MINISTRY OF HEALTH OF UKRAINE

ODESSA NATIONAL MEDICAL UNIVERSITY

Faculty of Pharmacy

Department of General and clinical pharmacology and pharmacognosy
Department of Organizations and economics of pharmacy with post diploma specialization
Department of Pharmaceutical chemistry and drug technology

APPROVE by

Vice-rector of scientific and pedagogical work

_____ Eduard BURIACHKIVSKYI

September 01, 2024

GUIDELINES FOR PRE-IPLOMA PRACTICE

Level of higher education: second (master's degree)

Field of knowledge: 22 "Health care »

Specialty: 226 "Pharmacy, industrial pharmacy"

Specialization: 226.01 "Pharmacy"

Educational and professional program: Pharmacy, industrial pharmacy

2024

Approved:

Meetings of the Departments of General and Clinical Pharmacology and Pharmacognosy

Minute's № 1, from August 29, 2024

Head of the Department _____ Yaroslav ROZHKOVSKYI

Meetings of the Departments of Organizations and Economics of Pharmacy with post diploma specialization

Minute's № 1, from August 29, 2024

Head of the Department _____ Oksana BIELIAIEVA

Meetings of the Departments of Pharmacy chemistry and technology drugs

Minute's № 1, from August 29, 2024

Head of the Department _____ Volodymyr HELMBOLDT

Developers:

Liana UNHURIAN, Doctor of Pharmaceutical Sciences, Professor, Dean of the Pharmacy Faculty

Yaroslav ROZHKOVSKYI, Doctor of Medical Sciences, Professor, Head of the Department of General and Clinical Pharmacology and Pharmacognosy

Lidiia EBERLE, Candidate of Biological Sciences, Associate Professor, Department of General and Clinical Pharmacology and Pharmacognosy

Oksana BIELIAIEVA, PhD in Pharmacy, Associate Professor, Head of the Department of Organization and Economics of Pharmacy with post diploma specialization

Iryna YASHCHUK, Senior teacher, Department of Organization and Economics of Pharmacy with post diploma specialization

Volodymyr HELMBOLDT, Doctor of Chemical Sciences, Professor, Head of the Department of Pharmaceutical Chemistry and Drug Technology

Oleksii NIKITIN, Senior teacher, Department of Pharmaceutical Chemistry and Drug Technology

CONTENT

TOPIC 1. INTRODUCTION TO THE WORK OF THE DEPARTMENT. PLANNING OF UNDERGRADUATE PRACTICE TASKS.	
	1. Familiarization applicant higher education with work departments.
	2. Familiarization with the workplace, establishing communication with the employees of the department (division) who ensure the organization of scientific activities or directly work on the scientific topic chosen by the applicant.
	3. Familiarization of the applicant with the methods, research methods, list of necessary reagents, equipment and possibilities of their application in their future work. Drawing up a plan for conducting experimental work.
	4. Drawing up an individual plan for the applicant's pre-graduate practice, indicating the content of the tasks and the schedule for carrying out the research. The research schedule determines the specific deadlines for the work.
TOPIC 2. WORKING WITH SCIENTIFIC LITERARY SOURCES.	
	1. Familiarization of the applicant with primary sources, monographs, abstracts on the topic of research, which are available at the department, as well as with reviews that have been made on this topic by previous researchers, consulting with the scientific supervisor.
	2. Implementation independent search applicant literary sources on the selected topic, using for searching the information resources of the scientific library of Odesa National Medical University, library funds of other scientific institutions, modern databases for information search: electronic resources Elsevier, Sciencedirect, Scopus, Web of Science, PubMed, Cochrane Library, Embase and the SciFinder search database.
	3. Analysis literary sources is ending writing review with justification of the goals and objectives of the scientific research.
TOPIC 3. IMPLEMENTATION OF EXPERIMENTAL PARTS OF THE WORK AND PROCESSING OF RESULTS.	
	1. Implementation planned parts research applicant higher education.
	2. Independent processing of the obtained experimental results, using modern computer programs for constructing graphic images, tables (Excel), for conducting statistical analysis and constructing chemical formulas (ChemDraw and ChemScetch), for surveys and data collection (Google Forms), drawing appropriate conclusions about the effectiveness of their research.
TOPIC 4. PREPARATION OF REPORTING DOCUMENTATION AND PRESENTATION OF THE RESULTS OF UNDERGRADUATE PRACTICE.	

	1. Preliminary familiarization of the applicant with the form and types of reporting documentation on pre-diploma practice (report, diary) using the examples of reports and samples available at the department.
	2. Creating a diary for pre-graduate practice, containing a calendar schedule types of activities, workers records under time practices and a description and feedback from the practice manager.
	3. Preparation of a report on pre-graduate practice taking into account the main components passage undergraduate practices and according to the tasks set by the practice manager.
	4. Preparation and approbation results scientific research the applicant through participation in domestic and international conferences, or publication of scientific articles.
Appendix 1.	
Appendix 2.	

TOPIC 1. FAMILIARIZATION WITH WORK DEPARTMENTS. PLANNING OF UNDERGRADUATE PRACTICE TASKS.

1. Familiarization applicant higher education with work departments.

Selection and justification of the research topic. Formulation by the practice manager of the goal, task, content, procedure for completing the practice, requirements for preparing reporting documentation. Study of the specifics of planning, preparation and research methods in various branches of pharmacy.

Familiarization of the applicant with the work of the department is an important stage of practical training of a future specialist in the field of pharmacy. At this stage, the applicant gets the opportunity not only to consolidate the theoretical knowledge acquired during training, but also to get acquainted with the real conditions of professional activity, the structure organizations, its functional responsibilities and directions scientific research work.

During the internship, the applicant, as a rule, becomes familiar with the organizational structure of the department, the distribution of responsibilities between employees, the main areas of activity and the specifics of the implementation of production tasks. or scientific tasks. Important aspect there are understanding roles each unit in the overall process of functioning of the institution, as well as the relationships between them. Special attention is paid to familiarization with the material and technical base, laboratory equipment, product quality control methods and standards used in the work.

The practice manager plays a key role in the process of organizing and conducting practical preparation. Exactly he helps student to determine the goal and objectives of the practice, forms its content, determines the procedure for passing and controls implementation delivered tasks. Except that, head provides methodological recommendations for conducting research, assists in choosing methods and approaches, and also advises on the preparation of reporting documentation.

An important aspect is also familiarization with the requirements for preparing reporting documentation. The internship report is the main document that reflects the results of the applicant's work, the level of mastery of the material, and the acquired practical skills. He should be structured, logically stated, contain introduction, main part, conclusions and list of sources used. The report must reflect all stages of the internship, completed tasks, research results and their analysis.

During the internship, special attention is paid to studying the specifics of planning, preparation and methods of conducting research in various branches of pharmacy. This includes familiarization with the principles of organizing scientific research, planning experiments, choosing appropriate analysis methods and processing the obtained results. In modern pharmacy, they are widely used various research methods, including physicochemical, biological, microbiological and pharmacological.

Planning research there are important stage, which provides defining the goal, choosing the object and subject of the study, developing an experimental plan and

determining the necessary resources. It is important to consider possible risks, limitations and ensure the reliability and reproducibility of the results. Preparation for the study includes the selection of equipment, reagents, development of methods and preparation of documentation.

Research methods in pharmacy have their own characteristics depending on the field of activity. For example, in pharmaceutical chemistry, methods for analyzing the composition of drugs, determining their purity and stability are widely used. In pharmacology, the main attention is paid to the study of the effect of drugs on the body, their effectiveness and safety. In drug technology means are being investigated processes developments, production and storage of drugs.

Thus, completing an internship allows the applicant to gain a comprehensive understanding of professional activities in the field of pharmacy, to form practical skills skills, necessary for future work, and also to develop scientific thinking. Familiarization with the work of the department, choosing a research topic, setting goals and objectives, as well as studying research methods are important components of this process that contribute to the training of a highly qualified specialist.

2. Familiarization with the workplace, establishing communication with the employees of the department (division) who organize scientific activities or directly work on the scientific topic chosen by the applicant.

Familiarization with the workplace is one of the first and extremely important stages of a student's internship. It involves not only physical familiarization with working conditions, but also a deeper understanding of the organization of the work process, the functional responsibilities of employees and the specifics of the unit's activities. It is at this stage that the initial idea of the professional environment is formed, which subsequently contributes to the effective adaptation of the student to the real conditions of future work.

During the introduction to the workplace, the student becomes familiar with the material and technical base of the department or enterprise, including the laboratory. equipment, devices, software software, and also regulatory documentation that regulates scientific activity. An important component is compliance rules techniques security, sanitary and hygienic norms and internal regulations of the institution. This not only allows to ensure safe working conditions, but also forms a responsible attitude towards professional activities. An equally important aspect is familiarization with the structure of the department and the functions of its employees. The applicant learns about the distribution of responsibilities between employees, their role in conducting scientific research and organizing the educational process. This helps to understand how work is coordinated, how interaction occurs between different specialists, and how efficiency is achieved in performing the assigned tasks.

Of particular importance is the establishment of communication with the staff of the department or unit. The success of the internship largely depends on the level of communication, since it is through communication that the applicant receives the

necessary knowledge, consultations and practical skills. It is important to show initiative, openness to dialogue, respect for colleagues and readiness for cooperation. Effective communication contributes faster assimilation new information and the formation of professional competencies.

In the process of interacting with employees, the applicant has the opportunity to get acquainted with their experience, approaches to solving scientific problems, as well as receive recommendations on organizing their own research activities. Employees who are directly involved in the scientific topic chosen by the student can provide valuable advice on choosing research methods, sources of information, and also help in the formation of scientific thinking.

Communication also includes participation in working meetings, discussions, scientific seminars or consultations. This allows the applicant to better understand current trends in the development of science, current problems in the field and ways to solve them. In addition, participation in such events contributes to the development of public speaking skills, argumentation of one's own opinion and critical analysis of information.

An important component is the observance of professional ethics during communication. This includes correctness in statements, responsibility for carrying out instructions, compliance with subordination and confidentiality of information. Such qualities there are integral part professional cultures future specialist.

In the process of establishing communication, the applicant also learns to work in a team. Many scientific studies in pharmacy are performed collectively, which requires coordination of actions, mutual understanding, and shared responsibility for the result. Work in team contributes exchange knowledge, increase research efficiency and achieving better results.

Such in a way, acquaintance with workplace and set-up communications with employees are important components of the internship. They ensure not only the applicant's adaptation to the professional environment, but also contribute to the formation of key competencies necessary for future activities. Thanks to this, the student receives valuable practical experience, which will become the basis for further professional development.

3. Familiarization of the applicant with the methods, research methods, list of necessary reagents, equipment and possibilities of their application in their future work. Drawing up a plan for conducting experimental work.

Acquaintance applicant with methods and methods research there are An important stage of practical training in the field of pharmacy, since it forms the basis for further scientific and professional activity. During the internship, the student gets the opportunity to get acquainted with modern approaches to conducting research, study the principles of their organization, and also acquire practical skills in working with various methods of analysis.

First of all, the applicant becomes familiar with the basic techniques used in the relevant field of pharmacy.

These methods include physicochemical, analytical, biological, microbiological and pharmacological research methods. Each of them has its own characteristics, advantages and limitations, which determines the scope of their application. For example, physicochemical methods are used to determine the composition and properties of drugs, while biological and pharmacological methods allow you to assess their effect on living organisms.

Special research methods in the organizational and managerial direction include the following:

- expert assessment method
- makes it possible to assess the level of availability of medicines for the population; determine the effectiveness of the organization of pharmaceutical support; identify the main factors affecting the quality of pharmaceutical care; substantiate areas for improvement activities pharmacy institutions; to carry out prognostication development of the pharmaceutical market, to diagnose the levels of marketing management of the pharmaceutical enterprises under study;
- methods of comparison and economic analysis - used to study the marketing activities of enterprises;
- methods of economic and mathematical modeling - to optimize the structure of marketing channels.

Familiarization with the methods involves studying their theoretical foundations, principles of operation, as well as practical aspects of application. The applicant must understand how a particular analysis is carried out, what stages it includes, what conditions must be observed to obtain reliable results. Particular attention is paid to the accuracy, reproducibility and reliability of the methods, since these characteristics are crucial for scientific research.

It is equally important to familiarize yourself with the list of necessary reagents used. under time carrying out research. Reagents play back key role in ensuring the correctness and accuracy of experiments, so the applicant must know their properties, storage conditions, rules of use and possible risks. Importantly also understand, as choose reagents depending from research objectives and specifics of the methodology.

During the internship, the applicant becomes familiar with the classification of reagents, their purity, concentration, and quality standards. Special attention is paid to working with hazardous substances, compliance with safety regulations, and the use of personal protective equipment. This allows not only to ensure safe working conditions, but also to prevent errors that may affect the results of the study.

An important component is also familiarization with laboratory equipment used in pharmaceutical research. Such equipment includes analytical balances, spectrophotometers, chromatographs, microscopes, thermostats, centrifuges, and other devices. Each of them has its own purpose and is used to perform certain types of analysis.

The applicant must learn to work with this equipment, understand the principles of its functioning, the rules of operation and maintenance. This includes preparing the devices for operation, calibration, setting parameters, as well as interpreting the results obtained. Practical skills in working with equipment are extremely important for a future specialist, as they ensure the efficiency and quality of performing professional duties.

Sources of information for conducting an experimental study of organizational and managerial direction are data from statistical, operational and financial reporting, as well as plans and reports on the effectiveness of individual areas of activity of a pharmaceutical enterprise (company). Accounting materials are of great importance; internal documentation of the enterprise, reflecting the implementation of business transactions; contracts for the supply of material resources and the sale of products; results of consumer surveys; observations at points of sale, etc.

The specified sources of information do not belong to commercial secrets provided they are used in an anonymized form and may be used by higher education students for educational and research purposes in accordance with the requirements of current legislation and the principles of academic integrity.

Familiarization with the possibilities of using methods, reagents, equipment and business documentation of a pharmaceutical enterprise (company) in future professional activities contributes formation in holistic seekers idea about chosen one specialty. It allows realize the practical significance of theoretical knowledge, identify the most in-demand professional skills, and outline promising areas for further professional development.

The next important step is to draw up a plan for conducting the experimental work. Planning research there are key factor his success, because allows systematize process, to determine sequence

actions and to avoid errors. Getter should to learn right formulate the purpose of the research, define the object and subject, and set specific tasks.

Plan experimental works usually includes sprat main stages. The first is the preparatory stage, which involves the analysis of literary sources, the choice of methods, the selection of reagents, equipment, as well as the preparation of the necessary documentation. At this stage, it is important to take into account all possible factors that may affect the results of the study.

The second stage is the direct conduct of the experiment. It includes the implementation of planned actions in accordance with the selected methodology, compliance with the established conditions and recording the results obtained. It is important to ensure the accuracy of measurements, compliance with the sequence of operations and control over all process parameters.

The third stage is the processing and analysis of the obtained data. The applicant must learn to use statistical methods, assess the reliability of the results, identify patterns and draw reasonable conclusions. This is an important component of scientific activity, as it allows you to transform the obtained data into useful information.

Final stage there are design results research. It includes preparing reports, writing scientific papers, designing tables, graphs, and other materials. It is important to adhere to established design requirements and ensure the logical and consistent presentation of the material.

Drafting plan experimental works also provides taking into account possible risks and limitations. The applicant must assess available resources, identify possible difficulties and develop ways to overcome them. This helps to increase the efficiency of the research and reduce the likelihood of errors.

In addition, research planning helps develop important skills such as organization, responsibility, analytical thinking, and the ability to work independently. These qualities are essential for a successful career in the field of pharmacy.

Thus, familiarity with the methodologies, research methods, reagents and equipment, documentation of the pharmaceutical enterprise (company), as well as drawing up a plan for experimental work are important components of the applicant's practical training. They ensure the formation of the necessary knowledge and skills, contribute development professional competencies and preparation for independent scientific activity. Thanks to this, the student gets the opportunity not only to master theoretical material, but also to apply it in practice, which is the key to a successful career in the pharmaceutical industry.

4. Drawing up an individual plan for the applicant's pre-graduate internship, indicating content tasks and schedule implementation research. The research schedule determines the specific deadlines for the work.

Drawing up an individual plan for a student's pre-graduate practice is one of the key stages in organizing his practical training. It is this document that determines the content of the student's activities during the practice, the structure of the tasks, as well as the time frame for their implementation. The individual plan acts as a kind of "road map" that ensures consistency, systematicity and efficiency of the research work.

Pre-diploma internship aims to consolidate theoretical knowledge gained during the study process, as well as to develop practical skills necessary for future professional activities. In this context, an individual plan plays an important role, as it allows you to clearly define the scope and content works, which has perform getter, and also provides CONTROL by their execution.

The process of drawing up an individual plan begins with determining the overall goal of the pre-diploma internship. The goal should correspond to the topic of the diploma thesis. work, be specific, clearly formulated and directed to achieve a certain result. It reflects the main direction of the applicant's activity during the internship and determines the logic of performing all subsequent tasks.

After defining the goal, the main tasks of the practice are formulated. Tasks must be specific, measurable and interconnected. They detail the goal and define the sequence of actions that must be performed to achieve it. For example, tasks may include analyzing scientific literature, selecting research methods, conducting experiments, processing results, and preparing reporting documentation.

The next stage is to determine the content of the tasks. The content of the tasks should reflect the specific activities that the applicant will perform during the internship. This may include familiarization with the work of the unit, participation in scientific research, performance of laboratory tests, preparation of reports, participation in seminars. etc. Importantly, that content tasks answered specialties the applicant and the topic of his research.

When drawing up an individual plan, special attention is paid to the research schedule. The schedule is an integral part of the plan and determines the specific deadlines for completing each task. It allows for a rational distribution of time, to avoid overload and to provide timely implementation of all stages of work. The schedule is usually drawn up in the form of a table, which indicates the names of tasks, deadlines for their completion, and responsible persons.

The research schedule should be realistic and take into account the complexity of the tasks, available resources, and possible risks. It is important to provide a reserve

time to perform unforeseen work or eliminate possible errors. In addition, the schedule should be flexible so that it can be adjusted if necessary without compromising the overall result.

All tasks and deadlines for their completion must be reflected in writing. document "Task on undergraduate practice." This document is official and approved by the internship supervisor. It contains basic information about the applicant, the topic of their research, the goal and objectives of the internship, as well as the schedule of work.

The individual plan is drawn up in close cooperation between the applicant and the internship supervisor. The supervisor provides methodological recommendations, helps to formulate the goal and objectives, determine the optimal research methods and draw up a realistic schedule for the work. Such cooperation helps to improve the quality of planning and the effectiveness of the internship.

An important component of an individual plan is also the definition of expected results. Getter should clearly understand, which results he should receive at the end of the internship, what skills to acquire and what knowledge to learn. This allows to evaluate efficiency completed works and to determine level achieving the set goal.

In the process of implementing the individual plan, the applicant must regularly analyze his/her activities, evaluate the results achieved and, if necessary, make adjustments. adjustments. This contributes to the development self-control, responsibility , and organizational skills, which are important for a future specialist.

Particular attention should be paid to the documentation of individual plan. He should be composite in accordance to established requirements, contain all the necessary details, be clear and understandable. It is important to adhere to a single design style, use the correct terminology and avoid inaccuracies.

In addition, an individual plan may include additional elements such as a calendar, a list of references, a description of research methods, etc. This allows more in detail to display content works and to provide its Systematicity. In modern conditions, it is also important to use digital tools for planning and monitoring task performance. These can be electronic tables, specialized programs or online services, which allow effectively organize work, to track progress and save necessary information.

Such in a way, drafting individual plan undergraduate Internship is a complex and responsible process that requires a careful approach and consideration of many factors. It ensures a clear organization of the applicant's activities, contributes to the effective performance of tasks and achievement of the set goal.

As a result of a properly compiled individual plan, the applicant receives: possibility systematically and successively perform yours work, to use effectively time and resource, and also reach high results in scientific activity. It, in yours queue, contributes formation professional competencies and preparation for independent work in the field of pharmacy.

Therefore, an individual pre-graduate internship plan is an important tool for

organizing the educational process, which ensures the integration of theoretical knowledge and practical skills, contributes to the development of scientific thinking and the training of a highly qualified specialist.

TOPIC 2. WORK WITH SCIENTIFIC LITERARY SOURCES.

1. The applicant's acquaintance with primary sources, monographs, abstracts on the topic of the research that are available at the department, as well as with reviews that have been made on this topic by previous researchers, consultation with the scientific supervisor.

Acquaintance applicant with primary sources, monographs, abstracts and other scientific materials on the topic of research is one of the most important stages of preparation for carrying out scientific work. It is this stage that lays the foundation for the formation of a scientific worldview, the development of analytical thinking and the ability to conduct independent research. Working with scientific sources allows the applicant not only to familiarize himself with the results already achieved in certain industries, but and determine current issues that require further study.

First by all, getter getting acquainted with primary sources, which there are basis any scientific research. These include original scientific articles, results of experimental studies published in professional publications, as well as dissertations and their abstracts. These sources contain primary information about the conducted research, its methodology, obtained results and conclusions. Working with primary sources allows the applicant to obtain reliable information directly from the authors of the research, which is important for forming an objective idea of the state of the problem.

A special place among scientific sources is occupied by monographs, which are thorough scientific works devoted to a detailed study of a certain topic. Monographs, as a rule, summarize a large amount of information, contain an analysis different approaches to solution scientific problems and offer Author's concepts. Familiarization with such works allows the applicant to gain a deeper understanding of the theoretical foundations of the research, as well as to become familiar with modern scientific trends.

No less important are dissertation abstracts, which contain a concise summary basic provisions dissertation research. They allow quickly to familiarize oneself with the research topic, its purpose, objectives, methods, and main results. Analysis of abstracts allows the applicant to determine which issues have already been researched and which remain insufficiently studied.

When working with scientific sources, the applicant also becomes familiar with literature reviews that have been prepared by previous researchers. Such reviews are an important source of information, as they systematize existing knowledge, summarize the results of various studies, and identify the main directions of scientific development in a particular field. Analyzing reviews allows the applicant to more

quickly navigate a large amount of information and identify key aspects of the problem under study.

Another important stage is consulting with the academic supervisor. The supervisor helps the applicant navigate the selection of sources, recommends the most relevant and authoritative publications, and also provides advice on methodology. works with literature. Except that, he helps to formulate main areas of research, determine the goal and objectives, and avoid common mistakes.

In progress analysis scientific sources the applicant is studying critically evaluate information, compare different approaches, identify contradictions and make reasoned conclusions. It there are important component scientific activities, because it allows not only to assimilate existing knowledge, but also to create new ones.

Special attention getter devotes definition research, which aroused his greatest interest. These may be works that offer new approaches to solution problems, contain interesting experimental results or open new directions of research. Analysis of such works allows the applicant to form his own vision of the problem and determine the prospects for its further study.

At the same time, the applicant should pay attention to studies that, in his opinion, are not sufficiently complete or have certain limitations. These may be works with a limited sample, insufficiently substantiated conclusions, or those that What not take into account certain factors. Detection such disadvantages there are an important step in forming one's own scientific position and determining directions for further research.

Based on the analysis, the applicant can propose ideas for continuing or improving existing research. This may include expanding the sample, using new research methods, or refining hypotheses. or carrying out additional experiments. Such approach contributes development of scientific thinking and formation of the ability to creative activity.

An important result of working with scientific sources is the formation of one's own knowledge base, which will be used in further research activities. Getter systematizes received information, highlights key concepts, forms a bibliographic list and prepares materials for writing a scientific paper.

In addition, working with literature helps develop academic writing skills, correct citation and design sources. It there are important aspect of scientific activity, as it ensures compliance with the principles of academic integrity.

In the process of familiarizing oneself with scientific sources, the applicant also learns to work with various information resources, such as libraries, electronic databases, scientific journals, and Internet resources. This allows one to obtain up-to-date information and stay abreast of the latest developments in the field.

Of particular importance is the systematic work with literature. The applicant must regular update your knowledge, follow new ones publications and analyze them. This allows maintaining a high level of awareness and ensures the relevance of the research.

Thus, the applicant's familiarization with primary sources, monographs, abstracts, and other scientific materials is an important stage in preparation for scientific activity. It ensures the formation of necessary knowledge and skills, promotes the development of critical thinking, and allows identifying promising areas of research.

As a result, the applicant gets the opportunity not only to familiarize himself with existing scientific achievements, but also to form his own vision of the problem, determine its relevance and propose ways to solve it. This is important step by step on way to becoming as independent scientist and specialist in the field of pharmacy.

Therefore, the analysis of scientific sources, consultation with the scientific supervisor and identification of promising research directions are integral components of the applicant's preparation for carrying out scientific work. They ensure a high level preparation, contribute development professional competencies and the formation of the scientific potential of the future specialist.

2. The applicant's independent search for literary sources on the selected topic, using the information resources of the scientific library of Odesa National Medical University, library funds of other scientific institutions, modern databases for information search: electronic resources Elsevier, Sciencedirect, Scopus, Web of Science, PubMed, Cochrane Library, Embase and the SciFinder search database.

Carrying out an independent search for literary sources is an integral part of the scientific and research activities of a higher education student. In modern conditions of the development of science and information technologies, this process is significantly simplified. thanks to use electronic libraries, international scientometric databases and specialized information search platforms. At the same time , the effectiveness of such a search largely depends on the level of informational cultures researcher, skill right formulate requests, critically evaluate sources and systematize received information.

The first stage of independent literature search is a clear definition of the research topic. The relevance of the sources found depends on how correctly the topic is formulated. The topic should be specific, scientifically sound and correspond to the current state of development of the relevant field of knowledge. At this stage, the applicant forms a list of keywords and concepts that will be used to search for information. It is advisable to take into account both Ukrainian, Yes and English-speaking deadlines, because significant part modern scientific publications are presented in English.

Next step by step there are using resources scientific libraries Odessa National Medical University. The library acts as an important information center, providing access to printed and electronic sources. Its collections include textbooks, monographs, dissertations, periodicals, and also electronic catalogs, which allow quickly find the necessary literature. Working with the library involves the use of

alphabetical, systematic and electronic catalogs, which allows you to search by author, title, subject or keywords.

In addition, library collections of other scientific institutions play an important role. Thanks to interlibrary loan subscription getter maybe get access to rare or highly specialized sources that are not available in the holdings of one's own institution. This is especially relevant for interdisciplinary research, where it is necessary to involve literature from different fields of science.

An essential element of modern information search is the use of international electronic databases. One of the most famous is the ScienceDirect database, which belongs to the Elsevier publishing house and provides access to millions of scientific publications in various fields of knowledge. This platform contains full-text articles, books and scientific reviews covering natural, technical, medical, social and human sciences. Using ScienceDirect allows the researcher to obtain up-to-date information directly from primary sources, which is extremely important for writing scientific papers.

Another important database is Scopus, an abstracting and bibliographic platform that contains information on millions of scientific publications, including articles, conference proceedings, books, and patents. It allows for citation analysis, tracking scientific trends, and assessing the impact of individual studies.

Scopus there are one from key tools for carrying out scientometric analysis and preparation of systematic literature reviews. Along with Scopus, the Web of Science database is widely used, which is one of the oldest and most authoritative scientometric platforms. It provides access to high-quality scientific journals and allows you to analyze citations, determine the Hirsch index and other indicators of scientific activity. Web of Science is distinguished by high requirements for the selection of journals, which guarantees the reliability and authenticity of the information presented.

In modern research practice, leading specialized medical and pharmaceutical resources that provide an evidence base for clinical and economic analyses include:

- PubMed (MEDLINE): a fundamental global database biomedical data, which is a critically important source for finding clinical and pharmaceutical studies. It contains ramified massif publications from pharmacoeconomics, allowing for the analysis of the therapeutic value of drugs based on indexed scientific papers.
- Cochrane Library: A leading resource in evidence-based medicine, specializing in high-quality systematic reviews. The database is indispensable for verifying clinical effectiveness and building an evidence base when assessing the cost-effectiveness and effectiveness of treatment regimens.
- Embase: specialized base data from expanded focus on pharmacology and biomedicine. It acts as a strategic tool for expert search information about medicinal means, providing complex safety monitoring (including pharmacovigilance and risk minimization), and providing relevant data for health technology assessment (HTA).

A special place among specialized resources is occupied by SciFinder, a platform focused mainly on the fields of chemistry, biochemistry, and related sciences. It provides access to information about chemical compounds, reactions,

patents and scientific publications, What does its irreplaceable tool for researchers in relevant fields. SciFinder allows for structured search, which significantly expands the possibilities of analyzing scientific information.

Effective searching in these databases involves the use of special strategies. In particular, Boolean operators (AND, OR, NOT) are used, which allow you to refine your queries and obtain more relevant results. Filters by year of publication, document type, industry knowledge, in the language and others parameters. Important The skill is the ability to work with thesauruses and controlled dictionaries, which help find synonyms and related terms.

After receiving the search results, it is necessary to critically analyze them. Not all sources found are equally valuable, so they should be evaluated according to the following criteria, as topicality, scientific novelty, authority author or journal, citation level, presence of peer review. Particular attention should be paid to sources published in journals included in international scientometric databases, as they undergo strict selection and peer review.

Separate direction there are search patent information, which has big importance for applied research. Patents contain information about new technical solutions, which allows you to avoid duplication of research and determine the level of novelty of your own work. Databases such as Scopus also contain information about patents, which expands the possibilities of the researcher.

Important aspect there are organization and systematization of the found information. For this are used special programs for management bibliography, such as Mendeley or EndNote. They allow you to store sources, create bibliographic lists, and automatically format references according to the requirements of different citation styles.

No less important is the observance of the principles of academic integrity. When using literary sources, it is necessary to correctly cite references, avoid plagiarism, and adhere to ethical standards of scientific activity. This contributes to the formation of trust in the results of the research and increases its scientific value.

Thus, independent search for literary sources is a complex but extremely important process that requires knowledge, skills and a responsible attitude from the seeker. The use of resources of scientific libraries, international databases and modern information technologies allows to provide high level scientific research and contributes integration of domestic science into the global scientific space.

3. The analysis of literary sources is completed by writing a review justifying the goals and objectives of the scientific research.

Analysis of literary sources is the final stage of the applicant's information-search activity and logically progresses to writing a literature review, which performs important component scientific research. Exactly At this stage, the collected information is summarized, systematized, and critically interpreted, which allows not only to demonstrate the researcher's level of awareness in the chosen topic, but and justify topicality, novelty, the goal and objectives of future research.

Review literature – it not simple list sources or their short retelling, but analytical work, which involves an in-depth study of scientific works, a comparison of different approaches, identification of contradictions, gaps and trends in the development of a certain scientific problem. Its main goal is to form a holistic picture of the state of the researched issue at the current stage of scientific development.

The initial stage of writing a review is to structure the collected material. The applicant must group the sources according to certain criteria: thematic areas, chronology, methodological approaches or scientific schools. This approach allows you to logically build a presentation of the material and to provide sequence analysis. For example, can first to consider classic approaches to problems, further - modern research, and then – latest trends and development prospects.

Important aspect there are critical analysis sources. It means, What The researcher must not only present the content of scientific works, but also evaluate their significance, reliability, methodological soundness, and practical value. Particular attention should be paid to trace to devote comparison results different authors, detection common features and differences in their approaches. It allows to determine, which aspects which problems have already been sufficiently researched, and which remain insufficiently studied.

In the process of analyzing the literature, the applicant gradually forms his own vision of the problem. This is an important step towards substantiating the scientific novelty of the research. The identification of gaps in scientific knowledge, contradictory results, or insufficiently developed aspects creates a basis for formulating the goal and objectives of the research. Thus, the literature review performs not only an informational, but also a methodological function.

After conducting a thorough analysis of the sources, the applicant proceeds to justify the relevance of the research topic. Relevance is determined by the significance of the problem for science and practice, its compliance with current trends in the field, as well as the presence of unresolved issues. In this context, it is important to show why the chosen topic requires further research and what benefits the results obtained can bring.

Next logical stage there are formulation goals research. Goal – this is generalized terminal result, whose seeks achieve researcher. She should be clear, specific and answer discovered in process analysis literature problems. Formulation goals has to reflect basic direction research and be a logical extension of the literature review.

Along with the goal, research tasks are defined, which specify the ways to achieve it. Tasks are usually formulated in the form of sequential steps that must be performed to implement the goal. They may include theoretical analysis of the problem, development of research methodology, conducting an experiment, analysis of the results obtained, etc. It is important that the tasks are logically interconnected and correspond to the structure of the future study.

The literature review should also include a justification for the chosen research

methods. By analyzing the work of other authors, the applicant can determine which methods are most effective for solving the tasks set, as well as identify their advantages and disadvantages. It allows to choose optimal methodology and improve the scientific validity of the research.

An important requirement for a literature review is the logicality and consistency of the presentation. Text has be structured, with clear division on divisions, each of whose dedicated separate aspect problems. Presentation material should to be argumentative, from using links on scientific sources. At this trace avoid excessive citation and strive to generalization information in your own words.

No less important is the observance of the academic style of presentation. The literature review should be written in scientific language, using appropriate terminology, without emotional assessments and subjective judgments. At the same time, it is allowed to express the researcher's own position, but it must be well-reasoned and based on the analysis of scientific sources.

Separately attention trace to devote design links and list sources used. This is an important component of academic integrity and helps avoid plagiarism. All sources used should be properly documented according to established standards.

Thus, writing a literature review is the final and at the same time key stage of analyzing scientific sources. It allows you to systematize the knowledge gained, identify current problems, formulate the goal and objectives of the study, as well as substantiate its scientific novelty and practical significance. A qualitatively completed literature review is the key to successful scientific research and an important indicator of the applicant's level of preparation.

TOPIC 3. IMPLEMENTATION EXPERIMENTAL PARTS OF THE WORK AND PROCESSING OF RESULTS.

1. Completion of the planned part of the research by a higher education student.

The implementation of the planned part of the research by a higher education student is one of the key stages of scientific research activity, which directly determines the quality and reliability of the results obtained. This stage involves the practical implementation of the previously formulated goal, objectives and methodological approaches that were substantiated in the literature review. It is here that theoretical developments are transformed into plane practical research, which requires the applicant to have a high level of organization, responsibility, analytical thinking, and mastery of appropriate methods of scientific knowledge.

The initial stage of conducting a study is a clear planning of the work. Even if the general plan was formed earlier, at this stage it is refined with taking into account specific conditions carrying out research. The applicant determines the sequence of tasks, the deadlines for their implementation, the necessary resources and tools. It is important to draw up a detailed work plan or schedule that allows you to monitor the progress of the research and make timely adjustments in case of difficulties.

The next step is to prepare the research materials. This may include selecting the necessary equipment, software, reagents, questionnaires or others tools collection data. IN case empirical

research, it is also important to determine the sample - the set of objects or respondents on which the research will be conducted. The sample must be representative, that is, one that adequately reflects the general population, and meet the purpose of the research.

Particular attention should be paid to the selection and application of research methods. The methods must correspond to the tasks set and ensure the receipt of reliable and objective results. Depending on the nature of the research, theoretical (analysis, synthesis, generalization, modeling) and empirical methods (observation, experiment, survey, questionnaire, testing, etc.) can be used. In many cases, it is advisable there are combination quantitative and quality methods, What allows get a more complete picture of the phenomenon under study.

Direct research involves collecting primary data. This process should be carried out in accordance with a pre-developed methodology that ensures standardization of conditions and minimizes the influence of extraneous factors. For example, when conducting a survey, it is important to observe the same conditions for all respondents, avoid leading questions and ensure the anonymity of responses. In the case of experimental research, it is necessary to control variables that may affect the results and ensure the reproducibility of the experiment.

After data collection, they are processed and analyzed. At this stage, the applicant applies methods statistical processing, mathematical modeling or qualitative analysis depending on the type of data obtained. It is important to choose the right analysis methods, as the accuracy of the interpretation of the results depends on this. For example, for quantitative data can to be used averages, variance, correlation analysis, regression models, etc. For qualitative data – methods of content analysis, classification or interpretation.

Received results necessary systematize and to present in convenient for analysis form. It can be tables, graphs, charts or others visual aids, What allow to visually display main trends and Data visualization greatly facilitates their perception and contributes to a deeper understanding of the research results.

An important stage is the interpretation of the results obtained. The applicant must not only describe received data, but and explain their value, establish cause-and-effect relationships, compare results with data from other studies. This allows you to determine whether the hypotheses put forward are confirmed, as well as assess the degree to which the goal has been achieved.

Various difficulties may arise during the research process: insufficient data, technical problems, time or resource constraints. In such cases importantly be able promptly respond on changes, to contribute adjustments to

research plan and look for alternative ways to solve problems. Flexibility and adaptability are important qualities of a researcher.

No less important is the observance of ethical principles when conducting research. This concerns, in particular, ensuring data confidentiality, voluntary participation of respondents, and preventing falsification of results. Adherence to ethical norms increases trust in research results and is consistent with the principles of academic integrity.

IN process implementation research getter also leads documentation, which reflects the progress of the work, the methods used, the results obtained and the conclusions drawn. These can be work records, observation logs, electronic databases, etc. Such documentation is important for further analysis and presentation of the research results.

The final stage of the planned part of the research is the formulation of preliminary conclusions. They should correspond to the tasks set and be based on the data obtained. Preliminary conclusions can be clarified or supplemented on the following stages research, but already on this At this stage, they allow you to assess the effectiveness of the work carried out.

Thus, the implementation of the planned part of the research is a complex and multi-component process that requires the applicant to have a systematic approach, deep knowledge and practical skills. Successful realization this stage ensures obtaining reliable results that can be used for the further development of science and practice, and also serves as the basis for writing a qualification paper or scientific publication.

2. Independent processing of the obtained experimental results, using modern computer programs for constructing graphic images, tables (Excel), for conducting statistical analysis, constructing chemical formulas (ChemDraw and ChemScetch), for surveys and collection data (Google Forms), having done relevant conclusions about the effectiveness of your research.

Independent processing of the obtained experimental results is one of the most important stages of the scientific research activity of a higher education student, since it is at this stage that raw empirical data are transformed into scientifically sound conclusions. The use of modern computer programs significantly increases the accuracy, clarity and efficiency of processing the results, and also contributes to their correct interpretation. The use of such tools as Microsoft Excel, methods of analysis of variance (ANOVA), as well as specialized programs for chemical modeling - ChemDraw and ACD / ChemSketch - allows you to ensure a high level of reliability of the obtained results and their compliance with modern scientific standards.

Using digital tools like Google Forms or similar services ensures automatic creation of charts and graphs immediately after receiving answers, possibility unloading results in format Excel for

for further statistical analysis and to substantiate the conclusions. The applicant can distribute the survey according to the research topic via social networks and messengers, and also get data from respondents with others bridge or regions, which expands the geography and representativeness of the study.

The initial stage of processing the results is to organize the collected experimental data. The data obtained during the study can be presented in the form of numerical indicators, text descriptions, measurement results or observations. It is important to systematize this data in such a way that they are convenient for further analysis. Usually, spreadsheets are created for this purpose, in which each parameter has a clearly defined place, and the values are ordered according to the logic of the study.

At this stage, Microsoft Excel is actively used, which is a universal tool for working with tabular data. With Excel, the applicant can create structured tables, perform primary calculations, such as calculating average values, standard deviation, variance, coefficients of variation, etc. This allows you to get a general idea of the data distribution and identify possible anomalies or measurement errors.

The next step is to visualize the data. Graphing and charts are an important tool for analyzing results, as they allow you to visually present relationships between variables, identify trends and patterns. Excel offers various types of graphs: line, column, pie, scatter, etc. Choose type graphics depends from character data and goals analysis. For example, for display speakers changes indicators in time appropriate use line graphs, while for comparing quantitative indicators – bar charts.

After the initial processing and visualization of the data, a more in-depth statistical analysis is performed. One of the most common methods is analysis of variance (ANOVA), which allows you to determine whether there are statistically significant differences between the mean values of several groups. This method is especially relevant in cases where the study involves comparing the impact of different factors or conditions on the indicator under study.

Application ANOVA provides verification hypotheses about equality average values in different groups. If the results of the analysis show statistically significant differences, this indicates that the factor under study has an effect on the result. It is also important to consider the level of significance (p-value), which determines the probability of the results obtained by chance. Typically, a significance level of 0.05 is used, which means a 5% probability of error.

To perform ANOVA in Excel, you can use built-in data analysis tools or additional statistical packages. The candidate must be able to correctly interpret the results of the analysis, in particular the value of the F-test. and p-value, and also do justified conclusions of confirmation or rejection of the hypothesis.

Separate direction processing results there are work with chemical structures and formulas. In research related to chemistry, pharmacy or biochemistry, it is important not only analyze numeric data, but and right represent chemical compounds. Specialized programs such as ChemDraw and ACD/ChemSketch are used for this.

ChemDraw there are powerful tool for creating structural formulas, reaction schemes, and mechanisms of interaction of substances. It allows you to build accurate and standardized images of molecules that meet international requirements. In addition, the program can automatically determine the names of compounds, calculate molecular weight, and other characteristics.

ACD/ChemSketch has similar functionality and is widely used in education and research. It allows you to create both 2D and 3D models. models molecules, What there are important for understanding spatial structures of substances. The use of such programs ensures high quality graphical representation of results and contributes to their better perception.

After all stages of data processing, the applicant proceeds to the interpretation of the results. This is one of the most important stages, since it is here that the scientific explanation of the obtained data is formed. The applicant must analyze whether the results meet expectations, whether they confirm the hypotheses put forward, and what new patterns have been identified.

Interpretation of results should be based not only on the data obtained, but also on the analysis of literary sources. Comparing one's own results with the data of other studies allows one to assess their novelty and significance. If the results differ from those already known, one should try to explain the reasons for such differences.

The final stage is the formulation of conclusions regarding the effectiveness of the research. The conclusions should be clear, logical, and consistent with the objectives. They should reflect the main results of the research, their scientific novelty, and practical significance. It is also important to note the limitations of the research and possible directions for further research.

Except that, getter should to evaluate efficiency used methods and instruments. This includes an analysis of the accuracy of measurements, the reliability of the data obtained, and the adequacy of statistical methods. Such an assessment allows for the improvement of the research methodology and the quality of future work.

Thus, independent processing of experimental results using modern computer programs is a complex, multi-stage process that requires a high level of professional training from the applicant. Using Microsoft Excel for data processing and visualization, applying analysis of variance for statistical evaluation of results, as well as using ChemDraw and ChemSketch for construction chemical structures allows to provide scientific validity and certainty research. Received

The results, properly analyzed and interpreted, become the basis for formulating conclusions and further developing scientific knowledge.

TOPIC 4. PREPARATION REPORT DOCUMENTATION AND PRESENTATIONS RESULTS UNDERGRADUATE PRACTICES.

1. Preliminary familiarization of the applicant with the form and types of reporting documentation on pre-diploma practice (report, diary) using the examples of reports and samples available at the department.

Previous acquaintance applicant higher education with form and species reporting documentation on pre-diploma practice is an important preparatory stage that significantly affects the success of the practice and the quality of its final design. This stage allows you to form a clear idea of the requirements for the structure, content and design of documents, and also helps to avoid typical errors in the process of their preparation. The main types of reporting documentation include a report on the practice, a practice diary and a presentation of results, each of which performs a separate function, but together they provide a comprehensive reflection of the applicant's activities during the practice.

First of all, the applicant should familiarize himself with the general requirements for completing a report on pre-graduate practice. The report is the main document, which reflects the content of the work performed, the level of acquisition of professional competencies and ability apply theoretical knowledge on practice. Familiarization from samples reports, what are stored on department, allows understand the logic their construction, amount, style I will explain, and also requirements to design text, tables, drawings and list used sources. As rule, report has clearly defined structure, which includes introduction, main part, conclusions and applications.

IN introduction usually is justified topicality practices, are determined its purpose and objectives, and a brief description of the practice base. The main part contains a detailed description of the work performed, an analysis of the activities of the enterprise or institution, as well as the results of one's own research or observations. The conclusions summarize the results obtained, reflect the level of achievement of the set tasks and contain recommendations for improving the activities. Appendices can comprise tables, graphs, schemes, documents and others materials confirming the work performed.

The next important document is the internship diary. This is an official document that records the daily activities of the applicant during the internship. Familiarization with sample diaries allows you to understand, as right to reflect completed task, which records there are sufficient and informative, as well as how to sign the practice supervisors. The diary performs not only the function of recording the work performed, but also serves as proof of the applicant's active participation in the practice.

Entries in the diary should be regular, clear and meaningful. It is important to avoid general phrases and try to specify the tasks performed, indicate the methods used, the results obtained and your own observations. Familiarization with examples allows you to develop skills in proper diary keeping, which greatly facilitates the preparation of the final report.

Familiarization from samples reporting documentation also helps the applicant to understand the requirements for document formatting in accordance with current standards. This includes text formatting rules (font, spacing, margins), page numbering, design headlines, tables, drawings and links. Compliance These requirements are an important indicator of academic culture and affect the overall assessment of the work.

In addition, the analysis of finished samples allows you to identify typical mistakes that should be avoided. These include insufficient specification of the work performed, lack of logical structure, excessive use of theoretical material without connection with practice, errors in design and lack of conclusions. Awareness of these shortcomings at the initial stage allows you to significantly improve the quality of your own work.

An important aspect is also understanding the criteria for evaluating reporting documentation. Familiarization with examples allows you to see which works receive high marks and how they differ from less successful ones. As a rule, the completeness of the topic disclosure, the logic of the presentation, the validity of the conclusions, the level of independence, as well as the quality of the design are assessed.

Preliminary acquaintance with reporting documentation contributes to the formation of skills in planning one's own work during the internship. The applicant begins to understand what materials need to be collected, what data to record, what to pay special attention to. This allows you to avoid situations when at the end of the internship there is not enough information to prepare a report or there are difficulties with reproducing the work done.

In addition, this stage contributes to the development of analytical thinking. Analyzing other people's work, getter is studying evaluate their quality, determine strong and weaknesses, which further helps to improve one's own skills in writing scientific and practical papers. It also forms a responsible attitude towards completing tasks and an understanding of the importance of each stage of practice.

The psychological aspect is no less important. Familiarization with the samples of the reporting documentation reduces level uncertainties and anxiety, especially for applicants who are undergoing pre-degree practice for the first time. A clear understanding of the requirements and expectations allows you to more confidently approach the implementation of tasks and planning your activities.

Thus, preliminary familiarization with the form and types of reporting documentation there are necessary condition successful passage undergraduate

practices. It provides an understanding of the requirements for the design of results, contributes to the formation of practical skills, increases quality completed works and allows the applicant maximum effectively to present results of yours activities. This stage there are important component preparation to professional activities and formation of a competent specialist.

2. Creating a pre-graduate internship diary, containing a calendar of activities, work notes during the internship, and a description and feedback from the internship supervisor.

The preparation of a diary of pre-diploma practice is an important component of the final reporting documentation of a higher education applicant. This document performs not only the function of recording the work performed, but also serves as confirmation of the applicant's active participation in practical activities, reflects the level of formation of professional competencies and allows the practice supervisor to assess the quality of the student's training. The diary is an official document, ago its design must answer established requirements, be systematic, logical and reliable (Appendix 2).

The structure of a pre-diploma internship diary usually includes several main elements: a title page, a calendar schedule of the internship, daily (or periodic) work notes, and a characteristic-feedback from the internship supervisor. Each of these components has its own purpose and should be designed in accordance with the methodological recommendations of the educational institution.

First element there are title sheet, which contains main information about the applicant, educational institution, specialty, internship topic, basis for passing practices, and also data about leaders practices from departments and from the practice base. Although this element is formal, it should be neatly designed and meet established standards, as it creates the first impression of the work.

One of the key sections of the diary is the internship calendar. It reflects the planning of the applicant's activities throughout the internship period and allows you to structure the implementation of tasks over time. The calendar schedule is usually drawn up in the form of a table, which indicates dates, types of activities, place of work and, if necessary, responsible persons. It is important that the schedule is realistic and corresponds to the actual content of the internship.

When drawing up a calendar, it is necessary to take into account the purpose and objectives of the internship, as well as the specifics of the activities of the institution or enterprise where it takes place. For example, in the first days of the internship, it is advisable to provide for familiarization with the organization of work, regulatory documentation, safety precautions. In the future, the implementation of basic professional tasks, participation in research or production processes, gathering materials for report. Final stage maybe comprise generalization results and preparation reporting documentation.

The next important component of the diary is the work records, which are kept by the applicant throughout the entire period of practice. They are the main part of the document and reflect the daily or periodic activities of the student. Work records must be systematic, meaningful and reliable. They must indicate the date, a brief description of the tasks performed, used methods, received results, and also own observations and conclusions.

It is important that the notes are specific and not limited to general phrases. For example, instead of the wording "familiarization with the work of the department", it is advisable to indicate which processes were studied, which documents were processed, which skills were acquired. This approach allows you to more fully reflect the content of the activity and makes it easier to write a report later.

Work records may also contain elements of analysis of the work performed. The applicant may briefly evaluate the effectiveness of the methods used, note the difficulties encountered, and the ways in which overcoming them. This indicates the student's active position and his ability to think independently.

Another important aspect is the regularity of keeping a diary. Entries should to be carried out daily or through short gaps time, that avoid loss of information and ensure the accuracy of the reflection of events. Filling out the diary "retroactively" is undesirable, as this can lead to inaccuracies and a decrease in the quality of the document.

Work records are usually signed by the practice supervisor from the department, which confirms their certainty. IN some cases provided weekly or periodic approval of records. This allows you to monitor the progress of the practice and make timely adjustments to the applicant's activities.

The final element of the diary is the internship supervisor's characteristic-feedback. This is an official document that evaluates the applicant's performance during the internship. The characteristic contains information about the level of professional preparation applicant, its attitude to work, discipline, initiative, ability to work independently, communication skills and other qualities.

The design of the diary must meet the requirements of academic integrity and the culture of business speech. The text must be literate, without spelling and stylistic errors, and designed in accordance with established standards. It is important to adhere to a single style of presentation, use clear wording, and avoid excessive emotionality.

In addition, the diary should be neat and tidy. If it is kept in paper form, corrections, cross-outs and sloppy design should be avoided. In the case of electronic keeping, it is necessary to adhere to the requirements for text formatting, information structuring and file storage.

Keeping a diary has not only formal but also educational significance. It contributes to the development of planning skills, self-control, analysis of one's own activities, and also forms a responsible attitude towards the performance of professional duties. In the process of keeping a diary, the applicant learns to systematize information, highlight the main points, formulate thoughts and draw conclusions.

Thus, the pre-graduate internship diary is an important document, which reflects all process activities applicant under time practice. Its correct design includes drawing up a calendar schedule, keeping meaningful work records and receiving an objective characteristic from the manager. A qualitatively designed diary is not only the basis for evaluating the practice, but also evidence of the applicant's professional maturity, his responsibility and readiness for future activities.

3. Preparation of a report on pre-graduate internship, taking into account the main components of the pre-graduate internship and in accordance with the tasks set by the internship supervisor.

The preparation of a report on pre-diploma practice is the final and extremely responsible stage of the industrial practice of a higher education applicant. It is the report that serves as the main document that summarizes the results of the work performed, demonstrates the level of professional competencies formed and confirms the applicant's ability to apply theoretical knowledge in practical activities. A qualitatively prepared report is not only the basis for evaluating the practice, but also an important indicator of the professional training of the future specialist.

First of all, it should be noted that the report should be prepared in accordance with the requirements of the higher education institution, the methodological recommendations of the department and the tasks set by the internship supervisor. This applies to both the structure of the document and its content, volume, design of the text, tables, figures and the list of sources used. Compliance with these requirements is a prerequisite for the successful defense of the internship (Appendix 1).

A pre-diploma internship report has a clearly defined structure, which usually includes: a title page, table of contents, introduction, main part, conclusions, list of sources used, and appendices. Each of these elements performs a separate function and should be logically connected to other parts of the document.

Title sheet contains main information about applicant, educational institution, faculty, specialty, topic of practice, basis for its completion, as well as data about leaders practices from departments and from bases practices. He is drawn up in accordance with the established template and is a mandatory element of the report.

After the title page, a table of contents is provided, which reflects the structure of the work and allows you to quickly navigate the document. The table of contents indicates the names of sections and subsections with the corresponding pages.

The introduction justifies the relevance of completing pre-graduate internship, are determined its goal and task, and also short characterized by practice base. The introduction should be concise but meaningful, and create a general idea of the focus of the work.

The main part is the most voluminous and important part of the report. It should reflect all aspects of the applicant's activities during the internship and meet the tasks set by the supervisor. The content of the main part depends on the specifics of the specialty and the practice base, but usually includes several logically related sections.

The first section is often devoted to a general description of the department or institution, where passed practice. IN him are described organizational structure, main areas of activity, functions of departments, regulatory framework governing work. This allows you to understand the context in which the applicant's practical activities were carried out.

Next sections dedicated directly execution tasks practices. Here the applicant describes his/her activities, work performed, methods and tools used. It is important not only to list the tasks performed, but also to analyze them, to show the level of independence, initiative, and ability to solve professional problems.

If the practice is of a research nature, the report should present the results of the research conducted, their processing and analysis. This may include experimental data, statistical calculations, graphs, tables, and diagrams. It is important to properly format these materials, provide explanations for them, and draw appropriate conclusions.

Particular attention should be paid to the analysis of the results obtained. The applicant must to show, as completed task contributed achievement goals practices, what are the results were received, which problems arose and as they were decided. Such analysis demonstrates the ability for critical thinking and a deep understanding of professional activity.

An important element is also the reflection of the individual task, if it was provided for in the internship program. The applicant must describe the process of its implementation, the results obtained and their significance for future professional activities.

The conclusions summarize the results of the internship. They should be clear, logical and correspond to the tasks set in the introduction. The conclusions should reflect what knowledge and skills were acquired, to what extent the goal practices, which professional competence formed. Also appropriate to note offers of improve activities enterprises or practice organization.

The list of sources used is drawn up in accordance with established standards and contains all sources that were referenced in the text. These can be regulatory

documents, scientific articles, textbooks, electronic resources. Compliance with the rules for drawing up the list is an important element of academic integrity.

Appendices include materials that supplement the main text: tables, graphs, diagrams, copies of documents, photographs, etc. They must be numbered and referenced in the text of the report.

Design report must answer requirements to scientific and educational works. This applies to the font, intervals, fields, numbering pages, design of headings, tables and figures. The text should be literate, logical and consistent, without spelling and stylistic errors.

An important aspect is maintaining academic integrity. All borrowings must to be accompanied links on sources, Plagiarism or falsification of data is unacceptable. This is the basis for trust in the results of the work and an indicator of the applicant's professional ethics.

The process of writing a report also contributes to the development of skills in analyzing, summarizing, and systematizing information. The applicant learns to present the material logically, formulate conclusions, argue yours position. It there are important competencies for future professional activities.

In addition, a well-prepared report facilitates the process of defending it. An applicant who is well-versed in the content of his work can confidently answer questions, explain the results in a reasoned manner, and demonstrate the level of his preparation.

Thus, the preparation of a pre-graduate internship report is comprehensive. process, which requires from applicant responsibility, attentiveness and a systematic approach. Compliance with established requirements, complete and high-quality reflection of the work performed, analysis of results and formulation of substantiated conclusions ensure the successful completion of the internship and contribute to the formation of a professionally competent specialist.

4. Preparation and approbation results scientific research the applicant through participation in domestic and international conferences, or publication of scientific articles.

Preparation and testing of the results of the applicant's scientific research is a mandatory component of the educational process in the field of pharmacy and an important element in the formation of professional and scientific competencies of the future specialist. This process involves systematization, generalization and proper design results own research with further their presentation in

scientific environment through participation in domestic and international scientific and practical conferences, as well as publications in professional scientific publications.

A higher education applicant is obliged to ensure a high level of scientific culture when preparing materials submitted for approval. This includes not only the correct reflection of the research results, but also compliance with the logical sequence of presentation, scientific style of speech, terminological accuracy and compliance with the requirements of current regulatory documents and standards for the design of scientific works. All materials must be presented in the state language or a language determined by the requirements of a specific scientific event or publication, in compliance with the norms of academic writing.

Scientific materials, prepared applicant, regardless from forms submission (theses of the report or scientific article) must have a clearly defined structure that ensures the completeness and clarity of the presentation of the research results. It is mandatory to substantiate the relevance of the topic, which involves defining the scientific problem, its significance for modern pharmaceutical science and practice, as well as analyzing the current state of research in the relevant field. The formulation of the research goal must be clear, concise and correspond to the content of the work performed.

The "Materials and Methods" section should contain a detailed description of the research objects, the methods used, equipment, reagents and conditions conducting experiments. Particular attention is paid to the reproducibility of the study, i.e. the possibility of repeating the experiment by other researchers based on the provided data. description. For applicants pharmaceutical profile important there are correct indication of pharmacognostic, pharmacological, biochemical, microbiological or analytical methods used in the study.

The “Research Results” section should contain a summary of the data obtained. in logically orderly form with their scientific justification. The results can be presented in the form of tables, graphs, diagrams or other illustrative materials, which must be clearly formatted and accompanied by explanations. It is unacceptable to provide unsubstantiated or unverified data. In this section, it is also advisable to compare the obtained results with data from other studies, which allows assessing their novelty and practical significance.

The conclusions should reflect the main results of the study and correspond to the stated purpose. They are formulated in concise, in a clear form and should not contain new information that was not presented in the previous sections. The conclusions should emphasize the scientific novelty and practical significance of the results obtained, and, if necessary, outline the prospects for further research.

The list of used literature is a mandatory structural element of a scientific works and should be decorated in accordance to established requirements (national standards or international styles citation). Sources must be current, relevant to the research topic, and reflect the current state of scientific knowledge in the relevant field.

The peculiarities of preparing abstracts for reports are the need for the most concise and at the same time informative presentation of the material. The applicant must highlight the key aspects of the research, focusing on novelty and main results. The volume of abstracts is usually limited by the requirements of the conference, so it is important to ensure clarity and conciseness of the presentation without losing the content.

Preparing scientific articles involves a more thorough approach to presenting the material. The article must not only present the research results, but also conduct their in-depth analysis, substantiate their reliability, reveal their theoretical and practical significance, and also make a comparison with the results of other authors. The article must meet the requirements of a specific scientific journal, including structure, volume, design, and citation style.

Special attention when preparing scientific materials should be paid to compliance with the principles of academic integrity. The applicant is obliged to ensure complete independence in conducting the research and presenting its results. The use of other people's scientific ideas, texts or results without proper reference is unacceptable and is considered a violation of academic ethics. All borrowings must be accompanied by correct bibliographical references.

Falsification or fabrication of research results, as well as any intentional distortion of the obtained data, is strictly prohibited. The applicant bears personal responsibility for the accuracy of the information presented. Particular attention should be paid to the correct registration of co-authorship: the authors should include only those individuals who have made a significant contribution to the research.

Inadmissible there are also duplication publications, that is, presentation some and the same ones results to different scientific publications without relevant message or proper justification. In case of using materials from previous research, the applicant must clearly state this in the text of the work.

Before submitting materials to a conference or scientific publication, the applicant must carefully check the work for compliance with the established requirements for design, structure and volume. It is mandatory to pass a check for the presence of text borrowings using appropriate software tools. It is also advisable to have the work reviewed in advance by a scientific supervisor, who will provide recommendations for its improvement.

Participation in scientific and practical conferences involves not only submitting abstracts, but also the possibility of oral or poster presentation of research results. The applicant must be prepared for scientific discussion, reasoned defense of the obtained results and answers to questions from specialists. This contributes to development critical thinking, communication skills and improving the level of professional training.

Thus, the preparation and testing of scientific research results is a complex and responsible process that requires the applicant to have a high level of organization, scientific competence, and adherence to the principles of academic integrity. Implementation the specified requirements provides proper quality scientific materials, their compliance with international standards and contributes to the integration of the applicant into the modern scientific space.

BRIEFING
OF RULES WORKS UNDER TIME PERFORMANCE OF PRACTICAL ACTIVITIES OF THE PRODUCER

During practical activities, applicants are required to comply with established safety requirements, work organization, and proper professional conduct.

1. When performing practical tasks, it is necessary to maintain cleanliness, order, silence, and accuracy in work.
2. It is forbidden to eat food. and drinks during the performance research, as well as using utensils intended for work other than their functional purpose.
3. It is strictly forbidden to taste any substances or come into direct contact with them unnecessarily.
4. research unattended .
5. Unauthorized handling of substances that may pose a danger is not allowed; all actions must be performed in accordance with established instructions.
6. During work, the applicant is required to use special clothing (gown), and if necessary, personal protective equipment (gloves, safety glasses, etc.).
7. It is necessary to strictly follow the rules for handling flammable, toxic and potentially hazardous substances.
8. The use of equipment and manipulations must be carried out only in accordance to established methods and with compliance with safety precautions.
9. It is prohibited to perform actions that may result in damage to equipment, loss of materials, or the creation of dangerous situations.
10. All substances should be used carefully, using appropriate aids (pipettes, spatulas, forceps, etc.), without direct contact with hands.
11. Mixing or improper storage of substances is not allowed; it is necessary to ensure their proper labeling and tightness.
12. Improper disposal of waste is prohibited; all residual substances must be disposed of in accordance with established requirements.
13. In case of selection excess quantity substances it should be placed in separate clean, labeled dishes for further use or disposal.
14. During work, it is necessary to avoid mixing materials, follow the rules for their identification, and prevent contamination.
15. Any manipulations must be carried out carefully, observing the sequence of actions and precautions.
16. After completion The job seeker is obliged to bring in proper condition of the workplace, clean up used materials, turn off equipment and make sure there are no hazardous factors.
17. It is forbidden to leave a dirty workplace or used materials behind.

18. Not allowed implementation practical activities without proper control or in violation of the established procedure for organizing work.
19. Before completing work, it is necessary to check that all resources and equipment used are turned off.
20. Compliance with these rules is mandatory and is aimed at ensuring safety, work efficiency, and the formation of the applicant's professional responsibility.

The briefing was conducted by_____

Briefing passed_____

Calendar schedule of pre-diploma practice

No	Name works	Weekly internship (terms)		Mark
		Term implementation	Note about implementation	Manager's signature

Head of pre-diploma practice

(signature) (surname) and initials)

Workers records applicant education under time undergraduate practices

Conclusion manager practices about passage applicant pre-diploma practice

Date of the test « _____» _____20 ____year
Grade: on the national scale_____
number of points_____

Head of pre-diploma practice

_____ _____
(signature) (surname) and initials