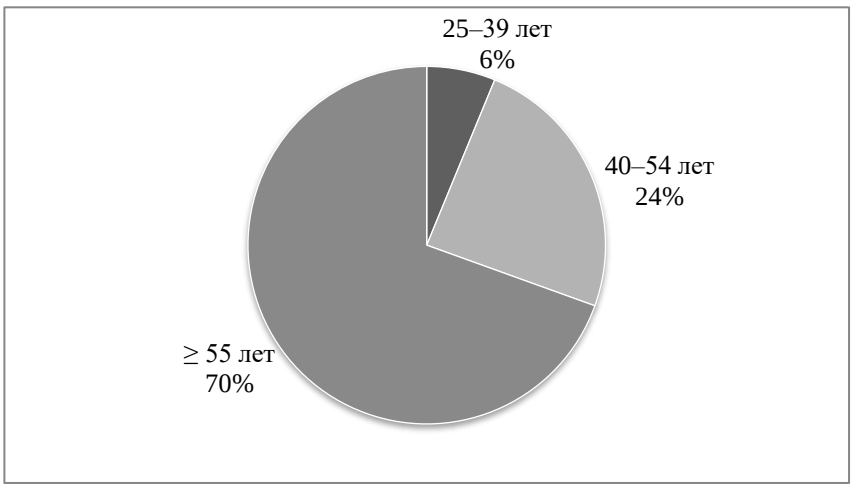


Figure 4.11 Distribution of obstetrics and gynecology patients with fatal outcomes by age in an emergency hospital, total indicator for 2015-2022

≥ 55 лет	≥ 55 years
25–39 лет	25–39 years old
40–54 лет	40–54 years old

Table 4.17 Distribution of obstetrics and gynecology patients with fatal outcome by age in an emergency hospital, 2015-2022

Year	Age	Age, years			Total	M±m	Range	Median	Mode
		25–39	40–54	≥ 55					
Column number		1	2	3	4	5	6	7	8
2015	Abs. val.	2	12	21	35	60.4 ±14.5	30:90	60	51
	%	5.7	34.3	60.0	100.0				
2016	Abs. val.	2	9	25	36	62.6 ±14.4	32:97	63	69
	%	5.6	25.0	69.4	100.0				
2017	Abs. val.	3	10	14	27	59 ±14.8	34:83	58	43
	%	11.1	37.0	51.9	100.0				
2019	Abs. val.	2	5	36	43	64.9 ±13.5	31:90	63	61
	%	4.7	11.6	83.7	100.0				
2022	Abs. val.	2	7	27	36	62.9 ±13.3	35:86	65	73
	%	5.6	19.4	75.0	100.0				
Total	Abs. val.	11	43	123	177	62.2 ±14.0	30:97	62	61
	%	6.2	24.3	69.5	100.0				
Dynamics 2015-22	Abs. val.	0.0	-5.0	6.0	1.0	2.5 ±1,2		5.0	22.0
	%	0	-41.7	28.6	2.9	4.1±8.3		8.3	43.1

Significance of differences (p) of indicators in columns: $p_{1-2-3}<0.05$ (2015, 2016, 2022, total); $p_{1-2,3}<0.05$ (2017); $p_{1,2-3}<0.05$ (2019)

Important in relation to the analysis of the flow of fatal obstetrics and gynecology patients admitted to an emergency hospital are time parameters, which include:

- time of admission to the hospital;

- time spent in the emergency room (reception and diagnostic);

total hospitalization time (k/day).

It allows us to assess the availability, efficiency and quality of medical care.

Analysis by time of admission made it possible to establish (Table 4.18) daily fluctuations in the intensity of the flow of patients, highlighting priority values: the overwhelming number of patients ($p<0.01$) were admitted in the intervals $12 <t\leq 15$ and $15 <t\leq 18$ - in total they amounted to 85 people, 48.0%. Other 3-hour time intervals had a significantly smaller number of patients ($p<0.01$). In the dynamics of 2015-2022, there was an increase in the proportion of patients admitted in the interval $15 <t\leq 18$ ($r= 0.7$).

Table 4.18 Distribution of obstetrics and gynecology patients with fatal outcome by time of admission to the emergency hospital, 2015-2022

Time interval., hour	Indic.	Row number	Year					Total	M	m	Dynamics 2015-2022	
			2015	2016	2017	2019	2022				Абс. зн.	%
9 <t≤12	Abs. val.	1	6	6	4	4	7	27	5.4	1.3	1	16.7
	%	2	22.2	22.2	14.8	14.8	25.9	100.0				
12 <t≤15	Abs. val.	3	13	8	5	11	8	45	9.0	3.1	-5	-38.5
	%	4	28.9	17.8	11.1	24.4	17.8	100.0				
15 <t≤18	Abs. val.	5	5	8	4	12	11	40	8.0	3.5	6	120.0
	%	6	12.5	20.0	10.0	30.0	27.5	100.0				
18 <t≤21	Abs. val.	7	4	7	2	2	3	18	3.6	2.1	-1	-25.0
	%	8	22.2	38.9	11.1	11.1	16.7	100.0				

End of figure 4.18

21 <t≤24	Abs. val.	9	3	2	6	6	2	19	3.8	2.0	-1	-33.3
	%	10	15.8	10.5	31.6	31.6	10.5	100.0				
24 <t≤3	Abs. val.	11	2	1	4	2	3	12	2.4	1.1	1	50.0
	%	12	16.7	8.3	33.3	16.7	25.0	100.0				
3 <t≤6	Abs. val.	13	1	0	2	3	1	7	1.4	1.1	0	0.0
	%	14	14.3	0.0	28.6	42.9	14.3	100.0				
6 <t≤ 9	Abs. val.	15	1	3	0	2	1	7	1.4	1.1	0	0.0
	%	16	14.3	42.9	0.0	28.6	14.3	100.0				
Итого	Abs. val.	17	35	36	27	43	36	177	35. 4	5.7	1	2.9
	%	18	19.8	20.3	15.3	24.3	20.3	100.0				

Reliability of differences (p) of indicators in columns: $p_{3,5\text{-}1,7,9,11,13,15}<0.01$ (column M).

This information correlates with previously obtained data on the predominant admission of patients (emergency hospitalization) by reference from OC and during the opening hours of OC (polyclinics, antenatal clinics), which indicates an improvement in the quality of work of these institutions.

Analysis of the incoming flow of patients with a fatal outcome, admitted to a multidisciplinary emergency hospital (EMC) for emergency indications (177 people) and with a obstetrics and gynecology diagnosis according to the time of stay in the Emergency Medical Center (IEMCD) allowed us to identify the most significant intervals (Tables 4.19 and 4.20):

1. the vast majority of patients (1st place) spent 0.5 to 1 hour in the emergency room (58 people; 32.8%; p<0.01);

2. in 2nd place - patients whose stay in the emergency room was up to 0.5 hours (37 people; 20.9%; p<0.01);

3. in 3rd place - patients who received help within the interval of 4 - 5 hours (21 people; 11.9%; p<0.01).

The remaining intervals are definitely of lesser significance (less than 20 people during the observation period; less than 11.0% each in the total population; p<0.01).

Table 4.19 Distribution of obstetrics and gynecology patients with a fatal outcome by time of stay in the emergency medical care (reception and diagnostic) emergency hospital, 2015-2022

Year		Time spent in EMCD (t), hour										Total
		t≤0.5	0.5<t≤ 1	1<t≤ 2	2<t≤3	3<t≤4	4<t≤ 5	5<t≤6	6<t≤7	7<t≤8	8<t≤9	
Column number		1	2	3	4	5	6	7	8	9	10	27
2015	Abs. val.	11	5	2	3	2	7	1	3	0	0	35
	%	31.4	14.3	5.7	8.6	5.7	20.0	2.9	8.6	0.0	0.0	100.0
2016	Abs. val.	10	9	3	6	1	3	2	1	0	1	36
	%	27.8	25.0	8.3	16.7	2.8	8.3	5.6	2.8	0.0	2.8	100.0
2017	Abs. val.	3	11	1	3	4	4	1	0	0	1	27
	%	11.1	40.7	3.7	11.1	14.8	14.8	3.7	0.0	0.0	3.7	100.0
2019	Abs. val.	6	17	3	3	2	5	3	0	3	1	43
	%	14.0	39.5	7.0	7.0	4.7	11.6	7.0	0.0	7.0	2.3	100.0
2022	Abs. val.	7	16	2	4	2	2	1	0	1	1	36
	%	19.4	44.4	5.6	11.1	5.6	5.6	2.8	0.0	2.8	2.8	100.0
Итого	Abs. val.	37	58	11	19	11	21	8	4	4	4	177
	%	20.9	32.8	6.2	10.7	6.2	11.9	4.5	2.3	2.3	2.3	100.0
Динамика 2015-2022	Abs. val.	-4	11	0	1	0	-5	0	-3	1	1	-248
	%	-36.4	220.0	0.0	33.3	0.0	-71.4	0.0	-100.0	-	-	-3.3

Significance of differences (p) of indicators in columns: $p_{1\text{-}2,3,4,5,7,8}<0.05$; $p_{6\text{-}3,5,7}<0.05$ (2015); $p_{1\text{-}3,5,6,7,8,10}<0.05$; $p_{2\text{-}3,5,6,7,8,10}<0.05$ (2016); $p_{1\text{-}2,3,4,5,6,7,10}<0.05$ (2017); $p_{2\text{-}1,3,4,5,6,7,9,10}<0.01$ (2019); $p_{2\text{-}1,3,4,5,6,7,9,10}<0.01$ (2022); $p_{1\text{-}2,3,4,5,6,7,8,9,10}<0.01$; $p_{2\text{-}3,4,5,6,7,10}<0.01$; $p_{6\text{-}3,5,7,8,9,10}<0.05$ (column: Total)

Table 4.20 General indicators of the distribution of obstetrics and gynecology patients with a fatal outcome by time of stay in the emergency medical care (reception and diagnostic) emergency hospital, 2015-2022

Year	Total number of patients	Average stay time, min. (M)	m	Median	Mode
2015	35	278.1	162.0	143	31
2016	36	150.2	133.4	84	31
2017	27	132.8	125.6	86	31
2019	43	140.9	152.5	46	31
2022	36	102.3	127.5	31	31
Total	177	133.4	141.8	52	31

The distribution flows of obstetrics and gynecology patients with a fatal outcome and the indicators of the time they spent in an emergency hospital are presented in Table 4.21 and 4.22.

In dynamics (2015-2022), there is an increase in the proportion of patients with the time of receiving medical care in the emergency hospital (IEMCD) in the range from 0.5 to 1 hour (r = 1.0) with a decrease in those in the intervals of 4-5 hours (r = -0.7) and 6-7 hours (r = -0.8), which indicates an increase in the efficiency of medical care at the stage of admission to the hospital (at IEMCD).

In general, it should be noted that the average time of stay in IEMCD decreased from 278.1±162.0 minutes (2015) up to 102.3±127.5 minutes (2022) (r = -0.8) and median with 143 minutes (2015) up to 31 minutes (2022) (r = -1.0).

Table 4.21 Flows of distribution of obstetrics and gynecology patients with fatal outcomes in an emergency hospital (medical triage), 2015-2022

Year	Row number	2015		2016		2017		2019		2022		M±m	Dynamics 2015-2022		Total	
Indicators		Abs. val.	%	Abs. val.	%	Abs. val.	%	Abs. val.	%	Abs. val.	%		Abs. val.	%	Abs. val.	%
Surgical departments	1	5	14.3	3	8.3	4	14.8	6	14.0	8	22.2	5.2±1.9	3	60.0	26	14.7
Departments of Anesthesiology and Reanimation	2	29	82.9	33	91.7	22	81.5	37	86.0	28	77.8	29.8±5.6	-1	-3.4	149	84.2
IEMCD[1]	3	1	2.9	0	0.0	1	3.7	0	0.0	0	0.0	0.4±0.5	-1	-100.0	2	1.1
Total	4	35	100.0	36	100.0	27	100.0	43	100.0	36	100.0	35.4±5.7	1	2.9	177	100.0

[1] IEMCD - short-term inpatient emergency medical care department

Significance of differences (p) of indicators by row: $p_{1\text{-}2\text{-}3}<0.01$ (in column 2015-2022, total)

Table 4.22 Distribution of obstetrics and gynecology patients with fatal outcome by length of hospitalization in an emergency hospital, 2015-2022

Indicators		Length of hospitalization, bed/day												Total	M	m	r[1]
		<1	1	2	3	4	5	6	7	8	9	10	>10				
Column number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2015	Abs. val.	6	6	3	1	2	2	3	1	1	1	1	8	35	2.9	2.4	-0.2
	%	17.1	17.1	8.6	2.9	5.7	5.7	8.6	2.9	2.9	2.9	2.9	22.9	100.0			
2016	Abs. val.	3	5	1	2	1	2	1	3	1	2	0	15	36	3.0	4.0	0.3
	%	8.3	13.9	2.8	5.6	2.8	5.6	2.8	8.3	2.8	5.6	0.0	41.7	100.0			
2017	Abs. val.	3	3	3	4	0	1	1	1	0	0	1	10	27	2.3	2.8	0.1
	%	11.1	11.1	11.1	14.8	0.0	3.7	3.7	3.7	0.0	0.0	3.7	37.0	100.0			
2019	Abs. val.	4	5	4	4	5	1	1	3	2	3	1	10	43	3.6	2.5	0.04
	%	9.3	11.6	9.3	9.3	11.6	2.3	2.3	7.0	4.7	7.0	2.3	23.3	100.0			
2022	Abs. val.	6	8	4	3	3	0	2	0	2	0	0	8	36	3.0	3.0	-0.4
	%	16.7	22.2	11.1	8.3	8.3	0.0	5.6	0.0	5.6	0.0	0.0	22.2	100.0			
Итого	Abs. val.	**22**	**27**	**15**	**14**	**11**	**6**	**8**	**8**	**6**	**6**	**3**	**51**	**177**	14.8	13.5	-0.01
	%	12.4	15.3	8.5	7.9	6.2	3.4	4.5	4.5	3.4	3.4	1.7	28.8	100.0			
Dynamics 2015-22	Abs. val.	0	2	1	2	1	-2	-1	-1	1	-1	-1	0	1	0.1	1.3	-0.5
	%	0	33.3	33.3	200.0	50.0	-100.0	-33.3	-100.0	100.0	-100.0	-100.0	0.0	2.9			
Pearson correlation coefficient r (year/number of patients)			0.1	0.3	0.6	0.7	0.5	-0.9	-0.4	-0.2	0.6	-0.1	-0.3	-0.3	0.3	0.3	

[1]Pearson correlation coefficient r (year/number of patients)

Significance of differences (p) of indicators in columns: $p_{1,2\text{ - }3,4,5,6,7,8,9,10,11}<0.01$; $p_{1,2,3,4,5,6,7,8,910,11\text{- }12}<0.01$ (Total line).

Analysis of routing in the emergency medical service hospital shows that 84.2% of these patients upon admission were hospitalized in the anesthesiology and intensive care departments (due to the severity of their condition), and 14.7% - in surgical departments (Table 4.20).

The time spent in the emergency hospital hospital for a significant proportion of patients (27.7%, $p<0.01$) was less than 24 hours (pre-daily mortality) (Table 4.21).

Conclusions on Chapter IV:

Thus, an analysis of the organizational aspects of hospitalization of obstetrics and gynecology patients admitted to a multidisciplinary emergency hospital (2015-2022) allowed us to conclude (Kim I.V. et al., 2021h):

1. About 10% of patients independently seek the necessary medical care without the participation of primary health care organizations and emergency medical care due to the availability of diagnostic resources in inpatient emergency departments operating around the clock; the proportion of these patients may be significantly higher due to the characteristics of the condition of incoming patients (mostly satisfactory);

2. A significant proportion of patients admitted to the emergency hospital for emergency reasons do not need medical care on 24-hour available beds, both due to the severity of their condition and the need for specialized therapeutic and diagnostic measures; the development of inpatient emergency departments makes it possible to triage incoming patients according to these criteria;

3. Almost every fifth (22.9%) patient admitted as an emergency receives an adequate (necessary and sufficient) amount of medical care in an inpatient emergency department on an outpatient basis or in overnight emergency beds; the proportion of these patients may be significantly higher due to the characteristics of the condition of incoming patients (mostly satisfactory); an updated diagnosis and examination results ensure continuity in the provision of medical care and allow continued treatment and medical supervision in an outpatient clinic network;

4. There is a decrease in non-core hospitalization, including the admission of obstetric and gynecological patients under the guise of surgical (by 22.8%) and

therapeutic (by 17.7%) pathology, which indicates an increase in the quality of the diagnostic process at the pre-hospital stage and in conditions of IEMCD;

5. The vast majority of patients (85.0%; 30.9 thousand) are residents of St. Petersburg, among whom the population of the Frunzensky district of St. Petersburg predominates (16.7 thousand); at the same time, an increase in the share of nonresident (by 43.4%) and foreign (by 2.0%) patients was noted, which corresponds to both the peculiarities of patient routing approved in the city and the actual growth of tourism and labor migration in St. Petersburg;

6. The vast majority (77.6%) of patients specializing in obstetrics and gynecology are admitted to the hospital between 9.00 and 21.00, i.e. during the opening hours of outpatient clinics (polyclinics, antenatal clinics) that refer patients for emergency hospitalization; analysis of the dynamics of patient admission for the period 2015-2022 showed an increase in the proportion of hospitalized patients in the interval 9.00-12.00 by 11.6% and a decrease in their proportion in the interval 24.00-3.00 by 23.6%, which indicates an increase in the quality of work of outpatient clinics;

7. The average time of a patient's stay in IEMCD (reception and diagnostic) was about 2 hours (121.2±117.0 minutes); in dynamics (2015-2022) there is a decrease in the average time of stay of patients in IEMCD, an increase in the proportion of patients with the time of receiving medical care in IEMCD in the range from 1 to 3 hours, with a decrease in those in other intervals; At the same time, an aspect of the work of a modern hospital emergency department is not only the initial examination and registration of an incoming patient, but also a whole range of organizational (medical triage, dynamic observation) and therapeutic and diagnostic measures related to determining the indications for hospitalization in a specialized bed, as well as the level and location of medical care;

8. Low hospitalization periods were noted for patients specializing in obstetrics and gynecology who were admitted to the EMC hospital on an emergency basis, with a predominance of patients in need of short-term medical care: the vast majority of patients (95.7%) were in the hospital for up to 10 days, of which every fifth (20.4%) - less than 1 day, 38.9% - within 1 day, 54.2% - up to 3 days, 71.7% - less than 5 days;

There is a trend towards a further decrease in the length of hospital stay: in the dynamics of 2015-2022 there was an increase in the number of patients with an extra-day stay (by 8.1%), a stay lasting 2 beds/day (by 22.4%) and 4 beds/days (by 24.7%) with a decrease in those with longer hospitalization periods.

An analysis of the medical and statistical characteristics of obstetrics and gynecology patients admitted to a multidisciplinary emergency hospital (2015-2022) showed:

1. About the predominance of patients aged 25-39 years (they made up more than half of the incoming flow - 54.6%), which is associated with the greatest burden on the reproductive sphere of women during this age period; during the observation period, there was an increase in the proportion of patients in older age groups and an increase in the average age of patients admitted to EMC hospital for emergency reasons;

2. The vast majority (88.1%; $p<0.01$) of patients were admitted with pathology of classes XIV and XV of diseases: XIV. Diseases of the genitourinary system (N00-N99) – 16.9 thousand patients, 46.3%; XV. Pregnancy, childbirth and the postpartum period (O00-O99) – 15.2 thousand patients, 41.8%;

3. The most common nosological forms were: Bleeding in early pregnancy (O20, 28.2%), Heavy, frequent and irregular menstruation (N92, 12.3%), Uterine leiomyoma (D25, 7.6%);

4. In the dynamics of 2015-2022, there is an increase in the number of patients with pathology of class XIV by 12.6% with a slight decrease in the number of patients of class XV (by 11.6%), as well as an increase in the number of patients with pathology of a non-inflammatory nature with a decrease in that with pathology of an inflammatory nature;

5. A significant proportion of patients admitted to the emergency hospital for emergency indications did not require medical care on round-the-clock beds, both due to the severity of their condition and the need for specialized therapeutic and diagnostic measures; the development of inpatient emergency departments makes it possible to triage incoming patients according to these criteria;

6. Patients with an unfavorable (fatal) outcome account for 35.4±5.7 people per year, and the mortality rate is in the range of 0.4 – 0.6 (on average 0.5±0.03) with no pronounced dynamics of the indicator during the observation period;

7. The main cause of death in an emergency hospital specializing in obstetrics and gynecology in 2015-2022 was malignant neoplasms of the female genital area (vagina, uterus, ovaries and mammary glands);

8. Among patients with a fatal outcome, the predominance of patients in the older age group (≥55 years; $p<0.05$) is clearly visible - they amounted to 69.5%, the proportions of patients in other age groups were significantly smaller ($p<0.05$), a trend of increasing age was noted: the number of patients in the group of 40-54 years old decreased by 41.7% over 5 years ($r= -0.8$), and in the group ≥55 years old - increased by 28.6%;

9. The vast majority of patients - 89.8% (159 people) were residents of St. Petersburg ($p <0.01$); a significant part of them (85.9%) were sent for hospitalization by medical organizations of the outpatient clinic network and emergency medical services (46.9% and 39.0%, respectively, $p>0.05$); the bulk of them ($p<0.01$) were admitted to the hospital in the interval $12 <t\leq 18$ (48.0%), that is, during the opening hours of OC (clinics, antenatal clinics), which indicates an increase in the quality of work of these institutions;

10. The vast majority of patients were in IEMCD from 0.5 to 1 hour (58 people; 32.8%; $p<0.01$); in dynamics (2015-2022) there is an increase in the proportion of patients with the time of receiving medical care in IEMCD in the range from 0.5 to 1 hour with a decrease in those in other time intervals, which indicates an increase in the efficiency of medical care at the stage of admission to the hospital (at IEMCD); in general, for the group of patients with an unfavorable outcome, it should be noted a decrease in the average time of stay in the emergency room from 278.1 ± 162.0 minutes (2015) to 102.3 ± 127.5 minutes (2022) and the median from 143 minutes (2015) to 31 minutes (2022).

11. On admission, 84.2% of these patients were hospitalized in anesthesiology and intensive care units (due to the severity of their condition), and 14.7% were

hospitalized in surgical departments; the length of stay in EMC hospital for a significant proportion of patients (27.7%, $p<0.01$) was less than 24 hours (pre-24-hour mortality).

Thus, the analysis of the organizational aspects of hospitalization of obstetrics and gynecology patients admitted to a multidisciplinary emergency hospital allows us to conclude that there are significant positive dynamics in the system of providing medical care to this group of patients. At the same time, one cannot fail to note the need to further improve the medical care system in modern conditions.

The level of development and current state of the inpatient stage of emergency medical care, the treatment and diagnostic capabilities of multidisciplinary EMC hospitals require the development of new models and principles for organizing the treatment and diagnostic process, including:

– development of a clear algorithm for the admission of obstetrics and gynecology patients in an emergency hospital (including medical triage according to the severity of the condition and pathology nosology), ensuring a reduction in unnecessary hospitalization, increasing the availability and efficiency of medical care in obstetrics and gynecology patients;

– expanding the capabilities of IEMCD (therapeutic and diagnostic, dynamic observation) to receive this contingent of patients, aimed at reducing unnecessary hospitalization in specialized hospital departments, length of hospitalization, with expanding the possibilities of using emergency beds (daily and short-term stay) for obstetric and gynecological patients; the latter requires the creation of special conditions for the stay of these patients (separate wards, examination rooms), staffing standards for specialized consultants (obstetricians and gynecologists) in the IEMCD, additional training for emergency medical doctors at the IEMCD in the field of obstetrics and gynecology.

CHAPTER 5. SELECTED ISSUES OF CONTINUITY, ECONOMICS AND MANAGEMENT IN THE PROVISION OF MEDICAL CARE TO OBSTETRICS AND GYNECOLOGY PATIENTS

An important condition for the coordinated work of the healthcare system is to take into account the volumes, forms and conditions of its provision at different levels of medical care. The variability of the medical care system in the obstetrics and gynecology profile forces us to pay more attention to some aspects of its organization. One of the objectives of the study was to study the issues of continuity in the provision of obstetric and gynecological care in emergency and emergency forms at the pre-hospital and hospital stages.

An analysis of statistical data for St. Petersburg, namely, invoices issued to medical insurance organizations (according to the Territorial Compulsory Medical Insurance Fund of St. Petersburg for 2021) revealed that this assistance in the compulsory medical insurance system was provided by 140 medical organizations (MO) of the city, of which 74 (52.9%) - municipalities subordinate to city district administrations, 29 (20.7%) - to the Health Committee, 23 (16.4%) - institutions of the private healthcare system, 8 (5.7%) - federal medical institutions of the Ministry of Health of Russia, 6 (4.3) %) – departmental MO. Of these 140 medical organizations, 126 (90.0%) provided medical care in an outpatient setting, 71 (50.7%) in a day hospital, and 39 (27.9%) in an inpatient setting. At the same time, there is still a significant proportion of medical organizations of the state and private healthcare system that provide medical care in the field of “obstetrics and healthcare” on an extra-budgetary (paid) basis; their services are not included in these statistics.

By building a single line of routing of these patients in medical organizations of the city, we practically connected different types of medical care (primary health care, specialized and emergency) in different conditions (outside a medical organization, outpatient and inpatient) and forms (emergency and urgent) of its provision to study

the features of organizing this assistance from the perspective of various organizations, to find common problems and patterns.

5.1. Special aspects of organization of medical care for obstetrics and gynecology patients in the conditions of the pre-hospital stage of emergency medical care

The provision of emergency medical care (EMC) in Russia is regulated by Federal Laws No. 323-FZ dated November 21, 2011 “On the protection of the health of citizens in the Russian Federation” and No. 326-FZ dated November 29, 2010 “On compulsory health insurance in the Russian Federation.” Emergency medical care is organized and provided in accordance with the procedure for providing medical care - Order of the Ministry of Healthcare of the Russian Federation dated June 20, 2013 No. 388n “On approval of the procedure for providing emergency, including emergency specialized medical care,” based on clinical recommendations (from 01/01/2022) , taking into account the standards of medical care.

Ambulance, including specialized emergency medical care, is a type of medical care and is provided in case of diseases, accidents, injuries, poisoning and other conditions that require urgent medical intervention (Order of the Ministry of Healthcare of the Russian Federation dated June 20, 2013 N 388n). And if ambulance, including specialized ambulance, medical care outside a medical organization in accordance with the Procedure for its provision (Order of the Ministry of Healthcare of the Russian Federation dated June 20, 2013 N 388n, clause 6) is provided by medical workers of mobile ambulance teams, then in outpatient and inpatient conditions it is provided by medical workers of MO, providing medical care in outpatient and inpatient settings (8 paragraph). Among the reasons for calling an ambulance in an emergency form, one should note sudden acute illnesses, conditions, exacerbation of chronic diseases that pose a threat to the patient’s life, including childbirth, the threat of termination of pregnancy.

Medical evacuation is an element of medical care; it is the transportation of a patient in order to save life and preserve health (including persons being treated in

medical organizations that do not have the ability to provide the necessary medical care for life-threatening conditions, women during pregnancy, childbirth, postpartum period and newborns, persons injured as a result of emergencies and natural disasters) with the implementation of medical care measures during transportation, including the use of medical equipment.

The City Emergency Medical Station (CEMS) is the largest medical institution in St. Petersburg, having 26 EMC substations in different areas of the city. Every day, the operational department of the Central EMC substation receives up to 8 thousand calls by phones 103 and 03, EMC teams carry out up to 1.8 thousand calls per day, more than 180 teams of various profiles respond to calls from the population around the clock. CEMS receives calls from persons located in the Admiralteysky, Vasileostrovsky, Vyborgsky, Kalininsky, Kirovsky, Krasnogvardeysky, Krasnoselsky, Moskovsky, Nevsky, Petrogradsky, Primorsky, Frunzensky, and Central administrative districts of St. Petersburg. Calls coming from the suburban areas of St. Petersburg are switched to the communication centers of the geographically suburban stations and emergency medical departments located there, which are independent medical organizations.

Medical evacuation in St. Petersburg is carried out by CEMS EMC evacuation teams, EMCD of polyclinics and suburban emergency medical services stations (departments), including emergency ones transferred from outpatient medical organizations (polyclinics, antenatal clinics, emergency teams).

St. Petersburg State Budgetary Healthcare Institution "City Emergency Medical Care Station" provides emergency medical services for acute sudden illnesses in adults and children that occur outside their place of residence (on the street, in public places, at work, etc.); in case of accidents in places of residence, on the street, public places, at work; during childbirth and disturbances in the normal course of pregnancy; with the development of an acute mental disorder; in the event of a threat or occurrence of an emergency; in case of mass disasters and natural disasters. The provision of emergency medical services to patients in places of their permanent or temporary residence in conditions caused by sudden acute diseases or exacerbation of chronic

diseases that threaten life and health is provided by emergency medical services departments of city polyclinics (EMCD).

It should be noted that emergency medical services teams only deliver (if indicated) patients to the hospital to resolve the issue of hospitalization. The decision on the need for patients to undergo treatment and diagnostic measures on round-the-clock beds (in inpatient conditions) is made by the doctor of the admission and diagnostic department (or the inpatient emergency department if there is one in the structure of the MO).

In order to analyze emergency hospitalizations of obstetrics and gynecology patients by EMC teams of St. Petersburg, generalized indicators of emergency medical service visits throughout the city were studied (CEMS, EMC of suburban areas and EMC departments of polyclinics, n = 272,554 calls), 2015 and 2022 are presented in Table 5.1.

When analyzing the results of EMC calls, it was found that 97.9% (2015) and 95.9% (2022) of those who applied for EMC with obstetric and gynecological pathology were subject to hospitalization, of which 95.0% and 93.3%, respectively, were actually hospitalized, about 2/3 of which - to a hospital, 1/3 - to a maternity hospital, and only about 2.0% (2022) of those who applied stayed at home (at the place where the ambulance team was called) in the absence of indications for hospitalization, and the same number refused the proposed hospitalization.

Table 5.1 Analysis of emergency calls from St. Petersburg ambulance teams to obstetrics and gynecology patients, 2015 and 2022 (fragment)

Indicators	Year				Dynamics 2015-2022	
	2015		2022			
	Abs. val., call	%	Abs. val., call	%	Abs. val., call	%
1. The patient is admitted to the hospital	39,248	64.5	32,200	66.6	-7,048	-18.0
2. The patient is hospitalized in the maternity hospital	18,558	30.5	12,908	26.7	-5,650	-30.4
3. The patient is left on site (if there are no indications for hospitalization)	873	1.4	979	2.0	106	12.1

End of figure 5.1

4. The patient refused hospitalization (if there were indications for hospitalization)	1,791	2.9	1,002	2.1	-789	-44.1
5. Other[1]	410	0.7	1,254	2.6	844	205.9
Total	60,880	100.0	48,343	100.0	-12537	-20.6

[1] Other: the patient was not found, the call was canceled, medical care was refused, taken home, to the morgue, the call was transferred to a health care facility (antenatal clinic, clinic, etc.)

It should be noted that the total number of obstetric and gynecological calls for emergency medical care decreased by 20.6% (from 60.9 thousand to 48.3 thousand calls per year, $p<0.05$) with a decrease in the number of refusals from hospitalization (by 44.1%, $p<0.05$). The number of hospitalizations to hospitals decreased by 18.0%, but the most significant decrease was the number of hospitalizations to maternity hospitals - by a third (30.4%, by 5.7 thousand calls per year, $p <0.05$).

Thus, the presented data indicate the following:

- high percentage of hospitalization of patients with obstetric and gynecological pathologies (93-95%) - about the significant risk of developing life-threatening conditions in this category of applicants and the extremely limited treatment and diagnostic capabilities of the staff of EMC teams in obstetrics and gynecology at the pre-hospital stage, taking taking into account, including the significant share of paramedic teams in the structure of EMC;

- a decrease in the total number of obstetric and gynecological visits (by 20.6%) and emergency hospitalizations to the maternity hospital (by 30.4%) correlates, on the one hand, with data on demographic problems in our country, including a decrease in natural population growth and birth rates, on the other hand, with the optimization of the work of primary health care, in which patients are observed and treated on an outpatient basis, and are hospitalized in a hospital (maternity hospital) in the direction of the antenatal clinic (in an emergency and on a planned basis).

5.2. Special aspects of organizing the medical care provision to obstetrics and gynecology patients in the conditions of antenatal clinics

On January 1, 2021, the order of the Ministry of Healthcare of the Russian Federation dated October 20, 2020 No. 1130n “On approval of the Procedure for the provision of medical care in the field of obstetrics and gynecology” came into force. Primary specialized medical care in the field of obstetrics and gynecology is provided in antenatal clinics or in obstetric and gynecological offices of polyclinics. The main difference between the modern model of providing primary specialized obstetrics and gynecology medical care is the principle of staged provision, not only taking into account the size of the population served, but also taking into account the degree of specialization of primary health care provided by the antenatal clinic (Chapter 3, Appendix C): medical organizations providing primary specialized obstetric and gynecological care to the population are divided into three groups (levels).

The first group includes antenatal clinics (outpatient departments) at central district hospitals, district hospitals, and first-level obstetric hospitals with a population of 20,000 to 50,000 people served. The second group includes independent antenatal clinics, as well as antenatal clinics as part of maternity hospitals of the second group, city hospitals and clinics with a service population of 50,000 to 70,000 people, as well as as part of inter-district perinatal centers with a service population of 70,000 to 100 000 people. The third group includes consultative and diagnostic departments of perinatal centers, republican, regional, regional, district maternity hospitals, maternal and child health centers, as well as independent centers for family health and reproduction, and adolescent reproductive health centers.

The list of medical organizations providing medical care to women during pregnancy and the postpartum period, women with gynecological diseases in accordance with groups (levels) of outpatient medical care in St. Petersburg includes 57 medical organizations (Appendix C). The first group included 17 medical organizations: antenatal clinics and obstetric and gynecological departments of clinics.

The second group included all 6 independent antenatal clinics, as well as 32 antenatal clinics that were part of maternity hospitals and clinics. The third group includes 8 medical organizations of the city subordination: consultative and diagnostic departments of maternity hospitals and the City Perinatal Center, Diagnostic Center (medical genetics), Family Planning and Reproduction Center, City Center for Adolescent Reproductive Health "Yuventa".

Most antenatal clinics in St. Petersburg are included in the second group (level) of providing specialized obstetric and gynecological care in outpatient settings.

The Antenatal Clinic Center (WCC), an antenatal clinic, is one of the specialized medical organizations for providing primary health care obstetric and gynecological care to women on an outpatient basis. Its main objectives are: provision of primary specialized medical care to women during pregnancy, services to strengthen and protect reproductive health, prevention of abortion, prevention, diagnosis and treatment of gynecological diseases.

We assessed the dynamics of some indicators of the performance of antenatal clinics in one of the districts of a large city (Fig. 5.1, Table 5.2) - the “oldest” district of the metropolis with a relatively stable housing stock and established infrastructure.

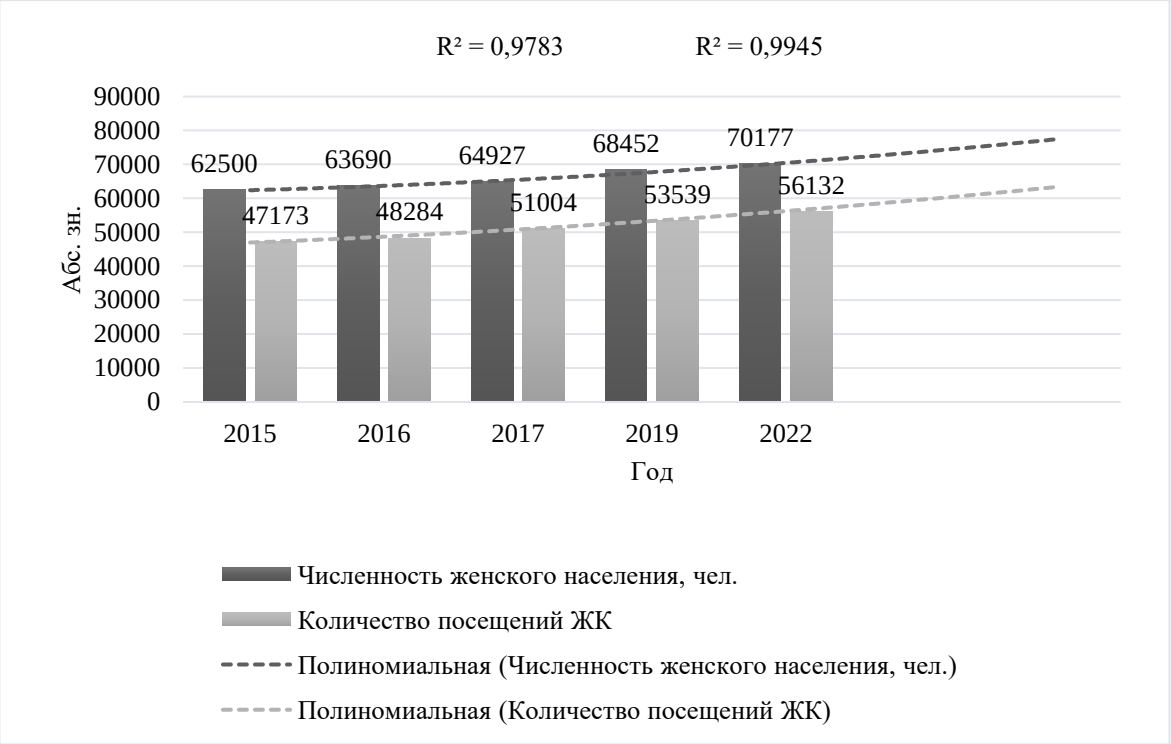


Figure 5.1 Number of attached female population and number of visits to antenatal clinic, 2015-2022

Абс. зн.	Abs. val.
Численность женского населения, чел.	Female population, people
Количество посещений ЖК	Number of visits to antenatal clinics
Полиноминальный (Численность женского населения, чел.)	Polynomial (Number of female population, people)
Полиноминальный (Количество посещений ЖК)	Polynomial (Number of visits to antenatal clinics)

Table 5.2 General volume indicators of the work of the antenatal clinic, 2015-2022

Year	2015		2016		2017		2019		2022		M±m	Dynamics 2015-2022		Total	
Indicators	Abs. val.	%	Abs. val.	%	Abs. val.	%	Abs. val.	%	Abs. val.	%		Abs. val.	%	Abs. val.	%
Female population, people	62,500	19.0	63,690	19.3	64,927	19.7	68,452	20.8	70,177	21.3	65,949.2 ±2,904.6	7,677	12.3	32,9746	100.0
including women of fertile age, people	39,025	18.5	39,830	18.9	44,000	20.9	45,114	21.4	42,807	20.3	42,155.2 ±2,357.4	3,782	9.7	21,0776	100.0
Obstetrics and gynecology centers, units.	10		10		10	0	11	0	11		10.6 ±0.5	1	10.0		
Outpatient department (OD), beds	0	0.0	3	100	3	100	3	100	3	100	2.4±1.2	3	-	3	100.0
Volume of inpatient units assistance (number of pregnant women treated in the OD), people	0	0.0	624	24.3	653	25.4	679	26.4	613	23.9	513.8 ±257.9	613	-	2,569	100.0
Number of visits to AC	47,173	18.4	48,284	18.9	51,004	19.9	53,539	20.9	56,132	21.9	51,226.4 ±3,303.0	8,959	19.0	2,56132	100.0
including, at home	47	17.3	46	17.7	62	22.9	53	19.6	61	22.5	54.2 ±6.3	14	29.8	271	100.0

AC – antenatal clinic, OD – outpatient department

During the observation period, there was an increase in the number of female population attached to antenatal clinics by 12.3% (by 7.7 thousand, from 62.5 thousand to 70.2 thousand), including women of fertile age by 9.7% (by 3.8 thousand, from 39.0 thousand to 42.8 thousand), which led to an increase in the number of visits to antenatal clinics by 19.0% (by 8.9 thousand, from 47.2 thousand to 56.1 thousand per year), including at home by 29.8% ($p<0.05$).

The opening of an outpatient department with 3 beds (in 2016) was also significant, which made it possible to increase the volume of medical care provided in the antenatal clinic using hospital-substituting technologies: about 600 pregnant women a year receive treatment in these beds (613 in 2022).

Organizational measures were also accompanied by an increase in the number of obstetric and gynecological sites in the serviced territory by 10.0% (by 1 unit, from 10 in 2015-2017 to 11 clinics in 2019) and, accordingly, the staffing of the antenatal clinic (obstetricians-gynecologists, ultrasound specialists, midwives, nurses - according to staff standards) ensuring the work of this unit.

In accordance with the staffing standards recommended by the Procedure for the provision of obstetrics and gynecology medical care, it is possible to use two methods of forming a staff of obstetricians and gynecologists for medical organizations that provide primary specialized health care to the population in the field of obstetrics and gynecology. When using the first method 1.0, the position of an obstetrician-gynecologist is allocated to 2,200 women of childbearing age. The second method involves allocating 1.0 obstetrician-gynecologist positions per 3,500–4,000 female population. Per 10,000 children, 1.25 pediatric obstetrician-gynecologist positions are allocated. In relatively large antenatal clinics (not lower than the second level), positions of specialized obstetrician-gynecologists are allocated. Thus, for every 10.0 positions of medical specialists, 1.0 positions of obstetrician-gynecologist are provided for identifying diseases of the mammary glands. In addition, for every 8 positions of obstetricians and gynecologists, 1.0 positions of gynecologist-endocrinologist, obstetrician-gynecologist for miscarriage, for the treatment of cervical pathology, and

an obstetrician-gynecologist for the preservation and restoration of reproductive function are being introduced.

In the basic antenatal clinic, due to the increase in the size of the population served, there was an increase in the number of full-time positions of obstetrician-gynecologists from 21.0 to 23.0 positions (Table 5.3). At the same time, during 2015-2022, the staffing level of full-time positions, taking into account part-time and substitution, in the antenatal clinic was 100.0%.

Table 5.3 Dynamics of staffing of obstetrician-gynecologist positions in the antenatal clinic in 2015 – 2022

Year	Number of positions for obstetricians and gynecologists, abs. val.		Number of individuals, abs. val.	Staffing of regular positions		Part-time ratio	Shortage of individuals	
	staff	occupied		taking into account occupied positions, %	By individuals, %		abs. val.	%
2015	21	21	12	100.0	57.1	1.75	9	42.9
2016	21	21	14	100.0	66.7	1.50	7	33.3
2017	23	23	19	100.0	82.6	1.21	4	17.4
2019	23	23	16	100.0	69.6	1.44	7	30.4
2022	23	23	17	100.0	73.9	1.35	6	26.1

Significantly lower rates of staffing of obstetrician-gynecologist positions with individuals were observed. The minimum level of this indicator was identified in 2015 (57.1%), and the maximum level was in 2017 (82.6%). Accordingly, in these years the highest level of the part-time ratio was identified (1.75 occupied positions per 1.0 individual obstetrician-gynecologist in 2015) and the lowest level of this indicator (1.21 occupied positions per 1.0 individual obstetrician-gynecologist in 2017).

A positive trend can be seen in relation to the shortage of obstetricians and gynecologists. In 2015, the shortage of individual obstetricians and gynecologists was 9 doctors, and in 2022 – 6 people. Accordingly, 42.9% of full-time positions were not occupied by individuals in 2015, and 26.1% in 2022. It should be noted that 3.0 full-time positions of obstetricians-gynecologists were allocated for specialized reception

and 1.0 position is occupied by an obstetrician-gynecologist at a day hospital. Thus, for obstetrician-gynecologist surgeries, 17.0 full-time positions were allocated in 2015-2016 and 19.0 full-time positions in 2019-2022.

The problems of staffing therapists, psychologists, lawyers, and social workers, who are also included in the staff of the antenatal clinic, remained unresolved.

A study of the size of the female population per 1.0 full-time position of an obstetrician-gynecologist providing obstetric and gynecological care on a local basis showed over time that, in general, during the observation period this indicator corresponded to the established standard (Fig. 5.2).

Figure 5.2 Dynamics of the total number of women and the number of women of childbearing age assigned to the antenatal clinic, per 1.0 full-time position of obstetrician-gynecologist in 2015 – 2019

Абс. зн. - чел.	Abs. val. - people
Число женщин на 1,0 штатную должность акушера-гинеколога	Number of women per 1.0 full-time position of obstetrician-gynecologist
Число женщин фертильного возраста 1,0 штатную должность акушера-гинеколога	Number of women of fertile age per 1.0 full-time position of obstetrician-gynecologist
Полиноминальный (Число женщин на 1,0 штатную должность акушера-гинеколога)	Polynomial (Number of women per 1.0 full-time position of obstetrician-gynecologist)
Полиноминальный (Число женщин на 1,0 штатную должность акушера-гинеколога)	Polynomial (Number of women per 1.0 full-time position of obstetrician-gynecologist)

At the same time, in 2016-2019, a slight excess in the number of women of fertile age was revealed per 1.0 full-time position of obstetrician-gynecologist: in 2016, the actual level of this indicator exceeded the recommended standard by 6.5%, in 2017 - by 5.3% , and in 2019 – by 7.9%. It should also be noted that during the entire observation period, the dynamics of both indicators were multi-directional (Fig. 5.2).

An unresolved problem for many years is the lack of premises for the deployment of the required number of offices of obstetrician-gynecologists with an increase in the female population served by the territory's antenatal clinic. For the same reason, there are difficulties in deploying specialized reception rooms and increasing the capacity of day hospitals.

A study of the dynamics of the number of emergency hospitalizations of patients referred from the antenatal clinic indicates a significant increase in both the absolute number of hospitalizations and the number of hospitalizations per 1,000 women (Table 5.4).

Table 5.4 Dynamics of the absolute number of emergency hospitalizations of patients referred by doctors at the antenatal clinic and the number of emergency hospitalizations per 1,000 women in the service area in 2015 - 2022

Year	Number of emergency hospitalizations of patients, abs. val.	Demonstrative score, %	Rate of increase, %	Number of emergency hospitalizations of patients per 1,000 women, abs.val.	Demonstration score, %	Rate of increase, %
2015	340	100.0	-	5.4	100.0	-
2016	446	131.1	+ 31.1	7.0	129.6	+ 29.6
2017	517	152.1	+ 15.9	8.0	148.1	+ 14.3
2018	512	150.6	- 1.0	7.5	138.9	- 6.3
2019	531	156.2	+ 3.7	7.6	140.7	+ 1.3
2022	535	157.3	+ 0.7	7.5	138.9	- 1.3

Compared to 2015, in 2022 the number of hospitalizations of women referred by antenatal clinic doctors increased by more than 1.5 times: from 340 cases to 535 cases (+57.3%). The maximum rate of increase in the number of hospitalizations was identified in 2016 (+31.1%). The number of emergency hospitalizations of obstetrics and gynecology patients per 1,000 women in the territory served by the antenatal clinic

increased from 5.4 cases in 2015 to 8.0 cases in 2017 (+48.1%). In subsequent years, there was a slight decrease in the indicator to 7.5 cases in 2018 and 2022 and to 7.6 cases in 2019. At the same time, the growth rate of the indicator in 2016–2017 was positive with a maximum value in 2016. In 2018, the growth rate became negative, and the maximum value of the decline rate of this indicator was revealed.

A study of the age composition of patients hospitalized by referral from antenatal clinic doctors to medical organizations providing specialized obstetrics and gynecology medical care in a hospital setting, made it possible to identify some changes in the age composition for the period 2015 – 2022. Thus, in 2015-2016, first place in the age structure of hospitalized patients belonged to persons aged from 20 to 29 (47.4% in 2015; 44.4% in 2016; $p > 0.05$). The second place in these years was occupied by patients aged 30-39 years (respectively, 35.0% in 2015 and 42.4% in 2016; $p > 0.05$) (Table 5.5).

In the next four years, the first place was occupied by patients aged 30 to 39 years, and in 2022, women in this age group accounted for almost half (49.0%). The third place in both 2015 and 2022 among patients hospitalized with reference from the antenatal clinic was occupied by women aged 40-49 years (10.9% and 14.0%, respectively, $p > 0.05$). A small proportion were patients aged 50–59 years (2.6% in 2015 and 3.0% in 2022; $p > 0.05$) and patients aged 60 years and older (2.6% in 2015 and 3.2% in 2022, $p > 0.05$).

It should be noted that the proportion of patients aged 20-29 years decreased from 47.4% in 2015 to 29.5% in 2022 ($t = 5.34$; $p < 0.01$), and the proportion of patients aged 30-39 years, on the contrary, increased from 35.0% in 2015 to 49.0% in 2022 ($t = 4.15$; $p < 0.01$).

Particular attention should be paid to the fact that during the entire observation period, the proportion of women of fertile age among patients hospitalized with the reference from the antenatal clinic varied within insignificant limits from 97.4% in 2016 (maximum share) to 93.8% in 2022 (minimum specific gravity, $p>0.05$).

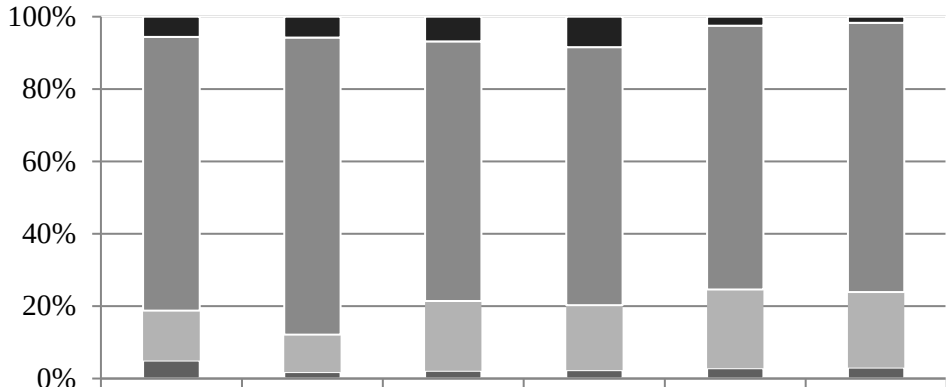
Table 5.5 Age composition of patients hospitalized for emergency reasons by doctors at the antenatal clinic in 2015-2022, %

Age (years)	Year					
	2015	2016	2017	2018	2019	2022
< 20 years	1.5	1.6	1.5	1.8	3.2	1.3
20 – 29	47.4	44.4	41.4	37.9	33.5	29.5
30 – 39	35.0	42.4	43.7	44.5	45.2	49.0
40 – 49	10.9	9.0	8.9	10.6	12.2	14.0
50 -59	2.6	2.2	3.3	3.7	3.6	3.0
60 – 69	2.6	0.4	1.2	1.5	2.3	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

A study of the nosological composition of patients hospitalized on an emergency basis with reference from antenatal clinic doctors showed that the first place during the observation period was taken by patients sent to the hospital for pregnancy, childbirth and the postpartum period (class XV according to ICD-10) (Fig. 5.3). The proportion of patients sent to the hospital for pregnancy, childbirth and the postpartum period varied from 82.1% in 2016 (maximum level of the indicator) to 71.3% in 2018 (minimum level of the indicator): $t = 4.19$; $p < 0.01$. The second place was consistently occupied by patients with diseases of the genitourinary system (class XIV according to ICD-10); a significant increase in the proportion of patients hospitalized with diseases belonging to this class has been noted since 2017. The maximum proportion of patients with diseases of the genitourinary system was in 2019 (21.8%) is 2.1 times higher than the minimum proportion of patients with this pathology hospitalized in 2016 (10.3%), $t = 4.19$; $p < 0.01$. The third place in 2015 – 2018 was occupied by patients with conditions included in the ICD class “Factors influencing the state of public health and visits to health care institutions (class XXI)”, and the fourth place was occupied by patients with neoplasms.

The data presented in Figure 5.5 clearly demonstrates a significant increase among the causes of hospitalization in the share of obstetric and gynecological diseases belonging to class XIV - “Diseases of the genitourinary system”. The maximum growth rate of this indicator was noted in 2017, when the proportion of patients with these diseases increased 1.9 times: from 10.3% in 2016 to 19.3% in 2017. Compared to 2015,

in 2022 the proportion of patients of this nosological group increased by 1.5 times from 13.8% to 20.9% (t = 4.40; p<0.001).



	2015	2016	2017	2018	2019	2022
класс II C00-DO99)	5,6	5,8	6,8	8,4	2,5	1,7
класс XV(O00-O99)	75,6	82,1	71,8	71,3	72,9	74,4
класс XIV (N00 -N99)	13,8	10,3	19,3	18	21,8	20,9
класс XXI (Z00 -Z99)	5	1,8	2,1	2,3	2,8	3

Figure 5.3 Nosological composition of patients hospitalized for emergency reasons by doctors at the antenatal clinic in 2015 – 2022, %

Класс II (C00-DO99)	Class II (C00-DO99)
Класс XV (O00-O99)	Class XV (O00-O99)
Класс XIV (N00-N99)	Class XIV (N00-N99)
Класс XXI (Z00-Z99)	Class XXI (Z00-Z99)

Attention should be paid to the decrease in the proportion of patients hospitalized due to circumstances related to reproductive function (class XXI ICD-10): from 5.6% in 2015 to 1.7% in 2020 (t = 2.86 ; p< 0.01). There was a slight decrease in the proportion of patients with neoplasms (from 5.0% in 2015 to 3.0% in 2020; t = 1.44; p>0.05).

The results of the study (Table 5.6) indicate that in both 2015 and 2022, the first place among women hospitalized for emergency indications by antenatal clinic doctors was occupied by patients sent for hospitalization with diagnoses included in the heading “Other maternal diseases, mainly associated with pregnancy” (O20 – O29).

Table 5.6 Nosological composition of patients referred by the antenatal clinic for hospitalization for emergency indications in 2015-2022

Indicators	Year					
Nosological groups	2015	2016	2017	2018	2019	2022
Malignant and benign neoplasms of the female genital organs (C53, D 25-D 27) – abs. number	17	8	11	12	15	16
Specific gravity %	5.0	1.8	2.1	2.3	2.8	3.0
Inflammatory diseases of the female genital organs (N70-N77) – abs. number	8	11	22	18	30	12
Specific gravity %	2.3	2.5	4.3	3.5	5.7	2.2
Non-inflammatory diseases of the female genital organs (N80 - N 88) – abs. number	4	7	15	13	12	18
Specific gravity %	1.2	1.6	2.9	2.5	2.3	3.4
Menstrual irregularities, bleeding (N 91–N 95) – abs. number	35	28	63	61	74	82
Specific gravity %	10.3	6.3	12.2	11.9	13.9	15.3
Pregnancy with abortive outcome, ectopic pregnancy, abnormal products of conception (O 00 –O08) – abs. number	39	34	29	38	23	35
Specific gravity %	11.5	7.6	5.6	7.4	4.3	6.5
Edema, proteinuria and hypertensive disorders during pregnancy (O10-O16) – abs. number	64	78	80	69	57	78
Specific gravity %	18.8	17.5	15.5	13.6	10.7	14.6
Other maternal diseases, mainly associated with pregnancy (020 - 029) - abs. number	118	166	178	161	205	158
Specific gravity %	34.7	37.2	34.4	31.5	38.6	29.5
Medical care for the mother in connection with the condition of the fetus, the amniotic cavity and possible difficulties in delivery (O30-O48) – abs. number	12	37	26	41	25	11
Specific gravity %	3.5	8.3	5.0	8.0	4.7	2.1
Other maternal diseases from other headings (099) – abs. number	24	51	58	56	77	116
Specific gravity %	7.1	11.4	11.2	10.9	14.5	21.7
Monitoring a normal pregnancy (Z34) – abs. number	19	26	35	43	13	9
Specific gravity %	5.6	5.8	6.8	8.4	2.5	1.7
Total– abs. number	340	446	517	512	531	535
Total %	100.0	100.0	100.0	100.0	100.0	100.0

This nosological group included patients with “Bleeding in early pregnancy (O20).” However, the proportion of such patients decreased from 34.7% in 2015 to 29.5% in 2022 ($t = 3.52$; $p>0.001$). In 2015, second place was occupied by patients hospitalized with a diagnosis of “Edema, proteinuria and hypertensive disorders during pregnancy (O10-O16)” (18.8%), and in 2022 patients with this pathology took fourth place (14.6%). In second place (21.7%) were patients with “Other maternal diseases classified in other headings (099),” including patients with anemia, endocrine, cardiovascular and other diseases. In 2015, patients with this pathology occupied only fourth place, accounting for 10.3%. Third place in 2015 was occupied by pregnant patients hospitalized due to abortion and ectopic pregnancy (O00 - O08), amounting to 11.5%. And in 2022, third place was occupied by patients with “Menstrual cycle disorders (N91–N95).” Moreover, their share increased from 10.3% in 2015 to 15.3% in 2022 ($t = 4.58$, $p < 0.001$). In 2015, patients from this nosological group took fourth place. It is necessary to note the increase in both the absolute number and the proportion of women hospitalized with diagnoses included in the nosological group “Other maternal diseases from other headings (O99).” Their number increased from 24 people in 2015 to 116 people. in 2022 (4.8 times), and the share - from 7.1% to 21.7% (3.1 times) - $p< 0.001$.

With an almost equal number of people hospitalized for neoplasms (17 in 2015 and 16 in 2022), their share during this period decreased from 5.0% to 3.0%. The proportion of patients with diagnoses included in the heading “Medical care for the mother in connection with the condition of the fetus, amniotic cavity and possible difficulties in delivery (O30–O48)” decreased insignificantly (from 3.5% to 2.1%; $p > 0.05$), although the absolute number of hospitalizations for these reasons remained virtually unchanged.

A small proportion of all hospitalized patients for emergency reasons in 2015 and 2022 were patients with inflammatory diseases of the female genital organs (2.3% and 2.2%) and non-inflammatory diseases of the female genital organs (1.2% and 3. 4 %).

Of particular note is the significant decrease in the proportion of women hospitalized due to a normal pregnancy. The maximum number and maximum proportion of such patients remained from 2015 to 2018. Since 2019, there has been a decrease in the proportion of patients hospitalized by antenatal clinic doctors for a normal pregnancy, their share decreased from 8.4% in 2018 to 2.5% in 2019 and to 1.7% in 2022 ($t= 4.48$; $p< 0.001$). The identified dynamics are associated with a decrease in the birth rate (Table 5.6).

Thus, the study of the features of the organization of medical care for obstetrics and gynecology patients in the settings of antenatal clinics during the observation period (2015-2022) allowed us to conclude:

- about an increase in the number of female population attached to the an antenatal clinic by 12.3%, including women of fertile age by 9.7%, which led to an increase in the number of visits to the antenatal clinic by 19.0%, including at home by 29.8%;

- about a significant increase in the absolute number of emergency hospitalizations of patients with reference from the antenatal clinic (more than 1.5 times, by 57.3%) and the number of hospitalizations per 1,000 women (by 48.1%);

- about the change (increase) in the age composition of hospitalized patients: since 2016, first place was occupied by patients aged 30-39 years, and in 2022, women in this age group accounted for almost half (49.0%) of hospitalized patients;

- on the nosological composition of patients hospitalized on an emergency basis by referral from antenatal clinic doctors: first place (74.4%, 2022) was taken by patients sent to the hospital for pregnancy, childbirth and the postpartum period (class XV according to ICD -10), second (20.9%) - with diseases of the genitourinary system (class XIV according to ICD-10);

- The significant decrease in the proportion of women hospitalized due to a normal pregnancy deserves special attention: their share decreased from 8.4% (2018) to 2.5% (2019) and to 1.7% (2022).

As a result, during the observation period, 2.9 thousand cases were urgently sent for hospitalization in the direction of the antenatal clinic, among which the pathology

of pregnant women predominated ($p<0.01$) (74.4%, 2022). This is one of the most significant groups of patients requiring special attention, care and proper medical care.

The data obtained indicate, on the one hand, positive dynamics in solving the country's demographic problems - the growth of the female population of fertile age, which opens up prospects for increasing the birth rate; on the other hand, the need to improve obstetric and gynecological services, ensuring accessibility and quality of medical care. In this regard, the problem of resolving personnel issues of antenatal clinics that ensure the solution of these problems is important.

5.3. Special aspects of organizing the work of an inpatient emergency department for obstetrics and gynecology patients

As the present study showed, a significant proportion of patients admitted to EMC hospital for obstetrics and gynecology emergency indications did not require medical care on round-the-clock beds, both in terms of the severity of their condition and the need for specialized therapeutic and diagnostic measures. Low periods of hospitalization of patients with a predominance of patients in need of short-term medical care were noted: every fifth (20.4%) was in the hospital for less than 1 day, 38.9% - within 1 day, 54.2% - up to 3 days. Almost every fifth (22.9%) patient admitted as an emergency received an adequate (necessary and sufficient) volume of medical care in an inpatient emergency department (on an outpatient basis or in overnight emergency beds); the proportion of these patients may be significantly higher due to the characteristics of the condition of incoming patients (mostly satisfactory condition).

Since 2010-2011, inpatient emergency departments (IEMCD) began to be created in multidisciplinary emergency hospitals. And patients who do not require long-term treatment in a specialized bed can be referred to these departments.

As a result, the current state of multidisciplinary EMC hospitals requires the development of new models and principles for organizing the treatment and diagnostic process in order to optimize the use of available resources (Manukovsky V.A. et al., 2023). In this regard, some technological aspects of an inpatient emergency department

functioning should be taken into account. The current stage of development of the EMC system is characterized by the improvement of its provision in an emergency and urgent form, including the hospital stage of emergency medical care. This process is regulated by the Procedure for the provision of emergency, including emergency specialized medical care (Order of the Ministry of Health of Russia dated June 20, 2013 No. 388n). Foreign and domestic experience shows that the optimal option for organizing the reception of emergency patients is to create an inpatient emergency department at the hospital stage (emergency department, inpatient emergency medical care department, IEMCD). The continuity of care at the pre-hospital and hospital stages, their organizational interaction is associated with the presence of a unified diagnostic and treatment technology for the provision of medical care, regardless of the type of disease, injury or poisoning, age and social status of the patient. IEMCD are organized as a structural unit of multidisciplinary hospitals with a bed capacity of at least 400 beds, subject to daily round-the-clock admission of at least 50 patients (victims).

The operating technology of the inpatient EMC department involves medical triage of the incoming flow of patients according to the severity of the patient's condition, their infectious and social danger to others; early syndrome treatment; hospitalization of patients with signs of a threat to life and health (or the risk of their development); dynamic observation to clarify the diagnosis and short-term treatment.

The types of emergency medical care beds are determined by order of the Ministry of Health and Social Development of the Russian Federation dated May 17, 2012 No. 555n "On approval of the nomenclature of hospital beds according to medical care profiles" and include short-stay EMC beds (for diagnosis, observation and treatment of the patient for up to 3 days) and beds EMC for daily stay (for diagnosis, observation and treatment of the patient for up to 1 day) (Fig. 5.4).

International experience in organizing work at the hospital stage of EMC has made it possible to highlight the following main provisions of the concept of creating IEMCD in a multidisciplinary hospital:

- providing organizational algorithms for the work of IEMCD, ensuring rational logistics for patients and staff in 24/7/365 mode (architectural and planning solution,

emergency medical care beds, staff, equipment, medicines and medical products); it is extremely important to have a modern, compactly located diagnostic service, geographically close to the flow of incoming patients (victims);

- carrying out medical triage of patients (victims) in IEMCD settings, identifying patient flows (depending on the severity of their condition);

- use of diagnostic and treatment algorithms for the provision of medical care at IEMCD (in accordance with the allocated patient flows), ensuring efficiency, consistency and quality of medical services;

- dynamic observation to monitor the patient's condition and clarify the diagnosis in the conditions of IEMCD ;

- short-term treatment of patients (victims) who do not require specialized inpatient treatment (including high-intensity magnetic therapy), in the conditions of IEMCD;

- readiness to provide EMC at the pre-hospital stage by mobile EMC teams of the department (if they are available in the structure of the unit), including providing medical evacuation.

The subsequent distribution of examined patients is carried out taking into account the severity of their condition, ensuring continuity and consistency in the provision of medical care. According to indications for continued treatment, patients are referred:

- to outpatient medical organizations (with an updated diagnosis and recommendations);

- to a general emergency medical department (IEMCD) with emergency beds for daily (up to 24 hours) or short-term (up to 72 hours) stay - for additional examination, short-term treatment and dynamic observation;

- to specialized departments of a multidisciplinary hospital for the type of pathology (in this case - obstetrics and gynecology) for examination, treatment and observation by specialist doctors, including the intensive care unit, anti-shock operating room.

Figure 5.4 Structure and tasks of the inpatient emergency department

ОСНОВНЫЕ СТРУКТУРНО-ОРГАНИЗАЦИОННЫЕ ПРИНЦИПЫ
ФУНКЦИОНАЛЬНО-ОРГАНИЗАЦИОННЫЕ ВОЗМОЖНОСТИ
ОЖИДАЕМЫЕ РЕЗУЛЬТАТЫ
АРХИТЕКТУРНО-ПЛАНИРОВОЧНОЕ РЕШЕНИЕ

- СОРТИРОВКА б-х по тяжести сост.
- ЗОНИРОВАНИЕ, разделение потоков (ЗЕЛЕНАЯ, ЖЕЛТАЯ, КРАСНАЯ зоны)
- РАЦИОНАЛЬНОЕ ДВИЖЕНИЕ ПОТОКОВ ПАЦИЕНТОВ

Увеличение доли амбулаторных пациентов до 40% и более в целях снижения необоснованной госпитализации
Современная, круглосуточная, компактно расположенная ДИАГНОСТИЧЕСКАЯ СЛУЖБА, территориально приближенная к поступающим пациентам

- ОПЕРАТИВНЫЙ круглосуточный режим диагностики в соответствии с ПОРЯДКАМИ организации и СТАНДАРТАМИ оказания мед. помощи

Повышение интенсивности работы стационара в целом: за счет увеличения

BASIC STRUCTURAL AND ORGANIZATIONAL PRINCIPLES
FUNCTIONAL AND ORGANIZATIONAL CAPABILITIES
EXPECTED RESULTS
ARCHITECTURAL PLANNING SOLUTION

- SORTING patients by severity of condition
- ZONING, flow separation (GREEN, YELLOW, RED zones)
- RATIONAL MOVEMENT OF PATIENT FLOWS

Increasing the proportion of outpatients to 40% or more in order to reduce unnecessary hospitalization
Modern, 24-hour, compactly located DIAGNOSTIC SERVICE, geographically close to incoming patients

- OPERATIVE round-the-clock diagnostic mode in accordance with the organization’s PROCEDURES and STANDARDS for the provision of medical care

Increasing the intensity of work of the hospital as a whole: by increasing the flow of patients,

потока пациентов, повышения интенсивности и эффективности работы отделений	increasing the intensity and efficiency of the departments
КОЙКИ СМП СУТОЧНОГО И КРАТКОСРОЧНОГО ПРЕБЫВАНИЯ ▪ ДИНАМИЧЕСКОЕ НАБЛЮДЕНИЕ И ЛЕЧЕБНО-ДИАГНОСТИЧЕСКИЕ МЕРОПРИЯТИЯ в экстренной и неотложной форме на койках суточного и краткосрочного пребывания	EMC BEDS FOR DAILY AND SHORT-TERM STAY ▪ DYNAMIC OBSERVATION AND TREATMENT AND DIAGNOSTIC MEASURES in emergency and emergency form on daily and short-stay beds
Повышение эффективности работы специализированных отделений стационара: сокращение непрофильной госпитализации, повышение оперативной активности, использование ВМТ, повышение эффективности работы специализированной койки	Increasing the efficiency of specialized hospital departments: reducing non-core hospitalization, increasing operational activity, using high-intensity magnetic therapy, increasing the efficiency of a specialized bed

Triage of patients according to severity involves identifying the main flows of patients, which correspond to the corresponding zones in the IEMCD (Manukovsky V.A. et al., 2023). The following streams are distinguished:

I *(red)* - “resuscitation” patients - intensive care unit, anti-shock operating room - disturbance of the vital functions of the body or their rapid increase, to eliminate which emergency treatment measures or surgical interventions are necessary;

II *(yellow)* - “bed-ridden” patients - IEMCD room - condition of moderate severity, moderately severe disturbances of the vital functions of the body, not posing a threat to life;

III *(green)* “walking” patients - IEMCD waiting room - satisfactory condition, minor and compensated functional disorders or their absence.

Departments created according to this principle allow for more efficient:

- to sort patients according to the severity of their condition, infectious and social safety, which ensures rational use of diagnostic and treatment potential, priority provision of emergency assistance to those in need;

- ensure the availability of a diagnostic base for urgent diagnosis of pathological conditions and prompt medical care;

- provide short-term observation, diagnosis and treatment of patients who do not require long-term (specialized) inpatient treatment;

- reduce the flow of non-specialized patients to specialized departments of a multidisciplinary hospital, thereby helping to optimize their mode of operation and increase the efficiency of use of beds and resources.

Taking into account the general-profile nature of the emergency medical care beds of IEMCD, in relation to obstetrics and gynecology patients, it is important to take into account the specific features of the treatment and diagnostic process for these patients, namely: the presence of separate wards and examination rooms that need to be deployed in the conditions of IEMCD. In addition to emergency medical services doctors - the main staff of the IEMCD, there must be specialized staff - obstetricians-gynecologists, who can be full-time employees of the IEMCD or consultants involved in organizing the diagnostic and treatment process for specialized patients. A significant part of these issues is determined by the volume of relevant patient flow. One thing is obvious - the provision of medical care, and more precisely, emergency obstetrics and gynecology medical care in the conditions of IEMCD, must be organized 24/7, including diagnostic examinations.

5.4. Economic aspects of hospitalization of obstetrics and gynecology patients in an emergency hospital

The goal of state policy in the field of healthcare is to improve the health status of the population by ensuring the availability of quality medical care by creating legal, economic and organizational conditions for the provision of medical services. Improving emergency medical care, including in inpatient settings, is one of the main objectives of the state health care development program aimed at increasing the accessibility and quality of medical care (Barsukova I.M. et al., 2022abc).

The economic aspects of the activities of hospitals in the context of the development of market relations and the compulsory medical insurance system continue to remain relevant and are of great interest when analyzing their work.

As our previous studies presented earlier showed, a significant proportion of patients admitted to the EMC hospital for emergency reasons did not require medical

care in round-the-clock beds; low hospitalization periods were noted for obstetrics and gynecology patients who were admitted to EMC hospital on an emergency basis, with a predominance of patients in need of short-term medical care. These data allowed us to take a different look at the system of organizing medical care for this category of patients.

The mechanism for ensuring accessibility and quality of medical care is the balance between the required volumes, structure of medical care, conditions for its provision and the financial resources necessary for this.

The question arises about the advisability of using specialized obstetric and gynecological beds for short-stay patients who do not need high-tech diagnostic and treatment methods. And the second question is about the possibility and feasibility of using emergency beds to provide medical care to this category of patients.

In accordance with modern requirements, medical care is provided to the patient in accordance with the procedure for providing medical care, based on clinical recommendations, as well as taking into account the standards of medical care (Federal Law of November 21, 2011 N 323-FZ (as amended and supplemented) “On fundamentals of protecting the health of citizens in the Russian Federation"). An important guideline in organizing the work of a medical organization is also Order of the Ministry of Health of the Russian Federation dated May 10, 2017 N 203n “On approval of criteria for assessing the quality of medical care.” At the same time, the territorial features of the organization of the diagnostic and treatment process in a medical organization are not so important if the main priorities of the diagnostic and treatment work are met - accessibility and quality of medical care, and there are no violations of the rights of the insured person under compulsory medical insurance (CMI) to receive high-quality, timely medical care.

The amount of tariffs for medical services is determined annually by the tariff agreement of the Program of State Guarantees for the provision of free medical care to citizens of the Russian Federation.

On the territory of St. Petersburg, a general tariff agreement is being developed and concluded in accordance with Federal Laws of November 29, 2010 No. 326-FZ

“On Compulsory Health Insurance in the Russian Federation”, dated November 21, 2011 No. 323-FZ “On the Fundamentals of Protecting the Health of Citizens in the Russian Federation ", the Rules of compulsory medical insurance, approved by order of the Ministry of Health of Russia dated February 28, 2019 No. 108n, the annual laws of St. Petersburg "On the Territorial program of state guarantees of free provision of medical care to citizens in St. Petersburg..." and other regulatory legal acts of the Russian Federation and St. Petersburg. It determines and establishes the procedure for applying methods of payment for medical care (MC); the size and structure of tariffs for payment for medical care provided within the framework of the Territorial Compulsory Medical Insurance Program, which is part of the Territorial Program of State Guarantees for the free provision of medical care to citizens in St. Petersburg, as well as the procedure and conditions for their application; the amount of non-payment or incomplete payment of costs for the provision of medical care, as well as the payment by a medical organization of fines for failure to provide, untimely provision or provision of medical care of inadequate quality.

In St. Petersburg, payment for the provision of specialized medical care in inpatient conditions in the compulsory health insurance system is carried out in accordance with clinical and statistical groups, for each of which the “General Tariff Agreement”, approved annually, determines the terms of treatment. Payment at the full rate is made if the actual length of the patient’s stay in the hospital is at least 80% of the established duration of treatment. In this regard, hospitals are not interested in reducing the length of inpatient treatment.

At the same time, an analysis of the average duration of hospital stay for patients with a number of gynecological diseases indicates significant differences in these indicators and the duration of inpatient treatment of patients with this pathology, established in accordance with clinical and statistical groups (Table 5.7).

Thus, in 2019, patients with salpingoophoritis were in hospital for an average of 6.4 days, which is 53.3% of the treatment time for this clinical and statistical group. The duration of specialized medical care in a hospital setting for the clinical and

statistical group “endometriosis” is 14 days, and the actual period of treatment in city hospitals is 6.8 days (48.6% of the recommended period).

Table 5.7 Comparison of the average duration of treatment in city hospitals for patients with gynecological diseases and the duration of treatment for the corresponding clinical and statistical group

CSG code	Diagnosis	Duration of treatment according to CSG, days	80% of the duration of treatment according to CSG, days	Average duration of treatment in St. Petersburg hospitals, days	% of treatment duration according to CSG
361010	Acute salpingoophoritis	12	10	6.4	53.3
361020	Chronic salpingoophoritis	12	10		
361040	Endometriosis	14	12	6.8	48.6
361120	Polyp, erosion	3	3	2.9	96.7
361160	Hypermenorrhea	10	8	2.9	29.0
361150	Female infertility	8	7	2.9	36.3

The most significant difference is between the recommended and actual periods of hospital treatment of patients for hypermenorrhea (respectively, 10 days and 2.9 days; 29.0% of the recommended period) and for infertility (respectively, 8 days and 2.9 days; 36.3% of recommended period).

For inpatient emergency departments, different tariffs apply, and a bed-day in these departments is more expensive, since a significant amount of treatment and diagnostic services, determined by the standards of medical care, are performed within one day (for hospitalization on daily stay beds) or in for 3 days (if hospitalized in short-stay beds).

Of course, if it is necessary to conduct a short-term examination and treatment in a hospital setting, and there are no indications for hospitalization in specialized gynecological departments, IEMCD is more preferable. The human resources and treatment and diagnostic capabilities of the IEMCD allow a diagnosis to be made in a short time and a set of treatment measures to be carried out with subsequent continuation of treatment on an outpatient basis.

Tariffs for emergency medical care of the IEMCD and the procedure for their application are presented in Appendix F. The specified tariffs are applied for a completed case of patient treatment in an inpatient emergency department, provided that at least 3 laboratory and 2 instrumental studies are performed. They are approved for use in certain medical organizations in the city operating as emergency hospitals. The approved tariffs for emergency obstetrics and gynecology medical care of the IEMCD are presented in Table. 5.8.

Table 5.8 Tariffs for payment of medical services to patients in the conditions of emergency medical care (in emergency medical beds) - Appendix No. 4 to the General Tariff Agreement of St. Petersburg for 2021 (fragment)

Tariff code	Name of CS, adult	Tariff, rubles	Duration	Daily tariff
521021	Providing assistance to gynecological patients (injured) on a dynamic observation bed	6,847.10	1	6,847.10
521023	Providing assistance, observation and short-term treatment of gynecological patients (victims) in a short-stay bed	11,363.10	3	6,847.10

In the course of this study, cases of specialized obstetric and gynecological care were analyzed not only in the gynecological departments of the I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Medicine, but also in the emergency department, in terms of their medical, social and financial-economic efficiency, the amounts of payment for treatment cases and the profitability of medical care in the compared departments were compared.

Using the methodology of an organizational experiment, we tried to compare the standard tariffs for specialized medical care in the “obstetrics and gynecology” profile for short-stay patients (with stays of up to 3 days) who received medical care in the beds of specialized departments (according to invoices issued for payment), and emergency medical care tariffs for inpatient emergency departments approved by the tariff agreement of St. Petersburg, which could be used for this category of patients (subject to their treatment in the IEMCD). To do this, we calculated and compared

economic indicators for patients actually treated during the year (2021) (n=1367, complete sample), using 2 calculation options (tariffs).

Comparative characteristics of tariffs for payment for cases of medical care in the “obstetrics and gynecology” profile with stays of up to 3 days when using specialized medical care tariffs and emergency medical care tariffs, as well as their financial efficiency are presented in Table. 5.9 and 5.10.

As calculations have shown, the use of emergency medical care tariffs for patients in need of urgent and emergency medical care (n = 1367), in the conditions of IEMCD, allows one to obtain a significantly superior financial effect, exceeding the effect from the standard use of specialized medical care tariffs by 2.7 times (more by 7.5 million rubles, by 173.4%, $p<0.01$).

Based on the invoices issued in the compulsory medical insurance system, it should be noted that 1-day hospitalization was required for 35.3% of patients with a short-term (up to 3 days) stay, 2 days – 29.6%, 3 days – 25.9% of patients. There are no statistically significant differences between these periods ($p>0.05$). An overnight hospital stay was observed significantly less frequently (2 or more times, $p<0.01$) and was observed in 9.2% of cases.

The results of the implementation of the technology of an inpatient emergency department for obstetric and gynecological patients using the appropriate tariffs for emergency medical care in the conditions of IEMCD in 2022 showed their effectiveness: tariff 521021 - Providing assistance to gynecological patients (victims) in a dynamic observation bed (6,847.1 rubles) - was provided to 219 patients with an overnight stay, the economic effect amounted to 1,499,514.9 rubles. (Table 5.11).

Table 5.9 Comparative characteristics of payment for cases of obstetrics and gynecology medical care with stays of up to 3 days using tariffs for specialized and emergency medical care (fragment)

Patient profile number	Left the department	ICD-10	Duration of patient's stay in bed	Tariff set for specialized medical care (payment for bed days)		Alternative tariff for emergency medical care in inpatient settings (payment for bed days)	
				tariff code	sum	tariff code	sum
1	2	3	4	5	6	7	8
71*	GD № 1	O03.9	2	361180	2,701.80	521023	9,105.10
110*	GD № 1	O02.0	2	361170	2,386.40	521023	9,105.10
354*	GD № 1	O02.0	1	361170	1,193.20	521023	6,847.10
400*	GD № 1	N70.0	3	361010	5,654.10	521023	11,363.10
429*	GD № 1	O02.0	2	361170	2,386.40	521023	9,105.10
519*	GD №2	N92.4	3	361160	5,243.40	521023	11,363.10
533*	GD №2	N84.0	0	361120	1,001.50	521021	6,847.10
668*	GD №2	O20.0	3	462130	9,135.90	521023	11,363.10
712*	GD № 1	O02.0	3	361170	3,579.60	521023	11,363.10
778*	GD №2	N92.5	2	361160	3,495.60	521023	9,105.10
832*	GD № 1	O02.0	2	361170	2,386.40	521023	9,105.10
950*	GD №2	O20.0	3	462130	9,135.90	521023	11,363.10
962*	GD №2	N83.2	0	361110	915.30	521021	6,847.10
1075*	GD №2	N83.2	3	361260	4,885.50	521023	11,363.10
1130*	GD № 2	O20.0	3	462130	9,135.90	521023	11,363.10
1145*	GD № 1	O02.0	1	361170	1,193.20	521023	6,847.10
1215*	GD № 1	E28.8	3	361160	5,243.40	521023	11,363.10
1273*	GD № 1	E28.8	3	361160	5,243.40	521023	11,363.10
1598*	GD № 1	O02.0	1	361170	795.50	521023	6,847.10
1893*	GD № 1	O02.0	3	361170	3,579.60	521023	11,363.10
2006*	GD №2	O02.0	3	361170	3,579.60	521023	11,363.10
2048*	GD № 1	O03.9	1	361180	900.60	521023	6,847.10
2215*	GD №2	N92.5	1	361160	1,747.80	521023	6,847.10
2249*	GD №2	N92.4	1	361160	1,165.20	521023	6,847.10
2255*	GD №2	N92.5	1	361160	1,165.20	521023	6,847.10
…	…	…	…	…	…	…	…
n=1367							
Итого (за 1 год, руб.)					**4,344,376.8**		**11,876,639.0**
Разница (столб. 8 и 6), руб.							7,532,262.2
Разница (столб. 8 и 6), %							173.4

*- patient profile number is partially hidden

GD - gynecological department (GD No. 1 or GD No. 2)

Table 5.10 Economic characteristics of obstetrics and gynecology patients flow using tariffs for specialized and emergency medical care

Indicator	Row №	Length of hospital stay (days)				Total
		0 (до сут.)	**1**	**2**	**3**	
Column №	1	2	3	4	5	6
N, abs. val.	2	126	483	404	354	**1,367**
Share of patients,%	3	9.2	35.3	29.6	25.9	100.0
Tariffs for specialized medical care (exhibited)						
Financial effect, rubles	4	394,587.9	679,271.1	1,340,414.7	1,930,103.1	**4,344,376.8**
Financial effect, %	5	9.1	15.6	30.9	44.4	100.0
Tariffs for emergency medical care (alternative)						
Financial effect, rubles	6	867,134.1	3,306,836.9	3,707,226.6	3,995,441.4	**11,876,639.0**
Financial effect, %	7	7.3	27.8	31.2	33.6	100.0

Table 5.11 Results of the implementation of the technology of an inpatient emergency department for obstetric and gynecological patients using
the corresponding emergency medical care tariffs (results of 2022)

Patient profile number	Date of admission	Date of discharge	ICD-10	Profile	Profile name	Department	Invoice issued, rubles
1	2	3	4	5	6	7	8
63*	03.01.21	03.01.21	N92.5	521021	Providing assistance to gynecological patients (injured) on a dynamic observation bed	IEMCD	6,847,1
238*	11.01.21	11.01.21	N70.0	521021		IEMCD	6,847.1
709*	29.01.21	29.01.21	N92.5	521021		IEMCD	6,847.1
730*	30.01.21	30.01.21	N92.5	521021		IEMCD	6,847.1
989*	10.02.21	10.02.21	N92.5	521021		IEMCD	6,847.1
995*	10.02.21	10.02.21	N92.5	521021		IEMCD	6,847.1
1036*	12.02.21	12.02.21	N92.5	521021		IEMCD	6,847.1
1158*	18.02.21	18.02.21	N92.4	521021		IEMCD	6,847.1
1239*	22.02.21	22.02.21	N70.0	521021		IEMCD	6,847.1
1315*	25.02.21	25.02.21	N70.1	521021		IEMCD	6,847.1
1316*	25.02.21	25.02.21	N70.0	521021		IEMCD	6,847.1
1376*	28.02.21	28.02.21	N70.0	521021		IEMCD	6,847.1
1438*	03.03.21	03.03.21	C56.0	521021		IEMCD	6,847.1
…	…	…	…	…	…	…	…
8384*	30.12.21	30.12.21	N70.0	521021	The same	IEMCD	6,847.1
n=219							
Total				**521021**	The same	IEMCD	**1,499,514.9**

*- patient profile number is partially hidden

An analysis of the nosological structure of obstetrics and gynecology patients with a daily stay in IEMCD is presented in Table. 5.12.

Table 5.12 Analysis of the nosological structure of obstetrics and gynecology patients with a daily stay in IEMCD, 2022

ICD-10		Indicator	2022	Total (ICD classes)	
				abs. val.	%
II.	Total, C,	Abs. val.	7	23	10.5
(C00-D48)[1]	including	%	100.0		
	C 53.0	Abs. val.	2		
		%	28.6		
	C 56.0	Abs. val.	5		
		%	71.4		
	Total, D,	Abs. val.	16		
	including	%	100.0		
	D 25.9	Abs. val.	16		
		%	100.0		
IV.	E 28.8	Abs. val.	6	6	2.7
(E00-E90)[2]		%	100.0		
XIV.	Total,	Abs. val.	180	180	82.2
(N00-N99)[3]	including	%	100.0		
	N 70.0	Abs. val.	80		
		%	44.4		
	N 70.1	Abs. val.	12		
		%	6.7		
	N 83.8	Abs. val.	3		
		%	1.7		
	N 84.0	Abs. val.	1		
		%	0.6		
	N 92.1	Abs. val.	7		
		%	0.6		
	N 92.3	Abs. val.	2		
		%	1.1		
	N 92.4	Abs. val.	8		
		%	4.4		
	N 92.5	Abs. val.	64		
		%	35.6		
	N 92.6	Abs. val.	3		
		%	1.7		

End of figure 5.12

XV.	Total,	Abs. val.	10	10	4.6
(O00-O99)[4]	including	%	100.0		
	O 02.2	Abs. val.	9		
		%	90.0		
	O 21.0	Abs. val.	1		
		%	10.0		
Total		Abs. val.		219	100.0

Note to Table 5.12

[1] II. Neoplasms (C00-D48): C53 Malignant neoplasm of the cervix; C56 Malignant neoplasm of the ovary; D25 Leiomyoma of the uterus;

[2] IV. Diseases of the endocrine system, nutritional disorders and metabolic disorders (E00-E90): E28 Ovarian dysfunction;

[3] XIV. Diseases of the genitourinary system (N00-N99): N70 Salpingitis and oophoritis; N 83 Non-inflammatory lesions of the ovary, fallopian tube and broad ligament of the uterus; N 84 Polyp of female genital organs; N 92 Heavy, frequent and irregular menstruation;

[4] XV. Pregnancy, childbirth and the puerperium (O00-O99): O02 Other abnormal products of conception; O03 Spontaneous abortion; O21 Excessive vomiting of pregnancy.

Among the admitted patients, patients with ICD class XIV pathology - Diseases of the genitourinary system (N00-N99) predominated ($p < 0.01$): they amounted to 82.2%. The most common ($p<0.01$) nosological forms in patients with an extra-day stay in the obstetrics and gynecology profile at IEMCD in 2022 were: N70 (Salpingitis and oophoritis; 36.5%) and N92 (Heavy, frequent and irregular menstruation; 29.2%); together they accounted for 65.8% of admitted patients in this category. Apparently, these patients, despite the emergency nature of the hospitalization, due to the severity of their condition (disease), did not require treatment in the beds of specialized hospital departments (high-tech methods of diagnosis and treatment, round-the-clock medical supervision), but required clarification of the diagnosis, consultation with a specialist, a minimum scope of examination to exclude a life- and health-threatening condition, as well as recommendations for continuing treatment on an outpatient basis.

It should be noted that the possibility of using emergency medical care tariffs for patients with short-term stays who do not require high-tech diagnostic and treatment methods motivates the medical organization to quickly, in the shortest possible time, carry out the entire range of diagnostic and treatment measures necessary for the patient in order to ensure one of the conditions for using the tariff – time interval (up to 24

hours - on a daily EMC bed, up to 72 hours - on a short-stay EMC bed). This is fully consistent with the principles of organizing the work of EMC (in this case, in inpatient settings, in IEMCD), ensures a high turnover of beds in IEMCD, accessibility and quality of medical care (Barsukova I.M. et al., 2022bc).

5.5. Mechanisms for improving the organization of rescue and emergency gynecological care in a multidisciplinary emergency hospital

In the course of the study to improve the organization of emergency and emergency gynecological care in a multidisciplinary emergency hospital, a detailed analysis of resource, operational and financial management was carried out in accordance with the triad: structure (resources) – process (technology) – result.

Based on the results of the work in accordance with the purpose, objectives and program of the study, aspects and prospects for improving the system of providing medical care to obstetric and gynecological patients in an emergency hospital are presented, which have scientific, methodological and practical significance (Table 5.13).

Table 5.13 Aspects and prospects for improving the system of providing medical care to obstetric and gynecological patients in an emergency hospital

Indicators	Aspects and prospects for improving the system of providing medical care to obstetric and gynecological (OG) patients in an emergency hospital (EMC)
Structure of EMC hospital	Inpatient emergency department - IEMCD (reception and diagnostic with bed capacity): - daily stay (up to 24 hours) - short stay (up to 72 hours) Specialized OG departments
Beds of EMC hospital	Emergency medical care in the structure of IEMCD*: - daily stay (up to 24 hours) - short stay (up to 72 hours) Profile specialized in the structure of specialized OG departments

End of figure 5.13

Medical personnel	Emergency doctors Senior doctors of IEMCD Medical specialists (obstetricians-gynecologists, staff or consultants) Doctors of diagnostic services (according to indications)
Algorithm of actions upon admission of patients to EMC hospital	Medical triage of patients by severity of condition, social and epidemiological safety, highlighting flows (green, yellow, red) Registration Appointment (initial examination) with an emergency physician Treatment and diagnostic measures (using general clinical methods) Consultative assistance from a specialist obstetrician-gynecologist (according to indications, using OG diagnostic methods)* Determination of indications for hospitalization in a specialized (OG or other profile) department (based on diagnostic results) Providing medical care to outpatients (not requiring hospitalization) Dynamic observation on emergency beds* Diagnostics and short-term treatment in emergency beds* - daily stay (up to 24 hours) - short stay (up to 72 hours) Referral to specialized OG departments (according to indications)
Compulsory medical insurance tariffs	Emergency medical care in the structure of IEMCD: - daily stay (up to 24 hours) - short stay (up to 72 hours) Profile specialized for providing medical care to patients in specialized OG departments

*taking into account the characteristics of the patient population - the organization of separate wards, examination and diagnostic rooms for patients with OG profile

Mechanisms for improving obstetric and gynecological care in an emergency hospital and an Algorithm for routing OG patients in an inpatient setting are presented in Fig. 5.5 and 5.6.

Figure 5.5 Mechanisms for improving obstetric and gynecological (OG) care in an emergency hospital (EMC)

Высокая социальная и демографическая значимость проблемы	High social and demographic significance of the problem
Особенности контингента пациентов стационара СМП (экстренно госпитализированные; краткосрочность пребывания; более 90% - в удовл. состоянии, не нуждаются в ВМП)	Aspects of the patient population of EMC hospital (emergency hospitalized; short stay; more than 90% are in satisfactory condition, do not need high-tech care)
Снижение ресурсов и объемов специализированной АГ помощи	Reduced resources and volumes of specialized OG care
Стационарное отделение СМП	Inpatient department of EMC
Механизмы совершенствования мед. помощи пациентам АГ профиля	Mechanisms for improving medical assistance to OG patients
Общие	Common
Медицинская сортировка поступающих по нуждаемости в лечебно-диагностических мероприятиях, социальной и эпидемиологической безопасности	Medical triage of admissions according to the need for treatment and diagnostic measures, social and epidemiological safety
Высокая оперативность оказания медицинской помощи	High efficiency of medical care
Специализированные	Specialized
Подготовка специалистов СМП по актуальным вопросам акушерства и гинекологии	Training of EMC specialists on current issues of obstetrics and gynecology
Привлечение профильных специалистов (акушеров-гинекологов) для оказания	Involvement of specialized specialists (obstetricians-gynecologists) to provide

помощи на койках СМП
Создание условий для пациентов АГ профиля в рамках СтОСМП (отдельных палат, смотровых кабинетов и др.)

assistance on EMC beds
Creation of conditions for OG patients within the framework of IEMCD (separate wards, examination rooms, etc.)

A technological worksheet has been developed for improving the organization of emergency and urgent gynecological care in a multidisciplinary emergency hospital, including activities of a supervisory, regulatory, legal, organizational and economic nature (Table 5.14).

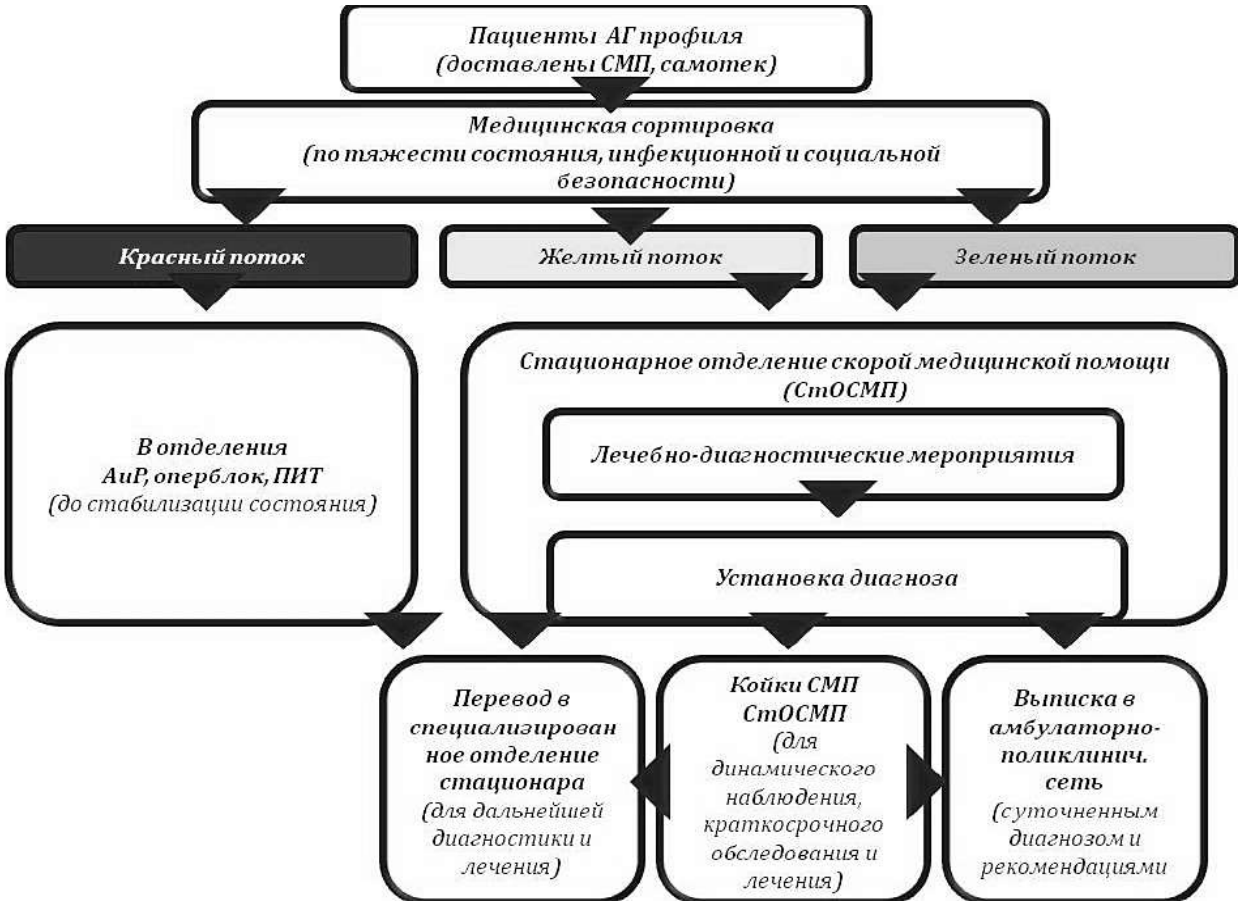


Figure 5.5 Algorithm for routing obstetrics and gynecology (OG) patients in inpatient settings

Пациенты АГ профиля (доставлены в СМП, самотек)
Медицинская сортировка (по тяжести состояния, инфекционной и социальной безопасности)
Красный поток
Желтый поток
Зеленый поток

OG patients (delivered to the emergency room, by themselves)
Medical triage (by severity of condition, infectious and social safety)

Red Stream
Yellow stream
Green stream

В отделения АиР, оперблок, ПИТ (до стабилизации состояния)	To the A&R departments, operating unit, ICU (until the condition stabilizes)
Стационарное отделение скорой медицинской помощи (СтОСМП)	Inpatient emergency medical care department (IEMCD)
Лечебно-диагностические мероприятия	Treatment and diagnostic measures
Установка диагноза	Establishing a diagnosis
Перевод в специализированное отделение стационара (для дальнейшей диагностики и лечения)	Transfer to a specialized hospital department (for further diagnosis and treatment)
Койки СМП, СтОСМП (для динамического наблюдения, краткосрочного обследования и лечения)	EMC and IEMCD beds (for dynamic observation, short-term examination and treatment)
Выписка в амбулаторно-поликлиническую сеть (с уточненным диагнозом и рекомендациями)	Discharge to an outpatient clinic network (with an updated diagnosis and recommendations)

As a result of the study, organizational measures were developed to improve medical care for patients with gynecological pathology in an emergency hospital:

- scientific and methodological provisions and conclusions are substantiated,
- practical recommendations are given,
- development prospects are presented,
- algorithms for routing patients in a multidisciplinary EMC hospital were developed,
- a technological worksheet has been developed to improve medical care for patients with gynecological pathology in an emergency hospital,
- a training manual was prepared (and published),
- research results are introduced into the practical work of scientific, medical and educational organizations (acts of implementation).

Table 5.14 Technological worksheet for improving the organization of emergency and urgent gynecological care in a multidisciplinary emergency hospital

Aim: to develop a set of measures to improve the organization of emergency and emergency gynecological care in a multidisciplinary emergency hospital		
Activities	Aims	Technology and result
1. Supervisory activities	audit of existing and under construction in a constituent entity of the Russian Federation EMC hospitals with OG beds	- analysis of the structure and technology of medical care, hospital performance (taking into account indicators of accessibility and quality of medical care, patient satisfaction with the level of medical care, efficiency of use of beds and resources); - special attention to providing medical care to patients with OG profile
2. Regulatory events	- Bringing the regulatory legal support of emergency medical services hospitals in accordance with: - Order of the Ministry of Healthcare of the Russian Federation dated June 20, 2013 No. 388n "On approval of the Procedure for providing emergency, including emergency specialized medical care" - Order of the Ministry of Health and Social Development dated May 17, 2012 No. 555n "On approval of the nomenclature of beds according to medical care profiles" - Order of the Ministry of Healthcare of the Russian Federation dated May 10, 2017 N 203n "On approval of criteria for assessing the quality of medical care" - Decree of the Government of the Russian Federation dated 01.06.2021 N 852 "On licensing of medical activities..."	- development of local regulatory legal acts of EMC hospital (regulations on IEMCD, job descriptions of IEMCD personnel, algorithms for providing medical care in IEMCD conditions, etc.) for the provision of medical care for hypertension profile - adjustment of the profile order (bed stock) of the MO - adjustment of the staffing table of the MO

End of figure 5.14

3. Organizational events	formation of IEMCD with the placement of a reception and diagnostic unit and emergency medical beds (daily and short-term stay), introduction of IEMCD technology for patients with OG profile	- development of an architectural and planning project with provision of zoning (red, yellow and green zones), medical triage, diagnostic observation in emergency beds, taking into account the characteristics of the patient population (organization of separate wards, examination and diagnostic rooms for patients with OG profile); - development of treatment and diagnostic algorithms and optimal logistics for patients and MO medical personnel; - organization of IEMCD staff training
4. Economic events	resolving issues of financial and economic support	- approval of inpatient EMC tariffs for patients with OG profile - adjustment of the planned state task of the MO

Abbreviations:

EMC - emergency medical care,

OG - obstetric-gynecological,

IEMCD - inpatient emergency medical care department,

MO - medical organization

The results of the study are fully implemented in the work of the State Budgetary Institution “I.I. Janelidze St. Petersburg Research Institute" of the St. Petersburg Health Committee:

- in its scientific activities - in the development of research work on improving emergency medical care at the pre-hospital and hospital stages (scientific unit - Department of Emergency Medical Care Organization);

- in clinical work carried out in a new diagnostic and treatment building, commissioned in December 2022;

- in educational activities - in the training of specialists (emergency medical services, obstetricians-gynecologists, health care managers) in the conditions of the Institute’s Training Center.

The organizational measures developed during the study to improve medical care for patients with gynecological pathology in an emergency hospital have positive quantitative and qualitative effects; they are aimed at:

Quantitative effect -

- for the rational use (optimization) of emergency hospital beds (due to the efficiency of organizing the treatment and diagnostic process, reducing the time of patients’ stay in the hospital when deploying daily and short-stay emergency medical beds, freeing up specialized beds);

- to increase the economic efficiency of an emergency hospital (using emergency medical care tariffs in inpatient settings);

Qualitative effect -

- to increase the availability and quality of medical care, satisfaction of patients with OG profile with the level of medical care;

- to improve the technology of medical care - the implementation of diagnostic and treatment algorithms and optimal logistics for patients and emergency hospital staff when providing medical care to patients with gynecological pathology.

Conclusions on Chapter V:

1. Data from the pre-hospital stage of EMC provision indicate a high proportion (93-95%) of hospitalization of patients with obstetric and gynecological pathologies, which is associated with a significant risk of developing life-threatening conditions in this category of applicants and limited treatment and diagnostic capabilities of EMC team personnel; as well as a decrease in the total number of obstetric and gynecological visits (by 20.6%) and emergency hospitalizations to the maternity hospital (by 30.4%) in the pre-hospital emergency departments.

2. The study of the features of the organization of medical care for obstetrics and gynecology patients in antenatal clinics settings during the observation period (2015-2022) allowed us to make conclusions:

- about an increase in the number of female population attached to antenatal clinics by 12.3%, including women of fertile age by 9.7%, which led to an increase in the number of visits to antenatal clinics by 19.0%, including at home by 29.8%;

- about a significant increase in the absolute number of emergency hospitalizations of patients with reference from antenatal clinics (more than 1.5 times, by 57.3%) and the number of hospitalizations per 1,000 women (by 48.1%);

- about the change (increase) in the age composition of hospitalized patients: since 2016, first place was occupied by patients aged 30-39 years, and in 2022, women in this age group accounted for almost half (49.0%) of hospitalized patients;

- about the nosological composition of patients hospitalized on an emergency basis with reference from doctors of the antenatal clinic: first place (74.4%, 2022) was taken by patients referred to the hospital for pregnancy, childbirth and the postpartum period (class XV according to ICD -10), the second (20.9%) - with diseases of the genitourinary system (class XIV according to ICD-10);

- the significant decrease in the proportion of women hospitalized for a normal pregnancy deserves special attention: their share decreased from 8.4% (2018) to 2.5% (2019) and to 1.7% (2022).

3. The current state of multidisciplinary EMC hospitals requires the development of new models and principles for organizing the treatment and diagnostic process in order to optimize the use of available resources. The operating technology of the inpatient EMC department involves medical triage of the incoming flow of patients according to the severity of the patient's condition, their infectious and social danger to others; early syndrome treatment; hospitalization of patients with signs of a threat to life and health (or the risk of their development); dynamic observation to clarify the diagnosis and short-term treatment.

4. The development of inpatient emergency departments opens up new opportunities for providing medical care to obstetrics and gynecology patients. These opportunities have not only promising medical, social, organizational, treatment and diagnostic, but also financial and economic aspects.

5. The use of emergency medical care tariffs for short-term obstetrics and gynecology patients who require urgent and emergency medical care is economically justified and appropriate. This approach makes it possible to obtain the maximum economic effect by reducing the length of hospital stay, high rates of emergency bed turnover, and the rational and efficient organization of the treatment and diagnostic process for obstetric and gynecological patients.

SUMMARY

In the course of the study, all the tasks we set were solved. An analytical review of scientific research on the current state and general problems of providing specialized obstetric and gynecological medical care in emergency medical organizations is presented. The study and generalization of domestic and foreign experience on the topic of the dissertation revealed a variety of approaches to improving organizational mechanisms for the development of systems for providing obstetric, gynecological and emergency medical care. An analysis of the available literature has shown that at the moment in our country and in the world there is a search for concepts, methodologies, and the most relevant areas of innovative development. All these and other aspects are related to the need to improve the management system of emergency medical organizations, including in relation to obstetrics and gynecology patients.

The work examines in a multifaceted manner the issues of organizing medical care for obstetrics and gynecology patients at the pre-hospital and hospital stages who need emergency and emergency medical care. By building a single line of routing of these patients in medical organizations of the city, we practically connected different types of medical care (primary health care, specialized and emergency) in different conditions (outside a medical organization, outpatient and inpatient) and forms (emergency and urgent) of its provision to study the features of organizing this assistance from the perspective of various organizations, to find common problems and patterns. At the same time, the main emphasis was placed on the inpatient emergency department - a new modern technology that ensures the organizational and technological unity of these stages.

Women's health issues are extremely important, as they are directly related to demographic problems in our country - a decrease in the birth rate (over 5 years by 21.6% in the Russian Federation and by 25.4% in St. Petersburg) and population decline (2000-2022). Therefore, one of the current areas for improving reproductive

health is improving the organization of obstetric and gynecological care, increasing its accessibility and quality.

An analysis was carried out of the provision of the population of the Russian Federation and St. Petersburg with obstetrician-gynecological beds and obstetrician-gynecologists (2015 – 2022), which revealed that the provision of medical care in inpatient conditions during pregnancy, childbirth and the postpartum period is carried out on the basis of regional routing schemes, providing for the possibility of a differentiated scope of examination and treatment, taking into account the degree of risk of complications, taking into account the structure, bed capacity of medical organizations, level of equipment, availability of qualified medical personnel and subordination. A study of the dynamics of the number of obstetric and gynecological beds in the Russian Federation (2000-2022) showed that in the country the number of obstetric and gynecological beds decreased by almost a third: gynecological - by 20.9 thousand (-32.4%), for pregnant women, women in labor and postpartum - by 25.1 thousand beds (-32.4%), accordingly, the provision of beds for the female population decreased (per 10,000 female population). An assessment of the dynamics of the use of obstetric and gynecological beds and the level of hospitalization of women in obstetric and gynecological departments of inpatient institutions in St. Petersburg in 2015-2020 indicates a decrease in the number of hospitalizations for beds for pregnant women and women in labor - by 21.3%, for gynecological beds for adults - by 21.3%. by 30.7%. A comparative analysis of the indicators of the use of bed capacity in gynecological departments in hospitals of city and federal subordination indicated a multidirectional redistribution of patients between medical organizations: a decrease in volumetric indicators in city hospitals with an increase in those in federal ones.

An analysis of the personnel composition of doctors in the Russian Federation revealed a slight positive trend in obstetrician-gynecologists: in 2015-2022, their number increased by 1.2% (by 0.5 thousand people, from 24.8 to 43.3 thousand people), and the supply of personnel - by 1.9% (from 5.4 to 5.5 per 10,000 population). In St. Petersburg, the number of individual obstetricians and gynecologists in the “pre-pandemic” period (2015-2019) increased from 1,559 to 1,697 (+ 8.8%), and the

provision of the female population with doctors of this specialty increased from 5.44 to 5.76 per 10,000 women (+ 5.9%). A study of the dynamics of the number of full-time positions in all medical organizations of city and federal subordination for 2015-2020 showed that, starting from 2017, there has been a clear trend toward an increase in the total number of full-time positions of obstetricians and gynecologists (+6.3%, 2015-2020). During 2015-2020, almost 3/5 of all full-time positions of doctors in this specialty were concentrated in medical organizations and outpatient departments. The number of full-time positions of obstetricians-gynecologists in medical organizations of St. Petersburg, providing medical care in inpatient and outpatient settings, also has a positive trend (+6.3%, 2015-2020), however, the shortage of these specialists remains, the staffing of regular positions (by individuals) is 77.9% (2020). The share of obstetricians and gynecologists who had qualification categories exceeds the share of doctors of all specialties who had a qualification category at the end of the year (53.5% and 46.6%, respectively, 2020).

A study of the organizational aspects of hospitalization of obstetric and gynecological patients admitted to a multidisciplinary emergency hospital (2015-2022) allowed us to conclude that about 10% of patients independently seek the necessary medical care without the participation of primary health care organizations and emergency medical care due to the availability of diagnostic resources in inpatient emergency departments, working around the clock; the proportion of these patients may be significantly higher due to the characteristics of the condition of incoming patients (mostly satisfactory). At the same time, a significant proportion of patients admitted to the emergency hospital for emergency indications do not need medical care on round-the-clock beds, both due to the severity of their condition and the need for specialized therapeutic and diagnostic measures; the development of inpatient emergency departments makes it possible to triage incoming patients according to these criteria. Almost every fifth (22.9%) patient admitted as an emergency receives an adequate (necessary and sufficient) volume of medical care in an inpatient emergency department on an outpatient basis or in overnight emergency beds; The updated diagnosis and examination results ensure continuity in the provision of

medical care and allow continued treatment and medical supervision in an outpatient clinic network. It should also be noted that there is a decrease in non-core hospitalization, including the admission of obstetric and gynecological patients under the guise of surgical (by 22.8%) and therapeutic (by 17.7%) pathology, which indicates an increase in the quality of the diagnostic process at the pre-hospital stage and in IEMCD settings.

Analysis of time intervals showed that the vast majority (77.6%) of patients are admitted to the hospital between 9.00 and 21.00, i.e. during the opening hours of outpatient clinics (polyclinics, antenatal clinics), referring patients for emergency hospitalization, and a decrease in their share at night, which indicates an increase in the quality of work of outpatient clinics.

The average time a patient spent in the emergency room was about 2 hours; in dynamics (2015-2022) there was a decrease in this indicator; At the same time, what is typical for the work of a modern hospital emergency department is not so much the initial examination and registration of an incoming patient, but rather a whole range of organizational (medical triage, dynamic observation) and treatment and diagnostic measures related to determining the level and place of medical care. Low hospitalization periods were noted for obstetrics and gynecology patients, admitted to the emergency hospital on an emergency basis, with a predominance of patients in need of short-term medical care: the vast majority of patients (95.7%) were in the hospital for up to 10 days, of which every fifth (20.4%) - less than 1 day, 38.9% - within 1 day, 54.2% - up to 3 days, 71.7% - less than 5 days; There is a trend towards a further reduction in length of hospital stay.

An analysis of the medical and statistical characteristics of obstetrics and gynecology patients admitted to a multidisciplinary emergency hospital (2015-2022) allowed us to conclude that there was a predominance of patients aged 25-39 years (they made up more than half of the incoming flow - 54.6%), which is associated with the highest workload on the reproductive sphere of women precisely during this age period; during the observation period, there was an increase in the proportion of patients in older age groups and an increase in the average age of patients admitted to

the emergency hospital for emergency reasons. The vast majority (88.1%; $p<0.01$) of patients were admitted with pathology of classes XIV and XV of diseases: XIV. Diseases of the genitourinary system (N00-N99) – 16.9 thousand patients, 46.3%; XV. Pregnancy, childbirth and the postpartum period (O00-O99) – 15.2 thousand patients, 41.8%. The most common nosological forms were: Bleeding in early pregnancy (O20, 28.2%), Heavy, frequent and irregular menstruation (N92, 12.3%), Uterine leiomyoma (D25, 7.6%); in the dynamics of 2015-2019 there is an increase in the number of patients with pathology of class XIV by 12.6% ($r = 0.7$) with a slight decrease in the number of patients of class XV (by 11.6%), as well as an increase in the number of patients with pathology of a non-inflammatory nature with a decrease in that with pathology of an inflammatory nature.

Patients with an unfavorable (fatal) outcome are 35.4±5.7 people per year, and the mortality rate is 0.5±0.03%; the main cause was malignant neoplasms of the female genital area (vagina, uterus, ovaries and mammary glands); the predominance of patients in the older age group (≥ 55 years) is clearly visible - they amounted to 69.5%, a trend of increasing age was noted: the number of patients in the group 40-54 decreased by 41.7% over 5 years, and in the group over 55 years old - increased by 28.6%. 84.2% of these patients upon admission were hospitalized in the anesthesiology and intensive care departments (due to the severity of their condition); the time of stay in the EMC hospital for a significant part of the patients (27.7%) was less than 24 hours (pre-daily mortality).

An analysis of the pre-hospital stage of emergency medical care showed a decrease in the total number of obstetric and gynecological visits (by 20.6%) and emergency hospitalizations to the maternity hospital (by 30.4%), which correlates with demographic characteristics in our country, including a decrease in the population of childbearing age and birth rates, as well as a high percentage of hospitalization of patients with obstetric and gynecological pathologies (93-95%), associated with a significant risk of developing life-threatening conditions in this category of applicants and extremely limited treatment and diagnostic capabilities of EMC medical personnel.

Data from the antenatal clinic indicated positive demographic dynamics in a specific (Nevsky) district of St. Petersburg: an increase in the number of attached female population by 12.3%, including women of fertile age by 9.7%, which led to an increase in the number of visits by 19.0%, including at home by 29.8%. At the same time, there was a significant increase in the absolute number of emergency hospitalizations of patients referred to the antenatal clinic (more than 1.5 times, by 57.3%) and the number of hospitalizations per 1,000 women (by 48.1%). It should be noted that there is a change (increase) in the age composition of hospitalized patients: since 2016, first place was occupied by patients aged 30-39 years, and in 2022, women in this age group accounted for almost half (49.0%) of hospitalized patients. In the structure of the nosology of patients, the first place (74.4%, 2022) was taken by those hospitalized, sent to the hospital for pregnancy, childbirth and the postpartum period (class XV according to ICD -10), the second (20.9%) - with diseases of the genitourinary system (class XIV according to the ICD -10). Of particular note is the significant decrease in the proportion of women hospitalized for normal pregnancy: their share decreased from 8.4% (2018) to 2.5% (2019) and to 1.7% (2022).

An analysis of the economic aspects of hospitalization of obstetrics and gynecology patients in an emergency hospital allowed us to conclude that the possibility of using emergency medical care tariffs for patients with a short stay who do not require high-tech methods of diagnosis and treatment motivates a medical organization quickly, in the shortest possible time carry out the entire range of diagnostic and treatment measures necessary for the patient in order to ensure one of the conditions for using the tariff - time interval (up to 24 hours - on a daily EMC bed, up to 72 hours - on a short-stay EMC bed). This fully complies with the principles of organizing the work of emergency medical care (in this case, in inpatient settings, in IEMCD), ensures a high turnover of beds in IEMCD, accessibility and quality of medical care. Therefore, the use of emergency medical care tariffs for short-stay obstetrics and gynecology patients who require urgent and emergency medical care is economically justified and appropriate. This approach makes it possible to obtain the maximum economic effect by reducing the length of hospital stay, high rates of

emergency bed turnover, and rational and efficient organization of the diagnostic and treatment process.

Thus, the current state of multidisciplinary EMC hospitals requires the development of new models and principles for organizing the treatment and diagnostic process in order to optimize the use of available resources. The operating technology of the inpatient EMC department involves medical triage of the incoming flow of patients according to the severity of the patient's condition, his infectious and social danger to others; early syndromic treatment; hospitalization of patients with signs of a threat to life and health (or the risk of their development); dynamic observation to clarify the diagnosis and short-term treatment. The development of inpatient emergency departments opens up new opportunities for providing medical care to patients in the field of obstetrics and gynecology. Moreover, these opportunities have not only promising medical, social, organizational, treatment and diagnostic, but also financial and economic aspects.

In the course of the study to improve the organization of rescue and emergency gynecological care in a multidisciplinary emergency hospital, a detailed analysis of resource, operational and financial management was carried out in accordance with the triad: structure (resources) – process (technology) – result. Based on the results of the work in accordance with the purpose, objectives and program of the study, features and prospects for improving the system of providing medical care to obstetric and gynecological patients in an emergency hospital are presented, which have scientific, methodological and practical significance. A technological worksheet has been developed for improving the organization of rescue and emergency gynecological care in a multidisciplinary emergency hospital, including activities of a supervisory, regulatory, legal, organizational and economic nature, the qualitative and quantitative effects of these activities have been noted.

CONCLUSIONS

1. An important social and demographic problem of modern Russia is the low birth rate, which does not ensure the reproduction of the population: in the Russian Federation over 5 years the birth rate decreased by 21.6%, and in St. Petersburg - by 25.4%, the natural increase in the population of the Russian Federation since 2016 has a negative value.

Over the period 2015-2022, the number of obstetric and gynecological beds in the country decreased significantly: gynecological beds - by 20.9 thousand (-32.4%), for pregnant women, women in labor and postpartum - by 25.1 thousand beds (-32.4%), respectively, and provision of beds for the female population (per 10,000 female population). In St. Petersburg, the total number of specialized beds decreased by 16.4%, the number of hospitalizations in beds for pregnant women and women in labor - by 21.3%, in gynecological beds for adults - by 30.7%.

The analysis of the personnel composition of obstetricians and gynecologists in the Russian Federation revealed a slight positive trend: in 2015-2022, their number increased by 1.2% (by 0.5 thousand people, from 24.8 to 43.3 thousand people), and the staffing level increased by 1.9% (from 5.4 to 5.5 per 10,000 population). In St. Petersburg, positive dynamics was also noted; during the observation period, almost 3/5 of all full-time positions of doctors in this specialty were concentrated in medical organizations and outpatient departments; At the same time, the shortage of obstetricians and gynecologists in hospitals remained; staffing of regular positions (by individuals) was 77.9%.

2. Analysis of organizational aspects of obstetric and gynecological patients hospitalization allowed us to conclude:

- a significant proportion of patients do not require medical care on round-the-clock beds, both due to the severity of their condition and the need for specialized therapeutic and diagnostic measures; almost every fifth (22.9%) patient receives an

adequate (necessary and sufficient) volume of medical care in an EMC hospital, on an outpatient basis or in overnight EMC beds;

- the average time of a patient's stay in IEMCD (reception and diagnostic) is about 2 hours (121.2±117.0 minutes); in dynamics there is a decrease in the indicator; At the same time, a feature of the work of a modern hospital EMC department is not so much the initial examination and registration of an incoming patient, but rather a whole range of organizational (medical triage, dynamic observation) and treatment and diagnostic measures related to determining the indications for hospitalization in a specialized bed, as well as the level and location of medical care;

- low periods of hospitalization of obstetrics and gynecology patients were noted, with a predominance of patients in need of short-term medical care: every fifth (20.4%) was in the hospital for less than 1 day, 38.9% - within 1 day, 54.2% - up to 3 days; there is a trend towards a further reduction in length of hospital stay.

3. Analysis of medical and statistical characteristics of obstetric and gynecological patients allowed us to conclude:

- about the predominance of patients aged 25-39 years (54.6%), which is associated with the greatest burden on the reproductive sphere of women during this age period; there was an increase in the proportion of patients of older age groups and middle age who were admitted to the EMC hospital for emergency indications;

- the vast majority (88.1%) of patients were admitted with pathology of classes XIV and XV of diseases (Diseases of the genitourinary system (N00-N99), 46.3%) and Pregnancy, childbirth and the postpartum period (O00-O99), 41.8%) ; the most common nosological forms were: Bleeding in early pregnancy (O20, 28.2%), Heavy, frequent and irregular menstruation (N92, 12.3%), Uterine leiomyoma (D25, 7.6%); over time, there is an increase in the number of patients with class XIV pathology (by 12.6%), as well as an increase in the number of patients with non-inflammatory pathology, with a decrease in that with inflammatory pathology;

- patients with an unfavorable (fatal) outcome are 35.4±5.7 people per year, and the mortality rate is 0.4-0.6% in the absence of pronounced dynamics of the indicator during the observation period; the main cause was malignant neoplasms of the female

genital area; patients of the older age group (≥ 55 years) predominated (69.5%), a trend of increasing age was noted: the number of patients in the group over 55 years old increased by 28.6%; 84.2% of these patients were admitted in serious condition; the length of stay in the emergency hospital for a significant proportion of patients (27.7%) was less than 24 hours (pre-daily mortality).

4. Data from the pre-hospital stage of EMC provision indicate a high proportion (93-95%) of hospitalization of patients with obstetric and gynecological pathologies, which is associated with a significant risk of developing life-threatening conditions in this category of applicants and limited treatment and diagnostic capabilities of EMC team personnel; a decrease in the total number of obstetric and gynecological visits (by 20.6%) and emergency hospitalizations to the maternity hospital (by 30.4%).

The study of the aspects of organizing the provision of medical care to obstetrics and gynecology patients in the conditions of a antenatal clinic (AC) during the observation period (2015-2022) allowed us to conclude:

- about a significant increase in the absolute number of emergency hospitalizations of patients in the direction of gastrointestinal tract (more than 1.5 times, by 57.3%) and the number of hospitalizations per 1,000 women (by 48.1%);

- about the change (increase) in the age composition of hospitalized patients: since 2016, first place was occupied by patients aged 30-39 years, and in 2022, women in this age group accounted for almost half (49.0%) of hospitalized patients;

- about the nosological composition of patients: first place (74.4%) was taken by patients sent to the hospital for pregnancy, childbirth and the postpartum period (class XV according to ICD-10), second (20.9%) - with diseases of the genitourinary system (class XIV according to ICD-10); the significant decrease in the proportion of women hospitalized due to a normal pregnancy deserves special attention: their share decreased from 8.4% (2018) to 2.5% (2019) and to 1.7% (2022).

The current state of multidisciplinary EMC hospitals requires the development of new models and principles for organizing the treatment and diagnostic process in order to optimize the use of available resources. The development of inpatient emergency departments opens up new opportunities for providing medical care to

patients in the field of obstetrics and gynecology. These opportunities have not only promising medical, social, organizational, treatment and diagnostic, but also financial and economic aspects.

5. The use of emergency medical care tariffs for obstetrics and gynecology patients with a short-term stay, in need of medical care in an emergency and emergency form, is economically justified and feasible, allows for maximum economic effect while reducing the length of stay in the hospital, high rates of turnover of emergency medical care beds, rational and operational organization of the diagnostic and treatment process.

6. Based on the results of the study, organizational measures have been developed to improve medical care for patients with obstetric and gynecological pathology in an emergency hospital: the aspects and prospects for the development of the system of providing medical care to obstetric and gynecological patients in an emergency hospital have been presented, an Algorithm for routing patients and a Technological worksheet for improving the organization of emergency gynecological care in a multi-profile emergency hospital have been developed, a training manual has been prepared.

PRACTICAL RECOMMENDATIONS

To the Ministry of Healthcare of the Russian Federation:

- accept for consideration the Technological worksheet for improving medical care for patients with obstetric and gynecological pathology in an emergency hospital, developed during the study.

To territorial health care authorities of the constituent entities of the Russian Federation, territorial compulsory medical insurance (CMI) funds:

- to provide, when developing territorial health care programs, a set of measures to improve the work of emergency hospitals: bringing it into compliance with Order of the Ministry of Healthcare of the Russian Federation dated June 20, 2013 No. 388n "On approval of the Procedure for the provision of emergency, including emergency specialized medical care," including the introduction of technology of inpatient emergency department, organization of training for this department, development and implementation of emergency medical care tariffs for the inpatient stage of emergency medical care, including for payment of medical care for obstetric and gynecological patients;

To the chief physicians of inpatient emergency medical organizations:

- take into account the methodological materials developed during the study: aspects and prospects for the development of the system of providing medical care to obstetric and gynecological patients in an emergency hospital, the Algorithm for routing patients and the Technological worksheet for improving the organization of emergency and emergency gynecological care in a multidisciplinary emergency hospital;

- in order to organize the treatment and diagnostic process for obstetrics and gynecology patients, to provide for the need to deploy separate wards, examination and diagnostic rooms in the IEMCD with the possibility of providing medical care to patients in emergency beds for daily and short-term stays; in the staffing table, in

addition to emergency medical doctors - the main staff of the IEMCD, ensure the presence of specialized specialists (obstetricians-gynecologists), who can be full-time employees of the IEMCD or consultants involved in organizing the diagnostic and treatment process for specialized patients; ensure the organization of the treatment and diagnostic process in the IEMCD on a 24/7 basis.

To heads of educational organizations:

- to improve the level of training of emergency medical services specialists (doctors and paramedics) providing medical care outside a medical organization (pre-hospital stage) and in hospital settings on issues of obstetrics and gynecology;

- when training obstetricians-gynecologists and health care managers, include in educational programs the issues of providing medical care in an inpatient emergency department.

PROSPECTS FOR THE TOPIC FURTHER DEVELOPMENT

Prospects for further development of the topic include monitoring the implementation of the mechanisms proposed during the study to improve medical care for patients with obstetric and gynecological pathology in an emergency hospital, implementing the activities of the Technological worksheet with an assessment of the efficiency of emergency hospitals (medical-statistical, organizational and economic) in the dynamics of subsequent years.

A promising scientific development could be an in-depth study of the issues of accessibility (efficiency) and quality of work of obstetrics and gynecology departments and emergency medical care at the pre-hospital and inpatient stages from the point of view of ensuring continuity in the provision of medical care, organizational, technological and information interaction in the provision of medical care to obstetrics and gynecology patients.

LIST OF ABBREVIATIONS

OC – outpatient clinic

AG – obstetrics and gynecology (profile)

WHO – World Health Organization

CAS – City Ambulance Station

GD – gynecological department

GTA – General Tax Agreement

AC – antenatal clinic

MIS – medical information system

MA – medical assistance

RI – Research Institute

AMI – acute myocardial infarction

CMI – compulsory medical insurance

RF – Russian Federation

EMC – emergency medical care

IEMCD – inpatient emergency department

CMI TF – territorial fund of compulsory medical insurance

FSO – form of statistical observation

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APPENDICES

Appendix A. Worksheet of a medical care case study in obstetrics and gynecology patient in a multidisciplinary hospital

Patient code _____

No.	Hallmark name	Code
1.	Date of admission: year month day	1
2.	Age (number of completed years at the time of admission)	2
3.	Place of permanent residence: country	3
4.	City/town/locality	4
		5
5.	District	6
6.	Name of the medical organization that referred	7
	the patient to the hospital	8
		9
		10
7.	Time of admission hour min.	11
		12
8.	Diagnosis of the referring organization	13
		14
		15
9.	Condition on admission: severe, moderate,	16
	Satisfactory	17
10.	Time spent in the admission-diagnostic department	18
	from hour min. till hour min.	19
11.	Diagnosis of the admission department	20
		21
		22
12.	Time of diagnosis	23
13.	From the reception department sent to the department (profile)	24
14.	Information about transfers: department profile and dates of transfers	25
		26
		27
15.	Clinical diagnosis	28
		29
		30
16.	Surgery details: date	31
17.	Name (code) of the surgery	32
		33
18.	Final diagnosis	34
		35
		36
19.	CSG code	37
		38
20.	Tariff for CSG	39
21.	Discharge date	41
		42

Appendix B. Worksheet for studying the case of emergency hospitalization of a patient at the antenatal clinic

Patient code _____

No.	Hallmark name	Code
1.	Date of referral for admission: year	1
2.	month	2
3.	day	3
4.	day of the week	4
5.	Age (number of completed years at the time of admission)	5
5.	Place of permanent residence: country	6
		7
		8
6.	City/town/locality	9
		10
7.	St. Petersburg district	11
		12
8	District No.	13
9.	Doctor's name	14
10.	Diagnosis of the referring organization	15
		16
		17

Appendix C. Groups (levels) of antenatal clinics providing primary specialized health care in the field of obstetrics and gynecology

Groups (levels)	Characteristics of medical organizations	Population served
First group (level)	antenatal clinics (office clinics) at central district hospitals and district hospitals, obstetric hospitals of the first group (level), providing primary health care to women during pregnancy, the postpartum period, and for gynecological diseases	20 000 - 50 000
Second group (level)	antenatal clinics stand alone or as part of second group (level) maternity hospitals, city hospitals and clinics	50 000 - 70 000
	antenatal clinics as part of interdistrict perinatal centers	от 70 000 до 100 000 человек
Third group (level)	consultative and diagnostic departments of perinatal centers, republican, regional, regional, district maternity hospitals, maternal and child health centers, independent centers for family health and reproduction, adolescent reproductive health centers	----------

List of medical organizations providing medical care to women during pregnancy and the postpartum period, women with gynecological diseases, in accordance with groups (levels) of outpatient medical care in St. Petersburg (Appendix 9 to the order of the Health Committee dated December 3, 2019 N 644-r)

First group (level)

No.	Name of medical organization
1.	St. Petersburg State Budgetary Healthcare Institution "Children's City Clinic No. 71" Antenatal Clinic No. 7 (by agreement)
2.	St. Petersburg State Budgetary Healthcare Institution "City Clinic N 99" Obstetrics and Gynecology Department (by agreement)
3.	St. Petersburg State Budgetary Healthcare Institution "City Clinic N 63" Obstetrics and Gynecology Department (by agreement)
4.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 54" Antenatal Clinic No. 10 (by agreement)
5.	St. Petersburg State Budgetary Healthcare Institution "City Hospital No. 40" Polyclinic Department No. 68 Antenatal Clinic (by agreement)
6.	St. Petersburg State Budgetary Healthcare Institution "City Hospital No. 40" Polyclinic Department No. 69 Antenatal Clinic (by agreement)
7.	St. Petersburg State Budgetary Healthcare Institution "City Hospital No. 40" Polyclinic Department No. 70 Obstetrician-gynecologist's office (by agreement)
8.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 6" Antenatal Clinic No. 31 (by agreement)
9.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 46" Antenatal Clinic No. 6 (by agreement)
10.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 34" Antenatal Clinic No. 34 (by agreement)

End of figure First group (level)

11.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 32" Antenatal Clinic No. 14 (by agreement)
12.	St. Petersburg State Budgetary Healthcare Institution "City Clinic N 122" Antenatal Clinic (by agreement)
13.	St. Petersburg State Budgetary Healthcare Institution "Nikolaevskaya Hospital" Antenatal Clinic (by agreement)
14.	St. Petersburg State Budgetary Healthcare Institution "City Clinic N 60 of Pushkin District" Polyclinic Department "Shushary" Antenatal Clinic (by agreement)
15.	St. Petersburg State Budgetary Healthcare Institution "City Clinic N 60 of Pushkin District" Polyclinic Department N 67 Antenatal Clinic (by agreement)
16.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 106" Antenatal Clinic No. 24 (by agreement)
17.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 106" Antenatal Clinic No. 25 (by agreement)

Second group (level)

18.	St. Petersburg State Budgetary Healthcare Institution "Antenatal Clinic No. 18" (by agreement)
19.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 4" Antenatal Clinic No. 16 (by agreement)
20.	St. Petersburg State Budgetary Healthcare Institution "Antenatal Clinic No. 22" (by agreement)
21.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 112" Antenatal Clinic No. 29 (by agreement)
22.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 96" Antenatal Clinic No. 32 (by agreement)
23.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 86" Antenatal Clinic No. 39 (by agreement)
24.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 88" Antenatal Clinic No. 13 (by agreement)
25.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 43" Antenatal Clinic No. 20 (by agreement)
26.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 23" Antenatal Clinic No. 36 (by agreement)
27.	St. Petersburg State Budgetary Healthcare Institution "City Clinic N 71" Antenatal Clinic (by agreement)
28.	St. Petersburg State Budgetary Healthcare Institution "City Clinic N 72" Antenatal Clinic (by agreement)
29.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 68" Antenatal Clinic No. 8 (by agreement)
30.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 17" Antenatal Clinic No. 9 (by agreement)
31.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 93" Antenatal Clinic No. 27 (by agreement)
32.	St. Petersburg State Budgetary Healthcare Institution "Antenatal Clinic No. 5" (by agreement)
33.	St. Petersburg State Budgetary Healthcare Institution "Antenatal Clinic No. 33" (by agreement)

End of figure Second group (level)

34.	St. Petersburg State Budgetary Healthcare Institution "City Clinic N 77" Obstetrics and Gynecology Department (by agreement)
35.	St. Petersburg State Budgetary Healthcare Institution "City Clinic N 100" Antenatal Clinic No. 37 (by agreement)
36.	St. Petersburg State Budgetary Healthcare Institution "Antenatal Clinic No. 40" (by agreement)
37.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 49" Antenatal Clinic No. 12 (by agreement)
38.	St. Petersburg State Budgetary Healthcare Institution "City Clinic N 111" Antenatal Clinic No. 11 (by agreement)
39.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 111" Antenatal Clinic No. 15 (by agreement)
40.	St. Petersburg State Budgetary Healthcare Institution "Antenatal Clinic No. 44" (by agreement)
41.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 44" Antenatal Clinic No. 19 (by agreement)
42.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 38" Antenatal Clinic No. 35 (by agreement)
43.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 39" Antenatal Clinic No. 2 (by agreement)
44.	St. Petersburg State Budgetary Healthcare Institution "City Clinic No. 74" Antenatal Clinic No. 43 (by agreement)
45.	St. Petersburg State Budgetary Healthcare Institution "City Perinatal Center N 1" Antenatal Clinic
46.	St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 6 named after V.F. Snegirev" Antenatal Clinic
47.	St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 9" Antenatal Clinic
48.	St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 10" Antenatal Clinic
49.	St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 16" Antenatal Clinic

Third group (level)

50.	Obstetric remote consultation center with visiting anesthesiology and resuscitation teams, consultative and diagnostic department of the St. Petersburg state budgetary healthcare institution "City Perinatal Center No. 1"
51.	Outpatient consultation department ("Center for the Prevention and Treatment of Miscarriage") of the St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 1 (specialized)"
52.	Consultative and diagnostic department (City Obstetric Hematology Center, City Obstetric Center for Endocrine Pathology) of the St. Petersburg State Budgetary Healthcare Institution "V.F. Snegirev Maternity Hospital No. 6"
53.	Outpatient consultative and diagnostic department of the St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 13"
54.	Outpatient department of prenatal diagnostics of the St. Petersburg state budgetary healthcare institution "Maternity hospital No. 17"

End of figure Third group (level)

55.	St. Petersburg State Government Healthcare Institution "Diagnostic Center (Medical-Genetic)"
56.	St. Petersburg State Budgetary Healthcare Institution "Center for Family Planning and Reproduction"
57.	St. Petersburg State Budgetary Healthcare Institution "City Center for Adolescent Reproductive Health "Yuventa"

Appendix D. Groups (levels) of obstetric hospitals providing medical care to women during childbirth and the postpartum period, and newborns

Group (level)	Characteristics of Medical Organizations
First group (level)	obstetric hospitals that do not provide round-the-clock presence of an obstetrician-gynecologist, a neonatologist and an anesthesiologist-resuscitator, as well as medical organizations that include an urgent delivery room
Second group (level)	obstetric hospitals (maternity hospitals (departments), including those profiled by type of pathology), which have in their structure intensive care wards (anesthesiology-resuscitation department) for women and resuscitation and intensive care wards for newborns, as well as inter-district perinatal centers, which have a department of anesthesiology-resuscitation room (intensive care ward) for women (by decision of the head of a medical organization with visiting ambulance teams of anesthesiology-resuscitation department), resuscitation and intensive care wards (departments) for newborns, pathology post for newborns and premature babies (by decision of the head of a medical organization)
Third A group (level)	obstetric hospitals that include an anesthesiology department - intensive care unit for women, a resuscitation and intensive care unit for newborns, a pathology department for newborns and premature babies (II stage of nursing), an obstetric remote consultation center with a telemedicine department, including mobile emergency medical care anesthesiology and intensive care units
Third B group (level)	obstetric hospitals of federal medical organizations providing specialized, including high-tech, medical care to women during pregnancy, childbirth, the postpartum period and newborns, developing and replicating new methods of diagnosis and treatment of obstetric and neonatal pathology and monitoring and providing organizational and methodological support for the activities of obstetric hospitals in the constituent entities of the Russian Federation.

List of medical organizations providing obstetrics and gynecology medical care, depending on the possibility of providing medical care during pregnancy, childbirth and the postpartum period (Appendix 3 to the order of the Health Committee dated December 3, 2019 N 644-r)

Group II	Group III A	Group III B
1. St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 1 (specialized)"	1. St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 18"	1. Federal State Budgetary Institution "V.A. Almazov National Medical Research Center"
2. St. Petersburg State Budgetary Healthcare Institution "Prof. V.F. Snegirev Maternity Hospital No. 6"		2. Federal State Budgetary Educational Institution of Higher Education "St. Petersburg State Pediatric Medical University"
3. St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 9"		
4. St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 10"		
5. St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 13"		
6. St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 16"		
7. St. Petersburg State Budgetary Healthcare Institution "Maternity Hospital No. 17"		
8. St. Petersburg State Budgetary Healthcare Institution "City Hospital No. 33"		
9. St. Petersburg State Budgetary Healthcare Institution "City Hospital of St. Righteous John of Kronstadt"		
10. Federal State Budgetary Institution "D.O. Ott Research Institute of Obstetrics, Gynecology and Reproductology"		
11. Federal State Budgetary Educational Institution of Higher Education "Academician I.P. Pavlov First St. Petersburg State Medical University"		
12. Federal State Budgetary Educational Institution of Higher Education "S.M. Kirov Military Medical Academy"		

Appendix E. Groups (levels) of medical organizations providing specialized medical care to gynecological patients in inpatient settings

MO* groups (levels)	Names of departments and MOs providing specialized services. MC for women with gynecological pathology in inpatient settings	Criteria for determining the stages of medical care for gynecological pathology
First group (level)	Medical institutions providing specialized medical care to women with gynecological pathology in the gynecological wards of surgical departments (with a population of 20,000 to 50,000 people, with the distance to the nearest gynecological hospital being more than 100 km and patient delivery time of more than 60 minutes)	- conditions requiring rescue and emergency medical care; - conditions that require the planned provision of specialized medical care in a volume corresponding to the level of equipment and qualifications of the obstetrician-gynecologist.
	gynecological departments in central district hospitals, city hospitals, departmental hospitals with a population of 50,000 to 70,000 people.	
Second group (level)	departments of city hospitals, specialized gynecological hospitals, city emergency hospitals, maternity hospitals, inter-district perinatal centers, medical units, dispensaries or centers providing specialized medical care in the field of obstetrics and gynecology with a population of 70,000 to 100,000 people served.	- conditions requiring rescue or emergency medical care; - conditions caused by gynecological pathology and requiring the provision of specialized medical care using, among other things, modern medical technologies (endoscopic, and also, if necessary, the involvement of related specialists).
Third A group (level)	gynecological departments of city, regional, regional, republican, district, clinical hospitals, perinatal centers, maternal and child health centers and other medical institutions providing specialized, including high-tech, medical care in the field of obstetrics and gynecology.	- conditions caused by gynecological pathology in combination with concomitant severe somatic pathology, with severe purulent-septic complications of abortion and childbirth; diseases of the pelvic organs, accompanied by a pronounced adhesive process, involving neighboring organs, tumors of the genital organs of large size, of unspecified origin; - conditions requiring the provision of high-tech medical care, using innovative technologies, including for the purpose of preserving and restoring the anatomical and functional state of the reproductive system.
Third B group (level)	gynecological hospitals of federal municipalities, providing specialized, including high-tech, medical care in the field of obstetrics and gynecology, as well as within the framework of clinical testing of methods of prevention, diagnosis, treatment and rehabilitation.	conditions caused by gynecological pathology in combination with concomitant severe somatic pathology, with severe purulent-septic complications of abortion and childbirth; diseases of the pelvic organs, accompanied by a pronounced adhesive process, involving neighboring organs, tumors of the genital organs of large size, of unspecified origin; conditions requiring the provision of high-tech medical care using innovative technologies, including for the purpose of preserving and restoring the anatomical and functional state of the reproductive system. conditions caused by gynecological pathology for the provision of medical care as part of clinical testing of methods of prevention, diagnosis, treatment and rehabilitation.

*MO – medical organization, MC – medical care

List of medical organizations providing medical care to women with gynecological diseases, in accordance with groups (levels) of inpatient medical care in St. Petersburg (Appendix 10 to the order of the Health Committee dated December 3, 2019 N 644-r)

Second group (level)	
1.	St. Petersburg State Budgetary Healthcare Institution "City Hospital No. 9"
2.	St. Petersburg State Budgetary Healthcare Institution "City Hospital No. 20"
3.	St. Petersburg State Budgetary Healthcare Institution "City Geriatric Medical and Social Center"
4.	St. Petersburg State Budgetary Healthcare Institution "City Hospital of St. Righteous John of Kronstadt"
5.	St. Petersburg State Budgetary Healthcare Institution "Nikolaevskaya Hospital"
6.	St. Petersburg State Budgetary Healthcare Institution Clinical Hospital of St. Luke
7.	St. Petersburg State Budgetary Healthcare Institution "City Multidisciplinary Hospital N 2"
8.	St. Petersburg State Budgetary Healthcare Institution "Center for Family Planning and Reproduction"
Third group (level)	
1.	St. Petersburg State Budgetary Healthcare Institution "City Aleksandrovskaya Hospital"
2.	St. Petersburg State Budgetary Healthcare Institution "City Hospital N 26"
3.	St. Petersburg State Budgetary Healthcare Institution "City Clinical Hospital N 31"
4.	St. Petersburg State Budgetary Healthcare Institution "City Hospital No. 40 of Kurortny District" (as agreed)
5.	St. Petersburg State Budgetary Healthcare Institution "City Hospital of the Holy Great Martyr George"
6.	State budgetary institution "I.I. Dzhanelidze St. Petersburg Research Institute of Emergency Medicine"
7.	St. Petersburg State Budgetary Healthcare Institution "City Mariinsky Hospital"
8.	St. Petersburg State Budgetary Healthcare Institution "City Hospital No. 33"
9.	St. Petersburg State Budgetary Healthcare Institution "City Hospital No. 15"
10.	St. Petersburg State Budgetary Healthcare Institution "City Hospital of the Holy Martyr Elizabeth"
11.	St. Petersburg State Budgetary Healthcare Institution "N.A. Semashko City Hospital No. 38

Appendix F. The payment procedure for applying tariffs for emergency medical care in hospital conditions (fragment)

Appendix No. 1
to the General Tariff
agreement for 2021
(Saint Petersburg)

Item number	Tariff name	Name of MOs applying tariffs	Note
19	Tariffs with codes 521011, 521013, 521021, 521023, 521031, 521033, 521041, 521043, 521051, 521053, 521061, 521063, 521071, 521073, 521081, 521083, 521091, 521093, 521101, 521103, 521111, 521113	FSBEI HE I.P. Pavlov PSPbSMU, Ministry of Healthcare of the Russian Federation (780039); State Budgetary Institution of I.I. Dzhanelidze St. Petersburg Research Institute for EMC (780036); St. Petersburg State Budgetary Healthcare Institution "Alexandrovskaya Hospital" (780047); St. Petersburg State Budgetary Healthcare Institution “City Hospital No. 40” (780014); St. Petersburg State Budgetary Healthcare Institution "Elizabeth Hospital" (780006); FSBEI HE I.I. Mechnikov Northwestern State Medical University of the Ministry of Healthcare of the Russian Federation (780018); St. Petersburg State Budgetary Healthcare Institution “City Hospital No. 26” (780004); St. Petersburg State Budgetary Healthcare Institution “City Hospital No. 15” (780045); St. Petersburg State Budgetary Healthcare Institution "City Mariinsky Hospital" (780046) S.M. Kirov Military Medical Academy (780152)	The indicated rates are applied for a completed case of treatment in an inpatient emergency department, provided that at least 3 laboratory and 2 instrumental studies are performed. In the case of transfer of patients (injured) from an inpatient emergency department (reception department) for subsequent treatment to a specialized department of a hospital for further provision of medical care, the specified tariffs do not apply, but tariffs are applied in accordance with the CSG for payment of medical care provided in inpatient medical organizations (section 1 and section 2 of **Appendix No. 4** to the State Customs Service for 2021) and tariffs for anesthesiology, resuscitation benefits, for separately paid services depending on the volume of medical care provided, or tariffs for payment for types of high-tech medical care in accordance with **Appendix No. 4-3** to the CSG for 2021. When providing medical care on an outpatient basis (without hospitalization of the patient, including in a bed for dynamic observation or short-term stay), the “Daily Tariff” is applied in accordance with sections 1 and 2 of **Appendix No. 4** to the CSG for 2021.

Acts of implementation

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ
ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ
ВЫСШЕГО ОБРАЗОВАНИЯ
«ПЕРВЫЙ САНКТ-ПЕТЕРБУРГСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ УНИВЕРСИТЕТ ИМЕНИ АКАДЕМИКА И.П. ПАВЛОВА»
МИНИСТЕРСТВА ЗДРАВООХРАНЕНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ
(ФГБОУ ВО ПСПбГМУ им. И.П. Павлова Минздрава России)

«УТВЕРЖДАЮ»
Проректор по учебной работе
ФГБОУ ВО «ПСПбГМУ им. акад. И.П. Павлова» Минздрава России
_____ / А. И. Яременко /
«11» марта 2022г.

АКТ ВНЕДРЕНИЯ
в учебный процесс Кафедры общественного здоровья и здравоохранения с курсом экономики и управления здравоохранением ФГБОУ ВО «Первый Санкт-Петербургский государственный медицинский университет им. акад. И.П. Павлова» Минздрава России

результатов диссертационной работы
КИМ ИРИНЫ ВАЛЕРЬЕВНЫ
на тему **«Совершенствование организации экстренной и неотложной гинекологической помощи в условиях многопрофильного стационара скорой медицинской помощи»**,
представленной на соискание ученой степени кандидата медицинских наук
по специальностям 14.02.03 – общественное здоровье и здравоохранение,

Наименование предложения:
Разработан и внедрен Алгоритм приема и лечебно-диагностической тактики при оказании медицинской помощи пациентам по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи.

Краткая аннотация: Исследована медицинская помощь в экстренной и неотложной форме, оказываемая пациентам по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи при госпитализации в стационарное отделение скорой медицинской помощи, разработаны механизмы ее совершенствования.

Эффект от внедрения: Повышение качества образовательного процесса при подготовке профильных специалистов.

Место внедрения: Кафедра общественного здоровья и здравоохранения с курсом экономики и управления здравоохранением ФГБОУ ВО «ПСПбГМУ им. акад. И.П. Павлова» Минздрава России.

Форма внедрения: включение материалов в образовательные программы основного и дополнительного профессионального образования при подготовке специалистов (врачей скорой медицинской помощи, организаторов здравоохранения, акушеров-гинекологов) по темам:

1. Совершенствование организации системы оказания скорой медицинской помощи пациентам по профилю «акушерство и гинекология» в Российской Федерации: скорая медицинская помощь в стационарных условиях.
2. Организация приема и совершенствование дальнейшей лечебно-диагностической тактики при ведении пациентов по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи.
3. Контроль доступности и качества скорой медицинской помощи на догоспитальном и госпитальном этапах ее оказания (при оказании помощи пациентам по профилю «акушерство и гинекология»).

Заведующий кафедрой,
з.д.н. РФ, профессор _____ / Н. И. Вишняков /

«УТВЕРЖДАЮ»
Ректор
ФГБОУ ВО «ПСПбГМУ им. акад. И.П. Павлова»
Академик РАН профессор С.Ф. Багненко
«14» марта 2022 г.

АКТ ВНЕДРЕНИЯ
в учебный процесс кафедры скорой медицинской помощи и хирургии повреждений ФГБОУ ВО «Первый Санкт-Петербургский государственный медицинский университет им. академика И.П. Павлова» Минздрава России
результатов диссертационной работы аспиранта 4 года обучения кафедры общественного здоровья и здравоохранения с курсом экономики и управления здравоохранением ФГБОУ ВО «ПСПбГМУ им. акад. И.П. Павлова» Минздрава России
Ким Ирины Валерьевны

на тему «Совершенствование организации экстренной и неотложной гинекологической помощи в условиях многопрофильного стационара скорой медицинской помощи», представленной на соискание ученой степени кандидата медицинских наук по специальности 14.02.03 – общественное здоровье и здравоохранение

Наименование предложения: разработан и обоснован Алгоритм приема и дальнейшей лечебно-диагностической тактики для пациентов по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи.

Краткая аннотация: исследованы организация и содержание медицинской помощи в экстренной и неотложной форме, оказываемой пациенткам по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи при госпитализации в стационарное отделение скорой медицинской помощи, разработаны механизмы ее совершенствования.

Эффект от внедрения: повышение качества образовательного процесса при подготовке профильных специалистов.

Место внедрения: кафедра скорой медицинской помощи и хирургии повреждений ФГБОУ ВО «ПСПбГМУ им. акад. И.П. Павлова» Минздрава России.

Форма внедрения: включение материалов в образовательные программы ординатуры и ДПО при подготовке специалистов (врачей скорой медицинской помощи, организаторов здравоохранения, акушеров-гинекологов) по темам:

1. Совершенствование системы оказания скорой медицинской помощи пациенткам по профилю «акушерство и гинекология» в Российской Федерации: скорая медицинская помощь в стационарных условиях.
2. Алгоритмы приема и дальнейшей лечебно-диагностической тактики пациенток по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи.
3. Контроль доступности и качества скорой медицинской помощи на догоспитальном и госпитальном этапах ее оказания (при оказании помощи пациенткам по профилю «акушерство и гинекология»).

Заведующий кафедрой
профессор И.П. Миннуллин

ПРАВИТЕЛЬСТВО САНКТ-ПЕТЕРБУРГА
КОМИТЕТ ПО ЗДРАВООХРАНЕНИЮ

Государственное бюджетное учреждение
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«УТВЕРЖДАЮ»
Заместитель директора по научной работе
ГБУ «СПб НИИ скорой помощи
им. И.И. Джанелидзе»
Профессор И.А. Вознюк
«29» декабря 2021 г.

29.12.2021 № 3023-р

На № _____

АКТ ВНЕДРЕНИЯ
в научно-исследовательскую деятельность
ГБУ «СПб НИИ СП им. И.И. Джанелидзе»
результатов диссертационной работы
Ким Ирины Валерьевны

на тему «Совершенствование организации экстренной и неотложной гинекологической помощи в условиях многопрофильного стационара скорой медицинской помощи», представленной на соискание ученой степени кандидата медицинских наук по специальностям 14.02.03 – общественное здоровье и здравоохранение

Наименование предложения: Разработан и обоснован Алгоритм приема и дальнейшей лечебно-диагностической тактики для пациентов по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи.

Краткая аннотация: Исследована медицинская помощь в экстренной и неотложной форме, оказываемая пациентам по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи при госпитализации в стационарное отделение скорой медицинской помощи, разработаны механизмы ее совершенствования.

Эффект от внедрения: Повышение доступности и качества скорой медицинской помощи пациентам по профилю «акушерство и гинекология», эффективности работы медицинской организации.

Место внедрения: Отдел организации скорой медицинской помощи и телемедицины (Балтийский центр телемедицины) ГБУ «СПб НИИ скорой помощи им. И.И. Джанелидзе».

Форма внедрения:

Результаты исследования использованы при выполнении НИР Института на тему: «Основные направления повышения доступности и качества оказания скорой медицинской помощи на догоспитальном и госпитальном этапа» (в соответствии с планом НИР ГБУ «СПб НИИ СП им. И.И. Джанелидзе», Решениями Медицинского Совета Комитета по здравоохранению Санкт-Петербурга).

Руководитель подразделения – базы исследования:
Руководитель
Отдела организации скорой медицинской помощи
и телемедицины (Балтийский центр телемедицины), Ученый секретарь
д.м.н. И.М. Барсукова

ПРАВИТЕЛЬСТВО САНКТ-ПЕТЕРБУРГА
КОМИТЕТ ПО ЗДРАВООХРАНЕНИЮ

Государственное бюджетное учреждение
«Санкт-Петербургский научно-исследовательский институт скорой помощи им. И. И. Джанелидзе»
(ГБУ СПб НИИ СП им. И.И.Джанелидзе)

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ИНН 7816058093 КПП 781601001
ОКПО 01967075 ОГРН 1037835021135

«УТВЕРЖДАЮ»
Главный врач
ГБУ «СПб НИИ скорой помощи
им. И.И. Джанелидзе»
к.м.н. А.С. Повторов
«29» декабря 2021 г.

29.12.2021 № 3021-р

На № _____

АКТ ВНЕДРЕНИЯ
в практику лечебной работы
ГБУ «СПб НИИ СП им. И.И. Джанелидзе»
результатов диссертационной работы

Ким Ирины Валерьевны

на тему «Совершенствование организации экстренной и неотложной гинекологической помощи в условиях многопрофильного стационара скорой медицинской помощи», представленной на соискание ученой степени кандидата медицинских наук по специальностям 14.02.03 – общественное здоровье и здравоохранение

Наименование предложения: Разработан и обоснован Алгоритм приема и дальнейшей лечебно-диагностической тактики для пациентов по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи.

Краткая аннотация: Исследована медицинская помощь в экстренной и неотложной форме, оказываемая пациентам по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи при госпитализации в стационарное отделение скорой медицинской помощи, разработаны механизмы ее совершенствования.

Эффект от внедрения: Повышение доступности и качества скорой медицинской помощи пациентам по профилю «акушерство и гинекология», эффективности работы медицинской организации.

Место внедрения: Стационарное отделение скорой медицинской помощи (приемно-диагностическое), Отделение скорой медицинской помощи (краткосрочного пребывания) ГБУ «СПб НИИ скорой помощи им. И.И. Джанелидзе».

Форма внедрения: алгоритм внедрен в практику лечебной работы стационара.

Руководитель подразделения – базы исследования:
Руководитель
Отдела организации скорой медицинской помощи
и телемедицины «Балтийский центр телемедицины»,
д.м.н. И.М. Барсукова
Заведующий Стационарным отделением скорой медицинской помощи
(приемно-диагностическое) С.В. Столярчук
Заведующий Отделением скорой медицинской помощи
(краткосрочного пребывания) Д.Л. Корбут

ПРАВИТЕЛЬСТВО САНКТ-ПЕТЕРБУРГА
КОМИТЕТ ПО ЗДРАВООХРАНЕНИЮ

Государственное бюджетное учреждение
Санкт-Петербургский научно-исследовательский
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ОГРН 1037835021135

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«УТВЕРЖДАЮ»
Заместитель директора по научной работе
ГБУ «СПб НИИ скорой помощи
им. И.И. Джанелидзе»
Профессор И.А. Вознюк
«14» декабря 2021 г.

АКТ ВНЕДРЕНИЯ
в учебный процесс Учебного центра
ГБУ «СПб НИИ СП им. И.И. Джанелидзе»
результатов диссертационной работы
Ким Ирины Валерьевны

на тему «Совершенствование организации экстренной и неотложной гинекологической помощи в условиях многопрофильного стационара скорой медицинской помощи», представленной на соискание ученой степени кандидата медицинских наук по специальностям 14.02.03 – общественное здоровье и здравоохранение

Наименование предложения: Разработан и обоснован Алгоритм приема и дальнейшей лечебно-диагностической тактики для пациентов по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи.

Краткая аннотация: Исследована медицинская помощь в экстренной и неотложной форме, оказываемая пациентам по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи при госпитализации в стационарное отделение скорой медицинской помощи, разработаны механизмы ее совершенствования.

Эффект от внедрения: Повышение качества образовательного процесса при подготовке профильных специалистов.

Место внедрения: Учебный центр ГБУ «СПб НИИ скорой помощи им. И.И. Джанелидзе».

Форма внедрения: включение материалов в образовательные программы ординатуры и ДПО при подготовке специалистов (врачей скорой медицинской помощи, организаторов здравоохранения, акушеров-гинекологов) по темам:

1. Совершенствование системы оказания скорой медицинской помощи в Российской Федерации: скорая медицинская помощь в стационарных условиях.
2. Алгоритмы приема и дальнейшей лечебно-диагностической тактики пациентов для по профилю «акушерство и гинекология» в стационаре скорой медицинской помощи.
3. Контроль доступности и качества скорой медицинской помощи на догоспитальном и госпитальном этапах ее оказания.

Руководитель подразделения – базы исследования:
Руководитель Учебного центра
д.м.н. И.М. Барсукова
Специалист по учебно-методической работе Учебного центра Н.К. Соловьева

Санкт-Петербургское
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«УТВЕРЖДАЮ»
Заместитель главного врача по
медицинской части
СПб ГБУЗ «Женская консультация № 33»
Малых Е.В.

«18» 01 2021 г.

АКТ
О ВНЕДРЕНИИ РЕЗУЛЬТАТОВ В ПРАКТИКУ
ЛЕЧЕБНОЙ РАБОТЫ

1. **Наименование предложения**: Прогностическое значение расширения зоны стационар-замещающих технологий в условиях женской консультации.
2. **Краткая аннотация:** Произведено расширение зоны стационар-замещающих технологий в виде оставления под динамическим наблюдением пациенток с острой гинекологической патологией, расцененных во время амбулаторного приема как нуждающиеся в госпитализации, в условиях дневного стационара в течении 2 часов с проведением базового клинико-лабораторного обследования и симптоматической терапии.
3. **Эффект от внедрения**: 10% пациенток по результатам наблюдения и получения результатов лабораторных анализов были направлены обратно на участок, минуя госпитализацию в круглосуточный стационар.
4. **Место и время использования предложения:**: СПб ГБУЗ «Женская консультация № 33», с февраля 2019 года.

5. **Форма внедрения**: Разработка локального акта о порядке маршрутизации на отделение дневного стационара утреннего потока пациенток с гинекологической патологией для участковых врачей и врачей дневного стационара.

6. **Название темы**: «Совершенствование организации экстренной и неотложной гинекологической помощи в условиях многопрофильного стационара»

Автор: Ким Ирина Валерьевна, аспирант кафедры общественного здоровья и здравоохранения с курсом экономики и управления здравоохранением ФГБОУ ВО ПСПбГМУ им. И.П. Павлова Минздрава России

Руководитель подразделения – базы внедрения:
Заместитель главного врача по медицинской части

Ф.И.О

«18» 01 2021 г.

«УТВЕРЖДАЮ»
Главный врач
Санкт–Петербургского государственного
бюджетного учреждения здравоохранения
«Женская консультация №44»
Пушкинского района
_____ Р.И. Миннуллин
«_20_» _02_____ 2023 г.

АКТ
О ВНЕДРЕНИИ РЕЗУЛЬТАТОВ В ПРАКТИКУ
ЛЕЧЕБНОЙ РАБОТЫ

1. **Наименование предложения**: Прогностическое значение расширения зоны стационар-замещающих технологий в условиях женской консультации.

2. **Краткая аннотация:** Произведено расширение применения стационарзамещающих технологий в амбулаторном звене акушерско-гинекологической службы (койки краткосрочного пребывания) для динамического наблюдения в условиях дневного стационара в течении 2 часов с проведением базового клинико-лабораторного обследования и симптоматической терапии.
3. **Эффект от внедрения**: У 12% пациенток, обратившихся с острой болью в Женскую консультацию по результатам дообследования и динамического наблюдения при проведении симптоматической терапии и получении результатов лабораторных исследований (CITO) были исключены неотложные состояния, сняты показания для госпитализации в круглосуточный стационар.
4. **Место и время использования предложения:** СПб ГБУЗ «Женская консультация № 44» Пушкинского района, с января 2021 года.

5. **Форма внедрения**: Разработка локального акта о порядке маршрутизации на отделение дневного стационара утреннего потока пациенток с гинекологической патологией для участковых врачей и врачей дневного стационара.

6. **Название темы**: «Совершенствование организации экстренной и неотложной гинекологической помощи в условиях многопрофильного стационара»

Автор: Ким Ирина Валерьевна, аспирант кафедры общественного здоровья и здравоохранения с курсом экономики и управления здравоохранением ФГБОУ ВО ПСПбГМУ им. И.П. Павлова Минздрава России

Главный врач СПБГБУЗ «Женская консультация № 44», доцент кафедры акушерства, гинекологии и неонатологии ФГБОУ ВО «Первый Санкт-Петербургский государственный медицинский университет им. акад. И.П. Павлова» Министерства здравоохранения Российской Федерации,
к.м.н. Миннуллин Руслан Ильдарович

«_20_» _02_____ 2023 г.