

STRATEGIC PRIORITIES FOR THE DEVELOPMENT OF PERINATAL CARE IN UKRAINE

СТРАТЕГІЧНІ ПРІОРИТЕТИ РОЗВИТКУ ПЕРИНАТАЛЬНОЇ ДОПОМОГИ В УКРАЇНІ

The health of mothers and newborns is a key indicator of a country's social development and the effectiveness of its healthcare system. In Ukraine, ongoing demographic challenges have been further exacerbated by the full-scale war and its consequences for infrastructure, medical staffing, and access to care. These issues demand an evidence-based, strategically planned response.

This study aims to analyze the current legal, organizational, and infrastructural foundations of perinatal care in Ukraine, identify systemic challenges, and present strategic priorities to improve maternal and neonatal health services within the framework of the Strategy for the Development of the Health Care System of Ukraine until 2030.

Materials and Methods. The study is based on a comprehensive analysis of legislative documents, official statistics, WHO standards, and national health policy guidelines. Demographic data and clinical performance indicators were reviewed to identify areas of weakness and opportunities for system reform. The methodological approach includes comparative analysis, strategic health systems evaluation, and evidence synthesis in line with WHO recommendations for maternal and perinatal health.

Results. The research demonstrates that while Ukraine has implemented a structured three-tier regionalization model of perinatal care in accordance with international standards, multiple systemic barriers persist. These include high maternal and infant mortality rates (maternal mortality rate of 17 per 100,000 live births in 2024; infant mortality rate of 8.7 per 1,000), low total fertility rate (1.22 births per woman), insufficient health financing, significant urban–rural disparities in service access, destroyed infrastructure, displacing qualified personnel, and limiting access to emergency and preventive care and so on.

Conclusions. This study presents a comprehensive set of strategic priorities aimed at enhancing perinatal care in Ukraine. The proposed strategy aligns with Ukraine's national health development plan and global Sustainable Development Goals, and its successful implementation requires political commitment, legislative support, intersectoral collaboration, and continuous monitoring and evaluation. The overarching goal is to ensure equitable, high-quality, and resilient perinatal care capable of responding to current crises and future challenges.

Key words: perinatal care, health of mothers and newborns, strategy, development, health care system.

Здоров'я матерів і новонароджених є ключовим показником соціального розвитку країни та ефективності її системи охорони здоров'я. Зважаючи на існуючі виклики в системі надання перинатальної допомоги в Україні, зокрема високий рівень материнської та дитячої смертності (рівень материнської смертності 17 на 100 000 живонароджених у 2024 році; дитяча смертність – 8,7 на 1000), низький рівень загальної народжуваності (1,22 народжень на жінку), недостатнє фінансування охорони здоров'я, значні диспропорції у доступі до медичних послуг, руйнування медичної інфраструктури, міграцію кваліфікованого медичного персоналу, обмеження доступу до екстреної та профілактичної допомоги тощо, авторами було сформовано комплекс стратегічних заходів щодо покращення системи надання перинатальної допомоги в Україні.

Метою цього дослідження є аналіз чинної нормативно-правової, організаційної та інфраструктурної бази перинатальної допомоги в Україні, виявлення системних викликів і визначення стратегічних пріоритетів для покращення послуг у сфері охорони материнського та неонатального здоров'я в межах Стратегії розвитку системи охорони здоров'я України до 2030 року.

Дослідження базується на аналізі законодавчих документів, офіційної статистики, стандартів ВООЗ і національної політики у сфері охорони здоров'я. Методологічний підхід включає порівняльний аналіз, стратегічну оцінку систем охорони здоров'я та узагальнення доказових даних відповідно до рекомендацій ВООЗ.

У цьому дослідженні представлено комплексний перелік стратегічних пріоритетів, спрямованих на удосконалення перинатальної допомоги в Україні. Запропоновані заходи відповідають Національному плану розвитку системи охорони здоров'я України та Глобальним цілям сталого розвитку. Їхня успішна реалізація потребує політичної волі, законодавчої підтримки, міжсекторальної співпраці, а також безперервного моніторингу та оцінки. Загальною метою реалізації стратегічних заходів є забезпечення рівного, справедливого доступу до якісної перинатальної допомоги.

Ключові слова: перинатальна допомога, здоров'я матері та новонароджених, стратегія, розвиток, система охорони здоров'я.

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Problem Statement in General Terms.

Perinatal care plays a pivotal role in safeguarding the health and well-being of mothers and newborns and serves as a cornerstone of national demographic stability and sustainable development. In Ukraine, the perinatal care system has undergone significant transformation over the

past two decades, including the introduction of a three-level regionalization model and alignment with international standards. However, despite structural reforms, the country continues to face persistent challenges, such as ranging from high maternal and infant mortality rates to declining fertility, limited access to reproductive services,

and growing disparities between urban and rural populations.

The full-scale war launched in 2022 has further strained the healthcare system, disrupting access to care, damaging medical infrastructure, and accelerating the outflow of skilled professionals. These factors, combined with the ongoing demographic crisis, underscore the urgent need for strategic, coordinated, and evidence-based reforms.

Analysis of Recent Research and Publications. The scientific papers of Boychuk T., Znamenska, T., Herush I., Hodovanets Y., Marichereda V., Zaporozhan V. are devoted to the study of this issue.

The study is based on a comprehensive analysis of legislative documents, official statistics, WHO standards, and national health policy guidelines. Demographic data and clinical performance indicators were reviewed to identify areas of weakness and opportunities for system reform. The methodological approach includes comparative analysis, strategic health systems evaluation, and evidence synthesis in line with WHO recommendations for maternal and perinatal health.

Highlighting previously unsolved parts of the general problem. But nevertheless, there is still no defined strategy for perinatal care in Ukraine.

This **study aims** to analyze the current legal, organizational, and infrastructural foundations of perinatal care in Ukraine, identify systemic challenges, and present strategic priorities to improve maternal and neonatal health services within the framework of the Strategy for the Development of the Health Care System of Ukraine until 2030.

Presentation of the Main Material. The legislation and organization of perinatal care in Ukraine are based on the Constitution of Ukraine. Article 3, regarding the health and life of citizens in Ukraine, proclaims that “a person, their life and health, honor and dignity, inviolability and security are recognized in Ukraine as the highest social value. Human rights and freedoms and their guarantees determine the essence and direction of state activity. The state is responsible to the person for its activities. The affirmation and protection of human rights and freedoms is the main duty of the state. Everyone has an inalienable right to life” [1]. Article 27 further establishes that “everyone has the inalienable right to life, and no one shall be arbitrarily deprived of life. It is the duty of the state to protect human life” [1].

Perinatal care is organized based on the Constitution of Ukraine [1], the Fundamentals of Health Legislation of Ukraine [2], the Law of Ukraine “On the Protection of Childhood” [3], and Order No. 726 of the Ministry of Health of

Ukraine dated October 31, 2011 “On Improving the Organization of Medical Care for Mothers and Newborns in Perinatal Centers” [4]. Article 57 of the Fundamentals of Legislation states that motherhood in Ukraine is protected and encouraged by the state [2]. According to Article 6 of the Law “On the Protection of Childhood” [3], every child has the right to life from the moment of being recognized as born alive and viable according to WHO criteria [5].

In accordance with WHO requirements, Ukraine has developed an effective regulatory framework for regionalization of perinatal care, which includes:

- Procedures and timelines for regionalization;
- Audit procedures for assessing the quality of regional perinatal care and staffing of level III perinatal centers;
- Quality and safety indicators for medical facilities of levels I, II, and III;
- Lists of equipment for each level of care and their updates.

Order No. 726 of the Ministry of Health of Ukraine (October 31, 2011) introduced the procedure for regionalizing perinatal care, levels and scopes of care at health care facilities, and criteria for determining the level of institutions providing perinatal services [6]. Order No. 52 of the Ministry of Health of Ukraine (January 12, 2022) established the list of state and/or municipal institutions serving as expert and regional centers for neonatal screening to create a new national system of mass neonatal screening in Ukraine [7].

Since 2018, the Medical Guarantee Program for primary health care has been implemented. Since 2020, the state guarantees of medical care under the Medical Guarantee Program have been extended to all types of care according to Law No. 2168 dated October 19, 2017 [8]. The implementation procedure is approved annually by the government, and service tariffs are set. Payments are made by the National Health Service of Ukraine (NHSU) from the State Budget, directly to health care providers under contract with NHSU.

Regardless of the level of care, childbirth in Ukraine is attended by both a physician and a midwife. Approximately 1% of births take place outside specialized maternity facilities, mostly in planned home births with the assistance of so-called “spiritual midwives”. However, this type of birth is not legally regulated in Ukraine. All births, regardless of the facility level, must be accompanied by partograph monitoring.

The regionalization of perinatal care involves organizing medical care for women, pregnant women, women in labor, postpartum women, and newborns within each region according to

a three-level system. This system distributes responsibilities for perinatal care across health care facilities by levels (I, II, III), depending on the complexity and intensity of medical needs.

All perinatal care in Ukraine is provided by qualified personnel with appropriate competencies in accordance with Ukrainian legislation.

Overall, in Ukraine, the majority of regions ensure optimal access to highly specialized, high-tech perinatal care during childbirth. This includes care for pregnant women with heart defects (Concentration Index [CI] in level III perinatal care facilities: 61.0–66.9%) and with circulatory system diseases (CI: 50.5–47.0%), exceeding the minimum recommended thresholds of 50% and 25–30%, respectively. But the cesarean section rate remains high and is increasing, currently at 17.7–18.3%, varying from 13.0% in level I facilities to 19.3% in level II, and reaching 27.6% in level III perinatal centers. The neonatal transfer index also remains relatively high (4.1%, compared to the optimal ~1%).

A positive trend is observed in the concentration of births of very low birth weight infants in level III facilities: in 2014: 59.0% of newborns weighing 500–999 g; in 2015: 62.0%; 52.4–55.3% of newborns weighing 1000–1499 g; and 71.4–75.8% of newborns weighing 1500–2499 g was delivered in level II–III medical facilities.

Despite the implementation of a staged and tiered system of perinatal care in Ukraine,

the country has experienced an unfavorable demographic situation over the past decade. The natural population growth has remained negative year after year, the child population is shrinking, and there is a rise in morbidity and disability among children. The maternal mortality rate remains relatively high – in 2022, it was 19.3 deaths per 100,000 live births [9].

This negative trend is exacerbated by the ongoing full-scale war launched by the Russian Federation, which has led to a demographic crisis characterized by excess mortality, high disability rates, increased migration, and a low birth rate. According to projections by the Institute for Demography and Social Research [10], Ukraine's population may decline to 30.5 million by 2037, posing a serious risk to national demographic security.

Maternal Mortality Trends. Maternal mortality in Ukraine is increasing. In 2021, it reached 38.2 deaths per 100,000 live births (104 women), compared to 18.7 in 2020 (55 women). Although maternal mortality declined significantly from 41 deaths in 1981 to 15 in 2014, and remained stable (around 19 deaths) until 2017, the target indicator of 11.8 deaths per 100,000 live births has not yet been achieved.

In recent years, the main clinical causes of maternal deaths have been “indirect causes” such as thromboembolic, anaphylactic, anesthetic, and transfusion-related complications, as well as extragenital pathology. Hemorrhage, gestosis, and septic complications consistently ranked lower as causes of death in the last three years.

Fertility Rates and Regional Variation. The total fertility rate (TFR) in 2022 was 1.56 births per woman (ranked 193rd globally); in 2024, it declined to 1.22 births per woman (224th place) [11]. TFR remains higher in rural areas (1.8) compared to urban areas (1.3). Compared to 1988–1989, TFR has dropped by more than 20% – from 1.9, with the greatest decrease (approx. 30%) in urban areas and about 20% in rural areas.

The highest TFRs are found in rural populations of:

- Rivne Region – 2.5
- Volyn Region – 2.2
- Odesa Region – 2.0

The lowest TFRs (1.2) are in urban populations of Luhansk, Sumy, Kharkiv, Poltava, Cherkasy, and Chernivtsi regions.

The average maternal age at first birth in 2024 was 26.2 years (excluding temporarily occupied territories).

Birth Statistics. In 2021, 271,984 children were born in Ukraine. In January 2022 there were 18,062 newborns. According to the State Statistics Service of Ukraine, in 2021:

Table 1
Demographic Indicators of Ukraine as of December 2024 [11]

Indicator	Ukraine, 2024
Population growth rate	2.38 %
Birth rate	6 births per 1,000 population
Death rate	18.6 deaths per 1,000 population
Net migration rate	36.5 migrants per 1,000 population
Sex ratio at birth	1.06 males/female
Average age of mother at first birth	26.2 years
Maternal mortality rate	17 deaths per 100,000 live births
Infant mortality rate	8.7 deaths per 1,000 live births Male: 9.7 Female: 7.6
Total fertility rate (TFR)	1.22 births per woman
Gross reproduction rate	0.59
Contraceptive prevalence rate	65.4%

- Birth rate: 7.3‰
- Death rate: 18.5‰
- Natural population growth: -11.2‰
- Migration rate: 0.9‰ [13].

In the first 9 months of the war in 2022, 152,000 births were registered a decrease of 36,000 compared to the same period in 2021. In the first half of 2023, 96,755 children were born (47,129 girls and 49,626 boys) – 28% fewer than the same period in 2021 (135,079 births), and even lower than in 2022. This is the sharpest decline in birth rates in Ukraine's post-independence history.

Birth rates in Ukraine have been declining since 2013, by approximately 7% per year. In 2024, the death rate was 18.6 deaths per 1,000 population, and unfortunately, Ukraine ranks first in the world for death rate [11].

So, we can highlight the following key issues and challenges that are presented below.

1. *Pregnancy, Childbirth, and Newborn Health.*

An analysis of global indicators and reproductive health support programs worldwide indicates that annually, out of 210 million pregnant women, approximately 8.0 million (3.8%) suffer from life-threatening pregnancy-related complications, with many experiencing long-term illnesses and disabilities. According to global clinical analysts' estimates, in 2022, 529,000 women died during pregnancy and childbirth, primarily due to preventable causes. Globally, the maternal mortality rate has not significantly changed over the past decade, with 99% of these maternal deaths occurring in developing countries.

Analysis of national demographic indicators suggests that the main challenge in Ukraine is the declining birth rate (as of 2024, 6 births per 1,000 population), placing Ukraine 228th among other countries in terms of birth rate, with a gross reproduction rate of 0.59.

Ukraine has seen a positive trend in complicated deliveries, decreasing from 67.8% in 2001 to 36.23% in 2019, with an odds ratio (OR) at 95% confidence interval (CI) of 0.26 (0.26–0.27); anomalies in labor activity decreased from 111.2 to 41.14 per 1,000 births, OR at 95% CI 0.3 (0.3–0.4); obstetric hemorrhage decreased from 36.3 to 18.55, OR at 95% CI 0.5 (0.49–0.53). However, issues remain with the increasing volume of surgical interventions during childbirth—the cesarean section rate increased from 114.99‰ to 253.1‰, OR at 95% CI 2.4 (2.3–2.4); instrumental vaginal deliveries increased from 5.27‰ to 13.8‰, OR at 95% CI 2.6 (2.5–2.8).

The maternal mortality rate in Ukraine remains high despite a positive trend (23.9 per 100,000 births in 2001 and 14.9 in 2019).

A registered decrease in reproductive losses from 9.1‰ in 2001 to 8.8‰ in 2019 was accompanied by an unfavorable change in the structure of perinatal mortality – increasing stillbirths from 4.8‰ to 5.8‰, OR at 95% CI 1.2 (1.1–1.3) against the backdrop of a steady increase in the share of intrauterine fetal deaths – from 85.3% in the structure of stillbirths in 2001 to 90.5% in 2019, with a decrease in postnatal mortality from 4.3‰ to 3.0‰, OR at 95% CI 0.7 (0.6–0.8). Unfortunately, relevant statistics are unavailable for the period of martial law.

Most cases of maternal mortality are associated with complications during childbirth (e.g., complicated labor, especially during early first pregnancies, hemorrhages, and hypertensive complications), immediately after childbirth (sepsis and hemorrhage), or following unsafe abortions. Factors typically associated with these mortality cases include the absence of qualified medical personnel, lack of services capable of providing emergency obstetric care and addressing complications after unsafe abortions, and inefficient referral systems to specialized professionals.

Globally, out of 10.8 million child deaths under the age of 5, 3.0 million occur during the first 7 days of the neonatal period. Additionally, an estimated 2.7 million children are stillborn.

The infant mortality rate in Ukraine, despite declining, remains high and exceeds that of developed countries in the European region by several times. Infant mortality under 1 year gradually decreased until 2021. The lowest infant mortality rates were observed in 2018–2020, reaching 7.1‰, 7.0‰, and 6.7‰, respectively. In 2021, there was an increase to 7.2‰, according to calculations by the State Statistics Service of Ukraine, excluding temporarily occupied territories of the Autonomous Republic of Crimea, Sevastopol, and data from Donetsk and Luhansk regions. This increase is likely related to the COVID-19 pandemic.

Over the past ten years, infant mortality rates in urban areas have been significantly lower than in rural areas. Since 2010, infant mortality in rural regions has been 1.21 times higher than in cities (rural areas – 10.3‰, urban settlements – 8.5‰). In 2021, the difference between rural and urban infant mortality rates significantly decreased (7.5‰ and 7.0‰, respectively), but urban infant mortality increased from 6.3 to 7.0 per 1,000 live births from 2019 to 2021.

Many of these deaths are associated with poor maternal health and inadequate care during pregnancy, childbirth, and the postpartum period. The neonatal mortality rate (death in the first 28 days) in developing countries has

remained unchanged since the early 1980s, at approximately 30 deaths per 1,000 live births. Additionally, maternal death can seriously jeopardize the survival of her children.

In Ukraine, the structure of mortality among children under 1 year from 2010 to 2021 shows the following trends:

1. Conditions arising in the perinatal period (57%),
2. Congenital malformations (21%),
3. External causes of mortality (3.5%).

In 2023, respiratory system disorders, as well as cardiac and respiratory system disorders, continue to lead in the structure of neonatal morbidity.

With the onset of war in Ukraine, factors complicating perinatal care have intensified. Stress, malnutrition, disrupted logistics between settlements, destruction of medical facilities, and lack of medical care in temporarily uncontrolled territories are the most significant issues affecting pregnant women in Ukraine. According to doctors, there are now more severe pathologies, preterm births, and miscarriages than before the full-scale invasion of Ukraine.

II. Family Planning.

The prevalence of contraceptive use has significantly increased in many developing countries. In Ukraine, as of 2012, the contraceptive prevalence rate was 65.4%.

Nevertheless, studies indicate that in developing and transitioning economies, over 120 million married couples have unmet needs for safe and effective contraception, despite a clear desire to avoid future pregnancies or space them out. This unmet need for family planning exists in 9%–39% of married women (including those in consensual unions). Data suggest that unmet needs also exist among unmarried sexually active adolescents and adults. Approximately 80 million women worldwide experience unintended or unwanted pregnancies annually, some resulting from contraceptive failures.

III. Unwanted Pregnancy and Unsafe Abortions.

Annually, approximately 45 million unintended pregnancies are terminated worldwide, with about 19 million through unsafe abortions; 40% of all unsafe abortions occur in young women aged 15–24. Unsafe abortions result in approximately 68,000 female deaths each year, accounting for 13% of all pregnancy-related deaths. Additionally, unsafe abortions are associated with significant morbidity; studies show that at least one in five women who undergo unsafe abortions suffer from genital tract infections, some leading to infertility.

In Ukraine, 45.1 thousand abortions were performed in 2023, which is 4% fewer than in 2022 (46.9 thousand). Since 2011, the number of

abortions has been decreasing by an average of 7% annually. Over the past 13 years, the number of abortions in Ukraine has dropped 3.6 times – from 163.6 thousand to 45.1 thousand per year. Currently, there are 250 abortions per 1,000 live births, compared to 330 per 1,000 in 2011.

The age distribution of abortions is as follows:

- 64.3% of pregnancy terminations are among women aged 20–34;
- 31.3% of terminations occur in women over 34;
- 3.3% are among girls aged 18–19;
- 1% among girls aged 5–17;
- 0.1% among girls under the age of 14.

The statistics include spontaneous pregnancy terminations (miscarriages) and medically legal abortions performed in public and private healthcare institutions, either for medical reasons or at the woman's request.

IV. Sexually Transmitted Infections (STIs), including HIV and other reproductive tract infections.

Sexually transmitted infections are a leading cause of infertility: globally, approximately 60–80 million married couples suffer from infertility and childlessness due to untreated or inadequately treated STIs.

According to WHO estimates, 340 million new cases of bacterial STIs are registered globally every year, most of which are treatable. In addition, millions of cases of mostly untreatable viral infections are recorded annually, including 5 million new cases of HIV infection, of which 600,000 are in children due to mother-to-child transmission. Over 100 million treatable cases of STIs are reported annually, predominantly among young people aged 15 to 24.

The human papillomavirus (HPV), a sexually transmitted infection, is closely linked to cervical cancer, which is diagnosed in more than 490,000 women and causes 240,000 deaths among women annually worldwide. Three-quarters of all cervical cancer cases occur in developing countries where there is a critical lack of screening, prevention, and treatment programs. Unfortunately, in Ukraine, HPV vaccination is not included in the National Immunization Schedule.

In general, all aspects of poor reproductive and sexual health – maternal and perinatal mortality and morbidity, oncological diseases, STIs, and HIV/AIDS – account for approximately 20% of the burden of poor reproductive health in women and about 14% in men.

V. Violence.

According to WHO estimates, violence against women is the second most significant global risk factor for reproductive health. Intimate partner violence includes physical, sexual, and

psychological abuse. The consequences of such violence are extensive for reproductive and sexual health and include unwanted pregnancy, unsafe abortion, chronic pain syndromes, sexually transmitted infections (including HIV), and gynecological disorders.

Studies show that globally, between 4% and 20% of women experience violence during pregnancy, which affects both them and their children, leading to outcomes such as miscarriage, preterm birth, and low birth weight.

On average, 1 in 4 women globally experiences sexual violence from an intimate partner. Violence and rape by acquaintances and strangers are widespread. Forced prostitution remains a serious issue.

According to the Office of the Prosecutor General of Ukraine, in 2023, 2,731 individuals were victims of criminal offenses under Article 126-1 of the Criminal Code of Ukraine (domestic violence) (compared to 1,449 in 2022), of whom 2,423 were women (compared to 1,254 in 2022), and 66 were children (35 minors and 31 younger children). In recent years, the number of domestic violence cases in Ukraine has increased by 14 % since the beginning of the year, according to the Ministry of Internal Affairs of Ukraine.

VI. *Youth and Adolescents at Risk.*

Sexuality in childhood remains a taboo subject, creating serious obstacles to accessing information, reproductive health services, and other forms of support necessary for young people to stay healthy. Nevertheless, sexual and reproductive behavior during adolescence (ages 10 to 19) has both immediate and long-term consequences.

Today, sexual activity often begins during adolescence and is frequently risky, regardless of whether it occurs within or outside marriage. Adolescents rarely have the skills or support to resist pressure to engage in sexual activity, negotiate safer sex, or protect themselves from unwanted pregnancies and sexually transmitted infections. For young girls, pregnancy carries a high risk of maternal mortality and morbidity.

Unfortunately, Ukraine lacks programs aimed at developing reproductive and sexual health literacy among children and adolescents. Therefore, protecting the rights of millions of teenagers in Ukraine is crucial for ensuring the reproductive health of current and future generations.

VII. *Perinatal Care Infrastructure in Ukraine.*

A major issue since the beginning of the full-scale war that maternity hospitals and perinatal care facilities face in Ukraine is the disruption of transportation links between cities and rural areas, destroyed roads, and mined routes – all

of which make it difficult for pregnant women to access medical care.

The situation is further complicated by reduced public funding due to military aggression and the internal and external migration of highly qualified medical personnel, especially noticeable in temporarily non-government-controlled territories of Ukraine.

According to the head of the Kharkiv Regional Perinatal Center, the number of pregnancy complications in women has increased due to the war. Pregnant women in occupied territories have been particularly affected. The main pathologies seen in perinatal centers in eastern Ukraine are those more characteristic of earlier times. This is because women were unable to undergo medical examinations, many experienced worsening of chronic conditions, and nearly every woman from occupied areas suffers from anemia due to poor nutrition. Fetal infections are also common.

The war has also impacted how perinatal care is organized. There is a need to equip shelters with everything required for childbirth and emergency care, and blackouts due to missile attacks on Ukraine's critical energy infrastructure present additional challenges. However, transporting "high-risk" mothers and infants to shelters is always a major risk to their lives, so doctors and nurses prioritize the mother's life in such decisions.

Many pregnant women have fled to western Ukraine, where they find shelter and safety. This has led to internal displacement and increased pressure on regional perinatal centers in western Ukraine.

Despite wartime conditions, and for the future post-war recovery of Ukraine, further development of the perinatal care system is essential.

VIII. *Medical Personnel.*

One of the key challenges in improving perinatal medical care in Ukraine is the shortage of human resources. The full-scale war has resulted in a lack of highly qualified medical staff due to turnover and the loss of specialists through migration, as well as the ineffective use and distribution of personnel already working in the perinatal care system. Low wages, poor training quality, and unsatisfactory working conditions are the main reasons for low productivity and high turnover in the sector.

IX. *Technology and Digitalization.*

Over the past two decades, significant progress has been made globally in perinatal care through the development of electronic databases, technological upgrades, and the implementation of information and digital tools.

However, even with such tools available, Ukraine has limited access to these databases

and systems. The inability to conduct proper strategic planning based on adequate quantitative and qualitative data restricts understanding of the reasons behind poor service quality, lack of access, and underutilization of services. Ukraine has also yet to establish effective tools and mechanisms for monitoring and evaluating the perinatal care system.

All of these challenges require strategic planning to improve the perinatal care system and to create and retain a properly trained and highly qualified workforce.

Taking into account the strategic goals and priorities of the Strategy for the Development of the Health Care System of Ukraine until 2030, approved by the Order of the Cabinet of Ministers of Ukraine dated January 17, 2025, No. 34-r [16], we can identify the following strategic priorities for improving perinatal medical care in Ukraine.

Strategic Priority 1. Improving antenatal, perinatal, postnatal care and care for newborns. The key operational tasks must be:

- Analyze and revise the existing regulatory framework in the field of maternal and child health.
- Implement systematic strategic analysis in the area of perinatal health to improve quality of care, define and approve national-level indicators for decision-making regarding optimization of perinatal center and maternity facility networks.
- Ensure monitoring of perinatal healthcare services at the community level.
- Conduct clinical audits of perinatal care quality, including assessment of infrastructure, staffing, financial and material resources, medical and organizational technologies, compliance with current standards, and effectiveness.
- Further optimize the maternal and child healthcare system: restore a network of powerful perinatal centers with genetic counseling, reduce ineffective maternity facilities, and concentrate care at larger-capacity hospitals operating within a unified medical space.
- Introduce an integrated outpatient perinatal care model using multidisciplinary teams at primary care centers (PHC), including midwives and family doctors.
- Adopt and advocate clinical guidelines, standards, and Ministry of Health orders on maternal and child care and family planning based on evidence-based medicine with clearly defined quality criteria.
- Vaccinate pregnant women according to the National Immunization Schedule and international recommendations.
- Improve coordination and cooperation among interdisciplinary healthcare providers and institutions of various perinatal care levels to ensure access to specialist consultations and care.

- Update patient transport logistics for emergency obstetric and perinatal care.

- Update outpatient documentation and perinatal cards to align with WHO standards.

- Manage risk factors affecting the quality of obstetric and perinatal care, including personnel, medications, equipment, clinical guidelines, organization, and patient-family dynamics.

- Support the operation of neonatal screening centers and introduce new screening types for congenital conditions.

- Introduce new technologies and digital tools for delivering and monitoring perinatal care, including telemedicine, AI, and remote consultations.

- Ensure quality control of care in perinatal institutions, including sociological surveys and questionnaires.

Strategic Priority 2. Providing high-quality family planning services, including infertility services. The operational tasks must be:

- Establish an optimal network of family planning centers equipped with modern diagnostics (e.g., at PHC centers and perinatal centers).

- Improve infertility prevention and treatment systems with new methods and wider access.

- Strengthen research to identify reproductive health factors and develop prevention strategies.

- Expand services to prepare parents for childbirth.

- Introduce modern technologies in reproductive health based on evidence-based medicine.

- Ensure equal access to reproductive health services for men and women.

- Provide counseling services for adolescents on reproductive health.

- Create programs to promote healthy lifestyles, responsible parenthood, and safe motherhood.

- Conduct awareness campaigns on family planning.

Strategic Priority 3. Eliminate unsafe abortions must be achieved by operational tasks:

- Provide free emergency treatment for women experiencing complications from unsafe abortions.

- Offer social and other support to women with unwanted pregnancies within the limits of current Ukrainian legislation.

- Enable provision of medical abortions at PHC day hospitals.

- Raise awareness among women and adolescents through campaigns on abortion risks and the importance of consulting qualified professionals.

- Include reproductive health and safe abortion topics in national sexual health education programs.

- Improve access to modern contraceptives via national programs ensuring financial affordability for all population groups.

- Create systems for monitoring and evaluating the quality and accessibility of abortion services.

- Conduct regular research to identify barriers to safe abortion access and develop solutions.

Strategic Priority 4. Risk mitigation of STIs, including HIV, STDs, cervical cancer, and other gynecological diseases by achieving the following operational tasks:

- Increase access to preventive tools and healthcare, ensuring affordability and availability of modern contraceptives (e.g., condoms).

- Introduce free, confidential STI and HIV screenings and testing for all age groups, including cervical cancer and gynecological disease screenings.

- Implement a national HPV vaccination program to prevent cervical cancer, including adding vaccination for 12–13-year-old girls to the National Immunization Schedule.

- Conduct awareness campaigns on STI and HIV transmission, prevention, and the importance of regular testing.

- Expand STI/HIV awareness among underserved groups, including men.

- Integrate STI/HIV education into school and university curricula to promote responsible sexual behavior.

- Improve epidemiological surveillance systems for STI/HIV prevalence and effectiveness of interventions; conduct research to identify trends and shape strategies.

- Strategic Priority 5. Strengthen adolescent sexual and reproductive health

- Operational tasks:

- Create a national network of adolescent sexual and reproductive health centers offering free counseling, medical and psychological support, and sex education (without age limits, up to age 18).

- Develop a national education program to improve adolescent sexual and reproductive health.

- Train medical university graduates and school teachers to deliver sex education and support adolescent reproductive health.

- Train professionals to provide counseling on safe sex and reproductive health.

Strategic Priority 6. Improve psychological support for pregnant women and new mothers by achieving the following operational tasks:

- Expand maternal mental health screening, diagnosis, treatment, and access.

- Develop a national maternal mental health program covering prevention, screening, diagnosis, intervention, and access.

- Build infrastructure to support maternal and family mental health.

- Provide support to mothers and families addressing mental health disorders during pregnancy and postpartum.

Strategic Priority 7. Ensure qualified medical staffing for all levels of perinatal centers and improve training by achieving the following operational tasks:

- Create Innovation Target Centers (IA-centers) in perinatal facilities to implement maternal and child health guidelines and digitized perinatal information systems.

- Review and update staff competencies in perinatal centers, reducing workload.

- Train and upskill staff through family doctor and general practice training programs including reproductive health and family planning.

- Improve ultrasound skills among general practitioners to assess fetal position, labor progression, and complications.

- Implement team-based emergency care training and soft skills workshops in pre- and post-graduate education.

- Train GPs on safe abortion and post-abortion care.

- Continuously improve emergency and anesthetic care skills for OB-GYNs, neonatologists, and GPs.

- Provide psychological support training for staff in all levels of perinatal care.

- Raise midwifery education to master's level to enable management of uncomplicated pregnancies and some physician duties.

- Upgrade continuing medical education cycles aligned with evidence-based guidelines for maternal, child, and family planning care.

- Facilitate internships at leading Ukrainian and international perinatal centers using state and local funds.

- Improve healthcare funding systems by amending the Budget Code of Ukraine to support perinatal centers, raise salaries, and incentivize performance.

- Enhance workforce motivation using medical-demographic performance indicators.

- Train doctors to work in post-war liberated regions.

- Encourage local governments to improve working conditions for health workers (e.g., municipal bonuses in rural/depressed areas).

Strategic Priority 8. Sustainable financing mechanisms

Financial support is central to implementing all the operational tasks under each priority. The

goal is to ensure that all initiatives to improve perinatal care quality, expand reproductive and sexual health networks, and ensure universal access are backed by sustainable financing mechanisms.

This requires improvements to the healthcare funding system by amending the Budget Code of Ukraine to facilitate transfers, support and develop perinatal centers, raise salaries, and create financial incentives.

Key steps include:

- Ensure reproductive and sexual health is central to national planning and strategy development.

- Integrate reproductive and sexual health into national health plans, including AIDS, TB, and other relevant initiatives.

- Prioritize reproductive and sexual health in service packages under the Medical Guarantees Program.

- Introduce alternative financing mechanisms, including international funds, to improve access for children, youth, the poor, and other groups.

- Systematically monitor and adapt these policies to local needs.

Achieving these strategic priorities aims to strengthen the perinatal care system's capacity in Ukraine. However, it requires political will, legislative support, and robust monitoring, evaluation, and reporting mechanisms.

Conclusions. Based on the comprehensive analysis of the challenges, which Ukrainian perinatal care meets, in the paper the main strategic measures are presented. They recognize the critical role of perinatal care in addressing key demographic challenges, including declining fertility, maternal mortality, and poor access to quality reproductive services. The goal of the proposed strategic measures is to promote the reproductive health of the population of Ukraine by ensuring equitable access to quality medical services and building a sustainable system of perinatal medical care in the country. Also, it meets the objective to accelerate progress toward achieving internationally agreed goals in the field of reproductive health.

A significant focus is placed on reviewing and updating regulatory frameworks related to maternal and child health; integrating evidence-based clinical guidelines into national policy; and strengthening strategic health data systems to inform policy and clinical decisions. These steps align with WHO recommendations and reflect a transition toward data-driven and quality-oriented care delivery.

The proposed strategic measures aim to optimize national network of perinatal centers by consolidating services into high-capacity, well-

equipped regional facilities and phasing out inefficient or underutilized obstetric institutions. This approach supports cost-effectiveness, resource allocation, and regional equity in medical service delivery.

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