

MINISTRY OF HEALTH OF UKRAINE
STATE INSTITUTION «DNIPROPETROVSK MEDICAL ACADEMY MINISTRY OF
HEALTH OF UKRAINE»
HYGIENE AND ECOLOGY DEPARTMENT



**Guideline for practical and seminar studies on
the discipline « Labor protection in medical
branch» for the 3 courses students,
speciality "Dentistry"
*(Master's degree of preparation)***

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State Institution "Dnipropetrovsk Medical Academy"*

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Guideline was created in accordance with curriculum and working program of the discipline "Labour protection in medical branch" for 3 course students on the speciality "Master of medicine" for educational institutions in Ukraine III – IV accreditation levels

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(Protocol № _ _____)*

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Object, purposes and tasks of educational discipline «Labour protection in the medical branch»

Subject of study discipline "Labour protection in the medical branch" is the basic theoretical knowledge and practical skills, focused on the 2 courses students on the speciality "Medicine" in higher medical establishments of Ukraine III-IV level of accreditation, in accordance with educational-professional program of training "Master," harmful and dangerous factors of occupational environment and system of measures for protection life and health of medical staff.

1. Purpose and objectives of the discipline

1.1. **Purpose** of practical training discipline «Labour protection in medical branch» is forming among future specialists' knowledges and abilities for providing effective management over labour in medical industry and creation favourable environmental conditions in stomatological practice according to official normative-legal acts, which correspond to the goals of a discipline according to "Higher education standard" in "222. Medicine."

1.2. **Basic tasks** of the discipline «Labour protection in medical branch» as well as theory and practice of safety life-conditions, health and ability to medical staff work in the industrial conditions by application complex legislative, organizational, engineering & technical, sanitary-hygenic, treatment & profilactic measures, directed on the prophylaxis cases of traumatism and origin of professional and production-conditioned diseases.

**Structure of a discipline
«Labour protection in the medical branch»**

Structure of the discipline	Number of hours, i.e.					
	Totally	Auditorium			IWS	IHWS
		Lecturer	Seminar	Practical		
90 hours 3 credits	10	10	10	50	10	
Module 1 « Labour protection in the medical branch»						
Substantive module 1. General questions of labour protection in dentistry						
Theme1. Organization of labor protection in the medical branch as a component of system of labor protection in the state	2	2				
Theme 2. Legal and organizational basis of labour protection	7		2		5	
Theme 3. Basis of the state and department control over working conditions, responsibility for violation in legislation of labor protection in dentistry	7		2		5	
Theme 4. Organization of labor protection in health care facilities	7			2	5	
Theme 5. Physiological basis of labour activity of dentists	2	2		2		
Theme 6. Basis of ergonomics, its importance for creating the safety working environment	7			2	5	
Totally on a substantive module 1	32	4	4	6	20	

Substantive module 2. Features of working conditions in the medical branch						
Theme 7. Occupational hazards at the performing functional duties of medical staff	7			2	5	
Theme 8. Main methods and criteria of evaluation sanitary-hygienic conditions of medical staff	2	2				
Theme 9. Accidents in the healthcare facility, their account and order of investigation	7			2	5	
Theme 10. Occupational diseases of medical staff, their accounting and order of investigation	7			2	5	
Totally on a substantive module 2	23	2	2	6	15	
Substantive module 3. Special issues of labour protection in the medical branch						
Theme 11. Peculiarities of planning, building, domestic equipment and sanitary-technical support of medical institutions as part of measures on labour protection in medical institutions	2	2				
Theme 12. Basics of industrial safety of medical staff at working with electrical devices	7			2	5	
Theme 13. Basics of fire safety in the health care facilities	7			2	5	
Theme 14. Prevention of nosocomial infections as a component of labor protection in medicine	2	2				
Theme 15. Basics of safety at the utilization of medical waste. Final lesson.	7			2	5	
Totally on a substantive module 3.	25	4		6	15	
IHW	10					10
Totally	90	10	18	10	50	10

Theme of lectures

№	Theme	Number of hours
1.	Organization of labor protection in the medical branch as a component of system of labor protection in the country	2
2.	Physiological basis of labour activity of medical workers	2
3.	Main methods and criteria of sanitary-hygienic assessment working conditions of the medical staff	2
4.	Peculiarities of planning, building, domestic equipment and sanitary-technical support of medical institutions as part of measures on labour protection in medical institutions	2
5.	Prevention of nosocomial infections as a component of labor protection in medicine	2
	Totally	10

Theme of seminars

№	Theme	Number of hours
1.	Legal and organizational basis of labour protection	2
2.	Basis of the state and department control over working conditions, responsibility for violation in legislation of labor protection	2
	Totally	4

Theme of practical lessons

№	Theme	Number of hours
1.	Organization of labor protection in health care facilities	2
2.	Basis of ergonomics, its importance for creating the safety working environment	2
3.	Occupational hazards at the performing functional duties of medical staff	2
4.	Accidents in the healthcare facility, their account and order of investigation	2
5.	Occupational diseases of medical staff, their accounting and order of investigation	2
6.	Basics of industrial safety of medical staff at working with electrical devices	2
7.	Basics of fire safety in the health care facilities	2
8.	Basics of safety at the utilization of medical waste. Final lesson.	2
	Totally	16

**List of teoretical questions and practical skills
on the discipline «Labour protection in medical branch»**

Teoretical questions

1. Basic terms and determination in the field of labour protection: labour protection, working conditions, harmful industrial factor, dangerous industrial factor, safety nine-to-five working conditions, workplace, accident prevention etc.
2. Subjects and objects of labour protection.
3. Legal issues of labour protection in Ukraine.
4. State administration, state supervision and public inspection above the labour protection in Ukraine. Public bodies over labour protection, their basic rules and rights.
5. Public inspection for observance legislation of the labour protection.
6. Normatively & Legal Acts focused on labour protection (NPAOT): determination, basic requirements and signs.
7. Structure of NPAOT. Register of NPAOT.
8. National standards of Ukraine in the branch of labour protection.
9. System of safety standards of labour (SSBT).

10. Sanitary & building norms, other national documents above labour protection.
11. Labour protection acts, carried out in the enterprise, organization, their composition and structure. Instructions on labour protection.
12. Development and claim of acts on the labour protection at the enterprises, organizations.
13. Working staff responsibility in order to abide legislation about labour protection.
14. Social partnership as well as principle of legislative and normative-legal providing over labour protection.
15. Norms of the International Organization of Labour (IOL).
16. Conventions and Recommendations of IOL.
17. Basic IOL Conventions in the branch of labour protection.
18. Social dialog in the European Union. International Norms of Social Responsibility (Standard SA 8000 «Social responsibility», International standard ISO 26000 «Guidance on social responsibility», Scope Directive 89/391/ES «About introduction of measures, cooperant improvement of safety and hygiene of working conditions»).
19. Elements of control system over labour protection, International Standard OHSAS 18001:2007.
20. International cooperation in the branch of labour protection.
21. Basic directions of collaboration (United Nations, Worldwide Organization of Health Protection, International Organization of Labour, etc).
22. Industrial environment. Classification of harmful and dangerous occupational factors.
23. Basic methods and criteria of sanitary-hygienic estimation working conditions of the medical staff.
24. Concept about weight, tension, harmfulness and danger of labour.
25. Physiological & hygienic features working conditions and state of health among medical staff in the surgical department.
26. Physiological & hygienic features working conditions and state of health among medical staff in the therapeutic department.
27. Physiological & hygienic features working conditions and state of health among medical staff in the pharmaceutical department.
28. Physiological & hygienic features working conditions and state of health among medical staff in the medical & prophylactic establishments.
29. Certifying workplaces on the working conditions issues.
30. Purpose, basic tasks and maintenance of attestation.
31. Organization of works as well as attestation of workplaces. Professional "map" of working conditions.
32. Branch programs over improvement state of safety, labour and occupational environment.
33. Position about organization of control system by the labour protection in medical branch.
34. Order of MHU № 268 from 30.09.94.
35. Investigation of industrial accidents cases. Investigation of non-industrial accidents.
36. Traumatism, sharp and chronic professional diseases and poisonings in medical branch.
37. Prophylaxis of accidents, traumatism and professional diseases of medical staff.
38. Collective and labour agreement as well as realization legislation over labour protection.
39. Law of Ukraine «Above collective agreements», its maintenance.
40. Ministry of Labour and Social Policy Order of Ukraine «About standardization form of labour contract between worker staff and physical person».
41. Labour contract on the specific types of works and functional duties.
42. Adjusting questions of labour protection in a collective agreement. Reception on contract work.
43. Fund of Social Security from industrial accidents and professional diseases.
44. Law of Ukraine «About obligatory state social security from industrial accident and professional disease, entailing loss of ability to work».
45. Compensation for harmful working conditions.

46. Hygienical requirements to planning and buildings of medical establishments. Features of ventilation, illumination, internal planning of apartments.
47. Measures on correction unfavorable influence of physical factors on the organism of medical workers.
48. Requirements to the microclimate, noise, vibration, ultrasound, illumination, Electromagnetic radiation, laser radiation, ionizing radiation.
49. Measures on normalization unfavorable influence of chemical factors on the organism of medical workers.
50. Ways of warning air contamination in the industrial zone by harmful chemical substances.
51. Prophylaxis influence of biological factors.
52. Sanitary-hygienic and preventive mode in the hospital. Prophylaxis of in-hospital infections as well as labour protection in medical branch.
53. Measures focused on decline physical and nervous & psychical overload of medical workers.
54. Scientific organization of labour activity in the medical establishments.
55. Rational organization of workplace and furniture. Basic ways of prevention overloading.
56. Features of organization labour activity of medical personnel in the separate structural subdivisions of medical establishments (operating block, radiodiagnostic subdivisions, physical therapy cabinets, pathoanatomical separations etc.).
57. Requirement of individual defence facilities and working wear of medical staff.
58. Organization of physical examinations involved medical personnel.
59. Guarantee labour protection rights for workers on privilege and indemnification for heavy and harmful working conditions.
60. Duties of workers on the observance requirements as well as legal acts on the labour protection.
61. Labour protection of the separate categories of population – women, teenagers, persons with special needs.
62. Structure, basic functions and tasks of management over labour protection in medical establishments.
63. Basic tasks, functions of labour protection service. Right and duties labour protection service staff.
64. Commission on labour protection in medical establishments. Basic tasks and rights of the commission.
65. Responsible for personnel concerning issues in the branch of labour activity, their duty and right.
66. Offices of industrial safety and labour protection, basic tasks and working direction.
67. Planning measures covered labour protection. Types of planning and control over labour protection.
68. Exposure, estimation and increasing hazardous risks. Account and analysis indexes of labour protection.
69. Plans of localization and liquidation of emergency situations and failures. Stimulation of labour protection.
70. Principles of organization and types of labour protection issues. Labour protection issues for students and medical staff.
71. General requirements of technological equipment safety and processes in medical establishments.
72. Safety rules at the exploitation systems under constraint and criogenic technique.
73. Electricity safety rules.
74. Classification of apartments on the danger degree such as defeat an electric current. Conditions of defeat man by an electric current. Safe exploitation of electrical equipment: preventive facilities and measure.
75. Fire prophylaxis at the planning and exploitation of medical equipment.

76. Fixed assets and measures of providing fire safety of industrial object. Fire warning. Facilities of the fire extinguishing.
77. Staff actions in the case of the fire. Providing safe evacuation of personnel.
78. Providing and control of fire safety on the industrial objects. Training rules of fire safety for medical personnel.
79. Indexes of dangerous chemical substances and fire properties materials.
80. Categories of apartments in the relation of fire or chemical disaster dangers. Classification of explosive connected apartments and areas.
81. Fire-resistance of build constructions and materials.

Practical skills for students to study the discipline:

1. Apply requirements of legislative and normative documents for organization and management of the labour protection in medical establishments.
2. Apply main forms of organization and management of labour protection in medical branch.
3. Carry out harmful and dangerous factors of the industrial environment in the workplace of medical staff and give them hygienical estimation.
4. Give estimation of organization workplace, furniture, medical equipment in the medical establishments.
5. Forecast professional, professional-oriented diseases, accidents, emergency situations.
6. Organize attestation of workplaces on the indexes of weight, tension, harmfulness and danger of industrial process.
7. Make recommendations as well as healthy working conditions for medical staff and control their efficiency.
8. Abide control over observance rules of the personal hygiene and carry out facilities of individual defence for medical personnel.
9. Carry out investigation of accidents, sharp and chronic professional diseases, cases of traumatism in medical department.
10. Organize measure of fire-prevention and electrical safety.
11. Provide instructions on labour protection for medical workers.
12. Conduct teaching and verification of knowledges on the labour protection.

Recommended literature

Basic:

1. Labor protection in the medical sector / Yavorovsky O.P., Veremey MI, Zenkina V.I. etc. - K., 2017. - 208 p.
2. Labor protection in the medical sector: teaching method. manual / O.P. Yavorovsky, MI Veremey, VI Zenkina et al. - K.: "Medicine", 2015 - 208 p.
3. Hygiene and labor protection of health workers. Textbook / Ed. VF Moskalenko, O.P. Yavorovsky - K.: "Medicine", 2009 - 176 p.

Additional:

1. Labor protection in the medical sector / Yavorovsky AP, Veremey MI, Zenkina VI and others - K., 2017. - 208 p.
2. Health and safety of health workers (in English): / Textbook for ed. Yavorivsky O.P. - K., 2015. - 210 p.
3. Zerkalov D.V. Occupational Health. General requirements (summary of lectures). K.: 2011. - 156 p.
4. VS Tarasyuk, GB Kuchanska. Protection of Labor in Treatment and Prevention Facilities. Safety of life. - K.: "Medicine", 2010. - 488 p.
5. Bardov VG Hygiene and ecology / Bardov VG, Moskalenko VF, Omelychuk ST, Yavorovsky O.P. [and others] // V.: The New Book, 2006. - 720 p.
6. Hygiene of labor: Textbook / Yu.I.Kundiev, O.P. Yavorovsky, A.M. Shevchenko et al.; for ed. acad. HAH Ukraine, National Academy of Medical Sciences of Ukraine, prof. Yu.I. Kundiev, Corr. NAMS of Ukraine prof. O.P. Yavorovsky - K.: "Medicine", 2011. - 904 p.

7. Labor hygiene (research methods and sanitary and epidemiological supervision) / Ed. A.M. Shevchenko, O.P. Yavorovsky - Vinnitsa: NEW BOOK, 2005. - 528 p.
8. Epidemiology / Ed. by KM Syniaka. - K.: Health, 1998. - 464 p.

Informational resources:

1. Official Internet address of President of Ukraine <http://www.president.gov.ua/>.
2. The Verkhovna Rada of Ukraine <http://www.rada.gov.ua/>.
3. The Cabinet of Ministers of Ukraine <http://www.kmu.gov.ua/>.
4. Ministry of Health of Ukraine <http://moz.gov.ua/ua/portal/>.
5. Ministry of Education and Science of Ukraine <http://www.mon.gov.ua/>.
6. Ministry of Ecology and Natural Resources of Ukraine <http://www.menr.gov.ua/>.
7. The State Service of Ukraine for Emergencies <http://www.dsns.gov.ua/>.
8. The State Service of Ukraine on Labor <http://dsp.gov.ua/>.
9. World Health Organization <http://www.who.int/en/>.
10. International Labor Organization <http://www.ilo.org/global/lang--en/index.htm>.
11. Web- page of Department of Hygiene and Ecology (303) on a site of SE "DMA MPH of Ukraine" www.dsma.dp.ua

FORMS OF CONTROL AND CRITERIA OF ESTIMATION STUDENTS

Forms of control and system of estimation are carried out according to requirements of the program «Time instruction on the estimation educational activity of students at introduction of credit-modular system at the organization of educational process» (letter of MHU from 16.06.2005 № 08.01-22/1258), Issue «About organizations of educational process in the higher educational establishments» (order by Ministry of Education of Ukraine №161 from 2.06.1993), Temporal position about organization of educational process on the credit-module system as well as preparation of specialists, confirmed by MHU № 48 from 23.01.2004, and recommended changes to temporal instruction as evaluated by educational activity (letter of MHU from 21.01.2008 № 08.01-22/65).

Estimation of the module is defined as the sum of marks for current educational activity in points and also estimation of total modular control in points, which is exposed at the assessment theoretical knowledge and practical skills, according to the program on discipline.

Current control is carried out on each practical occupation, according to specific purposes of each theme. At the estimation educational activity of students, advantage is given to the standardized quality monitoring: testing, structured written works of students, structured on procedure control of practical skills in conditions which are approached to the real. Results of credit were carried out according to two-mark scale: «done», «not done».

Estimation of independent work. Estimation of independent work of students, provided in the theme over auditorium work, is carried out on the current control of a theme, corresponding to auditorium occupation. Estimation is taken out only for independent work and do not enter into the theme of auditorium occupations, controlled at the total modular control.

Quantity of points for individual research independent work of the student (IRIWS) depends on volume and quality of this work, but is no more than 10 points. These points increase to the sum of points, appropriated to the student for current educational activity.

General estimation each theme of the module carried out for current educational activity by the marks of the traditional four-ball scale, depending on quantities of themes in the module: „5”, „4”, „3”, „2”.

Estimation of disciplines:

Estimation on the discipline carried out to those students, which have passed module.

Students, who study on one speciality, taking into account quantity of points typed on discipline, are ranged in dean's offices on the scale ECTS.

Scheme of distribution points, carried out for students

Current control, discussion and Independent work										Points for IHWS	Sum
Substantive module 1				Substantive module 2			Substantive module 3				
T2	T3	T4	T6	T7	T9	T10	T12	T13	T14	10	200
19	19	19	19	19	19	19	19	19	19		

T2, T3 ... T14 – themes of lesson.

Points for Individual Homework of Student (IHWS) depends on volume and quality of this work, but is no more than 10 points. These points increase to the sum of points, appropriated to the student for current educational activity.

Converting of traditional mark to the points:

Traditional mark	Converting in points
«5»	19
«4»	15
«3»	12
«2»	0

Points from the discipline should be carried out by the sum of points, appropriated to the student for current educational activity.

Scale of estimation

Points for all elements of educational activity	Mark after national scale to pass the credit
From 120 to 200 points	“done”
Less 120 points	“not done” with possibility of repeated passing
Less than 120 points after 1 passing of the module and 2 repeated passing	“not done” with obligatory repeated study of the discipline

Converting of points from the discipline to scale ECTS should be carry out:

Points	Mark by ECTS
192-200	A
192-172	B
148-171	C
128-147	D
120-127	E

Maximum quantity of points which student can be appropriated at the module is equaled to **200 points**. It is calculated by multiplication quantity of points, which answer to the mark „5” –19 points, on the quantity of themes in the module, including points for individual work (10 points) SPS.

Minimum quantity of points which student can be appropriated at the module is equaled to **90 points**. It is calculated by multiplication quantity of points which answer to the mark „3” – 12 points, on the quantity of themes in module (10). The obligatory condition of the credit is least of marks for the module (120 points), which is correspond to the result of the credit as well as «done».

Estimation «not done» is exposed to students, who have typed minimum quantity of points for current educational activity, but students are not enlisted total modular control. This category of students has right to repeat examination of total modular control under the confirmed schedule, but no more than two times.

Students, who get less < 120 points, which have visited all auditorium module occupations, but have not typed minimum quantity of points for current educational activity and are not admitted to the total modular control. This category of students has right to repeat studying of the module.

Form of carrying out credit is standardized and includes testing, verbal and writing questioning, interview, implementation of practical tasks.

Methodological instructions to the practical and seminar lessons

Theme 1. Legal and organizational basis of labour protection (seminar)

Educational purposes of the lesson:

- get acquainted with the legal and organizational fundamentals of labor protection in the state;
- to master the legal and organizational foundations of labor protection in the state;
- be able to apply in practice the main provisions of the legislation of Ukraine on labor protection in the state.

Content of the theme of lesson (educational questions):

1. Basic terms and definitions in the field of occupational health and safety.
2. The legal basis for labor protection.
3. Legislation of Ukraine on labor protection, basic provisions.
4. International documents and international cooperation in the field of labor protection.
5. State management of labor protection.
6. Collective and labor contracts as a reflection of legislation on labor protection.
7. Conclusion of the employment contract on the specifics of types of work and features of functional duties.
8. Regulation of labor protection issues in a collective agreement.
9. Social Insurance Fund for Industrial Accidents and Occupational Diseases.
10. Compensation of harm to the victim at work.
11. Stimulation of labor protection.

Structure of the seminar.

At the beginning of the lesson, written control of the initial level of knowledge on academic matters is carried out. After solving the organizational questions and instructions of the teacher, students independently study the normative documents on the topic and outline the main provisions of the documents. Evaluation of students is conducted through a survey with correction and supplementation of reports. At the end of the lesson, the teacher sums up the results, assesses the students' knowledge, gives the assignment for the next lesson.

Informational part

Legislative acts defining the main provisions on labor protection issues, there are general laws of Ukraine, as well as special legislative acts. The general laws governing the main provisions on labor protection include: the Constitution of Ukraine, the laws of Ukraine on labor protection, on health, on fire safety, on the use of nuclear energy and radiation protection, on the provision of health and epidemiological well-being of the population ", " On compulsory state social insurance against accidents at work and occupational diseases that led to loss of ability to work, "the Labor Code of Ukraine (Labor Code). Special legislative acts in the field of labor protection are regulatory acts on labor protection, State standards of the Occupational Safety Standards System, Building codes and norms, Sanitary norms, Rules for safe operation of electrical installations of consumers, and d Other normative legal acts, which regulate the generally binding rules (norms).

The main legislative document in the field of labor protection is the Law of Ukraine "On labor protection", the effect of which extends to legal and physical persons, in accordance with the law, employ wage labor, and on all workers. This Law determines the main provisions for the implementation of the constitutional right of workers to protect their lives and health in the course of work, to appropriate, safe and healthy working conditions, regulates, with the participation of relevant state authorities, the relationship between the employer and the employee on safety, health and and establishes a unified procedure for the organization of labor protection in Ukraine.

Labor protection is a system of legal, socio-economic, organizational and technical, sanitary-hygienic and therapeutic and preventive measures and means aimed at preserving the life, health and working capacity of a person in the process of work.

The employer is the owner of the enterprise, institution, organization or body authorized by him, irrespective of the form of ownership, type of activity and management, and the natural person using hired labor.

An employee is a person who works at an enterprise, in an organization, institution, and performs duties or functions under an employment contract (contract).

The state policy in the field of labor protection is based on the principles:

- Priority of life and health of employees, full responsibility of the employer for the creation of appropriate, safe and healthy working conditions;
- Increase the level of industrial safety by providing complete technical control over the state of production, technology and products, as well as assisting enterprises in creating safe and harmless working conditions;
- comprehensive solution of labor protection tasks on the basis of national, sectoral, regional programs on this issue and taking into account other directions of economic and social policy, achievements in science and technology and environmental protection;
- social protection of workers, full compensation for harm to persons affected by occupational accidents and occupational diseases;
- Establishment of unified labor protection requirements for all enterprises and business entities, regardless of the form of ownership and activities;
- adaptation of labor processes to the capabilities of the employee, taking into account his health and psychological state; use of economic methods of OSH management, state participation in financing labor protection measures, attracting voluntary contributions and other revenues for these purposes, the receipt of which is not contrary to the law;
- Informing the population, conducting training, training and raising the level of professional skills of workers on labor protection issues;
- Ensuring the coordination of the activities of public authorities, institutions, organizations, citizens' associations that address health, safety and health problems, as well as cooperation and consultations between employers and employees (their representatives), among all social groups in making decisions on labor protection at local and state levels;
- Use of world experience in organizing work to improve conditions and increase labor safety through international cooperation.

The rights to labor protection when concluding an employment contract

The terms of the employment contract can not contain provisions that are contrary to laws and other regulatory and legal acts on labor protection.

When concluding an employment contract, the employer must inform the employee against a receipt on the working conditions and about the presence of dangerous and harmful production factors at his workplace that have not been eliminated, the possible consequences of their impact on health and the employee's rights to benefits and compensation for work in such conditions in accordance with the law and the collective agreement.

An employee can not be offered a job that is contraindicated for him on medical grounds for medical reasons. To carry out works of increased danger and requiring professional selection, persons are allowed in the presence of a psycho-physiological examination.

All employees are legally subject to compulsory state social insurance against accidents at work and occupational diseases that result in loss of ability to work

Workers' rights to labor protection during work

Working conditions in the workplace, the safety of technological processes, machines, mechanisms, equipment and other means of production, the state of collective and individual protection equipment used by the employee, as well as sanitary and living conditions must meet the requirements of the law.

The employee has the right to refuse the commissioned work if an industrial situation is created that is dangerous for his life or health or for the people who surround him, or for the production environment or the environment. He must immediately report this to the immediate supervisor or employer. The fact of availability of such a situation, if necessary, is confirmed by

the labor protection specialists of the enterprise with the participation of the representative of the trade union of which he is a member or an employee authorized by the employees on labor protection issues (if the trade union has not been established at the enterprise) and an insurance expert on labor protection.

For the period of idle time, for reasons provided for in part two of this article, those arising not through the fault of the employee, the average earnings remain.

The employee has the right to terminate the employment contract at his own will, if the employer does not comply with labor protection legislation, does not comply with the terms of the collective agreement on these matters. In this case, the employee is paid severance pay in the amount provided for by the collective agreement, but not less than three months' earnings.

An employee who, due to health reasons in accordance with a medical certificate, needs to provide easier work, the employer must transfer with such consent the employee for such work for a period specified in the medical report and, if necessary, establish a shorter working day and arrange for the training of the employee to purchase Another profession in accordance with the law.

At the time of stopping the operation of the enterprise, shop, site, individual production or equipment by the state supervision of labor protection or the labor protection service, the employee retains his place of work, as well as the average earnings.

The right of employees to benefits and compensation for hard and harmful working conditions

Employees employed in jobs with severe and harmful working conditions are provided free of charge with preventive food, milk or equivalent foods, carbonated salt water, have the right to paid breaks in sanitation, shortened working hours, additional paid holidays, preferential retirement benefits, remuneration of labor in an increased amount and other benefits and compensation provided in the manner prescribed by law.

In the case of the traveling nature of the work, the employee is paid monetary compensation for the purchase of therapeutic and preventive nutrition, milk or equivalent food products on the terms stipulated in the collective agreement.

The employer may, for his own money, additionally establish privileges and compensations that are not provided for by the legislation under the collective agreement (agreement, labor contract).

During the period of validity of the employment contract concluded with the employee, the employer must inform the employee in writing, no later than 2 months in advance, about changes in production conditions and benefits and compensations, taking into account the additional benefits provided to him.

Provision of workers with overalls, other personal protective equipment, detergents and detoxifying agents

At work with harmful and hazardous working conditions, as well as work related to pollution or unfavorable meteorological conditions, employees are given free of charge, according to established norms, special clothes, special footwear and other personal protective equipment, as well as detergents and detoxifying agents. Employees involved in one-off work related to the elimination of the consequences of accidents, natural disasters that are not provided for in the employment contract, must be provided by the said means.

The employer must provide at his own expense the acquisition, acquisition, issuance and maintenance of personal protective equipment in accordance with the regulatory and legal acts on labor protection and collective bargaining.

In case of premature depreciation of these funds, the employer is obliged to replace them at their own expense, not through the fault of the employee. If the employee purchases work clothes, other personal protective equipment, detergents and detoxives for his means, the employer is obliged to compensate all expenses on terms stipulated in the collective agreement.

According to the collective agreement, the employer can additionally, in addition to the established norms, give the employee certain personal protective equipment, if the actual working conditions of this employee require their application.

Compensation for harm in the event of damage to the health of workers or in the event of their death

Compensation for damage caused to an employee due to damage to his health or in case of death of an employee is carried out by the Social Insurance Fund of Ukraine in accordance with the Law of Ukraine "On compulsory state social insurance against accidents at work and occupational diseases that caused disability".

The employer may, at the expense of its own resources, provide additional payments to the victims and their families in accordance with a collective or labor contract.

For employees who have lost their ability to work due to an accident at work or an occupational disease, the place of work (position) and the average salary for the entire period until the restoration of work capacity or until the establishment of a permanent loss of professional capacity for work are retained. In case of failure to perform the previous work, the victims are trained and retrained, and also employed in accordance with medical recommendations.

The duration of a disability due to an accident at work or an occupational disease is counted in the length of service for the assignment of a pension for the age, as well as for the length of service with harmful conditions, which gives the right to grant a pension on preferential terms and in preferential amounts in accordance with the procedure established by law .

OSH management and employer responsibilities

The employer is obliged to create working conditions in each structural subdivision in accordance with regulatory legal acts, as well as to ensure compliance with the requirements of the legislation regarding the rights of workers in the field of labor protection.

For this purpose, the employer ensures the functioning of the OSH management system, namely:

- creates appropriate services and appoints officials who provide solutions to specific issues of occupational safety, approves instructions on their duties, rights and responsibilities for the performance of the functions assigned to them, as well as supervises their compliance;
- develops with the participation of the parties to the collective agreement and implements comprehensive measures to achieve the established standards and increase the existing level of labor protection;
- ensures the implementation of the necessary preventive measures in accordance with changing circumstances;
- Introduces advanced technologies, achievements of science and technology, means of mechanization and automation of production, requirements of ergonomics, positive experience in labor protection, etc .;
- ensures proper maintenance of buildings and structures, production equipment, monitoring of their technical condition;
- ensures the elimination of causes leading to accidents, occupational diseases and the implementation of preventive measures determined by the commissions following the investigation of these causes;
- organizes the audit of labor protection, laboratory research of working conditions, assessment of the technical condition of production equipment, attestation of workplaces for compliance with regulatory and legal acts on labor protection in the order and time specified by law and, as a result, takes measures to eliminate hazardous and harmful health of production factors

- develops and approves regulations, instructions, other acts on labor protection that operate within the enterprise (hereinafter - acts of the enterprise), and establish rules for the performance of work and behavior of workers on the premises of the enterprise, in production facilities, at construction sites, workplaces in accordance with regulatory and legal acts on labor protection, provides employees free of charge with regulatory legal acts and acts of the enterprise for labor protection;
- monitors the employee's compliance with technological processes, rules for handling machines, mechanisms, equipment and other means of production, using collective and individual protection equipment, performing work in accordance with labor protection requirements;
- organizes the promotion of safe labor practices and cooperation with workers in the field of labor protection;
- takes urgent measures to help the victims, attracts, if necessary, professional rescue teams if accidents and accidents occur at the enterprise.

The employer is directly responsible for the violation of these requirements.

Obligations of the employee to comply with the requirements of regulatory and legal acts on labor protection.

The employee is obliged:

- take care of personal safety and health, as well as the safety and health of the people around them in the course of performing any work or while staying on the territory of the enterprise;
- Know and comply with the requirements of regulatory and legal acts on labor protection, the rules for handling machines, mechanisms, equipment and other means of production, use collective and individual protection equipment;
- to undergo preliminary and periodic medical examinations in accordance with the procedure established by law;
- the employee is directly responsible for the violation of these requirements.

Commission for Occupational Safety and Health

At the enterprise, in order to ensure the proportional participation of workers in solving any issues of safety, occupational health and the working environment, a commission on occupational safety and health may be established by decision of the labor collective.

The commission consists of representatives of the employer and the trade union, as well as the person authorized by the employees, occupational safety and health specialists and other services of the enterprise in accordance with the standard provision approved by the federal executive body that ensures the formation of the state policy in the field of labor protection.

Financing of labor protection

Financing of labor protection is carried out by the employer.

Financing preventive measures for labor protection, implementation of national, sectoral and regional programs to improve the state of safety, occupational and industrial health and other state programs aimed at the prevention of accidents and occupational diseases is provided, along with other sources of funding, certain legislation in the state and local budgets.

For enterprises, regardless of the form of ownership, or individuals, in accordance with the law, wage labor is used, labor protection costs are not less than 0.5 percent of the wage fund for the previous year.

Enterprises that are funded from the budget, the amount of labor protection expenditure is set in the collective agreement, taking into account the financial capabilities of the enterprise, institution, organization.

The sums of expenditures on labor protection relating to the gross expenses of a legal or physical person, in accordance with the legislation, use hired labor, are determined in accordance with the list of measures and means for labor protection, approved by the Cabinet of Ministers of Ukraine

Information and reporting on the state of labor protection

The employer is obliged to inform the employees or persons authorized to exercise public control over compliance with the requirements of the regulatory and legal acts on labor protection,

and the Social Insurance Fund of Ukraine on the state of labor protection, the cause of accidents, accidents and occupational diseases and the measures taken to eliminate them and Ensuring the company's working conditions and safety at the level of regulatory requirements.

Employees and / or their representatives are provided with access to information and documents containing the results of workplace attestation, preventive measures planned by the employer, the results of investigation, recording and analysis of accidents and occupational diseases, and reports on these issues, as well as on communications, submissions and orders from authorities state supervision of occupational safety and health.

Economic incentives for labor protection

Any incentives for active participation and initiative in implementing measures to improve safety and improve working conditions may be applied to employees. Types of rewards are determined by collective agreement, agreement.

When calculating the amount of insurance premium for each enterprise by the Social Insurance Fund of Ukraine, subject to the achievement of an adequate state of labor protection and reducing the level or absence of injuries and occupational morbidity as a result of the employer's appropriate preventive measures, a discount to it or a premium to the insurance premium for a high level of injuries and occupational diseases and an inadequate state of labor protection.

Calculation of the size of the insurance premium with the use of discounts and allowances for each enterprise provided for in part two of this article shall be carried out in accordance with the legislation on compulsory state social insurance against accidents at work and occupational diseases that result in loss of ability to work.

Compensation to legal entities, individuals and the state of losses caused by violation of labor protection requirements

The employer is obliged to compensate losses caused by violation of labor protection requirements to other legal entities, individuals and the state on general grounds provided for by law.

The employer reimburses the costs of carrying out work to save the victims during the accident and eliminate its consequences, to investigate and conduct an examination of the causes of the accident, an accident or occupational disease, to compile a sanitary and hygienic characterization of the working conditions of persons undergoing examination for occupational disease, and others expenses provided for by law.

Literature

Basic:

1. Labor protection in the medical industry: / Yavorovsky AP, Veremey MI, Zenkina VI and others - K., 2017. - P. 50-56.

Additional

1. Labor protection in medical and preventive institutions. Safety of vital activity / B.C. Tarasyuk, G.B. The Kuchan. K.: "Medicine", 2013. - P. 7-9, 51-85.

2. The Law of Ukraine "On Labor Protection". - 2012. - 18 p.

Informational resources: site of hygiene and ecology department www.dsma.dp.ua

Theme 2. Basis of the state and department control over working conditions, responsibility for violation in legislation of labor protection (seminar)

Educational purposes of the lesson:

- familiarize with the structure of the State Administration of Occupational Safety in Medicine and the functions of the basic structural elements;

- to acquire knowledge and skills to ensure effective management of labor protection in the medical industry;

- be able to apply in practice knowledge and skills to ensure effective management of labor protection in the medical industry.

Content of the theme of lesson (educational questions):

1. System of state control over working conditions.

2. The State Service for Labor, its structure, powers, forms and methods of work.

3. Departmental monitoring of working conditions in the health care system.
4. Powers of the Ministry of Health of Ukraine, heads of health care institutions and their units in the implementation of appropriate working conditions and their compliance with medical personnel.
5. Public control of working conditions. The role of the labor collective and trade unions in the implementation of public control over working conditions.
6. Responsibility for violation of legislation on labor protection: disciplinary administrative, criminal.

Structure of the seminar

At the beginning of the lesson, written control of the initial level of knowledge on academic matters is carried out. After solving the organizational questions and instructions of the teacher, students independently study the normative documents on the topic and outline the main provisions of the documents.

Evaluation of students is conducted through a survey with correction and supplementation of reports. At the end of the lesson, the teacher summarizes the results, assesses the knowledge of students, and gives the assignment for the next lesson.

Informational part

In pursuance of the Law of Ukraine "On Labor Protection", the State Committee of Ukraine on Occupational Safety Oversight (now the State Labor Service - Gostruda) issued Order No. 255 of 15.11.2004, according to which the Model Provision on Occupational Safety and Health Services was approved. According to him, the labor protection service is created by the employer to organize the implementation of legal, organizational, technical, sanitary and hygienic, socio-economic and therapeutic and preventive measures aimed at preventing the occurrence of accidents, occupational diseases and accidents in the labor process.

The labor protection service is created at enterprises and organizations, where the number of employees is more than 50 people.

At the enterprise with the number of employees less than 50 people, the functions of the labor protection service may be performed by persons having appropriate training as part-time jobs.

At the enterprise with the number of employees less than 20 people, to perform the functions of the labor protection service, third-party specialists may be recruited on a contractual basis, having a work experience of at least 3 years and trained in labor protection.

Heads and specialists of the labor protection service in terms of their positions and wages are equated with managers and specialists of the main production and technical services and must comply with the qualification requirements specified in the Handbook of Qualification Characteristics of Employee Professions that are common to all economic activities approved by the Ministry of Labor and social policy №24 of 16.02.1998.

Training and testing of knowledge on occupational safety and health of employees of the labor protection service are carried out in accordance with the procedure established by law with the admission to the robot and periodically every 3 years.

Employees of the labor protection service of the enterprise in their activities are guided by the legislation of Ukraine, the regulatory and legal acts on labor protection, the collective agreement and acts on labor protection operating within the enterprise. The liquidation of the labor protection service is allowed only in the event of the liquidation of an enterprise or the termination of the use of hired labor by an individual. The labor protection service reports directly to the employer.

As the main tasks of the labor protection service it is necessary to note:

- providing professional support for employer decisions on improving OSH management in the enterprise;
- organization of carrying out preventive measures aimed at eliminating harmful and dangerous production factors, preventing accidents at work, occupational diseases and other threats to the life or health of workers;
- studying and promoting the introduction of science and technology achievements, progressive and safe technological solutions, modern means of collective and individual protection of workers;
- ensuring control over compliance by employees with the requirements of laws and other

regulatory and legal acts on labor protection, sectoral agreement, section "Protection

labor "in the collective agreement and labor protection acts that operate within the enterprise;
 • informing and providing explanations to the employees of the company on labor protection issues.

The organization of the labor protection service of the enterprise should be carried out in accordance with the work plan and schedules of surveys approved by the employer.

Workplaces of workers of the labor protection service should be located in a separate room, be provided with proper office equipment and technical means of communication and be convenient for receiving visitors.

To conduct training, briefings, seminars, lectures and exhibitions, a health and safety office should be established in accordance with the Model Regulations on the Occupational Safety Cabinet approved by the State Committee for the Supervision of Occupational Safety No. 191 of 18.07.1997, registered with the Ministry of Justice of Ukraine on 08.10. . 1997 to No. 458/2262.

The employer should ensure the stimulation of the effective work of the employees of the labor protection service, who can not be involved in performing functions not provided for in the Labor Protection Act of Ukraine. The labor protection service should effectively interact with other structural divisions, services, specialists enterprises and representatives of the trade union, and in its absence - with persons authorized by employees for labor protection.

Public control over observance of labor protection legislation is carried out by labor collectives through their authorized representatives and trade unions in the person of their elected bodies and representatives.

The authorized labor collectives on labor protection are called upon to conduct appropriate inspections and submit proposals for the consideration of employers to eliminate the revealed violations in accordance with the regulations on occupational safety and health.

The trade unions monitor the observance by employers of legislative and other regulatory acts on labor protection, the creation of safe and harmless working conditions and proper production conditions for workers, providing them with collective and individual protection equipment, and the like. They have the right to freely check the condition of labor conditions and safety at work, the degree of implementation of the relevant programs and obligations of collective agreements (agreements), make representations on labor protection issues to employers and public authorities and receive a reasoned response from them.

In particular, these issues are dealt with by the Federation of Trade Unions of the country and trade unions, including the trade union of medical workers. Labor protection departments may be established in trade union structures and posts of full-time inspectors may be established. In addition to staff inspectors appointed by public controllers and responsible for the protection of labor in the field: in the hospital, in the laboratory, in the economic or auxiliary structure (boiler room, laundry, autoclave), etc. (Figure 1).

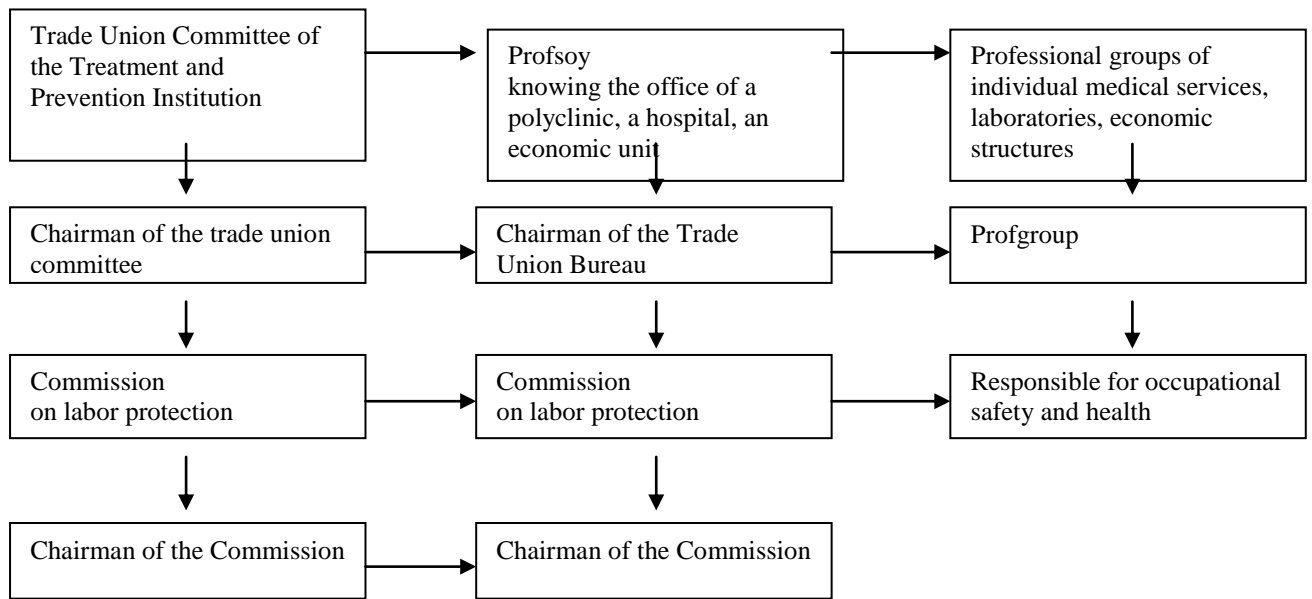


Fig. 1. Approximate structural scheme of the implementation of public control and the implementation of measures for labor protection in a medical and preventive institution (on the example of a trade union organization).

In compliance with the Law of Ukraine "On Labor Protection", the State Committee of Ukraine on Occupational Safety Oversight, in accordance with Order No. 72 of 3.08.1993, approved the "Model Regulations on the Labor Safety Commission" and in accordance with Order No. 135 of 28.12.1993 year - "Model Regulations on the Work of Authorized Labor Collectives on Occupational Safety and Health".

According to these documents, the OSH commission is organized in collectives (hospitals) with the number of employees of more than 50 people by the decision of the meeting of employees and is a permanent consultative and advisory body of the work collective, created with the aim of involving him in cooperation in the field of OSH management branch and is formed on the basis of equal representation from the employer and employees.

Commission on Occupational Safety and Health:

- protects the rights and interests of workers in the field of labor protection;
- Analyzes the state of safety and working conditions in the workplace (in the hospital) and provides relevant recommendations to the employer;
- has the right to apply to the head (chief physician) with proposals for regulating relations in the field of occupational safety, establish the degree of guilt patiently, monitor compliance with the requirements of legislation on occupational safety (provision of collective and individual protection, preventive nutrition), take participation in the resolution of conflict situations in the matter of labor protection and the like;
- headed by the chairman, who is elected at its meeting.

The members of the commission on labor protection issues carry out their duties on a voluntary basis, draw up their meetings (decisions) in the form of protocols, report once a year on their work to the general meeting and take part:

- in the development of a collective agreement between the administration and the employee (section "Labor protection");
- in the work of standing commissions on the issues of attestation of workplaces;
- In the investigation of accidents and other conflict situations on labor protection issues and the like.

Members of the commission on labor protection issues have the right:

- directly check the state of occupational safety and health, compliance with regulations on

labor protection;

- make suggestions on elimination of deficiencies in the field of labor protection;
- require the head of the production (hospital) unit to stop work in case of creating a threat to the life or health of employees

• to make proposals on bringing to responsibility of workers who violate normative acts on labor protection;

- To be elected to the labor protection committee and to be representatives in the

The courts, which hear questions about violations of labor protection.

The issue of the release or replacement of members of the commission is decided only at the meeting of the collective. Persons who create obstacles to their activities are established by the legislation.

So, as can be seen from the above materials, the issues of labor protection in medicine are quite problematic and diverse. Obviously, it's no wonder that in the state of modern hospitals even a post is provided - a hospital hygienist. Unfortunately, due to lack of money these positions are almost everywhere vacant. However, one should hope for the best, because unifying the efforts of the administration, labor protection specialists, the public and doctors, hospital hygienists, is undeniable, will significantly improve the working conditions in the medical industry and ensure effective prevention of the emergence of various production problems.

Authorized labor collectives on labor protection issues:

- elected by a simple majority of votes at the general meeting of the collective of the enterprise (hospital) or the hospital department (the number of members is determined by the decision of the general meeting of the circle of persons, they are not responsible for the organization and safety of working conditions);

• are trained in labor protection issues at the expense of the organization and fulfill their duties during working hours, cooperate with the OSH commission and the heads of the relevant structural units;

- at least once a year report on their work at the general meeting where they were elected;

have the following duties:

- to monitor the working conditions, its regime and the peculiarities of the organization of rest, use of labor of women, minors and the disabled;

- monitor the provision of workers with overalls, preventive nutrition, detergents, etc .;

- to control the issue of granting benefits and compensations for work in hard and harmful working conditions, compensation by the employer (administration) for harm to employees in the event of violations of their health, medical examinations and briefings, the use of funds for labor protection and the like.

Types of liability for violation of legislation on labor protection

In accordance with Art. 49 of the Law of Ukraine "On labor protection" for the violation of legislative and other regulatory acts on labor protection, the creation of obstacles to the activities of officials of the state supervision of labor protection and representatives of trade unions, the guilty employees are brought to disciplinary administrative material criminal responsibility in accordance with the law.

Disciplinary responsibility is to impose disciplinary penalties foreseen by current legislation. In accordance with Art. 147, KZoT established the following disciplinary sanctions: reprimand, dismissal from work. The right to impose disciplinary penalties on employees of the masses body that enjoys the right to recruit this employee. Disciplinary punishment may be imposed on the initiative of bodies exercising state and public control over occupational safety and health. For each violation, only one disciplinary sanction may be applied. When choosing a disciplinary punishment, it is necessary to take into account the severity of the committed misdemeanor and the harm caused to them, the circumstances under which the misconduct preceded by the employee's work is committed.

Disciplinary responsibility is imposed on officials guilty of violations of labor protection legislation in the form of a fine. The right to impose administrative penalties for the reasons specified in Art. 49 of the Law of Ukraine "On labor protection" are officials of the State Security Inspection. Administrative responsibility is imposed on persons who have reached the age of committing an administrative offense at the age of sixteen.

Liability is the responsibility of both the employee and the owner (enterprise). In Art. 130 Labor Code notes that employees are liable for damage to the enterprise (institution) for violations of their duties, including, as a result of violations of labor protection rules. The liability is established only for direct actual damage and provided that such damage is caused to the enterprise (institution) by illegal actions (inaction) of the employee. This responsibility, as a rule, is limited to a certain part of the employee's earnings and should not exceed the total amount of damage caused. The liability can be imposed irrespective of the employee's involvement in disciplinary, administrative or criminal liability. The owner of the enterprise (institution) or the person (body) authorized by him is liable for the harm caused to the employee irrespective of the presence of fault, unless he proves that the harm was caused due to force majeure or intention of the victim. Losses in connection with violations of labor protection legislation may include reimbursement to the victim of lost earnings, a lump sum, additional costs for treatment, prosthetics, if the victim survived, as well as burial costs in case of death of the victim, lump-sum allowance for the family and dependents.

Criminal liability occurs if violations of the requirements of legislation and other regulatory acts on labor protection have created a danger to the life or health of citizens. The subject of criminal liability for labor protection may be any official of the enterprise, institution, organization, regardless of the form of ownership, as well as the citizen - the owner of the enterprise or a person authorized by him. Criminal liability is determined in court.

Literature

Basic

1. Labor protection in the medical industry: / Yavorovsky AP, Veremey MI, Zenkina VI and others - K., 2017. - P. 57-68.

Additional

1. Labor protection in medical and preventive institutions. Safety of vital activity / B.C. Tarasyuk, G.B. Kuchan. K.: BCB "Medicine", 2013. - P. 107-115.

2. The Law of Ukraine "On Labor Protection". - 2012. - 18 p.

Informational resources: site of hygiene and ecology department www.dsma.dp.ua

Theme 3. Organization of labor protection in health care facilities

Educational purposes of the lesson:

- familiarize with the structure of the labor protection service in the health facility, as well as the rights and duties of its representatives;
- to acquire knowledge and skills in planning activities for labor protection in health facilities;
- be able to apply in practice knowledge and skills in planning activities for labor protection in health facilities.

Content of the theme of lesson (educational questions):

1. Occupational safety service of the medical-prophylactic institution, its structure, strength, main tasks and functions.
2. Rights and duties of workers of the labor protection service in the health facility.
3. Planning of measures for labor protection in health facilities. Plans for localization and elimination of emergency situations and accidents.
4. Principles of organization, types of training and testing of knowledge on labor protection issues. Instructions on issues of labor protection, their types.
5. Rights and duties of medical personnel in observance of working conditions in the performance of official duties.
6. Attestation of workplaces, the procedure for conducting, evaluating the results, taking them into account when determining benefits, compensation for employees.

Structure of the seminar.

At the beginning of the lesson, written control of the initial level of knowledge on control questions is carried out. After solving the organizational questions and instructions of the teacher, students independently study the normative documents on the topic. Evaluation of students is conducted through a survey with correction and supplementation of reports. At the end of the lesson, the teacher summarizes the results, assesses the knowledge of students, and gives the assignment for the next lesson.

Informational part

The main functions of the labor protection service in health facilities are:

- development of comprehensive measures in cooperation with other health facilities in order to achieve the established standards and increase the existing level of labor protection, plans and programs for improving working conditions, preventing occupational injuries and occupational diseases, and providing organizational and methodological assistance in the implementation of
 - planned activities;
 - drafting orders on labor protection issues and introducing them for consideration by the employer;
 - holding jointly with representatives of other structural units and with the participation of representatives of the trade union institutions or, in case of absence, persons authorized by employees on labor protection issues to inspect employees' compliance with the requirements of regulatory and legal acts on labor protection;
 - drawing up reports on labor protection in accordance with established forms;
 - conducting an introductory briefing on labor protection with workers;
 - Maintaining an accounting and analysis of the causes of occupational injuries, occupational diseases, accidents and establishing the extent of the damage caused by them;
 - ensuring proper registration and storage of documentation on labor protection issues, as well as timely transfer to the archive for long-term storage in accordance with the established procedure;
 - drawing up lists of occupations, positions and types of work with the participation of heads of health facility divisions, for which instructions should be developed for the protection (safety) of labor operating within the health facility, providing methodological assistance in their development;
 - informing employees about the basic requirements of laws, other regulatory and legal acts and labor protection acts that operate within the enterprise;
 - consideration of issues on confirmation of the existence of a hazardous production situation, which resulted in the employee's refusal to perform the assigned work, as well as letters and applications, complaints from the company's employees regarding compliance with labor protection legislation;
 - organization of the provision of units with regulatory and legal acts and acts on labor protection, acting within the enterprise, with benefits and training;
- materials on these issues;
- the organization of the work of the cabinet on labor protection, the preparation of information stands and corners on labor protection;
- holding meetings, seminars and contests on labor protection.
- Occupational safety workers take part in:
 - Investigation of accidents, occupational diseases and accidents in accordance with the Procedure for Investigation and Management of Accidents, Occupational Diseases and Industrial Accidents;
 - Drawing up the sanitary and hygienic characteristics of the workplaces of workers who are being examined for occupational diseases;

Conducting an internal audit of labor protection and attestation of workplaces for its compliance with regulatory and legal acts on labor protection;

- the work of commissions for the commissioning of constructed, reconstructed or technically re-equipped industrial and socio-cultural facilities, repaired or upgraded equipment in terms of compliance with labor protection (safety) requirements;
- the development of regulations and instructions, as well as the section on "Labor protection" of the collective agreement, labor protection (safety) acts in force within the enterprise, etc .;
- drawing up lists of professions and positions, according to which workers must undergo mandatory measures (preliminary) and periodic medical examinations;
- organization of training in occupational safety and health.

As an extremely important area of activity of the labor protection service, it is necessary to allocate control over:

- implementation of activities envisaged by the programs, plans to improve the state of safety, occupational health and working environment, the collective agreement and measures aimed at eliminating the causes of accidents and occupational diseases;
- carrying out identification and declaring safety of high-risk facilities;
- the presence in the units of instructions on labor protection in accordance with the list of professions, positions and types of work, the timely introduction of changes in them;
- timely conduct of tests and technical inspections of production equipment, safety and protective devices, as well as ventilation systems;
- timely training on occupational safety and health;
- Provision of workers in accordance with the requirements of the legislation with overalls, special footwear and other means of individual and collective protection, detergents and detoxifying agents;
- organization of storage, washing, dry cleaning, drying, dust removal and repair of overalls, footwear and other personal protective equipment;
- Sanitary and hygienic and sanitary conditions of employees in accordance with regulations;
- timely provision of benefits and compensations to employees for difficult and harmful working conditions, providing them with medical and preventive nutrition, milk or equivalent food products, carbonated salt water, and providing paid breaks for sanitation;
- observance in proper condition of the territory of the enterprise, internal roads and footpaths;
- rational organization of workplaces;
- using targeted funds allocated for the implementation of integrated
 - measures to achieve the established standards and increase the existing level of labor protection;
 - carrying out (preliminary) medical examinations of workers engaged in work with harmful and dangerous working conditions, professional selection, annual mandatory medical examinations of persons under the age of 21, and the like.
 Specialists of the labor protection service have the right:
 - issue to the heads of the structural units of the health facility mandatory instructions for the elimination of existing shortcomings, as well as obtain from them the necessary information, documentation and explanations on labor protection issues. The instruction of a labor protection specialist can only be canceled by the employer. The order is made in 2 copies, one of which is issued to the manager of the work, the object, the second remains in the labor protection service and

is retained for 5 years. If the head of the health unit of the health facility refuses to sign the receipt of the prescription, the health and safety specialist submits the appropriate representation to the name of the person who is administratively subordinated to this structural unit or to the employer;

- demand the removal from work of persons who have not undergone medical examination, training, briefing, knowledge testing and are not allowed to do relevant work or do not comply with the requirements of regulatory and legal acts on labor protection;

- Send to the employer an idea of bringing to justice officials and employees who violate labor protection requirements;

- make suggestions on encouraging employees for active work in the field of improving the state of labor safety;

- Involve, in agreement with the employer and the heads of individual departments of the institution, specialists for conducting inspections of the state of labor protection.

The organization of the labor protection service of the enterprise should be carried out in accordance with the work plan and schedules of surveys approved by the employer.

Instructions on labor protection are held when organizing work on labor protection both at enterprises and in educational institutions. The nature and timing of the briefing on OSH at the enterprises are divided into several types, namely: introductory, primary, repeated, unscheduled and target.

Introductory training on occupational safety and health is conducted:

- with all employees re-employed (permanent or temporary), regardless of their level of education, length of service in this profession and position;

- with employees who are on business trips at the enterprise and take a direct part in the production process, with drivers of vehicles entering the territory of the enterprise for the first time;

- with pupils, pupils and students who came to the enterprise for practical training.

Introductory instruction is carried out by a labor protection specialist or a person who is entrusted with these duties by an order for an enterprise (a decision of the management board). In large enterprises, individual questions of introductory briefing can be covered by relevant specialists.

Introductory instruction is conducted in the office of labor protection or indoors, specially equipped for this purpose, using modern technical means of training and visual aids (posters, full-scale exhibits, models, models, movies, filmstrips, video films, etc.).

Introductory briefing is conducted according to the program developed by the labor protection service taking into account the features of production and approved by the head of the enterprise (production).

A record of an introductory briefing is provided in a special journal, as well as in a document on the admission of a worker to work.

Initial briefing is conducted at the workplace prior to commencement of work:

- With an employee who is newly admitted (permanently or temporarily) to the enterprise;

- With an employee, is transferred from one production workshop to another;

- With an employee who will perform a new job for him;

- With a seconded employee who takes a direct part in the production process at the enterprise;

- With a student, student and pupil, who arrived at the production practice.

Initial briefing is conducted individually or with a group of persons of a special specialty in accordance with a program compiled in accordance with the requirements of the relevant labor protection regulations for workers, other labor protection regulations, technical documentation and an indicative list of initial briefing questions.

The program of initial briefing is developed by the head of the workshop, the site, coordinated with the labor protection service and approved by the head of the enterprise or the relevant structural unit.

After the initial briefing at the workplace, all employees, including graduates of vocational educational institutions, training and production (coursework) plants, should undergo an internship under the supervision of experienced, skilled workers within 2-15 shifts (depending on the nature of the production and qualification level of the specialist) specialists, who are appointed by order (order) for the enterprise (shop, plot, production).

The head of the enterprise (shop, plot, production) has the right, by his order or order, to release from the instruction of an employee who has at least 3 years of experience in his profession

and moves from one shop to another, where the nature of his work and the type of equipment on which it will work, does not change.

Repeated briefing is conducted in the workplace with all employees: on jobs with increased danger - 1 time per quarter, in other jobs - 1 time in the half year.

As a rule, the repeated briefing is carried out individually or with a group of workers performing the same type of work, under the program of initial briefing in full.

Unscheduled briefing is conducted with employees at the workplace or in the office of labor protection:

- in the event that new or revised regulations on occupational safety and health are introduced into force, as well as when changes and additions to them are introduced;
- when changing the technological process, upgrading equipment, instruments and tools, raw materials, materials and other factors affecting occupational safety;
- in the event of violation by the employee of regulations on occupational safety, which can lead or lead to injuries, accidents or poisoning;
- at the request of employees of the state supervisory authority for labor protection, the higher economic organization or the state executive power in the event that the employee does not know the safe methods of working methods or regulations on labor protection;
- if there is a break in the professional activity of the employee for more than 30 calendar days - for work with increased danger, more than 60 days - for other types of work.

Over planning briefing is conducted individually or with a group of employees of a general specialty. The scope and content of the briefing is determined in each individual case, depending on the reasons and circumstances that necessitated its conduct.

Targeted instruction is conducted with the employee:

- in case of one-time works not related to direct duties in the specialty;
- in case of liquidation of an accident or a natural disaster;
- in the course of work for which an outfit, permit or other similar documents are issued;
- when conducting excursions at enterprises.

The target instruction is fixed by a work permit or other documentation that allows the work to be carried out.

Primary, repeated, unscheduled and targeted briefings are carried out directly by the head of the work (head of production, shop, site, master, instructor of production training, etc.). And their implementation must necessarily end with the testing of knowledge through oral interviews, with the help of technical training tools, and also on the basis of verification of the acquired skills of safe working methods. Knowledge is checked by the person who conducted the briefing.

On the conduct of primary, repeated, unscheduled and targeted briefings, the person who conducted the briefing, records in the journal. At the same time, the signatures of both those instructed and those who instructed are mandatory. Instruction books should be numbered, stitched and sealed.

If necessary, primary, repeated, unscheduled briefings can be held in accordance with the established procedure at another related technology company, where there are conditions necessary for this.

The head of the enterprise, if necessary, has the right to invite to himself for the briefings of the relevant specialists of another, technology-related enterprise. The preparation of briefings, internships and admission to work of the employee in such cases is carried out in the journal of registration of briefings on the issues of labor protection of the enterprise.

The head of the enterprise is obliged to give out to the employee a copy of the instruction on labor protection by his profession or to hang it at his workplace.

The list of professions and positions of employees exempt from primary, repeated and unplanned briefings is approved by the head of the enterprise, after agreement with the state inspector of the State Committee for Supervision of Occupational Safety and Health. This list may include persons whose activities are not related to the maintenance of equipment, the use of certain tools, the conservation of raw materials and materials, etc.

Assessment of workplaces

Certification of workplaces is a complex of administrative, engineering and technical and sanitary-hygienic measures aimed at determining the compliance of the specialist's workplace with technological, ergonomic and sanitary-hygienic requirements, as well as with labor safety

requirements.

In accordance with the Decree of the Cabinet of Ministers of Ukraine No. 442 of 01.08.1992 "On the procedure for attestation of workplaces for working conditions", the certification of workplaces is carried out at enterprises and organizations, regardless of ownership and management, in the event that the technological process, equipment, raw materials and material that are used are potential sources of harmful and dangerous production factors that can adversely affect the health of workers, as well as their descendants both in this time, and in the future.

Attestation of workplaces

The main goal of attestation of workplaces is to regulate the relationship between the employer or its authorized body and employees in the field of realization of the rights to healthy and safe working conditions, benefits and compensation for working in unfavorable conditions, preferential pension provision and the like.

Attestation of workplaces is carried out by the certification commission, the composition and powers of which are determined by the order for the enterprise of the organization within the time period stipulated in the collective agreement (agreement), but not less than once in 5 years.

The responsibility for the timely and qualitative performance of the certification is assigned to the head of the health facility.

Extraordinary certification is carried out in the event of a fundamental change in the conditions and nature of labor on the initiative of the owner or the body authorized by him, the trade union committee, the work collective or its production body, state supervision of labor protection with the participation of the institutions of the State Sanitary and Epidemiological Service of the Ministry of Health.

Design and research organizations, technical labor inspectorates of trade unions, inspections of state technical supervision, etc. can be involved in the certification process.

Certification of workplaces provides:

- identification of factors and causes of unfavorable working conditions;
- Sanitary-hygienic study of the working environment, severity and intensity of the work process in the workplace;
- a comprehensive assessment of the factors of the working environment and the nature of labor and their compliance with safety standards, construction and sanitary norms and rules;
- establishing the degree of harmfulness and hazards of labor and its nature in accordance with the generally accepted hygienic classification;
- reasonable assignment of a workplace to a certain category by the degree of harmfulness and severity of labor;
- Definition (confirmation) of workers' right to preferential pension provision for activities carried out in unfavorable conditions;
- Drawing up a list of jobs, industries, professions and positions that provide for preferential pension provision for workers;
- analysis of the implementation of technical and organizational measures aimed at ensuring labor safety.

Literature

Basic

1. Labor protection in the medical industry: / Yavorovsky AP, Veremey MI, Zenkina VI and others - K., 2017. - P. 110-125.

Additional

1. Labor protection in medical and preventive institutions. Safety of vital activity / B.C. Tarasyuk, G.B. The Kuchan. K.: "Medicine", 2013. - P. 51-84.

2. The Law of Ukraine "On labor protection" - 2012 - 18 p.

Theme 4. Basis of ergonomics, its importance for creating the safety working environment

Educational purposes of the lesson:

- familiarize yourself with the general patterns of the emergence of hazards associated with the workplace, their properties and characteristics of human exposure;
- master the skills of analyzing working conditions, technological processes, production equipment of places, labor operations, organization of production with the purpose of revealing harmful and dangerous production factors, occurrence of possible emergency situations;
- be able to use in practice recommendations for eliminating hazardous and harmful production factors, creating healthy and safe working conditions.

Content of the theme of lesson (educational questions):

1. The concept of "ergonomics."
2. Psychology and psychophysiology of labor.
3. The tension of labor.
4. Ergonomic approach to work organization.
5. Rational planning and organization of the workplace.
6. Equipping the workplace.
7. Factors affecting the working capacity and fatigue of a person's physical and psychological factors of productive activity.
8. The mode of work and rest.
9. Methods of ergonomic analysis.
10. Requirements of ergonomics in controls and means of indication.
11. The main stages of the ergonomic analysis of systems of process equipment and the environment.
12. The importance of ergonomics for creating safe working conditions in health facilities.

Structure of the lesson

At the beginning of the lesson, written control of the initial level of knowledge on academic matters is carried out. After solving the organizational questions and instructions of the teacher, students independently study the normative documents on the topic and outline the main provisions of the documents.

Evaluation of students is conducted through a survey with correction and supplementation of reports. At the end of the lesson, the teacher sums up the results, assesses the students' knowledge, gives the assignment for the next lesson.

Informational part

Ergonomics studies, develops and gives recommendations on the design, manufacture and operation of technical means that provide the person with the necessary comfort in the labor process, retain her strength, efficiency and health.

Activity - a specific, inherent in a person, a form of active relationship to the world around him. Any activity consists of a goal, means, result and, in fact, the process of activity. Activity is the real driving force of social progress and the guarantee of the existence of society.

In the historical aspect of the development of the labor activity of man, three basic stages of labor can be distinguished: manual, mechanized and automated.

For a long time, almost to the beginning of the XX century, human functions with regard to technology, they remained basically energetic, that is, people used their muscular power to control technology. This work was characterized by complex motor processes, which required significant expenditure of physical strength, high coordination of movements, dexterity. The reconciliation of man with technology was reduced only to the account of its anatomical and physiological characteristics.

With the advent of new types of equipment (car, airplane, etc.) at the beginning of the 20th century, there is a need to take into account the psychological capabilities of a person, such as the reaction speed, memory and attention characteristics, emotional state, etc. With the widespread introduction of automated control systems, and automation of production processes there were

changes in the professional structure of labor associated with the emergence of operator activity.

Features of the operator's activity have significantly changed the work of man. The tension of labor has increased because the operator faces the task of managing an increasing number of objects and parameters. Man does not deal with direct observation, but with information mapping. There are growing demands on the accuracy, speed and reliability of human actions, the speed of psychological processes. The labor activity is accompanied by considerable expenses of neuro-emotional and mental energy.

Computerization and robotics, on the one hand, expanded the capabilities of the person, and on the other, significantly changed the requirements for its activities. There is no need for primitive work using monotonous physical operations, with stereotyped mental activity. The need for creative and highly qualified work has increased. Complicated the problem of harmonizing working conditions, the construction of equipment with the psychological and physiological capabilities of man.

Thus, manual, mechanized and automated work differ in the magnitude of physical exertion and neuro-emotional stress, which affect the physical and mental capabilities of a person.

Of great importance from the point of view of the physiology of labor is the study of the course of mental and physiological processes during the labor activity of man, which can be conditionally divided into physical and mental. The first type of activity is characterized by the energy aspect (load on the body, which requires muscle effort and appropriate energy supply), and for the second - information (intense brain work during the receipt and analysis of information).

Physical activity is determined mainly by the work of the muscles, to which the blood flows intensively in the process of work, ensuring the supply of oxygen and the removal of oxidation products. This is facilitated by the active work of the heart and respiratory organs. This consumes energy. In terms of the total energy inputs of an organism, physical work is divided into lungs (Ia, Ib), medium severity (IIa, IIb) and heavy (III).

Table 1

State Sanitary Norms and Rules 3.3.6.042-99

Category of work	Total energy consumption of the body	
	<i>Dzhoule/sec (Watt)</i>	<i>Kcal/hour</i>
Easy-I	105—140	90—120
Easy-16	141—175	121—150
Moderately severe -II a	176—232	151—200
Medium gravity -II b	233—290	201—250
Heavy III	291—349	251—300

Category Ia includes jobs that are performed sitting and do not require physical exertion (the profession of management, sewing and watchmaking, etc.).

The category Ib includes works that are performed sitting, standing or connected with walking and accompanied by some physical strain (a number of professions at communication enterprises, inspectors, masters, etc.).

Category IIa includes work associated with constant walking, moving small (up to 1 kg) items or items in a standing or sitting position and equiring a certain physical strain (a number of professions in the spinning and weaving industry, machine-assembling shops, etc.).

The category IIb includes works that are performed standing, connected with walking, moving small (up to 10 kg) weights and accompanied by moderate physical stress (a number of professions in machine building, metallurgy, etc.).

Category III includes work associated with permanent movements, the transfer of significant (over 10 kg) weight and requiring great physical effort (a number of professions with the implementation of manual operations of metallurgical, engineering, mining enterprises).

The higher the category of work performed, the greater the burden on musculoskeletal, respiratory and cardiovascular systems. Since the heart rate, which at rest is 65-70 cuts per minute, when performing heavy work can increase to 150-170. Pulmonary ventilation as well as heart rate

increases in parallel with the increase in intensity performed. Ventilation of the lungs, is 6-8 liters of air per minute at rest, during heavy physical work can reach up to 100 or more liters per minute. During intensive work, there are changes in some other functions of the body.

Mental activity of a person is determined, mainly, participation in the labor process of the central nervous system and sense organs. With mental work, heart rate is slowed down, blood pressure rises, metabolic processes are weakened, blood supply to the extremities and abdominal cavity is reduced, blood supply to the brain is increased 8-10 times compared to rest. Mental activity is very closely related to the work of the sense organs, primarily the organs of sight and hearing. Compared with physical activity in certain types of mental activity (the work of designers, computer operators, students and teachers, etc.), the intensity of the sense organs increases 5-10 times. This leads to more stringent requirements regarding the levels of noise, vibration, illumination precisely with mental activity.

Despite significant differences, the division of labor activity into physical and mental activities is relatively arbitrary. With the development of science and technology, automation and mechanization of labor processes, the border between them is increasingly smoothed out.

With intensive and prolonged work, fatigue can occur, which is characterized by a decrease in working capacity. Fatigue means a set of temporary changes in the physiological and mental state of a person that appear as a result of intense and prolonged activity and lead to a deterioration in its quantitative and qualitative indicators. Fatigue is a defensive reaction against the depletion of the functional potential of the human body. After rest, fatigue disappears, and working capacity is restored. Fatigue can occur both with intense physical and mental activity, although at the latter it is less noticeable, especially during the performance of your favorite work. At the same time, the process of monitoring the development of fatigue with mental activity is difficult, because even after the end of working time, the human brain unconsciously continues to seek a solution to the task. The state of fatigue, as a rule, is accompanied by a feeling of fatigue - a subjective expression of the processes that occur in the body with fatigue.

It is important that fatigue, accumulating, does not become overfatigue, as it can lead to pathological changes in the human body and the development of diseases of the central nervous system.

Literature

Basic

1. Occupational safety in the medical industry: / Yavorovsky AP, Veremei MI, Zenkina VI and others - M., 2017. - P. 112-135.

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Informational resources: site of hygiene and ecology department www.dsma.dp.ua

Theme 5. Occupational hazards at the performing functional duties of medical staff

Educational purposes of the lesson:

- to know the hygienic characteristics of occupational hazards and physiological and hygienic features of the work of medical workers of various specialties;
- master the skills that are used to assess the working conditions of medical personnel of health facilities, identify risk factors and their possible negative health consequences, justify measures to optimize working conditions;
- be able to justify measures to optimize working conditions.

Content of the theme of lesson (educational questions):

1. Hygienic importance of planning, equipment, optimal operating conditions of health facilities as conditions for creating safe working conditions for medical personnel.
2. Occupational hazards, hygiene and labor protection of medical personnel of various departments (therapeutic, surgical, infectious, resuscitative, psychoneurological, diagnostic,

physiotherapeutic, etc.) and laboratories of health facilities.

3. Legislative and organizational measures for the protection of labor of medical personnel.

4. Provision of favorable working conditions, prevention of nosocomial infection and occupational diseases among medical personnel, personal hygiene of personnel.

Structure of the seminar. At the beginning of the lesson, written control of the initial level of knowledge on control questions is carried out. After solving the organizational questions and instructions of the teacher, students independently study the normative documents on the topic. Evaluation of students is conducted through a survey with correction and supplementation of reports. At the end of the lesson, the teacher summarizes the results, assesses the knowledge of students, and gives the assignment for the next lesson.

Informational part

Currently, more than 1 million people are involved in health care in Ukraine, including about 200,000 doctors and more than 400,000 average medical workers.

50% of the medical workers in the city and 90% of the medical workers in the village believe that their working conditions require improvement, 84% of medical workers believe that they are daily exposed to stress and the main cause of stress is low wages, poor material and technical basis for health care. , low social security of medical workers. Thus, it can be seen that the nature and conditions of work have a huge impact on the health and performance of health workers.

Protection of labor of medical workers

The following medical and nursing specialties are distinguished:

1. therapeutic profile;
2. Surgical profile;
3. Dental Profile
4. hygienic profile;
5. with special research methods and the like.

The type of medical institution (hospital, polyclinic, ambulance) and the profile of the department in which they work are significantly influencing the nature of the work of medical workers of the same specialty.

The work of medical workers is connected with the influence of both harmful and dangerous factors of the working environment:

a) psychophysiological (psychoemotional stress, forced working posture, excessive voltage of analyzer systems, etc.);

b) physical (discomfort microclimate, insufficient illumination of workplaces, increased levels of noise, vibration, ultrasound, laser radiation, ionizing radiation, etc.);

c) biological (causative agents of infectious diseases and products of their vital activity);

d) chemical (medicines, narcotic drugs, etc.).

The main physical factors at workplaces of health workers are industrial microclimate, noise, ultrasound, ionizing, non-ionizing and laser radiation, vibration. Among the huge number of chemicals used in medicine today, most often medical workers have to contact with aerosols of drugs, drugs and disinfectants.

Professional activity of the majority of medical workers of various specialties is accompanied by contact with infectious agents.

The functional state of the employee is affected not only by physical, chemical and biological factors, but also by the labor process itself. The main characteristics of the work process of doctors and nurses are static workload, forced working posture, irregular variability, the duration of focused attention, responsibility for the life and health of others, a danger to personal health.

Psychophysiological factors.

The work of medical workers is characterized by considerable intellectual tension, and in some cases requires considerable physical endurance, attention and high working capacity under extreme conditions.

Functional tension of the body during operation can be schematically described from two sides - energy and information.

For the majority of professional groups of medical workers, neurological and emotional stress is one of the main factors of the working environment, adversely affecting their health.

And the effect of this factor in recent years has not only not diminished, but continues to grow.

So, in the 80-ies of the XX century. 60% of doctors believed that their work is accompanied by a nervous-emotional tension. Today, this percentage has increased to 74% for doctors, and for

nurses it is 82%. First of all, the neuro-emotional tension is typical for the staff of psychiatric hospitals and dispensaries, intensive care units, obstetrician-gynecologists, hospital surgeons, neurologists, emergency medical workers.

Causes of nervous and emotional stress of medical workers is the constant responsibility for the health and life of people (patients, colleagues, own health and life) daily contact with people of different ages (children, elderly people, etc.), social status (patients and their relatives, leaders of various institutions, the population), various psychological types of characters; the need to urgently make a decision, a large number of stressful situations, shift work and the like. In recent years, the reasons have been weighty, which are of a socioeconomic nature, which include the lack of stable and full financing of the medical industry and, as a consequence, the lack of necessary medicines, equipment, equipment, untimely payment of wages and low wages and the like.

The work of medical workers can be divided into two main categories:

1) mental (work of physicians of therapeutic profile, except for doctors of intensive care units, hygienists, researchers, etc.);

2) mentally emotional (work of doctors in the surgical profile of hospitals, anesthesiologists, intensive care units, emergency doctors, etc.).

Physicians performing mental-emotional work, nervous-emotional the voltage is particularly high. So, surgeons in the process of performing the operation there is a more pronounced increase in the heart rate compared with therapists leading patients. Surgery, especially at the most crucial moments of the operation, increases the latent period of the motor reaction, the number of errors for all types of reactions, by the end of the working day, the speed of perception and processing of information, indicating the development of deep fatigue, decreases.

In connection with the need for round-the-clock service of patients, many doctors, nurses and other personnel of medical and preventive institutions (LPU) have to work not only in the daytime, but also in the evening and even in the night shift. The transition of medical workers from one working shift to another is accompanied by the destruction or reorganization of daily biorhythms. A change in the daily rhythm of functional activity can cause persistent sleep disturbances, a decrease in the reliability of the mechanisms of homeostatic regulation, and become the starting link in the pathogenesis of many somatic and neuropsychic diseases.

In addition to the shift work, the duration of the shift can influence the medical workers. So, although for different categories of physicians a working day is set from 4 to 8 hours, the real working shift in many hospitals is 12 or even 24 hours.

More than 30% of doctors and 50% of average medical personnel work additionally at part-time jobs in the main workplace or in other health facilities, which increases the total time of their contact with harmful factors of the working environment.

For the work of a number of professional groups of medical workers (emergency doctors, dentists, surgeons, etc.), a combination of a high level of neuro-emotional tension and physical activity is characteristic.

The level of physical activity in the performance of various types of labor among medical workers is not the same. So, at doctors-laborators, ophthalmologists, otolaryngologists, etc. (who do the work sitting), it is insignificant. This group of people is characterized by the danger of decomposition of hypodynamia. For example, the time for which the motor activity of otolaryngologists is accounted for is only 4.7% of the total time of admission. Especially unfavorable combination of hypodynamia with a high level of neuro-emotional tension.

At the same time, the work of trauma doctors, surgeons, district doctors, hygienists, masseurs, nurses, and some groups of nurses is associated with a significant energy expenditure. And for some groups of medical workers it is characteristic to perform dynamic work (lifting and carrying heavy loads by ambulance staff, hospital attendants, etc.), and for others - static load (surgeon during surgery, dentist, etc.).

Significant static loads are often combined with irrational work postures. So, in the forced posture caused by the torso inclination, the therapist performs percussion, palpation, auscultation, measures blood pressure, examines the skin.

Hygienic features of working conditions and occupational hazards of surgical doctors

A professional feature of surgeons' activity is the multicomponent nature of the work process. In addition to the preparation and conduct of surgical interventions, as a the main type of activity of surgical surgeons, a considerable amount of working time is spent on the review and analysis of the patients' condition, diagnosis, postoperative procedures, morning conferences, medical appointments and decisions about surgical interventions, work with medical records (case histories), conversations with relatives of patients, for heads of departments - administrative work and the like. In addition to the above activities, each surgeon during the month enters into several duties, which last 7, 16 or 24

hours. While on duty, surgeons perform routine and urgent surgical interventions, provide counseling and medical care to patients in different departments.

Within a year, one surgeon has about 185 hours of surgery. One operation lasts an average of 1 hour 12 minutes. Thus, the operative load per surgeon is about 155 surgical interventions per year. It is necessary to take into account the specifics of performing surgical interventions in the purulent surgery departments, where the number of ongoing operations is much less than the time (10-35 min), and the average operative load per one such surgeon is 136 interventions per year.

The physiological feature of the surgeon's labor activity in the operating room is a forced working posture standing, with a static strain of the muscular system. It is established that 37.6% of the total operation time the surgeon's torso is tilted forward at an angle of about 45 °, and 27% - with an additional return to one side or the other, and only 26% of the time its trunk occupies a vertical position. Static muscular tension in surgeons is accompanied by tonic and tetanic contraction of the muscles of the shoulder girdle, back, pelvis, lower extremities, hands, the appearance of fatigue, which is directly dependent on the duration of the operation. Blood pressure in the legs increases by 2 times, in the pelvic region - by 50%. There is bleeding of the brain.

Among the unfavorable factors of physical nature, the leading place in the work of the surgeon belongs to the heating microclimate, which leads to a strain of the mechanisms of thermoregulation and increased sweating.

When performing operations under hyperbaric oxygenation conditions, surgeons and their assistants experience the combined action of the heating microclimate, increased atmospheric pressure, confined space and increased intake of nitrogen. The unfavorable effect is also the process of compression and especially decompression. Under the influence of nitrogen, euphoria appears in the members of the operating team, behavior changes (unfounded laughter, loquaciousness, slowing down of motor reactions, decreased attention, clarity of manipulation, etc.).

When X-ray diagnosis, radiodiagnosis, surgical manipulation in traumatology, doctors and their assistants are exposed to ionizing radiation.

It should be noted that the members of the surgical teams, in addition to these physical factors, are exposed to toxic chemicals. The content of fluorotan in the operating air at a different distance from the patient's mask increases in proportion to the duration of the operation, especially with the half-open breathing circuit. In addition, the content of inhaled drugs in the respiratory zone of the members of surgical teams depends on the volume of surgical intervention, the cubic capacity of the operating room and the volatility of narcotic substances.

During surgical interventions, surgeons are in a state of high mental and neuro-emotional tension. With prolonged operations (3-6 hours), the time of the zovoromotor reaction increases, the coordination of the movements of the hand and fingers is impaired, memory and attention are reduced, the inhibitory processes prevail in the central nervous system. At the same time, reverse manifestations also occur: during the operation, the performance indicators improve, emotional excitement begins.

Among the diseases of surgeons with temporary disability, the first place is occupied by acute respiratory diseases, influenza, diseases of the circulatory, digestive and nervous system.

Among the chronic diseases of surgeons and obstetrician-gynecologists, which are manifested as a result of medical examinations, the greatest specific gravity is occupied by diseases of the circulatory system and neurasthenia, associated with high psycho-emotional and physical stress. In these doctors the pain is most often noted in the heart, increased blood pressure, significant changes in the ECG, varicose veins of the lower extremities, disorders of the nervous system and others.

Hygienic features of working conditions and occupational hazards of therapeutic physicians
Specialties of the therapeutic profile include: therapy with its branches (gastroenterology, pulmonology, cardiology), phthiology, infectious diseases, dermatovenereology, neurology, psychiatry, pediatrics, emergency and urgent medical care.

From the point of view of the peculiarities of the organization of work and the impact of unfavorable factors of the physicians of the specialties listed, it should be divided into:

- polyclinic;
- precinct officers;
- working in a hospital.

The basic principle of organizing the work of a polyclinic is the precinct principle of providing medical assistance, is to maintain the polyclinic of a territorial site based on the population living on it.

An important direction of the work of the district therapist is the reception of patients in the clinic. Now the fixed rate of time needed to receive one patient is 12 minutes. On average, the time spent by the district doctor when providing care at home should be 30-40 minutes per visit.

At home, it is more difficult to conduct a diagnostic examination than in a polyclinic or a

hospital, especially almost 2/3 of the calls come from elderly patients.

Among the unfavorable psychophysiological factors affected by district therapists, the leading role belongs to excessive physical exertion, depending on the season of the year (the number of calls), the size of the medical station, the type of development (single or multi-storey buildings, the presence or absence of lifts in the houses).

The main activities of therapists in hospitals are: bypassing patients, filling out medical records, conducting diagnostic procedures, consulting with the department head and narrow specialists, conducting interviews with patients and their relatives, and the like.

- The actual number of patients, the doctor the therapist supervises at the same time, averages 18.5-21.5 persons. Medical-diagnostic work occupies 43.5-51.9% of working time for physicians of the therapeutic department, filling of medical documentation - 30-33%, and the rest of the time is spent talking with patients and their relatives.
- The modern means of technical equipping of medical institutions - X-ray devices, sources of radioactive radiation, electronic, ultrahigh-frequency, ultra-high frequency, ultrasonic and laser devices, a source of UV radiation, chemical factors - pharmacological drugs that act on medical personnel in as solutions, gases, vapors and aerosols.
- Among the diseases of therapists with temporary disability, the first place is occupied by acute respiratory diseases, influenza, diseases of the circulatory, digestive and nervous system.
- In the structure of chronic diseases of district therapists, the first ranking places are occupied by diseases of the digestive organs (chronic cholecystitis, gastritis, stomach ulcer, duodenal ulcer), diseases of the nervous system and sensory organs. Then follow: sciatica and radiculitis, caused by a frequent change of stay in the room and beyond with the care of patients at home.
- To diseases of medical personnel of the therapeutic profile, caused by the influence of the working environment and labor activity, include:

Infectious and parasitic diseases, similar diseases of patients, are served by a doctor, nurse or laboratory assistant (leprosy, tuberculosis, plague, cholera, anthrax, rabies, sap, brucellosis, leptospirosis, helminthiasis, etc.);

- diseases that arise when working with medicines, narcotics, disinfectants and other chemicals (acute and chronic poisoning, drug allergies, dermatoses, etc.);
- Diseases that develop with prolonged direct service of the mentally ill, professional psychoneurosis;
- diseases caused by a significant permanent neuro-emotional stress (hypertension, angina pectoris, etc.).

Hygienic features of working conditions and occupational hazards of physicians of a pharmaceutical profile.

Sanitary and hygienic indices of working conditions of pharmacy workers, pharmacy warehouses and control and analytical laboratories (area of premises, temperature and humidity regime, air condition of production premises, illumination) can vary significantly with the normative values. When carrying out manufacturing operations, pharmacists, up to 85% of the working time, come into contact with medicinal and chemical substances, including with poisonous, narcotic or aggressive reagents.

As you know, the harmful effects of dust on the body largely depends on the degree of its dispersion. Characterizing the dust of medicinal products, it should be noted that most of its species are highly disperse aerosols. At 96-98% they consist of dust particles of less than 5 microns in size. As a result, virtually all aerosol medications are stable in the air and are able to penetrate deep into the lungs. Most of the working time with medicinal substances, including in the form of dust, is contacted by pharmacists-technologists, pharmacists-analysts, pharmacists and packers.

Dust of medicines in high concentration is present in pharmacy warehouses during the packing of medicines, medicinal semi-finished products, herbs, as well as in assistant medicine for the direct manufacture of medicines and especially complex medicinal mixtures. It is quite harmful to pack the medicinal herbs and make mixtures of them.

If the sanitary regime is violated, unfavorable microclimatic conditions may be created in the pharmacy. Especially it concerns such premises, as washing, distillation-sterilization, sterilization and trading hall. So, in the wash for the need for hot water, a stove or gas stove burns for a long time, as a result of which the air temperature rises. In addition, the humidity rises, because during washing and drying dishes from it and washing baths in the air receives a large amount of water vapor. In the sterilization-distillation and sterilization rooms, the increase in air temperature can be due to the heating of various apparatuses, drying cabinets, sterilizers, and the like.

In contrast to rooms with a heating microclimate, the trading room and the basement refer to

rooms with a cooling microclimate.

The most epidemiologically dangerous are jobs at the pharmacist-technologist, pharmacist, cashier, because they are located in the trading room, where they are directly in contact with visitors.

Work in the pharmacy (pharmacist-technologist, analyst-technologist, pharmacist) is associated with a significant strain of the organ of vision, as they perform technological operations that require the discrimination of small objects (reading recipes, inscriptions), colors and shades of medicinal raw materials and finished medicinal products, turbidity mixtures, determination of uniformity of mixtures, powders; work in conditions of insufficient lighting and the like. This causes the appearance of irritability, weakening of attention, violation of coordination of movements, development of myopia and the like.

Pharmacy personnel often have to work in a compelled position. Long sitting work causes curvature of the spine, increased intra-abdominal pressure, stagnation of blood in the veins of the abdominal cavity and rectum, in turn leads to disruption of the bowel (atony, constipation) and hemorrhoids.

Pharmacists, especially in non-mechanized drugstores, must perform work associated with significant physical stress. The dynamic load during the shift is up to 60 thousand kg / m (at the rate of 30 thousand kg / m), while the static load reaches 80 thousand kg / s (at the rate of 40 thousand kg / s).

In terms of the incidence of workers, the first place is occupied by production pharmacies, the second - pharmacies of medical and preventive institutions, the third - drugstores of ready-made dosage forms, small-wholesale dispensing and homeopathic pharmacies. The indicator of allergic diseases in pharmaceutical workers is about 2,5%.

The study of the relationship between morbidity indicators and categories of pharmacy workers determined that the leaders in the list of morbidity are pharmacists-analysts, pharmacist-technologists and administrative personnel. A slightly lower rate for pharmacists.

Literature

Basic

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Additional

1. Hygiene of Labor: Textbook / Yu.I. Kundiev, A.P. Yavorovsky, A.M. Shevchenko and others; Ed. acad. HAH of Ukraine, AMS of Ukraine, prof. Yu.I. Kundieva, corresponding member. NASU of Ukraine prof. A.P. Yavorovsky. - M.: "Medicine", 2011. - 904 p.

Informational resources: site of hygiene and ecology department www.dsma.dp.ua

Theme 6. Accidents in the healthcare facility, their account and order of investigation

Educational purposes of the lesson:

to familiarize with the order of the account and investigation of accidents and failures in treatment-and-prophylactic establishments;

- master the methodology of accounting and the procedure for investigating accidents and accidents in treatment and prevention institutions;

- To be able to apply in practice knowledge and skills in the registration and investigation of accidents and accidents in medical and preventive institutions.

Content of the theme of lesson (educational questions):

1. The notion of a dangerous production factor.
2. The term "accident".
3. Classification of accidents.
4. Occupational injuries.
5. The causes of industrial injuries.
6. The main content of the Resolution of the Cabinet of Ministers of Ukraine No. 1232 of 30.11.2011 "Some issues of investigation and recording of accidents, occupational diseases and accidents at work".
7. Technique of accounting and investigation of accidents at work.
8. Measures to prevent accidents in health facilities.

Structure of the practical training.

A teacher checks up presence of the students, acquaints students with main issues of the given theme. At the beginning of practical training students ought to write control questions covered basic field terms. In the second part of practical training students under the direction of teacher study basic legislative documents on the theme "Order of investigation and carry out registration accidents, professional diseases and failures cases in the industrial enterprises" № 1232 from November, 30, 2011 by Cabinet of Ministry of Ukraine.

After that every student covered with individual situational card and carried out practical work, according to the "Order...", conducted investigation case of professional disease.

After estimation of situation on a problem specification a student makes a conclusion and designs protocol. At the end of employment teacher estimates knowledges of students on this topic, assigns on next employment, recommends necessary literature for preparation. Estimation of students is conducted by questioning with correction and addition of answers. Teacher estimates knowledges of students, assigns on next theme of the practical study.

Informational part

At the enterprises at operation of the equipment and performance of technological processes workers can be in dangerous zones. A dangerous manufacturing factor is a production factor, the impact of which on the employee under certain conditions leads to injury or a sharp deterioration of health.

Production factors (moving machines and mechanisms, moving parts of production equipment, etc.) May cause injuries. The term "industrial trauma" refers to the violation of the anatomical integrity or physiological functions of human tissues or organs due to mechanical, thermal, chemical and other effects of factors of the production environment on the human body in connection with the performance of professional work, any production assignment or social assignment.

According to the influence of factors of the working environment on workers, injuries are divided into mechanical, thermal, chemical, electrical, radiation, combined.

Mechanical injuries (affected parts of the body, fractures, wounds, etc.) can be caused by moving parts of the production equipment and processed objects, a tool that is moved by the load. They can occur when the employee falls (if the premises are cluttered with equipment, damaged portable stairs).

Thermal injuries (burns, frostbite, heat strokes) are caused mainly by direct contact with the surface of the production equipment, by the action of flame, hot objects; sudden action of molten metal, hot liquid, hot steam or gas. Frostbite is the result of low temperatures of air, equipment or objects.

Chemical injuries are chemical burns, acute poisoning by concentrated acids, alkaline solutions, etc. their worker can get during transportation and overflow of acids, alkalis, making solutions, repairing and cleaning equipment.

Electrical injuries are associated with the penetration of current through the human body. The causes of electrical injuries in production are varied: wire breaks, contact with bare wires or. subjects under tension.

Radiation injuries associated with exposure to radiation.

Combined injuries can be caused by several kinds of effects (eg, mechanical shock and electric shock, etc.).

In accordance with the "Schemes of the distribution of work-related injuries in terms of severity of injuries" and "Schemes for the distribution of acute professional injuries in terms of their severity," injuries are divided into light, severe, and fatal. In addition, injuries can be group, if two or more workers are injured. The totality of work-related injuries is called occupational traumatism.

As a result of prolonged or repeated exposure to harmful substances and hazardous factors in the working environment and the work process, occupational diseases occur. A disease that has arisen as a result of professional activity exclusively or mainly under the influence of harmful substances and certain types of work and other factors related to work belongs to the occupational disease.

The event that caused the trauma is called an accident. The Law of Ukraine "On compulsory state social insurance against accidents at work and occupational diseases resulting in disability" determines that an accident is a time-limited event or a sudden impact on employees of a hazardous production factor or environment that occurred during the performance of their employment duties and as a result of which harm to health or death occurred.

There are accidents related to work and production, as well as household accidents related to work. The latter are a broader concept and include accidents that occurred not only in production, but also outside it (Figure 1).

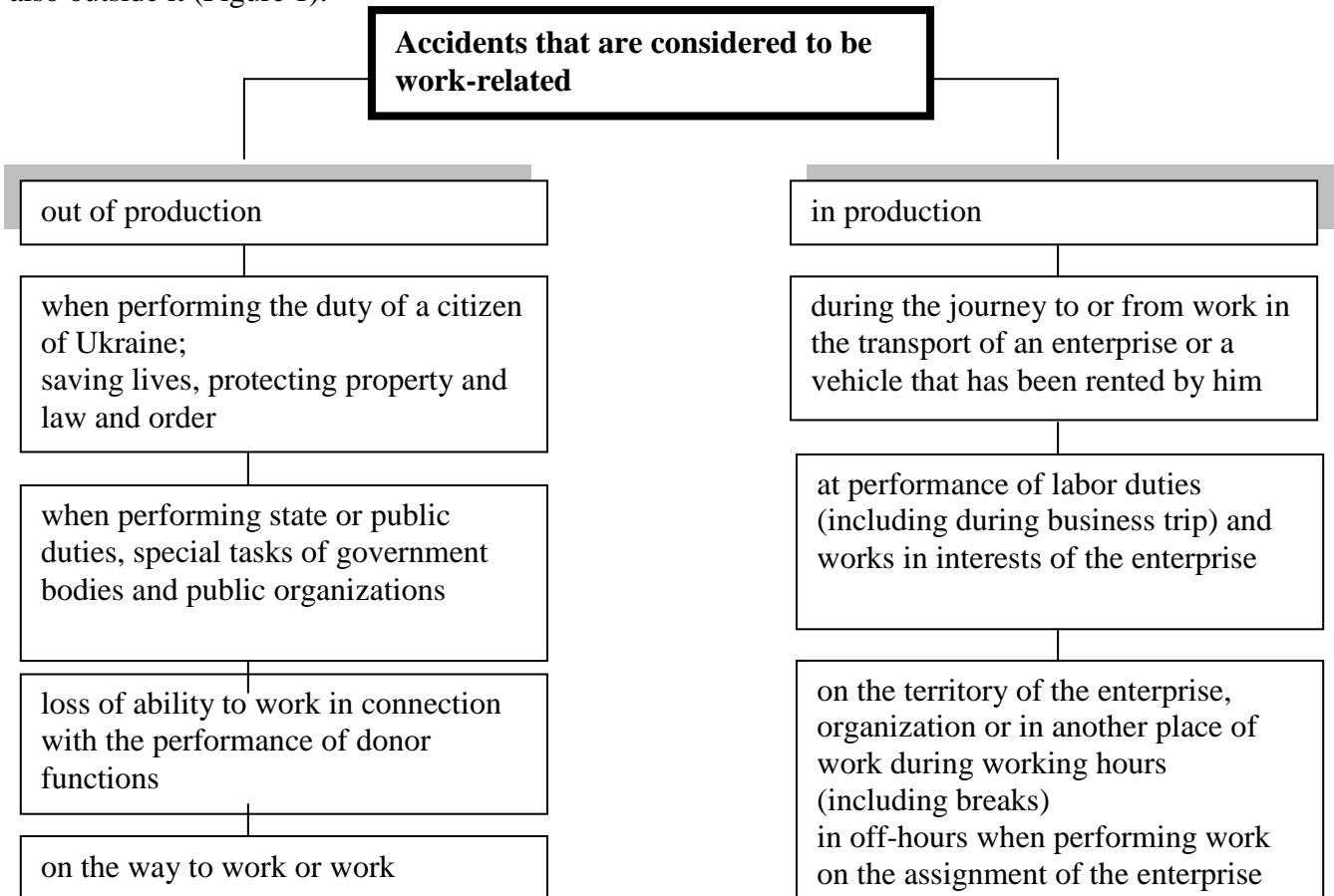


Fig. 1. Classification of accidents

Accidents are classified by type as follows (Figure 2):

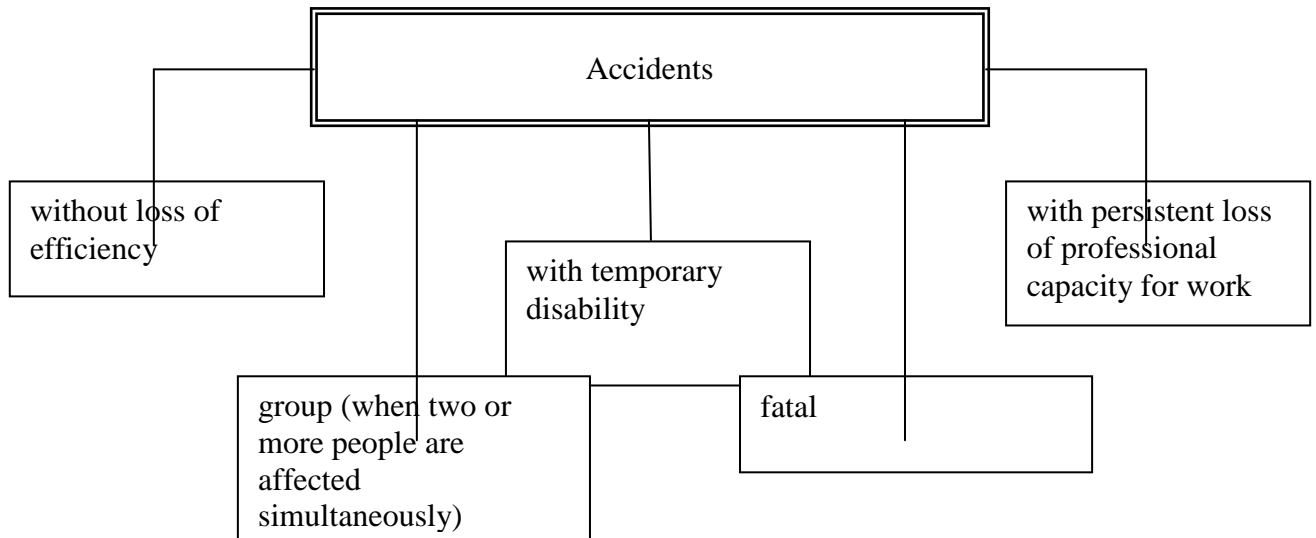


Fig. 2. Classification of accidents

The most difficult and responsible stage in the investigation of accidents is the determination of their causes. Allocate the organizational, technical and psychophysiological causes of injuries.

Organizational reasons for injuries include:

- unsatisfactory functioning, imperfection or absence of a labor protection management system;
- shortcomings during the training of safe working methods;
- poor-quality development, imperfection of instructions on labor protection or their absence;
- absence of functional duties on labor protection in job descriptions;
- violation of the regime of work and rest;
- failure to use personal protective equipment because of their lack of security;
- performance of work with defective collective protection equipment;
- Involvement of employees not by profession (profession);
- violation of the technological process;
- violation of safety requirements for the operation of equipment, machinery, mechanisms, and the like;
- violation of labor and production discipline;
- non-use of individual and collective protection equipment (with their availability); non-compliance with the requirements of labor protection regulations.

For technical reasons, injuries include:

- constructive shortcomings, imperfection and insufficient reliability of means of production;
- design deficiencies, imperfection and insufficient reliability of vehicles;
- poor-quality development or lack of design documentation for construction, reconstruction of production facilities, buildings, structures, equipment, and the like;
- poor performance of construction work;
- imperfection, non-compliance with the safety requirements of the technological process;
- unsatisfactory technical condition of production facilities, buildings, structures, territory, means of production, vehicles;
- unsatisfactory condition of the production environment.

To psycho-physiological reasons of a traumatism carry:

- alcoholic, narcotic intoxication, toxicological poisoning;
- low neuropsychic resistance;
- unsatisfactory physical or health conditions;
- unsatisfactory "psychological" climate in the team;
- Other reasons.

Studies show that technical causes account for approximately 50% of all accidents, organizational - about 25% and psychophysiological - about 10-12%.

The analysis of injuries confirms the decisive role of the person in creating the prerequisites for the formation of traumatic situations. A significant number of them occur through subjective reasons associated with the person's personality, his behavior. Accounting for individual and personal characteristics is of great importance in creating safe working conditions. Of course, a person who comes to work in a morbid state is in danger much more than healthy. With workers who regularly drink alcohol, accidents happen 0.35 times more often, and injuries due to injuries are more severe for them than for people who do not use alcohol.

In addition, a person can make erroneous actions due to fatigue caused by large physical (static and dynamic) overloads, mental overloads, overloading of analyzers (visual, auditory), monotony of work, stressful situations, painful condition. Before the injury can lead to a mismatch of anatomical and physiological and psychological characteristics of the human body to the nature of the work performed. In modern complex technical systems, in the design of machines, instruments and control systems, physiological, psychophysiological, psychological and anthropometric features and human capabilities are still insufficiently taken into account.

Methods of trauma analysis

An important factor in the prevention of occupational injuries and occupational diseases is a systematic analysis of the factors that cause them.

- statistical
- monographic
- topographic
- economic
- method of questioning
- method of expert evaluation

The statistical method is based on the study of injuries according to documents: reports, acts, logs. This allows groups of injuries to be grouped according to certain characteristics: occupations of victims, workplaces, shops, length of service, age, causes of injuries, equipment that caused trauma and the like.

To assess the level of injury calculated parameters of its frequency and severity:

$$P_t = A \times 1000 / T;$$

$$P_m = A / A,$$

where P_t - an indicator of frequency of a traumatism; A - the number of injuries during the reporting period; T - average number of employees; P_m - an indicator of gravity of a traumatism; D - number of days of incapacity for work.

The incapacity indicator is the number of person-days of incapacity for work per 1000 employees:

$$PNT = 1000 \times D / T.$$

These indicators allow you to study the dynamics of injuries in the enterprise, organizations and institutions, compare it with other subjects of the market economy.

The monographic method consists of a detailed survey of the whole range of working conditions, technological process, workplace equipment, work methods, sanitary and hygienic conditions, collective and individual protection equipment. In other words, this method consists in the analysis of dangerous and harmful production factors inherent only in this or that (mono) section of production, equipment, technological process. By this method, in-depth consideration of all circumstances of the accident, if necessary, then carry out the relevant research and testing. The following are subject to investigation: the shop, the site, the technological process, the main and auxiliary equipment, labor receptions, personal protective equipment, working environment conditions, meteorological conditions in the room, illumination, gas contamination, dust, noise, vibration, radiation, causes of accidents that occurred earlier on this workplace. Consequently, the accident is also studied in a comprehensive manner.

Topographical method is based on the fact that on the plan of the shop (enterprise), the places where the accidents have occurred are noted. This allows you to visually see places with increased danger, which require careful examination and preventive measures. Repetition of accidents in certain places indicates an unsatisfactory state of occupational safety at these facilities. These places are paid special attention, they study the causes of injuries. By additional examination of the mentioned places, they identify the causes that caused accidents, form current and prospective measures to prevent accidents for each individual facility.

The economic method is to study and analyze the losses caused by occupational injuries.

Method of questioning. Forms for workers are being developed. Based on the questionnaire data (answers to questions), preventive measures are developed to prevent accidents.

The method of expert assessments is based on expert opinions (assessments) of working conditions, on the identification of conformity of technological equipment, devices, tools, technological processes and the requirements of standards and ergonomic requirements for machines, mechanisms, equipment, tools, control panels.

Under the influence of harmful factors in the workplace, workers may experience acute occupational or chronic poisoning and disease. Investigation and recording of professional poisonings and diseases is carried out in accordance with the current Regulations. All first detected chronic and acute occupational poisonings and diseases are subject to investigation.

In order to quantify the level of incidence in the workplace, calculate the incidence rate of cases (PCP) and the incidence rate (PTZ) (the number of days of disability per 1000 workers).

$$PCP = D \times 1000 / T;$$

$$PTZ = D / 3,$$

where C is the number of cases of diseases; D - number of days of incapacity for work for the reporting period; T is the total number of employees.

The employer is obliged to inform employees about the state of labor protection, the causes of accidents, occupational diseases and the measures taken to eliminate them and to ensure working conditions at the level of regulatory requirements.

Literature

Basic

1. Occupational safety in the medical industry: / Yavorovsky AP, Veremei MI, Zenkina VI and others - M., 2017. - P. 176-198.

Additional

1. Occupational safety in treatment and prevention institutions. Safety of vital activity / B.C. Tarasyuk, B. Kuchanskaya. K.: ENV "Medicine", 2013. - P. 85-99.

2. Decree of the Cabinet of Ministers of Ukraine "Procedure for investigating and keeping records of accidents, occupational diseases and accidents at work" No. 1232 of November 30, 2011.

Informational resources: site of hygiene and ecology department www.dsma.dp.ua

Theme 7. Occupational diseases of medical staff, their accounting and order of investigation

Educational purposes of the lesson:

- familiarize with the procedure for recording and investigating chronic occupational diseases;
- master the skills of determining the composition of the commission and drawing up an act of investigation of a chronic occupational disease;
- be able to apply in practice knowledge and skills in the recording and investigation of chronic occupational diseases.

Content of the theme of lesson (educational questions):

1. The main resolutions of the Cabinet of Ministers of Ukraine No. 1232 *Some Aspects of Investigation and Recording of Accidents, Occupational Diseases, and Emergencies at Work* as of 30.11.2011 and No. 270 *On Approval of Investigation and Recording of Non-Production Accidents* as of 22.03.2001.

2. Determination of accidents related and not related with work duties (with occupation).

3. Determination of acute and chronic occupational diseases poisoning and the underlying causes of their occurrence.
4. Definition of accident and its categories.
5. Procedures for investigation accidents that occurred during performance of (official) work duties of an employee.
6. Procedures for investigation accidents that are not related with performance of duties.
7. Composition and tasks of the commission, which investigates accidents that are related and not related with work duties.
8. Types and content of documents that are compiled by the commission, which investigates accidents related and not related with work duties.
9. Concept of special investigation of accidents.
10. Government bodies relevant to investigation of accidents.
11. Determination of connection between diseases, working conditions and the diagnosis of occupational diseases.
12. Investigation of accidents in a company (institution).

Structure of the practical training.

This is a practical training. Homework having been checked, the students and their teacher discuss theoretical questions on this topic, but for all that the teacher asks questions to the students and provides his explanations according to the list of questions for self-training. The students work independently after they have been given individual tasks (situational problem) to investigate case of occupational poisoning or occupational disease. In the course of this work the students must study the case of occupational disease or occupational poisoning, diagnose patients, and specify the cause of the disease, make proposals concerning carrying out of regular medical inspection of this industrial enterprise, substantiate optimal measures to improve conditions of work. They should arrange the results of their work in writing in their books for protocols.

Informational part

Occupational diseases and their classification. A worker who has received an award for permanent total or permanent partial disability should be encouraged to make a reasonable effort to reduce the disability; and the award shall be subject to periodic examination.

Occupational diseases with the approval of the director, curative care arising from a generally recognized, nonexperimental advance in medical science since the workers claim was closed that is highly likely to improve the workers condition and that is otherwise justified by the circumstances of the claim. The insurer or self-insured employer shall pay the costs of the medical examination and related services which are reasonably necessary to allow the worker to submit to any examination requested under this section. As used in this paragraph, related services includes, but is not limited to, child care, travel, meals, lodging and an amount equivalent to the workers net lost wages for the period during which the worker is absent if the worker does not receive benefits pursuant during the period of absence. Notwithstanding any provision of law or rule to the contrary, a worker of a noncomplying employer is considered to be subject to a contract between the State Accident Insurance Fund Corporation as a processing agent or the assigned claims agent and a managed care organization.

Well – known classification of occupational diseases focused on the etiological principles of the diseases.

On this basis, occupational diseases are subdivided into five groups:

1) *First group* of occupational diseases, caused by chemical factors (acute and chronic toxicity, their consequences carried out with isolated or combined damage various organs and systems);

2) *Second group* of occupational diseases, caused by dust impact (pneumoconiosis, as well as silicosis, silicates, pneumoconiosis welders and burner, polishers, etc.);

3) *Third group* of occupational diseases, caused by physical factors: vibration disease; diseases associated with exposure of contact ultrasound: vegetative polyneuritis; cochlear neuritis, noise disease; diseases associated with exposure of electromagnetic radiation and scattered laser

radiation; exposure of ionizing radiation: radiation sickness; caused significant and relatively rapid changes in atmospheric pressure: decompression sickness, acute hypoxia, caused by adverse weather (micro-climatic) conditions, overheating, convulsive disease, occlusive disease, autonomic-sensitive polyneuritis;

4) *Fourth group* - occupational diseases, caused by overvoltage: diseases of peripheral nerves and muscles as well as neuritis, radiculoneuritis, vegetarienne polyneuritis, cervico-brachial plexitis, myofascitis; musculoskeletal chronic tendovaginitis, bursitis, deforming arthrosis; coordinative neurosis - writing spasm, other forms of functional dyskinesias; vocal apparatus diseases - asthenopia and myopia;

5) *Fifth group* - professional diseases, caused by biological factors: infectious and parasitic diseases - tuberculosis, brucellosis, anthrax, dysbiosis, candidiasis of skin and mucous membranes, visceral candidiasis, etc.

Professional harm. It is accepted to distinguish three main classes of occupational hazards. To class "A": sanitary violations of production processes, include occupational hazards:

1. Unfavorable influence of factors of a mechanical and physical nature:

- energy of mechanical vibrations (noise, vibration, ultrasound, infrasound, etc.);
- energy of electromagnetic oscillations (visible, ultraviolet, infrared, laser, radio wave, etc.);
- energy of intraatomic transformations (α -, β -, neutron radiation, etc.);
- meteorological factors (temperature, humidity and speed of air movement, heat release, etc.);

- High and low atmospheric pressure.

2. Unfavorable influence of factors of a chemical nature:

- aggressive chemicals and compounds;
- toxic fumes;
- toxic aerosols.

3. Adverse effects of biological factors:

- Pathogenic microorganisms;
- pathogenic viruses;
- Pathogenic protozoa;

Pathogenic flora.

Class "B": the wrong organization of the labor process includes the following hazards in its structure:

- excessive intensity of work;
- Excessive working hours;
- prolonged forced position of the body
- overloading of individual organs and systems;
- Monotony of the labor process.

Class "B": the unsatisfactory external environment of labor and production determines how leading such unfavorable factors:

- insufficient and uneven natural or artificial lighting;
- unsatisfactory ventilation, heating, water supply, sewerage and the like.

Occupational diseases and poisoning.

Occupational disease is a disease caused by the action of a harmful factor in production conditions and is confirmed in the order established by the state. Therefore, it is necessary to emphasize that the term "occupational disease" has not only medical, but also statutory insurance value, and the list of occupational diseases must be legally approved. Acute occupational diseases and acute occupational poisoning include diseases and poisoning caused by exposure to hazardous factors or harmful substances for no more than one shift. Acute occupational diseases are caused by the influence of chemical substances, ionization and non-ionization radiation, significant physical stress and overexertion of individual organs and human systems. These include infectious, parasitic and allergic diseases. Occupational poisoning is the effect of harmful substances of chemical origin.

Accounting and investigation of chronic occupational diseases and poisonings.

The professional character of chronic diseases and poisonings (hereinafter diseases) is determined by the expert commission as part of the specialists of the medical and preventive institution (hereinafter referred to as the institution), which is granted such a right by the Ministry of Health of Ukraine. In case of need, experts (representatives) of the enterprise, the working body of the executive directorate of the Fund, the trade union organization whose member is the victim are involved in the work of the commission.

The attribution of the disease to the professional is carried out in accordance with the Procedure for establishing the connection of the disease with the working conditions (hereinafter the Procedure).

The association of the disease with the worker's working conditions is determined on the basis of clinical data and sanitary and hygienic working conditions, is determined by the appropriate institution (institution) of the Gostrud with the participation of specialists (representatives) of the enterprise, trade unions and the working body of the Fund's executive directorate.

For each patient, the institution makes a notification in the form of P-3, which within three days after the diagnosis is sent:

- the employer of the enterprise, whose harmful production factors led to the onset of the disease;
- to the relevant institution (institution) of Gostrud;
- the institution that serves the enterprise;
- the relevant working body of the Fund's executive management.

The employer organizes the investigation of the disease within ten working days from the receipt of the notification. The investigation is carried out by a commission consisting of representatives:

- the relevant institution (institution) of Gostrud (chairman of the commission),
- the institution that serves the enterprise;
- enterprises;
- a trade union organization of which the patient is a member (or an authorized labor collective for labor protection issues);
- the relevant working body of the Fund's executive management.

The Commission of Inquiry shall:

- Develop a program to investigate the causes of occupational disease;
- to distribute functions among the members of the commission;
- consider the need to involve experts in its work;
- Investigate the circumstances and causes of occupational disease;
- To draw up an act of investigation of chronic occupational disease in the form of P-4 (hereinafter the form P-4), in which to reflect measures to prevent the development of occupational disease and ensure the normalization of working conditions, as well as establish persons who did not comply with the relevant requirements of labor protection legislation and on ensuring the sanitary and epidemic well-being of the population.

In the event that the employer or other members of the commission refuses to sign the P-4 form, an appropriate act is drawn up, which is an integral part of the P-4 form.

Prevention of occupational diseases is a whole system of socioeconomic, organizational, technological, technical, sanitary and hygienic and therapeutic and preventive measures, which are based and regulated by the relevant legislative and regulatory framework, state bodies for industrial safety, occupational safety and mining supervision, the working bodies of the Social Insurance Fund for Occupational Diseases and Occupational Accidents, the trade union public and non-governmental organizations, as well as directly by health care institutions.

Now the law of Ukraine "On labor protection" provides for compulsory compensation for damage caused as a result of professional activity, in the event of negative shifts in the health of workers, or in case of death. Moreover, compensation for damage caused to an employee that led to a deterioration in his state of health or caused the occurrence of a fatal accident is carried out by the

Social Insurance Fund against accidents at work and occupational diseases in accordance with the Law of Ukraine "On Universal-Compulsory State Social Insurance against Occupational Accident and Occupational diseases that have caused disability ". In addition, the employer may, at his own expense, make additional payments to the victims and members of their families in accordance with a collective or employment contract.

For employees who have lost their ability to work due to an accident at work or as a result of occupational disease, the place of employment (position) and the average wage are maintained for the whole period of the restoration of capacity for work or until a permanent loss of professional capacity is established. In case of impossibility of performing the labor activity of the victims at the previous place of work, his retraining and retraining, as well as further employment, are conducted.

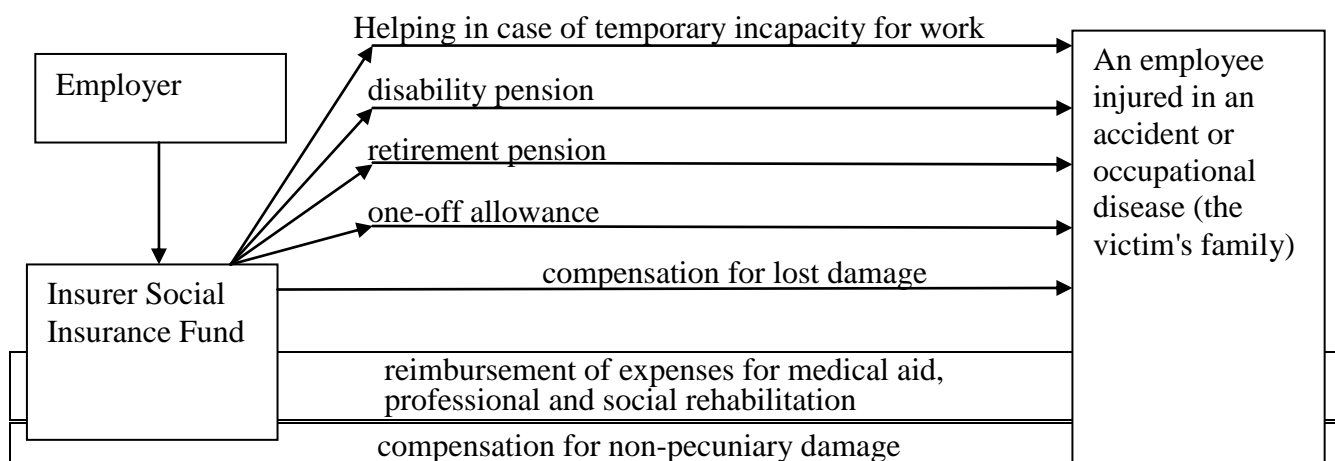


Fig. 1. The scheme of compensation for harm to the victim in production.

Literature

Basic

1. Labor protection in the medical industry: / Yavorovsky AP, Veremey MI, Zenkina VI and others - M., 2017. - P. 176-198.

Additional

1. Occupational safety in treatment and prevention institutions. Safety of vital activity / V.C. Tarasyuk, B. Kuchanskaya. K.: "Medicine", 2013. - P. 85-99.

2. Decree of the Cabinet of Ministers of Ukraine "Procedure for investigating and keeping records of accidents, occupational diseases and accidents at work" No. 1232 of November 30, 2011.

Informational resources: site of hygiene and ecology department www.dsma.dp.ua

Theme 8. Basics of industrial safety of medical staff at working with electrical devices

Educational purposes of the lesson:

- familiarize yourself with the safety measures when working with electrical appliances in the health facility;
- master the skills of first aid in electrical work in the workplace;
- be able to apply in practice knowledge and skills in planning activities for the protection of labor of medical workers when working with electrical appliances in health facilities.

Content of the theme of lesson (educational questions):

1. The effect of electric current on the human body.
2. Safety measures when operating electrical appliances.
3. Classification of electromedical equipment. Obligations of specialists (electricians) and medical personnel of health facilities when working with electrical appliances.
4. Electrical injury, first aid. Monitoring the electrical safety in the hospital
5. Features of working conditions when working with computer equipment.

Structure of the practical training. At the beginning of the lesson, written control of the

initial level of knowledge on control questions is carried out. After solving the organizational questions and instructions of the teacher, students independently study the normative documents on the topic. Evaluation of students is conducted through a survey with correction and supplementation of reports on the results of solving situational problems. At the end of the lesson, the teacher summarizes the results, assesses the knowledge of students, and gives the assignment for the next lesson.

Informational part

Electrical Safety

Effects of Electric Current on the Human Body

The *biological effects* of a current are manifested by aggravation and irritation of the body tissues, as well as disruption of the internal bioelectric processes that occur within the body and are directly linked to its vital functions. This may be accompanied by involuntary, convulsive contractions of the muscles, including the heart muscles and the lungs. In this instance, blood circulation and respiratory organ performance are impaired or cease altogether.

The *thermal* (heat-related) influence of a current results in burns to individual areas of the body, as well as the heating of the blood vessels, nerves, heart, brain, and other organs through which the current passes. This can cause significant functional disorders.

The *electrochemical* (electrolytic) influence of a current causes the breakdown of organic fluids, including the blood, which is accompanied by considerable changes in their physicochemical composition.

The *mechanical* effects of a current consist of separation, laceration, and other mechanical damage to the body's tissues, in particular – muscle tissue, blood vessel walls, and the vessels of the lungs due to an electrodynamic effect, as well as instantaneous explosive vapor formation as a result of current's heat – related influence.

Electric trauma – is the damage, caused by exposure to an electric current.

Electric traumas are divided into two types: local and general.

Local traumas originate when local damage to the body occurs.

Local electric traumas include:

- electric burns,
- electric marks and
- mechanical damage.

An electric burn is the most widespread electric trauma, which occurs as a result of heat release when an electric current passes through different parts of body.

Electric marks (tags) are well-defined spots, grey or pale grey in color, on the surface of the human skin that has undergone exposure to a current.

Mechanical damage is a consequence of different convulsive reflex contractions of muscles under the influence of a current that passes through the body. As a result, ligament, skin and blood vessel ruptures may form, in addition to which joint dislocations and even bone breaks can occur.

General traumas or so-called electric shocks, occur when the entire body is damaged (or a threat of damage is created) due to the disruption of the normal activities of vital organs and systems.

Classification of General Electric Traumas

Electric shock can be divided into the following five levels:

- barely perceptible convulsive muscle constriction,
- convulsive muscle constriction accompanied by severe pains, but without loss of consciousness,
- convulsive muscle constriction with loss of consciousness, but with retention of respiration and cardiac performance,
- loss of consciousness and disruption of cardiac activity or respiration, and
- clinical death.

Electric shocks are responsible for more than 85% of fatal human injuries caused by an electric current.

Electrical safety is a system of organizational and technical measures and means to protect

people from harmful and dangerous effects of electric current, electric arc, electromagnetic field and static electricity.

Electrical equipment, which has to deal with almost all health workers, is a great potential danger also because human senses are unable to detect the presence of electrical voltage at a distance. In this regard, the protective reaction of the body is manifested only after a person is under the influence of electrical stress. Passing through the human body, the electric current exerts a thermal, electrolytic, mechanical and biological effect on it. Thermal action of the current is accompanied by burns of individual parts of the human body, heating of blood vessels, heart, brain and other organs through which current flows, causes functional disorders. Electrolytic action causes significant shifts in the physicochemical composition of blood and other organic liquids. As a result of the mechanical action of the current, there are damages (ruptures, stratification, etc.) of various tissues of the body as a result of the electrodynamic effect. The biological effect of the current on living tissue is manifested by the dangerous excitation of cells and tissues of the body, which is accompanied by involuntary convulsive contraction of the muscles. Such excitement can lead to significant violations and even complete cessation of the activity of the respiratory and circulatory organs.

The irritation of body tissues as a result of the action of an electric current can be direct, when the current passes directly through these tissues, and reflex (through the central nervous system), when the current through the tissue does not pass.

An electric trauma is a trauma caused by the action of an electric current or an electric arc. According to the results of electric trauma, they are conventionally divided into two types: local electric trauma, when there is local damage to the body, and general electric trauma (electric shock), when the entire body is affected due to disruption of normal activity of vital organs and systems. Typical local electrical injuries are electrical burns, electrical signs, skin metallization, mechanical damage and electro-ophthalmia.

Electric burn is the most common local electric injury (about 60%), which is observed mainly among workers serving the operating electrical installations. These burns, depending on the conditions of origin, are of two types: current (contact), when as a result of the current flow, electrical energy is converted into thermal energy, and arc, which arise due to the impact on the human body of the electric arc. Depending on the amount of heat and temperature released, as well as the dimensions of the arc, electrical burns can affect not only the skin, but also muscles, nerves and even bones. Such burns are called deep; they heal very long.

Electrical signs (electrical marks) are spots of gray or pale yellow in the form of corn on the surface of the skin at the point of contact with conductive parts.

Metallization of the skin is the penetration of the smallest particles of metal into the upper layers of the skin, it melts as a result of the action of the electric arc. Such damage is usually experienced by open body parts of the hand and face. The damaged area of the skin becomes hard and rough, but in a relatively short time it again acquires the former appearance and elasticity.

Mechanical damage is damage that occurs as a result of convulsive contractions of muscles under the influence of an electric current passing through the human body. Mechanical damage manifests itself in the form of ruptures of the skin, blood vessels, nerve tissues, as well as dislocation of joints and even fractures of bones.

Electroophthalmia is the damage to the eyes due to the action of ultraviolet radiation from the electric arc.

The most dangerous type of electric injury is an electric shock, which basically (about 80% of cases, including mixed injuries) leads to the death of the victim.

Electric shock is the excitation of living tissues of the body by electric current, accompanied by convulsive contraction of muscles. Depending on the consequences of the defeat, the effect of the electric current can be divided into four degrees:

- convulsive muscle contractions without losing consciousness;
- convulsive muscle contractions with loss of consciousness, but with the preservation of breathing and the work of the heart;
- loss of consciousness and violation of cardiac activity or breathing (or both systems at the same time);
- Clinical death.

Clinical death is a transitional period from life to death, comes from the moment of cardiac arrest and respiration and lasts 6-8 minutes, until the cells of the brain die. After this, biological death sets in, as a result of which biological processes in the cells and tissues of the body stop and the protein structures disintegrate. If you eliminate the effect of electric current during a clinical death and urgently begin providing the necessary help (artificial respiration, cardiac massage), then there is

a high probability of saving the life of the victim. The causes of deaths from the action of electric current can be: cardiac arrest or its fibrillation, cessation of breathing due to convulsive contraction of the muscles of the chest, involved in the process of breathing, electric shock. It is also possible to act simultaneously on two or even all three of the above-mentioned reasons. It should be noted that the shock state can last from several tens of minutes to a day. With a prolonged state of shock, death usually occurs.

First aid in case of electric shock. The main condition for successful first aid in case of electric shock is the prompt and correct action of those who provide assistance. At the same time, delay, delayed and unqualified assistance can lead to the death of the victim. That is why it is important that everyone knows and knows how to properly and quickly provide the necessary assistance in such cases. First aid in case of electric shock consists of two stages: the termination of the electric current to the victim; providing him with the necessary medical care.

Termination of the electric current on the victim. In case of electric shock it is first of all necessary to immediately stop the current, since the severity of the electric injury depends heavily on the duration of such exposure. It should be remembered that it is necessary to act quickly, but at the same time carefully, so as not to get under stress yourself. The safest way to stop an electric current is to shut down the electrical installation to which the victim touches, with the help of a nearby switch, a switch or other device for de-energizing. If the installation can not be turned off quickly enough, it is necessary to release the victim from the live parts to which he touches. To release the victim from live parts or wires up to 1000 V, use a stick, board or some other dry object that does not conduct electrical current. At the same time it is desirable to isolate yourself from the ground (stand on a dry board, unfiltered litter). You can also cut the wires with an ax with a dry wooden hatchet or snack them with a tool with insulated handles (nippers, pliers, etc.). Cutting or snacking wires is necessary per phase, i.e. each wire separately. You can also pull the victim from the live parts for clothes (if it is dry and falls behind the body), for example, for the gowns of the gown. In this case, you should avoid touching the surrounding metal objects and open parts of the body. To isolate the hands, especially when you need to touch the victim's body, the savior must wear dielectric gloves or wrap his hand around with dry clothes. When pulling the victim from current-carrying parts, it is recommended to do this with one hand. If an electric current passes through the injured person and convulsively compresses one conductive element (for example, a wire) in the hand, then it is easier to stop the current by separating the victim from the ground (by slipping a dry board under it or pulling the legs off the ground with a rope or for dry pants) . In this case, it is necessary to remember personal safety. To release the victim from live parts and wires that are under voltage above 1000 V, it is necessary to wear dielectric gloves and boots and operate with an insulating rod or ticks designed for the corresponding voltage. In this case it is necessary to remember the danger of step voltage if the wire is on the ground.

Provision of medical care. After the termination of an electric current on the person it is necessary to call the doctor, however before its arrival it is necessary to render the necessary help to the victim. Measures of pre-medical care depend on the condition in which the victim is. To assess the condition of the victim, check that he has consciousness, breathing, pulse. The victim after the termination of the electric current may be in one of three states:

- in the mind;
- unconscious, but he has breathing and pulse;
- in the state of clinical death (there is no breath, the pulse is not probed).

If the victim is conscious, then he should be put on a bed of cloth or clothes, for better access to fresh air, unfasten clothes so as not to squeeze the victim, making breathing difficult, rubbing and warming the body and provide rest before the doctor arrives. The victim, who is in an unconscious state, should be given a sniff of cotton wool soaked with ammonia, or sprinkling his face with cold water. If the victim comes to himself, he should give 15-20 drops of tincture of valerian and hot tea.

In the absence of signs of life (breathing and pulse), you should immediately begin cardiopulmonary resuscitation (artificial respiration and indirect heart massage), because the probability of success is less, the more time passed since the beginning of clinical death.

Systems of means and measures for the safe operation of electrical appliances. The design of electrical appliances must meet the conditions of their operation and ensure the protection of personnel from possible contact with moving and live parts, as well as from ingress of foreign objects and water.

Safe operation of medical equipment and devices is provided in the same way as all electrical installations: the design of electrical installations, technical methods and means of protection, organizational and technical measures.

According to the Instruction on the protective earthing of electromedical equipment in health care institutions, the safety of people working with electromedical equipment depends to a large

extent on the proper performance and operation of protective earthing and other protective measures (for example, a device for protective shutdown).

Metallic, zero-current parts of the electromedical equipment (enclosures, tripods, etc.) can be energized when the working insulation is broken. Touching these parts becomes dangerous.

Protective earthing is necessary to create a low voltage between the zero-current metal parts of the electromedical equipment and the ground. The safety of a person who accidentally touched these parts during a short to the case is provided by reducing the touch voltage and automatically shutting down the network in a short time with fuses or circuit breakers. This instruction applies to all types of electromedical devices, instruments, installations. Electromedical equipment is manufactured in the following classes: 0I, I, II, III.

Classes 0I and I belong to the equipment, to protect against electric shock when the working insulation is violated, it is connected by means of a ground wire to the grounding device. Class II refers to equipment to protect against electric shock has a double or reinforced insulation in comparison with parts of the network circuit. This equipment does not have a protective earth. Class III equipment is designed for power supply with a constant or alternating voltage not exceeding 24 V, does not have internal or external electrical circuits with a higher voltage.

The protective earthing of the electromedical equipment must comply with the requirements of the current Electrical Installation Rules (EIP), as well as the requirements of the specified instruction. Earthing devices must be carefully inspected and checked for compliance with their requirements. The defects of the grounding device detected during inspections and tests should be eliminated. If defects during the test period do not eliminate them, they are entered in the statement of defects, which is attached to the technical report. The test report of the grounding device is approved by the management of the organization that conducted the tests.

Protective neutralization is used in four-wire networks with voltages up to 1000 V with a grounded neutral neutral point of the winding of the current source (neutral). According to the EMP, the zeroing of the housings is used in the same cases as the protective earth. Zeroing is a deliberate electrical connection with a zero protective conductor of metal non-conductive parts that can be energized. A zero protective conductor is a conductor connecting parts to be reset to a grounded neutral neutral point of the winding of the current source or its equivalent.

A safety shutdown is used as a primary or additional protective device if safety can not be provided by a grounding device or other means of protection. Protective disconnection is a high-speed protection that ensures the automatic shutdown of the electrical installation (no more than 0.2 s) if there is a danger of electric shock in it.

Electro-protective means are products that are transported and transported and serve to protect people (goggles, insulating gloves, rugs, insulating stands, etc.), working with electrical installations, from electric shock, electric arc and electromagnetic field.

Organizational and technical measures of electrical safety consist in the fact that persons who are not younger than 18 years are allowed to work with medical electrical equipment, who have been instructed and trained in safe working methods, to check knowledge of safety rules and instructions in accordance with their positions and the electric safety qualification group that do not have contraindications determined by the Ministry of Health of Ukraine.

In order to prevent occupational diseases, accidents and ensure the safety of labor, workers serving the electrical installation must pass preliminary (when hiring) and periodic medical examinations.

To ensure the safety of work with electrical installations, it is necessary to appoint persons responsible for the organization and carrying out of works, to organize measures that preclude accidental supply of voltage to the work site, establish grounding and the like.

The main provisions for ensuring the safety and security of the user of computers. Before you start working with the computer, the user must be sure to check the integrity of the PC's cases and blocks of equipment, check the presence of grounding, the serviceability and integrity of the power cables.

While working with computer equipment, it is necessary to take into account that all primary power supply networks are under tension, which are dangerous for human life. So, both the main and peripheral devices of modern computers should be in working order and be serviceable. During the performance of production tasks, you must strictly follow the instructions for the safe operation of computer equipment. It should be emphasized that when the equipment is turned on, it is forbidden:

- replace various components of the computer; to connect and disconnect the plugs and sockets of the primary power supply networks;
- remove covers that block access to live parts of the primary power supply network;
- Use a soldering iron with an ungrounded housing;

- replace fuses;
- keep the computer on while unattended.

If any signs of a malfunction in the video display terminals are detected, as well as sparking, breakdowns, smell of burning, signs of burning, it is necessary to immediately stop work, disconnect the equipment from the power grid and immediately inform the relevant officials about it.

At the end of the working day it is necessary:

- disconnect the power supply and put the workplace in order;
- remove the equipment and materials that were used, in the designated places;
- close windows and windows;
- check the premises and make sure there are no smoldering objects;
- disconnect all electric appliances and electrical equipment from the power supply;
- turn off the lights;
- close the entrance doors of the room to the lock;
 - hand over the keys to the guard on duty, guard or security guard.

In case of electric shock, it is necessary to immediately release the victim from the current, call for emergency medical care and provide first aid, given that if the victim has lost consciousness, but breathes, it must be laid flat and comfortable, unfasten clothing, provide fresh air and rest, if signs of life are absent before the arrival of doctors, it is necessary to do artificial respiration and indirect heart massage to the victim.

In case of fire, it is necessary to immediately inform the fire department, take measures to evacuate people, extinguish or localize the fire using primary firefighting means, in the event of an emergency, other rescue services, in particular medical and gas rescue, should be called in.

The basic requirements to the production personnel, which works with the computer.

Among the requirements for production personnel who work with a computer, it is necessary to note, first of all, that all workers performing work related to the operation, maintenance, adjustment and repair of computers are subject to mandatory medical examination, the previous one upon recruitment and periodic during the period of employment.

Officials, specialists and other employees of enterprises that organize and carry out works related to the operation, preventive maintenance, adjustment and repair of computers, are trained (advanced training), knowledge of labor protection, industrial sanitation and fire safety, as well as briefings in The procedure provided for in the Model Provision on Occupational Safety Training.

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2. Decree of the Cabinet of Ministers of Ukraine "Procedure for investigating and keeping records of accidents, occupational diseases and accidents at work" No. 1232 of November 30, 2011.

Informational resources: site of hygiene and ecology department www.dsma.dp.ua

Theme 9. Basics of fire safety in the health care facilities

Educational purposes of the lesson:

- familiarize yourself with the main legislative and regulatory acts in the field of fire safety; to know the classification of explosive and fire hazardous premises;
- master the skills that are used to extinguish fires and methods of evacuating people from buildings and structures and to know which exits are considered evacuation;
- be able to use in practice the basics of fire safety in health care facilities.

Content of the theme of lesson (educational questions):

1. The main causes of fires and their characteristics.

2. Major hazards and hazards associated with fires.
3. Definition of combustion, its types.
4. Varieties of burning, their definitions.
5. What are the indicators for assessing the explosion and fire hazard of substances and materials?
6. In what categories are rooms and buildings divided according to the fire and fire hazard?
7. How are explosive and fire-hazardous rooms (zones) classified?
8. What is included in the complex of measures and facilities to ensure fire safety of the facility?
9. What is a fire prevention system?
10. What conditions are necessary for the occurrence of a fire (burning)?
11. Measures and means for the prevention of the formation of a flammable environment.
12. Measures and means to prevent the ignition source from occurring in a combustible environment.
13. How is the fire protection system implemented?
14. What is meant by the fire resistance of buildings and structures and what are the characteristics of it?
15. How can the fire resistance of building structures be increased?
16. How is people evacuated from buildings and structures? Which exits are considered evacuation?
17. What are the requirements for evacuation outlets.
18. What are the ways to stop burning and the main fire-extinguishing agents?
19. A brief description of extinguishing agents.
20. When is it impossible to use water to extinguish fires?
21. What facilities and means are used to extinguish fires?
22. The main types of fire detectors: their purpose, structure, principle of operation, scope.

Structure of the practical training.

At the beginning of the lesson, written control of the initial level of knowledge on control questions is carried out. After solving the organizational questions and instructions of the teacher, students independently study the normative documents on the topic. Evaluation of students is conducted through a survey with correction and supplementation of reports on the results of solving situational problems. At the end of the lesson, the teacher sums up the results, assesses the students' knowledge, and gives the assignment for the next lesson.

Informational part

General Fire Safety Requirements

- Each employee must know the location of the primary means for extinguishing fires and know how to use them; employee must know the dos and don'ts during a fire and the emergency exits.
- Highly inflammable liquids and fuels may be stored in special separate locations, within the limits of the necessity and in accordance with the rules.
- Lubrication materials, highly inflammable liquids and fuels must be stored in special containers away from other materials and substances.
- It is forbidden to scatter flammable materials about. They must be removed from the facility after use to a specially allotted location.
- In case of fire breaks out, employee must immediately contact a fire department by dialing the appropriate number and management and begin to extinguish the fire by all available means.

Administrative Procedures for Fire Safety

All manufacturing facilities, installations and buildings are divided into 5 categories:

- A – explosion – and fire-hazardous. Such facilities use burning gases or highly inflammable liquids with a flash temperature up to 28⁰C in such a quantity that a burning mixture can be created with the air, during burning (explosion) of which an excess pressure greater than 5 kP is created in the facility.

- B - explosion – and fire-hazardous. Such facilities use highly inflammable liquids with a flash temperature from 28⁰C to 61⁰C or combustible powders and fibers in such a quantity that a burning mixture can be created with the air, during the burning (explosion) of which an excess pressure greater than 5 kP is created in the facility.
- C – fire- hazardous. In such facilities they use either combustible liquids (a flash point greater than 61⁰C) or solid combustible materials or powders and fibers (the lower concentration edge of flame propagation of their mixture can be created with the air is above 65⁰C/m³).
- GID – fireproof. There are no combustible substances and materials in such facilities.

The Dos and Don'ts and Safety Measures upon Fire

When a person is near a fire, he/she can come under the influence of such dangers and hazards as:

a) the fundamental fire hazards:

- toxic products of combustion;
- the fire;
- increased ambient temperature;
- smoke, insufficient oxygen;

b) secondary manifestations of fire hazards:

- destruction of building structures and explosions;
- leakage of dangerous substances occurring as a result of a fire;
- panic.

HAZARDOUS AND HARMFUL FACTORS RELATED TO FIRE

Fire is uncontrolled burning outside a special hearth, spreading in time and space. It should be noted that fires are not safe. If they do not pose a direct threat to human life and health (for example, forest fires), they damage the environment, lead to significant material losses.

Fire hazard the possibility of occurrence and (or) development of a fire.

When a person is in the fire impact zone, he can fall under the following dangerous and harmful factors: toxic combustion products; Fire; high temperature of the medium; smoke; lack of oxygen; destruction of building structures; explosions; expiration of hazardous substances occurring as a result of a fire; panic.

Toxic combustion products pose the greatest threat to human life, especially in fires in buildings. After all, in modern industrial, domestic and administrative premises there is a significant amount of synthetic materials, which are the main sources of toxic combustion products. So, when burning polyurethane foam and caprone, hydrogen cyanide (hydrocyanic acid), vinyl chloride-hydrogen chloride and carbon monoxide, linoleum hydrogen sulphide and sulfur dioxide gas are formed, etc. Most often in fires, there is a high content of carbon monoxide in the air. So, in cellars, mines, tunnels, warehouses, its content can be from 0.15 to 1.5%, and in rooms 0.1-0.6%.

FIRE PROTECTION SYSTEMS

The fire protection system is a set of organizational measures and also technical means aimed at preventing people from exposing hazards to fire and limiting the material damage from it.

Fire protection of the facility is carried out in the following four areas:

1. Limitation of the size and spread of fire:

- placement of buildings and structures on the territory of the facility in compliance with fire breaks and other fire safety requirements;
- compliance with restrictions on the number of floors of buildings and floor space;
- Proper planning and placement of production facilities, premises, plots within the building;
- location of fire-hazardous processes and equipment in isolated rooms, compartments, chambers;
- choice of building structures for the required degrees of fire resistance;
- Establishment of fire barriers in buildings, ventilation systems, heating and cable communications;
- limiting leakage and spreading of flammable and combustible liquids in case of fire;
- Installation of automatic fire alarm and fire fighting systems.

2. Restriction of fire development:

- limiting the amount of combustible substances that are simultaneously in the room;
- use of finishing construction and construction materials with standard values of explosion and fire hazard;
- Emergency bleeding of flammable liquids and gases;
- timely release of premises from residues of combustible materials;
- application of special equipment for fire-hazardous substances with enhanced protection against damage.

3. Ensuring the safe evacuation of people and property:

- the choice of such volumetric-planning and constructive execution of the building that the evacuation of people was completed before the maximum permissible levels of fire factors;
- application of building structures of buildings and structures of appropriate degrees of fire resistance, so that they retain the supporting and enclosing functions during the entire evacuation time;
- selection of appropriate means of collective and individual protection;
- application of emergency shutdown of equipment and communications;
- the installation of smoke protection systems that prevent smoke from evacuation routes;
- Arrangement of necessary evacuation routes (corridors, staircases, external fire stairs), rational placement and proper maintenance.

4. Creation of conditions for successful fire extinguishing:

- installation of fire automatic systems in buildings and premises;
- provision of premises with a standardized quantity of primary fire extinguishing means;
- arrangement and maintenance in the proper condition of the territory of the enterprise, entrances to construction facilities, fire reservoirs, hydrants.

FIRE SAFETY

To protect combustible building materials from fire, the following methods are used: thermal insulation, fireproof impregnation, application of fireproof coatings. Thermal insulation is achieved when plastering wooden structures, sheeting with steel sheets on asbestos or felt with clay. Processing of combustible materials with a fireproof coating consists in the fact that a thick layer of special paint is applied to their surface, consisting of substances that do not burn themselves, do not burn for a long time in the fire and have a low thermal conductivity. Fire retardant impregnation is carried out with flame retardants and their aqueous solutions (liquid glass, sodium fluoride, calcium chloride, etc.). This method of wood processing is effective coating with fire retardant paint, however it is more expensive and laborious.

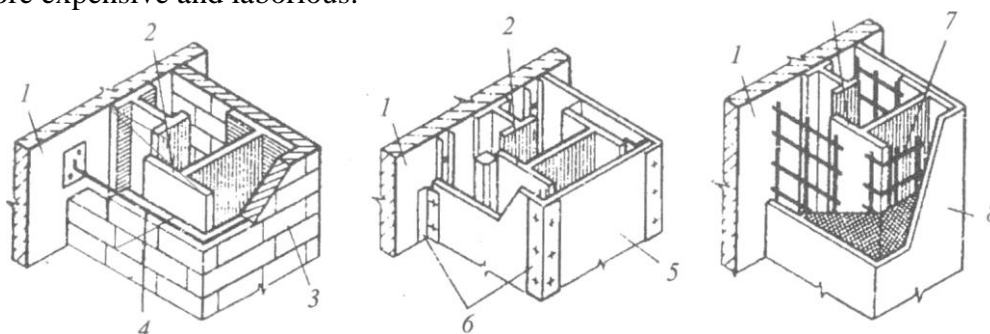


Fig. 1. Fire protection column, are at the wall of the building: a brickwork; b facing with drywall sheets; in the lining of plaster. 1 wall of the building; 2 columns; 3 brickwork; 4 fittings; 5 drywall plating; 6 gon; 7 reinforcing bars; 8 – plaster

EVACUATION OF PEOPLE FROM BUILDINGS AND PREMISES

In the event of a fire at the initial stage of its development, heat, toxic combustion products, and structural destruction are released. Therefore, it is necessary to organize as soon as possible the evacuation of people from burning buildings. The indicator of the effectiveness of evacuation is the time during which people can, if necessary, leave individual rooms and buildings or structures as a whole. The safety of evacuation is achieved then; when the evacuation time does not exceed the time of the onset of the critical phase of the development of the fire, that is, the time from the start of the

fire to the maximum values of the fire factors for the person (critical temperatures, oxygen concentrations, etc.).

Exits are considered evacuation if they lead:

- from the premises of the ground floor to the outside directly or through a corridor, an entrance hall, a staircase;
- from the premises of any floor, except the first one, to the corridors leading to the staircase (including through the hall), while the staircases must have an outlet directly or through the vestibule separated from the adjoining corridors by partitions with doors;
- from the premises to the next room on the same floor as provided by the outputs indicated above.

Evacuation exits should be spread out. The number of emergency exits must be at least two. Doors on evacuation routes must be opened in the direction of exit from buildings (premises). The device of doors with opening in a premise in case of simultaneous stay in it of no more than 15 persons is supposed. If there are people in the room, the doors of the escape routes can only lock on the inner bolts, which can easily be opened. The minimum width of evacuation routes is not less than 1 m, doors are not less than 0.8 m. The distance from the most remote point of the shop or premise to the evacuation exit is determined in accordance with SNiP 2.09.02-85, depending on the degree of fire resistance of the building and the number of people who are evacuated. It is not allowed to arrange emergency exits from the premises of category A and B, as well as through production facilities in buildings IIIB, IV, IVa, V degrees of fire resistance.

LEGAL FRAMEWORK FOR FIRE SAFETY

The legal basis for activities in the field of fire safety is the Constitution, the Law of Ukraine "On Fire Safety" and other laws of Ukraine, resolutions of the Verkhovna Rada of Ukraine, decrees and orders of the President of Ukraine, decrees, resolutions and orders of the Cabinet of Ministers of Ukraine, decisions of public authorities, local self-government, adopted within their competence. Providing fire safety should also be guided by the Fire Safety Rules in Ukraine, standards, building codes, electrical installation rules (EEE), standards of technological design and other regulatory acts, based on their scope, which regulate fire safety requirements.

The main legislative document regulating the requirements of fire safety is the Law of Ukraine "On Fire Safety". This law determines the general legal, economic and social basis for ensuring fire safety in the territory of Ukraine, regulates the relations of state bodies, legal entities and individuals in this area, regardless of the type of their activities and forms of ownership.

GENERAL PRINCIPLES OF FIRE SAFETY

Providing fire safety is an integral part of government activities to protect people's lives and health, national wealth and the environment. In accordance with Article 4 of the Law of Ukraine "On Fire Safety", state bodies of executive power and self-government bodies of all levels, within their competence, organize the development and implementation in relevant sectors and regions of organizational and scientific and technical measures for fire prevention and fire fighting, fire safety settlements and objects.

Provision of fire safety is an integral part of production and other activities of officials, employees of enterprises, institutions, organizations. According to the current legislation, fire safety of enterprises, institutions and organizations is entrusted to their owners (managers) and their authorized persons, unless otherwise provided by the relevant agreement.

Owners of enterprises, institutions and organizations, as well as tenants are obliged:

- develop comprehensive measures to ensure fire safety;
- in accordance with the regulations on fire safety, develop and approve regulations, instructions, other regulatory acts in force within the enterprise, to monitor them continuously;
- Ensure compliance with fire safety requirements of standards, norms, regulations, as well as compliance with the requirements of regulations and regulations of state fire safety authorities;
- organize the training of workers in fire safety regulations and the promotion of measures to ensure them;

- keep in good condition the means of fire protection and communication, fire fighting equipment, equipment and inventory, not to allow their use for other purposes;
- create, in case of need, in accordance with the established procedure, fire protection units and the necessary material and technical base for their operation;
- submit at the request of the state fire protection information and documents on the state of fire safety of the facilities and products that they produce;
- implement measures to introduce automatic fire detection and extinguishing means;
- timely inform the fire department about the malfunction of fire fighting equipment, fire protection systems, water supply, etc .;
- Carry out official investigation of fires.

In accordance with Article 6 of the Law, citizens of Ukraine, foreign citizens and stateless persons who are on the territory of Ukraine are obliged:

- comply with fire safety regulations, provide buildings owned by them on the right of personal property, primary means of extinguishing fires and fire-fighting equipment, educate children about caution in handling fire;
- Report to the fire department on the occurrence of a fire and take measures to eliminate it, save people and property.

In accordance with the Fire Safety Rules in Ukraine, the main organizational measures to ensure fire safety are:

- Definition of duties of officials on maintenance of fire safety;
- designation of fire safety of individual buildings, structures, premises, plots, etc., technological and engineering equipment, as well as maintenance and operation of available fire protection equipment;
- installation of an appropriate fire-fighting regime at each enterprise (institution, organization);
- development and adoption of a general site instruction on fire safety measures and appropriate instructions for all explosive and fire hazardous premises, organization of the study of these instructions by employees;
- development of plans (schemes) for the evacuation of people in the event of a fire;
- Establishment of an order (system) for alerting people to a fire, familiarizing them with all workers;
- Definition of categories of buildings and premises for explosion and fire hazard in accordance with the requirements of existing regulatory documents, the establishment of classes of zones according to the Rules for the installation of electrical installations;
- Provision of territories, buildings and premises with appropriate signs of fire safety, signs indicating the telephone number and the procedure for calling the fire protection;
 - creation and organization of work of fire-technical commissions, voluntary fire brigades and teams.

STATE FIRE SUPERVISION

In settlements and objects, regardless of the form of ownership, state fire supervision is carried out. Officials of the bodies of state fire supervision are state inspectors for fire supervision, who have the right:

- conduct fire-technical inspections and inspections of controlled objects at any time in the presence of the owner or his representative, regardless of the form of ownership, obtain from the owner necessary explanations, materials and information;
- give (direct) the heads of executive bodies and self-governments of various levels, managers and other officials of enterprises, institutions and organizations, as well as citizens, mandatory instructions for eliminating violations and deficiencies in matters of fire safety.
- monitor the fulfillment of fire safety requirements stipulated by normative and technical documents, in the design, construction, reconstruction, technical re-equipment or expansion, major repairs of enterprises, buildings, structures and other facilities. In case of detection of violations, prohibit their elimination, release and application of projects, stop construction and installation works;

- suspend or prohibit the operation of enterprises, individual productions, production sites, units, operation of buildings, structures, individual rooms, heating appliances, electric network sections, fire works, release and sale of fire hazardous products.

Means of fire protection in case of violation of fire safety rules, creating a threat of a fire or preventing its extinguishing and evacuation of people, as well as in case of release of fire hazardous products, systems and means of anti-fire protection with deviation from standards or technical conditions or in the absence of fire;

- to bring to administrative responsibility officials, other employees of enterprises, institutions, organizations and citizens who are guilty of violating the fire safety requirements established by the legislation, failure to comply with regulations, resolutions of the state fire safety authorities, use of fire fighting equipment and fire extinguishing means not for the intended purpose;

- apply penal sanctions to enterprises, institutions and organizations for violation of fire safety requirements established by law, failure to comply with orders (orders) of officials of state fire supervision authorities.

OBJECTIVES AND TYPES OF FIRE PROTECTION

The main tasks of fire protection are:

- monitoring compliance with fire safety requirements;
- prevention of fires and accidents on them;
- extinguishing fires, saving people and providing assistance in eliminating the consequences of accidents, disasters and natural disasters.

Fire protection is divided into state, departmental, local and voluntary.

The state fire protection is formed on the basis of existing militarized and professional fire protection, it is part of the system of the Ministry of Ukraine for Emergencies and Affairs of Population Protection from the Consequences of the Chernobyl Catastrophe (MES) and carries out state fire supervision.

Subdivisions of departmental fire (fire-guard) protection are created at the facilities of ministries and other central executive bodies, the list of which is determined by the Cabinet of Ministers of Ukraine.

In rural settlements, where there are no state fire protection units, local executive authorities and local self-government bodies are creating units of local fire protection. In addition, the same units can be created both in cities and for the protection of objects.

At enterprises, institutions and organizations, voluntary fire brigades (teams) may be set up to carry out activities to prevent fires and organize their extinguishing.

Fire breaks are installed depending on the significance, explosion and fire hazard category, and degree of fire resistance of the buildings according to the requirements of the Ukrainian National Construction Regulation DBN 360, Construction Standards and Regulations SNiP II-89, DBN B.2.4.-1, DBN B.2.4-3, SNiP 2.11.06, Industry-Specific Construction Standards VSN V.2.2-53 and other regulatory documentation.

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Informational resources: site of hygiene and ecology department www.dsma.dp.ua

Theme 10. Basics of safety at the utilization of medical waste.

Educational purposes of the lesson:

- familiarize yourself with the classification of medical waste and labor protection requirements when handling medical wastes, methods of their temporary storage, marking, placement and disposal, organizations of temporary waste storage sites, provision of working conditions and personal hygiene of personnel when handling medical waste;
- to acquire knowledge and skills in occupational safety when handling medical waste;
- be able to apply in practice knowledge and skills in the protection of labor in the treatment of medical waste.

Content of the theme of lesson (educational questions):

1. Categories of medical waste.
2. General hygienic requirements for the organization of the treatment system (collection, disposal and neutralization) with liquid, solid and specific wastes generated in the health facility
3. Organization of safe handling of Category A waste.
4. Organization of safe handling of Category B waste.
5. Organization of safe management of waste category C.
6. Organization of safe handling of D waste.
7. Requirements for personnel in the organization of a waste management system.
8. General requirements for methods and methods of neutralizing waste treatment facilities.
9. Requirements for the organization of premises for temporary storage and disposal of waste, their accounting and transportation.

Structure of the practical training.

At the beginning of the lesson, written control of the initial level of knowledge on control questions is carried out. After solving the organizational questions and instructions of the teacher, students independently study the normative documents on the topic. Evaluation of students is conducted through a survey with correction and supplementation of reports. In the second part of the lesson, students defend individual work and answer the teacher's questions on her topic. At the end of the lesson the teacher summarizes the lessons and the whole module, announces the final grades in the discipline.

Informational part

Basic terms:

- decontamination (neutralization) elimination of the main hazardous manifestations of the action of waste; disinfection (disinfection) a set of methods (physical or chemical) aimed at the destruction of pathogenic and opportunistic pathogens in rooms, equipment, tools, materials, substances and in waste;
- medical waste; waste generated as a result of medical care in institutions that, in accordance with the established procedure, obtained a license to carry out economic activities in medical practice (except for enterprises producing pharmaceutical products and medical waste generated in everyday life);
 - the risk of waste physical, chemical, biological and other properties of waste, create or can create a danger to the environment and human health;
 - waste disposal premises, a suitable place in an institution where reception, decontamination or decontamination of waste is carried out, temporary storage (accumulation) of waste, washing and disinfection of rack-trolleys, containers and other equipment used for the movement of waste.

Waste categories

Medical waste is divided into the following categories:

- Category A - epidemically safe medical waste;
- Category B - epidemically hazardous medical waste;
- Category C - toxicologically hazardous medical waste;
- Category D - radioactive hazardous medical waste.

General requirements for the organization of a waste management system

1. The waste management system consists of the following stages:

- collection and sorting of waste;
- waste labeling;
- Disinfection (disinfection) of waste;
- transportation and transfer of waste to hull / intercorpus (storage) containers within the establishment where they are formed;
- disposal of waste (those that can be disposed of);
- Waste disposal (only for Category A wastes).

2. Waste management in institutions should take place in accordance with the standard scheme for waste management.

A typical waste management scheme should contain the following information:

- the name of the structural unit of the institution (hereinafter referred to as the subdivision)
 - List of wastes by categories formed in the subdivision;
 - Place (places) of waste collection and temporary storage in the unit;
 - transportation of waste to the place (places) of collection and temporary storage of waste in general for the institution;
 - export (according to the schedule) of waste by category to the processing, disposal, destruction, burial sites (only for Category A wastes);
 - responsible officer in the unit.
3. Medical waste that poses a danger to human health can not be accumulated, temporarily stored, transported, destroyed along with other wastes.
4. The collection of waste is carried out as close as possible to the places of their formation in separate containers visually distinctly different in color and / or marking.
5. In the places of primary waste generation there should be spare tanks (bags or containers) for waste collection.
6. The filled packages or containers after the initial collection are sealed, marked with a tag for marking, moved to storage containers, closed with a lid.
7. The system for marking medical waste at each waste collection point is composed of their separate collection and identification, symbols and marks for marking.
8. A package with waste categories B and C that has been disinfected should contain a marking according to the waste category, the date of disinfection, the type of disinfection, the responsible person who disinfected for medical waste.
9. Mixing of waste of different categories is not allowed.

Requirements for waste category A

1. Category A wastes include waste types:

- food waste of all departments of the institution, except for infectious diseases, including venereal and phthisiatric;
- Wastes that do not have contact with the biological fluids of patients, infectious and skin-venereal patients;
- Household waste (solid, large-size, repair) of all departments of the institution, except for infectious diseases, including venereal and phthisiatric.

2. Collection of food waste is carried out separately from other waste in reusable containers or disposable bags installed in the premises of kitchens, dining rooms and pantry.

3. Temporary storage of food waste in separate special containers in the absence of specially allocated refrigeration equipment is allowed no more than 24 hours. A stock of containers must be provided for at least one day. Containers from food waste are washed and disinfected after each emptying.

4. Surfaces and aggregates of large-scale household waste that had contact with infected material or patients are subjected to mandatory disinfection before placing them in a storage container or a special room.

5. The management of household waste is carried out in accordance with the requirements of the current legislation.

Requirements for waste category B

1. Category B waste includes infected and potentially contaminated waste that has been exposed to the biological media of the infected material:

- used medical instruments (sharp objects: needles, syringes, scalpels and blades, slides, ampoules, empty test tubes, broken glassware, vasophixes, feathers, pipettes, lancets, etc.);
- items contaminated with blood or other body fluids;
- Organic medical waste of patients (tissues, organs, body parts, placenta, embryos, etc.);
- food waste from the infectious diseases departments of the institution;
- waste generated as a result of medical laboratories (microbiological cultures and strains containing any living pathogens, artificially grown in significant quantities, live vaccines unsuitable for use, as well as laboratory cups and equipment for their transfer, remains of nutrient media, inoculation, mixing microbiological cultures of pathogens of infectious diseases, infected experimental animals and biological waste of vivaria);
- Waste of medical diagnostic units of institutions and dispensaries, contaminated with sputum of patients, microbiological laboratories that work with pathogens of tuberculosis.

2. Waste specified in paragraph 1 of this section shall be subject to mandatory decontamination (disinfection) by physical methods (thermal, microwave, radiation, etc.). The use of chemical disinfection methods is allowed only for the disinfection of food waste from the departments of infectious patients, as well as in the organization of primary antiepidemic measures in the foci of infection. If there are no premises for disinfection (disinfection) of waste or a centralized system for decontamination of waste, the medical waste is disinfected by the personnel of this institution at the places of their formation by chemical / physical methods.

3. When cleaning Category B wastes:

- destroy, cut medical waste, including the use of intravenous infusion systems, with the aim of decontaminating them;
- remove the needle from the syringe after use;
- pour (overload), tamp down unpackaged medical waste from one container to another, except for emergency situations;
- carry out any operations with waste without gloves or the necessary personal protective equipment and overalls;
- install disposable and reusable containers for collection of waste at a distance of less than one meter from heating appliances.

Medical waste of category B is collected in a solid (not pierced) package (containers) or in a disposable soft (bags).

4. The collection of Category B waste in the places of their formation takes place during the working shift. When using containers for sharp instruments, they can be filled in for 3 days.

5. To collect sharp objects, use moisture resistant containers (containers) that are not pierced. The container must have a lid, fit tightly and which makes its uncontrolled opening impossible.

6. To collect organic, liquid wastes of category B (blood, rinsing, drainage water, etc.) use hermetic moisture-proof containers (containers), which make their uncontrolled opening impossible.

7. The containers are closed with lids. When using soft packaging after filling it, the employee responsible for collecting waste in the unit, observing the requirements of biological safety, binds the package or closes it, excluding the spills of waste. Transportation of Category B waste in open containers is not allowed.

8. Disinfection of reusable receptacles for the collection of waste of category B in the institution shall be carried out after each use.

9. Medical waste of category B, obtained from clinical units, is collected in containers that are moved to a waste collection room or to a temporary waste storage facility.

10. Containers for waste should be made of materials resistant to mechanical impact, high and low temperatures, detergents and disinfectants, closed with lids, the design of which should not allow their uncontrolled opening.

11. Accumulation and temporary storage of category B waste that has not been decontaminated is carried out separately from other wastes in special rooms, excluding access of unauthorized persons.

12. When organizing Category B disinfection sites, it is permitted to collect, temporarily store, transport B-class waste without prior disinfection in the places of education, provided that the necessary epidemiological safety requirements are met.

13. The main methods of disinfection (disinfection) of category B waste are physical and chemical methods:

- Physical method of disinfection of waste (category B), including treatment with saturated steam under excessive pressure and temperature with the help of special equipment for B class decontamination plants, in particular autoclaves, which are used for disinfection of wastes at a sterilization temperature of at least 150 C, and means and methods of radiation and electromagnetic irradiation of the appropriate designation directly at the facility

- The chemical method for decontamination of waste category B includes treatment with disinfectants, bactericidal (including tuberculocidal), virucidal, fungicidal (sporicidal if necessary) action in appropriate modes, is applied with the help of special installations or by means of dipping of waste in marked containers with disinfectant solution in places their education.

14. Chemical disinfection of Category B wastes at the place of their formation is used as a mandatory temporary measure in the absence of a waste disposal facility or in the absence of a centralized disinfection system.

15. Liquid wastes of category B (vomit, urine, feces), including similar biological fluids of tuberculosis patients, merge into the centralized sewage system only after preliminary disinfection by chemical or physical methods.

16. For disinfection of Category B wastes, use means and equipment authorized for use in Ukraine in accordance with the procedure established by law.

17. Thermal disposal of Category B wastes can be carried out in a decentralized manner (incinerators or other thermal disinfection units intended for use for this purpose). Thermal disposal of Category B wastes can be carried out in a centralized way.

18. Pathological and organic operating waste of category B (organs, tissues) are to be cremated (incinerated).

19. The removal of Category B wastes that have not been decontaminated (disinfected) in educational facilities or in waste treatment facilities is not allowed outside the territory of institutions.

20. Waste of category B after decontamination is transferred to enterprises licensed to carry out operations in the field of hazardous waste management and have the appropriate certified equipment.

Requirements for waste category C

1. Category C wastes that may be of a chemical nature include:

- medicinal, diagnostic, disinfectant;
- batteries, items containing mercury, instruments and equipment containing heavy metals;
- wastes generated from the operation of equipment, transport, lighting systems and the like.

2. Wastes specified in clause 1 of this section shall be collected in marked containers with lids that fit tightly and stored in specially designated rooms.

3. Collection, temporary storage of waste cytostatics and genotoxic drugs, as well as all types of waste generated as a result of the preparation of their solutions (vials, ampoules, etc.), without decontamination is not allowed. Medical waste is subject to immediate decontamination at the place of education using appropriate means. It is also necessary to decontaminate the workplace. Work with such waste must be carried out using appropriate personal protective equipment and carried out in a fume hood.

4. Medical wastes of category C are transferred to specialized enterprises that are licensed to carry out operations in the field of hazardous waste management.

Waste requirements of category D

1. All materials resulting from the use of radioisotopes for medical and / or scientific purposes in any aggregate state exceeding permissible levels established by radiation safety standards belong to category D waste.

2. The collection, storage, transportation and disposal of Category D wastes are carried out in accordance with the requirements of the legislation of Ukraine for the management of radioactive waste, radiation safety standards.

Organization of waste management and personnel requirements

1. For the organization of waste management and daily monitoring in institutions, the head of the institution is appointed by the responsible person or the head of the institution is such a responsible person.

2. Personnel, contact with waste, undergo preliminary (when hiring) and periodic medical examinations in accordance with the requirements of Ukrainian legislation.

3. When recruiting for work and in the future every year, staff must undergo mandatory training on the rules for safe handling of waste.

4. Personnel in contact with waste are provided with appropriate personal protective equipment.

5. In the case of an employee receiving a trauma, a potentially dangerous infection (an injection, a cut with a violation of the integrity of the skin and / or mucous membrane), it is necessary to take emergency preventive measures when handling waste. At the workplace personnel should be a first aid kit for injuries and working solutions of disinfectants.

6. Communications, accounting and investigation of cases of infection of personnel with infectious diseases causative agents associated with professional activities shall be conducted in accordance with the legislation.

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