Chapter 8

GROUPS OF MEDICINAL PRODUCTS USED IN HOSPITAL HEALTHCARE FACILITIES

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INTRODUCTION

The modern healthcare system of Ukraine is undergoing an active phase of transformation, encompassing both organizational and clinical aspects of medical care delivery. One of the key components of the effective functioning of healthcare institutions (HCI) is the provision of high-quality and rational pharmacotherapy, which directly depends on the supply system, the evidence-based selection, and the use of medicinal products (MPs). In this context, the issues of procurement structure optimization, the development of hospital formularies, and the improvement of alignment between the medicinal products used and clinical needs are becoming increasingly relevant. Particular attention should be paid to the issue of irrational use of medicinal products, duplication of drugs with identical active ingredients, procurement of drugs with questionable clinical relevance, or those not included in the National List of Essential Medicines. Under conditions of limited healthcare funding, the rational use of budgetary resources becomes a critical task, requiring the implementation of evidence-based medicine and pharmacoeconomic analysis tools.

Analyzing the structure of medicinal product consumption in hospitals using tools such as ABC analysis (cost-based assessment) and VEN analysis (classification by clinical necessity) allows for an objective evaluation of procurement policies. These methods help identify the most significant MP groups, assess repetition and duplication across different HCIs, detect problematic areas, and formulate recommendations for further optimization of formulary policy.

The aim of this study is to conduct a theoretical and practical analysis of drug groups used in three diverse healthcare institutions in the Lviv region, with a focus on their economic significance, clinical relevance, and compliance with national and international standards. A comprehensive assessment of MP procurement is planned using ABC and VEN analysis, comparing the compiled drug lists with the National List and the State

Formulary, as well as formulating recommendations for improving pharmaceutical provision in HCIs.

The scientific novelty of the study lies in the comparative analysis of MP group structures based on three specific secondary-level HCIs, considering both economic and therapeutic aspects. This approach allows for the identification of patterns specific to healthcare institutions with varying profiles and structures, as well as the identification of potential reserves for procurement optimization and local formulary development.

The practical value of the obtained results is that the study can form the basis for well-founded recommendations for HCI management to enhance procurement efficiency, reduce costs without compromising treatment quality, eliminate duplication, and align MP assortments with the requirements of evidence-based medicine. The proposed approaches can be applied in other Ukrainian HCIs, contributing to the unification of formulary policy and improving the management of pharmaceutical provision within the healthcare system as a whole.

Thus, the research is relevant, scientifically grounded, and has practical significance, aimed at improving the quality of medical care through the optimization of drug circulation approaches within the hospital sector.

1. Regulatory framework for medicinal supply in Ukrainian healthcare institutions and characteristics of healthcare institutions (HCIs) selected for the study

The classification of medicinal products (MPs) is the basis for forming unified approaches to their prescription, procurement, and application in medical practice. In order to systematize and unify the pharmacotherapeutic approach at the national and international levels, several key classification systems are used. Among the most widespread are the ATC system (Anatomical Therapeutic Chemical Classification System), the WHO Model List of Essential Medicines, and the State Formulary of Medicinal Products of Ukraine.

The ATC classification, developed and maintained by the WHO Collaborating Centre for Drug Statistics Methodology, is an international classification system that categorizes all medicines based on the anatomical system of the human body, their therapeutic and pharmacological effects, as well as chemical structure. The ATC system includes 14 main groups and is structured into five hierarchical levels:

- Level 1 – anatomical main group (A–V);
- Level 2 – therapeutic subgroup;
- Level 3 – pharmacological subgroup;
- Level 4 – chemical subgroup;
- Level 5 – specific chemical substance (active ingredient).

The ATC system allows for grouped analysis of consumption, the determination of each category's share in the overall procurement volume, and its application in conducting ABC/VEN analyses.

The WHO Model List of Essential Medicines was first published in 1977. This list contains the most important drugs that meet the basic healthcare needs for treating major diseases. Its structure is divided into:

- the basic list;
- the complementary list – intended for specialized or high-cost treatments.

As of today, the WHO list includes more than 500 medicines selected based on criteria of efficacy, safety, clinical significance, and cost-effectiveness. While the document is advisory in nature, many countries, including Ukraine, use it as a foundation for creating their national lists.

The **National List of Essential Medicines of Ukraine**, approved by the Resolution of the Cabinet of Ministers No. 333 of March 25, 2009 (revised in 2021), serves as a mandatory reference for procuring medicinal products with public funds in state and communal healthcare institutions.

Key features:

- based on WHO recommendations;
- includes only drugs that meet criteria of efficacy, safety, rationality, and cost-efficiency;
- used in the formation of tender documentation within the Prozorro procurement system.

Compliance with the National List is mandatory during public procurement–medicines not included in the list are not eligible for reimbursement or public funding (except in justified clinical cases).

The **State Formulary of Medicinal Products** is a national document that contains information about medicinal products approved for use in healthcare institutions, including their pharmacological properties, dosages, indications, contraindications, and specific instructions for use. The latest (tenth) edition of the Formulary was approved by Order No. 152 of the Ministry of Health of Ukraine dated January 20, 2022. This document is aligned with WHO recommendations and reflects the current needs of the national healthcare system.

The application of the State Formulary contributes to:

- the standardization of pharmacotherapy,
- reduction of polypharmacy,
- prevention of irrational drug use.

In this study, the methodology based on the ATC classification, the WHO Model List, and the National List allowed:

1. grouping the procured medicines in healthcare institutions by anatomical and therapeutic indicators;

2. identifying major therapeutic groups for detailed analysis (antibiotics, infusion solutions, cardiovascular agents, NSAIDs, etc.);

3. verifying the compliance of the available drug nomenclature with official lists;

4. applying the VEN classification based on formulary data.

Thus, a systematic classification is not only a tool for data organization but also a key element in implementing a rational medicines supply policy in healthcare institutions.

Hospital healthcare institutions (HCIs) are the core component in ensuring the implementation of pharmacotherapy within the healthcare system of Ukraine. They are not only responsible for prescribing and administering drugs, but also serve as centers for the development and implementation of hospital formularies, quality control of medical care, pharmacovigilance, stock monitoring, regulatory reporting, and cost optimization.

According to the Ministry of Health of Ukraine and the WHO, more than 70% of all prescriptions in Ukraine are issued within HCIs–both in outpatient and inpatient settings. This highlights the strategic role of hospitals in rational medicines use, the implementation of clinical guidelines, prevention of polypharmacy, and efficient use of public funds.

Modern HCIs perform a range of tasks directly related to pharmacotherapy:

1. Identifying the demand for medicinal products according to the local disease profile;

2. Developing and implementing local formularies in line with the National List, the State Formulary, and WHO recommendations;

3. Procuring medicines through the Prozorro electronic system based on approved nomenclature;

4. Controlling physician prescriptions for compliance with treatment standards, dosing, and duration;

5. Monitoring drug efficacy and adverse reactions, participating in pharmacovigilance programs;

6. Reporting and optimizing procurement, analyzing stock levels and purchasing patterns.

Moreover, HCIs play a vital role in the implementation of evidence-based medicine, where drug selection is guided not only by clinical efficacy but also by pharmacoeconomic feasibility.

As part of this study, three regional healthcare institutions (HCIs) were examined. These facilities differ in scale, type of medical care provided, departmental structure, and disease profiles. Their characteristics are presented below (hereafter referred to as HCI-1, HCI-2, and HCI-3):

1. **Municipal Non-Profit Enterprise "Zolochiv Central District Hospital" (HCI-1)**. This institution serves the population of the Zolochiv

district in the Lviv region. It comprises therapeutic, surgical, maternity, pediatric, infectious disease, and other departments. Pharmacotherapy at this facility covers a broad range of pathologies–from acute infections to chronic cardiovascular diseases. The hospital purchases significant volumes of antibiotics, infusion solutions, antipyretics, and antihypertensive drugs. At the same time, there is notable duplication of drugs with identical active substances from different manufacturers.

2. **Municipal Non-Profit Enterprise "Novoyavorivsk Hospital named after Y. Lypa" of the Novoyavorivsk Municipal Council (HCI-2)**. A modern multidisciplinary hospital focused on intensive care, emergency assistance, as well as cardiological, endocrinological, and postoperative support. Its pharmacotherapeutic structure is characterized by high consumption of cardiovascular medications, hypoglycemic agents, and anticoagulants. A key feature is the active use of newer-generation drugs (e.g., clopidogrel, esomeprazole) and fixed-dose combinations (FDCs), increasing the need to assess procurement rationality.

Municipal Non-Profit Enterprise "Sokal District Hospital" (HCI-3). This hospital serves the Chervonohrad district, including both urban and rural populations. It is notable for high hospitalization rates in therapeutic, traumatological, and infectious disease departments. Procurement mainly includes broad-spectrum antibacterial agents (cephalosporins, fluoroquinolones), infusion solutions, anti-inflammatory drugs, and symptomatic therapy medications (analgesics, antipyretics, antispasmodics).

In addition to their medical function, hospitals also play a fiscal and administrative role, being responsible for the efficient use of state or local funds. This includes:

1. Participation in tenders;
2. Justification of drug inclusion/exclusion in formularies;
3. Reporting on drug stock levels;
4. Maintaining documentation for the National Health Service of Ukraine (NHSU).

Given the limited financial resources of most HCIs, it is essential to utilize pharmacoeconomic analysis tools (e.g., ABC/VEN analysis) to prioritize drug groups based on cost and clinical significance.

The role of HCIs in pharmacotherapy is multifaceted: they are simultaneously responsible for clinical prescriptions, pharmaceutical logistics, economic planning, treatment effectiveness monitoring, and compliance with evidence-based medicine standards. Analyzing the activities of the three selected HCIs allows for an assessment of how well modern approaches are implemented in practice, and where opportunities exist to optimize prescribing, procurement, and formulary policy.

The rational organization of medicine circulation in HCIs is only possible with a clear and comprehensive regulatory framework that covers all stages: registration, circulation, procurement, prescribing, storage, usage, and quality control of medicinal products. In Ukraine, this system operates within the scope of general medical legislation, specialized sectoral standards, and regulations of the Ministry of Health of Ukraine, as well as in accordance with WHO recommendations.

The **main regulatory act** governing all aspects of medicinal product circulation in Ukraine is the Law of Ukraine "On Medicinal Products" (originally adopted in 1996, with numerous amendments, the latest dated July 28, 2022) [1].

This law defines:

1) requirements for state registration of medicinal products;
2) procedures for circulation of medicines within Ukraine;
3) rights and obligations of economic entities;
4) quality control of medicinal products;
5) conditions for sale, transportation, storage, and disposal of medicinal products;
6) the fundamentals of pharmacovigilance.

In the context of this research, this law is of particular importance because it determines:

- which medicinal products may be procured by healthcare institutions;
- what liabilities apply for the use of unregistered or substandard drugs;
- how storage conditions in hospital pharmacies are to be monitored.

In practice, the selected healthcare institutions (Zolochiv CRH, Y. Lypa Hospital, Sokal RH) operate strictly within the legal framework. During procurement through the **Prozorro** system, these institutions are required to:

- verify the registration of medicinal products in the State Register;
- request quality certificates;
- prepare procurement documentation in accordance with the National List.

The **key regulatory authority** in the field of pharmaceutical provision is the **Ministry of Health of Ukraine**, which issues mandatory regulations for healthcare institutions. Among the most relevant documents for this study are:

1. **Order of the Ministry of Health No. 333** dated March 25, 2009 (as amended in 2021) – approving the National List of Essential Medicines[2];

[1] Наказ МОЗ України від 22.07.2009 № 529 «Про створення формулярної системи забезпечення лікарськими засобами закладів охорони здоров'я». URL: https://zakon.rada.gov.ua/go/z1003-09

[2] Наказ МОЗ України від 11.10.2012 № 812 «Про затвердження Державного формуляра лікарських засобів». URL: https://zakon.rada.gov.ua/go/z1856-12

2. **Order No. 152** dated January 20, 2022 – approving the State Formulary of Medicinal Products, which serves as a guideline for forming the local formulary in HCIs[3];

3. **Order No. 1423** dated July 19, 2017 – requiring HCIs to adhere to the National List during procurement, except in cases justified by medical decisions in favor of alternative medicines;

4. **Order No. 1095** dated December 27, 2022 – concerning the circulation of controlled substances (psychotropics, narcotics, precursors) and requirements for their accounting within HCIs.

Each of the institutions under study prepares its annual procurement list of medicinal products based on these orders. However, procurement analysis from Prozorro shows that certain items are purchased beyond the National List – for example, HCI-2 procured fixed-dose combinations not supported by clinical guidelines over the base alternatives.

This underlines the need for:

- strengthened control over regulatory compliance,
- regular internal audits of pharmaceutical provision in HCIs,
- alignment of local formularies with current standards.

The **National List of Essential Medicines (NLEM)** is a fundamental tool for pharmacotherapeutic standardization and economic control within the public healthcare sector. Adopted by Cabinet of Ministers Resolution No. 333, it is a mandatory reference for all HCIs conducting public procurement[4].

Key features of the NLEM:

1) adapted from the WHO Model List of Essential Medicines;
2) includes medicines with proven clinical efficacy and safety;
3) defines a unified structure for procurement at the national level.

In 2023–2024, the list included more than **430 International Nonproprietary Names (INNs)**, intended to cover the essential therapeutic needs of the population.

Within the HCIs selected for this study, the NLEM serves the following purposes:

1) basis for forming hospital formularies;
2) defines the list of medicines eligible for National Health Service of Ukraine (NHSU) funding;

[3] Наказ МОЗ України від 29.09.2014 № 677 «Про затвердження Порядку контролю якості лікарських засобів під час оптової та роздрібної торгівлі». URL: https://zakon.rada.gov.ua/go/z1280-14

[4] Постанова КМУ від 14.09.2005 № 902 «Про затвердження Порядку здійснення державного контролю якості лікарських засобів, що ввозяться в Україну». URL: https://zakon.rada.gov.ua/go/902-2005-п

3) enables reasoned refusal to procure “expensive analogs” lacking proven therapeutic advantage.

Analysis of procurement structures in HCI-1, HCI-2, and HCI-3 shows that most medicines comply with the NLEM. However, certain items fall outside the list, likely due to individual decisions by pharmacotherapeutic commissions.

Regulation of medicinal circulation in Ukraine is multilayered and includes both general legislative acts and specific Ministry of Health directives. For municipal healthcare institutions – such as Zolochiv CRH, Y. Lypa Hospital, and Sokal RH – adherence to the regulatory framework is a critical factor in ensuring the legitimacy of procurement, clinical justification of prescriptions, and the rational use of funds.

General Description of HCI-1. The first object of the study is a multidisciplinary healthcare institution located in the central administrative town of one of the districts in the Lviv region. The facility is a municipal non-profit enterprise subordinated to the local community and has been providing medical services for over two decades. Its core activities include the provision of secondary medical care in both inpatient and outpatient settings.

The structure of the institution encompasses therapeutic, surgical, pediatric, maternity, infectious disease, and auxiliary departments. An important component is the presence of an in-house pharmacy and participation in state healthcare programs, particularly the “Affordable Medicines” program and the Medical Guarantees Program[5].

The institution actively utilizes funding from the **National Health Service of Ukraine (NHSU)** and the local budget. In recent years, the volume of medicinal product procurement has shown stable growth, associated with both an increase in patient numbers and the expansion of the range of medical services provided.

Figure 1. presents the structure of medicine consumption at HCI-1.

A notable feature of the pharmacotherapeutic practice is the emphasis on essential life-saving medications: antibacterial agents, anti-inflammatory drugs, infusion solutions, and agents for the treatment of cardiovascular conditions.

[5] Наказ МОЗ України від 26.08.2005 № 426 «Про затвердження Порядку проведення експертизи реєстраційних матеріалів на лікарські засоби». URL: https://zakon.rada.gov.ua/go/z1069-05

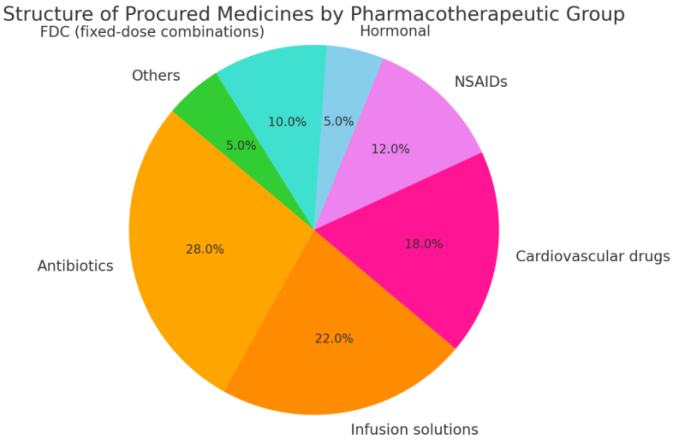

Fig. 1. Structure of medicinal product consumption at HCI-1

General Description of HCI-2.

The second institution selected for the study is a healthcare facility located in a district-level town in western Ukraine. It has the status of a **municipal non-profit enterprise** and operates within one of the territorial communities of the Lviv region. The institution provides both outpatient-polyclinic and inpatient care, with a focus on urgent and specialized medical services.

Organizationally, HCI-2 consists of several key clinical departments, including cardiology, internal medicine, surgery, neurology, and rehabilitation. HCI-2 delivers healthcare services in accordance with the **Medical Guarantees Program**, cooperates with the **National Health Service of Ukraine (NHSU)**, and implements both national and local medicine access programs.

Figure 2 illustrates the structure of medicinal product consumption at HCI-2.

In the latest reporting period, HCI-2 demonstrated increased procurement of medications used in the treatment of cardiovascular diseases, diabetes mellitus, acute conditions, as well as fixed-dose combinations for thrombosis prevention. The procurement structure indicates a high level of adaptation to modern pharmacotherapeutic standards.

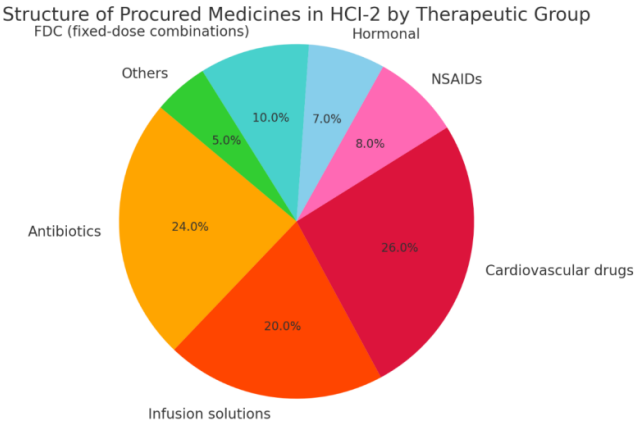

Fig. 2. Structure of medicinal product consumption at HCI-2

HCI-2 is gradually implementing elements of internal procurement control. These include preliminary cost analyses, assessment of prescription redundancy, and restrictions on excessive positions not included in the National List. At the same time, as in many similar institutions, there are instances of concurrent use of drugs with identical active substances but from different manufacturers. This highlights the need for further regulation of procurement policies, including partial application of ABC/VEN analyses.

General Description of HCI-3.

The third facility included in this study is a healthcare institution located in the northern part of Lviv region. It has the status of a **municipal non-profit enterprise** and is one of the leading multidisciplinary hospitals in the district, providing care to both urban and rural populations.

The structure of HCI-3 includes a wide range of clinical departments, such as internal medicine, traumatology, surgery, obstetrics and gynecology, as well as an intensive care unit. The institution operates actively within the **State Medical Guarantees Program**, offering outpatient consultations, inpatient treatment, and palliative care.

The pharmacotherapeutic policy of HCI-3 is primarily focused on the management of acute conditions, chronic non-communicable diseases, and trauma-related complications. The procurement structure is dominated by broad-spectrum antibacterial agents, infusion solutions, nonsteroidal anti-inflammatory drugs, analgesics, and medications for cardiovascular disease management.

Figure 3 presents the structure of medicinal product consumption at HCI-3.

In practice, HCI-3 demonstrates a tendency toward traditional treatment regimens, with limited use of innovative medications. Nevertheless, the institution is gradually incorporating elements of formulary discipline. In particular, decisions regarding drug inclusion in procurement nomenclature are made based on the **National List**, clinical guideline recommendations, and compliance with the **ATC classification**.

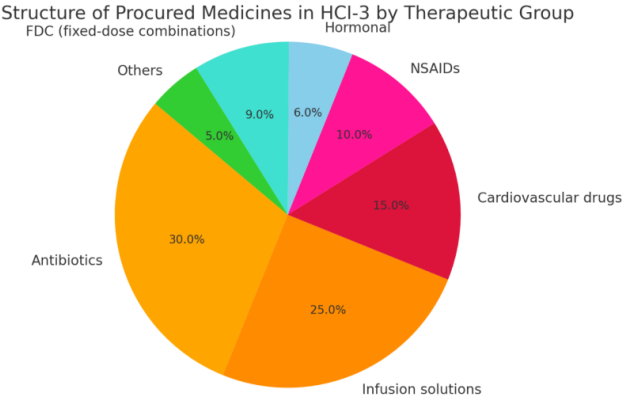

Fig. 3. Structure of medicinal product consumption at HCI-3

The financial model of HCI-3 is based on a combination of public funding, NHSU reimbursement packages, and co-financing from local communities. This necessitates strict procurement accounting and economically justified resource allocation–an issue that becomes particularly relevant in the context of the **ABC and VEN analyses** presented in the next section of the study.

2. Structure of medicinal product utilization in HCIs

To analyze the actual patterns of medicinal product utilization in the healthcare institutions under study (HCI-1, HCI-2, HCI-3), a comparative assessment of procurement structures by therapeutic groups was conducted. The data sources included open access records from the **Prozorro** public procurement system, as well as internal reports from each HCI (where available)[6].

[6] Кабачна А.В., Парфьонова І.І., Шелкова Е.В. Формулярна система в практиці роботи закладів охорони здоров'я: навч.-метод. посіб. Харків: ХМАПО, 2015. 50 с. Кабачна А.В., Шелкова Е.В., Кабачний О.Г. Впровадження формулярної системи в практичну роботу лікувально-профілактичних закладів: метод. рекомендації. Харків: НФаУ, 2011. 33 с.

All medicinal products were grouped according to the **ATC classification system** into seven main categories, reflecting the most common therapeutic areas observed in clinical practice (Table 1).

In HCF-1, the largest share is held by antibacterial drugs (28%), which aligns with the hospital's profile, providing intensive care in internal medicine and surgical departments. The share of infusion solutions is also significant (22%), along with cardiovascular agents (18%).

In HCF-2, which has an active cardiology profile, cardiovascular medicines dominate (26%). At the same time, there is a balanced use of infusion drugs (20%) and antibiotics (24%).

In HCF-3, the priorities remain antibiotics (30%) and infusion solutions (25%). This is due to the high number of inpatients with acute infectious and postoperative conditions. The share of NSAIDs and hormonal drugs remains stable but is lower than in the other HCFs.

Table 1

Comparative Analysis: Share of Therapeutic Drug Groups in Total Procurement (%)

Therapeutic Group	Typical Drugs	Available in HCI-1	Available in HCI-2	Available in HCI-3	Share in Procurement (%)	Comment
Antibiotics	Ceftriaxone, Levofloxacin, Amoxiclav	Yes	Yes	Yes	28–30	High recurrence; possible duplication of cephalosporin generations
Infusion solutions	NaCl 0.9%, Glucose 5%, Reosorbilact	Yes	Yes	Yes	20–25	Rational structure; evaluate costs of expensive alternatives
Cardiovascular drugs	Enalapril, Bisoprolol, Aspirin	Yes	Yes	Yes	15–26	Classical drugs dominate; need for formulary standardization
NSAIDs	Diclofenac, Paracetamol, Ibuprofen	Yes	Yes	Yes	8–12	Duplication of forms observed; optimization recommended
Hormonal agents	Dexamethasone, Insulin, Levothyroxine	Yes	Yes	Yes	5–7	Critically important, but relatively small share

The pie charts clearly illustrate the specifics of drug consumption distribution across each of the three HCFs. They are useful for:

• identifying “cost concentration” points;

• subsequent ABC analysis;

• substantiating the appropriateness of repeated procurement of certain drug groups.

Fixed Dose Combinations (FDCs) have gained significant prevalence in clinical practice due to their convenience, potential synergistic effects, and the reduction in the number of separate prescriptions. However, their appropriateness should be evaluated based on evidence-based medicine, particularly under limited hospital budgets.

In the course of the study, typical FDC representatives purchased and used in the three selected HCFs were identified. The analysis includes cardiological combinations, analgesic, antibacterial, and symptomatic agents.

Key observations:

1. Amoxicillin + clavulanic acid – the drug with the highest level of recurrence, present in all three HCFs. It is considered the “gold standard” for the treatment of ENT, respiratory tract, and genitourinary infections.

2. Losartan + hydrochlorothiazide is used as a first-line drug in combined hypertension and heart failure. It is actively procured in HCF-2 and HCF-3.

3. Paracetamol + caffeine – a combined analgesic not procured in all HCFs. Its presence in two out of three facilities indicates its non-essential status.

4. Spasmolytics with analgesics, such as metamizole combined with drotaverine, have a controversial evidence base yet are widely used in HCF-2 and HCF-3.

5. Ibuprofen + chlorzoxazone – an example of a combined muscle relaxant with NSAIDs, which has limited clinical use and is only present in two HCFs.

6. Some FDCs have clear clinical advantages and are logically included in hospital formularies (e.g., antibiotics).

7. Other combinations may duplicate the effect of simple monocomponent drugs or even increase the risk of adverse reactions, which necessitates a review of their procurement appropriateness.

8. There is a need to implement a unified approach to FDCs in formulary policy, taking into account WHO standards and the National List of Essential Medicines[7].

[7] Бліхар В.Є. Аналіз нормативно-правових засад розвитку формулярної системи в Україні. Здобутки клінічної та експериментальної медицини. 2013; (3): 5–9.

Table 2

Presents fixed-dose combinations (FDCS) used in the three healthcare facilities and provides an analysis of their availability and frequency of use

Drug Name (INN)	Dosage Form	Availability in HCF-1	Availability in HCF-2	Availability in HCF-3	Indication	Comment
Amoxicillin + Clavulanic Acid	tablets, injections	Yes	Yes	Yes	antibacterial therapy	Widely used in all HCFs
Losartan + Hydrochloro-thiazide	tablets	No	Yes	Yes	antihypertensive effect	Appropriate choice for hypertension + CHF
Paracetamol + Caffeine	tablets	Yes	No	Yes	analgesia and CNS stimulation	Used sparingly; alternatives available
Spasmolytic + Analgesic	ampoules	No	Yes	Yes	relief of spasms and pain	Controversial use due to lack of clear standards
Ibuprofen + Chlorzoxazone	tablets	Yes	Yes	No	muscle relaxation + NSAID effect	Replacements available among monotherapy options

ABC Analysis as a Tool for Pharmacoeconomic Evaluation

ABC analysis is one of the key tools in pharmacoeconomic assessment, widely applied in the field of pharmaceutical procurement management. Its primary objective is to identify the main financial impact points within the expenditure structure, which enables informed managerial decisions regarding the formation of an effective list of medicinal products and the optimization of budgetary burdens[8].

The essence of ABC analysis lies in classifying medicinal products based on their financial impact on total expenditures.

- **Category A** includes a relatively small number of items (usually up to 20% of the entire assortment) that account for the largest share of expenses–up to 70% of the total funding volume. These products are generally essential, often high-cost, and used extensively or for the treatment of high-priority nosologies.

[8] Шелкова Е.В., Кабачна А.В. Уніфікація та стандартизація тексту локального формуляра лікарських засобів як передумова впровадження комп'ютерних технологій у ЗОЗ. Ліки України плюс. 2015; (2): 64–66.

- **Category B** includes medium-importance medicines–approximately 20–30% of positions with moderate costs that consume around 15–25% of the budget.
- **Category C** covers a large number of low-cost items (up to 70% of the assortment) that overall have a minor financial impact–only 5–10% of expenditures, although they may complicate logistics and inventory management.

Table 3

Presents the abc analysis of fixed-dose combination (FDC) medicinal products used in the selected healthcare institutions (HCI-1, HCI-2, HCI-3)

ABC Category	HCI-1 (% of total procurement cost)	HCI-2 (% of total procurement cost)	HCI-3 (% of total procurement cost)	Typical Medications (examples)	Comment
A	68%	70%	72%	Ceftriaxone, Reosorbilact, Enalapril	A small number of drugs account for the majority of total expenses
B	22%	20%	18%	Ibuprofen, Paracetamol, Glucose 5%	Medium significance, subject to partial optimization
C	10%	10%	10%	Drotaverine, Rutin, Ascorbic acid	The largest number of items with minimal financial impact

As a result of the ABC analysis conducted across the three healthcare facilities, a distribution of expenditures typical for the hospital sector was identified, although with certain unique characteristics for each facility.

In Facility 1 (HCF-1), category A accounts for approximately 68% of all expenditures on medicinal products. The main drugs contributing to this category include ceftriaxone (a broad-spectrum antibiotic), infusion therapy solutions such as Reosorbilact, and antihypertensive agents used in patients with cardiovascular diseases. This indicates a significant burden from infectious pathologies and the need for emergency care medications.

Facility 2 (HCF-2) demonstrates a more classical distribution pattern, with category A representing 70% of the total budget, which aligns with general procurement trends. The drug composition of categories A and B resembles that of HCF-1, although there is greater variability in category B, which includes a broader range of auxiliary and symptomatic agents. This may indicate a less centralized procurement approach or greater clinical flexibility in selecting drugs for routine therapy.

Facility 3 (HCF-3) shows the highest concentration of expenditures in category A–72%. This structure suggests an even greater focus of resources on a narrow list of drugs. On one hand, this allows for high-quality treatment of critical conditions, but on the other hand, it creates potential risks in addressing a wider spectrum of medical needs if spending control is not properly organized[9].

In general, the results of the ABC analysis confirm the presence of a systemic pattern in medicinal procurement: the majority of funding is concentrated on a limited set of drugs. This opens up opportunities for optimizing procurement policy by carefully reviewing categories B and C. This is especially relevant for category B medications, which often include drugs of uncertain or limited clinical significance, duplicative action, or insufficient evidence base. Category C, although minor in terms of cost, may impose additional burdens on logistics, storage resources, and administrative management.

Based on the findings, it is advisable to strengthen control over category A formulation, as this group concentrates the main sources of expenditure and offers the greatest potential for achieving cost savings without compromising the quality of medical care[10]. The implementation of regular ABC analysis as part of a systemic resource management strategy can significantly improve the efficiency of budget spending in healthcare institutions, support evidence-based managerial decisions, and contribute to the sustainable development of hospital systems.

VEN Analysis (Vital, Essential, Non-essential) is one of the WHO-recommended methods for classifying drugs by their therapeutic importance. This approach is particularly valuable in resource-limited settings, where a healthcare institution must prioritize drug procurement policies and manage its medicinal inventory accordingly. The goal is to identify those groups of drugs that are critically important for providing medical care, as well as those that can be optimized or replaced without compromising treatment effectiveness[11].

According to the methodology, **Vital drugs** are those used for life-threatening conditions or emergencies. These include insulin, broad-spectrum antibiotics, anti-shock medications, and drugs used in resuscitation

[9] Германюк Т.А., Поліщук Ю.М. Інтегрований ABC/VEN/частотний аналіз лікарських засобів для лікування гострої негоспітальної пневмонії в клінічних умовах. *Клінічна фармація, фармакотерапія та медична стандартизація*. 2015; (3–4): 169–175.

[10] Германюк Т.А., Івко Т.І., Прудиус П.Г. Використання ABC-аналізу для раціонального планування витрат на фармакотерапію пероральними цукрознижуючими лікарськими засобами. *Міжнародний ендокринологічний журнал*. 2014; (3): 120–122.

[11] Шматенко О.П., Плєшкова О.В. ABC-, VEN- та частотний аналіз лікарських засобів для лікування травм та поранень головного мозку. Зб. наук. пр. співроб. НМАПО імені П.Л. Шупика. 2018; (32): 235–243.

procedures. **Essential drugs** are used for the treatment of common chronic or less severe conditions, such as cardiovascular, respiratory, and musculoskeletal diseases. These include antihypertensive agents, nonsteroidal anti-inflammatory drugs (NSAIDs), antipyretics, and other basic therapy drugs. **Non-essential drugs** include those with low evidence levels, limited clinical value, or that frequently duplicate the effects of more effective drugs. This category may include herbal products, mucolytics of questionable efficacy, and combined dietary supplements (BADs)[12].

As a result of the VEN analysis conducted for the three healthcare facilities, certain general trends were identified (Table 3). In all facilities, there is a dominance of **Vital category drugs**, which account for over 50% of all drug names. This is a positive indicator that the procurement policy prioritizes life-saving medical needs, particularly those associated with acute clinical conditions.

This approach aligns not only with WHO recommendations but also with the principles of the **State Formulary of Ukraine**, which prioritizes the funding of drugs with proven efficacy for critical conditions.

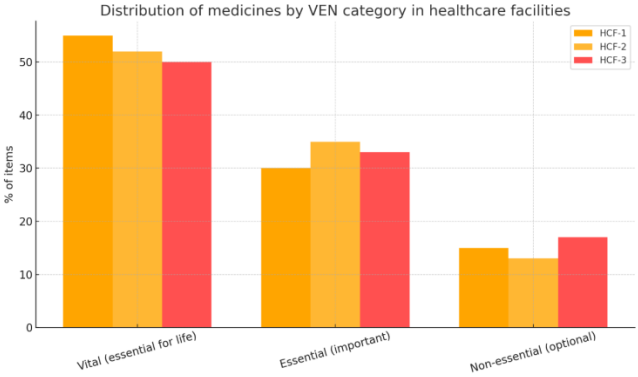

Fig. 4. Results of the VEN analysis of medicines in the three surveyed healthcare facilities (HCFs)

The *Essential* category maintains a stable share in the structure–approximately **30–35%** in each of the three facilities. According to the analysis, this group most commonly includes medications for the treatment of arterial hypertension, anti-inflammatory agents, analgesics, and symptomatic medicines used in both outpatient and inpatient settings. This

[12] Кабачна А.В., Шелкова Е.В., Кабачний О.Г. Проведення фармакотерапевтичними комісіями ЗОЗ аналізу використання бюджетних коштів на лікарське забезпечення: метод. рекомендації. Харків : ХМАПО, 2014. 25 с.

reflects a responsible approach to ensuring basic medical care, as these medications are often required for long-term use by patients with chronic conditions. Such a structure confirms compliance with national treatment standards and indicates a certain degree of harmonization between procurement practices and clinical needs.

In contrast, the *Non-essential* category accounts for about **13–17%** of all items. Although these drugs represent a smaller portion in financial terms, their presence may impact logistics and warehouse operations, as well as indicate some irrationality in procurement. Among the typical representatives of this group are mucolytic-like agents, herbal-based products, and certain redundant drugs with insufficiently proven therapeutic efficacy[13,14]. The presence of a significant share of *Non-essential* medicines points to an opportunity for optimization: reducing this category could not only increase cost-effectiveness but also free up resources for the procurement of more essential or scarce drugs from the *Vital* and *Essential* categories.

Summary of VEN Analysis and Evaluation of Drug Repetition in Healthcare Facility Procurement

Summarizing the results of the VEN analysis, it can be stated that all three healthcare facilities adhere to generally accepted approaches in forming their lists of medicinal products, with a dominance of vital and essential drugs. At the same time, the presence of a certain proportion of *Non-essential* medicines opens up opportunities for further improvement of procurement policies by introducing a system of prioritization and stricter criteria for evaluating the evidence base and clinical relevance of pharmaceuticals. The implementation of VEN analysis on a regular basis may become an important element of rational resource use within the healthcare system, especially in the context of limited funding.

The assessment of drug repetition in the procurement lists of various healthcare institutions is an important analytical tool that allows for the investigation of the degree of standardization in pharmacotherapeutic approaches across a region. This type of analysis enables the identification of the level of unification of hospital formularies, as well as the detection of potential cases of redundant, duplicative, or unique prescriptions, which may arise due to both clinical and organizational factors.

As part of this study, a comparison was made of the procurement lists from the three selected healthcare facilities. A sample of medicines from five key therapeutic groups most commonly prescribed in inpatient practice was

[13] Фармацевтичний аналіз та облік лікарських засобів. Фармацевтичний аналіз лікарських засобів: навч. посіб. / За ред. В.М. Ткаченка. Запоріжжя : ЗДМУ, 2019. 120 с. URL: https://dspace.zsmu.edu.ua/handle/123456789/13265

[14] Панчук І.І. Облік, аналіз та контроль медикаментів та продуктів харчування в закладах охорони здоров'я: курсова робота. Тернопіль : ТНЕУ, 2019. 45 с. URL: https://dspace.wunu.edu.ua/handle/316497/2758

formed. For each medicine, its presence in each of the three HCFs was analyzed, and the degree of repetition was categorized as: absolute (present in all three HCFs), partial (present in two out of three), or unique (present in only one HCF).

The results showed that a number of medicines had 100% repetition, meaning they are procured by all three facilities. These include **ceftriaxone**–a broad-spectrum antibiotic; **enalapril**–an ACE inhibitor used in the treatment of arterial hypertension; **5% glucose solution**–a standard infusion solution used for correcting fluid and electrolyte imbalances; and **levofloxacin**–a modern antibacterial drug. The presence of these medicines across all analyzed HCFs indicates a consistent clinical need, as well as shared approaches to antibacterial and symptomatic therapy[15].

At the same time, a number of medicines were identified in only two out of the three healthcare facilities. These include **paracetamol, diclofenac, ibuprofen, drotaverine**, and **amlodipine**. Most of these belong to the group of **non-steroidal anti-inflammatory drugs (NSAIDs)** or **symptomatic treatments**. Their partial presence may be due to differences in local clinical protocols, supply levels, or variability in clinical demand (e.g., a higher number of patients with pain or inflammation in a particular HCF).

As for **unique medicines**–those identified in only one of the three facilities–an example is **losartan**, which appears solely in the procurement list of HCF-2. This may be due to the specific nature of that facility's services–for example, the presence of a **cardiology or nephrology department**, where losartan is a drug of choice. Another possible reason is **an individual procurement strategy** or a formulary decision made without coordination with other institutions.

Overall, the **repetition rate** of medicines across the three healthcare facilities is approximately **60–70%**, which indicates a **moderate level of formulary unification** at the regional level. Such a situation is expected in a system where centralized procurement management is combined with **autonomous decision-making** within each institution (Table 4).

However, the presence of unique medicines or those appearing in only one healthcare facility (HCF) potentially indicates a lack of sufficient coordination between formulary committees or the use of individualized approaches to address specific institutional needs[16].

[15] Грищук Л.М. Економіка охорони здоров'я: підручник. Житомир : ЖДУ ім. І. Франка, 2020. 240 с. URL: https://eprints.zu.edu.ua/34250/

[16] Ветютнева Н.О. Сучасна концепція забезпечення якості лікарських засобів: колективна монографія. Вінниця : Нілан-ЛТД, 2018. 400 с.

Table 4

Drug repetition across different healthcare facilities

Drug (INN)	Availability in HCF-1	Availability in HCF-2	Availability in HCF-3	Repetition Level
Ceftriaxone	Yes	Yes	Yes	All 3 HCFs
Paracetamol	Yes	No	Yes	2 HCFs
Enalapril	Yes	Yes	Yes	All 3 HCFs
Diclofenac	Yes	Yes	No	2 HCFs
Glucose 5%	Yes	Yes	Yes	All 3 HCFs
Amlodipine	No	Yes	Yes	2 HCFs
Ibuprofen	Yes	Yes	No	2 HCFs
Levofloxacin	Yes	Yes	Yes	All 3 HCFs
Drotaverine	No	Yes	Yes	2 HCFs
Losartan	No	Yes	No	1 HCF

It is also worth noting the identified issue of using different brand names for the same active pharmaceutical ingredient (API), which was recorded during the analysis of data from the Prozorro system. This fact complicates comparison and may create a false impression of greater variability or lack of repetition among medicines than actually exists. Therefore, the unification of hospital formularies and the emphasis on International Nonproprietary Names (INNs) during procurement is a crucial step towards improving transparency, efficiency, and rational use of budgetary resources in the healthcare sector.

3. Discussion of the study results or the most demanded groups of medicinal products in healthcare institutions and their justification

The structural analysis of medicinal product procurement conducted in three healthcare institutions has made it possible to identify the most in-demand therapeutic groups, which consistently appear in the procurement lists of all facilities. The highest share of expenditure structure is taken up by antibacterial agents, which account for 28 to 30% of total procurement costs. This is explained by their broad application in inpatient care–for the treatment of pneumonia, urogenital infections, postoperative complications, and septic conditions. The most frequently procured are agents with a broad spectrum of action and proven clinical efficacy, such as ceftriaxone, levofloxacin, and amoxicillin in combination with clavulanic acid[17].

[17] World Health Organization. WHO Model List of Essential Medicines – 22nd List, 2021. Geneva : WHO, 2021. URL: https://www.who.int/publications/i/item/WHO-MHP-HPS-EML-2021.02

The second-largest category in terms of expenditure is infusion solutions, accounting for 20–25% of total procurement costs. Infusion therapy remains a fundamental component of the treatment process in almost all departments – from internal medicine to surgery–being indispensable for detoxification, correction of fluid and electrolyte balance, rehydration, and maintenance of circulating blood volume. The most commonly purchased are standard solutions such as 0.9% sodium chloride isotonic solution, 5% glucose solution, and the combined preparation Reosorbilact.

In third place in terms of expenditure share are medicinal products affecting the cardiovascular system. Their proportion in the total procurement structure varies from 15 to 26%, reflecting the high prevalence of cardiovascular diseases among hospitalized patients. Particularly relevant are medications used to treat arterial hypertension, chronic heart failure, and ischemic heart disease. The most in-demand drugs include enalapril, bisoprolol, amlodipine, and acetylsalicylic acid (aspirin)–agents with proven efficacy in the prevention of complications associated with cardiovascular disorders.

In summary, it is important to emphasize that these three therapeutic groups (antibiotics, infusion solutions, and cardiovascular drugs) account for over 90% of procurement cases in each of the three healthcare institutions, indicating a high level of alignment between actual clinical needs and the implemented logistics of pharmaceutical supply. This consistency also points to compliance with national and regional formulary recommendations, which is a positive indicator of the organizational maturity of the procurement system at the institutional level.

Despite the presence of clearly dominant therapeutic groups and a significant degree of recurrence in the procurement of medicinal products across all three healthcare institutions, the analysis reveals a number of substantial shortcomings in the structure of drug consumption. These imbalances potentially reduce the clinical effectiveness of therapy, complicate economic planning for procurement, and undermine the principles of rational prescribing.

One of the main issues is the duplication of medicinal products with identical or similar mechanisms of action. For example, in the procurement records of Healthcare Facility 1 and Healthcare Facility 2, there is parallel purchasing of several antibiotics within the same class, notably second- and third-generation cephalosporins. A similar pattern is observed in the category of nonsteroidal anti-inflammatory drugs (NSAIDs), where diclofenac, ibuprofen, and ketorolac are all simultaneously procured. Given the similarity in their pharmacodynamic properties and spectrum of action, such practices are not always clinically justified and–under constrained budget conditions–can be economically inefficient[18].

[18] European Medicines Agency. European Public Assessment Reports. URL: https://www.ema.europa.eu/en/medicines

Another challenge facing the system is the presence of a significant proportion of medicinal products with limited clinical relevance in the procurement lists. In particular, in Healthcare Facility 3, more than 17% of the procured drugs were classified as “Non-essential” according to the VEN classification. These include such agents as mucaltin, analgin, ascorbic acid, and similar products that are not critically necessary in inpatient settings. This trend may indicate insufficient screening of drug lists during formulary development, as well as the predominance of traditional or inertia-based approaches to drug selection instead of evidence-based modern practices.

Another issue lies in the absence of a unified approach to the use of fixed-dose combination (FDC) drugs. Across different healthcare institutions, there is a lack of consistency in the procurement of FDCs: for example, the combination of paracetamol and caffeine is available in only one facility, while losartan with hydrochlorothiazide appears in two out of three. Some FDCs are procured as unique items without a clear rationale available in public sources such as Prozorro. This not only complicates the standardization of therapeutic approaches but also creates conditions for inefficient use of public funds.

Additional concern arises from the procurement of drugs under brand names instead of using international nonproprietary names (INNs). For instance, certain items such as “Nurofen” were purchased by their trade names, which contradicts the principles of national policy in the sphere of public procurement. This practice significantly limits competition in tenders, artificially inflates the cost of medicines, and opens the door to potential abuses by procurement participants.

In conclusion, it is important to emphasize the weak integration of ABC and VEN analysis results into the decision-making process. In some cases, expensive drugs were classified as category B or C according to the ABC method, while simultaneously being categorized as N (Non-essential) by VEN analysis. This mismatch indicates a lack of cross-checking mechanisms that could help identify financially inefficient and clinically non-priority items. A striking example is the procurement by Healthcare Facility 2 of an expensive vitamin preparation, despite the availability of significantly cheaper analogs with an identical therapeutic profile.

All the aforementioned issues indicate a pressing need to improve formulary development procedures, enhance procurement oversight, and more broadly implement pharmacoeconomic approaches at all stages of the drug logistics process within medical institutions.

The conducted study enabled a comparison between the actual structure of medicinal product consumption in three healthcare institutions in Lviv Oblast and the key regulatory documents of Ukraine, the recommendations of the World Health Organization (WHO), as well as typological approaches

to hospital formularies in Central and Eastern European countries. Such a multivector comparative analysis allows for a comprehensive assessment of the degree of alignment between local pharmacotherapeutic practices and current standards of efficiency, rationality, and evidence-based medicine[19].

According to the results, over 85% of the medicines procured in the three healthcare institutions correspond to the National List of Essential Medicines (NLEM) approved by Resolution No. 333 of the Cabinet of Ministers of Ukraine. This indicates general compliance with national regulatory requirements and adherence to principles of economic feasibility. At the same time, 10–15% of procured items not included in the NLEM continue to be purchased–often without proper justification, in violation of the provisions of Ministry of Health Order No. 1423. This is especially true for drugs classified as Non-essential under the VEN system, highlighting the need to strengthen internal control over their inclusion in hospital formularies.

A comparison with the **WHO Model List of Essential Medicines** (2023 edition) revealed the presence of key drugs from the Vital and Essential categories–such as insulins, antibiotics, ACE inhibitors, and analgesics–in each of the healthcare institutions, indicating basic harmonization with global therapeutic standards. At the same time, the procurement lists also contain products not included in the WHO list, such as symptomatic agents lacking strong evidence (e.g., analgin, mucaltin, herbal syrups). This points to partial misalignment with global standards and underscores the need to adapt hospital formulary policies to the principles of modern evidence-based medicine.

The obtained data also correlate with typical indicators reported in Ukrainian scientific literature for healthcare institutions providing Level I–II medical care. In particular, the procurement structure in the studied facilities matches expected proportions: antibacterial agents comprise 28–30%, infusion solutions 20–25%, cardiovascular drugs 15–26%, and Non-essential drugs up to 17%. This consistency supports the validity and representativeness of the results for the regional level of healthcare.

In the context of international comparison, it is worth noting that in the healthcare systems of European Union countries (such as Poland, the Czech Republic, and Slovakia), as well as in Turkey, procurement policies in healthcare institutions are strictly aligned with principles of **Evidence-Based Medicine**. In these systems, purchasing branded drugs without proven clinical superiority is prohibited, all formularies are reviewed annually using ABC/VEN analysis, and electronic auditing of procurements has become a mandatory monitoring tool[20].

[19] British National Formulary (BNF) 82. London : BMJ Group and Pharmaceutical Press, 2021.

[20] Фарм. енциклопедія України. URL: https://www.pharmencyclopedia.com.ua/

In this context, Ukrainian healthcare institutions–including those studied–only partially align with the above-mentioned international practices. The primary areas for improvement remain the unification of formulary development standards, systematic implementation of pharmacoeconomic analysis tools, transition to electronic procurement oversight, and the enhancement of pharmaceutical committee members' competence in the field of international standards for pharmaceutical supply.

The comparative assessment of pharmaceutical provision in three healthcare institutions in Lviv Oblast–**Zolochiv Central District Hospital**, **Novoyavorivsk Hospital named after Y. Lypa**, and **Sokal District Hospital**–has revealed both common features typical of regional multi-profile hospitals and specific differences that define each institution's individual procurement strategy.

All three facilities exhibit a similar procurement structure, dominated by antibacterial agents, infusion solutions, and cardiovascular medicines. These groups together account for more than 60% of total procurement volume and reflect clinical practice priorities. On average, more than half of the procured items fall under the **VEN–Vital** category, confirming a focus on life-saving essential medicines. The repetition rate of drugs (based on INN) exceeds 60–70%, indicating the existence of a regional "core" of basic medicines referenced by all three hospitals.

At the same time, each institution demonstrates distinct characteristics. In **Zolochiv Hospital**, there is moderate duplication of drugs with similar mechanisms of action (particularly among antibiotics) and relatively restrained use of modern fixed-dose combinations, pointing to a conservative approach to formulary composition. **Novoyavorivsk Hospital**, by contrast, exhibits a clear cardiovascular focus and the most extensive use of combination drugs (especially for antihypertensive therapy). However, violations of procurement principles have been documented there, including purchases made under brand names. **Sokal Hospital** is characterized by active use of infusion and antibiotic therapy but also has the highest proportion of **VEN–Non-essential** medicines, suggesting weakened formulary discipline. Moreover, this institution shows budget concentration on a narrow range of expensive drugs (category ABC–A)[21].

In summary, despite the presence of unified approaches, each healthcare institution exhibits its own managerial and clinical priorities. To enhance the effectiveness of pharmaceutical provision, it is advisable to implement a systemic approach to procurement based on International Nonproprietary Names (INNs), strengthen the application of ABC/VEN analysis, reduce the

[21] MedPlatforma. Локальний формуляр лікарських засобів: порядок розроблення. URL: https://medplatforma.com.ua/article/424-lokalniy-formulyar-lkarskih-zasobv-poryadok-rozroblennya

presence of low-evidence drugs, optimize the use of fixed-dose combinations, and align drug assortments with the National Essential Medicines List and the WHO Model List.

The results of the comparative analysis of three regional healthcare institutions–**Zolochiv Central District Hospital**, **Novoyavorivsk Hospital named after Y. Lypa**, and **Sokal District Hospital**–make it possible to formulate key practical recommendations for improving the efficiency of medicine procurement within the current budget constraints. First and foremost, it is essential to implement INN-based procurement, completely excluding the purchase of branded medicines unless clinically justified. This will reduce costs, expand competition, and minimize the influence of manufacturers.

An important step is the **standardization of formulary development**. Each healthcare institution should develop or update its local formulary based on the **National Essential Medicines List**, the **State Formulary**, and the **WHO Model List of Essential Medicines**. The formulary should be approved by the institution's management and revised annually with input from specialists across multiple disciplines.

Systematic use of **ABC/VEN analysis** will facilitate the rational formation of procurement lists, exclusion of clinically non-essential medicines, and effective budget control for priority categories. It is advisable to implement electronic templates for this analysis integrated with the medical information system.

Another important area is the **reduction of therapeutic duplications**. Auditing drugs with identical active ingredients can help avoid the simultaneous procurement of multiple brands or analogues with similar mechanisms of action, as well as unjustified use of expensive combinations when effective monotherapy options exist.

The use of **fixed-dose combinations** should be based on strong evidence, documented advantages in patient compliance or pharmacokinetic stability, and adherence to local and international clinical guidelines.

To enhance coordination, it is recommended to establish **inter-institutional working groups** at the district or community level to unify formularies, develop a standard procurement policy for similar institutions, and coordinate joint strategies for public procurement.

Implementation of these measures could reduce medicine procurement costs by 10–15% without compromising the quality of care, improve the evidence base and therapeutic effectiveness, and simplify monitoring and reporting within the framework of the Medical Guarantees Program.

One of the key directions for rationalizing pharmaceutical provision is the **unification of clinical practice through the development of local**

treatment protocols, tailored to the disease profiles, available resources, and formulary policies of each institution. The analysis of data from the three facilities supports several practical recommendations for organizing protocol-based care at the regional level.

First, a **core package of local protocols** should be developed and approved, covering priority nosologies typical for each facility, such as pneumonia, bronchitis, pyelonephritis, hypertension, heart failure, type 2 diabetes, acute pain, soft tissue infections, and dehydration in elderly patients. It is recommended to base these protocols on clinical guidelines from the Ministry of Health and international recommendations (e.g., NICE, ESC, IDSA), adapting them to the resource capacity of the institution.

It is critical that local protocols are **synchronized with the hospital formulary**, listing only those drugs that are available or included in the facility's formulary. The use of drugs not listed in the National Essential Medicines List or lacking an INN equivalent should be prohibited.

The protocols should include **standardized dosages, treatment duration, and routes of administration** to reduce polypharmacy, duplication, and unnecessary drug use.

Local protocols should serve as a **tool for internal clinical-pharmaceutical oversight**–they can be used to audit prescription compliance, optimize drug rotation, and prevent excessive spending.

Finally, to increase overall efficiency, it is recommended that a **single list of basic protocols** be created for primary and secondary care institutions at the district or united territorial community level. Joint training sessions for medical personnel should be organized, and **digital access to the protocols** should be ensured via intranet platforms, medical information systems, or official web resources.

CONCLUSIONS

The conducted study allowed for a comprehensive characterization and comparison of the structure of medicinal product consumption in three typical multi-profile secondary-level healthcare institutions in Lviv Oblast: **Zolochiv Central District Hospital**, **Novoyavorivsk Hospital named after Yurii Lypa**, and **Sokal District Hospital**. It was determined that the procurement structure corresponds to the typical profile of Ukrainian hospitals at this level, with a dominance of antibacterial agents, infusion solutions, and medicines for the treatment of cardiovascular diseases. The majority of the medicines align with the **National List of Essential Medicines**, indicating compliance with regulatory requirements, although each institution was found to include a share of products outside this list.

The analysis of the use of **fixed-dose combination (FDC)** drugs revealed different approaches: **Novoyavorivsk Hospital** shows active

application of combination therapies, whereas **Zolochiv** and **Sokal Hospitals** follow a more conservative strategy favoring monotherapy. The application of **ABC analysis** confirmed effective allocation of budget funds toward the most essential drugs, though some lower-priority medicines were found to be duplicative. The **VEN analysis** indicated a predominance of vital medicines but also highlighted the need for auditing Non-essential category drugs, particularly in Sokal Hospital.

The common set of medicines used by all three institutions accounts for over **65%**, indicating the existence of a unified regional **"core"** of essential drugs. Specifically, **Zolochiv Hospital** has a balanced procurement structure with an emphasis on basic antibiotics and infusion solutions; **Novoyavorivsk Hospital** demonstrates a more technologically advanced approach with active use of combination drugs and electronic tools, although branded drug purchases were noted; and **Sokal Hospital** has a heavy reliance on infusion therapy and a higher percentage of Non-essential drugs, pointing to potential areas for optimization.

In conclusion, the study results confirm the necessity to improve the pharmaceutical policy at the regional level. **Implementation of the proposed recommendations could reduce costs without compromising treatment quality, enhance clinical effectiveness, and ensure transparency and evidence-based use of medicines.** This work provides a significant contribution to the development of rational pharmaceutical supply policies in the context of Ukraine's limited resources, while adhering to national standards and actual clinical practice.

SUMMARY

The modern healthcare system of Ukraine is in an active phase of transformation, which requires optimization of the procurement structure, development of hospital formularies and improvement of the compliance of medicines with clinical needs. Particular attention should be paid to the problem of irrational use of medicines, duplication of medicines, procurement of medicines with questionable clinical feasibility or those not included in the National List of Essential Medicines. In the context of limited funding for medical institutions, the task of rational use of budgetary resources is acute, which requires the introduction of evidence-based medicine and pharmacoeconomic analysis tools.

The aim of this paper is to theoretically and practically analyze the groups of medicines used in three different healthcare facilities in Lviv region, with a focus on studying their economic significance, clinical feasibility and compliance with national and international standards. The scientific novelty is to conduct a comparative analysis of the structure of drug groups on the example of three specific secondary health care facilities,

taking into account economic and therapeutic aspects. The practical value of the findings is that the study can be used to develop sound recommendations for the management of healthcare facilities to improve the efficiency of drug procurement, reduce costs without compromising the quality of treatment, eliminate duplication, and bring the range of medicines in line with the requirements of evidence-based medicine.

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