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Federal State Budget Educational Institution
of Higher Education
Pacific State Medical University
of the Ministry of Health of the Russian Federation

APPROVED BY
Head of the Department of Public
Health and Public Healthcare

_____ / Kuznetsov V.V./
"10th" of April 2025

COLLECTION OF ASSESSMENT TOOLS
Б2.О.04(У) Research activity (Developing basic research skills) of the basic educational program of Higher Education

Specialty	**31.05.01 General Medicine for international students (in English)** (code, name)
Degree	Specialist's degree
Profile	02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system)
Mode of study	**Full-time**
Period of mastering the BEP	**6 years** (nominal length of study)
Department	of Public Health and Public Healthcare

Vladivostok, 2025

1. INTRODUCTION

1.1. Collection of Assessment Tools is a document that regulates the format, content, and types of assessment tools for continuous assessment, interim examination and final (state final) examination, and graded criteria for each type of assessment tools.

1.2. Assessment tools allows to evaluate the development of universal, general professional, and professional competencies (UCs, GPCs and PCs respectively) outlined in Federal State Educational Standard of Higher Education and defined in the basic educational program of higher education for the specialty 31.05.01 General Medicine for international students (in English), profile 02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system).

(BEP HE for the 31.05.01 General Medicine for international students (in English) specialty, section 3 Learning Outcomes Requirements of the Basic Educational Program of Higher Education)

2. DOCUMENT BODY

2.1. Types of Assessment, Formats of Assessment Tools

No.	Types of assessment	Assessment Tools Format
1	**Continuous assessment**	**Tests**
		Interview Questions
2	**Interim assessment**	**Tests**
		Interview Questions

3. The contents of assessment tools for continuous and interim examination are prepared by the teacher of the course

1. Tests for continuous and interim assessment

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.01	General Medicine for international students (in English)
C	UC-2	Is able to manage a project at all stages of its development and implementation
C	GPC-11	Is able to draft and use research, development, project, organizational, managerial and regulatory documentation of the health care system
I		**ANSWER LEVEL 1 TEST QUESTIONS (ONE CORRECT ANSWER)**
		1. Statistics is defined as +A) an independent social science that studies the quantitative side of mass phenomena in inextricable connection with their qualitative side B) collection, processing and storage of information characterizing quantitative patterns of social phenomena

C) analysis of mass quantitative data using statistical and mathematical methods
D) statistical and mathematical methods in collecting, processing and storing information

2. Medical statistics is defined as
+A) a branch of statistics that studies issues related to medicine, hygiene, sanitation, and public health
B) a branch of statistics that studies the health of the population
C) a set of statistical methods necessary for analyzing the activities of medical organizations
D) a branch of statistics that studies issues related to hygiene, planning and forecasting of the activities of medical organizations

3. Statistical method for studying health
+A) is a unified system of accounting and reporting in healthcare
B) is based on the creation of experimental models of individual types of activities or healthcare institutions
C) ensures the study of the phenomenon taking into account time, place, and historical conditions
D) involves the study of any processes, phenomena, organizational structures as systems consisting of subsystems and at the same time being subsystems of larger systems

4. The statistical population as an object of statistical research includes
+A) a group or set of relatively homogeneous elements that have features of similarity and difference
B) a group or set of relatively homogeneous elements that have distinctive features
C) a group or set of relatively homogeneous elements that have similar characteristics
D) a group or set of relatively homogeneous elements that have no similarities or differences

5. The unit of observation is
+A) the primary element of a population that is the bearer of characteristics subject to registration
B) array of units that are carriers of features
C) observation confined to one particular moment
D) volume of observations

6. The diagram that most clearly characterizes the structure of morbidity is
+A) sectoral
B) radial
C) columnar
D) voluminous

7. The minimum sufficient probability for medical statistical research is the probability of an error-free prediction

+A) 95.5%
B) 68.9%
C) 90.5%
D) 50.9%

8. To establish the strength and nature of the relationship between features, one needs to find

+A) correlation coefficient
B) standard deviation correlation coefficient
C) reliability criterion
D) regression coefficient

9. The sample population in relation to the general population should be

+A) representative
B) average
C) group
D) typical

10. The structure of the phenomenon under study is characterized by the indicator

+A) extensive
B) intensive
C) ratios
D) clarity

11. The intensive indicator characterizes

+A) level, frequency, dynamics of the phenomenon in the environment
B) representativeness
C) reliability
D) relationship of features

12. When assessing the reliability of the difference in the obtained research results, the difference is reliable (significant) if, for n >30, the value of t is equal to

+A) 2.0
B) 1.8
C) 3.0
D) 1.0

13. The reliability of the obtained value of the Student's criterion (t) for small samples is assessed

+A) according to the table
B) according to the formula
C) according to the principle: if t>2, then P>95%
D) according to the principle: if t<2, then P>95%

14. The ratio indicator characterizes

+A) the relationship between two unrelated populations

B) level, frequency, dynamics of the phenomenon in the environment
C) distribution of a population into its constituent parts
D) relationship of features

15. The change in the indicator over a period of time characterizes
+A) rate of increase
B) standardized indicator
C) reliability coefficient
D) intensive indicator

16. The frequency, level and prevalence of processes and phenomena in the environment are characterized by the indicator
+A) intensive
B) extensive
C) ratios
D) clarity

17. The size of the sample population depends on
+A) the magnitude of the marginal error and the degree of homogeneity of the phenomenon being studied
B) the accepted probability of an error-free forecast and the degree of homogeneity of the phenomenon under study
C) the accepted probability of an error-free forecast and the magnitude of the marginal error
D) a sufficient number of units in the population

18. Two district physicians compiled an age grouping for the population they serve. Which physician did this correctly?
+A) up to 20 years old, 20-39 years old, 40-59 years old, 60 years old and older; up to 20 years old, 20-40 years old, 40-60 years old, older than 60 years
B) up to 25 years old, 25-35 years old, 35-45 years old, 45-50 years old, 50 years old and older
C) 18-20 years old, 21-30 years old, 31-40 years old, 41-50 years old, 51-60 years old, 61 years and older

19. In city N, in the structure of infant mortality in 2018, respiratory tract infections accounted for 42%, and intestinal infections - 35 %, in 2017 - 38% and 30%, respectively. Is the conclusion about the reduction in infant mortality from these types of pathology correct?
+A) no, the structure cannot be used to judge the frequency of the phenomenon
B) yes, the numbers really did go down
C) no, the reliability of the difference in indicators is not indicated
D) yes, the apparent reliability of the difference in amplitude is determined

20. What is the infant mortality rate if it is known that stillbirth rate is 10 ‰, early neonatal mortality is 8‰, late neonatal mortality is 2‰, post-neonatal mortality is 3‰, perinatal mortality is 18‰?

+A) 13‰
B) 18‰
C) 20‰
D) 10‰

21. What is the perinatal mortality rate if it is known that stillbirth rate was 10 ‰, early neonatal mortality was 8‰, late neonatal mortality was 2‰, postneonatal mortality was 3‰?

+A) 18‰
B) 12‰
C) 10‰
D) 20 ‰

22. The following methods are used when conducting medical and social research

+A) statistical
B) mathematical
C) financial
D) sociometric

23. Among the quantitative criteria of the level of public health of the population, the main indicator of the health of the nation is the indicator

+A) life expectancy
B) infant mortality rate
C) infant mortality
D) perinatal mortality

24. The highest life expectancy in the 21st century is observed in

+A) France
B) Finland
C) USA
D) China

25. The infant mortality rate is calculated

+A) per 1000 births
B) in percent
C) per 10,000 births
D) per 500 births

26. Within what limits can the value of the correlation coefficient fluctuate?

+A) from -1 to +1
B) from 0 to 1
C) from 0 to 2
D) from 0.5 to 1

27. Methods for determining the correlation coefficient include

+A) method of squares (Pearson's method)

B) least squares method

C) Fisher's method

D) qualimetry method

28. Methods for determining the correlation coefficient include

+A) rank method (Spearman's method)

B) least squares method

C) Fisher's method

D) qualimetry method

29. Specify the criteria that characterize the degree of diversity of a variable trait

+A) limits, amplitude, standard deviation, coefficient of variation

B) coefficient of variation, mode, median

C) coefficient of variation, standard deviation

D) limits, coefficient of variation

30. Which variant of the variation series is most often taken as the conditional mean?

+A) fashion

B) median

C) V_{max}

D) V_{min}

31. When comparing intensive indicators obtained on populations that are homogeneous in their composition, it is necessary to apply

+A) assessment of the reliability of the difference in indicators

B) assessment of the ratio indicators

C) definition of relative magnitude

D) standardization

32. The birth rate is calculated as

+A) the ratio of the number of births in a given year to the average annual population × 1000

B) the ratio of the number of deaths to the number of births

C) subtracting the number of deaths from the number of births

D) the ratio of the number of births in a given year to the average annual number of women of childbearing age

33. The primary incidence of the population is calculated using the formula

+A) number of diseases diagnosed (detected) for the first time in life per year × 1000/average annual population

B) number of all visits to the clinic x 1000 / population

C) number of people taken under dispensary observation × 1000 / number of identified patients

D) number of visits to the clinic for chronic diseases in a calendar year × 100,000 / average annual population

34. Life expectancy is

+A) the number of years that a given generation of newborns will live, assuming that age-specific mortality rates remain unchanged throughout life

B) the number of years a given generation of newborns will live if mortality rates remain constant throughout their lives

C) the number of years that a given generation of living people will live if age-specific fertility rates remain constant throughout their lives

D) the number of years that a given generation of newborns lives

35. The average number of girls born to one woman during her entire life and surviving to the age of the woman who gave birth to them is called

+A) net coefficient

B) gross coefficient

C) Pokrovsky index

D) total fertility rate

36. The index that reflects the number of years of life adjusted for disability is called

+A) DALY

B) QALY

C) cost reduction ratio

D) economic efficiency of healthcare

37. The index that reflects the quality of years lived is called

+A) QALY

B) DALY

C) cost reduction ratio

D) economic efficiency of healthcare

38. The overall mortality rate is

+A) an intensive indicator

B) average size

C) a standardized indicator

D) an indicator of visibility

39. General morbidity is

+A) the total number of diseases present in the population, first identified in a given year and previously known, for which patients first sought medical attention in a calendar year

B) incidence rate based on visits

C) morbidity recorded by a physician and recorded in medical records

D) recording of all diseases and special recording of diseases, including infectious morbidity, non-epidemic morbidity, morbidity with viral infections, and hospitalized morbidity

40. The post-neonatal mortality rate is calculated using the formula

+A) *(number of children who died between 29 days and 1 year of age) x 1000 / number of children born alive

B) (number of children who died during the first year of life) x 1000 / number of children born alive

C) (number of children who died within 6 months of life) x 1000 / number of children born alive

D) (number of children who died between 29 days and 1 year of age) x 1000 / number of children born still and alive

41. The first property of a statistical population can be expressed as

+A) absolute numbers and indicators (extensive, intensive, ratios, dynamic series)

B) average level of features

C) diversity (variability) of characteristics

D) relationship between features

42. The second property of a statistical population is determined as

+A) average values (mode, median, arithmetic mean, weighted mean)

B) representativeness or representativeness of features

C) diversity (variability) of characteristics

D) relationship between features

43. The third property of a statistical population is characterized by the

+A) limit, amplitude, standard deviation, coefficient of variation

B) mode, median, arithmetic mean, weighted mean

C) extensive, intensive, ratios, dynamic series

D) correlation coefficient

44. The fourth property of a statistical population includes

+A) calculation of errors of the mean, calculation of the boundaries in a sample population of fluctuations in average values or indicators (with a certain degree of probability), comparison of average values or indicators in two or more statistical populations

B) determination of the average level of features in a statistical population

C) distribution of features in a statistical population

D) determination of the relationship between features in a statistical population

45. The fifth property of a statistical population is characterized by

+A) correlation coefficient

B) extensive, intensive indicators

C) coefficient of variation

D) representativeness

46. A diagram in which statistical quantities are depicted in the form of various figures is called

+A) figured, or voluminous
B) sector
C) radial
D) columnar

47. A diagram that is used to depict the dynamics or statics of a phenomenon is called

+A) columnar
B) sector
C) radial
D) linear

48. A diagram that is constructed on a system of polar coordinates when depicting the dynamics of a phenomenon over a closed time cycle (day, week, year) is called

+A) radial
B) sector
C) linear
D) columnar

49. The image on a geographical map (or map diagram) of diagrams of various kinds is called

+A) cartogram
B) cartogram
C) plane diagram
D) line chart

50. The representation of statistical quantities on a geographical map (or map diagram) is called

+A) cartogram
B) map diagram
C) plane diagram
D) line chart

ANSWER LEVEL 2 TEST QUESTIONS (MULTIPLE CORRECT ANSWERS)

1. The main method of social and hygienic research

+historical
+statistical
+experimental and economic
- mathematical

+A) – answers 1, 2 and 3 are correct
B) Answers 1 and 3 are correct
B) - answers 1 and 4 are correct
D) - 4 answers are correct

2. Key indicators of public health

+morbidity rates
+indicators of disability and physical development

		+demographic indicators **-Student's coefficient** **+A) – answers 1, 2 and 3 are correct** **B) Answers 1 and 3 are correct** **B) - answers 1 and 4 are correct** **D) - 4 answers are correct** **3. Factors affecting health** **+conditions and lifestyle** **+hereditary-genetic and natural-ecological** **+medical and organizational** **- morbidity** **+A) – answers 1, 2 and 3 are correct** **B) Answers 1 and 3 are correct** **B) - answers 1 and 4 are correct** **D) - 4 answers are correct** **4. Factors regulating fertility include** **+population migration** **+age at marriage and contraceptive coverage** **+social and economic conditions and health status of parents** **+A) – answers 1, 2 and 3 are correct** **B) Answers 1 and 3 are correct** **B) - answers 1 and 2 are correct** **D) - 3 answers are correct** **5. Methods for studying morbidity include data obtained from** **+by appeal** **+according to medical examinations** **+by cause of death** **- based on the census results** **+A) – answers 1, 2 and 3 are correct** **B) Answers 1 and 3 are correct** **B) - answers 2 and 4 are correct** **D) - 4 answers are correct** **6. To assess the incidence of the population, the following criteria are used** **+morbidity rate** **+morbidity structure** **-frequency of incidence** **+incidence rate** **+A) – answers 1, 2 and 4 are correct** **B) Answers 1 and 3 are correct** **B) - answers 2 and 4 are correct** **D) - 4 answers are correct**

Assessment criteria
"Very good" – 90-100% correct answers of questions of every level
"Good" - 80-89% correct answers of questions of every level
"Satisfactory" - 70-79% correct answers of questions of every level
"Unsatisfactory" - less than 70% correct answers of questions of every level

Interview questions

	Code	**Competence description / name of labor function / name of work activity / text**
S	31.05.01	General Medicine for international students (in English)
C	UC-2	Is able to manage a project at all stages of its development and implementation
C	GPC-11	Is able to draft and use research, development, project, organizational, managerial and regulatory documentation of the health care system
I		**ANSWER THE QUESTIONS** 1. Methods of research of public health and healthcare as an independent science, their characteristics. 2. The law of large numbers as a theoretical basis for sampling research. Requirements for the sampling method. 3. Observation unit in a statistical population, accounting characteristics and their classification. 4. Statistical population and its properties. Types of statistical populations. 5. Sample population, ways of its formation and methods of selection of individual elements. 6. Stages of statistical research. Contents of the statistical research program and plan. Types of statistical tables. Requirements for their construction. 7. Collection, processing, and analysis of statistical research data. Application of statistical methods in clinical trials. 8. Relative and absolute numbers. Types of relative quantities, their graphic representation, and practical applications. 9. Graphical methods for representing obtained data. Types of diagrams and requirements for their construction. 10. Variation series, stages of its construction. Graphic representation of the varying feature. 11. Average level of a feature, types of average values. Methods for calculating arithmetic means. Application in scientific and practical activities of a physician. 12. Determining the reliability of average and relative values. Application of confidence limits. 13. The relationship (correlation) between factor and outcome characteristics. Calculation methods. Application in scientific research and practical activities. 14. Dynamic series and their analysis. Application in scientific research and practice. 15. The standardization method. Its essence and application in scientific research and practical activities.

		16. Public health as the most important economic and social potential of a country. Public health indicators. 17. Risk factors affecting public health. Public Health Research Program. 18. Medical and social aspects of the population's lifestyle. Factors influencing lifestyle. Health promotion, types of prevention. 19. Demography as a science. The importance of demographic processes for the healthcare system. Methods of population studies. 20. Population migration. Factors influencing migration processes. Implications for practical healthcare. 21. Population statistics. Methods for studying population size and composition. Population census: organization and methodology. 22. Basic patterns of natural population movement. 23. Fertility as an indicator of state demographic policy. Fertility dynamics in the Russian Federation and its importance in planning healthcare for the population. 24. Life expectancy as an indicator of public health, dynamics in Russia and abroad. 25. Perinatal mortality: levels, causes, and structure. Social and medical aspects of antenatal care. 26. Infant mortality: levels, dynamics, and structure of causes of child mortality. Measures to combat infant mortality. 27. Overall and age-specific mortality, its causes, and structure. Rules for issuing medical death certificates. 28. Population morbidity. Types of morbidity, study methods, and sources of morbidity data. 29. The importance of studying morbidity as a public health indicator. Characteristics and trends of morbidity in the Russian Federation. 30. ICD-10, its meaning and application in healthcare practice. 31. Morbidity based on outpatient clinic visits. Primary and general morbidity accounting. 32. Hospitalized morbidity: methods of study and analysis. Social and hygienic aspects of hospitalized morbidity. 33. Infectious morbidity, methods of study and analysis. Organization of recording and reporting of infectious and parasitic diseases in healthcare institutions. 34. Morbidity with temporary loss of ability to work, its indicators and methods of study. 35. Non-epidemic morbidity. Methodology of study and analysis. Registration of the most important non-epidemic diseases in healthcare organizations. 36. The medical and social significance of the most important non-epidemic diseases. Causes and structure. Methods of their study and analysis. 37. Disability. Current status and trends of disability in the Russian Federation. 38. Physical development as a key indicator of public health. Factors influencing the population's physical development and assessment methods.

		39. Medical records management in the clinic. Organization of operational oversight of the activities of structural divisions and specialists. 40. Inpatient medical records management. Organization of operational oversight of departments and specialists.

4. Assessment criteria for learning outcomes

"Very good" grade is given to a student who possesses knowledge of the subject in full scope outlined in the curriculum, has a sufficiently deep insight into the subject; is able to answer all questions clearly, exhaustively, and with no outside help; structures their answers logically, with emphasis on the most important information; is able to analyze, compare, classify, summarize, refine, and structure the course content, giving particular attention to cause-and-effect relationships.

"Good" is given to a student whose knowledge of the subject is almost in full scope outlined in the curriculum (gaps are only present in the knowledge of some especially complex aspects); is able to answer questions exhaustively with little to no outside help; does not always put emphasis on the most important information, but does not make significant mistakes.

"Satisfactory" is given to a student who possesses the bulk of knowledge on the subject; has difficulties answering questions with no outside help, uses imprecise wording; makes mistakes in substantial number of their answers.

"Unsatisfactory" is given to a student who does not have the mandatory minimum of knowledge on the subject, is not able to give an answer even with additional guiding questions.