"The Orenburg state medical University"

**METHODICAL DEVELOPMENT**

**FOR THE TEACHER TO CONDUCT PRACTICAL LESSON #1**

Theme " Introduction to epidemiology "

**DISCIPLINE "EPIDEMIOLOGY"**

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

Methodical recommendations are developed

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**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 № 1

# 2. Subject:

Introduction to epidemiology

# 3. Objective:

Acquire knowledge about Epidemiology (as a science) as the study of the distribution and determinants of health-related states and events in specified populations and the applications of this study for the control of health problems.

# 4. Tasks:

***Training:***

* Examine the definition, purpose and objectives of modern epidemiology.

***Educational:***

* To know the place of modern epidemiology in medical practice.

***Raising:***

* To be able to use epidemiological methods in medical practice.

# 5. Questions for consideration:

* Epidemiology as a science and practice
* Historical background
* Modern branches of epidemiology (Epidemiology of infectious diseases, Epidemiology of noninfectious diseases, Using epidemiological methods)
* Epidemiology of infectious diseases (Etiological classification Infectious diseases, Infectious process)
* Types of epidemiological studies (Descriptive studies, Analytic studies, Experimental studies)

# 6. Basic concepts of the theme

* Epidemiology
* Epidemiology of infectious diseases
* Epidemiology of noninfectious diseases
* Epidemiological method
* Infectious process
* Etiological classification Infectious diseases
* Descriptive studies
* Analytic studies
* Experimental studies

# 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**  Indicate the contribution of scientists to the development of modern epidemiology. | **Answer** |
| John Snow |  |
| Angelerio |  |
| Hippocrates |  |
| G. Fractorius |  |
| William Farr |  |

## Output control

Select ONE listed answer that is the right in each case:

1. AN APPROPRIATE DEFINITION OF EPIDEMIOLOGY AS A SCIENCE IS

1) the science of epidemics

2) the study of outbreaks

3) the study of the distribution and determinants of healthrelated states and events in specified populations and the application of this study for the control of health problems

4) the medical science, which investigates the causes of occurrence and spread of communicable diseases in the human society and applies this knowledge for fighting and prevention of these diseases.

2. EPIDEMIOLOGY OF INFECTIOUS DISEASES IS

1) the branch of epidemiology, which investigates the causes of occurrence and spread of communicable diseases in the human society and applies this knowledge for fighting and prevention of these diseases

2) the science of epidemics

3) the study of outbreaks

4) the study of the distribution and determinants of healthrelated states and events in specified populations and the application of this study for the control of health problems.

3. EPIDEMIOLOGY OF NONINFECTIOUS DISEASES

(NONCOMUNICABLE DISEASES) IS

1) the application of epidemiological method for investigation of noninfectious diseases

2) the branch of epidemiology, which investigates the causes and determinants of occurrence and spread distribution and determinants of noninfectious diseases and other health-related

states and events in specified populations and the application of this study for the control of health

3) the study of the distribution and determinants of healthrelated states and events in specified populations and the application of this study for the control of health problems

4) the science of epidemics

4. THE METHOD USED IN EPIDEMIOLOGY OF INFECTIOUS DISEASES IS

1) bacteriological method

2) statistical method

3) epidemiological method

4) logistic method

5. EPIDEMIOLOGICAL APPROACH MEANS TO INVESTIGATE HUMAN'S PATHOLOGY

1) at individual level

2) at molecular and genetic level

3) at cellular level

4) at population level

6. EPIDEMIOLOGY INVESTIGATES

1) all diseases and health-related states and events

2) only infectious diseases

3) only noninfectious diseases

4) chronic diseases

7. THE CONCEPT OF MIASM WAS CREATED BY

1) Hippocrates

2) G. Fracastorius

3) D. Samoylovich

4) J.Graunt

8. THE AUTHOR OF THE CONCEPT OF CONTAGION IS

1) Hippocrates

2) T. Sydenhame

3) G. Fracastorius

4) D. Samoylovich

9. THE FIRST RUSSIAN EPIDEMIOLOGIST KNOWN FOR THE WORKS ON STUDYING OF CONTAGIOUS DISEASES WAS

1) D. Samoylovich

2) D. Ivanovsky

3) L. Gromashevsky

4) N. Pavlovsky

10. THE FIRST IMMUNIZATION AGAINST SMALLPOX BY A PREPARATION CONTAINING VACCINIA VIRUS WAS CONDACTED IN 1796 BY

1) E. Jenner

2) L. Paster

3) G. Ramon

4) R. Berring

11. RABIES LIVE VACCINE WAS CREATED BY

1) E. Jenner

2) L. Paster

3) G. Ramon

4) R. Koch

12. THE FIRST FAMOUS ANALITIC INVESTIGATION OF THE ORIGINS OF CHOLERA EPIDEMIC IN LONDON (1855) WAS CONDUCTED BY

1) W. Farr

2) J. Snow

3) R. Koch

4) E. Jenner

13. MODERN STRUCTURE OF EPIDEMIOLOGY INCLUDES TWO FOLLOWING MAIN BRANCHES:

1) epidemiology of infectious diseases and epidemiology of noninfectious diseases

2) general epidemiology and epidemiology of different nosological groups

3) clinical epidemiology and military epidemiology

4) descriptive epidemiology and analytic epidemiology

14. DESCRIPTIVE TYPE OF EPIDEMIOLOGICAL STUDIES

1) identifies causal relationships or factors associated with disease

2) estimates the effectiveness of treatment and prophylactic means and measures

3) characterizes the distribution of cases in relation to person, place, and time

15. ANALITIC TYPE OF EPIDEMIOLOGICAL STUDIES

1) identifies causal relationships or factors associated with disease

2) estimates the effectiveness of treatment and prophylactic means and measures

3) characterizes the distribution of cases in relation to person, place, and time

16. EXPERIMENTAL TYPE OF EPIDEMIOLOGICAL STUDIES

1) identifies causal relationships or factors associated with disease

2) estimates the effectiveness of treatment and prophylactic means and measures

3) characterizes the distribution of cases in relation to person, place, and time

17. ANALYTIC TYPE OF EPIDEMIOLOGICAL STUDIES MAYBE

1) only retrospective

2) only prospective

3) retrospective and prospective

Choose ALL correct answers:

18. THE MAIN GOALS OF EPIDEMIOLOGY ARE THE FOLLOWING:

1) characterising the frequency and distribution of diseases and other conditions in population

2) identifying factors causing the occurrence and spread of diseases

3) providing the surveillance of diseases (communicable and noncommunicable) and other conditions

4) evaluating prophylactic means and measures

5) reducing the morbidity and mortality from infectious diseases, preventing the occurrence and spread of communicable diseases

19. EXAMPLES OF THE DESCRIPTIVE STUDIES AMONG LISTED BELOW:

1) cross-sectional survey

2) case series report

3) cohort study

4) case report

20. EXAMPLES OF THE ANALITIC STUDIES AMONG LISTED BELOW:

1) cross-sectional survey

2) case-control study

3) cohort studies

4) randomized clinical trials

21. EXAMPLES OF THE CONTROLED EXPERIMENTAL STUDIES AMONG LISTED BELOW:

5) case-control study

6) field trial

7) cohort studies

8) randomized clinical trial

22. EXPERIMENTAL TYPE OF EPIDEMIOLOGICAL STUDIES INCLUDES

1) cohort study

2) controlled epidemiological experiment

3) uncontrolled epidemiological experiment

4) “natural” experiment

23. EXPERIMENTAL TYPE OF EPIDEMIOLOGICAL STUDIES MAY BE

1) blinded

2) double blinded

3) three times blinded

4) four times blinded

24. EPIDEMIOLOGY IS BASED ON THE FOLLOWING FUNDAMENTAL ASSUMPTIONS:

1) diseases do not occur by chance

2) diseases occur by chance

3) diseases are distributed randomly in the population

4) diseases are not distributed randomly in the population, thus, their distribution indicates something about how and why that disease process has occurred

25. EPIDEMIOLOGICAL APPROACH USED TO INVESTIGATE HUMAN'S PATHOLOGY INCLUDES:

1) investigation at the individual level

2) investigation at the level of population

3) complex investigation

4) integration of many methods from different disciplines

5) using the only specific method

26. MATCH THE TYPES OF EPIDEMIOLOGICAL STUDIES LISTED IN THE LEFT COLUMN WITH THE EXAMPLES OF DIFFERENT EPIDEMIOLOGICAL STUDIES:

|  |  |
| --- | --- |
| Types of epidemiological studies | Examples of different epidemiological  studies |
| 1. descriptive  2. analytic  3. experimental | a) cohort studies  b) case reports  c) clinical trials  d) populations (correlation) studies  e) case-control studies  f) field trials |

27. MATCH THE TYPES OF EPIDEMIOLOGICAL ANALITIC STUDIES LISTED IN THE LEFT COLUMN WITH THEIR APPLICATION:

|  |  |
| --- | --- |
| Types of epidemiological analytic studies | Applications of different  epidemiological analytic studies |
| 1. case-control study  2. cohort study | a) for the examination of multiple  etiologic factors for a single disease  b) for the examination of multiple  effects of a single exposure  c) for the elucidation of temporal  relationship  d) for the evaluation of diseases in long  latent periods  e) for the evaluation of rare etiologic  factors  f) for the evaluation of rare disease |

Complete the sentences

28\* DESCRIPTIVE AND ANALYTIC STUDIES ARE \_\_\_\_\_\_\_\_ STUDIES, BECAUSE INVESTIGATORS DON’T INFLUENCE THE RESULTS BY ANY MEANS AND MEASURE.

29. EXPERIMENTAL STUDIES ARE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_STUDIES, BECAUSE INVESTIGATORS CAN INFLUENCE THE INDIVIDUALS BY USING THE MEANS OR TAKING MEASURES.

30. THE BEST WAY TO SEPARATE PARTICIPANTS OF THE CONTROLLED EPIDEMIOLOGICAL EXPERIMENT TO THE TREATMENT GROUP AND THE PLACEBO GROUP IS \_\_\_\_\_\_\_\_\_ .

**Answers to the tests**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Tests | Answers | Tests | Answers | Tests | Answers |
| **1** | 3 | **11** | 2 | **21** | 2, 4 |
| **2** | 1 | **12** | 2 | **22** | 2, 3, 4 |
| **3** | 2 | **13** | 1 | **23** | 1, 2, 3 |
| **4** | 3 | **14** | 3 | **24** | 1, 4 |
| **5** | 4 | **15** | 1 | **25** | 2, 3, 4 |
| **6** | 1 | **16** | 2 | **26** | 1 - b, d  2 - a, e  3 - c, f |
| **7** | 1 | **17** | 3 | **27** | 1 - a, d, f  2 - b, c, e |
| **8** | 3 | **18** | 1, 2, 3, 4 | **28** | observation |
| **9** | 1 | **19** | 1, 4 | **29** | intervention |
| **10** | 1 | **20** | 2, 3 | **30** | randomization |