

**AL-FARABI KAZAKH NATIONAL UNIVERSITY**

**FACULTY OF MEDICINE AND HEALTH CARE**

**Approved at the meeting of  
Scientific and methodological council  
al-Farabi KazNU**

**Minutes № \_\_\_\_\_**

**dated « » 2020**

**Vice Rector on Academic Affairs**

**\_\_\_\_\_ A. Khikmetov**

**THE PROGRAM**

**of the entrance exam for admission to the doctoral studies  
in the specialty 8D101- Public health, scientific and pedagogical direction  
for 2020-2021 academic calendar**

**ALMATY, 2020**

The program of the entrance exam in the specialty 8D101 - Public Health is prepared in accordance with the State Compulsory Education Standard of the Republic of Kazakhstan, Head of the Department of Epidemiology, Biostatistics and Evidence-Based Medicine, PhD Mamyrbekova S.A., Deputy Head of the Department for SIA&IR, PhD Raushanova A.M., Deputy Head of the Department for AAE, Master of Medical Sciences Nurgaliyeva Zh.Zh.

The program was considered at a meeting of the Department of Epidemiology, Biostatistics and Evidence-Based Medicine, Faculty of Medicine and Healthcare, al-Farabi KazNU.

Minutes №27 dated 14 May 2020.

Head of Department, PhD \_\_\_\_\_ Mamyrbekova S.A.

Approved at the meeting of the faculty's Methodical Bureau  
Minutes №10 dated 25 May 2020.

Chairman of Methodical Bureau \_\_\_\_\_ Ualiyeva A.Y.

Approved at the meeting of the Academic Council  
Minutes №10 dated 15 May 2020.

Chairman Academic Council,  
Dean of the Faculty of Medicine and Health care  
Al-Farabi KazNU,  
Dr.Med.Sc, Associate Professor, \_\_\_\_\_ Kalmatayeva Zh.A.

Scientific Secretary: \_\_\_\_\_ Ussatayeva G.M.

## INTRODUCTION

### **1. The purpose and objectives of the entrance exam in the specialty 8DM101 Public Health (scientific and pedagogical direction):**

The purpose of the entrance exam is to check the level of fundamental knowledge applicants in psychology, politics and healthcare management, scientific training, knowledge of the methodology of scientific creativity and modern information technologies, methods for obtaining, processing and storage of scientific information and readiness for research and scientific - pedagogical activity.

#### **Objectives of the entrance exam to assess the level of proficiency in:**

1. The basics of psychology.
2. The terminology of discipline.
3. The basic concepts of public health, its current problems and ways to solve them.
4. The basics of the formation of the policy of protecting the population health of the Republic of Kazakhstan and the health system of Kazakhstan;
5. Methods of scientific research, their application in medicine and public health;
6. The basic concepts of evidence-based medicine and its role in promoting health.

### **2. Enrolling Requirements for Doctoral Programs**

Persons with a master's degree and work experience of at least 1 (one) year or who have completed residency in medical specialties and have passed the preliminary selection procedure in the organization of higher and postgraduate education (in the field of education "Health and social welfare (medicine) are accepted for doctoral program". The previous level of education of persons wishing to enroll the educational programs of doctoral studies: Master in the specialty: 6M110100 – "Medicine", 6M110200 – "Public Health", 6M110300 – "Nursing", 6M110400 – "Pharmacy", 6M110500 – "Medical and preventive care", 6M110600 – "Healthcare Management", 6M050600 – "Economics", 6M050700 – "Management", 6M051300 – " World Economics ", 6M030100 – "Jurisprudence", Residency (all specialties).

A person entering the doctoral PhD:

#### **need to know:**

- fundamental and applied aspects of public health, the main stages of its modern development, the role and place of science of public health in the knowledge system, ways of applying theoretical knowledge to solve applied problems.

#### **be able to do:**

- analyze, systematize and generalize scientific information, formulate the

main hypotheses and conclusions, apply cognition methods and modern information technologies in solving theoretical and applied problems of public health.

**be familiar with:**

terminology of public health disciplines, modern educational information technologies, teaching skills in a specialized specialty in higher and secondary educational institutions, arguments, polemics and beliefs in problems of modern public health.

Admission of persons with no education in related specialties is not provided.

**List of questions for the entrance exam  
8D10101– Public Health**

**Subject: Biostatistics**

Biostatistics in public health. Objects, subject and tasks of biostatistics. The main types of measuring scales used in biomedical research. Quantitative and qualitative characteristics. Reliability and reliability of measurements in biostatistics. Assessment of parameters of populations. Basics of analysis of variance. Analysis of variance, basic concepts and application in public health. Statistical methods in epidemiological analysis. Correlation and regression. Planning and organization of statistical studies. Basic statistical methods. Stages of a biomedical experiment. The choice of statistical data processing method. The use of modern information technology in biostatistics. Statistical packages for the analysis of biomedical data. Classification of statistical packages. Modern requirements for statistical packages running on personal computers.

**Literature:**

1. Жидкова О.И. Медицинская статистика (конспект лекций). – М. «Эксмо», 2007.
2. Савилов Е.Д., Мамонтова Л.М. и др. Применение статистических методов в эпидемиологическом анализе. – М. «МЕД пресс-информ», 2004.
3. Лукьянова Е.А. Медицинская статистика. – М: Изд. РУДН, 2002.
4. Реброва О.Ю. Статистический анализ медицинских данных. Применение пакета прикладных программ STATISTICA. М, Медиасфера, 2002.
5. Жижин К.С. Медицинская статистика. – Высшая школа. Феникс. Ростов-на-Дону, 2007.
6. Ashis Banerjee A. Medical Statistics Made Clear: An Introduction to Basic Concepts, 2003.
7. Сергиенко В.И., Бондарева И.Б. «Математическая статистика в клинических исследованиях». М., «ГЭОТАР - Медиа», 2006.

8. Stanton A. Glantz. Primer of Biostatistics, 7th edition, 2011, 320p.
9. Биостатистика. Планирование, обработка и представление результатов биомедицинских исследований при помощи системы SAS Плавинский С.Л. ИД СПбМАПО, 2005.
10. Aviva Petrie, Caroline Sabin. Medical Statistics at a Glance, 2013, 180 p.
11. Платонов А.Е. Статистический анализ в медицине и биологии. – М.: РАМН, 2000.

### **Subject: «Public Health»**

Theoretical foundations of public health and healthcare as a scientific and educational discipline. Legal and organizational basis of public health. The Constitution of the Republic of Kazakhstan. The Code of the Republic of Kazakhstan “On public health and health care system”. The Principles of public health policy. The structure of healthcare system. Guaranteed volume of free medical care.

Methodology for the study of public health. Quantitative and qualitative assessment of public health. Assessment of the impact of social and economic factors on various indicators of public health. Monitoring public health. Health indicators.

Medical and social aspects of demography. The incidence of the population and methods for its study. The importance of morbidity statistics for a comprehensive assessment of the health status of a population. The concept of socially significant diseases and diseases that pose a danger to others.

Prevention of diseases and the formation of a healthy lifestyle (HLS).

### **Literature**

1. Лисицын Ю.П. Общественное здоровье и здравоохранение. – 2-е изд., перераб. и доп.. – М.: ГЭОТАР-Медиа, 2007. – 512 с.
2. Общественное здоровье и здравоохранение /Под ред. В.А. Миняева, Н.И. Вишнякова. – М.: МЕДпресс-информ, 2003. – 528 с. 3. Юрьев В.К., Куценко Г.И. Общественное здоровье и здравоохранение. - С.-Петербург, 2000.- 914 с.
3. Аканов А.А. Политика охраны здоровья населения в Казахстане: Опыт разработки, реализации национальных программ здравоохранения и перспективы на 2010-2015 годы. – Астана, 2005. – 243 с.
4. Аканов А.А., Куракбаев К.К., Чен А.Н., Ахметов У.И. Организация здравоохранения Казахстана. – Астана-Алматы, 2006. – 231 с.
5. Аканов А.А., Девятко В.Н., Кульжанов М.К. Общественное здравоохранение в Казахстане: концепция, проблемы и перспективы. – Алматы, 2001.– 100 с.

6. Медик В.А. Заболеваемость населения: история, современное состояние и методология изучения. – М.: Медицина, 2003. – 512 с.
7. Медик В.А. Руководство по статистике здоровья и здравоохранения. – М.: Медицина, 2006. – 528 с.
8. Медик В.А., Юрьев В.К. Курс лекций по общественному здоровью и здравоохранению. – В 3-х частях. – М.: Медицина, 2003.
9. Муминов Т.А., Камалиев М.А. Анализ здравоохранения с позиций социального маркетинга. – Алматы, 2003. – 170 с.
10. Тульчинский Т.Х., Варавикова Е.А. Новое общественное здравоохранение: Введение в современную науку. – Иерусалим, 1999. – 1049 с.

### **Subject: «Epidemiology»**

Epidemiology as a science. Basic terms and concepts. The role of epidemiology in the structure of medical sciences, medical education and practical healthcare. Epidemiological research methods. Descriptive and analytical studies. Systematic review. Meta-analysis. Collection of epidemiological data. Initial data, statistical indicators, assessment of problems, formulation of hypotheses. Processing and analysis of epidemiological research data. Visual presentation of epidemiological data. Clinical Epidemiology. Epidemiological aspects of screening. A cause-effect relationship in epidemiology. Application of epidemiological methods in public health and health management. Comprehensive assessment of medical interventions. Decision Analysis. Assessment of the activities of medical institutions and programs. The role of epidemiology in shaping social policy.

### **Literature:**

1. В.В.Власов «Эпидемиология», Изд-во: ГЭОТАР-Медиа. – 2004. 459 с.
2. Флетчер Р., Флетчер С., Вагнер Э. Клиническая эпидемиология: основы доказательной медицины, – М.: МедиаСфера, 1998. - 350 с.
3. Общая эпидемиология с основами доказательной медицины. Руководство к практическим занятиям: учебное пособие / Под ред. В.И. Покровского, Н.И. Брико. – М.: ГЭОТАР-Медиа, 2008. – 400 с.
4. Чистенко Г.Н. Общая эпидемиология: Учебное пособие. – Минск, 1997. - 115 с.
5. Биглхол Р., Бонита Р., Кьельстрем Т. Основы эпидемиологии: ВОЗ. – Женева, 1994. – 259 с.

### **Subject: «Fundamentals of Evidence-Based Medicine»**

Introduction to evidence-based or evidence-based medicine (EBM). Principles of clinical epidemiology and evidence-based medicine. The relationship of evidence-based medicine and clinical epidemiology, and biological statistics. Ethical problems in epidemiology. Concept of social epidemiology. Research methods in evidence-based medicine. Evidence-based medicine databases.

### Literature

1. Robert H. Fletcher, Suzanne W. Fletcher, Grant S. Fletcher Clinical Epidemiology: The Essentials, 2014
2. G.D. Friedman. Primer of epidemiology. - McGraw-Hill Education / Medical, 2003. – 305 с.
3. Т.Гринхальх «Основы доказательной медицины», М., 2006
4. В.В. Власов Введение в доказательную медицину. М.: Медиа. Сфера, 2001.- 392 с.
5. Принципы клинической практики, основанной на доказанном. Рабочая группа по доказательной медицине под ред. Гордона Гайятта, Драммонда Ренни., М., 2003.
6. Доказательная медицина. Ежегодный справочник. М.
7. В.В.Власов «Эпидемиология», М., 2004. 10.Е.Шарон, В.Страус и др. Медицина, основанная на доказательствах. Перевод В.В. Власова и К.И. Сайткулова. Москва 2010.
8. Окружающая среда и доказательная профилактическая медицина. Т.А. Муминов, Б.А. Неменко, Алматы. 2005
9. Стратегия поиска медицинской информации. Термины и ресурсы интернет. Кожобекова С.Н., Ошибаева А.Е. и др. Алматы 2008.

### Subject: «Fundamentals of Research Methodology»

Scientific research in medicine. Scientific and research programs. Research methodology. Descriptive and analytical studies. Systematic review. Meta-analysis. Collection of information. Data processing. Analysis of research and the formulation of conclusions and proposals. Implementation of research results, protection of intellectual rights (patenting). General requirements and rules for the design of research work. Review of research papers. Preparation of scientific materials for publication in print. Publications in peer-reviewed journals, general rules for writing articles.

### Literature

1. Кожухар В.М. Основы научных исследований. Учебное пособие Кожухар В.М. Дашков и К 2010 // ЭБС IPRbooks. – Режим доступа: <http://iprbookshop.ru/>

2. Болдин А.П. Основы научных исследований: учебник для студ. учреждений высш. проф. образования / А.П.Болдин, В.А.Максимов. - М.: Издательский центр «Академия», 2012. - 336 с.
3. Методология научных исследований: учебник для бакалавриата и магистратуры / Н. А. Горелов, Д. В. Круглов. — М.: Издательство Юрайт, 2015. — 290 с. — Серия: Бакалавр и магистр. Академический курс.
4. Шкляр, М.Ф. Основы научных исследований: учеб. пособие. – М.: Дашков и К\*, 2007. - 244 с.
5. Шкляр, М.Ф. Основы научных исследований: учеб. пособие. – М.: Дашков и К\*, 2008. - 244 с.
6. Шкляр, М.Ф. Основы научных исследований: учеб. пособие. – М.: Дашков и К\*, 2012. - 244 с.
7. Корякин, А.И. Основы научных исследований и творчества. [Электронный ресурс]: учебное пособие / А.И. Корякин, В.Г. Проноза; ФГБОУ ВПО «Кузбас. гос. техн. ун-т им. Т.Ф. Горбачева», Каф. открытых горн. работ. - Кемерово, 2012.

### **Scale for assessing the results of the entrance exam**

The ticket consists of 5 questions. Each ticket question reflecting a specific section is evaluated in one of the specialty disciplines. The result of the exam is the average score received for answering questions of the ticket, not exceeding 100%.

A	95-100%	Excellent
A-	90-94	
B+	85-89	Good
B	80-84	
B-	75-79	
C+	70-74	Satisfactory
C	65-69	
C-	60-64	
D+	55-59	
D	50-54	Fail
F	0-49	

The applicant's response is assessed as "excellent" when the applicant demonstrates a complete understanding of the main directions of scientific research of various processes and objects, technology of professional and scientific activities in the field of public health;

Able to clearly and logically express their thoughts in writing and speaking; be able to apply the acquired knowledge to the solution of practical problems; able to reason and draw logical conclusions.

The applicant's response is assessed as "good" when the applicant demonstrates an understanding of the main directions of scientific research of



various processes and objects, technology of professional and scientific activities in the field of public health;

Able to clearly and logically express their thoughts in writing and speaking; be able to apply the acquired knowledge to the solution of practical problems; able to reason and draw logical conclusions.

The applicant's response is assessed as "satisfactory" when the answer indicates a limited understanding of the main directions of scientific research of various processes and objects, technology of professional and scientific activities in the field of public health;

Does not know how to clearly and logically express his thoughts in writing and speaking; knows how to apply the acquired knowledge to solving practical problems; able to reason and draw logical conclusions.

The applicant's response is assessed as "fail" when the answer indicates a complete lack of understanding of the main directions of scientific research of various processes and objects, technology of professional and scientific activities in the field of public health.

Does not know how to clearly and logically express his thoughts in writing and speaking; does not know how to apply the acquired knowledge to solving practical problems; does not know how to reason and draw logical conclusions.