"The Orenburg state medical University"

**METHODICAL DEVELOPMENT**

**FOR THE TEACHER TO CONDUCT PRACTICAL LESSON 6**

Theme " The basis of epidemiology of infectious diseases "

**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 2. Epidemiological control**

# 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 № 6

# 2. Subject:

The basis of epidemiology of infectious diseases

# 3. Objective:

To acquire knowledge about the features of epidemiology and prevention of infectious diseases.

# 4. Tasks:

***Training:***

* To study the components of the epidemic process
* To study the factors influencing the epidemic process
* To study the Surveillance system and control measures

***Educational:***

* Forming the ability to carry out preventive measures aimed at different parts of the epidemic process

***Raising:***

* Modify to carry out preventive measures

# 5. Questions for consideration:

* Structure of epidemiology of infectious diseases
* The concept of epidemical process
* Characteristics of epidemical process
* Classification of infectious diseases
* Factors influencing the epidemical process
* Features of epidemical process
* Surveillance system and control measures

# 6. Basic concepts of the theme

* The epidemical process
* The source of infection
* The mechanism of transmission
* Surveillance system
* Control measures

# 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** |
| List ecological epidemiological classification of infections (3 words only). |  |
| List - 3 phases (stages) of mechanisms of transmission. |  |
| List (specify) the mechanisms of transmission (5 items). |  |
| The surveillance system includes 3 subsystem. List them. |  |
| Control measures are subdivided intro 3 groupp. List them (list only, without decoding). |  |

## Output control

Choose one correct answer.

1. Epidemical process is:
2. the chain of specific infectious states (diseases, carriers), following each other and connected with each other
3. the chain of epidemic foci
4. the place of being a source of infection on a surrounding territory within the limits of which an agent can be transmitted to susceptible host
5. the process of occurrence and spread diseases in human Population
6. Anthroponoses are classified accoding to:
7. the ecology of the etiologic agent
8. the reservoir o f the etiologic agent
9. the specific location of the etiologic agent in the human body and corresponding mechanism of transmission
10. the type of vectors
11. Sapronoses are classified according to:
12. the ecology of etiologic agent
13. the reservoir of a etiologic agent
14. the specific location of the etiologic agent in the human body and corresponding mechanism of transmission
15. the type of animals, who are the sources of the etiological agent of infection
16. Isolation is directed to the following link of epidemical process:
17. a source of infection
18. a mechanism of transmission
19. a susceptible host
20. the correct answer is missing
21. Sanitary and hygienic measures are directed to the following:
22. a source of infection
23. a mechanism of transmission
24. a susceptible host
25. the correct answer is missing
26. Immunoprophylaxis is directed to the following link of epidemical process:
27. a source of infection
28. a mechanism of transmission
29. a susceptible host
30. the correct answer is missing
31. An appropriate definition of epidemiologic surveillance is:
32. the complex of organizational, medical, diagnostic, sanitary and hygienic and other measures used to prevent occurrence of inflectional diseases
33. the complex of organizational, medical, diagnostic, sanitary and hygienic and other measures used to localize and eliminate an epidemic focus
34. the system of collection, analysis, deissemination of all data, needed to control diseases, and manage control system
35. the correct answer is missing
36. An appropriate definition of prophylactic measures is:
37. the complex of organizational, medical, diagnostic, sanitary and hygienic and other measures used to prevent occurrence of inflectional diseases
38. the complex of organizational, medical, diagnostic, sanitary and hygienic and other measures used to localize and eliminate an epidemic focus
39. the system of collection, analysis, deissemination of all data, needed to control diseases, and manage control system
40. the correct answer is missing
41. An appropriate definition of antiepidemic measures is:
42. the complex of organizational, medical, diagnostic, sanitary and hygienic and other measures used to prevent occurrence of inflectional diseases
43. the complex of organizational, medical, diagnostic, sanitary and hygienic and other measures used to localize and eliminate an epidemic focus
44. the system of collection, analysis, deissemination of all data, needed to control diseases, and manage control system
45. the correct answer is missing
46. An appropriate definition of a pathway (route) of transmission is:
47. the complex of factors to transmit the agent from the source of infection to a susceptible host in a certain case at a certain moment
48. the way of transferring the agent from one host to another. This way was formed by evolution and makes the existence of the agent as the biologic species possible
49. the complex of inanimate objects and live organisms, which can transfer an agent (microbe) from a source of infection to a susceptible host
50. the correct answer is missing
51. Examples of the anthroponoses among listed below:
52. Brucellosis
53. dysentery
54. Legionelliosis
55. tularemia
56. Examples of the zoonoses among listed below:
57. hepatitis A
58. measles
59. tularemia
60. malaria
61. Examples of the sapronoses among listed below:
62. legionelliosis
63. Rabies
64. Plague
65. malaria
66. Examples of the respirotory anthroponoses among listed below:
67. Rubella
68. Smallpox
69. Pertussis
70. all answers are correct
71. Links of the epidemical process are the following:
72. the source of the etiological agent of infection
73. the mechanism of transmission
74. the susceptible population (person)
75. all answers are correct
76. Types of sources of etiological agent of infection include:
77. Humans
78. Animals
79. Environment
80. all answers are correct
81. Factors of transmission include:
82. Fomites
83. Insects
84. Ticks
85. Dust
86. all answers are correct
87. Natural mechanisms of transmission include:
88. air-borne
89. vector-borne
90. fecal-oral
91. all answers are correct
92. Fecal-oral mechanism of transmission can be realized by the following pathways (routes):
93. water-borne route
94. food-borne route
95. contacts with fomites
96. all answers are correct
97. Air-borne mechanism of transmission may be realized by the following pathways (routes):
98. water-borne route
99. food-borne route
100. contact with fomites
101. dust route
102. Air-borne mechanism of transmission may be realized by the following pathways (routes):
103. water-borne route
104. food-borne route
105. arial-droplet spread
106. contact with fomites
107. Contact mechanism of trasmission involves:
108. vector-bone route
109. indirect contact
110. dust route
111. pransplacental pathway
112. Contact mechanism of trasmission involves:
113. vector-bone route
114. direct contact route
115. dust route
116. pransplacental pathway
117. Choose the pathway for the fecal-oral mechanism of transmission:
118. dust route
119. sexual pathway
120. vector-bone route
121. water-borne pathway
122. Choose the pathway for the fecal-oral mechanism of transmission:
123. dust route
124. sexual pathway
125. vector-bone route
126. food-borne pathway
127. Choose the pathway for the air-borne mechanism of transmission:
128. dust route
129. sexual pathway
130. water-borne pathway
131. food-borne pathway
132. Choose the pathway for the contact mechanism of transmission:
133. dust route
134. sexual pathway
135. water-borne pathway
136. food-borne pathway
137. Match the quantitative type of feature of epidemical process with the epidemiologic features:
138. incidence rate
139. seasonal variations
140. secular trend (tendency)
141. periodicity
142. Match the quantitative type of feature of epidemical process with the epidemiologic features:
143. seasonal variations
144. prevalence rate
145. secular trend (tendency)
146. periodicity
147. Match the qualitative type of feature of epidemical process with the epidemiologic features:
148. seasonal variations
149. secular trend (tendency)
150. periodicity
151. all answers are correct
152. Match the measure, directed to the source of infection and corresponding control measures:
153. isolation
154. Chemoprophylaxis
155. Disinfection
156. Disinsection
157. Immunoprophylaxis
158. sanitary and hygienic measures
159. Match the measure, directed to the source of infection and corresponding control measures:
160. Chemoprophylaxis
161. Disinfection
162. diratisation (rodent control)
163. Disinsection
164. Immunoprophylaxis
165. sanitary and hygienic measures
166. Match the measure, directed to interrupt mechanism of transmission and corresponding control measures:
167. Isolation
168. Chemoprophylaxis
169. disinfection
170. diratisation (rodent control)
171. immunoprophylaxis
172. Match the measure, directed to interrupt mechanism of transmission and corresponding control measures:
173. Isolation
174. Chemoprophylaxis
175. diratisation (rodent control)
176. disinsection
177. immunoprophylaxis
178. Match the measure, directed to interrupt mechanism of transmission and corresponding control measures:
179. Isolation
180. Chemoprophylaxis
181. diratisation (rodent control)
182. immunoprophylaxis
183. sanitary and hygienic measures
184. Match the measure, directed to the susceptible host and corresponding control measures:
185. Isolation
186. chemoprophylaxis
187. Disinfection
188. diratisation (rodent control)
189. disinsection
190. sanitary and hygienic measures
191. Match the measure, directed to the susceptible host and corresponding control measures:
192. Isolation
193. Disinfection
194. diratisation (rodent control)
195. disinsection
196. immunoprophylaxis
197. sanitary and hygienic measures

Choose some correct answers.

1. Examples of the anthroponoses among listed below:

1) brucellosis

2) dysentery

3) malaria

4) legionelliosis

1. Examples of the zoonoses among listed below:
2. hepatitis A
3. salmonellosis
4. Measles
5. tularemia
6. Examples of the sapronoses among listed below:
7. Pseudotuberculiosis
8. Legionelliosis
9. Rabies
10. plague
11. Examples of the respirotory anthroponoses among listed below:

1) leptospirosis

2) rubella

3) smallpox

4) pertussis

1. Examples of the enteric anthroponoses among listed below:

1) hepatitis A

2) salmonellosis

3) yersiniosis

4) poliomyelitis

1. Links of the epidemical process are the following:

1) the source of the etiological agent of infection

2) the factor of transmission

3) the mechanism of transmission

4) the susceptible population (person)

5) all answers are correct

1. Types of sources of etiological agent of infection include:

1) humans

2) animals

3) insects

4) ticks

5) environment

6) all answers are correct

1. Factors of transmission include:

1) fomites

2) animals

3) insects

4) ticks

5) dust

6) all answers are correct

1. Natural mechanisms of transmission include:

1) food-borne

2) water-borne

3) air-borne

4) vector-borne

5) fecal-oral

6) all answers are correct

1. Fecal-oral mechanism of transmission can be realized by the following pathways (routes):

1) water-borne route

2) food-borne route

3) ariai-droplet spread

4) sexual pathway

5) contacts with fomites

6) all answers are correct

1. Match the type of features of epidemical process in the left column with the epidemiologic features:

a) incidence rate

b) seasonal variations

c) prevalence rate

d) secular trend (tendency)

e) periodicity

f) all answers are correct

Pick a word.

1. The interaction of the population of microorganism and the human population, displaying itself (in some engvironmental conditions) as morbidity with different intensity level is … (epidemical process).
2. A natural environment (habitats), where biological agents (microbes) live, multiplie, grow and come out, and disseminate to susceptible hosts is the … (source of infection).
3. The chain of specific infectious states (diseases, carriers); following each other and connected with each other is … (epidemical process).
4. The concept of epidemiologic triangle states that, in order for a disease process to occur, there must be a unique combination of events: a harmful agent that comes into contact with a susceptible host in the proper … (environment).
5. The law “about three links of epidemical process” states that, the continuos epidemical process is maintained by the interaction of three factors: the source of infection, the … (mechanism of transmission) and the susceptible population (person).

**Answers**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1.a | 11.d | 21.c | 31.a | 41.2,3,4 |  |  |  |
| 2.c | 12.c | 22.b | 32.c | 42.1,2,4 |  |  |  |
| 3.a | 13.a | 23.b | 33.c | 43.1,3,4,5 |  |  |  |
| 4.a | 14.d | 24.d | 34.d | 44.1,2,5,6 |  |  |  |
| 5.b | 15.d | 25.d | 35.e | 45.1,3,4,5,6 |  |  |  |
| 6.c | 16.d | 26.a | 36.b | 46.3,4,5,6 |  |  |  |
| 7.e | 17.e | 27.b | 37.e | 47.1,2,5,6 |  |  |  |
| 8.e | 18.d | 28.a | 38.2,3 | 48.b,d,e,f |  |  |  |
| 9.e | 19.d | 29.b | 39.b,d |  |  |  |  |
| 10.b | 20.d | 30.d | 40.a,b |  |  |  |  |