Ministry of Healthcare of Ukraine
O. O. Bogomolets National Medical University

Department of hygiene and ecology №2

METHODICAL INSTRUCTIONS

For individual work of students
During preparing for practical lesson in the discipline "Occupational health and safety in healthcare sector"
On the topic:

Organization and management of occupational health and safety in hospitals and medical education institutions

Kyiv - 2019

Authors:

acad. NAMS of Ukraine O.P. Yavorovsky, prof. Yu.O. Paustovsky, prof. O.A. Nikitiuk, assistant professor V.I.Zenkina, assistant professor G.A. Shkurko, assistant professor M.I.Veremiy, assistant professor T.O. Bilko, assistant L.O.Kuyun, assistant T.O.Zinchenko, assistant M.L. Marchenko (responsible author), assistant N.V. Soloha, assistant R.P.Bruhno, assisstant L.V. Konovalova, graduate student. K.S. Riznyk

«Approved»
at the Department №2 of
Hygiene and Ecology meeting
from _____ 20___.

Head of Department
Professor _____O.
Yavorovskiy
«_____» _____
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INSTRUCTIONS

FOR STUDENTS' INDEPENDENT STUDIES IN PREPARING FOR PRACTICAL WORK

Discipline	Occupational (Labor) hygiene
Module № 1	Occupational health in the field
Module № 2	Occupational health issues in the medical field
Topic	**Organization and management of occupational health and safety in hospitals and medical education institutions**
Course	II, III
Faculties	Medical №1-4, FTDAFU, dentistry, medical-psychology

Kyiv – 2018

1. Relevance of the topic:

In the course of their work, health care workers and students of higher medical education institutions may be exposed to various harmful and dangerous factors as physical (physical, microclimate, noise, vibration, ultrasound, laser and electromagnetic radiation, ionizing radiation, etc.)., chemical (medical drugs, anesthetics, disinfectants, etc.), biological (pathogenic microorganisms and products of their life), psychological and ergonomical (physical and nervous-emotional overload). All this leads to a high risk of occurrence in these workers of professional, industrial-predetermined diseases and injuries.

Physicians in the process of their activities do not create material or spiritual consumer values, but they provide the necessary conditions for their creation. It is difficult to calculate the amount of these values created by people who were returned by the efforts of physicians to full-fledged life and productive work.

But the quality and effectiveness of medical care for patients depends not only on the qualifications of physicians, their equipping with modern equipment, medicaments, but also on the health of medical workers themselves - doctors, nurses, support staff.

All this determines the importance and necessity of ensuring a high level of labor protection for both as healthcare workers as students who study in higher medical educational institutions.

2. Specific objectives:

• Know the main types of legislative and regulatory acts that relate to the protection of the health of medical workers and students of higher medical education institutions.
• Describe the structure, main functions and tasks of the occupational safety management in medical institutions.
• Explain methods for detecting, assessing and reducing the risks of hazardous events in medical institutions.
• Know about principles of organization, types of training and testing of knowledge on occupational safety.
• Propose and substantiate basic measures to ensure the protection of workers health

3. BASIC KNOWLEDGE AND SKILLS (INTERDISCIPLINARY INTEGRATION).

Name of discipline	Knowledge
1. Human anatomy	Apply information about human anatomical building.
2. Medical chemistry	Use knowledge about physical and chemical laws as the basis of human life processes. Apply chemical methods of quantitative and qualitative analysis.
3.Medical and biological physics	Apply knowledge about general physical and biophysical laws which are the basis of human life.
4. Human physiology	Determine the state of human health and work capacity in different conditions on the basis of physiological criteria. Make conclusion about the state of physiological functions of the human body, its systems and organs.

4. TASK FOR INDIVIDUAL PREPARING FOR THE LESSON.
4.1. LIST OF MAIN TERMS AND CHARACTERISTICS TO BE LEARNED
BY THE STUDENT DURING THE PREPARATION TO THE LESSON:

Terms	Definition
1	2
Occupational health and safety management	*Preparation, adoption and realization of decisions on the implementation of organizational, technical, sanitary, medical and preventive measures aimed at creating safe working conditions, preserving the health and efficiency of the person in the process of work.*
Occupational health and safety management systems	*It includes health and safety policies, systems, standards, and records, and involves incorporating your health and safety activities and program into your other business processes. Having an effective management system improves your ability to continuously identify hazards and control risks in your workplace.*
Safe working environment	*a working environment where employees are able to work safely, without risk to their physical and psychological health and welfare.*
International Labor organization (ILO)	*is a United Nations agency dealing with labour problems, particularly international labour standards, social protection, and work opportunities for all. The ILO has 187 member*

	states: 186 of the 193 UN member states plus the Cook Islands are members of the ILO.
The Occupational Safety and Health Administration (OSHA)	*is an agency of the United States Department of Labor. Congress established the agency under the Occupational Safety and Health Act, which President Richard M. Nixon signed into law on December 29, 1970. OSHA's mission is to "assure safe and healthy working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance"*
The national institute for occupational safety and health (NIOSH)	*is the United States federal agency responsible for conducting research and making recommendations for the prevention of work-related injury and illness. NIOSH is part of the Centers for Disease Control and Prevention (CDC) within the U.S. Department of Health and Human Services.*
Risk management	*is the identification, evaluation, and prioritization of risks (defined in ISO 31000 as the effect of uncertainty on objectives) followed by coordinated and economical application of resources to minimize, monitor, and control the probability or impact of unfortunate events*
Risk	*The probability or threat of quantifiable damage, injury, liability, loss, or any other negative occurrence that is caused by external or internal vulnerabilities, and that may be avoided through preemptive action.*
Risk assessment	*is the determination of quantitative or qualitative estimate of risk related to a well-defined situation and a recognized threat (also called hazard). Quantitative risk assessment requires calculations of two components of risk (R): the magnitude of the potential*

	loss (L), and the probability (p) that the loss will occur.
ISO 45001:2018	specifies requirements for an occupational health and safety (OH&S) management system, and gives guidance for its use, to enable organizations to provide safe and healthy workplaces by preventing work-related injury and ill health, as well as by proactively improving its OH&S performance.

4.2. Theoretical questions to the lesson:

1. The main types of international legislative documents on occupational safety.
2. Occupational health and safety management in healthcare institutions.
3. Accounting and assessment in occupational safety and health.
4. Hazardous events detection, assessment and risk reduction.
5. Occupational safety and health training.

4.3. Practical tasks, which should be performed for acquiring practical skills.

Task 1. During the inspection of compliance with the requirements of occupational safety in the student hostel by the occupational health and safety service violations have been detected. According to results of the audit, the employee of the service had made an Order to remove violations found. However, this Order was canceled by order of the vice-rector of the university for administrative and economic work.
1. Indicate the validity of such decision of the vice-rector of the university.
2. Name the document, which lists the rights and responsibilities of employees of the labor protection service.
3. Indicate the person responsible for compliance with the requirements of occupational safety and fire safety in the hostel.

5. Topic content.

A safety and health management system is a proven, systematic approach - used by employers and employees, working together - to finding and correcting workplace hazards before injuries or illnesses occur. It provides an overarching framework for planning, implementing, evaluating, and improving all of a hospital's workplace safety and health management efforts. It integrates and strengthens, rather than replaces, hazard-specific programs such as those covering bloodborne pathogen protection, safe patient handling, and workplace violence prevention. The safety and

health management system encompasses all workplace hazards, not just those covered by OSHA standards.

The foundation of all safety and health management systems is the Plan-Do-Check-Act (PDCA)3 cycle, popularized by W. Edwards Deming.

The Plan-Do-Check-Act Cycle

Plan: Establish the organization's commitments, goals, and expectations for safety and health performance; develop an organizational structure and processes to manage and achieve performance objectives; identify and evaluate workplace hazards and risks; evaluate and select control measures to eliminate and reduce identified risks; and determine activities, processes, procedures, programs, and resources needed to achieve objectives.

Do: Implement plans, programs, and procedures throughout the organization in a systematic and controlled manner.

Check: Monitor and measure whether plans are carried out as intended; evaluate whether plans are effective and safety and health objectives have been achieved; and conduct periodic reviews of the suitability and effectiveness of the safety and health management system.

Act: Take needed corrective actions; modify and update the safety and health management system and the organization's goals and objectives as needed; and implement the entire PDCA cycle on a regular and periodic basis.

The core elements of a safety and health management system.

Most successful safety and health management systems have six "core elements," all interrelated, each necessary to the success of the overall system:

Management leadership: Managers at all levels of the organization demonstrate their commitment to improved safety and health, communicate their commitment, and document performance. Managers make safety and health a top priority, establish goals and objectives, provide adequate resources and support, and set a good example.

Employee participation: Employees have unique knowledge of the workplace and must be involved in all aspects of the safety and health management system—for example, setting goals, identifying and reporting hazards, investigating incidents, and tracking progress. All employees understand their roles and responsibilities under the safety and health management system and what they need to do to carry them out effectively. Employees are encouraged to communicate openly with management and report safety and health concerns. Barriers to participation (e.g., language, lack of information, or disincentives) are removed.

Hazard identification and assessment: Processes and procedures are put in place to continually identify workplace hazards and evaluate risks. An initial assessment of existing hazards and control measures is followed by periodic reassessments to identify new hazards and monitor the effectiveness of prevention and control measures.

Hazard prevention and control: Processes, procedures, and programs are created and implemented to eliminate or control workplace hazards and achieve safety and health goals and objectives. Progress in implementing controls is tracked.

Education and training: All employees are provided education or training to carry out their responsibilities under the safety and health management system. In addition, all employees are trained to recognize workplace hazards and trained in the corresponding control measures.

System evaluation and improvement: Processes are established to monitor safety and health management system performance, verify implementation, identify deficiencies and opportunities for improvement, and take necessary actions to improve the safety and health management system and overall safety and health performance.

Management leadership

Management leadership means that top administrators and the entire hospital's management team:

- Are fully committed to improving workplace safety and health performance.
- Make safety and health performance a top organizational value.
- Provide sufficient resources to implement the safety and health management system.
- Visibly demonstrate and communicate their safety and health commitment to employees and others.

When managers demonstrate this type of leadership and back it up with meaningful action, significant improvements in an organization's safety and health performance will follow. This includes reductions in overall injury, illness, and fatality rates, as well as other indicators of safety and health performance.

Management leadership can be demonstrated in many ways. For example, managers can:

- Conduct safety rounds and ask individual workers if they have any safety concerns or issues.
- Follow proper handwashing procedures and other standard precautions.
- Lead investigations of any incidents.

- Approve purchases or expenditures that will improve safety, and communicate the reasons for doing so.
- Walk around the hospital and stop to compliment employees who are following safe procedures, such as using patient lifting equipment.
- Keep employees from taking dangerous shortcuts, such as failing to use standard precautions to prevent bloodborne pathogen exposure.
- Halt work immediately to investigate or correct a serious hazard.
- Conduct housekeeping inspections of work areas.
- Ask workers informally about their safety and health concerns.
- Involve contractor and temporary workers in all aspects of the safety and health management system.
- Respond in person to employees' concerns.
- Provide access to occupational health services for any workplace-related injuries and illnesses, including infections.
- Begin meetings with discussions of the safety and health management system and what it is achieving.
- Attend meetings of the safety and health committee (if one is used).
- Become a visible proponent of safety and health management system outside the organization.
- Include safety and health messages and reminders in their public statements, written products, and web page.

Employee participation involves

- Both management and employees are committed to elevating workplace safety and health to the highest priority and to building a culture of safety throughout the organization.

- Management and employees can work in an atmosphere of mutual respect and trust.
- Employees are involved in the safety and health management system as broadly as possible from the very beginning.
- Employee participation is active - for example, they develop system goals and objectives, develop rules and procedures, identify and resolve issues, and make presentations at safety and health meetings.

- Employees are convinced that management wants their participation and will take their input seriously.
- At unionized sites, authorized representatives work jointly with managers and employees to develop and implement the safety and health management system.
- Employees are aware of their rights of protection from harassment or retaliation when they get involved in safety and health activities or report safety and health concerns.

Hazard identification and assessment

In identifying and assessing hazards, an organization:

- Provides access to and makes use of all available sources of information on hazards and potential hazards in the workplace.
- Combines this information with the results of workplace inspections, job hazard analyses, injury and illness investigations, input from workers, and other techniques used to identify hazards.
- Assesses and prioritizes hazards, taking into account the effectiveness of current controls.
- Continually monitors for and responds to the introduction of new hazards.

The prioritized hazards are addressed using the strategies described under the next core element, Hazard Prevention and Control.

Hazard prevention and control

Under this core element, organizations take several steps to prevent and control workplace hazards. On an ongoing basis, they:

- Identify and evaluate control options for workplace hazards.
- Select effective and feasible controls to eliminate, reduce, or contain these hazards.
- Implement these controls in the workplace.
- Follow up to confirm that these controls are being used and maintained properly.
- Evaluate the effectiveness of controls and improve, expand, or update them as needed.

The hazard prevention and control hierarchy

Engineering controls. Engineering controls redesign the work process to eliminate hazards entirely or reduce them to a minimum. Strategies include eliminating the

process, process step, equipment, or substance that is creating the hazard; substituting a less hazardous process, equipment, or substance; or using physical barriers (such as enclosures or guards) or ventilation to reduce employee exposure to the hazard. For example, engineering controls effective in controlling exposure to glutaraldehyde in hospitals may include general ventilation, local exhaust ventilation (at point of release), local exhaust hoods (capture, convey, and exhaust), or ductless fume hoods (capture and filter).

Safe work practices. Safe work practices are appropriate when engineering controls are not feasible, not completely protective, or temporarily suspended (e.g., during maintenance). Safe work practices include those described in both general and process-specific OSHA rules (e.g., for hazard communication, bloodborne pathogens, and laboratory chemical hygiene).

Administrative controls. Administrative controls include a wide range of measures to reduce employee exposure to hazards: physical conditioning programs, exercise or stretching breaks, use of additional relief personnel, and rotating employees. These controls are normally used together with others that more directly prevent or control exposure to the hazard.

Personal protective equipment (PPE). The term "PPE" refers to both equipment and clothing. Use of PPE is appropriate when the engineering and administrative controls described above cannot completely eliminate hazard exposure during normal operations or maintenance. PPE may also be appropriate for controlling hazards while engineering and work practice controls are being installed. To be effective, PPE must be carefully selected to match the work environment and hazard, and much of it (e.g., respirators) must be fit tested for individual users. PPE also must be maintained to ensure its continued effectiveness. Involving employees in PPE selection can improve compliance with PPE use policies.

Occupational Health management system Education and training

Education and training are essential elements of a safety and health management system. They provide all employees with the knowledge and skills required to perform their work safely and meet the organization's safety and health goals. An effective education and training program:

- Ensures that employers, managers and supervisors, and employees have the knowledge and skills needed to work safely and avoid creating hazards that could place them or others at risk.
- Enhances awareness and understanding of workplace hazards, and how to identify, report, and eliminate or control them.

- Provides specialized training, where needed, to employees whose work involves particular hazards or to those with specific roles in managing or operating the safety and health management system.
- Includes periodic checks to assess whether training is effective, timely, up-to-date, and applicable based on the current roles and responsibilities of managers, supervisors, and employees.

Evaluation and improvement

System evaluation and improvement means

System evaluation and improvement is one of the most important and often neglected elements of an effective safety and health management system. It involves:

- Activities and processes to determine whether a safety and health management system is operating as intended and achieving the organization's goals.
- Identifying and correcting deficiencies.
- Continually improving safety and health management system performance.

Effective system evaluation and improvement involves several critical management processes and activities. These include:

- Monitoring and measuring to track whether workplace safety and health conditions are improving and goals are achieved.
- Monitoring injury and illness experience to identify problem areas.
- Conducting inspections to determine if controls, processes, and other elements in the safety and health management system are being consistently implemented.
- Investigating safety and health management system deficiencies.
- Ensuring that effective corrective and preventive actions are promptly chosen and implemented.
- Evaluating the safety and health management system as a whole and by its components to determine whether it operates and functions effectively.
- Top management review of the safety and health management system's effectiveness and its continued ability to meet the organization's evolving needs.

Responsibilities of officials and occupational health and safety management at higher medical educational institutions.

The **Rector** is responsible for the creation of safe conditions for the educational process in accordance with the current legislation, interdisciplinary and sectoral policy, instructional and other documents on labor protection, it does not allow conducting educational process in the presence of harmful and unsafe conditions for the health of the participants of the educational process. Establishes occupational health and safety service in accordance with the current Labour Standards on occupational health and safety service, which is directly subordinate to him. The rector assigns responsible for the organization of the occupational health and safety service and fire safety. Appoints the order of the persons responsible for the state of labor protection in structural subdivisions, educational buildings, student hostels.

The occupational health and safety service controls compliance with the requirements of occupational safety and fire safety in all structural subdivisions, departments, educational buildings, dormitories, as well as timeliness of exercises on occupational safety issues. If violations or deficiencies are identified in order to ensure the requirements of the labor protection, the employee of the labor protection service have make an Order, which identifies the deficiencies and violations and specifies the deadlines for their elimination. This requirement is mandatory. Only rector has the right to cancel this Order.

The occupational health service should have:
- an access to relevant senior managers;
- a voice and influence on relevant committees, working groups and decision-making bodies;
- an interaction with:
– Health and safety advisers;
– Human resources advisers;
– Student health services and primary care provision for staff and students;
– Workers/safety representatives.

The occupational health service should be viewed as one component of a team, working closely with other relevant services, health and safety advisers and disability advisers. Good team working is probably more important than the precise location within the organization. Several different models are known to work well in universities and colleges.

The appropriate number of professional staff and clinical facility time for the occupational health service depends on:
- The number and turnover of employees;
- The nature of the work of the institution;

- The occupational health needs of employees.

The accommodation for the occupational health service should ideally be located in a quiet area that is easy for staff and students to reach and should have disabled access. It should provide an acceptable standard of confidentiality for a clinical examination in privacy and also for a private conversation with reception and clerical staff. It should also provide waiting rooms, examination rooms, and clinical, storage and office facilities, and should be equipped with adequate hand-washing and toilet facilities.

Materials for self-control:

Tasks for Self-control:
1. What is it occupational health and safety management?
2. What are main international organizations working in occupational health and safety area?
3. What is it risk management?
4. List core elements of a safety and health management system?
5. What is the first element of hazard prevention and control hierarchy?
6. Who is responsible for the occupational health and safety management in the medical university?

Literature:

Principal:

1. Occupational Physiology. / Allan Toomingas, Svend Erik Mathiassen, Ewa Wigaeus Tornqvist/ - 2011 by CRC Press - 309 Pages.
2. Occupational health and safety in the medical sector. / Yavorovsky O.P., Veremey MI, Zenkina V.I. etc. - K., 2017. - 208 pp.
3. Hygiene and ecology / Under the editorship of V.G.Bardov. – Vinnytsya: Nova knyha, 2018. – 688 pages.

Additional:
1. https://www.ors.od.nih.gov/sr/dohs/Documents/DLib_2.4_SHMS_roadmap_508.pdf
2. Occupational health and safety risks in the healthcare sector. Guide to prevention and good practice. European Commission – 282 pages.