"The Orenburg state medical University"

**METHODICAL DEVELOPMENT**

**FOR THE TEACHER TO CONDUCT PRACTICAL LESSON #2**

Theme "Epidemiological diagnosis"

**DISCIPLINE "EPIDEMIOLOGY"**

**WITH STUDENTS OF THE 5TH COURSE   
OF THE FACULTY OF FOREIGN**

Methodical recommendations are developed

assistant of professor  
the Department of epidemiology and infectious diseases

Kornejev Aleksej Gennad’evich

Orenburg, 2018

**Module 1. General epidemiology**

# 1. The competence generated:

|  |  |  |
| --- | --- | --- |
| Cipher  competence | №  competence | Elements of competence |
| Cultural competence | СС-1 | ability for abstract thinking, analysis, synthesis; |
| General professional competence | GPC-1 | willingness to solve standard tasks of professional activity with the use of  information, bibliographic resources, biomedical terminology, information and communication technologies and taking into account the basic requirements of information security; |
| Professional competence | PC-3 | ability and willingness to undertake anti-epidemic measures, organisation of protection  the population in the foci of particularly dangerous infections, the deterioration of the radiation situation, natural disasters and  other emergencies |

## Practical lesson № 2

# 2. Subject:

Epidemiological diagnosis

# 3. Objective:

Acquire knowledge of the calculation of incidence rates. Teach students to compare indicators, calculate risks.

# 4. Tasks:

***Training:***

* To study the incidence rates.
* Examine the differences in performance.
* Examine the risks.

***Educational:***

* Teach students to calculate incidence rates.
* To teach students to calculate the reliability of differences in indicators.

***Raising:***

* Calculate incidence rates.
* Calculate the reliability of differences in incidence rates.
* Calculate the risks.

# 5. Questions for consideration:

* Calculation of incidence rates
* Calculation of extensive indicators
* Comparison of indicators
* Assessment of the reliability of differences
* Identify time to risk
* Identification of risk groups
* Identification of risk areas

# 6. Basic concepts of the theme

* Incidence
* Reliability of differences in performance
* Time risk
* Risk group
* Risk area

# 7. Recommended reading:

1. Main literature:

* Methodical recommendations «Modern epidemiological methods in medical practice» of the Department of Epidemiology and Infectious Diseases
* Rothman, Kenneth J.; Greenland, Sander; Lash, Timothy L. Modern epidemiological. 3rd edition. 2008 Lippincott Williams & Wilkins. 1581 p.

2. Additional literature:

* O.V. Kovalishena, V.V. Shkarin, N.V. Saperkin, M.M. Khramtsov. Epidemiology of inflectional disease. Учебник. Издательство: «Смоленская городская типография», 2016. 284 с.

# 8. Activity and time of lesson

|  |  |  |  |
| --- | --- | --- | --- |
| № | The stages and content of the classes | The methods used | time |
| 1 | The organizational part.  The announcement of the theme, the objectives of the class.  Readiness assessment of the classroom, equipment and students.  Brief description of the stages and content of work of students in the class. |  | 5 minutes |
| 2 | Incoming control of knowledge, abilities and skills of students.  The terminological dictation | Handout  A written answer to the question | 5 minutes |
| 3 | Updating of theoretical knowledge | Analysis of theme elements and the construction of logical graphs on the board. | 1 hour 15 minutes |
| 4 | The development of practical skills. Case solving. | Cases | 30 minutes |
| 5 | Quality control of the formed competence /elements of competence (knowledge and skills) students on lessons  Output control | Written test | 15 minutes |
| 6 | The final part of the class:  Summarizing, the findings on the topic.  Homework | - | 10 minutes |

# 9. Form of organization class

instructional workshop (workshop)

# 10. Learning tools:

- logistics (multimedia projector)

## Incoming control

|  |  |
| --- | --- |
| **Task** | **Answer** |
| Write a formula for calculating the incidence |  |
| Draw a chart to illustrate the dynamics of the incidence |  |
| Draw a chart to illustrate the percentage indicators. |  |
| The incidence of the population of city A is 10 0/0000, and city B - 15 0/0000 with p = 0.2. Rate the accuracy of the differences indicators. |  |
| Specify the value of p, if Chi‑square=3.86. |  |

## Output control

**Task.** There are “M” students in school number 28. “N” people were sick during the period from October to April in this school. But in school number 15 – “P” students were ill. There are “Q” students in school number 15. Are there any differences between incidence rates?

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Var.** | M | N | P | Q | **I-28** | **measure** | **I-15** | **measure** | **χ2=** | **Difference (+/-)** |
| 1 | 1000 | 300 | 170 | 800 |  |  |  |  |  |  |
| 2 | 200 | 60 | 70 | 400 |  |  |  |  |  |  |
| 3 | 550 | 50 | 13 | 490 |  |  |  |  |  |  |
| 4 | 250 | 90 | 40 | 250 |  |  |  |  |  |  |
| 5 | 300 | 60 | 30 | 700 |  |  |  |  |  |  |
| 6 | 400 | 100 | 50 | 600 |  |  |  |  |  |  |
| 7 | 600 | 90 | 30 | 500 |  |  |  |  |  |  |
| 8 | 700 | 150 | 20 | 400 |  |  |  |  |  |  |
| 9 | 800 | 200 | 30 | 300 |  |  |  |  |  |  |
| 10 | 900 | 300 | 150 | 900 |  |  |  |  |  |  |
| 11 | 300 | 10 | 300 | 1000 |  |  |  |  |  |  |
| 12 | 400 | 50 | 200 | 700 |  |  |  |  |  |  |
| 13 | 600 | 200 | 400 | 800 |  |  |  |  |  |  |
| 14 | 700 | 150 | 30 | 500 |  |  |  |  |  |  |
| 15 | 800 | 350 | 20 | 400 |  |  |  |  |  |  |

Answer

|  |  |  |  |
| --- | --- | --- | --- |
| I-28 | I-15 | χ2= | Difference (+/-) |
| 300,0 | 212,5 | 17,2 | + |
| 300,0 | 175,0 | 11,5 | + |
| 90,9 | 26,5 | 17,8 | + |
| 360,0 | 160,0 | 25,0 | + |
| 200,0 | 42,9 | 61,4 | + |
| 250,0 | 83,3 | 51,0 | + |
| 150,0 | 60,0 | 21,8 | + |
| 214,3 | 50,0 | 51,3 | + |
| 250,0 | 100,0 | 28,8 | + |
| 333,3 | 166,7 | 65,8 | + |
| 33,3 | 300,0 | 88,9 | + |
| 125,0 | 285,7 | 36,5 | + |
| 333,3 | 500,0 | 38,2 | + |
| 214,3 | 60,0 | 53,3 | + |
| 437,5 | 50,0 | 185,9 | + |