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QALIFYING WORK

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THE TREATMENT OF BURNS DURING NATURAL DISASTERS IN THE
COUNTRIES OF THE WORLD**»

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ANNOTATION

The paper presents the results of a pharmacoeconomic evaluation of drugs for the treatment of burns in natural disasters in the countries of the world. An analysis of the market for the range of medicines regulated by orders for use in natural disasters and the treatment of burn injuries was carried out. The results of the pharmacoeconomic analysis of the most common methods of treatment of burn injuries are presented. The work is presented on 43 pages and consists of 3 chapters, general conclusions, 35 sources of literature. The research results are illustrated by 16 figures and 4 tables.

Key words: natural disasters, pharmaceutical assistance, drugs, injuries, pharmacoeconomic analysis.

АННОТАЦИЯ

В работе представлены результаты фармакоэкономической оценки препаратов для лечения ожогов при стихийных бедствиях в странах мира. Проведён анализ рынка ассортимента лекарственных средств, регламентированных приказами к применению при стихийных бедствиях и лечении ожоговых травм. Представлены результаты проведённого фармакоэкономического анализа наиболее распространённых методов лечения ожоговых травм. Работа представлена на 43 страницах и состоит из 3 глав, общих выводов, 35 источников литературы. Результаты исследований проиллюстрированы 16 рисунками и 4 таблицами.

Ключевые слова: стихийные бедствия, фармацевтическая помощь, лекарственные средства, травмы, фармакоэкономический анализ

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List of symbols

ATS - anatomical and therapeutic chemical classification

WHO - World Health Organization

SDM - State Disaster Medicine

LP - drugs

PSI - health care settings

MOE - Ministry of Emergency Situations

MOH - Ministry of Health

NLD - emergency medical care

OLZ - Essential Medicines

MLA - compulsory health insurance

PVNO - Fire and explosive objects

PLP - Items prescription

HTS - highly toxic substances

HNO - chemically dangerous objects

CH - civil defense

Introduction

The current level of technogenic risk that has emerged in recent years in one of the countries of the world, in Ukraine is increasingly limiting the space for the development of society. There is a steady trend of growth in the number and extent of NA in all industries. This process is facilitated by a number of objective and subjective factors, including imperfect system of normative and legal documents that govern the operation of potentially hazardous activities, a high level of physical and moral depreciation of fixed assets. For example, 20.6% of equipment chemically hazardous facilities has over 20 years of age and level of wear reaches 62.8%, in the fields of fuel and energy - 56.2%, oil - 65.3%, consisting of sewer networks are dilapidated and emergency. The operation of these installations can result in accidents with severe socio-economic impact of the National Assembly. Analysis of circumstances resulting from man-made and natural accidents over the past decade requires the creation in Ukraine capable of prevention and emergency response. The effectiveness of disaster medical services depends on the advance of training, support, daily readiness and ensure timely and complete medical and special property including drugs.

Therefore, the aim of our research was: pharmacoeconomic evaluation of drugs for the treatment of burns during natural disasters in the countries of the world.

To implement this goal identified the following objectives:

- analyze and summarize the literature on international experience and the actual state of Ukraine regarding the provision of assistance to victims in natural disasters;
- conduct market analysis assortment of drugs which are regulated by appropriate orders for use in natural disasters and actually used in the treatment of burn injuries;
- carry out pharmacoeconomic analysis of the most common treatments of burn injuries.

We used research techniques such as: historical, logical, comparative, market research methods, statistical methods, pharmacoeconomic analysis methods.

Information base studies were laws regulating drug provision victims in natural disasters from burns, statistical material, case histories, the publication of research on the topic.

Excessive industrialization Ukraine to the overall technological backwardness and objective difficulties of transition to a market economy led to a gradual increase in the number of accidents and other Emergencies.

In terms of solving the problems that emerged, minimizing losses from disasters and accidents is of great importance to society.

These circumstances and the experience of developed countries necessitate development of national programs appropriate action based on the concept of creating a single state system of prevention and response to accidents, disasters and other Emergencies.

In recent years, Ukraine is increasingly seen a strong upward trend in the number and scale of emergencies in all areas of the economy. Therefore, the need to provide high-quality pharmaceutical care to victims in natural disasters is important. In addition, it should be of high quality pharmaceutical care, which is possible in the presence of drugs, dressings and other materials in the required range and sufficient quantity.

This will help save lives and reduce the suffering of those affected. The work is presented on 43 pages and consists of 3 chapters, general conclusions, 35 sources of literature. The research results are illustrated by 16 figures and 4 tables.

CHAPTER 1

POPULATION PROBLEMS DRUG SUPPLY DURING NATURAL DISASTERS

1.1. Classification of natural disasters and their characteristics

Problems in the provision of medicines to the population in natural disasters can be caused by various reasons, such as [2, 5, 9, 15]:

- Insufficient production capacity. During times of crisis, such as pandemics, outbreaks, or natural disasters, shortages of medicines can occur if manufacturers cannot meet increased demand.
- Restrictions on transport and supplies. During emergencies, there may be problems transporting medicines to the right areas or countries, which can lead to shortages.
- Insufficient funding. Government agencies and other organizations may not allocate sufficient funds to purchase medicines during times of crisis.
- Supply chain disruption. In emergencies, there may be a break in the supply chain of medicines, which can lead to delays or unavailability in the market.
- Incompetence and insufficient training of medical personnel. Medical staff may not be qualified to work with new medicines or may not be able to use available resources effectively.

Various measures can be taken to solve these problems, such as increasing production capacity, improving logistics and transportation, increasing funding, improving the supply chain, and education and training of medical personnel. In addition, a monitoring and warning system can be developed to help respond quickly to possible problems in the provision of medicines in natural disasters [5, 10, 25, 30].

Ukraine - one of the largest countries in Europe in terms of area, population and economic potential, but also one of the first on the scale and consequences of accidents. The structure of industry in Ukraine potentially hazardous industries account for about 40% of the value of industrial fixed assets, about a third release output [1, 33, 35]. The crisis in the economy, accompanied by an increase in the proportion of obsolete technology and equipment, a reduction in the modernization and renovation of production, increases the risk of disasters. Modern scale environmental changes in the country have created a real threat to its national security [7, 33, 35].

Incident - disruption of normal rhythms of life and activities at the facility or area caused by accident, disaster, natural disaster or other dangerous events that led (can cause) loss of life and (or) significant material losses [6, 18, 35].

According to the UN, in the modern world every year as a result of NA (accidents, natural disasters, accidents, criminal acts, etc.) killed more than 2 million. Persons, and 10-12 million. become disabled people [5, 33].

Highly developed modern industrial society requires increasing complexity of production technology, which inevitably leads to an increase in the number of accidents and disasters.

In this regard, an important social and economic importance are prevention, forecasting and disaster NS arising from accidents, catastrophes and natural disasters [33].

In order to develop a single methodological approach to the system of collecting, processing and presenting information about the National Assembly, maintaining database of the nature, methods of localization of possible accidents, catastrophes and natural disasters, as well as other tasks informational nature Resolution of Cabinet of Ministers of Ukraine № 1099 of 15.07.98 year. approved the classification of NA [6, 16]. According to this decree all NA are divided into:

- anthropogenic character:

- o fire;
- o unprovoked explosions or their threat;
- with the release o crash HTS (chemical);
- with the release o crash HTS (radioactive);
- o accident with the release of biological agents;
- o sudden destruction of buildings and structures;
- o failure on utilities and life-support facilities;
- o hydrodynamic accident on dams, dykes, etc..
- NA natural disasters
 - o dangerous geological, meteorological phenomena;
 - o hydrological marine, freshwater phenomenon;
 - o degradation of soil or subsoil;
 - o natural fire;
 - o change of state air quality;
 - o infectious diseases of people, farm animals;
 - o mass destruction of agricultural plants;
 - o change of water resources
 - o change the state of the biosphere.
- NA socio-political nature:
 - o unlawful acts of terrorism direction;
 - o unlawful acts unconstitutional direction.
- PSD military nature:
 - o War.

Also, the purpose of the classification of the National Assembly is an efficient mechanism for evaluation of the events that occurred or may occur in the predicted time and determine the extent of reaction at the appropriate management level.

Our analysis of the Cabinet of Ministers of Ukraine № 1099 showed that:

- According to the causes of the origin of events that may lead to the emergence of the National Assembly on the territory of Ukraine, the National Assembly divided into: human, natural, social, political and military nature;
- According to the spatial distribution, amounts incurred or expected economic losses, the number of people affected by classification attributes defined four levels of NA - national, regional, local and Object;
- NS are common features: the presence or threat of loss of life or significant breach of their life; causing economic losses; significant deterioration of the environment;
- for each specific NA executive bodies responsible for determining classifications PSD develop classification maps that after the necessary approvals are transmitted to the approval of the ministry.

From the analysis of the NA classifications around the world [14, 33, 35], we believe the classification NA (as defined by the Cabinet of Ministers of Ukraine № 1099 of 15.07.98 g.) Need to be added to following classifications of accidents with the release of (the threat of release) HTS on objects (excluding transport):

- establishment and spread HTS during chemical reactions, which began as a result of the accident;
- Accident with chemical munitions.

1.2. Assessment of the situation in one of the countries of the world in order to predict the possible consequences of natural disasters

Natural disasters caused by natural and man-made disasters and related sanitary significant losses, usually accompanied by the destruction of infrastructure for mining (energy, transport, social services, etc.) [5, 9, 17, 14, 21, 27]. When natural disasters such as floods, earthquakes, landslides, accidents caused by explosions, fires at industrial sites, as well as chemical and radiation accidents, providing NLD simultaneously a large number of victims is accompanied by

problems that are not typical for daily practice in the health care system. In the area there is a lack of NA required number of health workers trained to provide NLD in extreme situations, and LP VMP, medical and sanitary equipment. Also lacking and there is a need for urgent hospitalization of victims; vehicles that are eligible for medical evacuation; hospitals, ready to take a large number of victims [1, 2, 13, 15]. These problems can not be solved without preparation. Planning and preparation for the complex medical and organizational activities in NA relies current conditions in the new health care - Disaster Medicine. In our country for the implementation of measures for elimination of the health consequences of the National Assembly, by Resolution of the Cabinet of Ministers of Ukraine dated 14 April 1997 p. № 343 "On the establishment of the Civil Service Disaster Medicine", formed SDM Ukraine.

Providing emergency medical care to a large number of the affected area of the National Assembly, for failure to adequately organize this support forces and local medical institutions, requiring rapid mobilization of large numbers of health workers, timely logistical support of all departments and agencies related to the prevention and elimination of consequences of the National Assembly for this requires timely and complete the needs of different types of property. We believe volumes and parts supply are determined based on the analysis and prediction of possible NS is in a given region of the state and in our opinion should consist of:

- prognostic evaluation of the circumstances and determine possible health losses;
- the methods of solving problems;
- develop a conceptual model that helps to solve the required task.

The tasks that must be addressed include:

- determine the forces and institutions that will provide assistance to victims;
- determination of the required range and number of LP, and its acquisition system delivering the National Assembly;

- LP reserves accumulation, storage, distribution, transportation, replenishment, updates.

1.3. Prognostic assessment of the circumstances of the territory under study and to determine possible health losses

In the economy Ukraine has over 1000 big explosion and flammable objects, which are more than 13 million. Tons of solid and liquid explosive and flammable substances. The length of the main gas pipelines is over 35 thousand kilometers of pipelines - 3.9 thousand kilometers. Their work provides 31 oil pumping stations and 89 gas compressor.

Fires in industrial accidents lead to the destruction of buildings, destroy industrial equipment and other tangible assets. In

of fires in office buildings and homes are accompanied by the release of toxic smoke, especially when burning of plastics and synthetic materials [13, 15, 25, 29].

Accidents at PVNO caused by strong explosions and fires can lead to serious social and economic consequences.

The major damaging factors in accidents PVNO are: airblast; fragmentation fields generated fragments of process equipment, flying; thermal radiation fires; the effect of toxic substances formed by the disaster (fire, accidents at chemical plants and so on.).

Size of population losses in fires and explosions varies within wide limits and can reach many hundreds and even thousands of people [2].

With the explosion in closed spaces (mines, industrial buildings, etc.) in almost all the people who are there possible care, floor area (about half) will be from 20 to 60% of body surface, and in other smaller area. Thermal lesions of skin will be combined with burns of the upper respiratory tract in 25%, and 12% - from mechanical injuries. In addition, approximately 60% of affected possible carbon monoxide intoxication [5].

So the main factors that determine the number of losses from fires and explosions are: the extent of fire or explosion of power; the nature and density of settlements; fire resistance of buildings and structures; meteorological conditions (wind speed, precipitation, etc.); time; population density in the area of damaging factors and others .; timely provision of medical care.

These data indicate that the explosion in a confined space in almost all affected can be combined lesions in various combinations, as a consequence of damaging factors inherent in these accidents. Because industrial regions are areas with high risk of accidents and disasters caused by man. This risk is growing because the level of depreciation of fixed assets and equipment in most industrial plants close to critical. This could explode damaged, break, etc., that lead to the accident.

In 2021, Ukraine registered 48,082 fires (compared to 2012 marked a decrease of 3.7%), resulting in the deaths of 4027 people (-3.8%), of which 126 children (+ 5.9%). Injured person in 1901 (+ 0.3%), of which 121 children (-10.4%).

Direct property damage from fires totaled 200 million. 552 thousand. UAH (+ 54.2%), side - 547 million. 67 thousand. UAH (+ 26.6%).

Every day in Ukraine on average 132 fires occurred as a result of which killed 11 and injured 5 people got the fire destroyed 55 buildings and 7 units of vehicles, the economic costs of fires were 2 million. 48 thousand. UAH.

Thus, the situation that has developed with the financing department of the Fire Service, catastrophic. In the last three years the number of units of the Fire Service, which are around the clock in rural areas decreased by 1949 units, the number of fire engines that are alert decreased by 2534 units eliminated in 1317 building fire stations.

Concern is the large number of houses and high-rise high-rise buildings, which are operated with inoperative fire protection system. Today in Ukraine 4094 is maintained houses and high-rise high-rise buildings, which are mounted system 6434 fire control and smoke. Due to the lack of maintenance of existing systems 49.1% are in non-working condition. However, according to statistics by the MOE

in 2021, the highest percentage of emergency situation are fires and explosions (57%) (Fig.1.1).

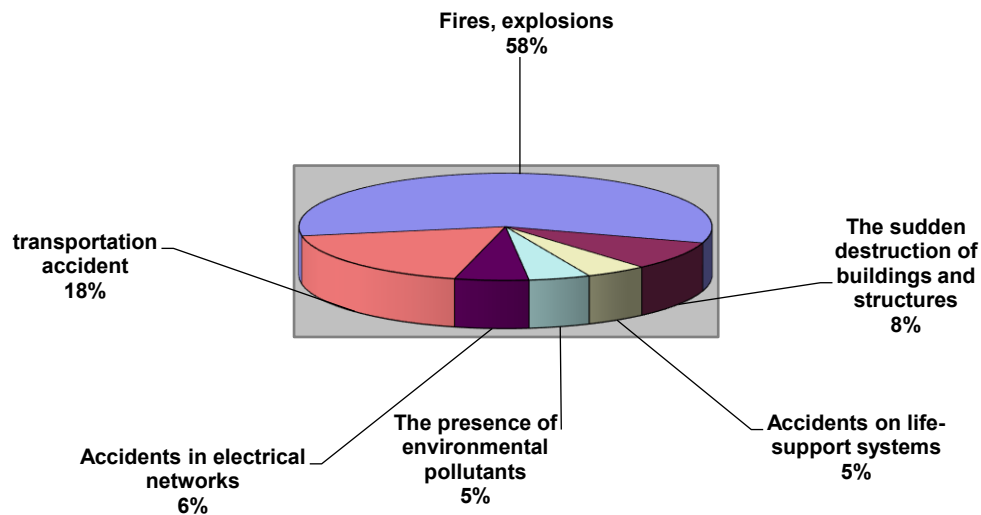


Figure 1.1. Distribution of emergency situation by in 2021.

Based on the above to the potential causes of possible anthropogenic origin in Ukraine include: significant human impacts territories; moral and physical deterioration of productive assets; deterioration of logistics; reduction of production and technological discipline; poor condition of disposal of toxic waste.

In addition, the creation of the reasons for the emergence of anthropogenic origin contributes ignoring environmental factors, the standards and other regulations, lack of attention to a set of measures aimed at the prevention of PSD [7].

According to experts Civil Defence Headquarters and the National Assembly, and environmental safety, as well as managers and professionals objects increased risk processes to prevent Emergencies can be controlled [6, 12], and then advance to influence the cause and basis of their appearance. To do this in advance to hold a series of organizational and practical measures. The main one is the prediction of

facts and assessment of high-risk facilities and implementation of practical measures for prevention of Emergencies and the creation of a data bank of high risk simulations National Assembly on potentially hazardous objects [11].

The basis of the prognostic assessment of circumstances in accordance with HNO 'organizational guidelines to calculate losses from HTS in peacetime "headquarters for CO and NA should be based on data on the simultaneous emission of total stock HTS available on-site at adverse weather conditions. The initial data for the evaluation of the chemical environment is the type and number HTS meteo- and topographic conditions (terrain, vegetation), the character development to the spread of contaminated air, storage conditions and the nature of the release of toxic substances, the degree of protection of employees, the public.

Conclusions

1. The analysis of NA in Ukraine and in the world, which indicates a significant increase in percent dying and injured in the last decade.
2. Analysis of circumstances resulting from man-made and natural accidents obliges Ukraine to create a functioning warning system and emergency response.
3. The effectiveness of disaster medical services depends on the advance of training, support daily readiness, availability of trained personnel, special and medical assets.
4. Disasters should be subject to forecasting headquarters CH, health and other services. When forecasting disasters at sites with HTS need to consider physical, chemical and toxicological properties of the latter number, population density, weather conditions.
5. The results confirm the relevance of ensuring the availability of health and medical care to the population in case of NA and capacities of the pharmaceutical market and funding sources.

SECTION 2

MARKETING ANALYSIS OF DRUGS THAT ARE USED IN BURNS AND TRAUMA

2.1. Analysis of drugs actually used for emergency medical care for burns and injuries

The problem of burn injury treatment in Ukraine and throughout the world is very crucial because burn pathology is one of the most common and serious types of injuries as war and peace time [17, 20, 27, 29]. Analysis of statistical data on the structure of Kharkiv region lesions showed that among the various pathologies important place belongs to burn disease [1].

We analyzed the range of drugs that effectively used to treat burns and injuries, primarily analyzed histories of inpatients who were treated at the burn offices in Kharkiv City Clinical Hospital ambulance (Table 2.1.).

Table 2.1.

Statistical data on hospitalized patients with burns and injuries in 2021

№	Diagnosis	Number of patients
		average
1	Personal care	347
2	Production burns	107
3	Burns in children	78
4	Total number of:	534

We conducted a statistical analysis showed that from 2020 to 2021 in the burning section above the city each year was in the hospital an average of 534 victims of burn injuries where household care were 66.8%, manufacturing - 21.4% and care of children - 11.8%.

We analyzed the medical records of 350 inpatients as follows:

1 Analysis of statistical data on hospitalized patients with burn injuries (Table 2.2.)

2 Data analysis of the actual use of the letters LP observations and in accordance with the clinical diagnosis of the patient.

Table 2.2.

Statistical data analysis of medical records inpatients with burn injuries

	The proportion	number of patients
Age of patients	7 years	14
	7 – 20 years	5
	21- 40 years	104
	41 – 60 years	212
	over 60 years	15
Gender patients	Women (including children)	126 (8)
	Men (including children)	224 (8)
The social status of patients	working	253
	idle (including children)	62(16)
	pensioner	35
Origin burns	household burns (including children)	256 (16)
	production of burns	94
diagnosis	superficial burns	14
	superficial and deep burns with burn disease	208
	care of burn shock	128
The total number of analyzed medical records		50

For the clinical diagnosis of 50 patients was as follows:

1 Personal thermal burns including children (73% of survivors):

- burns boiling water - 80%;
- flame burns - 10%;
- care oils, fats, etc. - 5%;
- Custody of rozkalenyh items - 3%;
- burns molten resin - 2%.

2 Industrial thermal burns (27% of survivors):

- flame burns - 90%;
- Custody of rozkalenyh items - 4%;

- Custody acids and others. SDYAV - 3%;
- electric arc burns in flames - 3%.

The analysis of the effectiveness of treatment in 6 categories shown:

- The first category - "with recovery" (it was written 65% of patients);
- Second - "with improvement" (30%);
- The third - "with deterioration" (none);
- Fourth - "unchanged" (none);
- Five - "died" (2%);
- Sixth - "transferred to another medical facility" (3%).

Data analysis of the actual use of the letters LP observations and in accordance with the clinical diagnosis of the patient showed that the treatment was applied for 149 drugs.

Comparative analysis of drugs according to ATC classification system showed that treatment of burn injury using 149 drugs from 10 anatomical groups, and the regulated list - 96 of 11 drug groups (tabl.2.3.).

We analyzed the lists for all four levels of classification system PBX.

The analysis showed that the most widely in both lists given group A - medicines that affect the digestive system and metabolism (28 drugs in the list of regulated and 27 LP actually used). Joint international non-proprietary names for both lists are 6 positions:

A03A D01	Papaverine	A11D A01	Thiamine
A03B A01	Atropine	A11G A01	Ascorbic acid
A07B A01	Activated charcoal	A11H A02	Pyridoxine

In this case, the list of drugs that is actually used, as opposed to the regulated list includes subgroups: A02A - antacids; A02H - other medicines for the treatment of acid-affiliated diseases; A05A - medicines used in biliary pathology; A05V - drugs used in diseases of liver, lipotropic agents; A07A - antibiotics used in intestinal infections; A07V - chelators; A07D - means protection peristalsis.

Table 2.3.

Comparative analysis of drugs according to ATC classification system used to treat burn injuries and regulated by the order

Anatomical group	<i>Name of anatomic</i>	number drugs	
		in the list of regulated	actually in use
A	Drugs that affect the digestive system and metabolism	28	27
B	Medications Blood and blood forming organs	12	32
C	Drugs affecting the cardiovascular system	11	16
D	Dermatological	8	19
H	Hormone medications for regular use (excluding sex hormones)	2	4
J	Antimicrobial medications for regular use	9	18
M	Drugs affecting the musculoskeletal system	2	4
N	Medications for nervous system	16	16
R	Medications Respiratory system	5	10
S	Medications organs feeling	1	-
V	Various tools	2	3
Total number of positions		96	149

In group B - means Blood and blood forming organs (12 medicines credited in regulated list, and in the actual 32 LP). Together, both the regulated list, and the list that is actually used six INN:

B01A B01	Heparin	B05B B01	Electrolytes
B02B X01	Etamzilat	B05X A03	Sodium chloride
B05B A03	Glucose	B05X A05	Magnesium sulfate

Note that the therapeutic subgroups B05V B01 - electrolytes - regulated in the list include two drugs, and in the list that actually applied to this subgroup included

six drugs, and these drugs are as V05AA01 - Albumin and V05AA05 - Reopoliglyukin.

Group C - medicines that affect the cardiovascular system (11 drugs in the list of regulated and 16 LP actually used). Together we have 6 positions:

C01C A04	Dopamine	C01EX	Validol
C01C A24	Adrenalin	C03CA01	Furosemide
C01D A02	Nitroglycerin	C04AX31**	Dibazol

In the anatomical group D - Dermatological (8 drugs in the list of regulated and 19 drugs actually used) - common to both lists are:

D08A G53	Iodine	D08A X01	Peroxide
		D08A X08	Ethanol 96%

Note also that the list is actually applied therapeutically-chemical subgroups D03A X - other drugs that promote healing - (four positions including Levomikol), D03B A - proteolytic enzymes - (three positions), D06A - antibiotics topical - (three positions), D06V A - sulfonamides - (two positions) and D06S - antibiotics in combination with chemotherapeutic agents - Levosyn.

Comparison of anatomical H - Hormone medications for regular use (excluding sex hormones) showed that common to both lists are: Dexamethasone (N02A V02) and Prednisolone (N02A V06). The list of LP that is actually used is such as drug Hydrocortisone (H02A B09).

Group J - antiinfectives for systemic use (9 drugs in the list of regulated and 18 LP actually used). In this group of comparable data lists coincide in position 2: J01C A01 - Ampicillin and J01D A13 - Ceftriaxone. But the list of LP actually used is given such drugs as: J01S A04 - amoxicillin, J01S A51 - Ampioks, J01S - bitsillina E30-3, J01D E02 - Tsefpirom, J01D C02 - Cefuroxime;

subgroups J01F F - linkozamidy (two preparations) and J01H X - other bacterial agents - Dioksydyn.

For group M - means affecting the musculoskeletal system (2 medicines in the list of regulated and 4 LP actually used) provided by different drugs. Regulated in the list are two drugs: M01A B01 - Indomethacin and M01A V05 - Diklofenak, and in the list that is actually used has four drugs: M01A B15 - Ketanov, Ketolonh, ketorolac and M02A - Oil CAMPHOR.

For anatomical group N - Medications for nervous system (16 drugs in the list of regulated and 16 LP actually used). Common to both lists are:

N01A F01	Thiopental	N02A F01	Butarfanol
N01A X11	Sodium hydroxybutyrate	N02A X02	Tramadol
N01B A02	Novocaine	N02B B02	Analgin
N01B B02	Lidocaine	N05A A01	Aminazin

For group R - drugs acting on respiratory system compliance analyzed lists seen by chotyrymya names: R03D A05 - Eufilin; R06A A02 - Diphenhydramine; R07A V02 - kordiamin; R06A X - other antihistamines for systemic use (a drug in the list of regulated and 2 - which is actually used in the treatment of burn injuries).

In anatomical Group S - Medications on the senses presented only regulated the list one position - S01A V04 - Sulfatsil sodium.

In the latter group V - different tools common to the lists under consideration are: V03A B06 - thiosulfate, but no such: V03A B10 ** - Cytochrome-C, V03A B11 ** - Unitiol (always used in gas poisoning uharonym).

Results The preparation of the ATC classification system showed that the joint for international non-proprietary names of drugs are 37 to 9 anatomical groups. Thus, in the list of regulated presented 38.5% LP actually used to provide victims with effective NLD burn injuries. Therefore, the issue of providing assistance to the

NA from burn injuries and availability of health care facilities and offices DSMK relevant drugs and their proper selection is important.

The next stage of research was to analyze the wholesale market drugs that are regulated by the order and actually used for burn injuries.

The subject of the research data were price lists of "Pharmacist", "Ezhenedelnyk Pharmacy" price lists wholesalers, information retrieval programs "Marion", "Farmtrejd", "Farmset» «Inform-client."

It is established that in the period 2020-2021. Drugs on the wholesale market represented 681 LP based forms of production. Further, our table was compiled svodna drugs used to treat burn injuries and regulated by the order of trade names and release form and was made comparative analysis between 2020 and 2021 (add. B).

Comparative analysis of the number of producers on the LP burn injuries and those who are governed, which were presented on the pharmaceutical market of Ukraine in the period from 2020 to 2021 (Table. 2.4.) Showed that during this period the entire LP was recorded from 144 producer while in 2020 - including 113 51 domestic companies, and in 2021 respectively - 117 and 65.

Thus the analysis showed that in 2020 the pharmaceutical market of Ukraine the number of domestic producers increased compared to 2020 by 27%, while the number of foreign suppliers decreased by 16%. The share of domestic producers in 2020 was 45% and in 2021 is almost 56%.

The next step was the analysis of trade names given above manufacturers release forms of drugs from burn injuries and those regulated by the order which showed that in 2020 the number was 527 LP, and in 2014 already 657 range is increased by almost 25% (tabl.2.5.).

The share of domestic production in 2020 was 69%, and in 2021 already 81% of their range is increased by 45%. Among the leading foreign manufacturers are: Hungary, India, Bulgaria, France and Russia. Thus the respective manufacturers England LP in 2020 was not, and in 2021 was registered for 9 dosage forms

(dodat.B). In this regard, the next step we more detailed analysis of these manufacturers in its range of LP that were presented, and their wholesale price.

Table 2.4.

Comparative analysis of the number of manufacturers of drugs used to treat burns and injuries 2020-2021.

Number of order	Country of origin	Number producers LP	
		2020 year	2021 year
1	Austria	4	1
2	England	-	1
3	Bulgaria	2	2
4	Hungary	4	3
5	India	11	10
6	Spain	1	1
7	Italy	1	1
8	Netherlands	1	2
9	Germany	8	5
10	Poland	6	4
11	Slovakia	3	2
12	USA	3	4
13	Finland	1	1
14	France	7	5
15	Croatia	1	1
16	Czech	2	1
17	Ukraine	51	65
	Total	113	117

The analysis showed that continually pharmaceutical market of Ukraine there are about 6% LP foreign production counterparts have not yet submitted the domestic producer. For example such as Almagel susp. 170 ml, almagel A susp. 170 ml production «Balkanpharma -Troyan» (Bulgaria); Baralhetas amp. 5 ml № 5, Baralhetas tab. Number 100 - «Jugoremedija» (Yugoslavia); Valokordin 20ml, 50ml

valokordin - «Krewel Mauselbach» (Germany); Hordoks 100 tys.od. 10 ml of number 25 - «Gedeon Richter» (Hungary); Dalatsin C phosphate amp. 300 mg 2 ml № 1 - «Pfizer Inc.» (USA); Dermazyn cream 1% 50g - «Lek» (Slovakia); Essentiale d / etc. amp. 5 ml of number 5, number Essentiale Forte N 30 - «Nattermann» (France); Iruksol ointment 30g - «Pliva» (Croatia); Kontrikala amp. 10 tys.od. 2 ml № 10 - «AWD. Pharma »(Germany) and others.

Table 2.5.

Comparative analysis of the number of trade names including forms release the LP used to treat burns and injuries for 2020-2021.

Number of order	Country of origin	Number of trade names given release forms LP	
		2020 year	2021 year
1	Austria	10	4
2	England	-	9
3	Bulgaria	10	10
4	Hungary	22	15
5	India	23	14
6	Spain	3	3
7	Italy	1	3
8	Netherlands	5	5
9	Germany	11	7
10	Poland	13	5
11	Slovakia	12	5
12	USA	8	11
13	France	15	14
14	Croatia	4	1
15	Czech	2	1
16	Belorussia	3	2
17	Ukraine	364	529
	Total	527	657

In connection with the expansion of competitive price range capable for LP domestic producers in Ukraine pharmaceutical market in 2021 is not presented some foreign drugs (tabl.2.6.)

Table 2.6.

List of foreign-made drugs that are not represented in 2021 the pharmaceutical market of Ukraine

Number of order	Country	Manufacturer	Medicinal product
1.	2.	3.	4.
1	Austria	Biochemie	Heparin (250 units. In 1 ml) solution 5ml № 1 Cefuroxime 750 mg; 1.5 g
		Nycomed Austria	Prednisolone tab. 5 mg № 30; amp. 25 mg 1 ml № 3
2	Bulgaria	Sopharma	Furosemide amp. 1% 2ml № 10
3	Hungary	Gedeon Richter	Heparin (250 units. 1 ml) solution 5ml № 1
		Chinoin	Furosemide amp. 20 mg district 2 ml № 25
4	India	Elegant India	Ampicillin far. D / etc. 1 g Diklofenak amp. 25mg / 1ml 3ml № 10 Captopril tab. 0,025g № 10 and № 40
		IPCA	Prednisolone tab. 5mg № 100
		Shreya Healthcare	Prednisolone tab. 5mg №100; amp. 30 mg ml 1 № 3
		Genom Biotech	Heparin (500 units. In 1 ml) solution 5ml №10
			Diklofenak amp. 25mg / 1ml 3ml № 20
			Nitroglycerin tab. 0.5 mg № 40 Tramolé amp. 10% of district 2 ml № 5
		Pharmacia AD	Furosemide tab. 0,04 № 10 and № 50
		5	Germany
Wockhardt	Metronidazole district d / etc. 0.5% 100ml № 1		
Jenafarm	Prednisolone tab. 5 mg № 20		
Grunenthal	Trueman amp. 5% and 10% of district 1 ml № 5		

Continued table 2.6.

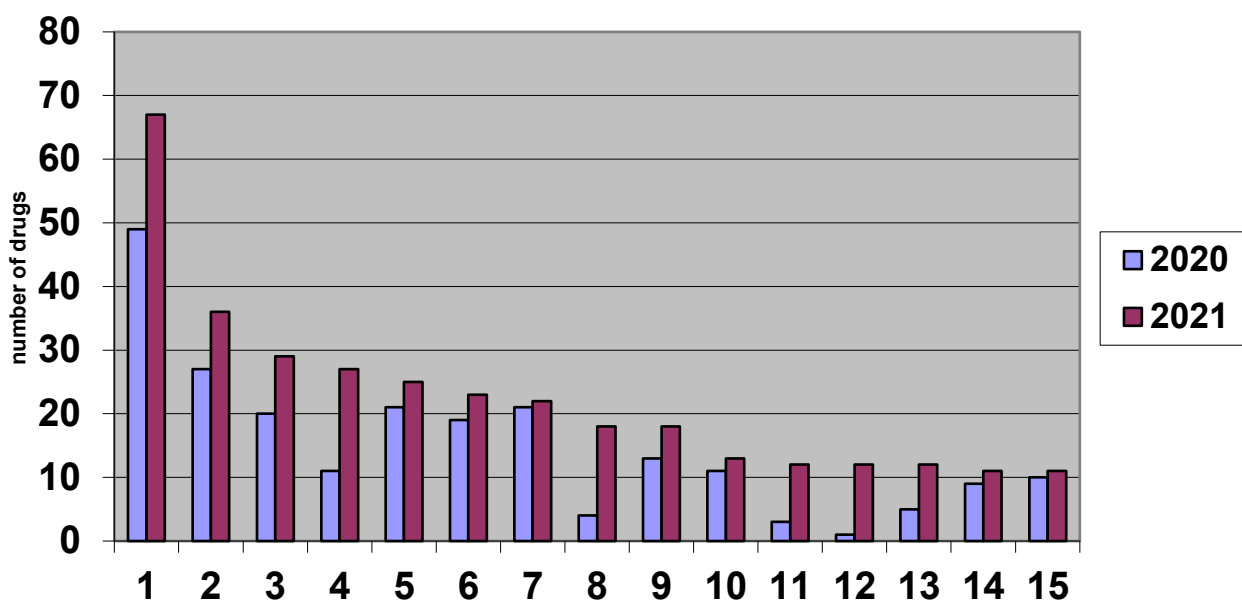
1.	2.	3.	4.
6	Finland	Orion	Digoxin table 0,125 mg 0,25 mg №100
			Furosemide tab. 0,04 № 50
7	Poland	Varshavskyy PhP	Table digoxin. 0.25 mg № 30
		Jelfa	Captopril tab. 0,025g and 0.0125 g № 40
		Polpharma	Piracetam capsules 0,4 № 60
			Trueman amp. 5% of district 1 ml e / al №5 and 10% of district 2 ml № 5
Cracow PhP	Tramadol g / CL. Amp. 10% of district 1 ml № 5		
8	Slovakia	KRKA	Captopril tab. 0.025 g № 20 and № 40
			Трамадола г/хл. Амп. 5% та 10% р-н 1 мл д/ін № 5
		Slovakofarma	Trueman amp. 5% and 10% of district 1 ml № 5
9	Croatia	Pliva	Amoxicillin capsules 0,25 № 15
10	Czech	Lechiva	Амоксицилін капс. 0,5 №1 0
		Pliva	Thiopental sodium pores. D / etc. 0.5 g and 1 g № 10
			Diklofenak amp. 75 mg 3 ml № 5

The highest number of drugs that was introduced in the pharmaceutical market of Ukraine for the period analyzed, from burn injuries account for such domestic manufacturers as LP by "Darnitsya" m. Kyiv, JSC "SC" Health ". Kharkiv JSC "Farmak" m. Kyiv, "Biopharma" m. Kyiv, JSC "Halychpharm" m. Lviv, JSC "Borshchahivskiy CPP" m. Kyiv, JSC "KMP" m. Kyiv, of "infusion" m. Kyiv, SC "DZ SSCD "m. Kharkiv, JSC" Fitofarm "m. Donetsk and other (Fig.2.1.).

The highest number of drugs that was introduced in the pharmaceutical market of Ukraine for the period analyzed, from burn injuries account for such domestic manufacturers as LP by «Darnitsya» m. Kyiv, JSC «SC» Health «. Kharkiv JSC «Farmak» m. Kyiv, «Biopharma» m. Kyiv, JSC «Halychpharm» m. Lviv, JSC «Borshchahivskiy CPP» m. Kyiv, JSC «KMP» m. Kyiv, of «infusion» m. Kyiv, SC «DZ SSCD «m. Kharkiv, JSC» Fitofarm «m. Donetsk and other (Fig.2.1.).

The analysis found overlapping range of manufacturers LP especially domestic producers. So then we analyzed their wholesale prices to eliminate the above table we have developed svodnoyi drugs with higher price.

For further research, we have selected trade names LP, which have the lowest price characteristics. Fragment of a drug selection universe of the example 5% glucose district and 400 mL of heparin (500 units. In 1 ml) Mr. 5ml number 1 are shown in Table 2.7., 2.8.



1 – Darnycya; 2 – Health; 3 – Farmak; 4 – Biopharma; 5 – Halychpharm; 6 – Borschahovsky CPP; 7 – KMP; 8 – infusion; 9 – health HNTSLS; 10 – Fitofarm; 11 – Nick; 12 – Novofarm-biosynthesis; 13 – Stirolbiofarm; 14 – Viola FF; 15 – Lubnyfarm

Figure. 2.1. Histogram ranking manufacturers LP, a variety of which are more than 10 drugs used for burns and injuries

Thus comparative analysis of the LP at wholesale prices in 2020 and 2021 allowed us to remove the drug and 474 to determine the list for further analysis of its marketing. This list included 183 LP of which 79.8% of domestic production (the list A).

Table 2.7.

Selection of heparin (500 units. 1 ml) Mr. 5ml number 1, which has the lowest price characteristics

№ of order	Medicinal product	Manufacturer	Wholesale price, USD	
			2020	2021
1	Heparin (500 units. in 1 ml) solution 5ml № 1	"Pharma Life" (Ukraine)	11,5	15,4
2	Heparin (500 units. in 1 ml) solution 5ml № 1	"Indar" (Ukraine)	11,8	13,84
3	Heparin (500 units. in 1 ml) solution 5ml № 1	"Pharmeks" (Ukraine)	-	14,16

Conclusion: Heparin (500 units. In 1 mL) district 5 ml 1 production number "Indar"

Table 2.8.

Selection of Glucose 5% rn 400 ml, which is the lowest price characteristics

№ of order	Medicinal product	Manufacturer	Wholesale price, USD	
			2020	2021
1	Glucose 5% of district 400 ml	"Infusion" (Ukraine)	1,15	1,3
2	Glucose 5% of district 400 ml	"Nicko" (Ukraine)	1,05	1,22
3	Glucose 5% of district 400 ml	"Uriya Pharm" (Ukraine)	1,03	1,18
4	Glucose 5% of district 400 ml	"Novofarm-Biosynthesis" (Ukraine)	1,00	1,18

Conclusion: Glucose 5% rn 400 ml of production ""Infusion" (Ukraine)" has the lowest wholesale price as in 2020 and in 2021.

2.2. Marketing analysis of drugs actually used to provide NLD from burns and injuries

When conducting market analyzes List A (183 trade names of 11 anatomical groups) for 3 years (from 2020 to 2021rr.) The object of study was the wholesale pharmaceutical market LP. The main subjects of the pharmaceutical market were manufacturers and wholesalers. The subject of the study were the wholesale prices manufacturers and suppliers LP presented in these price lists of "Pharmacist" and "Ezhenedelnyk Pharmacy" price lists wholesalers, information retrieval programs "Marion", "Farmtrejd", "Farmset" "Inform -klyent. "In the course of analysis by the minimum, maximum wholesale prices and calculated their average prices indexes (chain, basic), liquidity ratio and solvency adequacy.

In the analysis of wholesale prices for LP in Schedule We found that analizuyemyy period of 183 trading name price increased 100% in pharmaceuticals.

In the next stage of the marketing analysis of LP in Schedule A, we have calculated their liquidity ratios and the adequacy of the price to pay.

Liquidity ratio reflects the degree of price competition in a particular sector of the market in some time. The liquidity ratio was calculated by the formula:

$$Slig = ((T_{smax} - P_{min}) / P_{min})$$

Where: Slig - liquidity ratio price

T_{smax} - the maximum price,

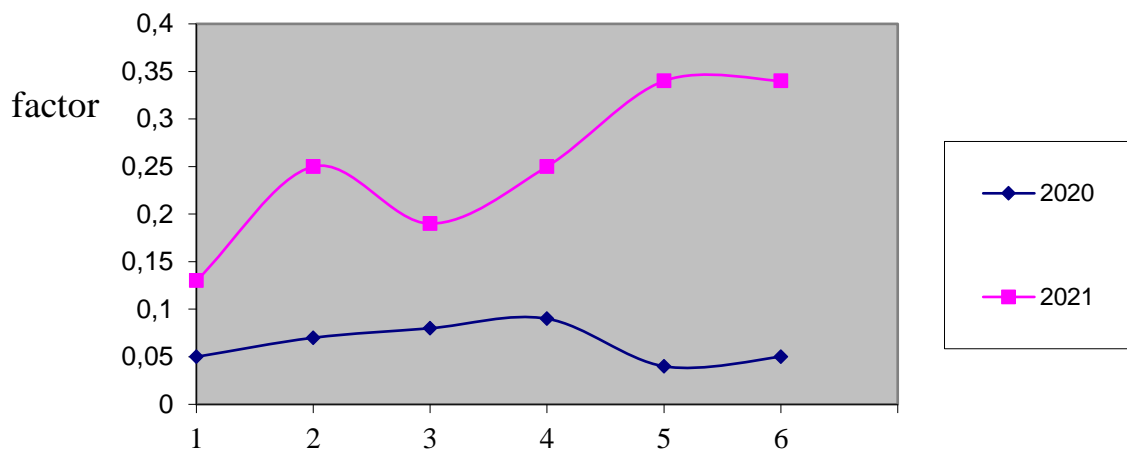
C_{min} - the minimum price [14].

The analysis we calculated ratios for liquidity reveals that the rate decreased in 2021 compared to 2020 by 0.06 and ranged from 0.00 to 0.66.

The results observed in studies compared to 2008 reduce, and in some cases increase the average liquidity ratio [30, 31]. Higher efficiency observed in 22.7% of LP. For example growth of 2.6 times is observed for 2% aminophylline district 5ml number 10 (JSC "Darnytsya" m. Kyiv), sodium bicarbonate 4% 100ml (LLC "George Farm" m. Kyiv) - 1.09 . Unchanged liquidity ratio observed in 3.3% of the

LP, and in 74% of medicines calculated coefficient decreases, indicating that the settlement price situation in the pharmaceutical market of Ukraine as a result of competition between wholesalers (Figure.2.2.).

Next, we have calculated the solvency adequacy ratio, or availability of the drug for each year analyzed. It describes the dynamics of value for a particular drug and solvency of the consumer and to some extent characterizes drug availability to the public of consumers [15].



1 - Eufilin amp.5% 5ml number 10; 2 - Sodium bicarbonate 4% rn 100 ml; 3 - Amoxicillin tab. 0,25 № 20; 4 - Ethyl alcohol 96%; 5 - Ointment "Levomekol" 40 g; 6 - Ointment "Levosyn" 40 g

Figure. 2.2. Analysis of the liquidity ratio for

Investigated indicator was calculated as the ratio of the average wholesale price of the drug to the average wage in Ukraine, expressed as a percentage:

$$\text{Ca.s.} = P / \text{Wa.w.} * 100\%$$

where: Ca.s. - Solvency adequacy ratio in doslidzhuvalnomu year;

P - average wholesale price of the drug by doslidzhuvalnyy year;

Wa.w. - The average salary for doslidzhuvalnyy year (tabl.2.9.) [65].

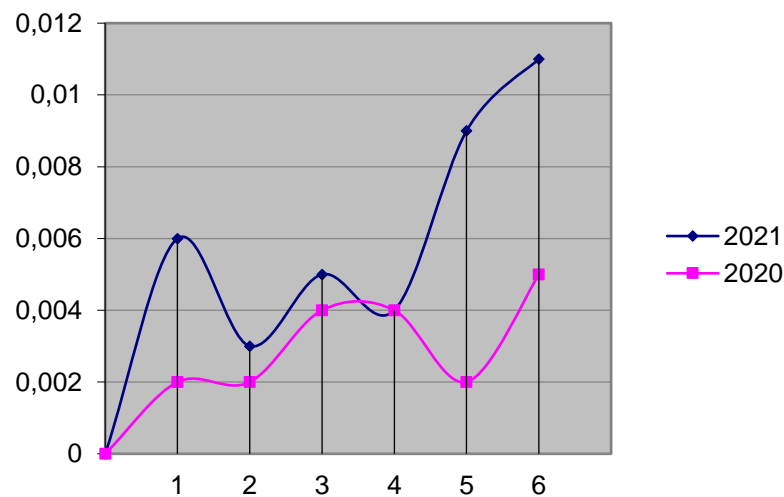
Table 2.9.

Dynamics of average monthly wage in Ukraine in 2016-2021.

	On average, one employee					
	2016	2017	2018	2019	2020	2021
Ukraine (UAH)	5187	7105	8867	10503	11596	14017

From the formula shows that the low rate Ca.s. provides access to the drug sale and guarantees in low effective demand. Thus, the ratio between solvency and adequate notion of accessibility at prices an inverse relationship. The higher the coefficient Ca.s, the less is available for the consumer product.

The analysis calculated the solvency adequacy ratio showed that in 2021 5.3% of LP he remained at 2020 for example amoxicillin tab. 0,25 № 20 (OOO Agrofarm m. Kyiv) it is 0,005, and for other LP solvency adequacy ratio decreased in 2 times or more. That solvency of the population in 2021 compared to 2020 increased (Figure 2.3). [30, 31].



1 - Eufilin amp.5% 5ml number 10; 2 - Sodium bicarbonate 4% rn 100 ml; 3 - Amoxicillin tab. 0,25 № 20; 4 - Ethyl alcohol 96%; 5 - Ointment "Levomekol" 40 g; 6 - Ointment "Levosyn" 40 g

Figure. 2.3. Analysis of solvency adequacy ratio

The study observed a certain pattern - solvency adequacy ratio of drugs during 2020-2021 years almost unchanged. It was typical for domestic preparations, and for imported products.

Conclusions

1. The analysis of case histories of and defined for the LP, which is actually used in burns and injuries.

2. The analysis of drugs actually used in the provision of medical care for burns and injuries on indicators: LP under the ATC classification system; LP by country of manufacture; LP by the number of proposals; LP at wholesale prices.

3. Analysis of liquidity ratios wholesale price from burn injuries LP showed that it decreased in 2020 compared to 2021 by 0.06 and ranged from 0.00 to 0.66.

4. Analysis of solvency adequacy ratio showed that it reduced to 2 or more times, ie solvency of the population in 2020 is growing.

SECTION 3

PHARMACO-ECONOMIC FOUNDATIONS OF EFFECTIVE PHARMACEUTICAL ASSISTANCE TO VICTIMS IN NATURAL DISASTERS WITH FIRE INJURIES

3.1. Schemes for the study of victims with burns and injuries

Burns called the damage caused by thermal, chemical or radiation energy. The severity of a burn is determined by the area and depth of tissue damage. The larger the area and deeper tissue damage, the harder for the burn. Classification of burns Depending on the causes of burns are divided into thermal, chemical and radiation. In the depths of defeat burns divided into five degrees of Kreybihu 1 degree burns manifest pronounced redness of the skin and tissue edema, accompanied by burning pain and losing only the epidermis. II degree burns are characterized by a deep skin lesions, but with preservation of papillary layer it. Also if symptoms noted at 1 .Enclosure, there is the formation of bubbles of exfoliated epidermis filled with serous fluid. Blisters can develop after exposure to a temperature or develop during the first day, which is determined by the temperature of the traumatic agent and duration of its action. III degree burns are characterized by necrosis tops papillary layer of the skin. IV degree burns all accompanied by necrosis papillary layer. V degree burns are accompanied by necrosis of the deeper layers of tissue and skin charring or body as a result of the strong impact of the traumatic agent, flame, molten metal, electric current, concentrated acid, etc. Heavy and deep burns III, IV, V extent usually at the edges of the affected surface followed by less deep lesions 1, II degree. There is chetyrehstepennaya classification of burns. Grade I is characterized by hyperemia and edema of the skin Grade II - the formation of bubbles filled with clear liquid yellowish 1for degree - spread of necrosis on all or almost all of the epidermis HIE degree - necrosis of the skin layers IV degree - necrosis not only skin, but also deeply lying tissue fascia, tendons, bones. In practice it is often used by dividing into

three degree burns 1 degree - erythema and edema 11 stepen- blistering of the epidermis exudate exfoliated and III degree - necrosis of the skin with the destruction of the growth layer of the epidermis.

In the hospital to take urgent measures to eliminate the shock is administered tetanus toxoid and produce primary processing surface burn. One of the ways it is that warm temperature 25°C operating or net dressing during anesthesia anesthesia or local anesthesia with sterile gauze balls soaked with ether or 0.5 solution of ammonia, thoroughly wash the affected surface and the surrounding skin exfoliation of the epidermis and foreign bodies completely removed.

Surface burning dried sterile wipes and wiped with alcohol and then impose a sterile bandage to sintomitsinovoy emulsion, sterile mineral oil with an alcohol solution furatsilina or placed under the patient's frame of sterile sheet with an open method of treatment. All the diverse methods of local treatment of burns can be divided into four groups, 1 indoor and 2 outdoor, mixed 3, 4 operational. The choice of treatment is determined by the severity of the burn time elapsed since the injury, the nature of the primary processing and the setting in which the treatment will be carried out. In the closed method of treatment on the surface of a burn bandage with various substances protivoozhogovaya ointment, emulsion sintomitsina, dioksidinovaya ointment, etc. In recent years, began to use the following method to the treated surface burns close fibrin or plastic film that protects the wound surface, and a film is administered antibiotics, preventing infection development. The advantages of this method of reducing the risk of infection following a burn, suitable for all conditions, clinic, hospital, military field offices and other patient mobility, facilitating the fight against complications of the heart, the lungs, with contractures of the joints, the ability to transport. The disadvantages are its difficulty in observing the surface of the wound, pain and destruction in the dressings are part of granulation and epithelial.

Open method of treatment is used in two ways and without surface treatment of burns and tanning agents used with the creation of a crust on the surface of the

burn eschar by treatment with coagulating agents. With an open method of treatment without processing tanning agents patient after primary treatment of burn surface is laid on the bed, tucked sterile sheets, and placed under the frame of a sterile sheet. With bulbs maintained at 23-25°C. Wound surface is dried and covered with a crust, under which the healing occurs. With the development of festering crust is removed and transferred to a closed treatment. Public method, with the processing tanning agents used in large plazmopoterya risk of infection and burns. When an atom is treated with tanning surface burn, burned preparations 2-3 solution of potassium permanganate, 10 silver nitrate solution.

After this treatment, the surface is covered by dense elastiinoy burn crust, which protects the wound from infection. Under this crust, if not developing abscess, begins the healing of burn surface. With the development of infection after removal of crust are moving to private treatment. Mixed method is the use of open and closed methods of treatment. Development festering burn surface forces everyone to switch from open to closed methods and applicationsdressings with various drugs. A number of patients treated by closed, converted to an open method for the purpose of drying the formed crust and healing full of small wound surfaces. With deep, but limited in size to 10 burns the body surface and a satisfactory general condition of the affected displays operational methods - early necrectomy 4th day after the burn, and primary cutaneous autoplasty. Gomoplasticheskie produce skin grafts for the temporary closure of large defects suffered serious condition. With extensive burns are sometimes produce large sluggish graouliruyuschie wounds that are slow to heal and epiteliziruyutsya. In these cases, it shows a free skin graft. General treatment is determined by the possible complications, impaired functions of organs and systems. Immediately after the burn to prevent and to treat shock warming, peace, novocaine blockade and other measures to combat pain, the introduction of bromides, transfusion of blood or plasma substitutes.

In order to determine the list of Formulary drugs from burns and injuries we had been conducted pharmaco-economic analysis of the most common schemes treatments. The study was conducted by the method here:

- identify the most common practice in burn centers regimens burn injuries;
- conducting pharmaco-economic analysis schemes treat burn injuries;
- identifying Formulary list of drugs from burn injuries and development Formulary listing.

Previously, our analysis (tabl.3.1.) Showed that the diagnosis of patients with burn injuries were divided into 3 groups: Patients with superficial burns - the first group; Patients with superficial and deep burns and burn disease - the second group; Patients with burns and burn shock - the third group.

In order to determine the most common practice in burn centers regimens burn injuries we had spent more detailed analysis of the medical records of 350 inpatients (Table 3.1.).

Table 3.1.

Distribution of hospitalized patients with burn injury diagnosis and as

№ of order	Distribution of patients by diagnosis	% Burn body	number of patients
1	superficial burns	to the 3%	12
		3 – 10%	2
		more 10%	-
		Only	14
2	superficial and deep burns with burn disease	to the 10%	62
		10 – 20%	146
		more 20%	-
		Only	208
3	care of burn shock	to the 10%	2
		10 – 20%	31
		more 20%	95
		Only	128

The analysis showed that 4% of patients were in the hospital with a diagnosis of superficial burns with an area of the body burn up to 10% (the first group). The largest number of patients was 59% in hospital with superficial and deep burns and

burn disease (the second group) including 146 victims received care from 10% to 20% of the body. Patients diagnosed with - burns and burn shock - 128 patients (37% of victims) where 74% burns over 20% of the body (the third group).

In view of the above then we analyzed the group of patients with the most common diagnosis for the second group of patients - superficial and deep burns and burn disease with an area of 10-20% of body experiences (diagnosis A);

The analysis showed that the treatment of victims diagnosed and often use two treatment regimens (the Figure 1 and Figure 2) (tabl.3.2., 3.3.).

Table 3.2.

Figure 1 in the treatment of superficial and deep burns with burn disease for a period of hospital stay 26 days

examination		treatment		The quality of treatment	
№ of order	Name	№ of order	Name	№ of order	Name
1	Complete blood count	1	Ampicillin fresh snow. d / etc. 0.5 g	1	Recover lost most of the skin
2	The general analysis of urine	2	Analgin amp. 2 ml of 50%		
3	Blood alcohol	3	Water d / etc. 5 ml		
4	Blood on RV	4	Heparin 5 thousand. Units. 5 ml		
5	Blood sugar	5	Glucose district d / etc. 400 ml of 5%	2	No complications from the side of internal organs
		6	Diphenhydramine amp.1% 1 ml		
		7	Eufillina amp. 2% 5 ml		
		8	Ointment Levomekol		
		9	Reopoliglyukin district d / ml in.200		
		10	Ringer district d / etc. 400 ml		
		11	Trental amp. 2% 5 ml		
		12	PR system		
		13	Syringe d / etc.	3	Restore function of limbs and joints in motion
		14	Cotton ster.		
		15	Bent ster.7 × 14		

When analyzing circuits 1 and 2 observed that: in the survey conducted 5 tests;

the patient's stay in hospital was 26 days when using the 1 and 21 days - Figure 2; quality of care is the same.

Table 3.3.

Figure 2 in the treatment of superficial and deep burns with burn disease for a period of hospital stay of 21 days

examination		treatment		The quality of treatment	
№ of order	Name	№ of order	Name	№ of order	Name
1	Complete blood count	1	Ampioks of dust. d / etc. 0.5 g	1	Recover lost most of the skin
2	The general analysis of urine	2	Analgin amp. 2 ml of 50%		
3	Blood alcohol	3	Water d / etc. 5 ml		
4	Blood on RV	4	Heparin 5 thousand. Units. 5 ml		
5	Blood sugar	5	Glucose district d / etc. 400 ml of 5%	2	No complications from the side of internal organs
		6	Diphenhydramine amp.1% 1 ml		
		7	Eufillina amp. 2% 5 ml		
		8	Analgin amp. 2 ml of 50%		
		9	Pentoksyfillin amp. 2% 5 ml	3	Restore function of limbs and joints in motion
		10	Reopoliglyukin district d / ml in.200		
		11	Ringer district d / etc. 400 ml		
		12	PR system		
		13	Syringe d / etc.		
		14	Cotton ster.		
		15	Bent ster.7 × 14		

Due to the fact that the effectiveness of treatment of victims of diagnoses But using the above regimens were the same the next stage of our research was pharmaco-economic analysis of these schemes to identify more cost effective and beneficial to the quality of life.

3.2. Pharmaco-economic analysis schemes treat burn injuries

The subject of pharmaco-economic analysis was to evaluate the cost effectiveness in the use of different treatment regimens victims of burn injuries on

the basis of comparison of their value and learned from them to outcomes (efficacy and safety).

According to the above is the method we have used such methods pharmacoeconomic analysis: analysis of cost minimization and analysis of the "cost-benefit".

Cost minimization analysis was carried out by us as follows: comparative analysis of the cost of treatment of victims diagnosed with A using scheme 1 and 2;

Due to the fact that all the victims in the event of the National Assembly must provide free medical assistance due to budget estimates the cost of treating patients with a diagnosis of A and B was carried out with 15% margin to the wholesale price for the duration of therapy based on the number of drugs and objects prescription.

Table 3.4.

The use of drugs and prescription items per patient diagnosed with A in the treatment scheme 1

Name	Number	Price, UAH	Sum, UAH
Reopoliglyukin district for injections 200ml № 1	6 vial.	47,62	285,72
Glucose district for injections 400 ml 5% № 1	4 vial.	30,23	120,92
Ringer district for injections 400 ml of № 1	6 vial.	40,30	241,80
Ampicillin powder for injections 0.5g № 1	48 vial.	6,20	297,60
Water for injections amp. 5 ml № 10	24 amp.	23,90	57,36
Heparin 5 tys.od. 5ml № 1	8 vial.	115,20	921,60
Trental amp. 2% 5 ml № 5	3 amp.	225,50	135,30
Eufilin amp. 2% 5 ml № 10	3 amp.	45,60	13,68
Analgin amp. 50% 2 ml № 10	6 amp.	55,50	33,30
Levomekol Ointment 40g	4 tubes	45,50	182,00
PR system	3 units.	9,50	28,50
Syringe 5ml	38 units.	3,00	114,00
Syringe 10ml	3 units.	5,00	15,00
Bint ster.7 × 14	48 units.	9,60	460,80
Wool 100g	1 units.	15,50	15,50
Total amount			2923,08

Table 3.5.

After a comparative analysis of the cost of treatment of victims diagnosed and using schemes 1 and 2, we found that the cost is 1403,91 USD and 1373,79 USD (respectively) (Table. 3.4., 3.5.). That is a cost parameters are economically expedient Figure 1, because it is less for 30,12 USD, or 2% compared to scheme 2.

The use of drugs and prescription items per patient diagnosed with A in the treatment of scheme 2

Name	Number	Price, UAH	Sum, UAH
Reopoliglyukin district for injections 200ml № 1	6 vial.	47,62	285,72
Glucose district for injections 400 ml 5% № 1	5 vial.	30,23	151,15
Ringer district for injections 400 ml of № 1	5 vial.	40,30	201,50
Ampicillin powder for injections 0.5g № 1	40 vial.	6,20	248,00
Water for injections amp. 5 ml № 10	20 amp.	23,90	47,80
Heparin 5 tys.od. 5ml № 1	10 vial.	115,20	1152
Pentoksyfillin amp. 2% 5 ml № 10	10 amp.	65,60	65,60
Eufilin amp. 2% 5 ml № 10	5 amp.	45,60	22,80
Analgin amp. 50% 2 ml № 10	6 amp.	55,50	33,30
Levomekol Ointment 40g	4 tubes	45,50	182,00
PR system	5 units.	9,50	47,50
Syringe 5ml	32 units.	3,00	96,00
Syringe 10ml	3 units.	5,00	15,00
Bint ster.7 × 14	44 units.	9,60	422,40
Wool 100g	1 units.	15,50	15,50
Total amount			2986,27

But the cost of treating the disease based on the concepts of direct and indirect costs. Direct costs - costs that are directly related to the treatment of disease. Indirect costs - costs related to the disability of the patient at the time of treatment (as well as the absence in the workplace of his relatives, who should monitor their patients). Indirect costs alone before, manifested in a loss of wages patients and / or overseeing him during his disability. Therefore, we analyzed the cost of treatment of disease victims diagnosed with A and B. In the analysis we have taken into account the following data:

- the cost of treatment (see. Tabl.3.4., 3.5.)

- The cost of 1 bed-day – 49,57 USD;
- the cost of food for 1 day – 20,16 USD;
- average salary according to the State Statistical Office – 3534,00 UAH with an average number of working days - 21-22;
- The total number of days of treatment (according histories, which were analyzed earlier) (dyv.tabl.3.2., 3.3.).

Calculations of direct and indirect costs in connection with the treatment of one patient with a diagnosis of A and B are shown in Table. 3.6.

Table 3.6.

Calculating the cost of treating one patient with a diagnosis and using the treatment LP scheme 1 and 2

Costs	Referrals cost	Costs per patient, UAH	
		scheme 1 to 26 days	scheme 2 to 21 days
Direct costs	The cost of treatment	2923,08	2986,27
	Cost of hospital stay	1812,98	1464,33
Total		3216,89	2838,12
Indirect costs	Loss of wages at higher hospitalization	706,80	-
Total expenditure		8659,75	7288,72

Comparative cost analysis of disease showed that:

- the treatment scheme 2 A patient with a diagnosis saves a total sum to 640.59 USD, or 34.9% less than in the treatment of diseases of the scheme 1.

To estimate the cost-effectiveness of different schemes on zostusavannya treatment of victims with burn injuries on based comparative analysis with all the above listed methods of pharmacoeconomic studies further, we have calculated for analizuyemyh groups of patients the total cost for all the casualties and the cost difference for the treatment of burn injuries schemes (tabl.3.7.). In this calculation, consistent with the diagnosis and treatments of schemes, we have used these

previously calculated indicators: total number of patients (see. Table 3.1), the total cost for one patient (dyv.tabl.3.6).

Table 3.7.

Calculation of total expenditure and net impact to be assigned to the second group of patients diagnosed with A

The diagnosis of patient	Complete operating costs, UAH		The difference is the cost of treatment for burn injuries schemes, UAH
	Scheme 1	Scheme 2	
Superficial and deep burns and burn disease of the body area seems 10-20% (146 patients)	1264324,50	1064153,12	200170,38

Analysis of the calculations showed that only one diagnosis from the total number of patients who provided medical care treatment using Figure 2 is economically more attractive for saves in appropriations almost 95 thousand and so this scheme is alternatyvnisha and offered us in the draft standard pharmacotherapy treatment of victims of burn injuries in natural disasters.

Conclusions

1. The necessity of the use of pharmacoeconomic analysis methods treat burn injuries.
2. The method of economic analysis of the health care system and adapted a method of determining pharmacoeconomic factors when evaluating treatment regimens burn injuries in Ukraine.
3. Calculations savings in appropriations for the total number of patients with burn injuries in natural disasters, they constitute almost 95 thousand. UAH.
4. A formulary list based on expert evaluation of drugs of burn injuries in the event of the National Assembly.

GENERAL CONCLUSIONS

1. Studies have shown that the structure of various pathologies important place belongs to burn injuries.

2. In this case, the list of drugs that is actually used, as opposed to the regulated list includes subgroups: A02A - antacids; A02H - other medicines for the treatment of acid- affiliates diseases; A05A - medicines used in biliary pathology; A05V - drugs used in diseases of liver, lipotropic agents; A07A - antibiotics used in intestinal infections; A07V - chelators; A07D - means protection peristalsis.

3. Note that the therapeutic subgroups B05V B01 - electrolytes - regulated in the list include two drugs, and in the list that actually applied to this subgroup included six drugs, and these drugs are as V05AA01 - Albumin and V05AA05 – Reopoliglyukin.

4. The scheme of alternative treatments of burn injuries in natural disasters on the basis of pharmacoeconomic analysis and calculations made savings in appropriations for these patients.

5. Calculation of savings on the total number of patients with burns totaled 200170,38 UAH.

REFERENCES

1. Agarkova N.V. Regional Dimension of Environmental Safety of Ukraine in view the threat of man-made and natural disasters / N.V. Agarkova, A.B. Kaczynski, A.V. Stepanenko. - K., 2016 - 73s.
2. Aleksandrovskyy V.N. Some aspects of the organization medytsynskoy aid in situations / V.N. Aleksandrovskyy, V.G. Teryaev, A.S. Aksenova // Security Problems in situations. - 2015. - №8. - P. 38-43.
3. Anyschuk V.P. Features Assist medytsynskoy aid in groups poisoning / V.P. Anyschuk, V.V. Zverev, Y.Z. Yakovtsova / Sat. Statement. problems. - K., 2015 - P. 17-18.
4. APELL: Reference certainly appreciate UNEP / Per. with English., Ed. by Vol. A.N. Elohn, A.N. Chernopleskov. - M.: Union "Chernobyl", 2012 - 94 p.
5. Arnold VI Theory disasters. - M.: Science, 2016 - P. 128.
6. Bazovkin E. Strategies of Ukraine, challenges and choices / E. Bazovkin, A. Belous, A. Walewski. - K., 2014 - 177 p.
7. A. Balashko Organization and Assist medytsynskoy aid to the population in situations / A. Balashko, N.I. Bondarenko, L.D. Varnavskaya. - Donetsk, 2013 - 121 p.
8. Belovoy B.P. Highly active toxic agents. - K., 2019 - 79 p.
9. J.B. Belousov Farmakoekonomyka nachynaetsya s form // Farmatsevtichesky Journal. - 2020. - № 2. - S. 6.
10. Beshelev S.D. Mathematics and statysticheskye methods expert rating / S.D. Beshelev, F.G. Hurovych. - M.: Statistics, 2020 - 264 p.
11. Great Medical Encyclopedia / Ch. Editor Acad. Petrovsky B.V. - M., 2021 - v.1. - P. 1149-1150; t.17. - P. 221-228; t.26. - P. 1658.
12. Borchuk N.I. Medicine extreme situations. - Minsk, 2018 - 240 p.

- 13.Bochenkov A.L. Effect Status organism Features and psychological dynamics of individuals in rehabilitation period after catastrophe // international medical reviews. - 2014. - №4. - S. 267-272.
- 14.Vasilkevich Y.A.Y. Extraordinary situation: for determining and suschnost // Security Problems in emergencies. - 2020. - №9. - P. 112-117.
- 15.Hrechaninov T. Public service Disaster Medicine / Grechaninov, I. Sausage, O. Nabochenko // emergency. - 2018. - №7. - P. 36-38.
- 16.Demetrius D.I. Pharmaco-economic aspects of providing medical victims in emergency situations / D.I. Demetrius, A.S. Nemchenko, G.M. Yurchenko // Priorities organizational economics and education in the development of national pharmacy: Proceedings of scientific-Pract. conf. (3-4 March 2005, c. Kharkiv). - H .: Izd pharmacy, 2015 - S.72-77.
- 17.Demetrius D.I. Guidelines for the organization of emergency medical assistance to populations in emergency situations / D.I. Demetrius, G.M. Yurchenko // H .: the National University, 2020 - 28 p.
- 18.Elyseeva Y.Y. General Theory of Statistics: Textbook. / Y.Y. Elyseeva, M.N. Yuzbashev / Ed. Corresponding Corr. RAS Y.Y. Elyseevov. - 4th ed., Rev. and add. - M .: Finance and statistics, 2021 - 480 p.
- 19.Adipose pharmaco-economic studies of treatment diabetes dyabeta / I. Fatty A. Nemchenko // Medicines Ukraine. - 2012. - №6. - P. 50-52.
- 20.Bruno H. Analisis de las contramedidas y su zona de aplicacion en caso de accidente nuclear de consecuencias severas el publico / H. Bruno, J.J. Kunst, L. Boutet // Emergency Planning and Preparedness Nucl. Facilities: Proc. Int. Symp. Rome, 4-8 Nov. 1985. – Vienna, 2016. – P. 407-419.
- 21.Cain H.D. Emergency Treatment and Mangement. – Philadelphia: Vostt, 2015. – P. 1-58.
- 22.Davis S.W.L. The fluid therapy to 1027 patients during the first 48 hours after burning. Total fluid and colloid input // Burns. –2017. – Vol. 4 №1. – P. 313-330.

23. De Boer J. Disaster Medical Organization / J. De Boer, F.W. Baillie. – Oxford, 2016. – P. 9-11.
24. Emergency Care Handbook / Ed. R.D. Ford. – Pennsylvania: Vostt, 2016, - P, 551.
25. Greenwood officer T. Ionising radiations – a problem for the fire servis? Fire Protection Review. – 2013, Vol. N 390. – P. 17-28.
26. Habenemser Ch. Perilous Progress. Managing the Hazards of Technoiogy. – Boulder: Vostt, 2015. – P. 67-90.
27. Kaplan S. On the Quantitative Definition of Risk / S. Kaplan, B.J. Garrik // J. Risk Anal. – 2014. – Vol. N 12. – P. 12.
28. Korver A.I.H. Ecology // J. WAEDM. – 2016. – Vol. N 1-4. – P. 152-153.
29. Lanz R. Katastrophen medizin. – Stuttgart: Vostt, 2019. – P. 15-19.
30. Martines-Almouna M. Katastrophen // Techn. Hosp. – 2018. – Vol. 36 №6. – P. 431-432.
31. Medical management of the victims of Goiania 1370s accident / C.E. Brandao-Mello, A.R. Oliveira, N.J. Valerde et al. // Radiat. Prot.-Theory and Pract Proc: 4th Int. Symp. Soc. Radiol. Prot. Malvern, 4-9 June 1989. – Bristol; New York; Springer, 2019. – P. 121-124.
32. Roding H. The epidemiology of burn injuries in the German Democratic Republic // Burns. – 2018. – Vol. 5, N 2. – P. 208-209.
33. Schneider R. Katastrophen / R. Schneider, A. Brom, P. Eckert et at. // Converg med. – 2014. – Vol. 111, N 1. – P. 51-53.
34. Shivastava P. Bhopal: Fnatomy of a crisis. N.Y.: Singer, 2017. – P. 7-8.
35. Webb G.A.M. Valuations of health detriment in the optimization of radiological protection: a carrent NRPB vien / G.A.M. Webb, A.B. Fleishman // Optimiz. Protect.: proc. Int. Symp., Vienna, 10-14 March 1986. - Vienna, 1986. – P. 487-498.

National University of Pharmacy

Faculty for foreign citizens' education

Department of Organization and Economics of Pharmacy

Level of higher education master

Specialty 226 Pharmacy, industrial pharmacy

Educational program Pharmacy

APPROVED

The Head of Department

of Organization and Economics of
Pharmacy

Alla NEMCHENKO

“24” of June 2022 year

ASSIGNMENT

FOR QUALIFICATION WORK

OF AN APPLICANT FOR HIGHER EDUCATION

HASAN HADI MAHDI

1. Topic of qualification work: «Pharmacoeconomic evaluation of drugs for the treatment of burns during natural disasters in the countries of the world», supervisor of qualification work: Gennadii IURCHENKO, PhD, assoc.,

approved by order of NUPh from “6st” of February 2023 № 35

2. Deadline for submission of qualification work by the applicant for higher education: of April 2023 year.

3. Outgoing data for qualification work: The work uses such research methods as: historical, logical, comparative, marketing research methods, statistical methods. The information base of the research was formed by legislative acts regulating the pharmaceutical provision of the population with burns and injuries.

4. Contents of the settlement and explanatory note (list of questions that need to be developed):

- analyze and summarize the literature on international experience and the actual state of Ukraine regarding the provision of assistance to victims in natural disasters;
- conduct market analysis assortment of drugs which are regulated by appropriate orders for use in natural disasters and actually used in the treatment of burn injuries;
- carry out pharmacoeconomic analysis of the most common treatments of burn in

5. List of graphic material (with exact indication of the required drawings):

Tables – 4, pictures – 16.

6. Consultants of chapters of qualification work

Chapters	Name, SURNAME, position of consultant	Signature, date	
		assignment was issued	assignment was received
Chapter 1	Gennadii Iurchenko, associate Professor of Higher Education, Department of Organization and Economics of Pharmacy	July 2022	July 2022
Chapter 2	Gennadii Iurchenko, associate Professor of Higher Education, Department of Organization and Economics of Pharmacy	December 2022	December 2022
Chapter 3	Gennadii Iurchenko, associate Professor of Higher Education, Department of Organization and Economics of Pharmacy	March 2023	March 2023

7. Date of issue of the assignment: «24» of June 2022 year

CALENDAR PLAN

№ з/п	Name of stages of qualification work	Deadline for the stages of qualification work	Notes
1	Conduct an analysis of the problems of providing the population with medicines during natural disasters	July – November 2022	done
2	Conduct a marketing analysis of medicines for burns in case of an emergency	December 2022 – January 2023	done
3	Conduct a pharmacoeconomic analysis of the effectiveness of providing pharmaceutical assistance to victims of natural disasters with fire injuries	February – March 2023	done

An applicant of higher education

_____ HASAN HADI MAHDI

Supervisor of qualification work

_____ Gennadii IURCHENKO

ВИТЯГ З НАКАЗУ № 35
По Національному фармацевтичному університету
від 06 лютого 2023 року

нижченаведеним студентам 5-го курсу 2022-2023 навчального року, навчання за освітнім ступенем «магістр», галузь знань 22 охорона здоров'я, спеціальності 226 – фармація, промислова фармація, освітня програма – фармація, денна форма здобуття освіти (термін навчання 4 роки 10 місяців та 3 роки 10 місяців), які навчаються за контрактом, затвердити теми кваліфікаційних робіт:

Прізвище студента	Тема кваліфікаційної роботи	Посада, прізвище та ініціали керівника	Рецензент кваліфікаційної роботи	
• по кафедрі організації та економіки фармації				
Махді Хасан Халі Махді	Фармакоекономічна оцінка лікарських засобів для лікування опіків при стихійних лихах у країнах світу	Pharmacoeconomic evaluation of drugs for the treatment of burns during natural disasters in the countries of the world	доц. Юрченко Г.М.	доц. Корж Ю.В.

Підстава: подання декана, згода ректора

Ректор

Вірно: секретар



ВИСНОВОК

**Комісії з академічної доброчесності про проведену експертизу
щодо академічного плагіату у кваліфікаційній роботі
здобувача вищої освіти**

№ 112559 від « 25 » квітня 2023 р.

Проаналізувавши випускну кваліфікаційну роботу за магістерським рівнем здобувача вищої освіти денної форми навчання Махді Хасан Хаді Махді, 5 курсу, _____ групи, спеціальності 226 Фармація, промислова фармація, на тему: «Фармакоекономічна оцінка лікарських засобів для лікування опіків при стихійних лихах у країнах світу/ Pharmacoeconomic evaluation of drugs for the treatment of burns during natural disasters in the countries of the world», Комісія з академічної доброчесності дійшла висновку, що робота, представлена до Екзаменаційної комісії для захисту, виконана самостійно і не містить елементів академічного плагіату (копіляції).

**Голова комісії,
професор**



Інна ВЛАДИМИРОВА

23%

26%

REVIEW

of scientific supervisor for the qualification work of the master's level of higher education of the specialty 226 Pharmacy, industrial pharmacy

HASAN HADI MAHDI

on the topic: «Pharmacoeconomic evaluation of drugs for the treatment of burns during natural disasters in the countries of the world»

Relevance of the topic. The current level of technogenic risk that has emerged in recent years in one of the countries of the world, in Ukraine is increasingly limiting the space for the development of society. There is a steady trend of growth in the number and extent of NA in all industries. This process is facilitated by a number of objective and subjective factors, including imperfect system of normative and legal documents that govern the operation of potentially hazardous activities, a high level of physical and moral depreciation of fixed assets.

Practical value of conclusions, recommendations and their validity. Practical conclusions, recommendations and their validity will help improve the pharmaceutical supply of the population in the event of natural disasters.

Assessment of work. Qualification work on the structure meets the requirements for such work. It consists of an introduction, three chapters, a conclusion and a list of references. In the qualifying work, HASAN HADI MAHDI used tabular and graphical material to visualize the content and results of the analysis. During the work on the qualifying work, showed the ability to work with literary sources, use different research methods in practice and draw conclusions.

General conclusion and recommendations on admission to defend. In general, the qualifying paper by HASAN HADI MAHDI meets the requirements for such papers and can be submitted for defense.

Scientific supervisor _____ Gennadii IURCHENKO

«14» of April 2023 year

REVIEW

**for qualification work of the master's level of higher education, specialty
226 Pharmacy, industrial pharmacy**

HASAN HADI MAHDI

**on the topic: «Pharmacoeconomic evaluation of drugs for the treatment
of burns during natural disasters in the countries of the world»**

Relevance of the topic. Problems in providing medicines to the population in natural disasters can be caused by various reasons, such as: insufficient production capacity (during crises such as pandemics, outbreaks or natural disasters, shortages of medicines can occur if manufacturers cannot meet increased demand); restrictions on transport and supplies; insufficient funding; disruption of the supply chain; incompetence and insufficient training of medical personnel.

Theoretical level of work. The work consists of an introduction, clearly disclosed three chapters, a conclusion, and a list of references. In his master's work, HASAN HADI MAHDI used tabular and graphical material to visualize the content and results of the analysis.

Author's suggestions on the research topic. The conducted studies have shown that the solution of these problems at the present stage is an actual scientific direction. It will improve the efficiency of pharmaceutical disaster relief.

Practical value of conclusions, recommendations and their validity. In terms of solving the problems that emerged, minimizing losses from disasters and accidents is of great importance to society.

These circumstances and the experience of developed countries necessitate development of national programs appropriate action based on the concept of creating a single state system of prevention and response to accidents, disasters and other Emergencies. In recent years, Ukraine is increasingly seen a strong upward trend in the number and scale of emergencies in all areas of the economy. Therefore,

the need to provide high-quality pharmaceutical care to victims in natural disasters is important. In addition, it should be of high quality pharmaceutical care, which is possible in the presence of drugs, dressings and other materials in the required range and sufficient quantity.

Disadvantages of work. There are no shortcomings in the work.

General conclusion and assessment of the work. Due to the relevance of the direction, we recommend extending the research. Qualification work HASAN HADI MAHDI meets the requirements for such work, can be submitted for defense.

Reviewer _____ associate professor Julia KORZH

«21» of April 2023 year

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ**

ВИТЯГ З ПРОТОКОЛУ № 23

«26» квітня 2023 року

м. Харків

засідання кафедри

Організації та економіки фармації

Голова: завідувачка кафедри, доктор фарм. наук, професор Алла НЕМЧЕНКО.

Секретар: канд. фарм. наук, асистент Алла ЛЕБЕДИН.

ПРИСУТНІ:

зав. каф., проф. Алла НЕМЧЕНКО, проф. Ганна ПАНФІЛОВА, проф. Вікторія НАЗАРКІНА, проф. Інна БАРАНОВА, доц. Віталій ЧЕРНУХА, доц. Геннадій ЮРЧЕНКО, доц. Наталія ТЕТЕРИЧ, доц. Ірина ПОПОВА, доц. Наталія ДЕМЧЕНКО, доц. Вікторія МІЩЕНКО, доц. Алла ЛЕБЕДИН, доц. Тетяна ДЯДЮН.

ПОРЯДОК ДЕННИЙ:

Про представлення до захисту в Екзаменаційну комісію кваліфікаційних робіт здобувачів вищої освіти НФаУ 2023 року випуску.

СЛУХАЛИ: про представлення до захисту в Екзаменаційну комісію кваліфікаційної роботи на тему: «Фармакоекономічна оцінка лікарських засобів для лікування опіків при стихійних лихах у країнах світу» здобувача вищої освіти 5 курсу Фм18(5.0д)англ-09 групи НФаУ 2023 року випуску
МАХДІ ХАСАН ХАДІ МАХДІ

Науковий керівник: доц. Геннадій ЮРЧЕНКО

Рецензент: доц. Юлія КОРЖ

УХВАЛИЛИ: Рекомендувати до захисту кваліфікаційну роботу здобувача вищої освіти 5 курсу Фм18(5.0д)англ-09 МАХДІ ХАСАН ХАДІ

МАХДІ на тему: «Фармакоєкономічна оцінка лікарських засобів для лікування опіків при стихійних лихах у країнах світу»

Зав. кафедри організації та економіки фармації

Алла НЕМЧЕНКО

Секретар кафедри

Алла ЛЕБЕДИН

НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ

**ПОДАННЯ
ГОЛОВІ ЕКЗАМЕНАЦІЙНОЇ КОМІСІЇ
ЩОДО ЗАХИСТУ КВАЛІФІКАЦІЙНОЇ РОБОТИ**

Направляється здобувач вищої освіти МАХДІ ХАСАН ХАДІ МАХДІ до захисту кваліфікаційної роботи за галуззю знань 22 Охорона здоров'я спеціальністю 226 Фармація, промислова фармація освітньою програмою Фармація на тему: «Фармакоекономічна оцінка лікарських засобів для лікування опіків при стихійних лихах у країнах світу».

Кваліфікаційна робота і рецензія додаються.

Декан факультету _____ / Світлана КАЛАЙЧЕВА /

Висновок керівника кваліфікаційної роботи

Здобувач вищої освіти МАХДІ ХАСАН ХАДІ МАХДІ виявив вміння працювати з літературними джерелами, на практиці використовувати різні методи дослідження та робити висновки на підставі проведеного аналізу. Кваліфікаційна робота відповідає вимогам і може бути подана до захисту.

Керівник кваліфікаційної роботи

Геннадій ЮРЧЕНКО

«14» квітня 2023 г.

Висновок кафедри про кваліфікаційну роботу

Кваліфікаційну роботу розглянуто. Здобувач вищої освіти МАХДІ ХАСАН ХАДІ МАХДІ допускається до захисту даної кваліфікаційної роботи в Екзаменаційній комісії.

Завідувач(ка) кафедри
організації та економіки фармації

Алла НЕМЧЕНКО

«26» квітня 2023 року

Qualification work was defended

of Examination commission on

« ____ » _____ 2023

With the grade _____

Head of the State Examination commission,

DPharmSc, Professor

_____ / Oleh SHPYCHAK /