

МИНИСТЕРСТВО ЗДРАВООХРАНЕНИЯ РЕСПУБЛИКИ БЕЛАРУСЬ

**УО «ВИТЕБСКИЙ ГОСУДАРСТВЕННЫЙ ОРДЕНА
ДРУЖБЫ НАРОДОВ МЕДИЦИНСКИЙ УНИВЕРСИТЕТ»**

КАФЕДРА ТЕРАПЕВТИЧЕСКОЙ СТОМАТОЛОГИИ С КУРСОМ ФПК И ПК



Т.И. Першукевич, Н.А. Байтус, Ю.П. Чернявский

**Коммунальная стоматология: методические
разработки для студентов 5 курса
стоматологического факультета**

T.I. Pershukevich, N.A. Baitus, Yu. P. Chernyavski

**Community Dentistry: methodical
developments for the 5th year students
of Stomatological Faculty**

Рекомендовано Учебно-методическим объединением по высшему
медицинскому, фармацевтическому образованию
в качестве учебно-методического пособия для студентов
учреждений высшего образования, обучающихся
по специальности 1-79 01 07 «Стоматология»

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Учебно-методическое пособие «Community Dentistry: methodical developments for the 5th year students of Stomatological Faculty» рассматривает основные разделы коммунальной стоматологии. В пособии отражен как международный опыт развития систем охраны здоровья, так и Республики Беларусь. Приводятся рекомендации Всемирной организации здравоохранения. Пособие соответствует образовательному стандарту, типовой и учебной программам по дисциплине «Коммунальная стоматология».

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METHODS OF EPIDEMIOLOGICAL RESEARCHES IN DENTISTRY

The questions to be studied for the learning of the topic:

1. Definition of the concept of "epidemiology". Kinds of epidemiology.
2. Types of epidemiological researches. Basic methods of epidemiological researches. Characteristics of methods.
3. The main stages of the exploratory research method for WHO.

Question 1. Definition of the concept of "epidemiology". Kinds of epidemiology.

Epidemiology is a science that studies the interrelationship of various factors that determine the frequency and spread of mass diseases in human society.

Epidemiology in dentistry studies the etiology and spread of dental diseases among the population.

Clinical epidemiology studies the dental morbidity according to the analysis of "outpatient cards of dental health".

Data from epidemiological researches allow to:

- Assess the prevalence and severity of major dental diseases
- Identify the need for disease prevention and treatment
- Determine the quality of dental care.
- Compare incidence rates in different regions and countries.
- Identify measurable goals for dental health at a community level.
- Justify the formulation of tasks for the volume and quality of dental care and for the industry producing equipment, materials, drugs.

Kinds of epidemiology

1. Descriptive - determines the prevalence of dental diseases.
2. Analytical - assesses the relationship of dental diseases with risk factors. Analytical epidemiology is the use of Questionnaires (identify bad habits and risk factors). Examples of WHO recommended questionnaires for adults and children are presented below.

Oral Health Questionnaire for Adults

Identification number	Sex		Location						
1. <table border="1" style="display: inline-table; border-collapse: collapse; width: 80px; height: 20px; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>					Male <input type="checkbox"/>	Female <input type="checkbox"/>	Urban <input type="checkbox"/>	Periurban <input type="checkbox"/>	Rural <input type="checkbox"/>
1 4	1	2	1	2	3				

2. How old are you today? _____
(Years)

3. How many natural teeth do you have?

No natural teeth ☐ 0

1–9 teeth ☐ 1

10–19 teeth ☐ 2

20 teeth or more ☐ 3

4. During the past 12 months, did your teeth or mouth cause any pain or discomfort?

Yes ☐ 1

No ☐ 2

Don't know ☐ 9

No answer ☐ 0

5. Do you have any removable dentures?

	Yes	No
	1	2
A partial denture?	<input type="checkbox"/>	<input type="checkbox"/>
A full upper denture?	<input type="checkbox"/>	<input type="checkbox"/>
A full lower denture?	<input type="checkbox"/>	<input type="checkbox"/>

6. How would you describe the state of your teeth and gums? Is it "excellent", "very good", "good", "average", "poor", or "very poor"?

	Teeth	Gums
Excellent	<input type="checkbox"/> 1	<input type="checkbox"/> 1
Very good	<input type="checkbox"/> 2	<input type="checkbox"/> 2
Good	<input type="checkbox"/> 3	<input type="checkbox"/> 3
Average	<input type="checkbox"/> 4	<input type="checkbox"/> 4
Poor	<input type="checkbox"/> 5	<input type="checkbox"/> 5
Very poor	<input type="checkbox"/> 6	<input type="checkbox"/> 6
Don't know	<input type="checkbox"/> 9	<input type="checkbox"/> 9

<p>7. How often do you clean your teeth?</p> <p>Never <input type="checkbox"/> 1</p> <p>Once a month <input type="checkbox"/> 2</p> <p>2–3 times a month..... <input type="checkbox"/> 3</p> <p>Once a week..... <input type="checkbox"/> 4</p> <p>2–6 times a week <input type="checkbox"/> 5</p> <p>Once a day <input type="checkbox"/> 6</p> <p>Twice or more a day..... <input type="checkbox"/> 7</p>																													
<p>8. Do you use any of the following to clean your teeth? (Read each item)</p> <table border="0"> <thead> <tr> <th></th> <th>Yes 1</th> <th>No 2</th> </tr> </thead> <tbody> <tr> <td>Toothbrush.....</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Wooden toothpicks</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Plastic toothpicks?</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Thread (dental floss)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Charcoal</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Chewstick/miswak.....</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Other</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Please specify</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>				Yes 1	No 2	Toothbrush.....	<input type="checkbox"/>	<input type="checkbox"/>	Wooden toothpicks	<input type="checkbox"/>	<input type="checkbox"/>	Plastic toothpicks?	<input type="checkbox"/>	<input type="checkbox"/>	Thread (dental floss)	<input type="checkbox"/>	<input type="checkbox"/>	Charcoal	<input type="checkbox"/>	<input type="checkbox"/>	Chewstick/miswak.....	<input type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input type="checkbox"/>	Please specify	<input type="checkbox"/>	<input type="checkbox"/>
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b) Do you use a toothpaste that contains fluoride?	<input type="checkbox"/> 1	<input type="checkbox"/> 2																											
Don't know	<input type="checkbox"/> 9																												
<p>10. How long is it since you last saw a dentist?</p> <p>Less than 6 months <input type="checkbox"/> 1</p> <p>6–12 months <input type="checkbox"/> 2</p> <p>More than 1 year but less than 2 years..... <input type="checkbox"/> 3</p> <p>2 years or more but less than 5 years <input type="checkbox"/> 4</p> <p>5 years or more <input type="checkbox"/> 5</p> <p>Never received dental care <input type="checkbox"/> 6</p>																													
<p>11. What was the reason of your last visit to the dentist?</p> <p>Consultation/advise..... <input type="checkbox"/> 1</p> <p>Pain or trouble with teeth, gums or mouth..... <input type="checkbox"/> 2</p> <p>Treatment/ follow-up treatment <input type="checkbox"/> 3</p> <p>Routine check-up/treatment..... <input type="checkbox"/> 4</p> <p>Don't know/don't remember <input type="checkbox"/> 5</p>																													

<p>12. Because of the state of your teeth or mouth, how often have you experienced any of the following problems during the past 12 months?</p>						
	Very often	Fairly often	Some- times	No	Don't know	
	4	3	2	1	0	
(a) Difficulty in biting foods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(b) Difficulty chewing foods.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(c) Difficulty with speech/trouble pronouncing words	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(d) Dry mouth.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(e) Felt embarrassed due to appearance of teeth.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(f) Felt tense because of problems with teeth or mouth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(g) Have avoided smiling because of teeth.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(h) Had sleep that is often interrupted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(i) Have taken days off work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(j) Difficulty doing usual activities..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(k) Felt less tolerant of spouse or people who are close to you.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
(l) Have reduced participation in social activities.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>13. How often do you eat or drink any of the following foods, even in small quantities? (Read each item)</p>						
	Several times a day	Every day	Several times a week	Once a week	Several times a month	Seldom /never
	6	5	4	3	2	1
Fresh fruit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biscuits, cakes, cream cakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sweet pies, buns.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jam or honey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chewing gum containing sugar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sweets/candy.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Lemonade, Coca Cola or other soft drinks .. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
Tea with sugar <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
Coffee with sugar <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
(Insert country-specific items)						
14. How often do you use any of the following types of tobacco? (Read each item)						
	Every day	Several times a week	Once a week	Several times a month	Seldom	Never
	6	5	4	3	2	1
Cigarettes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cigars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A pipe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chewing tobacco	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use snuff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Please specify _____						
15. During the past 30 days, on the days you drank alcohol, how many drinks did you <i>usually drink per day</i>?						
Less than 1 drink	<input type="checkbox"/> 0					
1 drink	<input type="checkbox"/> 1					
2 drinks	<input type="checkbox"/> 2					
3 drinks	<input type="checkbox"/> 3					
4 drinks	<input type="checkbox"/> 4					
5 or more drinks	<input type="checkbox"/> 5					
Did not drink alcohol during the past 30 days	<input type="checkbox"/> 9					
16. What level of education have you completed?						
No formal schooling	<input type="checkbox"/> 1					
Less than primary school	<input type="checkbox"/> 2					
Primary school completed	<input type="checkbox"/> 3					
Secondary school completed	<input type="checkbox"/> 4					
High school completed	<input type="checkbox"/> 5					
College/university completed	<input type="checkbox"/> 6					
Postgraduate degree	<input type="checkbox"/> 7					
(Insert country-specific categories)						
<i>That completes our questionnaire</i> <i>Thank you very much for your cooperation!</i>						
Year	Month	Day	Interviewer	District	Country	
<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	

Oral Health Questionnaire for Children

First, we would like you to answer some questions concerning yourself and your teeth

Identification number 1. <table style="display: inline-table; border: 1px solid black; width: 100px; height: 20px; vertical-align: middle;"> <tr> <td style="width: 25%; height: 20px;"></td> <td style="width: 25%; height: 20px;"></td> <td style="width: 25%; height: 20px;"></td> <td style="width: 25%; height: 20px;"></td> </tr> </table> <div style="display: flex; justify-content: space-around; width: 100px;"> 1 4 </div>					Sex <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> Boy <input type="checkbox"/> 1 </div> <div style="text-align: center;"> Girl <input type="checkbox"/> 2 </div> </div>	Location <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> Urban <input type="checkbox"/> 1 </div> <div style="text-align: center;"> Periurban <input type="checkbox"/> 2 </div> <div style="text-align: center;"> Rural <input type="checkbox"/> 3 </div> </div>

2. How old are you today? _____
(Years)

3. How would you describe the health of your teeth and gums?
(Read each item)

	Teeth	Gums
Excellent	<input type="checkbox"/> 1	<input type="checkbox"/> 1
Very good	<input type="checkbox"/> 2	<input type="checkbox"/> 2
Good	<input type="checkbox"/> 3	<input type="checkbox"/> 3
Average	<input type="checkbox"/> 4	<input type="checkbox"/> 4
Poor	<input type="checkbox"/> 5	<input type="checkbox"/> 5
Very poor	<input type="checkbox"/> 6	<input type="checkbox"/> 6
Don't know	<input type="checkbox"/> 9	<input type="checkbox"/> 9

4. How often during the past 12 months did you have toothache or feel discomfort due to your teeth?

Often	<input type="checkbox"/> 1
Occasionally	<input type="checkbox"/> 2
Rarely	<input type="checkbox"/> 3
Never	<input type="checkbox"/> 4
Don't know	<input type="checkbox"/> 9

Now please answer some questions about the care of your teeth

5. How often did you go to the dentist during the past 12 months?
(Put a tick/cross in one only)

Once	<input type="checkbox"/> 1
Twice	<input type="checkbox"/> 2
Three times	<input type="checkbox"/> 3
Four times	<input type="checkbox"/> 4

More than four times <input type="checkbox"/> 5 I had no visit to dentist during the past 12 months..... <input type="checkbox"/> 6 I have never received dental care/visited a dentist..... <input type="checkbox"/> 7 I don't know/don't remember <input type="checkbox"/> 9																								
<i>If you did not see a dentist during the last 12 months, go on to question 7</i>																								
6. What was the reason for your last visit to the dentist? (Put a tick/cross in one box only) Pain or trouble with teeth, gums or mouth <input type="checkbox"/> 1 Treatment/follow-up treatment <input type="checkbox"/> 2 Routine check-up of teeth/treatment..... <input type="checkbox"/> 3 I don't know/don't remember <input type="checkbox"/> 9																								
7. How often do you clean your teeth? (Put a tick/cross in one box only) Never..... <input type="checkbox"/> 1 Several times a month (2–3 times)..... <input type="checkbox"/> 2 Once a week <input type="checkbox"/> 3 Several times a week (2–6 times) <input type="checkbox"/> 4 Once a day..... <input type="checkbox"/> 5 2 or more times a day <input type="checkbox"/> 6																								
8. Do you use any of the following to clean your teeth or gums? (Read each item) <table style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%; text-align: center;">Yes 1</th> <th style="width: 20%; text-align: center;">No 2</th> </tr> </thead> <tbody> <tr> <td>Toothbrush.....</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Wooden toothpicks</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Plastic toothpicks.....</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Thread (dental floss)</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Charcoal</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Chewstick/miswak.....</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Other</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </tbody> </table> Please specify _____		Yes 1	No 2	Toothbrush.....	<input type="checkbox"/>	<input type="checkbox"/>	Wooden toothpicks	<input type="checkbox"/>	<input type="checkbox"/>	Plastic toothpicks.....	<input type="checkbox"/>	<input type="checkbox"/>	Thread (dental floss)	<input type="checkbox"/>	<input type="checkbox"/>	Charcoal	<input type="checkbox"/>	<input type="checkbox"/>	Chewstick/miswak.....	<input type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input type="checkbox"/>
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	Yes	No																						
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b) Do you use toothpaste that contains fluoride?....	<input type="checkbox"/> 1	<input type="checkbox"/> 2																						
Don't know.....	<input type="checkbox"/> 9																							

<p>10. Because of the state of your teeth and mouth, have you experienced any of the following problems during the past year?</p>						
	Yes 1	No 2	Don't know 0			
(a) I am not satisfied with the appearance of my teeth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
(b) I often avoid smiling and laughing because of my teeth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
(c) Other children make fun of my teeth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
(d) Toothache or discomfort caused by my teeth forced me to miss classes at school or miss school for whole days.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
(e) I have difficulty biting hard foods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
(f) I have difficulty in chewing.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

<p>11. How often do you eat or drink any of the following foods, even in small quantities? (Read each item)</p>						
	Several times a day 6	Every day 5	Several times a week 4	Once a week 3	Several times a month 2	Never 1
Fresh fruit.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biscuits, cakes, cream cakes, sweet pies, buns etc.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lemonade, Coca Cola or other soft drinks ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jam/honey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chewing gum containing sugar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sweets/candy.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Milk with sugar.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tea with sugar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coffee with sugar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Insert country-specific items)						

12. How often do you use any of the following types of tobacco? (Read each item)						
	Every day 6	Several times a week 5	Once a week 4	Several times a month 3	Seldom 2	Never 1
Cigarettes, pipe or cigars ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chewing tobacco or snuff..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. What level of education has your father completed (or your stepfather, guardian or other male adult living with you)?	
No formal schooling.....	<input type="checkbox"/> 1
Less than primary school.....	<input type="checkbox"/> 2
Primary school completed	<input type="checkbox"/> 3
Secondary school completed.....	<input type="checkbox"/> 4
High school completed	<input type="checkbox"/> 5
College/university completed	<input type="checkbox"/> 6
No male adult in household	<input type="checkbox"/> 7
Don't know.....	<input type="checkbox"/> 9

14. What level of education has your mother completed?	
No formal schooling.....	<input type="checkbox"/> 1
Less than primary school.....	<input type="checkbox"/> 2
Primary school completed	<input type="checkbox"/> 3
Secondary school completed.....	<input type="checkbox"/> 4
High school completed	<input type="checkbox"/> 5
College/university completed	<input type="checkbox"/> 6
No female adult in household.....	<input type="checkbox"/> 7
Don't know.....	<input type="checkbox"/> 9
(Insert country-specific categories)	

<i>That completes our questionnaire</i> <i>Thank you very much for your cooperation!</i>					
Year	Month	Day	Interviewer	District	Country
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

3. Experimental-analytical - assesses the medical and economic effectiveness of methods of treatment and prevention (fluoridation of drinking water). The effectiveness of anticaries drugs is carried out in 2-3 years, oral hygiene means - after 3-6 months.

Question 2. Types of epidemiological researches. Basic methods of epidemiological researches. Characteristics of methods.

Cross-sectional study is analysis of data collected from 2 or more samples at 1 point and at 1 time (the prevalence and intensity of dental diseases are studied and the relationships of dental diseases with different socio-demographic factors, people's way of life, etc. are revealed).

Longitudinal study is epidemiological study of a representative sample with repeated intervals of time a long period (assessment of medical and economic efficiency of primary prevention of dental diseases).

Sampling methods in epidemiological studies in dentistry

Solid requires a lot of time and material means.

Selective is widely used in scientific research.

Exploratory recommended by WHO, less time-consuming in comparison with others and quite informative.

Question 3. The main stages of the exploratory research method for WHO.

1. Planning

- Inhabited localities
- Time
- Personnel
- Budget

2. Sampling of the population for examinations

- Age groups
- Structure of the sampling
- Size of the sampling
- Method of the sampling

3. Collection of epidemiological data

- General information
- Determination of dental status
- Definition of risk factors of disease

4. Data analysis. The results of the studies are important for assessing dental status and planning, dental care at all levels.

Classification by age

Children

- 5-6 years old
- 12 years old
- 15 years old
- 18 years old

Adults and elderly

- 35-44 years old
- 65-74 years.

The minimum number of age groups can be two: 12-year-olds and 35-44-year-olds.

The rural and urban population should be examined in each region. In large cities (> 1 million inhabitants) it is recommended to examine 2-3 groups in different administrative districts.

Size of the sampling. In one district, the number of people for an examination of one age group should be at least 40-50 people.

Method of the sampling. Children 6, 12, 15 years can be examined in preschool and schools. The adult population is examined during visits of establishments of education, enterprises, etc.

Organization of examinations. The assistant conducts the registration of the data of examination. The researcher should check the accuracy and correctness of completing the survey cards at the end of the working day. Children and adults should be examined in the same conditions and one team of epidemiologists. The following materials and tools are required for instrumental dental examination:

1. Dental probes.
2. Stomatological mirrors.
3. Periodontal probes.
4. Gloves and masks in enough quantity.

Personnel. A small group of dentists should conduct an epidemiological examination. They should equally evaluate the dental status (pass calibration).

Collection of epidemiological data (organization of epidemiological research)

In the beginning it is necessary to pass an agreement with higher authorities (ministries, administration of establishments of education, etc.).

Direct examination of the population. Children and adolescents are examined in preschools and schools. Elderly are examined in homes for the elderly, sanatoria. Adult population are examined at enterprises, establishments of education, with maximum approximation to the workplace.

Dental cards developed by WHO:

- Combined WHO card (1980) for dental status and treatment.
- Card of dental health of WHO (1995), modification of L.G. Borisenko.

For the dental population examination it is recommended to use the modified card of the World Health Organization "Card of dental health" (WHO, 1995), which consists of 11 sections:

1. General information;
2. External examination;
3. Lesions of the oral mucosa;
4. Hygiene of the oral cavity;
5. Periodontal status;
6. Saliva;
7. Non-carious lesions and mobility of teeth;
8. Dental caries and need in treatment;
9. Orthopedic status and need in prosthetics;
10. Tooth-maxillary anomalies;
11. Need in emergency care.

The various forms of dental patient cards (adults and children) developed and recommended by WHO are presented below.

World Health Organization

Oral Health Assessment Form

for Adults, 2013

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World Health Organization

Oral Health Assessment Form

for Adults, 2013

Loss of attachment Severity 0 = 0–3 mm 1 = 4–5 mm Cemento-enamel junction (CEJ) within black band 2 = 6–8 mm CEJ between upper limit of black band and 8.5 mm ring 3 = 9–11 mm CEJ between 8.5 mm and 11.5 mm ring 4 = 12 mm or more CEJ beyond 11.5 mm ring X = Excluded sextant 9 = Not recorded * Not recorded under 15 years of age		Index teeth 17/16 11 26/27 (173) <input type="text"/> <input type="text"/> (175) (176) <input type="text"/> <input type="text"/> (178) 47/46 31 36/37	Enamel fluorosis <input type="text"/> (179) Severity 0 = Normal 1 = Questionable 2 = Very mild 3 = Mild 4 = Moderate 5 = Severe 8 = Excluded (crown, restoration, "bracket") 9 = Not recorded (unerupted tooth)
Dental erosion Severity <input type="text"/> (180) 0 = No sign of erosion 1 = Enamel lesion 2 = Dentine lesion 3 = Pulp involvement Number of teeth affected (181) <input type="text"/> <input type="text"/> (182)	Dental trauma Status <input type="text"/> (183) 0 = No sign of injury 1 = Treated injury 2 = Enamel fracture only 3 = Enamel and dentine fracture 4 = Pulp involvement 5 = Missing tooth due to trauma 6 = Other damage 9 = Excluded tooth Number of teeth affected (184) <input type="text"/> <input type="text"/> (185)		
Oral mucosal lesions <input type="text"/> (186) <input type="text"/> (187) <input type="text"/> (188) Condition 0 = No abnormal condition 1 = Malignant tumour (oral cancer) 2 = Leukoplakia 3 = Lichen planus 4 = Ulceration (aphthous, herpetic, traumatic) 5 = Acute necrotizing ulcerative gingivitis (ANUG) 6 = Candidiasis 7 = Abscess 8 = Other condition (specify if possible) 9 = Not recorded		Denture(s) Upper <input type="text"/> (192) Lower <input type="text"/> (193) Status 0 = No denture 1 = Partial denture 2 = Complete denture 9 = Not recorded	
Intervention urgency <input type="text"/> (194) 0 = No treatment needed 1 = Preventive or routine treatment needed 2 = Prompt treatment (including scaling) needed 3 = Immediate (urgent) treatment needed due to pain or infection of dental and/or oral origin 4 = Referred for comprehensive evaluation or medical/dental treatment (systemic condition)			

World Health Organization

Oral Health Assessment Form for Children, 2013

Leave blank (1) <input type="text"/>	Year (4) <input type="text"/>	Month (5) <input type="text"/>	Day (10) <input type="text"/>	Identification No. (11) <input type="text"/>	Orig/Dupl (14) <input type="text"/>	Examiner (15) <input type="text"/>	(16) <input type="text"/>	(17) <input type="text"/>
General information: Sex 1=M, 2=F Date of birth (18) <input type="text"/> (19) <input type="text"/> (20) <input type="text"/> (21) <input type="text"/> (22) <input type="text"/> (23) <input type="text"/> (24) <input type="text"/> (25) <input type="text"/> (26) <input type="text"/>								
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Ethnic group (27) <input type="text"/>		Other group (28) <input type="text"/>		Years in school (31) <input type="text"/>		Occupation (32) <input type="text"/>		
Community (geographical location) (34) <input type="text"/>				Location Urban (1) Periurban (2) Rural (3) <input type="text"/>				
Other data (37) <input type="text"/>				Other data (39) <input type="text"/>				
Other data (41) <input type="text"/>				Extra-oral examination (43) <input type="text"/>				

Dentition status <table style="width: 100%; text-align: center;"> <tr> <td>17</td><td>16</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>26</td><td>27</td> </tr> <tr> <td>Crown (45) <input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td>(58) <input type="text"/></td> </tr> <tr> <td>Crown (59) <input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td>(72) <input type="text"/></td> </tr> <tr> <td>47</td><td>46</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td><td>71</td><td>72</td><td>73</td><td>74</td><td>75</td><td>36</td><td>37</td> </tr> </table>	17	16	55	54	53	52	51	61	62	63	64	65	26	27	Crown (45) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(58) <input type="text"/>	Crown (59) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(72) <input type="text"/>	47	46	85	84	83	82	81	71	72	73	74	75	36	37	Primary teeth Permanent teeth Status A 0 = Sound B 1 = Caries C 2 = Filled w/carries D 3 = Filled, no caries E 4 = Missing due to caries F 5 = Missing for any another reason G 6 = Fissure sealant H 7 = Fixed dental prosthesis/crown, abutment, veneer I 8 = Unruptured J 9 = Not recorded
17	16	55	54	53	52	51	61	62	63	64	65	26	27																																												
Crown (45) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(58) <input type="text"/>																																												
Crown (59) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(72) <input type="text"/>																																												
47	46	85	84	83	82	81	71	72	73	74	75	36	37																																												

Periodontal status <table style="width: 100%; text-align: center;"> <tr> <td>17</td><td>16</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>26</td><td>27</td> </tr> <tr> <td>(73) <input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td>(86) <input type="text"/></td> </tr> <tr> <td>(87) <input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td><input type="text"/></td><td>(100) <input type="text"/></td> </tr> <tr> <td>47</td><td>46</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td><td>71</td><td>72</td><td>73</td><td>74</td><td>75</td><td>36</td><td>37</td> </tr> </table>	17	16	55	54	53	52	51	61	62	63	64	65	26	27	(73) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(86) <input type="text"/>	(87) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(100) <input type="text"/>	47	46	85	84	83	82	81	71	72	73	74	75	36	37	Enamel fluorosis <input type="text"/> (101) Status 0 = Normal 1 = Questionable 2 = Very mild 3 = Mild 4 = Moderate 5 = Severe 8 = Excluded (crown, restoration, "bracket") 9 = Not recorded (unruptured tooth)
17	16	55	54	53	52	51	61	62	63	64	65	26	27																																												
(73) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(86) <input type="text"/>																																												
(87) <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(100) <input type="text"/>																																												
47	46	85	84	83	82	81	71	72	73	74	75	36	37																																												

Gingival bleeding Scores 0 = Absence of condition 1 = Presence of condition 9 = Tooth excluded X = Tooth not present	Dental erosion Severity (102) <input type="text"/> 0 = No sign of erosion 1 = Enamel lesion 2 = Dentinal lesion 3 = Pulp involvement No. of teeth (103) <input type="text"/> (104) <input type="text"/>	Dental trauma Status (105) <input type="text"/> 0 = No sign of injury 1 = Treated injury 2 = Enamel fracture only 3 = Enamel and dentine fracture 4 = Pulp involvement 5 = Missing tooth due to trauma 6 = Other damage 9 = Excluded tooth No. of teeth (106) <input type="text"/> (107) <input type="text"/>	Oral mucosal lesions <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> Condition (108) <input type="text"/> (109) <input type="text"/> (110) <input type="text"/> 0 = No abnormal condition 1 = Ulceration (aphthous, herpetic, traumatic) 2 = Acute necrotizing ulcerative gingivitis (ANUG) 3 = Candidiasis 4 = Abscess 8 = Other condition 9 = Not recorded </td> <td style="width: 50%; vertical-align: top;"> Location (111) <input type="text"/> (112) <input type="text"/> (113) <input type="text"/> 0 = Vermilion border 1 = Commissures 2 = Lips 3 = Sulci 4 = Buccal mucosa 5 = Floor of mouth 6 = Tongue 7 = Hard and/or soft palate 8 = Alveolar ridges/gingiva 9 = Not recorded </td> </tr> </table>	Condition (108) <input type="text"/> (109) <input type="text"/> (110) <input type="text"/> 0 = No abnormal condition 1 = Ulceration (aphthous, herpetic, traumatic) 2 = Acute necrotizing ulcerative gingivitis (ANUG) 3 = Candidiasis 4 = Abscess 8 = Other condition 9 = Not recorded	Location (111) <input type="text"/> (112) <input type="text"/> (113) <input type="text"/> 0 = Vermilion border 1 = Commissures 2 = Lips 3 = Sulci 4 = Buccal mucosa 5 = Floor of mouth 6 = Tongue 7 = Hard and/or soft palate 8 = Alveolar ridges/gingiva 9 = Not recorded	Intervention urgency <input type="text"/> (114) 0 = No treatment needed 1 = Preventive or routine treatment needed 2 = Prompt treatment (including scaling) needed 3 = Immediate (urgent) treatment needed due to pain or infection of dental and/or oral origin 4 = Referred for comprehensive evaluation or medical/dental treatment (systemic condition)
Condition (108) <input type="text"/> (109) <input type="text"/> (110) <input type="text"/> 0 = No abnormal condition 1 = Ulceration (aphthous, herpetic, traumatic) 2 = Acute necrotizing ulcerative gingivitis (ANUG) 3 = Candidiasis 4 = Abscess 8 = Other condition 9 = Not recorded	Location (111) <input type="text"/> (112) <input type="text"/> (113) <input type="text"/> 0 = Vermilion border 1 = Commissures 2 = Lips 3 = Sulci 4 = Buccal mucosa 5 = Floor of mouth 6 = Tongue 7 = Hard and/or soft palate 8 = Alveolar ridges/gingiva 9 = Not recorded					

World Health Organization

Oral Health Assessment Form

for Adults (by tooth surface), 2013

Leave blank	Year	Month	Day	Identification No.	Orig/Dupl	Examiner
(1) <input type="text"/>	(4) <input type="text"/>	(5) <input type="text"/>	(10) <input type="text"/>	(11) <input type="text"/>	(14) <input type="text"/>	(15) <input type="text"/>
General information:				Sex 1=M, 2=F	Date of birth	Age in years
(Name) _____				(18) <input type="text"/>	(19) <input type="text"/>	(24) <input type="text"/>
				(25) <input type="text"/>	(26) <input type="text"/>	
Ethnic group (27) <input type="text"/>		Other group (29) <input type="text"/>		Years in school (31) <input type="text"/>	Occupation (33) <input type="text"/>	
Community (geographical location) (34) <input type="text"/>				Location Urban (1) Periurban (2) Rural (3) <input type="text"/>		
Other data (37) <input type="text"/>				Other data (39) <input type="text"/>		
Other data (41) <input type="text"/>				Extra-oral examination (43) <input type="text"/>		

Dentition status by tooth surface																		Permanent teeth Status 0 = Healthy 1 = Caries 2 = Filled w/caries 3 = Filled no/caries 4 = Missing due to caries 5 = Missing for another reason 6 = Fissure sealant 7 = Fixed partial denture, crown, abutment, veneer, implant 8 = Unruptured 9 = Not recorded
	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28		
Occ	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input checked="" type="text"/>	<input checked="" type="text"/>	<input checked="" type="text"/>	<input checked="" type="text"/>	<input checked="" type="text"/>	<input checked="" type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(45-54)	
Mes	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(55-70)	
Buc	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(71-86)	
Dis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(87-102)	
Oral	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(103-118)	
	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38		
Occ	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input checked="" type="text"/>	<input checked="" type="text"/>	<input checked="" type="text"/>	<input checked="" type="text"/>	<input checked="" type="text"/>	<input checked="" type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(119-128)	
Mes	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(129-144)	
Buc	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(145-160)	
Dis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(161-176)	
Oral	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(177-192)	

Periodontal status (CPI Modified)																		Gingival bleeding Score 0 = Absence of condition 1 = Presence of condition 9 = Tooth excluded X = Tooth not present Pocket Score 0 = Absence of condition 1 = Pocket 4-5 mm 2 = Pocket 6 mm or more 9 = Tooth excluded X = Tooth not present
	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28		
Bleeding (193)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(208)	
Pocket (209)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(224)	
Bleeding (225)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(240)	
Pocket (241)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(256)	
	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38		
Bleeding (193)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(208)	
Pocket (209)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(224)	
Bleeding (225)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(240)	
Pocket (241)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(256)	

World Health Organization

Oral Health Assessment Form

for Adults, 2013

Loss of attachment Severity 0 = 0–3 mm 1 = 4–5 mm Cemento-enamel junction (CEJ) within black band 2 = 6–8 mm CEJ between upper limit of black band and 8.5 mm ring 3 = 9–11 mm CEJ between 8.5 mm and 11.5 mm ring 4 = 12 mm or more CEJ beyond 11.5 mm ring X = Excluded sextant 9 = Not recorded * Not recorded under 15 years of age		Index teeth 17/16 11 26/27 (257) <input type="text"/> <input type="text"/> <input type="text"/> (259) (260) <input type="text"/> <input type="text"/> <input type="text"/> (262) 47/46 31 36/37		Enamel fluorosis <input type="text"/> (263) Severity 0 = Normal 1 = Questionable 2 = Very mild 3 = Mild 4 = Moderate 5 = Severe 8 = Excluded (crown, restoration, "bracket") 9 = Not recorded (unerupted tooth)
Dental erosion Severity <input type="text"/> (264) 0 = No sign of erosion 1 = Enamel lesion 2 = Dentinal lesion 3 = Pulp involvement Number of teeth affected (265) <input type="text"/> <input type="text"/> (266)		Dental trauma Status <input type="text"/> (267) 0 = No sign of injury 1 = Treated injury 2 = Enamel fracture only 3 = Enamel and dentine fracture 4 = Pulp involvement 5 = Missing tooth due to trauma 6 = Other damage 9 = Excluded tooth Number of teeth affected (268) <input type="text"/> <input type="text"/> (269)		
Oral mucosal lesions <input type="text"/> (270) <input type="text"/> (271) <input type="text"/> (272) Condition 0 = No abnormal condition 1 = Malignant tumour (oral cancer) 2 = Leukoplakia 3 = Lichen planus 4 = Ulceration (aphthous, herpetic, traumatic) 5 = Acute necrotizing ulcerative gingivitis (ANUG) 6 = Candidiasis 7 = Abscess 8 = Other condition (specify if possible) 9 = Not recorded		Denture(s) Upper <input type="text"/> (276) Lower <input type="text"/> (277) Status 0 = No denture 1 = Partial denture 2 = Complete denture 9 = Not recorded		
Intervention urgency <input type="text"/> (278) 0 = No treatment needed 1 = Preventive or routine treatment needed 2 = Prompt treatment (including scaling) needed 3 = Immediate (urgent) treatment needed due to pain or infection of dental and/or oral origin 4 = Referred for comprehensive evaluation or medical treatment (systemic condition)				

World Health Organization

Oral Health Assessment Form for Children (by tooth surface), 2013

Leave blank				Year				Month				Day				Identification No.				Orig/Dupl		Examiner						
(1)				(4)				(5)					(10)				(11)				(14)		(15)		(16)		(17)	

General information:

(Name) _____ Sex 1=M, 2=F _____ Date of birth _____ Age in years _____

(18) (19) (20) (21) (22) (23) (24) (25) (26)

Ethnic group (27) _____ (28) _____ Other group (29) _____ (30) _____ Years in school (31) _____ (32) _____ Occupation _____ (33)

Community (geographical location) _____ (34) _____ (35) _____ Location Urban (1) Periurban (2) Rural (3) _____ (36)

Other data _____ (37) _____ (38) _____ Other data _____ (39) _____ (40)

Other data _____ (41) _____ (42) _____ Extra-oral examination _____ (43) _____ (44)

Dentition status by tooth surface

	17	16	55	54	53	52	51	61	62	63	64	65	26	27	
Occ					X	X	X	X	X	X					(45-52)
Mes															(53-66)
Buc															(67-80)
Dis															(81-94)
Oral															(95-108)

	47	46	85	84	83	82	81	71	72	73	74	75	36	37	
Occ					X	X	X	X	X	X					(109-116)
Mes															(117-130)
Buc															(131-144)
Dis															(145-158)
Oral															(159-172)

Primary teeth	Permanent teeth
Status	
A	0 = Sound
B	1 = Caries
C	2 = Filled w/caries
D	3 = Filled, no caries
E	4 = Missing due to caries
F	5 = Missing for another reason
G	6 = Fissure sealant
	7 = Fix dental prosthesis/crown, abutment, veneer
	8 = Unerupted
	9 = Not recorded

World Health Organization

Oral Health Assessment Form

for Children, 2013

Periodontal status <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 {173} <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> {185} {187} <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> {200} </div> <div style="text-align: center;"> 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 85 84 83 82 81 71 72 73 74 75 35 36 37 </div> </div>		Enamel fluorosis <input type="checkbox"/> (201) Severity 0 = Normal 3 = Mild 1 = Questionable 4 = Moderate 2 = Very mild 5 = Severe 8 = Excluded (crown, restoration, "bracket") 9 = Not recorded (unerupted tooth)	
Gingival bleeding Score {0} = Absence of condition {1} = Presence of condition {9} = Tooth excluded {X} = Tooth not present			
Dental erosion Severity {202} <input type="checkbox"/> 0 = No sign of erosion 1 = Enamel lesion 2 = Dentinal lesion 3 = Pulp involvement <div style="display: flex; justify-content: space-around;"> <div>No. of teeth</div> <div>{203} <input type="checkbox"/> <input type="checkbox"/> {204}</div> </div>	Dental trauma Status {205} <input type="checkbox"/> 0 = No sign of injury 1 = Treated injury 2 = Enamel fracture only 3 = Enamel and dentine fracture 4 = Pulp involvement 5 = Missing tooth due to trauma 6 = Other damage 9 = Excluded tooth <div style="display: flex; justify-content: space-around;"> <div>No. of teeth</div> <div>{206} <input type="checkbox"/> <input type="checkbox"/> {207}</div> </div>	Oral mucosal lesions <div style="display: flex; justify-content: space-around;"> <div> Condition {208} <input type="checkbox"/> {209} <input type="checkbox"/> {210} <input type="checkbox"/> 0 = No abnormal condition 1 = Ulceration (aphthous, herpetic, traumatic) 2 = Acute necrotizing ulcerative gingivitis (ANUG) 3 = Candidiasis 4 = Abscess 8 = Other condition 9 = Not recorded </div> <div> Location {211} <input type="checkbox"/> {212} <input type="checkbox"/> {213} <input type="checkbox"/> 0 = Vermillion border 1 = Commissures 2 = Lips 3 = Sulci 4 = Buccal mucosa 5 = Floor of mouth 6 = Tongue 7 = Hard/soft palate 8 = Alveolar ridges/gingiva 9 = Not recorded </div> </div>	Intervention URGENCY <input type="checkbox"/> (214) 0 = No curative treatment needed 1 = Preventive or routine treatment needed 2 = Prompt treatment (including scaling) needed 3 = Immediate (urgent) treatment due to pain or infection of dental and/or oral origin 4 = Referred for comprehensive evaluation or medical treatment (systemic condition)

World Health Organization

Record Form for Oral Manifestations in HIV/AIDS, 2013

Country: _____																											
Leave blank (1) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> (4)				Year (5) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> (10)				Month (11) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> (14)				Day (15) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> (18)				Identification No. (19) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> (22)				Orig/Dupl (23) <input type="text"/> <input type="text"/> (26)				Examiner (27) <input type="text"/> <input type="text"/> (30)			
General information:												Sex 1=M, 2=F				Date of birth				Age in years							
(Name) _____ (18) (19) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> (24) (25) <input type="text"/> <input type="text"/> (26)																											
Ethnic group (27) <input type="text"/> <input type="text"/> (28)				Other group (29) <input type="text"/> <input type="text"/> (30)				Years in school (31) <input type="text"/> <input type="text"/> (32)				Occupation <input type="text"/> (33)															
Community (geographical location) (34) <input type="text"/> <input type="text"/> (35)				Location Urban (1) Periurban (2) Rural (3) <input type="text"/> (36)																							
Other data _____ (37) <input type="text"/> <input type="text"/> (38)				Other data _____ (39) <input type="text"/> <input type="text"/> (40)																							
Other data _____ (41) <input type="text"/> <input type="text"/> (42)				Other data _____ (43) <input type="text"/> <input type="text"/> (44)																							
Extra-oral examination _____ (45) <input type="text"/> <input type="text"/> (46)				Extra-oral examination _____ (47) <input type="text"/> <input type="text"/> (48)																							
Weight in kg <input type="text"/> <input type="text"/> (49–50)								Height in cm <input type="text"/> <input type="text"/> <input type="text"/> (51–53)								Fever <input type="text"/> (54) 1 = Present 2 = Absent											
Candidiasis 1 = Present 2 = Absent																											
Erythematous				Hyperplastic				Pseudomembranous																			
<input type="text"/> (55)				<input type="text"/> (56)				<input type="text"/> (57)																			
Location of lesion 1 = Present 2 = Absent																											
<input type="text"/> (58) Tongue				<input type="text"/> (59) Gingiva				<input type="text"/> (60) Lip/buccal mucosa				<input type="text"/> (61) Palate				<input type="text"/> (62) Pharynx											

World Health Organization
Record Form for Oral Manifestations
in HIV/AIDS, 2013

	1 = Present ✓ tick	2 = Absent ✓ tick	
Angular cheilitis	<input type="checkbox"/>	<input type="checkbox"/>	(63)
Oral hairy leukoplakia	<input type="checkbox"/>	<input type="checkbox"/>	(64)
Necrotizing ulcerative gingivitis (NUG)	<input type="checkbox"/>	<input type="checkbox"/>	(65)
Necrotizing ulcerative periodontitis (NUP)	<input type="checkbox"/>	<input type="checkbox"/>	(66)
Necrotizing stomatitis	<input type="checkbox"/>	<input type="checkbox"/>	(67)
Herpetic stomatitis/gingivitis and/or labial	<input type="checkbox"/>	<input type="checkbox"/>	(68)
Herpes zoster	<input type="checkbox"/>	<input type="checkbox"/>	(69)
Molluscum contagiosum	<input type="checkbox"/>	<input type="checkbox"/>	(70)
Cytomegalovirus	<input type="checkbox"/>	<input type="checkbox"/>	(71)
Warty-like lesions/human papillomavirus	<input type="checkbox"/>	<input type="checkbox"/>	(72)
Kaposi sarcoma	<input type="checkbox"/>	<input type="checkbox"/>	(73)
Aphthous ulcers	<input type="checkbox"/>	<input type="checkbox"/>	(74)
Other ulcerations	<input type="checkbox"/>	<input type="checkbox"/>	(75)
Dry mouth due to decreased salivary flow	<input type="checkbox"/>	<input type="checkbox"/>	(76)
Unilateral or bilateral swelling of major salivary glands	<input type="checkbox"/>	<input type="checkbox"/>	(77)
Other(s)	<input type="checkbox"/>	<input type="checkbox"/>	(78)

Indices of oral hygiene and periodontal status:

OHI-S - index of oral hygiene

Plaque

0 - no

1 - 1/3 of the tooth surface

2 - 2/3 of the tooth surface

3 - more 2/3 of the tooth surface

Tartar

0 - no

1 - 1/3 of the tooth surface

2 - 2/3 of the tooth surface

3 - more 2/3 of the tooth surface

Oral Hygiene Index-Simplified (OHI-S)

Described by John C. Greene and Jack R. Vermillion in 1964

Name _____

Date __/__/__

Age/Sex _____

Case No. _____

Income -

Brushing -

Education -

Agent -

Occupation -

Frequency -

Diet -

Sugar exposure -

DEBRIS INDEX-SIMPLIFIED (DI-S)

16	11	26
46	31	36

DI-S = Total score/no. of surfaces scored

= Interpretation = _____

CALCULUS INDEX-SIMPLIFIED (CI-S)

16	11	26
46	31	36

CI-S = Total score/no. of surfaces scored

= Interpretation = _____

OHI-S = DI-S + CI-S

= Interpretation = _____

Staff Signature

CPI - community periodontal index:

0 - healthy

1 - bleeding

2 - stone

3 - pocket 3-4 mm

4 - pocket 6 mm and more

X - excluded sextants

Community Periodontal Index (CPI)

Described by WHO/FDI in 1982

Name _____

Date __/__/__

Age/Sex _____

Case No. _____

Income -

Brushing -

Education -

Agent -

Occupation -

Frequency -

Periodontal Status

17/16	11	26/27
47/46	31	36/37

Loss of Attachment

17/16	11	26/27
47/46	31	36/37

Staff Signature

Diagnosis of caries (WHO's recommendations)

Caries is registered

- ✓ softened bottom
- ✓ undercut enamel
- ✓ softened fissure wall
- ✓ softening of enamel on a smooth surface
- ✓ the probe go in the cavity on the approximate surface

Caries is not registered

- ✓ white spots
- ✓ rough surface
- ✓ pigmented fossae, fissures
- ✓ the probe is retained in the fissure, but there is no softening or undercut edges
- ✓ pigmented spot

Table 1. Classification of caries levels by WHO (1996)

Age group	DMFT	Caries level
12 years old	0 – 0,50	Very low
	0,51 – 1,50	Low
	1,51 – 3,00	Average
	3,01 – 6,50	High
	6,51 – 10,00	Very high

Factors in caries risk assessment

Children

Low risk: No new or incipient carious lesions in the past year

Moderate risk (any of the following)

- ✓ One new, incipient or recurrent carious lesion in the past year
- ✓ Deep or noncoalesced pits and fissures.
- ✓ High caries experience in siblings
- ✓ History of pit and fissure caries
- ✓ Early childhood caries
- ✓ Frequent sugar exposures
- ✓ Decreased salivary flow
- ✓ Compromised oral hygiene
- ✓ Irregular dental visits
- ✓ Inadequate fluoride exposure
- ✓ Proximal radiolucency

High risk

Two or more new, incipient or recurrent carious lesions in the past year, or two or more of the following:

- ✓ Deep or noncoalesced pits and fissures
- ✓ Siblings or parents with high caries rate

- ✓ History of pit and fissure caries
- ✓ Frequent sugar exposures
- ✓ Decreased salivary flow
- ✓ Compromised oral hygiene
- ✓ Irregular dental visits
- ✓ Inadequate fluoride exposure
- ✓ Proximal radiolucency

Adults

Low risk: No new or incipient lesion

Moderate risk (any of the following)

- ✓ One to two new, incipient or recurrent carious lesions during the past three years
- ✓ History of numerous or severe caries
- ✓ Deep or noncoalesced pits and fissures
- ✓ Frequent sugar exposures
- ✓ Decreased salivary flow
- ✓ Irregular dental visits
- ✓ Inadequate fluoride exposure

High risk

Three or more carious lesions in the past three, or two or more of the following:

- ✓ History of numerous or severe caries
- ✓ Deep or noncoalesced pits and fissures
- ✓ Frequent sugar exposures
- ✓ Decreased salivary flow
- ✓ Irregular dental visits
- ✓ Inadequate fluoride exposure
- ✓ Compromised oral hygiene

Decayed-Missing-Filled Teeth Index (DMFT and def-t)

Described by Henry T. Klein, Carrole E. Palmer and Knutson J W in 1938

Name _____

Date __/__/__

Age/Sex _____

Case No. _____

Income -

Brushing -

Education -

Agent -

Occupation -

Frequency -

Diet -

Sugar exposure -

			55	54	53	52	51	61	62	63	64	65			
18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38
			85	84	83	82	81	71	72	73	74	75			

	D -
	M -
	F -

DMF-T = D + M + F =

	d -
	e -
	f -

def-t = d + e + f =

Staff Signature

Test control

1. Epidemiology is:

1. A science that studies the principles of organization dental care for the population;
2. A science that studies the possibility of factors determining the prevalence of dental diseases among the population;

3. A science that studies risk factors and methods for the prevention of major dental diseases.

2. In what units is measured the prevalence of dental diseases?

1. In fractional numbers;
2. In percentages;
3. In whole numbers.

3. What method of epidemiological study is most often used in scientific research?

1. Total;
2. Selective;
3. Exploratory.

4. Indicate a variant corresponding to the WHO's age group:

1. 31-35, 36-40, 41-45, 46-50, 51-60;
2. 30-40, 41-50, 51-60, 61-70;
3. 35-44, 45-54, 55-64, 65-74, 75 and older.

5. Indicate the minimum sample size for the exploratory method of epidemiological research among young people:

1. 200 people;
2. 30 people;
3. 50 people;
4. 70 people;
5. 100 people.

6. Determine the level of intensity of caries according to WHO at the DMFT = 2.8?

1. Low;
2. Average;
3. High;
4. Can not be determined.

7. What criteria determine the choice of the method of epidemiological research?

1. Reliability;
2. Informative;
3. Labor intensity;
4. Economy;
5. All of the above.

8. Indicate the types of calibration:

1. External;
2. Internal;
3. All of the above.

9. At epidemiological research the diagnosis "caries" is put in the following cases:

1. When the walls and bottom of the fissure are softened;
2. A hidden carious cavity is defined on the contact surface, the probe is not go in;
3. White and pigmented areas on the enamel are determined.

10. The DMFT is 2.1 from a 12-year-old teen. Determine the level of caries intensity (WHO, 1996):

1. Low;
2. Average;
3. High;
4. Very high.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 1									
2	2	2	2	3	4	5	3	1	2

TENDENCIES OF DENTAL DISEASES IN THE WORLD AND THE REPUBLIC OF BELARUS

The questions to be studied for the learning of the topic:

1. WHO's information system on dentistry.
2. Global goals of dental health by 2000.
3. Global goals and measurable tasks of dental health, 2020.
 - ✓ common goals.
 - ✓ common tasks.
 - ✓ specific tasks.
4. Data of epidemiological dental studies of the population of Belarus
5. Use of WHO's dental health criteria to the situation in Belarus.
6. Dental morbidity in the European countries.

Question 1. WHO's information system on dentistry.

In 1969, the Global Oral Data Bank (original abbreviation - GODB) was established at the Headquarters of the World Health Organization (Geneva, Switzerland) for study tendencies of the incidence of caries and other dental diseases in the world. The WHO's dental health program promoted the collection of epidemiological data, conducted computerized data analysis for free (using standard research methods and WHO cards). The exploratory method was recommended in epidemiological studies. Thanks to which, in a minimum amount of time, it is possible to develop national dental health programs.

WHO accepted the global goal of dental health (1981). According to this goal, by the year 2000, the average number of carious, filling, removed permanent teeth (DMFT index) from 12-year-old children will be no more than three, DMF=3.

DMFT = 3.0 or less was in 4 countries (out of 107 examined). DMFT of the teeth of 12-year-olds was more than 3.0 In the US and most European countries. Since 2005, data on the incidence of caries of teeth are available on the WHO website.

It is now noted:

- A decrease in the intensity of dental caries in many industrialized countries (developed programs for communal prevention);
- Stabilization of the DMFT;
- A very slow growth tendency of DMFT in some developing countries Africa, Asia.

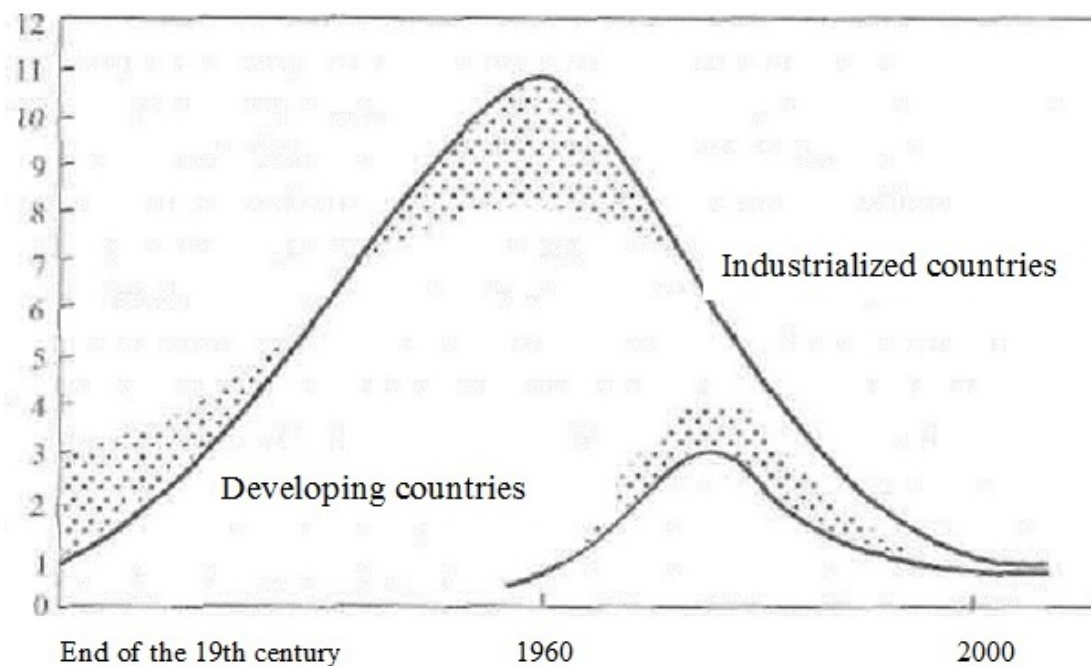


Figure 1. Tendencies in the incidence of caries of teeth in the world among 12-year-old children

WHO has developed the information system of dental health ORATEL, based on the index of the DMFT of teeth (the indicator of the quality of dental care for the population).

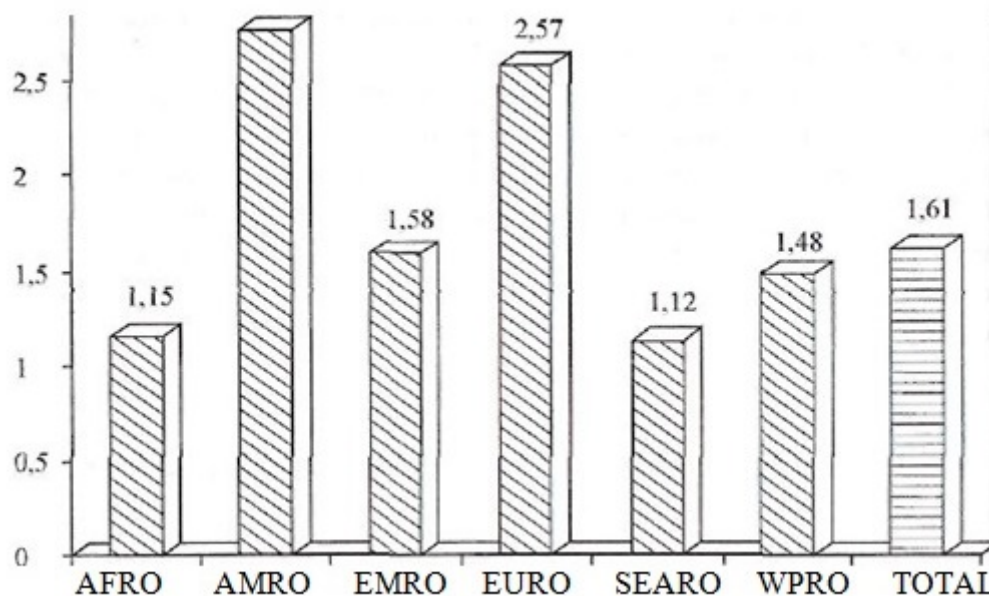


Figure 2. Average DMFT of teeth of 12-year-old children in six regions of the world (Bratthall, 2005)

**Question 2. European goals of stomatological health by 2020 adapted,
WHO's project of document**

Table 2. European goals of stomatological health by 2020

Goal 1. 6-year-old children	1.1. 80% or more will be healthy (free of caries). 1.2. The average DMFT of temporary teeth will not exceed 2.0.
Goal 2. 12-year-old children	2.1. The average intensity of caries of permanent teeth does not exceed 1.5 of DMF, from which the component "D" (untreated caries) will be less than 0.5. 2.2. The average number of sextants with a healthy periodont will be at least 5.5.
Goal 3. 15-year-old teens	3.1. The average intensity of caries will not exceed 2.3 of DMFT, component "D" will be less than 0.5. 3.2. There will be no teeth removed for caries. 3.3. The average number of sextants with a healthy periodont will be at least 5.0.
Goal 4. Young people aged 18 years	4.1. There will be no removed teeth for caries or periodontal disease. 4.2. The average number of sextants with a healthy periodontium will be at least 4.0.
Goal 5. Population aged 35-44 years	5.1. No more than 1% toothless. 5.2. 90% of patients will retain 20 or more natural functioning teeth. 5.3. The average DMFT of the teeth will be no more than 10, of which no more than 4 will be removed due to caries disease. 5.4. The average number of healthy sextants of periodontal disease will be 2 or more (CPITN "0").
Goal 6. Population aged 65-74 years	6.1. No more than 10% of toothless. 6.2. 90% or more will have a functionally full bite (natural or reconstructed). 6.3. The average number of sextants with deep pockets will not exceed 0.5 (CPITN "4").

In 2003, WHO proposed new global goals of dental health on the period until 2020. There are no numerals in new goals. Each country sets its objectives by 2020.

Question 3. Global goals and measurable tasks of dental health, 2020
Table 3. Global goals and measurable tasks of dental health

Common goals	<p>1) The influence of oral and craniofacial disease on general health and psychosocial development should be reduced to the maximally. Especially among the population most heavily burdened by such conditions and diseases.</p> <p>2) The influence of manifestations of systemic diseases in the craniofacial area on individuals and society should be reduced to the maximally. And use these manifestations for early diagnosis, prevention and effective treatment of systemic diseases.</p>
Common tasks	<p>1) To decrease mortality from dental and craniofacial diseases;</p> <p>2) To decrease the incidence of dental and craniofacial diseases and thus to improve the quality of life;</p> <p>3) To implement programs in dental care systems based on the generalization of positive practical experience (evidence-based health policy);</p> <p>4) To develop and implement acceptable cost-effective dental disease prevention systems based on the elimination of common risk factors;</p> <p>5) To integrate dental health programs with other sectors that affect common health;</p> <p>6) To develop dental health programs for improve common health;</p> <p>7) To increase systems and methods for monitoring the of level of dental health of the population in dynamics and on final results;</p> <p>8) To provide social responsibility and ethical adequacy in the practical work of dental staff.</p>
Specific tasks	<p><u>1. Pain.</u></p> <p>1.1. The decrease of cases of pain in the oral cavity and craniofacial area by X%.</p> <p>1.2. The decrease of the number of days of temporary disability, non-attendance of the school as a result of pain or discomfort in the oral cavity and craniofacial area by X%.</p> <p>1.3. The decrease of the number of days of testing difficulties in eating, talking and communicating due to pain or discomfort in the oral cavity and craniofacial area by X%.</p>

<p>1.4. The decrease of the number of days during which there were difficulties in participating in social and cultural activities due to pain or discomfort in the oral cavity and craniofacial area by X%.</p> <p>2. <u>Functional disorders.</u></p> <p>2.1. The decrease of the number of people experiencing difficulty in chewing, swallowing, communicating by X%. This includes a large number of measurable parameters, such as congenital and acquired maxillary deformities, including partial and complete loss of teeth.</p> <p>3. <u>Infectious diseases.</u></p> <p>3.1. To increase the number of medical personnel professionally competent in recognizing and decrease the risk of transmission of infectious diseases during the rendering of dental care at X%.</p> <p>4. <u>Orthopharyngeal cancer.</u></p> <p>4.1. The decrease of the number of cases of oropharyngeal cancer by X%.</p> <p>4.2. To improve the positive outcome (survival) after treatment of cancer cases by X%.</p> <p>4.3. To increase the percentage of early diagnosis by X% and fast admission to specialized medical facilities by X%.</p> <p>4.4. To decrease cases of exposure to risk factors by X%. To pay special attention to the use of tobacco, alcohol and improved nutrition.</p> <p>4.5. Increase the percentage of specialized multidisciplinary care for patients by X%.</p> <p>5. <u>Manifestations of HIV infection in the oral cavity:</u></p> <p>5.1. To decrease the cases of opportunistic infections in the orogenic area by X%.</p> <p>5.2. To increase the number of competent medical workers in diagnosing and treating manifestations of HIV infection in the oral cavity by X%.</p> <p>5.3. To increase the proportion of administrative workers in health care that pay attention to the consequences of HIV infection by X%.</p> <p>6. <u>Nom.</u></p> <p>6.1. To increase the availability of reliable data on risk factors for the population by X%.</p> <p>6.2. To increase early diagnosis and referrals to specialized medical facilities by X%.</p>	
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	<p>6.3. To decrease the population's exposure to risk factors by X% by immunizing against measles, improving nutrition and sanitation.</p> <p>6.4. To increase the proportion of specialized multidisciplinary care for patients by X%.</p> <p><u>7. Trauma.</u></p> <p>7.1. To increase early diagnosis and referral to specialized medical facilities by X%.</p> <p>7.2. To increase the number of medical personnel competent in diagnosis and emergency care for patients with traumas by X%.</p> <p>7.3. To increase the proportion of specialized multidisciplinary care for patients with appropriate indications by X%.</p> <p><u>8. Anomalies of the craniofacial region.</u></p> <p>8.1. To decrease the number of people exposed to risk factors by X%, paying special attention to tobacco, alcohol, teratogenic agents and nutrition.</p> <p>8.2. To increase the availability of genetic examinations and counseling by X%.</p> <p>8.3. To increase early diagnosis and referral to specialized medical facilities by X%.</p> <p>8.4. To increase the proportion of specialized multidisciplinary care to patients by X%.</p> <p>8.5. To increase the early diagnosis of severe disability in anomalies by X% and referral to specialized facilities by X%.</p> <p><u>9. Dental caries.</u></p> <p>9.1. To increase the proportion of 6-year-old children free of dental caries.</p> <p>9.2. To decrease DMFT of the teeth, especially component "C" in children aged 12 years by X%. To pay special attention to high-risk groups of children and using distribution and mean values.</p> <p>9.3. To decrease the loss of teeth due to caries in the age groups 18, 35-14 and 65-74 years.</p> <p><u>10. Anomalies in the development of teeth.</u></p> <p>10.1. To decrease the number of cases of disfiguring forms of fluorosis of the teeth by X%, paying special attention to the fluorine content in food, water and the misapplication of fluorides.</p> <p>10.2. To decrease the number of cases of acquired anomalies of tooth development by X%, paying special attention to infectious diseases and misdiagnosis of medicines.</p>
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	<p>10.3. To increase early diagnosis by X% and referral to specialized facilities by X% of cases of hereditary and acquired anomalies.</p> <p><u>11. Periodontal disease.</u></p> <p>11.1. To decrease the loss of teeth due to periodontal disease in the age groups 18, 35-44 and 65-74 years, paying special attention to smoking, poor oral hygiene, stress and accompanying systemic diseases.</p> <p>11.2. To decrease the cases of necrotic forms of periodontal disease by X% by reducing of the susceptibility of the population to such risk factors as poor hygiene, stress and immunosuppression.</p> <p>11.3. To decrease the cases of active periodontal infection in all age groups of the population by X%.</p> <p><u>12. Diseases of the oral mucosa.</u></p> <p>12.1. To increase by X% the number of medical professionals competent in diagnosing diseases of the oral mucosa and providing emergency care.</p> <p>12.2. To increase early diagnosis by X% and referral to specialized facilities by X%.</p> <p><u>13. Disorders of the salivary glands.</u></p> <p>13.1. To increase by X% the number of medical professionals, whose competence allows to diagnose and provide emergency care.</p> <p>13.2. To increase early diagnosis by X% and rapid referral to specialized facilities by X%.</p> <p><u>14. Loss of teeth.</u></p> <p>14.1. To increase the number of intact teeth in the age groups 18, 35-44 and 54-74, respectively, by X%, X%, X%.</p> <p><u>15. Dental service.</u></p> <p>15.1. To increase the proportion of the population, which is available dental care of adequate quality from X% to X%.</p> <p><u>16. Health information systems.</u></p> <p>16.1. To increase the proportion of the population which is available a satisfactory health information system from X% to X%.</p>
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Question 4. Data of epidemiological dental studies of the population of Belarus

DMFT in 12-year-olds:

- ✓ 1960 – 2.0.
- ✓ 1995 – 3.8.
- ✓ 1999 – 3,0 (result of the introduction of the prevention program).

DMFT in 1996

- ✓ 15 лет - 4.7;
- ✓ 8 лет - 6.8;
- ✓ 35-44 года - 13.8;
- ✓ 65 - 22.5.

Among 15-year-old teenagers and adult population of Belarus were revealed 100% prevalence and intensity of periodontal disease.

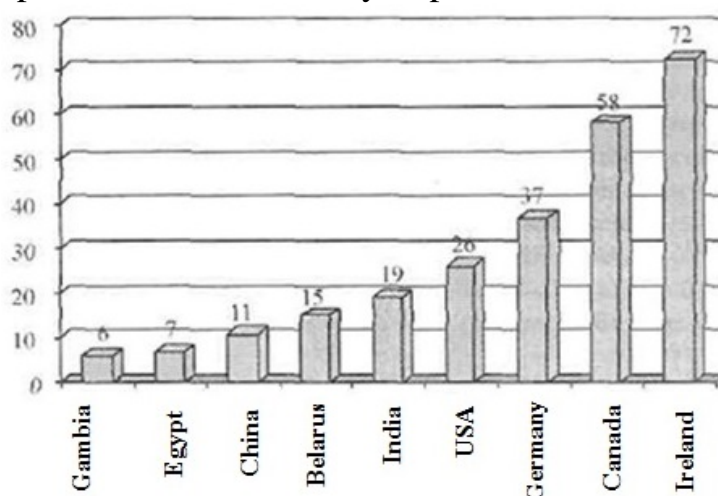


Figure 3. Prevalence of toothless population in Belarus and in the world [Petersen P.E., 2005].

Dependence of total secondary adentia from bad habits: the more smoking experience, the more removed teeth.

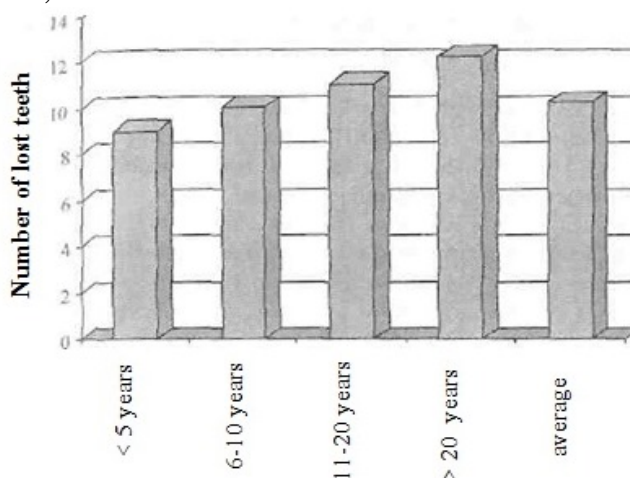


Figure 4. The dependence of tooth loss from smoking among 35-44-year-old people in Hungary (Petersen & Szoke, 2001).

Question 5. Use of WHO's dental health criteria to the situation in Belarus

WHO's goal in Belarus achieved in 1999. DMFT teeth in 12-year-olds is 3,0. There is a decrease in the intensity of caries in children.

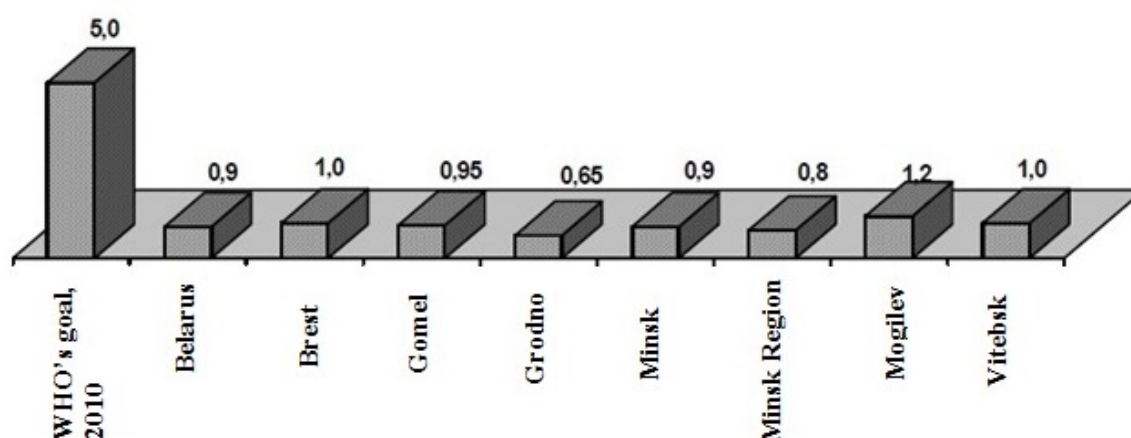


Figure 5. The average number of healthy sextants by the CPITN index among 15-year-olds in the regions of Belarus in comparison to the WHO's goal by 2010.

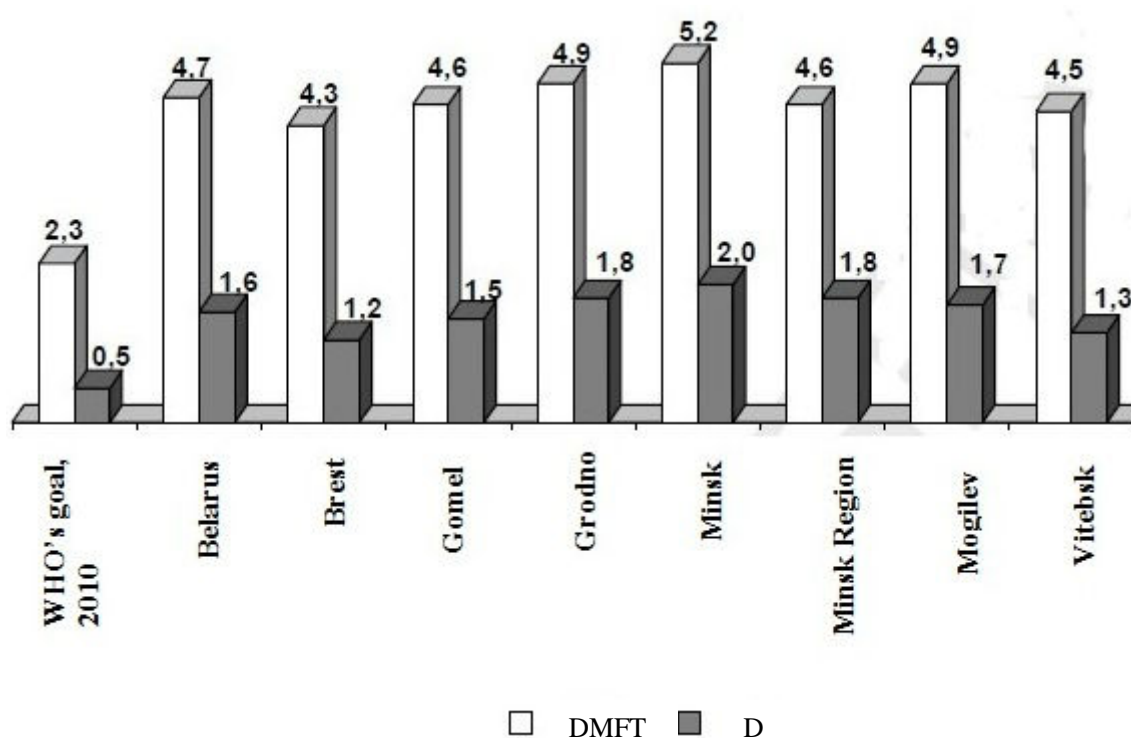


Figure 6. The average DMFT of teeth and component "D" (caries without filling) among 15-year-olds in Belarus in comparison to the WHO's goal by 2010.

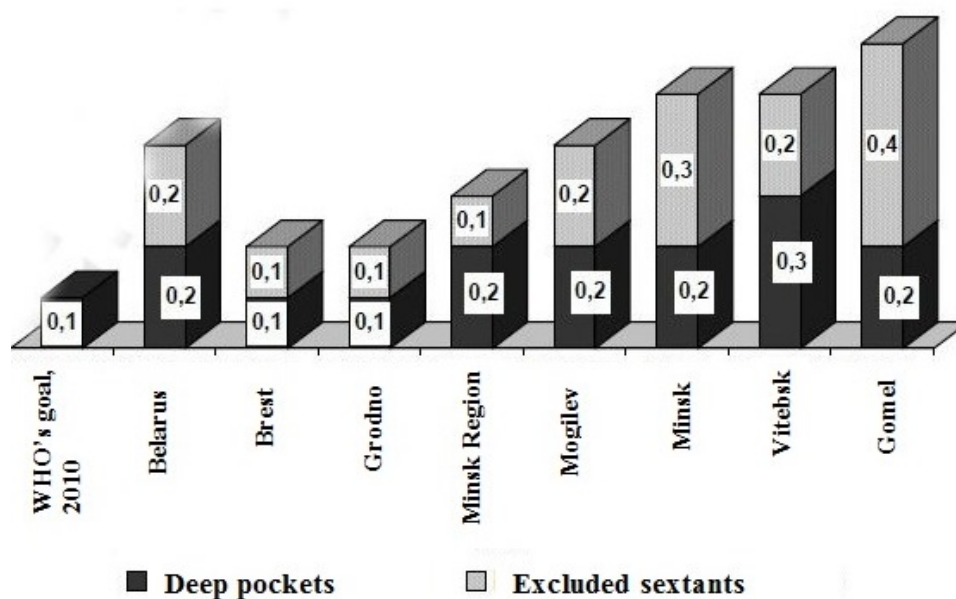


Figure 7. The average number of sextants with deep pockets (CPITN "4") among 35-44-year-old population of Belarus in comparison to the WHO's goal.

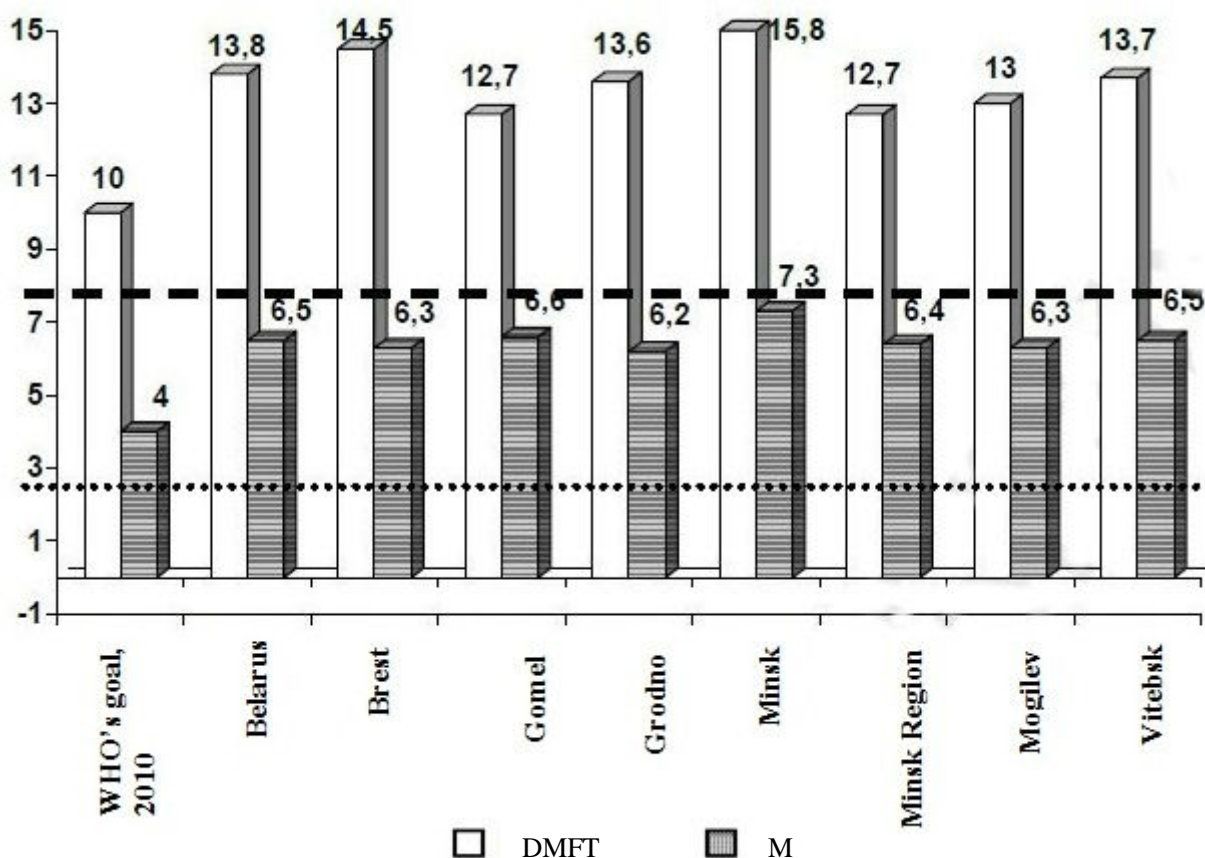


Figure 8. The average number of removed teeth among 35-44-year-olds in Belarus in comparison with the WHO's goal by 2010.

Question 6. Dental morbidity in the European countries

Countries of Western Europe

Table 4. The average DMFT of the teeth of 12-year-old children in Western Europe (GODB, WHO, 12/95.2)

Country	DMFT	Country	DMF	Country	DMFT
Netherlands	1.1	Greece	1.9	Belgium	2.7
Finland	1.2	Switzerland	2.0	Turkey	2.7
Denmark	1.3	Norway	2.1	Austria	3.0
England	1.4	France	2.1	Luxembourg	3.0
Sweden	1.5	Iceland	2.3	Portugal	3.2
Italy	1.8	Spain	2.3		
Ireland	1.9	Germany	2.5		

Countries of Central Europe

Table 5. The average DMFT of the teeth of 12-year-old children in Central Europe

Country	DMFT	Country	DMFT
Albania	2.2	Slovakia	3.6
Czech Republic	2.7	Hungary	4.3
Romania	3.4	Poland	5.1
Bulgaria	3.5		

Countries of Central Europe

Table 6. Tendencies of the DMFT of teeth of 12-year-old children in Eastern Europe

Country	DMFT		Country	DMFT	
	1996	2003		1996	2003
Moldova	2.3	No data	Lithuania	3.8	Decrease to 2.6
Armenia	2.4	No data	Estonia	4.1	Decrease
Georgia	2.4	No data	Ukraine	4.4	Decrease
Russia	3.5	Decrease to 3.0	Latvia	5.7	Decrease to 3.0
Belarus	3.8	Decrease to 2.7			

Central Asian Countries of the CIS

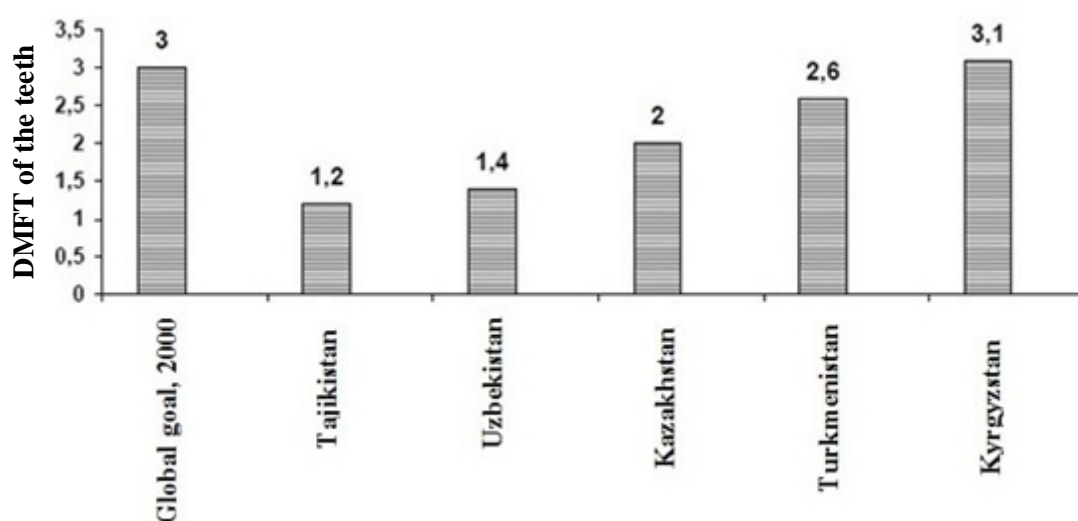


Figure 9. The WHO's global goal and the average DMFT of the teeth of 12-year-old children in the Central Asian countries.

Comparative data of the intensity of carries of teeth among adult population countries of Europe

Table 7. Average DMFT of the teeth of the population 35-44 years in Europe, 1987-96 (WHO/ORH/Caries 35-44 1996 г.)

Country	Average DMFT	The level of the intensity of carries by WHO
Kazakhstan	5.4	Low (1.6-6.2)
Moldova	6.3	Average (6.3-16.7)
Turkmenistan	7.6	
Romania	8.5	
Armenia	8.8	
Ukraine	9.0	
Georgia	9.2	
Uzbekistan	9.9	
Albania	10.7	
Turkey	11.6	
Italy	12.0	
Russia	12.4	
Belarus	13.8	High (12.8-16.2)
Lithuania	13.8	
France	14.6	
Hungary	15.0	
Greece	15.8	
Croatia	16.1	
Germany	16.3	Very high (≥ 16.3)
Czech Republic	17.7	

Netherlands	17.7	
Latvia	18.5	
Ireland	19.0	
United Kingdom	19.0	
Poland	19.3	
Finland	20.1 (35 years)	
Norway	20.5	
Denmark	22.0	
Switzerland	22.3	

TEST CONTROL

1. Indicate the average value of DMFT from 15-year-old children in the Republic of Belarus according to the epidemiological study of 1996:

1. 3.0;
2. 3.6;
3. 4.7.

2. Indicate the tendency of incidence of caries in the world:

1. Increases;
2. Decreases;
3. Is stable.

3. Indicate the global WHO's goal in 12-year-olds by 2010 according to the DMFT:

1. 1.0;
2. 0.5;
3. 1.5.

4. Indicate criteria for evaluation of dental health in the group of 5 to 6-year-olds:

1. Number of healthy sextants, DMFT;
2. Percentage of children free of caries, DMFT;
3. The number of sextants with deep pockets, the percentage of children free of dental caries.

5. Indicate the global WHO's goal in 15-year-olds by 2010 according to the CPITN index (the number of healthy sextants):

1. 2.0;
2. 3.0;
3. 5.0.

6. Is there any country in the world where 12-year-old children are free of caries of permanent teeth?

1. Yes;
2. No;
3. Is unknown.

7. Indicate the global WHO's goal for 18-year-olds by 2010 for component "M" of the DMFT index:

1. 0;
2. 0.1;
3. 0.3.

8. Indicate the global WHO's goal at the age of 65-74 years by 2010 (% toothless):

1. 5%;
2. 10%;
3. 15%.

9. Indicate the criteria for evaluation of dental health in the group of 18-year-olds:

1. Number of healthy sextants, DMFT (share of "M");
2. DMFT, the number of sextants with deep pockets;
3. DMFT (share "M"), the number of sextants with deep pockets.

10. What should be considered when predicting caries?

1. Risk factors;
2. Data from epidemiological studies;
3. Availability of prevention;
4. Tendencies in morbidity;
5. All of the above.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 2									
3	2	1	2	3	2	1	1	1	5

METHODS OF PREDICTION OF DENTAL CARIES

The questions to be studied for the learning of the topic:

1. Predicting of caries and periodontal diseases at the present stage
2. Short characteristics of methods of prediction.
3. The "Risk Profile".
4. Method "Karyogram".

Question 1. Predicting of caries and periodontal diseases at the present stage

Predicting of the emergence of new carious lesions and the development of periodontal disease is one of the most actual problems of dentistry. Predicting of caries and periodontal diseases at the present stage of development of medical science is reduced to an assessment of the risk of the appearance and progression of these diseases. "Risk" is defined as the probability that an undesirable action will occur. There are such terms as: risk indicators, risk factors, prognostic risk factors, caries risk markers and periodontal diseases. These terms are interpreted differently by different scientists. Currently, there is a discussion in the literature regarding the definition of such concepts as a risk factor, a risk indicator and a prognostic risk factor.

Dental caries and periodontal diseases are multifactorial in nature. The etiological factor of these diseases is microorganisms of plaque (cariogenic and periodontopathogenic). Among all factors, on the one hand, external and internal factors stand out. On the other hand, they are subdivided into factors acting directly, and risk indicators. These are the same factors that are differentiated by systematization.

Factors directly affecting the tooth surface and promoting the development of carious lesions

1. Dental plaque (its number and content of cariogenic microorganisms),
2. Nutrition (frequency of carbohydrate intake, buffer capacity of saliva and fluorides).

Risk factors

1. Socio-economic (low level of economic development of the country, irregular visits to the dentist, etc.), Epidemiological factors (living in a country with a high level of DMFT, a high individual DMFT, etc.),
2. Factors related to general health (general diseases, disability),
3. Clinical signs reflecting the increased risk of caries (recently erupted teeth, exposed root surfaces of teeth, etc.)

Internal factors of dental caries: saliva, chronic systemic diseases and weakened immune factors, size, morphology and structure of the teeth.

External factors of dental caries: nutrition, socio-economic and behavioral factors.

Internal factors of periodontal diseases: genetic (hereditary), chronic systemic diseases, age, condition of the oral cavity. **External factors of periodontal diseases:** smoking, low socioeconomic status, unhealthy lifestyle, rare visits to the dentist, acquired systemic and infectious diseases.

Risk indicators are factors significantly associated with the disease, but only at the population level (age, smoking, diabetes). **Risk factors** are characteristics of a person or environment, the presence of which directly leads to an increased likelihood that the person will fall ill, and their absence directly reduces the probability of the disease. **Prognostic risk factors** are factors that significantly increase the risk of further progression of an already existing disease. **Risk markers** (significant loss of attachment or deep periodontal pockets) are usually biological markers. They reflect either the disease or its progression in the past, but at present they are not the cause of the disease.

Question 2. Short characteristics of prediction methods

1. The index of the level of caries intensity - LCI (P.A. Leus, 1990) is the average rate of increase of the intensity of caries of teeth from a patient at any age from 1 to 65 years at the time of his examination. LCI is calculated:

- ✓ Age up to 9 years: the index **DF** (caries-filling) is divided by its age;
- ✓ Age 9-19 years: the DMFT is divided by the age of the examinee minus five years (the age of the beginning of the eruption of permanent teeth);
- ✓ The adults (20-65 years) The DMFT of a person's teeth is divided by his age.

Table 8. LCI's indicators for different ages

Age, years	Indicators
8	Not more than 0.4 is low; 0,5-0,8 - average; 0,9-1,2 - high; 1,3 and more - very high.
9-19	Not more than 0.3 is low; 0,4-0,6 - average; 0,7-0,9 - high; 1,0 and more - very high.
20-65	Not more than 0.15 is low; 0,15-0,30 - average; 0,31-0,60 - high; 0,60 and more - very high.

2. The method of clinical prognosis of dental caries (CPC, P.A. Leus, 1990) is the calculation of the correction in % to the determined initial

LCI, depending on the data obtained by Questioning and examining the patient. The correction can be either with the sign "+" (the LCI will increase) and with a sign "-" (LCI will decrease). Special cards are used during the examination of the patient. Prediction of caries of teeth is possible for a period of 1 to 5-6 years. Cariogenic factors are identified and ways of their elimination are determined. It is necessary to know the clinical indices.

LCI can also be used in combination with data of express-methods saliva test for determine Streptococcus mutans and buffer capacity of saliva. Identify people with a high risk of caries for timely provision of medical and preventive care. An accessible explanation of the causes of the disease, the risk of its appearance or progression is of particular importance in working with the patient. A graphic representation of the factors is used for this purpose for predict caries and periodontal disease. These include programs such as the computer interactive program "Kariogram" (D. Bratthall et al., 1997) and "Risk Profile" (Per Axellson, 2000).

3. "Karyogram" is a new method for identifying and demonstrating of the possible interaction between factors related to the occurrence of carious disease. "Karyogram" on the computer screen is a circle diagram that shows different groups of caries risk factors.

4. The "Risk Profile" (Per Axellson, 2000) is made for dental caries and for periodontal diseases. The method is based on the allocation of risk groups. Considered the etiological factors, prevention factors, external and internal factors, risk markers.

Question 3. The "RISK PROFILE"

A risk profile is a four-color ring chart, which can be done manually or using a computer.

- 0 - green, no risk,
- 1 - blue, low risk,
- 2 - yellow, risk,
- 3 - red, high risk.

Codes of caries - C1-C3. **Codes of periodontal disease** - P1-P3. Criteria for grading individual periodontal risk in four classes from risk-free to high-risk (P0-P3) are developed for children, young persons, adults and the elderly. They are based on anamnesis, clinical diagnostic criteria and bacteriological studies conducted according to the indications.

Table 9. Criteria for assessing of individual periodontal risk in young people

P0	no risk	Healthy gum Excellent oral hygiene No loss of attachment when approximated probing
----	---------	--

		There are no external and internal factors or risk indicators
P1	low risk	The index of bleeding gums <10% (CPITN 1) Good oral hygiene No loss of attachment when approximated probing There are no external and internal risk factors
P2	risk	One of the five approximal pockets > 3 mm (CPITN 3-4) Poor hygiene of the oral cavity Average loss of attachment with approximal probing <1 mm Internal indicators, factors and prognostic risk factors (type 1 diabetes, etc.) External indicators, factors and prognostic risk factors (smoking, low level of education of the patient, etc.)
P3	high risk	Localized or generalized aggressive periodontal disease A high periodontitis gain (annual probed loss of attachment) and several surfaces are associated with aggressive periodontitis Very poor hygiene of the oral cavity Most of the affected surfaces are infected with bacteria associated with aggressive periodontitis (A. Actinomycetemcomitans, P. gingivalis, etc.) Internal indicators, factors and prognostic risk factors such as genetic interleukin-1 polymorphism, PMNL cell dysfunction, reduction of immunoglobulin G2 (IgG2) response, type 1 diabetes, leukemia External indicators, factors and prognostic risk factors (smoking, low AIDS education, etc.)

The patient was diagnosed during the initial examination:

- high intensity of dental caries and periodontal diseases;
- high increase in intensity of caries and periodontitis;
- etiologic factor - a large amount of plaque, high rate of plaque formation, specific cariogenic and periodontogenic microorganisms;
- Many external and internal risk indicators, caries risk factors and periodontitis. External indicators: frequent use of adhesive carbohydrate products and administration of drugs that reduce the rate of salivation was noted **for dental caries**. Smoking from 10 to 20 cigarettes a day was noted **for periodontitis**.
Internal indicators: reduced the secretion of saliva (0.6 ml /min) **for dental caries**, and diabetes **for periodontitis**.
- very poor hygiene of the oral cavity and poor nutrition;
- an irregular visit to the dentist and no use of any methods of caries prevention and periodontal diseases.

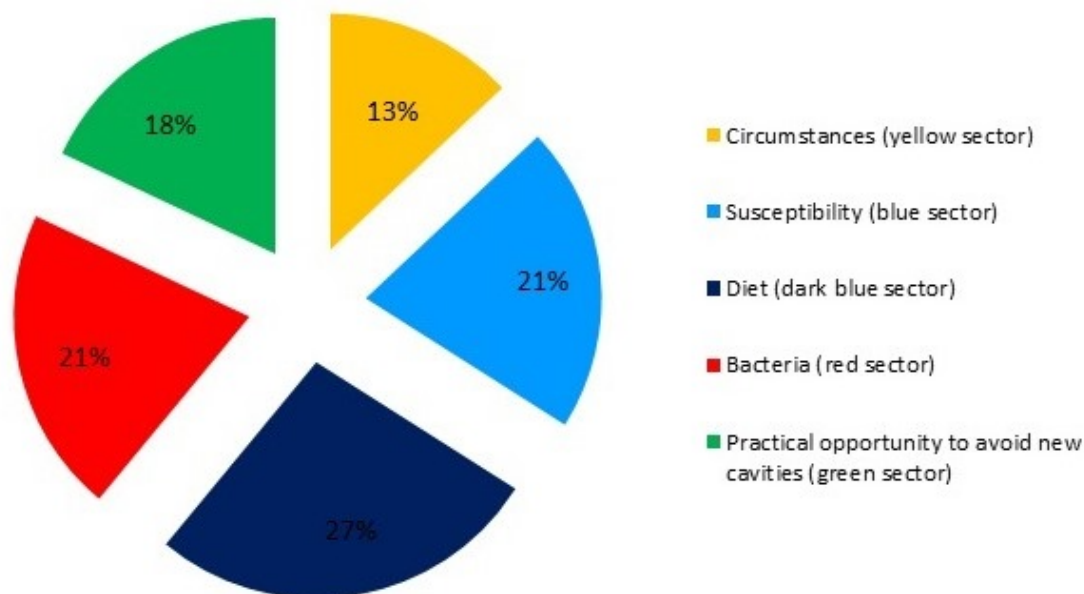
Based on the above data and together with the patient, a treatment plan was developed and implemented, based on the patient's cooperation with the dental staff. After two years of observation, the patient was classified as having a low risk of caries and periodontitis (CIP1).

Question 4. Method "Karyogram" in the clinical prediction of dental caries

Dental caries is one of the most common dental diseases in the world, which leads to a variety of complications and ultimately to a complete secondary adentia in the elderly. Many different cariogenic factors are involved in the development of carious disease. Identification and elimination of risk factors in the population with increased susceptibility to carious disease will contribute to prevent the development of new carious lesions. The computer program "Karyogram" (D.Bratthall and co-authors) was used in the clinic of therapeutic dentistry, in S.M. Tikhonova's modification.

"Karyogram" on the computer screen is a circle diagram that shows different groups of caries risk factors. The diagram is divided into five sectors, painted in green, dark blue, red, blue and yellow.

Figure 10. «Karyogram» (D.Bratthall and co-authors) in S.M. Tikhonova's modification



The significance of each factor is estimated in points: from 0 to 2 or from 0 to 3 (caries history - 3, concomitant diseases - 0, rational nutrition, composition - 2, nutrition, frequency - 1, amount of plaque - 2, fluoridation program - 1, clinical evaluation - 0). "0" is a favorable indicator; 1-3 points are unfavorable in increasing order. The "Karyogram" includes ten risk

factors, but it is already activated when seven factors are entered. Using this feature of the program, you can exclude three factors:

- 1) the amount of Streptococci Mutans in saliva,
- 2) the buffer properties of saliva
- 3) the rate of saliva secretion.

The value of the color sectors by S.M. Tikhonova

1. The *green sector* is "caries resistance". It demonstrates "the possibility of avoiding the appearance of new carious cavities" in %.
2. The *dark blue sector* is the "nutrition factor" includes data on diet and frequency of nutrition. The sector estimates the cariogenicity of food products by the content of fermentable carbohydrates in them. The evaluation is based on a patient's Questioning about the number and frequency of carbohydrate food.

Table 10. Interpretation of the factors "diet" and "frequency" of nutrition.

<i>Factors</i>	<i>Interpretation</i>	<i>Point</i>
Diet	The level of consumption of sugars and other carbohydrates contributing to the development of caries is very low	0
	Low content of fermentable carbohydrates, i.e. food ration "not cariogenic"	1
	Moderate content of fermentable carbohydrates	2
	A high level of consumption of fermented carbohydrates, i.e. not proper nutrition, which can contribute to the development of caries	3
Frequency of nutrition	Very low frequency of food intake, no more than 3 times a day	0
	Low frequency of food intake, no more than 5 times a day	1
	High frequency of food intake, 6-7 times a day	2
	Very high frequency of food intake, more than 7 times a day	3

3. The *red sector*. "Plaque" is determined by the plaque evaluation method using the PLI index (Silness-Loe, 1964).

Table 11. Interpretation of the "Plaque" factor.

<i>Factors</i>	<i>Interpretation</i>	<i>Point</i>
Plaque	Very good oral hygiene PLI <0.4	1
	Good oral hygiene PLI = 0.4 - 1.0	2
	Satisfactory oral hygiene PLI = 1,1 - 2,0	3

4. The *blue sector*. "Fluoridation" contains information about the use of fluoride by the patient.

Table 12. Interpretation of the "Fluoridation" factor.

<i>Factors</i>	<i>Interpretation</i>	<i>Point</i>
Fluoridation	The patient constantly uses the maximum potential of fluoroprophylaxis (fluorine-containing toothpaste and additional agents: F-tablets, rinses, fluorogels, lacquers)	0
	Used fluoride toothpaste and occasionally some additional measures, such as F-tablets or rinses, fluorogels, varnishes	1
	Used only fluoride toothpaste	2
	Fluorides are not used	3

5. *The yellow sector.* "Dental status" includes data on anamnesis of carious disease and concomitant diseases. "Dental status" is determined by the intensity of caries of teeth depending on the values of DMFT for different age groups. For this purpose, the LCI method (the level of caries intensity, Leus PA) is used. A grading scale of 0 to 2 is used for identify the impact of common illnesses or violations in the "Karyogram".

Table 13. Interpretation of caries intensity and common diseases

<i>Factors</i>	<i>Interpretation</i>	<i>Point</i>
Caries Intensity	Caries absent, there are no fillings, carious teeth and all teeth are kept	0
	The values of the DMFT of teeth from 1 to 3	1
	The values of the DMFT of teeth 4 and above	2
Common Diseases	There are no diseases	0
	Disease or disorder is present in an easy stage	1
	The patient has a severe disease for a long time	2

The program "Kariogram" also includes the "clinical evaluation" factor, which enables the doctor to make correction of the indications. The P.A. Leus's method is used: the CCP index (clinical caries prediction).

Table 14. Interpretation of caries intensity and clinical evaluation

<i>Factors</i>	<i>Interpretation</i>	<i>Point</i>
Caries Intensity	Caries absent, there are no fillings, carious teeth and all teeth are kept	0
	The values of the DMFT of teeth from 1 to 3	1
	The values of the DMFT of teeth 4 and above	2
Clinical evaluation	- 41% and more	0
	From -40% to -10%	1
	From 0% to + 30%	2
	+ 40% and above	3

The sections of the program "country / region of residence" and "risk group" are evaluated by the following parameters: "standard value", "low risk" and "high risk".

Results of the use of "Karyogram"

After the introduction of the information, the value of each sector on the diagram that appeared on the screen had a certain weight percentage.

Table 15. Evaluation of the risk of carious disease was carried out according to the scale proposed by Bratthall:

<i>The level of risk of carious disease</i>	<i>%</i>
A low degree of risk of caries (or very high resistance to carious disease)	61% or more
The average risk of caries	60 - 41%
High risk of caries	40 -21%
Very high risk of caries	20% or less

The modified computer program "Kariogram" is an effective clinical method for identifying the risk factors for dental caries and can be used at a dentist's appointment. Data for computer analysis are collected by routine dental examination (indices of hygiene and DMFT) and the patient's conversation. Elimination of several parameters from the program (microbiological and biochemical tests) allows its application without additional material costs. "Karyogram" can be used by any dentist who is familiar with computer technology such as "PC" at the user level.

Table 16. Advantages and disadvantages of caries prediction methods

<i>Methods</i>	<i>Advantages</i>	<i>Disadvantages</i>
The method of clinical prognosis of dental caries (CPC, P.A. Leus, 1990)	Simple, cheap, reasonably exact	Inconclusive for the patient
The "Karyogram" (D.Bratthall and co-authors, 1997)	Simple, reasonably exact, demonstrative	Labor-intensive (cost depends on the cost of express methods for the study of saliva, a computer is needed)
The method for predicting dental caries based on the determination of cariogenic microorganisms and the buffer capacity of saliva (P.A. Leus, Yu.V.Modrinskaya, 2002)	Simple, reasonably exact, demonstrative	Cost depends on the cost of express methods for the study of saliva
Modification of the "Karyogram" program (P.A.	Simple, demonstrative	Labor-intensive (a computer is needed)

TEST CONTROL

1. Indicate the average value of DMFT from 15-year-old children in the Republic of Belarus according to the epidemiological study of 1996:

1. 3.0;
2. 3.6;
3. 4.7.

2. Indicate the tendency of incidence of caries in the world:

1. Increases;
2. Decreases;
3. Is stable.

3. Indicate the global WHO's goal in 12-year-olds by 2010 according to the DMF:

1. 1.0;
2. 0.5;
3. 1.5.

4. Indicate criteria for evaluation of dental health in the group of 5 to 6-year-olds:

1. Number of healthy sextants, DMF;
- +2. Percentage of children free of caries, DMF;
- 3. The number of sextants with deep pockets, the percentage of children free of dental caries.

5. Indicate the global WHO's goal in 15-year-olds by 2010 according to the CPITN index (the number of healthy sextants):

1. 2.0;
2. 3.0;
3. 5.0.

6. Is there any country in the world where 12-year-old children are free of caries of permanent teeth?

1. Yes;
2. No;
3. Is unknown.

7. Indicate the global WHO's goal for 18-year-olds by 2010 for component "M" of the DMFT index:

1. 0;
2. 0.1;

3. 0.3.

8. Indicate the global WHO's goal at the age of 65-74 years by 2010 (% toothless):

1. 5%;
2. 10%;
3. 15%.

9. Indicate the criteria for evaluation of dental health in the group of 18-year-olds:

1. Number of healthy sextants, DMFT (share of "M");
2. DMFT , the number of sextants with deep pockets;
3. DMFT (share "M"), the number of sextants with deep pockets.

10. What should be considered when predicting caries?

1. Risk factors;
2. Data from epidemiological studies;
3. Availability of prevention;
4. Tendencies in morbidity;
5. All of the above.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 3									
3	2	1	2	3	2	1	1	1	5

SITUATIONAL ANALYSIS IN DENTISTRY

The questions to be studied for the learning of the topic:

1. Definition of the concept of situational analysis.
2. Stages of the situation analysis.
3. Methods of conducting situational analysis.
4. Demographic data.
5. Identification of risk factors for the occurrence of dental diseases.
6. Dental care for the population.
7. Dental status.
8. Interpretation of the received data during situational analysis.

Question 1. Definition of the concept of situational analysis.

Stages of planning dental care at the community level include (by WHO):

- ✓ situational analysis,
- ✓ determination of measurable goals of dental health of the population,
- ✓ staffing,
- ✓ material and financial provision,
- ✓ monitoring and evaluation of the quality of the dental care system for the population.

SITUATIONAL ANALYSIS is a medical logical analysis of the dental morbidity and, related to it, the factors or areas of the population of the serviced site or other specified area of residence.

The main goal of the situational analysis: to determine the dental health of the population in measurable categories and to identify risk factors for dental diseases.

Situational analysis includes:

1. Epidemiological data.
2. Data about dental care of the population.
3. Demographic and other data related to public health.

Question 2. Stages of the situation analysis

1. Determining of the objectives of the situation analysis and agreeing of the main stages of work with local authorities.
2. Demographic and general data collection.
3. Complete planning (using demographic data) and conducting of epidemiological research.
4. Getting information about dental care.
5. Receiving of statistical data on dental personnel, equipment, dental materials, means of prevention.
6. Detection of risk factors for dental diseases, statistical analysis of received epidemiological data.

7. Medical logical analysis of all materials and conclusion:

- Level morbidity and trends.
- Risk factors.
- Staffing.
- Material and financial provision.
- A list of the most important problems of dental health.

Question 3. Methods of conducting situational analysis

Organizers of dental care and every dentist must own **a methodology for conducting situational analysis.**

Question 4. Demographic data

Demographic data are needed to calculate the staff, funds and materials needed to provide dental care to the public. Information about the population is available in official statistical documents. The latest information is used. If the statistics for more than 5 years are amended. Attention is drawn to:

- Big cities,
- Densely populated rural areas,
- Contrasting climatic and geographical zones,
- Zones of different levels of fluorine content in the environment,
- The number of urban and rural population.

Question 5. Identification of risk factors for the occurrence of dental diseases

Drinking water. Information about drinking water is available in sanitary-epidemiological services. If there is no data, water is sent to the laboratory for analysis. Use chemically clean plastic bottles with a sealed lid. Bottle capacity is 10 ml.

Food. Characteristics of food and nutrition of population held together with dietitians, pediatricians, sanitary doctors:

- examining documents
- conversations are conducted with the parents of schoolchildren, teachers and educators of preschools and schools,
- stores, public canteens and school buffets are visited.

First of all pay attention to the availability of a variety of products (4 main types: bread, meat, dairy, vegetable). Particular attention is paid to the use of sugars and sweet foods in the diet. The average amount of sugar consumed per person per year is calculated.

General health of the population. Information on the general health of the population can be obtained from publications in medical journals, available medical documents of clinics, conversations with pediatricians and other colleagues of non-stomatological profile. Especially important information about eating disorders, hypovitaminosis, rickets, which can

affect the dental status. Information about bad habits: smoking and alcohol use contribute to diseases of the oral mucosa.

Environmental contamination and unhealthy conditions of work. Information on the environmental contamination can be obtained in the Center for Hygiene and Epidemiology, in local treatment and prevention clinics, from dentists working in enterprises with harmful production. It is necessary to study the possible contamination of air with harmful substances (fluorine compounds, heavy metals, acids).

Climate. The climate of the area is determined: hot, moderate or cold. It is necessary to determine the optimal dose of fluoride for artificial fluoridation of drinking water and edible salt and other methods of introducing fluoride into the body.

Question 6. Dental care for the population.

Dental staff. Information on the types of dental personnel performing dental care for the population is needed. WHO classifies dental personnel into two types:

- Dentists
- Auxiliary staff: operating, non-operating and technical support staff.

Treatment-and- preventive facilities and equipment:

- Consultative centers;
- Dental clinics;
- Dental departments;
- Dental offices;
- Children's dental clinics;
- Children's dental departments;
- Children's dental offices;
- The total number of dental units for adults;
- The total number of dental units for children;
- Provision of schools with dental offices;
- Prevention rooms;
- Private dental rooms.

Systematic (planned) dental care for the population. Data on the percentage coverage of pre-school children and schoolchildren with systematic treatment (planned sanitation) are needed, as well as on the organization of sanitation: organizational methods and scope, periodicity, equipment and materials, staffing, efficiency. It is important to have data on the average number of visits per child per year to the dentist, the time spent by the doctor on an average per child, on the doctor's working hours per day, week, year.

Dental handling of patients. Information is required on the total number of visits to a dental institution per year, on the number of the most

common treatment procedures (fillings, tooth extraction, dental prostheses, etc.).

Costs on dental care

- staff salaries;
- the cost of the room;
- the cost of equipment and maintenance;
- the cost of medicines;
- the cost of transport (for mobile teams);
- the cost of training doctors and nurses;
- the cost of housing for staff (if housing is paid by state);
- the total cost of all other services (except for housing), provided to staff free of charge;
- the average cost of prosthetics for privileged categories of citizens;
- the average cost of the most common methods of treatment (filling, removal, prosthetics) in the state paid and private health facilities.

Prevention. Information is needed on the coverage of the population by the prevention program. Information on individual and mass prevention is analyzed. Prevention methods are being specified. Data on the efficacy and economic benefit of primary prevention of dental diseases are analyzed. Information on the availability and quality of individual and mass prophylaxis is collected: toothpastes, toothbrushes, fluoride preparations for local and systemic use. Information on the presence of fluorinated edible salt on sale for Belarus is needed.

Question 7. Dental status.

WHO summarized the world experience on this issue "Methods of dental (1995, Geneva), which proposed standardized methods for the study of dental diseases and conditions. Determination of the dental status of the population is necessary for the subsequent resolution of the issue of the need to develop or optimize the existing program of primary prevention of dental diseases and the system of rendering dental care to the population. WHO recommends (WHO, 1980) to use the simplest, cheapest and quickest feasible method of epidemiological research - an "exploratory" dental study.

Assessment of the level of dental care. The ratio of the number of dentists to the population, the number of dental treatment-and-prevention facilities, the number of types of services rendered to the population are not always the criteria for dental health. Health criteria are valuable evaluation criteria. According to the DMFT index of teeth, it is possible to assess the health of the dentoalveolar system of a person or groups of people and to analyze how fully the dental care meets the needs for treatment. To determine this indicator, the LDC index is used - the level of dental care. LDC is determined by the following formula:

$$\text{LDC} = 100\% - (100\% * D + A / DMF), \text{ where}$$

LDC is the level of dental care

D is carious teeth untreated

A (adentia) is missing teeth, unrestored prostheses

DMFT is caries, filling, tooth removed

100% is conditional maximum level of providing the population with dental care

LDC can only be used as an average group indicator.

Table 17. LDC's interpretation

The value of LDC in %	Assessment of LDC
0-9	bad
10-49	inadequate
50-79	satisfactory
80 and higher	good

Table 18. SUMMARY OF THE MAIN DATA OF SITUATIONAL ANALYSIS

<u>1. Demographic data</u> Annual Population _____ increase (%) _____ Urban population (%) _____ Children 0 – 6 y. _____ Kindergarten _____ Pupils 7 – 17 y. _____ Schools _____	<u>2. Environmental factors</u> Water: central water supply (% population) _____ Fluorine content _____ Food: sugar per capita per year _____
--	--

3. Dental care for the population

	_____y	_____y		_____y	_____y
Number of dentists*	_____	_____	Total visits per year	_____	_____
Dentists**	_____	_____	Of these, primary	_____	_____
Hygienists	_____	_____	Children	_____	_____
The average medical staff of dental offices	_____	_____	Percentage schoolchildren with	_____	_____
Dental Clinics	_____	_____	sanation	_____	_____
Departments	_____	_____	Budget for dental care	_____	_____
Rooms	_____	_____	Information on prevention (population)		
Number of dental units	_____	_____	Fluorination of water	_____	_____
Dental units in schools	_____	_____	Fluoride tablets	_____	_____

			Fluoride locally Number of tubes (or ml) of toothpaste per person per year ~	_____	_____
--	--	--	---	-------	-------

Note: Dentists* - specialist who graduated from Medical University.

Dentists** - specialist who graduated from Medical College.

4. Dental status

Diseases and conditions			Age groups			
			6	12	15	35 – 44
Oral hygiene OHI-S						
Dental caries	Prevalence B %					
	DMFT index					
Fluorosis	Prevalence B %					
	DFI index					
Periodontal diseases	CPITN “0”	Sextants %				
	CPITN 1+2+3+4	Sextants %				
	CPITN 2+3+4	Sextants %				
	CPITN 3+4	Sextants %				
Dentofacial anomalies (prevalence in %)						

Table 19. City N (1). SUMMARY OF THE MAIN DATA OF SITUATIONAL ANALYSIS

<u>1. Demographic data</u> Annual Population <u>37 000</u> increase (%) <u>-0,3%</u> Urban population (%) _____ Children 0 – 6 y. <u>1 800</u> Kindergarten <u>4</u> Pupils 7 – 17 y. <u>4 000</u> Schools <u>3</u>	<u>2. Environmental factors</u> Water: central water supply (% population) <u>87%</u> Fluorine content <u>0,3 g/l</u> Food: sugar per capita per year <u>37 kg</u>
---	---

3. Dental care for the population

	1997	_____y		1997	_____y
Number of dentists*	<u>6</u>	_____	Total visits per year	<u>53 000</u>	_____
Dentists**	<u>no</u>	_____	Of these, primary	<u>51 %</u>	_____
Hygienists	<u>no</u>	_____	Children	<u>600</u>	_____
The average medical			Percentage schoolchildren		

staff of dental offices	<u>5</u>	_____	with sanitation	<u>63</u>	_____
Dental Clinics	<u>1</u>	_____	Budget for dental care	<u>3%</u>	_____
Departments	<u>no</u>	_____	Information on prevention (population)		
Rooms	<u>4</u>	_____	Fluorination of water	<u>no</u>	_____
Number of dental units	<u>6</u>	_____	Fluoride tablets	<u>no</u>	_____
Dental units in schools	<u>0</u>	_____	Fluoride locally	<u>5 %</u>	_____
			Number of tubes (or ml) of toothpaste per person per year ~	<u>400 ml</u>	_____

4. Dental status

Diseases and conditions			Age groups			
			6	12	15	35 – 44
Oral hygiene OHI-S				2.4	2.9	3.8
Dental caries	Prevalence B %		73	80	96	100
	DMFT index		3.8	3.6	6.0	10.5
Fluorosis	Prevalence B %		0	0	0	0
	DFI index					
Periodontal diseases	CPITN “0”	Sextants %			1.2	0.2
	CPITN 1+2+3+4	Sextants %			4.6	5.8
	CPITN 2+3+4	Sextants %			3.6	5.4
	CPITN 3+4	Sextants %			0.3	1.5
Dentofacial anomalies (prevalence in %)			1	27	20	

TEST CONTROL

1. Situational analysis is:

1. Analysis of activities and management of the entire system of dental care;
2. Medical logical analysis of dental morbidity and all factors determining the dental health of the population of the service area;
3. Medical logical analysis of the effectiveness of methods of preventing major dental diseases.

2. Goal of the situation analysis:

1. Study of morbidity, planning of dental care;
2. The identification of risk factors, the study of morbidity, the identification of disease tendencies;
3. Planning of dental care, determination of disease tendencies.

3. The main components of the situation analysis:

1. Demographic data;
2. Epidemiological data;
3. Data on dental care;
4. All of the above.

4. Which component is taken into account in the calculation of LDC:

1. Untreated caries ("D"), defects in the dentition, restored by orthopedic constructions;
2. Treated caries ("F"), defects in the dentition, not restored by orthopedic constructions;
3. Untreated caries ("D"), defects in the dentition, not restored by orthopedic constructions;
4. Treated caries ("F"), defects in the dentition, restored by orthopedic constructions.

5. What level of dental care corresponds to LDC= 80% or higher?

1. Bad;
2. Inadequate;
3. Satisfactory;
4. Good.

6. Conclusions on situational analysis include:

1. Widespread dental diseases;
2. All dental diseases;
3. Rare severe dental diseases.

7. Is it possible to use demographic data six years ago in the situation analysis?

1. Yes;
2. Yes, no change;
3. Yes, but we need to make corrections.

8. To assess the level of dental care (LDC) use:

1. Components of the DMFT index;
2. CPITN index components;
3. OHI-S index components;
4. Data on the prevalence of diseases.

9. What level of dental care corresponds to LDC= 50-79%?

1. Bad;
2. Inadequate;
3. Satisfactory;

4. Good.

10. Is it possible to identify risk factors when conducting a situational anamnesis?

1. Yes;
2. no;
3. Depends on the initial situation.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 4									
2	2	4	3	4	1	3	1	3	1

ANALYSIS OF THE DIARY OF NUTRITION AND DEVELOPMENT OF RECOMMENDATIONS ON THE CORRECTION OF NUTRITION WITH THE PURPOSE OF PREVENTION OF CARIES OF TEETH. USE OF FLUORIDES IN COMMUNITY PREVENTION PROGRAMS

The questions to be studied for the learning of the topic:

1. Evaluation of patient nutrition by diary.
2. The value of fluorides in the prevention of dental caries.
3. Methods of fluoroprophylaxis.
4. Fluorination of drinking water and of bottled water.
5. Fluorination of edible salt.
6. Fluorination of milk.
7. Use of fluoride in tablets and drops.
8. Professional procedures.
9. Fluorine-containing toothpastes.
10. Healthy lifestyle in communal programs for the prevention of dental diseases.

Question 1. Evaluation of patient nutrition by diary

The evaluation of the influence of food on the development of dental caries is based on the degree of their cariogenicity. The method of evaluation of nutritional factors for the health of a person's teeth is the keeping of a food diary. Diary of nutrition is conducted for seven days. The purpose of the method of keeping of a diary is to identify risk factors in nutrition for the nascency of dental caries. The dentist performs an analysis of the entries in the diary. The patient must keep a food diary conscientiously. Diary of nutrition of children (up to 12 years) is filled by their parents. The method evaluates the dental analysis of nutrition and does not evaluate the quantity, quality and caloric content of the food products consumed.

Table 20. Analysis of food diary

Stage	Determination
1	- the groups of food products: 1-bakery, 2-dairy, 3 - meat, 4 fruit-vegetables, 5 - carbohydrate food, including sweets, - the number of basic meals and snacks and frequency of carbohydrate meals.
2	- the tables "Analysis of the food diary" are made, - average deviations for a week are calculated.
3	conclusions and recommendations.

It is noted in the conclusions:

- frequency of meals (correspondence of the main meals and snacks to the norms).
- frequency of sweet and carbohydrate meals.
- the balance of food.

The variants for the conclusion can be as follows:

- no risk factors for caries related to diet have been identified;
- there is a small, easily eliminated risk of developing caries associated with a nutritional factor;
- there is a significant risk of caries associated with a nutritional factor;
- carious risk factors associated with the nutritional factor predominate.

The recommendations contain information on all the conclusions.

Variants of recommendations:

- Save the same diet;
- Save the same diet, but balance food, by reducing the frequency of use of some and increasing others (specify which);
- Requires a serious correction of diet: a decrease in the frequency of meals to 5 times a day, decrease the number of snacks up to 2 times a day, a balanced diet of food.

Question 2. The value of fluorides in the prevention of dental caries

Numerous scientific studies show that fluorides are a highly effective means of preventing dental caries if the concentration of the F-ion in the oral fluid is maintained at an optimal level constantly.

The mechanism of action of fluoride:

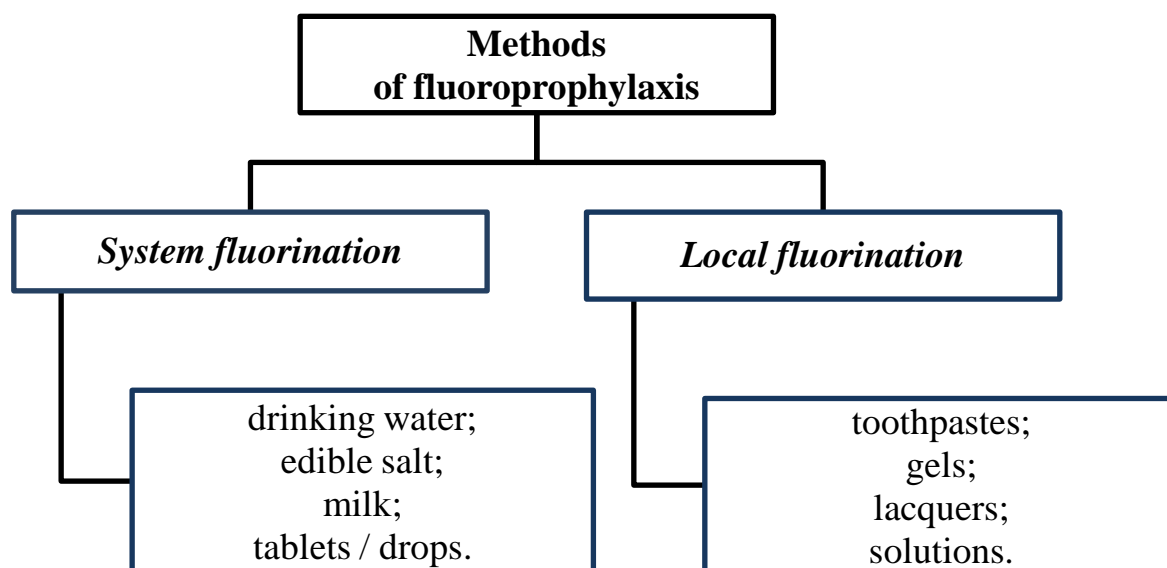
- ✓ Increases the resistance of enamel to acids,
- ✓ Inhibits metabolism of microorganisms,
- ✓ Accelerates remineralization,
- ✓ Bactericidal action.

Fluoride and enamel of teeth. Hydroxyapatite is the main component of enamel - $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$

Fluorapatite is formed at low concentrations of fluorine:
 $\text{Ca}_{12}(\text{PO}_4)_6(\text{OH})_2 + 2\text{F} = \text{Ca}_{10}(\text{PO}_4)_6\text{F}_2 + 2(\text{OH}).$

Calcium fluoride is formed at high concentrations of fluorine:
 $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2 + 2\text{F} = 10\text{CaF}_2 + 6\text{PO}_4 + 2(\text{OH}).$

Question 3. Methods of fluoroprophylaxis



Question 4. Fluorination of drinking water and of bottled water.

Fluorination of *drinking water* in the presence of central water supply is an effective, cheap and safe method of dental caries prevention (WHO, 1994).

Recommended concentration of fluoride:

- ✓ 0.5 mg / l in southern countries;
- ✓ mg / l in northern countries.

Efficiency:

- ✓ 40-50% temporary teeth;
- ✓ 50-60% permanent teeth.

Disadvantage: it is impossible without centralized water supply.

The use of *fluorinated bottled water* (natural or artificially enriched with fluorine) as a method of systemic prevention of caries is associated with a number of industrial, organizational and economic problems.

1. Belarus has a state program of the production and sale of fluorinated edible salt among the population. Therefore, dentists can not recommend fluorinated bottled water for caries prevention. Two methods of systemic prevention can not be used together.
2. Bottled water is highly mineralized, with a mineral salt content of more than 1500 mg per liter of water.

Methods of defluorization are used in excess of fluorine in natural drinking water. Methods are divided into centralized and individual. Defluorination of water by means of granular bone charcoal refers to

individual methods. Methods of industrial defluorization are used in a number of countries in the Middle East.

Question 5. Fluorination of edible salt
(order MH RB № 373-A from 28.09.98)

Fluorination of salt in efficiency is equivalent to fluorination of drinking water. The maximum effect is achieved by using it throughout life. Concentration of fluoride is 200-350 mg / kg salt. Levels of implementation:

- Partial
- Total

Disadvantages:

- Complexity in the distribution of salt;
- Complex technology and mandatory monitoring of the level of fluoride in urine.

Question 6. Fluorination of milk

The concentration of fluoride in milk is 5 mg / l. As part of the prevention program, every child should receive 200 ml of milk per day for about 200 days a year (since milk is a product of baby food).

Efficiency: satisfactory

Level of implementation: school programs.

Disadvantages:

- Complexity of distribution;
- The need for motivation of the population;

Question 7. Use of fluoride in tablets and drops

Anti-cariogenic action of fluoride is maximum, if it is prescribed to the child during the entire period of development of the teeth.

Can not be prescribed if:

- concentration of fluorine in drinking water more than 0.7 mg / l,
- in regions where fluoridated food salt is consumed.

Fluoride tablets:

Efficacy - up to 60%

Preparations of fluoride are produced in the form of: drops and tablets containing 0.25 mg, 0.5 and 1 mg fluoride.

Levels of implementation:

- Communal.
- School programs.

Disadvantages:

- Danger of fluorosis;
- Risk of poisoning;
- Complexity of implementation;

Question 8. Local application of fluoride on the teeth

Professional procedures

Solutions of fluorides and gels (2 times a year). Gel applications are indicated for patients with a high risk of developing caries. An acidified fluorophosphate gel is used at a fluoride ion concentration of 123 00 mg / kg.

Rinsing with fluoride solutions:

- ✓ Daily, 0.05% of the NaF solution (230 ppm).
- ✓ Daily 0,2% of the NaF solution (900 ppm).
- ✓ Rinse time 1-2 minutes.

WHO recommendations (1994):

- ✓ Do not use for children under 6 years of age.
- ✓ Keep out of the reach of children.

Fluoride containing lacquer is recommended for people with a high risk of caries every 3-6 months.

Individual independent procedures

Toothpaste containing fluoride

Fluorides:

- ✓ Sodium fluoride,
- ✓ Sodium monofluorophosphate,
- ✓ Amino fluoride

Efficacy: 25% when brushing your teeth all your life.

Doses of fluoride:

- ✓ 500 ppm is ineffective
- ✓ 1500 ppm is optimally
- ✓ 2500 ppm is dangerous.

Children under 6 years of age are not recommended fluoride toothpastes in areas endemic for fluoride. Not recommended less than 500 ppm.

Question 9. Healthy lifestyle in communal programs for the prevention of dental diseases

Dental caries and periodontal disease are widespread dental diseases. Healthy food is important.

Factors for their prevention:

- deficiency of fluoride in water and food;
- frequent use of sweets;
- unsatisfactory oral hygiene.

The relationship between the consumption of sugar and the development of caries. There is a clear correlation between the incidence of caries and the amount of sugar consumed per capita in different countries. Low incidence of caries is determined in populations with low sugar consumption and vice versa. When the sugar is consumed, the pH of the

medium drops (an acid is formed). Acidity in dental plaque on the surface of the enamel remains from 20 minutes to 2 hours.

Sugar:

- sucrose, or refined sugar, (from beet and sugar cane),
- glucose and maltose, which are found in many foods,
- fructose and lactose are found in fruits and milk.

Bacteria of plaque metabolize sugars. On the surface of the tooth produced acid, creating the risk of dissolution of the enamel.

Bound and unbound sugars. All sugars are divided into two large groups.

Bound sugars are natural sugars. They are inside the cellular structure of food (fruits and vegetables);

Unbound sugar is free in food or added to it. They are divided into lactose and other sugars, contained in fruit juices, honey. More cariogenic and their consumption should be minimal and replaced with fruits and vegetables.

Cariesogenicity of foods depends on the consistency of food, the frequency of its eating and other factors. Neutralization of acids formed from sugar occurs during eating, the amount of saliva is increased. The neutralization mechanism does not work during frequent use of sugars, sweets and sugary drinks. In this case, the risk of caries increases. Therefore, frequent use of sweets is a cariogenic factor.

WHO recommendation: limit the number and frequency of consumption of sugars. The share of sugars in human food should be less than 10% of the required calories.

Limiting the consumption of sugars is the basis of a healthy diet for teeth. Production of sugar substitutes and sweeteners is developing in the world. They have a low acid production potential.

Sweets without sugar

- Intensive sweeteners (saccharin, cyclamate, aspartame, acesulphates).
- Substitutes of sugar (sorbitol, xylitol, allatinite, lycasin).

Intensive sweeteners

- Sweeter than sugar,
- Give little energy
- Recommended for body weight control and for diabetics.
- Not used in cooking technology.

Substitutes of sugars

- Replenish for various functional aspects of sugars,
- Have low cariogenicity,
- Are derived from carbohydrates.

Sweeteners and substitutes of sugars

- do not promote the growth of plaque

- reduce the overall cariogenic load of the diet
- stimulate salivation,
- have an antimicrobial effect.

Table 21. Chewing gums

<i>Properties</i>	<ul style="list-style-type: none"> - additional hygiene means - cause stimulation of saliva secretion - quickly clean the teeth of food remnants - to chew for 5-20 minutes. Not more often 3-5 times a day - rapid neutralization of shifts in the pH of the plaque to the acidic side - - reduce the risk of tooth decay.
<i>Contraindications</i>	<ul style="list-style-type: none"> - functional disorders of the temporomandibular joint - mucosal integrity disorders - high degree of pathological mobility of teeth - children under 3 years
<i>Indications</i>	xerostomy (dry mouth)

For the health of the teeth, such components of chewing gums as sugar substitutes ("chewing gums without sugar") and fluorides are important.

TEST CONTROL

«The role of nutrition in communal programs prevention of dental diseases»

1. What undesirable phenomena can occur during the long-term and continuous use of sugar substitutes?

1. Diarrhea;
2. Adaptation to sugar substitutes for microorganisms and their use in the process of vital activity;
3. Allergic reactions;
4. All of the above;
5. There is no undesirable effect.

2. Is the use of sugar substitutes effective for caries prevention at the communal level?

1. Yes;
2. No;
3. Unknown.

3. What should be considered when assessing the "safe" dental health standards of nutrition?

1. The usefulness of the diet (the presence of 4 main groups), calorie diet, the shortness of food and sugars, the optimal ratio of proteins, fats, carbohydrates, minerals, risk factors associated with nutrition;
2. The usefulness of the diet (the presence of 4 main groups), the determination of the frequency of food consumption and sugars, the explanation to the patient risk factors associated with nutrition, the help to patient in choosing non-cariogenic products and proper diet.

4. Systemic influence of food on dental status means influence:

1. On the formation of normal microflora of the oral cavity;
2. On the composition and properties of saliva;
3. On receipt of fluorides;
4. All of the above.

5. Give examples of the general condition of the body, affecting the nature of nutrition:

1. Pregnancy, lactation;
2. Fracture of the jaw;
3. Surgical interventions on the gastrointestinal tract;
4. All of the above.

6. Indicate WHO recommendations for the use of sugars:

1. Use sugar substitutes;
2. Less to eat sugars;
3. Less often to eat sweets;
4. Less and less often to eat sweets.

7. Indicate the main properties of sugar substitutes and sweeteners:

1. Low cariogenicity, does not promote growth of plaque;
2. Stimulate salivation, increase local immunity;
3. Have remineralizing properties.

8. How long does the critical pH of the plaque persist after taking carbohydrate food?

1. 10 - 20 minutes;
2. 20 minutes - 2 hours;
3. Is restored immediately to a safe level.

9. The consumption of sugar per year per inhabitant of the Republic of Belarus is, on average:

1. 10 kg;
2. 20 kg;
3. 40 kg.

10. What sugars are more cariogenic?

1. Bound;
2. Unbound.

«Use of fluorides in public programs of prevention of dental diseases»

1. Which of the methods of exogenous fluoroprophylaxis is used by the majority of the world's population?

1. Applications of fluorides;
2. Rinsing with a solution of fluorides;
3. Use of fluorine-containing toothpastes.

2. What fluoridation methods are more effective at the population level?

1. System;
2. Local.

3. What levels of fluoridated salt introduction exist?

1. Total and partial;
2. Individual and communal.

4. Indicate the effectiveness of using fluoride-containing tablets in the prevention of caries of permanent teeth?

1. 60%;
2. 0 - 40%;
3. Unknown.

5. Indicate the method of fluoridation, where the risk of developing fluorosis is higher?

1. Use of fluorine-containing tablets;
2. Fluorination of edible salt;
3. Fluorination of water.

6. Indicate the main disadvantage of using fluorine-containing tablets:

1. Danger of fluorosis;
2. Insufficiently high efficiency;
3. High price;
4. All of the above.

7. Indicate WHO's main recommendation for the use of rinses with fluorine-containing solutions:

1. The method is not recommended for children under 6 years;
2. The method is recommended for children from 3 years of age;

3. The method is recommended for patients on the basis of determining the individual activity of caries.

8. Describe the WHO recommended strategy for fluoroprophylaxis:

1. Constant exposure of highly concentrated fluorides;
2. Constant non-intensive exposure of fluorides;
3. Systemic and local fluoroprophylaxis;
4. All of the above.

9. What is observed with fluorosis of the teeth?

1. Hypermineralization of hard tooth tissues;
2. Hypomineralization of hard tooth tissues;
3. Demineralization of hard tissues of teeth.

10. What fluoride gels are designed for independent use by the patient?

1. The concentration of fluoride – 500 – 1000 mg;
2. The concentration of the fluorine – 1000 – 5000 mg;
3. The concentration of the fluorine – 1000 – 10000 ppm.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 5									
4	3	2	4	4	4	1	2	3	2
3	1	1	1	1	1	1	2	2	2

DIARY OF NUTRITION

Full name of patient: Zubok G.N. (1980)

Date: 16.01.06. Day of the week: Monday	
<i>Time; hour, min.</i>	<i>Name of food and drinks</i>
10.00	Omelet Ketchup Tea Honey Cheese
13.30	Sandwich with ham An apple
20.30	Cabbage rolls Sour cream
21.00	An apple
Date: 17.01.06. Day of the week: Tuesday	
8.00	Cabbage rolls

	Sour cream Tea Honey Lemon
11.20	A cheese sandwich An Apple Tea
14.00	Borsch Ukrainian Mashed potatoes Chicken Kiev (a kind of cutlet representing a chicken fillet recieved into which a piece of cold butter is wrapped) Compote
18.30	Boiled rice Salad "Health" (from vegetables) Tea Honey
21.00	Kefir An Apple
Date: 18.01.06. Day of the week: Wednesday	
8.30	Fried potato Ham Pickled cucumber Tea Cheese Honey
11.10	Fruit yoghurt Tea Cheese
14.00	Soup «Kharcho" (very spicy soup from beef, rice, walnuts, garlic and herbs on a special acidic basis from dried plums) Boiled buckwheat Chicken cutlet Compote
18.30	Boiled potatoes Sunflower oil Herring Sauerkraut
Date: 19.01.06 r. Day of the week: Thursday	
8.30	Omelet Tea Cheese

13.40	Mushroom soup Oatmeal porridge Beef Stew Compote
16.00	Tea Cheburek with carrots (patty from a thin unleavened dough with mutton stuffing and spicy seasonings.)
18.30	Boiled vegetables (potatoes, carrots, beets) Sunflower oil Boiled rice Tea
21.00	Kefir
Date: 20.01.06 г. Day of the week: Friday	
8.30	Boiled rice Ham Carrot salad Tea Honey Lemon
14.00	Fish soup with meatballs Mashed potatoes Stewed mackerel Compote
16.30	Tea Fruit yoghurt
18.30	Stewed beans Vegetable salad Tea Honey
Date: 21.01.06 г. Day of the week: Saturday	
8.30	Pudding rice Tea Cheese
11.30	2 bananas Persimmon Apple juice
14.00	Vegetable soup with beans Boiled pearl barley Beef goulash Kissel (a dessert made from fruit juice or puree, boiled with sugar and water and thickened with potato or cornstarch).
18.30	Boiled potatoes

	Stewed chicken Vegetable salad Tea								
21.00	Kefir								
Date: 22.01.06 r. Day of the week: Sunday									
8.30	Fritters with potato Sour cream Tea								
11.00	Salad from sea kale								
14.00	Cabbage soup from sauerkraut Boiled rice Chicken breast fried Apple juice								
18.00	Fish fried Boiled potatoes Tea								
21.00	Kefir								
Evaluated products	The days of keeping a diary							Average number of times per week	N
	1	2	3	4	5	6	7		
✓ Total ingestion									5
☞ main									3
☞ snacks									2
✓ Use of products									
☞ bread									4
☞ dairy									2
☞ meat									2
☞ vegetables fruits									4
✓ Use of sweets, carbohydrates									
☞ main ingestion									3
☞ snacks									2
☞ total									5

PLANNING OF COMMUNAL PROGRAMS OF THE PREVENTION OF DENTAL DISEASES. CRITERIA OF THE EFFECTIVENESS OF THE PREVENTION PROGRAM

The questions to be studied for the learning of the topic:

1. Planning dental care for the population.
2. Situational analysis.
3. Definition of measurable tasks of primary prevention.
4. Development and implementation of the program of communal prevention.
5. Contingent.
6. Personnel for the practical implementation of the prevention program.
7. Calculation of the cost of the program.
8. Effectiveness of the prevention program.

Question 1. Planning dental care for the population

Planning of dental care for the population is one of the most important sections of community dentistry. Any system of dental care for population in the country should include (WHO OP № 53, 1980):

- primary prevention,
- systematic dental care for children,
- dental care for the adult population,
- training of personnel in adequate quantity, quality and types for the implementation of the above-mentioned parts of the system,
- material and financial provision of the system components,
- evaluation and monitoring (information system).

Dental care for the population can not be effective if the system does not have any component or not their consistency. The scope of planning for prevention can be different depending on the position of the dentist: from a small area (district doctor) or school (school specialist) to the whole country (chief dentist).

New tasks of further reducing morbidity are based on assessments of the results of the prevention program. All stages of implementation are re-planned.

Question 2. Situational analysis

Situational analysis can be modified depending on the objectives of prevention. The dentist begins planning after a situation analysis. The most frequent mistake is the definition of too many dental problems that can not be solved practically within the framework of one program. For example, in the city of M. during the dental examination of the population were identified:

- Dental caries - high intensity.
- Periodontal disease - 100% prevalence and high intensity.
- Dentofacial anomalies.

- Diseases of the oral mucosa.
- Big need for denture.
- Pathology of hard tissues of teeth of non-carious origin.
- Dryness of the oral mucosa in the elderly.

Among the accompanying factors and problems are established:

1. Deficiency of dental equipment
2. Insufficient funding
3. Incomplete staffing of orthopedic departments
4. Deficit of junior staff.

The natural desire of the doctor during the planning of the prevention program in this city to eliminate or reduce all the diagnosed diseases and problems. This is a mistake that should not be allowed in the development of primary prevention of dental diseases.

Question 3. Definition of measurable tasks of primary prevention

The most common mistakes in planning prevention are:

- the absence of specific tasks,
- the absence of scientific rationale of tasks,
- measures that can not be controlled ("less", "more", etc.)
- hyperbolization of tasks,
- setting tasks without initial data on morbidity.

The DMFT index is used for determine the task of reducing the intensity of dental caries: to decrease the intensity of caries of permanent teeth in children of 12 years from 4.0 DMFT to 3.0 DMFT teeth, or 1.0 DMFT , or 25% of the initial level. The only effective method of community-based prevention of periodontal diseases (chronic gingivitis, chronic periodontitis) is regular mechanical plaque removal with a toothbrush and professional removal of tartar (WHO, CTD 621, 1980). The most difficult task at this planning stage is the scientific rationale of the task of the prevention program. For example, why does the doctor plan to decrease caries by 1 unit of DMF, not by 2 or 3 units of DMFT etc. The simplest method of rationale measurable problems is the use of previously known parameters of medical effectiveness of selected prevention methods for calculations. The effectiveness of oral hygiene in the prevention of periodontal disease is high, but depends on the initial incidence rate. In the Republic of Belarus there is experience of prevention: a decrease in the intensity of gingivitis in the program for improving the health of students of the Minsk Medical Institute by 50-60% of the initial high level (S.S. Lobko, 1996). **Daily brushing of teeth:**

- in 2 months - decrease di-s from 1.0 to 0.5, i.e. twice;
- preservation a good level of hygiene for 3 years;
- calculus decreased by 52% for three years;

- the gingival index (GI) decreased from 0.8 to 0.48, i.e. by 40%;
- the average number of healthy sextants increased by 54%

Since oral hygiene using fluorine-containing pastes is effective in preventing carious disease and gingivitis, it is logical to plan primary prevention of both diseases within the same program. The World Health Organization recommends the following methods of communal prevention of dental caries and periodontal diseases:

- restriction of sugars in the diet,
- training in oral hygiene,
- system fluoridation,
- local application of fluorides,
- secondary prevention,
- upbringing and ensuring a healthy lifestyle.

Question 4. Development and implementation of the program of communal prevention

Stages of planning for community prevention:

1. Preliminary planning.
2. Solving of organizational issues.
3. Selection of contingent.
4. Staffing.
5. Determining the cost of the program and sources of financing.

Preliminary planning should be in the form of a summary of the program, including the main tasks, methods, personnel and cost. Further the plan is discussed with the administration of the appropriate level for the reality of practical implementation. After discussing the preliminary plan with the authorities and other interested institutions, most often there is a need to revise it towards more acceptable prevention tasks, decrease of the number of methods, limit of the coverage of the population, for example, only school-age children, etc. Based on thorough consideration of all possible options for using prevention methods, budget allocation and staffing, then:

- -reviews or clarifies the strategy,
- A new detailed plan is being developed.

Solving organizational issues

- Affirmation of the plan by local authorities of the appropriate level.
- Budget allocation.
- Organization of staff training, if necessary.
- Compiling a schedule for the implementation of the program.
- Providing means of prevention.
- Planning methods for monitoring the implementation of the program.

Question 5. Contingent

The whole population should be covered by the prevention program. However, if there are economic and other difficulties, then first of all, the population groups that are at greatest risk of dental caries and periodontal diseases should be covered:

- children,
- pregnant women,
- workers of industrial enterprises.

If it is impossible to cover all children, then primarily include 6-7-year-olds. Because they just erupted permanent teeth, needing protection from caries.

Question 6. Personnel for the practical implementation of the prevention program

It is important already at the planning stage of the program to clearly determine who will carry out the proposed preventive measures among the population. The most frequent mistakes in planning the provision of personnel are:

- absence of personnel for whom some responsibilities are assigned;
- inefficient use of staff;
- use of unqualified or unprepared personnel;
- absence of staff motivation to implement the program

Question 7. Calculation of the cost of the program

The main components of the cost of the primary prevention program are:

- number of people covered by the program,
- conducted preventive measures,
- the cost of means used in the prevention program,
- staff salaries,
- cost of equipment and rooms,
- transportation, business trips,
- other associated costs.

Approximate calculations of the cost of the program can be carried out using the documents of the WHO, as well as the experience of other countries. If the estimated cost of the planned program exceeds the economic opportunities of the society, then it is necessary to make corrections in the choice of prevention methods, to decrease the coverage of the population, to use the staff more economically. cost of prophylaxis of dental caries in preschool children in Belarus with the help of fluorinated edible salt is determined in the studies of T.N. Terekhova (1996). It was 0.04\$ per child per year. the introduction of an effective school program for the prevention of dental caries and periodontal disease in Mogilev was possible due to the

existing funding for the sanitation of the mouth (according to A.V. Kovalevskaya, 2000).

Question 8. Effectiveness of the prevention program

There is such a thing as "Medical effectiveness of prevention". The achieved level of health is compared, according to the measurable objectives of the program, with the initial condition or with the indicators of the dental status of the control population. Evaluation of the program for the prevention of dental caries is carried out 3-5 years after the start of the program:

- similar age groups examine in the beginning of programs, for example, children 12 years old, adults 35-44 years;
- control groups are used in places where prevention has not been done,
- The study is conducted by the same doctors who conducted the basic examination,
- the same diagnostic criteria or indices are used, for example, DMFT, CPI, CPITN, OHI-S.

The effectiveness of the program is acceptable to assess in a short time (a month, six months, etc.). In this case, the process is evaluated, for example, how many interviews about prevention, how many toothpastes are used, etc.

Calculation of economic efficiency (EE)

$$EE = \frac{\text{cost of the procedure} \times \text{number of people} \times \text{time}}{\text{average DMFT of prevented caries} \times \text{number of people} \times \text{time}}$$

Economic benefit (EB) is determined by finding the difference between the costs spent for the prevention program and the expected cost of treatment (CT):

$$EB = EE - CT$$

If prevention turned out to be economically unprofitable, then the program was economically unreasonable and it should be revised as soon as possible. Monitoring of the prevention program consists of monitoring trends in the incidence of caries and periodontal disease.

TEST CONTROL

1. Prevention of dental diseases is:

1. System of state, social, hygienic, medical measures aimed at ensuring a high level of health and preventing diseases;
2. System of state, social, economic, political measures aimed at ensuring the well-being of the population.

2. The goal of primary prevention is

1. Preservation of health, elimination of the impact on human of factors of the natural and social environment, capable of causing pathological changes;
2. Early detection of diseases, prevention of progression of the painful process and possible complications;
3. Preventing of the transition of the disease to a more severe form or stage, preventing exacerbations in its course, reducing temporary disability, disability, and mortality.

3. The goal of secondary prevention is

1. Preservation of health, elimination of the impact on human of factors of the natural and social environment, capable of causing pathological changes;
2. Early detection of diseases, prevention of progression of the painful process and possible complications;
3. Preventing of the transition of the disease to a more severe form or stage, preventing exacerbations in its course, reducing temporary disability, disability, and mortality.

4. The goal of tertiary prevention is

1. Preservation of health, elimination of the impact on human of factors of the natural and social environment, capable of causing pathological changes;
2. Early detection of diseases, prevention of progression of the painful process and possible complications;
3. Preventing of the transition of the disease to a more severe form or stage, preventing exacerbations in its course, reducing temporary disability, disability, and mortality.

5. The collection of epidemiological data should be carried out:

1. Before determining the tasks of communal prevention programs;
2. After the definition of the tasks of communal prevention programs;
3. At the staff planning stage.

6. The most reasonable measurable task of primary prevention of dental caries for schoolchildren 12 years in the Republic of Belarus is:

1. Decrease of the prevalence of caries 50% in 5 years;
2. Stabilization of caries morbidity;
3. A decrease of the average DMFT from 3.0 to 2.0 in 5 years.

7. The most reasonable measurable task of primary prevention of dental caries for schoolchildren 6 years in the Republic of Belarus is:

1. Decrease of caries prevalence from 90 to 50% over 10 years;
2. Stabilization of caries prevalence and intensity;
3. All children 6 years of age will not have carious teeth.

8. The most reasonable measurable task of primary prevention of dental caries for adults in the Republic of Belarus is:

1. Decrease in caries prevalence by 50% in 5 years;
2. Stabilization of caries morbidity;
3. Decrease of the average DMFT from 13.8 to 10.0 for 5 years;
4. Decrease of caries intensity by 25 - 30%.

9. Indicate the method of communal prevention through which it is possible to achieve a reduction in the growth of caries by 25 to 30%, using it during life:

1. Use of fluorine-containing toothpastes;
2. Use of bottled drinking water with an optimal concentration of fluorine;
- 3 use of sweeteners;
4. Use of fluorinated edible salt.

10. Indicate the methods of communal prevention stabilizing the incidence of caries from the adult population:

1. Rational nutrition, the use of fluorides;
2. Use of sweeteners, exclusion of smoking;
3. Prevention of systemic diseases, oral hygiene.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 6									
1	1	2	3	1	3	1	2	1	1

PLANNING OF COMMUNAL PREVENTION OF DENTAL DISEASES

The questions to be studied for the learning of the topic:

1. Stages of planning a communal program for the prevention of dental diseases.
2. Situational analysis.
3. Setting goals and measurable objectives of community-based prevention programs.
4. Choice of prevention methods.

Question 1. Stages of planning a communal program for the prevention of dental diseases

Planning dental care for the population is one of the most important sections of community dentistry. Any system of dental care for the population in the country (according to WHO) should include:

- primary prevention,
- systematic dental care for children,
- dental care for adults by handling,
- training of personnel in adequate quantity, quality and types for the implementation of the above-mentioned parts of the system,
- material and financial provision of the system components,
- assessment and monitoring (information system).

Dental care for the population can not be effective if the system lacks some component or not their consistency. The prevalence and intensity of dental diseases is constantly increasing without communal programs of primary prevention. The experience of practical health care shows that every doctor who worries about the health of people devotes considerable time in his work to prevention. The scope of prevention planning can be different (from a small district or school to the whole country).

Stages of planning for community prevention:

1. Situational analysis. The morbidity is determined and pathogenic factors or risk factors are identified.
2. Definition of measurable tasks of primary prevention.
3. development of the program.
4. Implementation.
5. evaluation of effectiveness.

New tasks for further reducing morbidity are based on assessments of the results of the prevention program and all stages of implementation are planned again.

Definition of measurable tasks • Program development
• Approbation • Evaluation • Clarification of tasks • Correction of the

program • Broad implementation • Re-evaluation • New tasks (this is a spiral development program prevention).

Question 2. Situational analysis

Situational analysis includes:

1. Epidemiological data.
2. Data about dental care of the population.
3. Demographic and other data related to public health.

Stages of the situational analysis

1. Determining of the objectives of the situation analysis and agreeing of the main stages of work with local authorities.
2. Demographic and general data collection.
3. Complete planning (using demographic data) and conducting of epidemiological research.
4. Getting information about dental care.
5. Receiving of statistical data on dental personnel, equipment, dental materials, means of prevention.
6. Detection of risk factors for dental diseases, statistical analysis of received epidemiological data.
7. Medical logical analysis of all materials and conclusion.

Situational analysis can be modified depending on the objectives of prevention. Certain difficulties can arise at this stage and mistakes can be made. The most common mistake is the definition of too many dental problems which within the framework of one program is practically impossible to solve and sometimes it is not necessary.

Examples

During the dental examination of the population in the city of M. were found:

Dental caries. High intensity.

Periodontal disease. 100% prevalence and high intensity.

Dentofacial anomalies.

Diseases of the oral mucosa.

Large need for denture.

Pathology of hard tissues of teeth of non-carious origin.

Dryness of the oral mucosa from the elderly.

Associated factors and problems:

Deficiency of dental equipment

Insufficient financing.

Incomplete staffing of orthopedic departments

Deficit of medical attendants.

The normal desire of the doctor during the planning of the prevention program in this city is the elimination or decrease of all the diagnosed

diseases and problems. This is exactly the mistake that should not be allowed during the development of the primary prevention of dental diseases.

Table 22. Approximate guide for a dentist in assessing of the desire and possibilities of prevention

Dental problems	Desire of dentist	World experience	Situation
High intensity of dental caries	To decrease	Possibly	Material possibilities are minimal
100% prevalence of periodontal disease	To decrease	Possibly	Material and staffing is insufficient
Dentofacial anomalies	To decrease	No experience	
Diseases of the oral mucosa	To decrease	No experience	
Large need for denture	To satisfy all	Возможно	Huge financial costs are needed
Non-carious lesions	To decrease	No experience	
Dryness of the oral mucosa from the elderly	To eliminate	No experience	

Question 3. Setting goals and measurable objectives of community-based prevention programs

Prevalent mistakes in planning:

- absence of specific tasks,
- absence of scientific justification of tasks,
- measurements that can not be controlled,
- hyperbolization of problems,
- setting tasks without baseline data on morbidity.

DMFT in specific numerals for a specific age group of the population can be a criterion for determining of the task of decline of the intensity of dental caries.

For example, to decrease the *intensity of caries* of permanent teeth in children 12 years from 4.0 DMFT to 3.0 DMFT teeth, or 1.0 DMFT, or 25% of the initial level. An increase in the average number of healthy sextants (CPITN "0") from 0.8 to 3.5 among young people of 18 years can be a specific measurable task for *periodontal disease*.

The scientific justification for the task of the prevention program is the most difficult task at this stage of planning. *For example*, why does the doctor plan to reduce caries by 1 unit DMFT, rather than 2 or 3 units. DMFT, etc. The use of previously known parameters of the medical effectiveness of

selected prevention methods for calculations is the simplest method for substantiating measurable problems. *Example:* the average DMFT for 12-year-old children in the city of M. is 4.0 and the doctor plans to use the method of fluoridation of drinking water. It is known, the tendency of decrease in intensity of caries will be observed in 3-5 years. The DMFT will be decreased by 40-60% of the initial level in 10-15 years (the level of DMFT will reach 2.0). So, it is possible to reasonably plan DMFT 2.0 in the form of a measurable task of communal prevention for the next 10-15 years, if fluoridation of drinking water will be introduced. Calculations for planning other known methods of primary prevention of dental caries can be done in the same way.

Question 4. Choice of prevention methods

Table 23. Methods of the prevention of dental caries (WHO, 1984)

Methods	Fluorine content	Frequency and duration of application	Percent of decrease of caries
<u>Fluorides</u> Fluoridation of drinking water	0,7-1,2 mg/l	All life	50-65
F-tablets at home	0,25-1 mg	From 6 months to 14 years	50-80
F-tablets at school	0,5-1 mg	School years	25-40
F-salt	250 mg/kg	All life	40-60
Methods	Fluorine content	Frequency and duration of application	Percent of decrease of caries
Fluoride applications locally, professionally	12-80 g/kg	1-2 times a year, school and young years	30-40%
Mouthwashes with solutions of fluorides	1 – 2,5 g/kg	2 - 30 times a month, school and young years	20-50%
Fluorinated toothpastes	-	All life	25-30%
Silants "sealing" fissures	-	At 6-7 and 12-13 years old, replacement as needed	14-90%
Methods	Fluorine content	Frequency and duration of application	Percent of decrease of caries
Limitation of sweets Limitation of the number and frequency of sweet	-	All life	20-25%

foods			
Mouth hygiene Controlled brushing of teeth in school	Without fluorine With fluorine	School years	0% 40-60%
Self-cleaning the teeth at home	Without fluorine With fluorine	All life	0% 25%

Methods of the prevention of periodontal disease:

- Regular mechanical removal of plaque
- Professional removal of tartar

The effectiveness of oral hygiene in the prevention of periodontal disease is high, but depends on the initial level of morbidity. The experience of prevention is available in the Republic of Belarus: a decrease of the intensity of gingivitis in the program for improving the students of the Minsk Medical Institute by 50-60% of the initial high level (SS Lobko, 1996).

Daily brushing of teeth:

- After 2 months - a decrease in DI-S from 1.0 to 1.5, that is, 2 times
- Preserving of a good level of hygiene for 3 years
- For 3 years, the index of calculus is reduced by 52%
- The gingival index (GI) decreases from 0.8 to 0.48, i.e. by 40%
- The average number of healthy sextants increases by 54% (from 1.2 to 1.85 CPITN "0")

Oral hygiene is effective in preventing carious disease and gingivitis With the use of fluorine-containing toothpastes. So it is logical to plan primary prevention of both diseases within the same program.

Methods of communal prevention of dental caries and periodontal diseases (WHO):

- Limitation of sugars in the diet
- Teaching oral hygiene
- System Fluorination
- Local application of fluorides
- Secondary prevention
- A healthy lifestyle.

TEST CONTROL

1. Prevention of dental diseases is:

1. System of state, social, hygienic, medical measures aimed at ensuring a high level of health and preventing diseases;
2. System of state, social, economic, political measures aimed at ensuring the well-being of the population.

2. Indicate the purpose of primary prevention:

1. Preservation of health, elimination of the impact on human beings of factors of the natural and social environment that can cause pathological changes;
2. Early detection of diseases, prevention of progression of the painful process and possible complications;
3. Preventing the transition of the disease to a more severe form or stage, preventing exacerbations in its course, reducing temporary disability, disability, and mortality.

3. Indicate the purpose of secondary prevention:

1. Preservation of health, elimination of the impact on human beings of factors of the natural and social environment that can cause pathological changes;
2. Early detection of diseases, prevention of progression of the painful process and possible complications;
3. Preventing the transition of the disease to a more severe form or stage, preventing exacerbations in its course, reducing temporary disability, disability, and mortality.

4. Indicate the purpose of tertiary prevention:

1. Preservation of health, elimination of the impact on human beings of factors of the natural and social environment that can cause pathological changes;
2. Early detection of diseases, prevention of progression of the painful process and possible complications;
3. Preventing the transition of the disease to a more severe form or stage, preventing exacerbations in its course, reducing temporary disability, disability, and mortality.

5. The epidemiological data should be collected:

1. Before the definition of the tasks of communal prevention programs;
2. After the definition of the tasks of communal prevention programs;
3. At the staff planning stage.

6. Indicate the method of communal prevention, with which can achieve a reduction in the growth of caries by 25 - 30%, using it throughout life:

1. Use of fluorine-containing toothpastes;
2. Use of bottled drinking water with an optimal concentration of fluorine;
3. Use of sweeteners;
4. Use of fluorinated edible salt.

7. Indicate the methods of communal prevention, with which can stabilize the incidence of caries in the adult population:

1. Rational nutrition, the use of fluorides;
2. Use of sugar replacers, elimination of smoking;
3. Prevention of systemic diseases, oral hygiene.

8. The stages of planning of communal prevention programs are:

1. Situational analysis, task definition, performance evaluation;
2. Setting goals and objectives, systematic dental care for children;
3. Development of the program, rehabilitation of schoolchildren, evaluation of effectiveness.

9. The most common mistakes during the setting of measurable tasks of communal prevention programs are:

1. Lack of specific tasks;
2. Hyperbolization of problems;
3. Setting tasks without taking into account the situation analysis;
4. All of the above.

10. The most common mistakes during the choice of methods of communal prevention programs:

1. The effectiveness of the method is unknown;
2. Effectiveness is not proven in community prevention programs;
3. Expensive method of prevention;
4. Absence of staff to implement the method;
5. All of the above.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson7									
1	1	2	3	1	1	1	1	4	5

DEVELOPMENT OF A MODEL OF A COMMUNITY PREVENTION PROGRAM BASED ON SITUATIONAL ANALYSIS DATA

The questions to be studied for the learning of the topic:

1. Contingent of participants in the communal program for the prevention of dental diseases
2. Development and implementation of a communal prevention program.
3. Personnel for carrying out a community prevention program.
4. Calculation of the cost of a communal prevention program.

Question 1. Contingent of participants in the communal program for the prevention of dental diseases

The whole population should be covered by the prevention program. If there are economic and other difficulties, then the population groups with the greatest risk of caries and periodontal diseases:

- children
- pregnant women
- industrial workers

If all children can not be included, then take 6-7 year olds. Because they have just erupted permanent teeth, needing protection from caries.

Question 2. Development and implementation of a communal prevention program

The planning stages include:

- Preliminary planning
- Solving of organizational issues
- The choice of the contingent (age groups or risk groups)
- Staffing
- Determining of the cost of the program and sources of financing

Preliminary planning includes:

- Summary of the program (tasks, methods, staff, cost)
- Discussion with the administration regarding the reality of practical implementation
- If necessary, a revision towards more acceptable prevention tasks (reduction in the number of methods, coverage of the population).

Table 24. Choice of prevention methods

Methods	Staff	Cost of the program	Problems of implementation	Possible solution
Fluoride tablets	Dentist Nurse	High Moderate	Budget is limited Deficit of nurses	Not realistic Not realistic
Fluorine-gel	Dentist Hygienist	High Moderate	No time Absent	Not realistic Not realistic

Controlled teeth cleaning	Dentist Hygienist Teacher	High Moderate Low	Budget is limited Absent Not trained, no motivation	Not realistic Not realistic Accept for further consideration
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Next, based on careful consideration of all possible variants for the use of prevention, budget allocation and staffing:

- A strategy is being revised or refined,
- A new detailed plan is being developed.

Solving of organizational issues:

1. Approval of the plan by local authorities of the appropriate level
2. Purpose of budget
3. Organization of staff training, if necessary
4. Schedule implementation of the program
5. Providing means of prevention
6. Planning of methods for monitoring the implementation of the program

Question 3. Personnel for carrying out a community prevention program

It is important already at the planning stage of the program to clearly determine who will carry out the proposed preventive measures among the population.

The most frequent mistakes in the planning of staffing:

1. Absence of personnel on whom certain duties are assigned
2. Unrealistic use of staff. For example, the dentist is instructed to brush teeth to schoolchildren. This increases the cost of the program and/or the implementation of the program becomes impossible, because the dentist is busy by treatment;
3. Use of unqualified or unprepared personnel
4. Absence of staff motivation

So, it is necessary to rationally select personnel in the required quantity to implement the proposed methods of prevention. It can be envisaged to train the appropriate personnel of the required quantity.

In this case, prevention planning is postponed. Because the process of personnel training is not a method of disease prevention and, therefore, it is impossible to expect a decrease in the incidence rate during this period.

Table 25. Calculations of staff for primary prevention

Prevention measures	Type of staff	Calculations of the need	Notes
A healthy lifestyle (enlightenment)	Dentist Assistant dentist Hygienist School nurse	One (of the listed) per 100 thousand population	Mass media are used
Teaching teeth cleaning	Hygienist Teacher Kindergartener	One (of the listed) for 2400 people	Need 6 minutes for a group of 30 people
Rinse mouth with fluoride solution	Nurses Hygienist	One for 14 thousand people	Once a week 5 minutes for 30 people
Removal of dental deposits	Dentist Hygienist	One for 3000 patients	30 minutes for 1 young person. 45 minutes per adult

Question 4. Calculation of the cost of a communal prevention program.

The main components of the cost of the primary prevention program are:

- Number of people in the program
- Prevention measures
- The cost of means used in the prevention program
- Staff salaries
- Cost of equipment and premises
- Transport, business trips
- Other associated costs.

The dentist at any level from the school cabinet to the chief specialist of the Ministry of Health in the planning of communal prevention did not deal with the calculation of the cost of the program until recently in the CIS countries. It was enough to justify and propose a list of planned preventive measures. The remaining work on financial support of the program was carried out by economists. Theoretically this is correct, but practice shows that often excellent programs remained either on paper or not properly implemented due to absence of or insufficient financing. Therefore, it is irrational to consider the planning process of the prevention program complete without securing specific funding. Using the documents of the WHO, the experience of other countries can conduct an approximate calculation of the cost of the program. It is necessary to make a correction in the choice of prevention methods, to reduce the coverage of the population,

to use the staff more economically, and so on, if the estimated cost of the planned program exceeds the economic opportunities of the society.

Examples:

1. the cost of dental caries prevention in preschool children in Belarus using fluorinated edible salt is determined in the research of TN Terekhova (1996). It was 0.04 \$ per child per year.
2. the introduction of an effective school program for the prevention of dental caries and periodontal disease in Mogilev was possible due to the existing funding for the sanitation of the mouth (according to AV Kovalevskaya).

Table 26. The cost of dental caries prevention

Methods	Price for 1 person per year (in US dollars)
Fluoridation of drinking water	0,20
Appointment of F-tablets to schoolchildren	0,40
Rinse the mouth with a 0.2% NAF solution once a week	0,50
F-gel application once a year	3,60
Regular teeth cleaning with F-containing toothpaste at home	4,00

TEST CONTROL

1. The stages of planning of communal prevention programs are:

1. Situational analysis, task definition, performance evaluation;
2. Setting goals and tasks, systematic dental care for children;
3. Development of the program, rehabilitation of schoolchildren, evaluation of effectiveness.

2. It is advisable to include in the program of communal prevention:

1. The most common dental diseases;
2. Rare dental diseases;
3. All diseases of the oral cavity.

3. Preliminary planning of communal prevention programs implies:

1. Availability of measurable tasks, conducting situational analysis, training of personnel;
2. Choice of adequate prevention methods, staff selection, assessment of economic opportunities.

4. Revision of prevention programs may include:

1. Statement of more simple problems;
2. Limiting the number of methods;

3. Decrease in the number of people covered by the program;
4. Limitation of the number of personnel;
5. All of the above.

5. One hygienist can teach teeth cleaning:

1. 100000 person;
2. 2400 person;
3. 14000 person;
4. 3000 person.

6. Indicate the most frequent errors in the planning of personnel for conducting community prevention programs:

1. Involvement of non-stop medical personnel;
2. Use of highly qualified personnel;
3. Absence of measures to motivate staff;
4. Use of junior medical personnel.

7. Indicate the method of communal prophylaxis of periodontal disease:

1. Improvement of social and economic conditions and hygiene of the oral cavity;
2. Regular mechanical removal of dental plaque with a toothbrush and professional removal of tartar;
3. Raising the level of education and treatment of common chronic diseases;
4. Any of the above.

8. Is it advisable to include dental diseases in the communal program of prevention?

1. Unknown;
2. Economically impractical;
3. It is expedient and necessary.

9. How can communal prevention of dental caries affect the individual DMFT of permanent teeth in an 8-year-old child?

1. DMFT will decrease;
2. DMFT will decrease only if good oral hygiene is observed;
3. DMFT will not change;
4. DMFT will decrease only when fluorides are used.

10. Can the intensity of caries decrease in the age group of 6-year-old children living in Vitebsk, as a result of carrying out community dental caries prevention?

1. No;
2. Yes;

3. There is no experience.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 8									
1	1	2	5	2	3	2	2	3	2

COMMUNAL PROGRAMS FOR THE PREVENTION OF DENTAL CARIES AND PERIODONTAL DISEASES IN THE REPUBLIC OF BELARUS

The questions to be studied for the learning of the topic:

1. Communal programs of caries prevention and periodontal disease in the Republic of Belarus
2. National program of the caries prevention and periodontal disease among the population of the Republic of Belarus
3. Analysis of the results of the National Program of the Prevention of Dental Caries and Periodontal Disease among the Population of the Republic of Belarus

Question 1. Communal programs of caries prevention and periodontal disease in the Republic of Belarus

Measures for prevent dental diseases will be effective if they are carried out in a planned and integrated order, combining all levels of the prevention program. Specific measures and organizational principles of the prevention program were developed in 1979 and presented in the guidelines of the Ministry of Health of the USSR "Complex system for the prevention of dental diseases.

Table 27. Appropriate methods of prevention are provided by the program in a certain age period of a person's life:

1	period of pregnancy	<ul style="list-style-type: none"> • health enlightenment work • balanced nutrition • comprehensive dental care
2	5-year-old children	<ul style="list-style-type: none"> • rational nutrition with restriction of sucrose • preventing bad habits • systematic intake of fluoride preparations in areas with insufficient content of fluorine • training in oral hygiene and its regular use • regular dental care.
3	6-15-year-old children	<ul style="list-style-type: none"> • rational nutrition with restriction of sucrose • regular health enlightenment work • systematic intake of fluoride preparations • regular oral hygiene • local treatment of tooth tissues with remineralizing means and dental plaque prevention preparations • dental care fully.

4	teenagerts	<ul style="list-style-type: none"> • regular individual and professional oral hygiene • local use of anticaries means • balanced nutrition • regular dental care in full • identification and elimination of professional hazards
5	adults	<ul style="list-style-type: none"> • adequate individual and professional oral hygiene • timely dental care fully • elimination of bad habits (smoking) and professional hazards

"Republican program for the prevention of dental diseases" was adopted in 1986. The goal of the program: to reduce the prevalence of dental diseases and the population's need for dental care. The goals and tasks of the program are determined for each region, based on local conditions. WHO's global goals by the year 2000 should serve as a guide.

Methods and means of prevention:

- fluoridation of drinking water
- fluoride tablets
- fluoride varnishes
- fluoride solutions
- vitafluor
- health enlightenment, including nutrition advice
- cleaning of teeth (independent and controlled)
- prevention and elimination of bite anomalies
- sanation of the oral cavity and examination of children at the dentist.

A dentist trains staff, instructs teachers, and conducts health education. Medical school sisters teach children to brush their teeth, give out tablets, rinse mouth with solutions of fluoride. Children's dentists perform sanation of the oral cavity and prophylactic examination of children with a multiplicity of examinations differentiated caries activity. Teachers of schools and kindergarten teachers distribute fluorine tablets, control the cleaning of teeth, and carry out health enlightenment work. Parents teach and control the cleaning of teeth, restrict the intake of carbohydrates.

Material equipment

Fluoride preparations

- for water fluoridation;
- for local effects: fluorine, fluoride tablets, 0.2% or 0.05% solutions of sodium fluoride, fluorine-containing pastes.

Remineralizing solutions:

- remodent
- calcium gluconate.

Evaluation of the effectiveness of the introduction of a program for the prevention of caries in children should be conducted according to the following indicators:

1. Number of children with intact teeth;
2. Stabilization of the carious process (the intensity of caries increase according to the DMFT, the number of caries recurrences (restorations of the fillings), the number of complications of the carious process of permanent and temporary teeth, etc.).
3. Decrease in the number of complicated forms of caries
4. The number of removed permanent teeth at school age should be minimal.

Question 2. National program of the caries prevention and periodontal disease among the population of the republic of Belarus

The National Program for the Prevention of Periodontal Caries and Diseases (1998) is based on WHO recommendations, takes into account the experience of the implementation of the Republican Program of Dental Diseases of 1986. Approved by the Minister of Health of the Republic of Belarus on September 29, 1998, No. 375. It is given in the abbreviated form as an example of a really functioning program at the communal level

Situational analysis of dentistry in Belarus revealed the following:

1. High prevalence and intensity of dental caries in children and adults with a tendency to increase.
2. High prevalence and intensity of periodontal disease.
3. Presence of risk factors for the onset of the disease, the main of which are: (a) a low concentration of fluoride in drinking water, (b) inadequate oral hygiene, (c) frequent consumption of carbohydrate foods, including sweets.

Scientific-methodical approaches and methods of prevention.

Scientific and methodical approaches recommended by the World Health Organization were used. The primary prevention program is based on the following three methods:

- oral hygiene,
- fluorides,
- rational nutrition.

Table 28. The main goals of dental health in the Republic of Belarus:

Criteria	Age, years	Basic data 1996/97	Goals	
% of children with healthy teeth	5 - 6	10%	15%*	≥50%
Average teeth DMFT	12	3,8	no more 4,0**	< 2,5
	35 - 44	13,5	Stabilization	
The average number of sextants with a healthy periodont	15	1,0	1,5	≤ 3,0

* - this indicator was achieved in 2000.

** - by the year 2000. the average DMFT will decrease to 3.0; to 2003. - up to 2.7.

Contingent (coverage of the population). The whole population must be covered by the program for achieve the goals.

Table 29. Practical implementation of established methods of prevention is carried out taking into account the characteristics of the following age groups:

0-2 years	newborns and young children
3-5\6 years	children of preschool age
6\7-14\ 17	children of school age
15\ 18-25 years	young people
26+	adult population

Table 30. Approximate duties of different types of personnel in implementing the program

Professorial and teaching staff of the stomatological faculty and scientists	<ul style="list-style-type: none"> - Preparation of lectures, methodological materials for students, course listeners, dentists, general practitioners - Reading lectures on prevention - Conducting prevention seminars - Conducting scientific and practical conferences of dentists on prevention - Organization and conduct of epidemiological studies to assess the effectiveness of the prevention program
Administrative staff at all levels (republic, region, city, district, village)	<ul style="list-style-type: none"> - Edition of orders, indications, directions, instructional materials on the organization of the prevention program - Creation of necessary conditions for the implementation of the planned activities within the program of the appropriate level - Material support of the program
Dentists	Practical implementation of preventive measures according to the program
Nurses and non-dental staff	Practical implementation of preventive measures under the guidance of a doctor
Tasks for training staff	<ul style="list-style-type: none"> - Improvement of knowledge of practicing dentists through seminars and conferences - Acquaintance of non-stomatological personnel (doctors, school teachers, kindergarten teachers) with the prevention program
<i>Program implementation plan for newborns and children under 3 years</i>	
Events	Training of parents during each patronage, attendance by the staff of

	the pediatric service and subsequent preventive visits of the children's polyclinic by parents		
Performers	Pediatricians, nurses of the pediatric service		
Materials	<ul style="list-style-type: none">- Methodical handbook for pediatric staff- A set of posters (4) for children's polyclinics, departments, offices- Memo for young parents		
Evaluation			
<ul style="list-style-type: none">- coverage (in%) of young parents- number of visits for the purpose of prevention	Intermediate <ul style="list-style-type: none">- improvement of parents' knowledge in comparison with baseline to> 80%- tendency to decrease the prevalence and intensity of caries in children 1-2 years	Final: achievement of targets in 2000 and 2010 (percentage of healthy 5-6-year-olds).	
Plan for the implementation of the program for preschool children: 3-5 / 6 years			
Events	<ul style="list-style-type: none">➤ Teaching parents at every preventive visit to the children's polyclinic➤ Teaching parents of children attending preschools➤ Training of kindergarteners of preschools		
Performers	<ul style="list-style-type: none">➤ Pediatricians and nurses of the pediatric service;➤ Kindergarteners of the preschools; dentists serving this area, including preschools.		
Materials	<ul style="list-style-type: none">➤ Instruction for parents of children➤ Instruction for kindergarteners of the preschools		

	<ul style="list-style-type: none"> ➤ A set of posters (4) for children's polyclinics and preschools ➤ Game materials (an album for coloring, models of teeth, samples of toothpastes and brushes)
<i>Evaluation</i>	
<p><u>Primary</u></p> <ul style="list-style-type: none"> - coverage (in%) of organized and unorganized children participating in the program - number of children attending dentistry for the purpose of prevention - publication of educational and methodological materials 	<p><u>Intermediate</u></p> <ul style="list-style-type: none"> - Improving the knowledge of parents and children about prevention: up to >80% - the tendency to improve oral hygiene in children of all age groups <p><u>Final:</u> achievement of the targets in 2000 and 2010 (percentage of healthy 5-6-year-olds)</p>
<i>Plan for the implementation of the program for school-age children and teenagers 6 7 ~ 14/17 years *</i>	
Events	<ul style="list-style-type: none"> ➤ Lectures for school teachers ➤ Teaching parents of school children at school and at a dentist's reception ➤ Activities held in schools are subject to coordination with educational authorities of all levels
Performers	<ul style="list-style-type: none"> ➤ dentists serving schoolchildren in the area ➤ school teachers
Materials	<ul style="list-style-type: none"> ➤ A series of posters (4) for schoolchildren ➤ Instruction for parents of junior schoolchildren ➤ Instruction for schoolchildren
<i>Evaluation</i>	

<p><u>Primary</u></p> <ul style="list-style-type: none"> - the publication of educational and methodological literature and visual aids (the implementation of the planned plans according to the terms and the number of publications) - coverage (in%) of schoolchildren in the school curriculum - attendance (in %) of schoolchildren of a dentist for the purpose of prevention 	<p><u>Intermediate</u></p> <ul style="list-style-type: none"> - improving the knowledge and behavior of schoolchildren to > 80% of the baseline - trends in improving oral hygiene of schoolchildren (according to the OHI-S) - trends in the improvement of the periodontal status (CPITN) 	<p><u>Final:</u> achievement of the set goals in 2000 and 2010 (CPI of 12-year-olds and CPITN "O" of 15-year-olds)</p>
<p><i>Program implementation plan for young people from 15/18 to 25 years old</i></p>		
Events	<ul style="list-style-type: none"> ➤ Training of young people at a dentist's reception (except for emergency care) ➤ Individual preventive procedures for admission to the dentist (except for emergency care) 	<p>Training of young people at a dentist's reception (except for emergency care)</p> <p>Individual preventive procedures for admission to the dentist (except for emergency care)</p>
Performers	Dentists of all specialties working in state clinics	
Materials	<ul style="list-style-type: none"> ➤ Methodical manual for dentists on the implementation of prevention in the program ➤ Instruction for young people about the methods of dental caries prevention and periodontal disease ➤ A series of popular science brochures (3) on the prevention of dental caries and periodontal disease 	<p>Methodical manual for dentists on the implementation of prevention in the program</p> <p>Instruction for young people about the methods of dental caries prevention and periodontal disease</p> <p>A series of popular science brochures (3) on the prevention of dental caries and periodontal disease</p>
<p><i>Evaluation</i></p>		
<p><u>Primary</u></p>	<p><u>Intermediate</u></p>	<p><u>Final:</u> Evaluation criteria for</p>

<ul style="list-style-type: none"> - the publication of methodical and educational materials (terms and quantity) - acquisition of means of prevention (terms, completeness of providing clinics) - coverage (in %) of young people with preventive measures - involvement (in %) of dentists in the prevention program 	<ul style="list-style-type: none"> - an increase in the percentage of patients who regularly use fluoride toothpaste (up to > 90%) - an increase in the percentage of patients practicing proper nutrition (up to > 80%) - tendency to improve oral hygiene (OHI-S) - tendency to improve the condition of periodontal disease (CPITN) 	<p>the final evaluation will be introduced as the positive dynamics of the intermediate assessment data.</p>
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Budget. This program is designed to be implemented within the existing budget for dental treatment and prevention services to the public.

Basic means of prevention (toothpastes) are buied by the population as a normal product of daily consumption. In some cases, taking into account economic opportunities, local authorities can finance the purchase of hygiene products for the implementation of the prevention program in children's institutions, among the population of preferential categories, etc.

Question 3. Analysis of the results of the national program of the prevention of dental caries and periodontal disease among the population of the republic of Belarus

Employees of the Department of Pediatric Dentistry of the Belarusian State Medical University under the direction of T.N. Terekhova in 2008 examined the key age groups of the child population of the Republic of Belarus and established positive trends in reducing the dental morbidity:

- DMFT for 12-year-olds decreased from 3.8 to 2.2;
- The percentage of children free of caries increased from 10% to 20%;
- DMFT for 15-year-olds decreased from 4.7 to 3.4.

There is a need to examine the adult population of Belarus to assess the dental morbidity and determine the effectiveness of the prevention program for this contingent. Employees of the Department of General Dentistry of Belarusian Medical Academy of Postgraduate Education conducted a survey of the population (Order of the Ministry of Health of the Republic of Belarus № 744 dated 14.07.10). The study was conducted in all regions (the regional center and one more town) and in Minsk (2 administrative districts). An "exploratory" method recommended by WHO was used. The main key groups of the adult population were examined: 18-year-olds, 35-44 years, 65 years and older. The intensity of caries was assessed with the help of the DMFT index of teeth. Carious, filled and removed teeth were taken into account in calculating the intensity of carious disease. Teeth covered with single crowns were also taken into account and denoted by the code "3". Separately, the DMFT was calculated taking into account the teeth covered with crowns, which are the support of the bridge, in order to be able to compare the data of the DMFT with the data of previous studies (1996). Medium and high levels of caries intensity and a high prevalence of carious disease in different age groups of the population of the Republic of Belarus were revealed during the study.

Table 31. Intensity of dental caries according to DMFT in the Republic of Belarus

Age, years	«D»	«F»	«M»	DMFT («1»+«3»+«4»)	DMFT («1»+«3»+«4»+«7»)
18	1,71***	3,65	0,26**	5,71*	5,71
35 - 44	1,71	7,57	2,65	11,93	13,11

* The average number of DMFT in 1996. was 6.8.

** Component "M" in 1996. was 0.38.

*** Component "D" in 1996. was 2.3.

The absence of removed teeth for caries and periodontal disease is the goal of the WHO by the year 2020 for 18-year-olds. The prevalence of caries in young people aged 18 years was 95.24%. The percentage of "healthy" (without caries) ranged from 2.97 + 1.69% in the Vitebsk region to 9.28 + 2.95% in the Brest region. On average, 5% of young people had healthy teeth. The high prevalence of carious disease (99%) is noted in the age group 35-44 years. A high level of intensity of carious disease was determined: DMFT averaged 11.93, and taking into account the crowns - 13.11 (in 1996 the DMFT was 13.8).

In general, the Republic of Belarus has positive changes in the structure of DMFT:

- the average number of removed teeth decreased from 6.5 to 2.7
- the average number of caries decreased from 2.1 to 1.7
- the number of sealed teeth increased from 5.2 to 7.6
- indicator "M" has achieved the goals of WHO.

Goals of the WHO by 2020 (age group 35-44 years): the average DMFT is no more than 10, no more than 4 teeth removed due to caries.

The intensity of dental caries according to the DMFT index in the age group of 65 years and older remains at a high level. The average indicators were 23.88, taking into account the crowns - 25.42 (in 1996 - 22.5, in 2004 - 22.4 in the age group 65-74 years).

Determination of the periodontal status of the population of the Republic of Belarus was carried out with the help of the following index evaluation:

- oral hygiene was determined with OHI-S
- the condition of the gum was recorded with a periodontal index (GI, Loe, Silness, 1963)
- the condition of periodontal tissues was assessed using the periodontal index CPITN.

Table 32. Hygiene of the oral cavity and manifestation of gingivitis

18-year-olds	Hygiene is satisfactory, gingival inflammation of mild degree was observed. Hygienic indicators ranged from 0.95 to 1.46. Gingival inflammation rates ranged from 0.39 to 0.60.
35-44 year olds	The level of hygiene is satisfactory and the inflammation of the gum is of moderate severity. Hygienic indicators varied from 1.05 to 1.71. The parameters of gum disease from 0.61 to 0.82.
65 years old and	The indicators of hygiene and inflammation of the gums

older	were not carried out because of the large number of absent teeth and excluded sextants.
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Table 33. Periodontal status of the adult population

18-year-olds	The average number of healthy sextants was 2.37. The number of sextants with tartar is 2.18.
35-44 year olds	The average number of healthy sextants is 1.24. The number of sextants with tartar is 2.79. The average number of sextants with pathological dentogingival pockets up to 4-5 mm is 0.34.
65 years old and older	An analysis was made of the average number of healthy sextants with deep periodontal pockets and sextants excluded from the survey. The number of excluded sextants is maximum - 3.53.

Epidemiological study conducted in the Republic of Belarus in 1996 found that periodontal disease is defined in 99.8% of the population. The average number of healthy periodontal disease at the age of 15 years is 0.9; 18-year-olds and 35-44 years was - 0.6 and 0.1, respectively. Periodontal pockets with a depth of 4-5 mm were found in 14.6% of those surveyed at the age of 15 and 62.5% at the age of 35-44.

Epidemiological study (L.A. Kazeko, N.A. Yudina, 2002-2003) showed an increase in sextants of healthy periodontal disease from 0.9 to 1.07 in 15 years, in 18-year-olds it was 1.17; at the age of 35-44 years - 0.19. Sextants with periodontal pockets of medium depth in 18-year-olds - 0.02; at the age of 35-44 years - 0.71. The population aged 18 and 35-44 years had about 4 sextants with tartar.

Epidemiological study of 2010 allowed to determine the tendency to further improvement of the condition of periodontal tissues in the adult population of the Republic of Belarus. The average number of healthy sextants at the age of 18 years increased to 2.37, and in 35-44 years - to 1.24.

**Program for prevention of major dental diseases
of the population of RB from 2017 to 2020
(Order of the Ministry of Health of the Republic of Belarus
on 23.11.2017 No. 1338)**

The main goal of the Prevention Program is to ensure the realization of the citizens' right to health protection by implementing a set of measures aimed at improving the dental health of the population.

Objectives of the Prevention Program:

- 1) prevention of dental diseases among the population of the Republic of Belarus;

- 2) ensuring the population's access to services for the prevention of dental diseases;
- 3) prevention of deterioration in the dental health indicators of the adult and child population of the Republic of Belarus;
- 4) creation conditions for decrease the prevalence of major dental diseases;
- 5) creation of favorable conditions for decrease the intensity of major dental diseases;
- 6) improvement of the system of monitoring and evaluation of dental health of the population of the Republic of Belarus, measures taken to improve it.

Practical methods for the prevention of tooth decay and periodontal disease are carried out at the following levels:

- 1) communal (population), ensuring the implementation of activities at the level of the republic, regions, districts, etc.;
- 2) professional (group), providing the implementation of activities at the level of groups, united by professional affiliation;
- 3) home, (including individual), introducing activities at the level of groups united by the conditions of cohabitation "including each family member,

The prevention program recommends the following as the main preventive methods:

- sanitary-educational work;
- hygienic care for the oral cavity;
- balanced diet;
- systemic and topical application of fluorides.

The prevention program is implemented by medical workers.

The all population must be covered for the achievement of the planned goals by the Prevention Program. The practical implementation of a complex of prevention methods (oral hygiene, fluoride use, rational nutrition) are carried out taking into account the age characteristics of the following population groups:

- children of early age (from birth to three years);
- children of preschool age (from three years to six / seven years);
- schoolchildren (from six / seven years old to 18 years of age);
- adult population (over 18 years of age).

The evaluation of the work of the Prevention Program is carried out using the indicators of dental health recommended by WHO, and is based on:

1. Comparison of the level of knowledge on the prevention of dental diseases in adults (over 18 years) and parents with children aged 3 and 12 years, with the baseline (based on the results of the Question naire);

2. Comparison of the parameters characterizing the prevalence and intensity of the main dental diseases of the population of the country, with the parameters designated as goals of the Prevention Program.

The expected results of the implementation of the Prevention Program are the decrease of dental morbidity and the improvement of the dental health of the population as a factor affecting the overall health of the individual, the quality of his life and the well-being of society.

Table 34. The incidence rates of dental caries (the proportion of children with healthy teeth, the intensity of dental caries, DMFT of teeth), the severity and prevalence of periodontal disease (CPI) among the population of the Republic of Belarus in 2020 are as follows (according to situational analysis and WHO prevention methods):

Criterion	Age	Initial indicator (2013)	Goal of the Prevention Program (2020)
Proportion of children with healthy teeth	5-6 years	20%	not less than 30%
DMFT of teeth	12 years	2,5	no more 2,0
DMFT of teeth	35-44 years	13	stabilization
CPI	15 years	0,96	no more 0,75
The average number of sextants with a healthy periodontium (CPI)	35-44 years	1,2	1,5

TEST CONTROL

1. What methods of communal prevention of dental caries and periodontal diseases are recommended by WHO?

1. Restriction of sugars in the diet and training in oral hygiene;
2. Systemic and local application of fluorides;
3. Secondary prevention, education and the provision of a healthy lifestyle;
4. All of the above.

2. Indicate the age groups of the population participating in the National Prevention Program of the Republic of Belarus:

1. 0 - 2 years;
2. 3 - 5/6 years;
3. 6/7 - 14/17 years;
4. 15/18 - 25 years;
5. Over 26 years of age;
6. All of the above.

3. Indicate the methods of primary prevention used in the National Prevention Program of the Republic of Belarus:

1. Hygiene of the oral cavity;

2. Use of fluorides;
3. Rational nutrition;
4. All of the above

4. The difference between prevention methods for different population groups in the National Prevention Program is as follows:

1. The difference is absent;
2. The appointment of endogenous and exogenous fluoroprophylaxis;
3. Fluorinated salt for adults is not recommended.

5. Indicate the goal of the National Program of Prevention of the Republic of Belarus by 2010 among 15-year-olds (the number of healthy sextants according to the CPITN):

1. 4.0;
2. 2.0;
3. 3.0;
4. 5.0.

6. Indicate the goal of the National Program of Prevention of the Republic of Belarus by 2010 among 5 - 6-year-olds (percentage of children free of caries):

1. 15%;
2. 30%;
3. 50%.

7. Was the situation analysis carried out in the Republic of Belarus before the development of the National Program for the Prevention of Caries and Periodontal Diseases?

1. Yes;
2. No;
3. Partially;
4. Data from neighboring countries were used.

8. Practical implementation of the National Prevention Program is possible:

1. Without changing the functional duties of dentists;
2. With changes in the functional duties of dentists;
3. Mandatory training of additional staff.

9. Implementation of the National Prevention Program in the Republic of Belarus started

1. In 2000;
2. In 1998;

3. In 1996;
4. In 1994

10. Is the National Prevention Program mandatory for dentists?

1. Yes;
2. Only at the discretion of the management of the polyclinic
3. None.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 9									
4	6	4	1	3	3	1	1	2	1

EVALUATION OF THE EFFICIENCY OF COMMUNAL PROGRAMS OF PREVENTION DENTAL DISEASES

The questions to be studied for the learning of the topic:

1. Methods for the prevention of dental caries
2. Methods for the prevention of periodontal disease
3. European goals of dental health by 2020.
4. WHO criteria for assessing the effectiveness of dental disease prevention programs
5. Criteria of medical efficiency
6. Criteria of economic efficiency
7. The economic benefits of the prevention program

Question 1. Methods for the prevention of dental caries

WHO recommends the following methods of communal prevention of dental caries and periodontal diseases:

- restriction of sugars in the diet;
- Teaching oral hygiene;
- systemic fluoridation;
- local application of fluorides;
- secondary prevention;
- upbringing and ensuring a healthy lifestyle.

Table 35. Methods of the prevention of dental caries (WHO, 1984)

Methods	Fluorine content	Frequency and duration of application	Percent of decrease of caries
<u>Fluorides</u> Fluoridation of drinking water	0,7-1,2 mg/l	All life	50-65
F-tablets at home	0,25-1 mg	From 6 months to 14 years	50-80
F-tablets at school	0,5-1 mg	School years	25-40
F-salt	250 mg/kg	All life	40-60
Methods	Fluorine content	Frequency and duration of application	Percent of decrease of caries
Fluoride applications locally, professionally	12-80 g/kg	1-2 times a year, school and young years	30-40%

Mouthwashes with solutions of fluorides	1 – 2,5 g/kg	2 - 30 times a month, school and young years	20-50%
Fluorinated toothpastes	-	All life	25-30%
Silants "sealing" fissures	-	At 6-7 and 12-13 years old, replacement as needed	14-90%
Methods	Fluorine content	Frequency and duration of application	Percent of decrease of caries
Limitation of sweets Limitation of the number and frequency of sweet foods	-	All life	20-25%
Mouth hygiene Controlled brushing of teeth in school	Without fluorine With fluorine	School years	0% 40-60%
Self-cleaning the teeth at home	Without fluorine With fluorine	All life	0% 25%

Question 2. Methods for the prevention of periodontal disease

Effective, generally accepted methods of communal prevention of periodontal diseases (chronic gingivitis, chronic periodontitis):

- Regular mechanical removal of plaque;
- Professional removal of tartar.

Daily brushing of teeth:

- After 2 months - a decrease in DI-S from 1.0 to 1.5, that is, 2 times
- Preserving of a good level of hygiene for 3 years
- For 3 years, the index of calculus is reduced by 52%
- The gingival index (GI) decreases from 0.8 to 0.48, i.e. by 40%
- The average number of healthy sextants increases by 54% (from 1.2 to 1.85 CPITN "0")

Since mouth hygiene using fluorine-containing pastes is effective in preventing carious disease and gingivitis, it is logical to plan primary prevention of both diseases within the same program. The WHO Regional Office for Europe in Copenhagen has developed the ORATEL dental health information system, based on the DMFT. WHO recommends the use of criteria for assessing levels of DMFT at the age of 12 years:

- 0 - 0.50 - very low
- 0.51 - 1.50 - low
- 1.51 - 3.00 - medium
- 3.01 - 6.50 - high
- 6.51 - 10 - very high (WHO EURO, 1999).

Question 3. European goals of dental health by 2020 (adapted, WHO's project of document)

Table 36. European goals of dental health by 2020

Goal 1. 6-year-old children	1.1. 80% or more will be healthy (free of caries). 1.2. The average DMFT of temporary teeth will not exceed 2.0.
Goal 2. 12-year-old children	2.1. The average intensity of caries of permanent teeth does not exceed 1.5 of DMFT, from which the component "D" (untreated caries) will be less than 0.5. 2.2. The average number of sextants with a healthy periodont will be at least 5.5.
Goal 3. 15-year-old teens	3.1. The average intensity of caries will not exceed 2.3 of DMFT, component "D" will be less than 0.5. 3.2. There will be no teeth removed for caries. 3.3. The average number of sextants with a healthy periodont will be at least 5.0.
Goal 4. Young people aged 18 years	4.1. There will be no removed teeth for caries or periodontal disease. 4.2. The average number of sextants with a healthy periodontium will be at least 4.0.
Goal 5. Population aged 35-44 years	5.1. No more than 1% toothless. 5.2. 90% of patients will retain 20 or more natural functioning teeth. 5.3. The average DMFT of the teeth will be no more than 10, of which no more than 4 will be removed due to caries disease. 5.4. The average number of healthy sextants of periodontal disease will be 2 or more (CPITN "0").
Goal 6. Population aged 65-74 years	6.1. No more than 10% of toothless. 6.2. 90% or more will have a functionally full bite (natural or reconstructed). 6.3. The average number of sextants with deep pockets will not exceed 0.5 (CPITN "4").

Question 4. WHO criteria for assessing the effectiveness of dental disease prevention programs

Calculate of the cost of the program

- Number of people in the program
- Prevention measures
- The cost of means used in the prevention program
- Staff salaries
- Cost of equipment and premises
- Transport, business trips
- Other associated costs

The dentist at any level from the school cabinet to the chief specialist of the Ministry of Health during the planning of communal prevention did not deal with calculating the cost of the program until recently. It was enough to justify and propose a list of planned preventive measures. Economists carried out the rest of the work on the financial provision of the program. Theoretically this is correct, but practice shows that often excellent programs remained either on paper or poorly implemented due to absence of or insufficient funding. Therefore, it is irrational to consider the planning process of the prevention program complete without securing specific funding.

Using WHO documents and the experience of other countries, it is possible to conduct approximate calculations of the cost of the program.

It is necessary to make corrections in the choice of prevention methods, to decrease the coverage of the population, to use the staff more economically, and so on, if the estimated cost of the planned program exceeds the economic opportunities of the society. The cost of dental caries prophylaxis in preschool children in Belarus using fluorinated edible salt is determined in the studies of T.N. Terekhova (1996). It was \$ 0.04 per child per year. The introduction of an effective school program for the prevention of dental caries and periodontal disease in Mogilev was possible within the existing funding for the sanitation of the mouth (data of AV Kovalevskaya (2001)).

Table 37. The cost of dental caries prevention

Methods	Price for 1 person per year (in US dollars)
Fluoridation of drinking water	0,20
Appointment of F-tablets to schoolchildren	0,40
Rinse the mouth with a 0.2% NAF solution once a week	0,50

F-gel application once a year	3,60
Regular teeth cleaning with F-containing toothpaste at home	4,00

Question 5. Criteria of medical efficiency

The *medical effectiveness of prevention* is assessed by comparing the achieved level of health according to the measurable objectives of the program with the baseline condition or with the dental status indicators of the control population. Evaluation of the program for the prevention of dental caries is carried out 3-5 years after the start of the program:

- examine similar age groups at the beginning of the program, for example, children 12 years old, adults 35-44 years;
- control groups are used in places where prevention has not been done;
- the study is conducted by the same doctors who conducted the basic examination;
- the same diagnostic criteria or indices are used, for example, DMFT , CPI, CPITN, OHI-S.

The greatest effectiveness in the prevention of dental caries belongs to Elmex toothpastes containing amino fluoride: up to 45% reduction of caries. However, due to the differences in the taste qualities of toothpastes, the high cost of the above paste, the pastes containing monofluorophosphate (Colgate products) are more popular on the market; sodium fluoride (products Procter & Gamble) or a combination of these fluorides, the effectiveness of which is estimated on average 25-30% in the reduction of caries. The data of numerous comparative studies of the medical efficacy of toothpastes containing NaF or Na₂FPO₃ showed the following: approximately 20% of all studies showed the advantage of pastes containing NaF, 30% - advantage of Na₂FPO₃, 50% did not show any difference. Therefore, patients can recommend any fluorine-containing pastes that have been clinically tested and / or recommended by dental associations.

Differences of toothpaste «Colgate» from other toothpastes:

- 40% of all used toothpastes
- implemented in different countries under the same brand, regardless of the place of production;
- the pH of the toothpaste is close to neutral;
- the taste of most pastas is neutral, does not have any specificity, which is important for the choice of toothpaste for the whole family, including children;
- new, more advanced formulations have appeared;
- toothpaste was the first, approved by the Belarusian Dental Association
- the average position among other products is at a cost, which makes it affordable for the majority of the population.

Toothpaste "32 pearls" ("Modum", Belarus) in 2003 successfully passed clinical approbation and was approved by dentists. All toothpastes available on a free sale must pass a professional examination in the form of clinical approbation, which results in the evaluation of medical efficacy. If such information is not available, the choice of home-produced or imported toothpaste depends on the professionalism of the dentist and the tastes of consumers.

Requirements of the American Dental Association to clinical studies of the effectiveness of toothpastes in the prevention of dental caries:

- conducting two independent studies;
- clinical groups should represent typical consumers of the product;
- the test product should be used in the usual brushing mode;
- comparison with positive control (toothpaste with known anti-caries effectiveness);
- the duration of the study is at least 2 years;
- index estimates of the intensity of caries should be carried out at the beginning of the study, on average and at the end;
- the results of studies can be recognized as positive if the medical efficacy of toothpaste is established by 10% more than positive control.

Medical effectiveness of fluorine-containing toothpastes in long-term programs.

In the 3-year-old tooth cleaning program, fluoride-containing toothpaste among medical students in Minsk was improved oral hygiene to a good level (OHI-S 0.4-0.6), a decrease in the prevalence and intensity of gingivitis (up to GI 0.2- 0,3) and a reduction in the growth of dental caries by 25-30% compared with the control. Based on the results of a long-term program (40 months) of first-graders in one of Minsk schools with fluoride toothpaste under the supervision of teachers, a reduction was obtained in the increment of caries of permanent teeth by 60%. A large-scale international demonstration program of controlled daily oral hygiene of 7-year-old children in three cities of Belarus using fluoride toothpaste and toothbrushes Colgate for two years contributed to a significant decrease in the amount of dental plaque (by 60-65%), a decrease in the intensity of chronic gingivitis by 51-53 % and reduction of the growth of caries of teeth by 14-32%.

Table 38. OHI-S of 7-year-old children participating under the supervision of teachers with the use of toothpaste «Colgate»

Place of research	Children		Initial level OHI-S	Through 2 years	Value changes OHI-S	Changes in% of the Initial
	groups	quantity				
Minsk	«Colgate»	363	2,02	0,77	-1,25	-62%
	Control	307	2,14	1,61	-0,53	-25%
Bobruisk	«Colgate»	243	2,33	0,82	-1,51	-65%
	Control	200	2,23	1,65	-0,58	-26%

Table 39. GI of 7-year-old children participating under the supervision of teachers with the use of toothpaste «Colgate»

Place of research	Children		Initial level GI	Through 2 years	Value changes GI	Changes in% of the Initial
	groups	quantity				
Minsk	«Colgate»	363	0,66	0,31	-0,35	-53%
	Control	307	0,64	0,56	-0,08	-13%
Bobruisk	«Colgate»	243	0,75	0,37	-0,38	-51%
	Control	200	0,74	0,55	-0,19	-26%

Table 40. DMFT of 7-year-old children participating under the supervision of teachers with the use of toothpaste «Colgate»

Place of research	Children		Initial level DMFT	Through 2 years	Value changes DMFT	Reduction the of increment caries
	groups	quantity				
Minsk	«Colgate»	363	0,48	1,18	+0,70	32%
	Control	307	0,41	1,44	+1,03	
Bobruisk	«Colgate»	243	0,45	1,90	+1,45	-14%
	Control	200	0,48	2,16	+1,68	

Thus, the world experience and data of scientific research in the Republic of Belarus coincide in evaluation the high efficiency of fluorine-containing toothpastes in the prevention of dental caries and periodontal diseases and these methods can be used in communal programs.

A six-month program of controlled dental cleaning of 15-year-old schoolchildren in Minsk with the use of «32 pearl» toothpaste (Modum) made it possible to improve oral hygiene by 32% (OHI-S) and decrease the intensity of chronic gingivitis (GI) by 25%.

Table 41. Indicators of oral hygiene indices (OHI-S) and gingivitis (GI) in 15-year-old schoolchildren of Minsk in a 6-month interval of tooth cleaning using toothpaste "32 pearls" (study of the Department of Therapeutic Dentistry of BSMU, 2001)

Indices	Initial level	Through 6 months	Changes in% of the Initial
OHI-S	2,6	1,7	-32%
GI	1,8	0,8	-25%

The effectiveness of the program can be calculated in a short time (in a month, half a year, etc.), but in these cases the process is evaluated (for example, how many conversations about prevention conducted, how many toothpastes are used, etc.).

The medical effectiveness of the school program of controlled dental cleaning

A dental examination of 97 first-graders (6-7-year-olds) at school №111 of Minsk was carried out by one calibrated dentist in standard conditions using one set of dental instruments. The condition of permanent teeth according to the DMFT and DMFT of surfaces, oral hygiene (OHI-S) and gum condition (GI) was determined during the examination. After the initial dental examination, the children, with the consent of the administration and parents, were involved in a program for the prevention of dental diseases, which included health lessons, discussions with parents about methods of preventing dental diseases, and daily (on school days) dental cleaning at school under the supervision of teachers. Cleaning was carried out in a corner of hygiene, where there was warm and cold water, shells and mirrors. The procedures were held immediately after the school breakfast. Teachers were taught methods of brushing teeth. Toothpastes and brushes were stored in classes with observance of all necessary sanitary conditions. The present program used toothpaste R.O.C.S. (oral protection system) registered in the Republic of Belarus, and toothbrushes in the required quantity. The average value of oral hygiene OHI-S in the examined children was 1.60 ± 0.04 ("unsatisfactory level"). OHI-S ranged from 1.0 to 3.0 units, and therefore the children were divided into 3 groups:

- A - "satisfactory" oral hygiene (OHI-S 1,2 or less)
- B - "unsatisfactory" (OHI-S from 1.3 to 1.9)
- C - "bad" (OHI-S from 2.0 units or more).

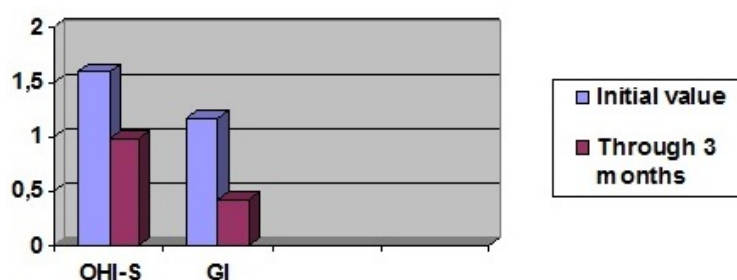


Figure 11. Dynamics of values of oral hygiene indices (OHI-S) and gingivitis (GI) in a 6-month period of tooth cleaning using «32 pearls» toothpaste (research conducted by the staff of the Department of Therapeutic Dentistry of the Belarusian State Medical University, 2001)

Children with good oral hygiene were not among the examined (OHI-S less than 0.6). All the examined children showed signs of "mild" gingivitis (GI): an average value of 0.98 ± 0.02 , fluctuations from 0.4 to 1.6 units. "Mild" chronic gingivitis ($GI\ 0.84 \pm 0.03$ and 0.99 ± 0.02 , respectively) was observed in case of satisfactory and unsatisfactory oral hygiene. Values of GI have turned into gingivitis of moderate severity in case of poor hygiene. The average OHI-S hygiene index in children decreased by 27% three months after the start of controlled tooth cleaning under the supervision of teachers. The intensity of chronic gingivitis (GI) decreased more than 2 times (by 57%).

Thus, all children participating in this program went on the category of "mild gingivitis" by gum condition, which is close to the real opportunities for gingivitis prevention in mass oral hygiene programs.

The evaluation of the **medical effectiveness of health education** is carried out by comparing the assigned tasks of dental health with the results obtained (for example, a decrease in the index of oral hygiene, reduction of the DMFT). The effectiveness of interventions depends on the methods of dental education (should be scientifically based), economic opportunities, general culture of the population, systemic (continuity), education and dental care (public, private), medical and educational cooperation.

Table 42. Examples of the potential effectiveness of health education with known methods of prevention and treatment of dental diseases:

<i>Examples of the effectiveness</i>	<i>Methods of prevention and effectiveness (%)</i>			
	<i>Health education</i>	<i>Use of fluorides</i>	<i>Treatment of dental caries</i>	<i>Total</i>
Decrease of the prevalence of dental caries in children 5-6 years old (Initial level of 90% in 1995).	25-30%	50-60 %	-	80-90%

Decrease of the prevalence of dental caries (DMFT) in children 12-years old (Initial level 3,8 in 1995)	15-20%	40-50%	-	55-70%
Decrease of removed teeth (R=18 зубов, 65+ years)	20-25%	30-40%	20-25%	70-90%

Question 6. Criteria of economic efficiency

A cost-effective program is a program that minimizes the costs associated with a certain level of activity. It is very important to assess the cost together with the quality of the program. The following most important Questions need to be monitored:

1. How much of the current budget is spent on the prevention of dental diseases? Limiting the financing of prevention leads to an increase in diseases and an increase in costs in the future
2. How does the "return" of restorative therapy grow: faster or slower than the cost of it?

Operational management provides for administrative costs, program financing and training costs for staff.

1. Staff costs. This is a salary for dental personnel, who carry out medical treatment and preventive care for the population.
2. Basic costs: the cost of buildings and equipment, including maintenance.
3. Current costs: daily operating costs of dental equipment, costs for dental materials and medicines.

Calculation of «Economic Efficiency» (EE)

$$EE = \frac{\text{cost of the procedure} \times \text{number of people} \times \text{time}}{\text{average DMFT of prevented caries} \times \text{number of people} \times \text{time}}$$

Question 7. The economic benefits of the prevention program

Economic Benefits (EB) is determined by finding the difference between the costs spent for the prevention program and the expected cost of treatment (CT):

$$EB = EE - CT$$

If prevention is economically unprofitable, then it should be revised in the shortest possible time (for example, after 2-3 years) for further implementation.

Monitoring of the prevention program consists in monitor trends in the incidence of caries and periodontal disease.

TEST CONTROL

1. WHO recommends the following methods of communal prevention of dental caries and periodontal diseases:

1. Restriction of sugars in the diet
2. Teaching oral hygiene
3. Systemic fluoridation
4. Local application of fluorides
5. Secondary prevention
6. Upbringing and ensuring a healthy lifestyle
7. All of the above

2. What dental index is a criterion for reducing the effectiveness of dental caries:

1. CPI
2. DMFT
2. OHI-S
3. CPITN

3. Indicate the percentage decrease of dental caries in the case of using the method of "sealing" fissures:

1. 2-5%
2. 5 to 10%
3. 14 to 90%

4. Indicate the percentage decrease in dental caries in the case of using fluoride-containing salt:

1. 20 - 30%
2. 10 - 20%
3. 40 - 60%
4. 70 - 80%

5. Indicate the percentage decrease of dental caries in the case of limiting the number and frequency of the intake of sweet foods:

1. 10 -15%
2. 15 -20%
3. 20 -25%
4. 45 - 60%

6. Indicate the percentage decrease of dental caries in the case of controlled tooth cleaning in school using fluoride toothpaste:

1. 20 to 40%
2. 40 - 60%

3. 60 - 70%
4. 60 - 80%

7. Indicate the percentage decrease of dental caries in the case of fluoridation of drinking water:

1. 25 - 45%
- +2. 50 - 65%
3. 65 - 75%
4. 65 - 80%

8. Indicate the percentage decrease in tooth decay in the case of using fluoride-containing toothpastes for life:

1. 10 - 25%
2. 25 - 30%
3. 30 - 35%
4. 35 - 40%

9. What methods of prevention of dental caries and periodontal diseases are effective?

1. Regular mechanical removal of plaque with a toothbrush
2. Professional removal of tartar
3. All of the above

10. Indicate the European goal of dental health by 2020 among children 6 years (percentage of children free of caries):

1. 50%
2. 60%
3. 80%
4. 90%

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 10									
7	2	3	3	3	2	2	2	3	3

DENTAL HEALTH OF THE POPULATION AND INTERNATIONAL INDICATORS FOR MONITORING DENTAL HEALTH OF THE POPULATION

The Questions to be studied for the learning of the topic

1. Basic indicators of dental health
2. The definitions of "lifestyle", "healthy lifestyle", "quality of life"
3. Types of programs for the prevention of dental and non-infectious diseases
4. CINDI-integrated prevention program
5. Factors of a healthy lifestyle
6. Dental enlightenment, ensuring public health (tasks, forms and means)
7. Organizational forms of dental enlightenment and health

Question 1. Basic indicators of dental health.

Dental health of a person is one of the components of not only general health, but also the quality of life. Problems of the dental system significantly affect the physical, psychological, social well-being of the individual. Methods of assessing the results of treatment-and-preventive work in Belarus have remained traditional since Soviet times: the number of visits, fillings, dentures, operations performed, etc. The implementation of the National Program of Primary Prevention in the country required constant monitoring of the incidence of caries in the children's population (1998). The intensity of caries of permanent teeth among school-age children decreased by 40% during the duration of the program.

The scientific dental community focuses on the existence of risk factors, the elimination of which is the main goal of preventive dentistry. 40 indicators of dental health are proposed as "tools" by the European Commission on Health. An analysis of the scientific literature on the descriptive and analytical epidemiology of dental caries and periodontal diseases was carried out using the indices of dental health EGOHID-2005. An international scientific and practical project was conducted to study the awareness of indicators in Minsk and 8 CIS cities. Dental examination and anonymous Questioning of 12-15-year-old schoolchildren (100 in each age group). DMFT permanent teeth, OHI-S and bleeding gums recorded during the examination of children. The modified WHO-2011 anonymous Questionnaire contained 10 multiple-choice Questions to determine:

- ✓ a subjective assessment of the condition and appearance of the Questionnaire
- ✓ regularity of visits to a dentist and an occasion
- ✓ tooth brushing frequency and toothpaste name
- ✓ the regularity of eating sweet foods and drinks.

The DMFT (indicator **B13** according to the EGOHID classification) was at the level of 2.2, which is 10-70% lower in a number of other countries (Russia, Albania, Bulgaria, Hungary) in 2008. Indicator **B12** (percentage of healthy (caries-free) children) on the example of 6-year-olds, showed that only 15% of children are healthy in Belarus. Endogenous prevention of caries (food fluorosol) is not very popular among the population. Exogenous prevention of caries is the use of fluorine-containing toothpastes (indicator **A4**) for tooth cleaning. The data from the anonymous Question naire showed that the intensity of caries is much less in the area where 15 schoolchildren used fluorine-containing toothpastes.

Periodontal disease is the second cause of loss of permanent teeth. The inverse relationship of the indicator **A1** (observance of the recommended frequency of tooth cleaning 2 times a day) and the prevalence of chronic gingivitis in children and adolescents, the presence of which is determined by the indicator **B14** (the prevalence of bleeding gums) is absolutely proved.

"Indicators" of quality. The main criterion for the quality of dental care provided to the population is the proportion of healthy people (WHO recommendations). However, this indicator is not yet applied due to a 100% incidence of caries. The number of removed permanent teeth in children and the structure of treatment-and-preventive dental care can be quite effective evaluation intermediate quality criteria. WHO recommendations on assessing the quality of dental care are still not fully implemented in practice.

Question 2. The definitions of "lifestyle", "healthy lifestyle", "quality of life"

The **lifestyle** is a concept that characterizes the features of people's daily lives. It covers work, life, forms of using free time, satisfaction of material and spiritual needs, norms and rules of conduct

The **healthy lifestyle** is the activity of people, aimed at preventing diseases, strengthening and maintaining health. A healthy way of life unites everything that promotes the fulfillment of professional, social and household functions in an environment that is optimal for health and expresses the orientation of the individual's activity towards the formation, preservation and strengthening of both individual and public health. Practice has shown that the formation of a healthy lifestyle from early childhood is the foundation of good health in adulthood.

The **quality of life** of the population is the degree of satisfaction of the material, spiritual and social needs of person. The main indicators of the quality of life are:

- Incomes of the population
- Quality of food
- Quality and fashionable clothes
- Comfort of home

- Quality of health care
- Quality of social services (rest and services sector)
- The quality of enlightenment
- Quality of culture
- Quality of service
- Quality of the environment
- Demographic tendencies

The **standard of living** is the level of the well-being of the population, the consumption of goods and services, the totality of conditions and indicators that characterize the measure of enjoyment of the basic life needs of people. The standard of living is characterized

- Consumer goods basket
- Average salary
- Difference in income
- Lifespan
- The level of enlightenment
- Structure of food consumption
- Development of services
- Provision of housing
- State of the environment
- The degree to which human rights are realized.

Pathogenic effects can have many factors in the case of an *unhealthy lifestyle* on the human body. Unfavorable factors are malnutrition, excessive drinking, smoking, inadequate physical activity, stress and environmental pollution. Diseases that arise under the influence of these factors are called *diseases of an unhealthy lifestyle*.

Table 43. Diseases of an unhealthy lifestyle

	Malnutrition	Excessive drinking	Smoking	Inadequate physical activity	Stress	Environmental pollution
Cardiovascular diseases						
Heart diseases	++	+	++	++	++	
Insult	++	++	+	++	++	
Hypertension	++	++	+	++	++	
Cancer of						
Intestine	++					
Lungs			++			+
Mucous Mouth		+	++			
Stomach	+					
Respiratory diseases			++			++

Cirrhosis		++				
Diabetes	++	++		++	++	
Osteoporosis	++	++	+	++		
Eating disorders	++	+		++		
Stomach ulcer	++	++	++		++	
Fetal trauma		++	++			+

Table 44. Factors of unhealthy lifestyle and dental diseases

<i>Dental diseases</i>	Absence or insufficient hygienic cleaning of teeth	A lot of sugar in food	Frequent use of sweets	Smoking	Frequent use of acidic foods	Excessive brushing of teeth with a stiff brush and tooth powder	Frequent use of strong alcohol	Deficiency of fluoride in drinking water	Irregular visit of dentist	Unhygienic maintenance of dentures
Caries	+	++	+++					+++		
Pulpitis, apical periodontitis									+++	
Gingivitis	++	+	++						+	
Periodontitis	++		+				+		++	
Non-carious defects in tooth enamel					++	++				
Change in tooth enamel color	++			++						
Diseases of the oral mucosa	++			+			++		+	+++
Malignant tumors of the mouth				+++			+		+	+

+ - risk of development the disease

++ - high risk

+++ - very high risk

Question 3. Types of programs for the prevention of dental and non-infectious diseases

It is possible to build prevention programs based on the decrease of the effect of risk factors or their elimination on the basis of obvious relationships between risk factors and dental diseases. Such programs include:

1. The program of dental cleaning among students of the Minsk Medical Institute (the work of St. Agyevtseva, LG Borisenko, LA Kazeko, SS Lobko, ON Pronorovich, 1992-1996).
2. The anti-smoking program is implemented by Associate Professor SV. Latyshev.
3. Professor TN. Terekhova introduced the fluoridation of edible salt to reduce the risk factor in the form of fluoride deficiency in drinking water in the Republic of Belarus.

The listed examples of communal prevention are *vertical programs*. They are aimed at eliminating or reducing any one risk factor. As a result, the program provides prevention of one disease, for example, a decrease in the intensity of dental caries in the case of fluoridation of edible salt. However, the population will suffer from other diseases (periodontal disease and others), since the risk factors for these diseases are not eliminated within the vertical program.

Elimination of the maximum number of risk factors for diseases is possible in the case of a healthy lifestyle. Achieved not only an acceptable level of dental health, but also provides good overall health and decreases morbidity and mortality from the pathology of the cardiovascular system and other diseases. Such prevention programs are called *integrated or integrated* (for example, CINDI, WHO EURO, 1994).

Question 4. CINDI-integrated prevention program

CINDI is the integrated program for the prevention of non-communicable diseases (including dental). 22 countries, including Belarus, participate in this program. It is one of the main conductors of the policy of the World Health Organization - "Health for All". National programs in many countries have demonstrated the effectiveness of integrated approaches to fighting smoking, achieving healthier dietary habits and lifestyles, and thereby reducing premature deaths associated with major chronic diseases and conditions. CINDI provides scientific support for the concept of "Health for All" through the use of an integrated protocol that includes an information system as a built-in assessment mechanism that can be used in any country at any level. The CINDI program involves not only health services, but also all other sectors that create a healthy social, economic, natural and cultural environment. It is this kind of environment that can help people choose a healthy lifestyle. This principle of intersectoral action serves as the basis for a new integrated, multi-disciplinary, community-based approach to monitoring

and decrease the incidence of non-communicable diseases. This approach emphasizes health promotion and disease prevention through existing health systems, as well as the active participation of both communities and individuals. This approach promotes responsible attitude to health both in individuals and in the community. The developed strategy is aimed at achieving this responsibility, including in all sectors of society. The CINDI program includes precisely these principles.

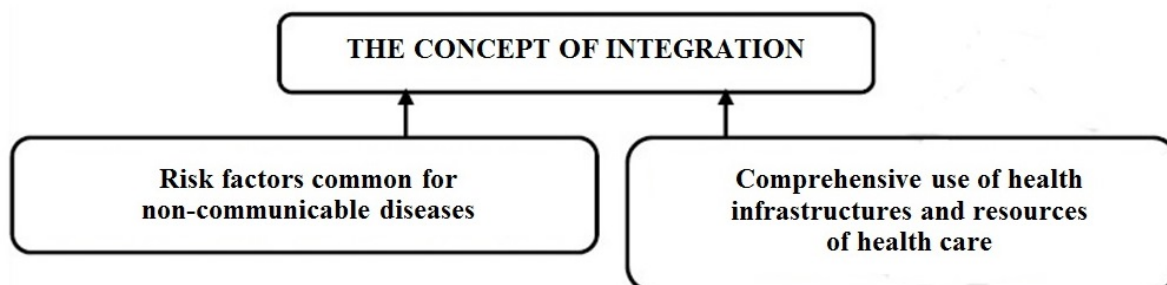
Non-communicable diseases subject to inclusion in the CINDI program. The list of non-communicable diseases to be included in the program should not be limited, but priority should be given to diseases with common risk factors:

- ✓ chronic diseases of the respiratory system
- ✓ diabetes
- ✓ dental caries

The following criteria should be taken into account, highlighting risk factors:

- Risk factors should be associated with several major non-communicable diseases;
- Selected risk factors should be proven;
- There should be methods of intervention and evaluation of changes.

Figure 12. CINDI program concept scheme



Objectives related to risk factors

Table 45. Data on risk factors show that among persons aged 25 to 65 years the prevalence of individual risk factors varies within the following limits (data of participating countries):

Indicator	%
Regular smoking	29-56%
High blood pressure (> 140/90 mm Hg)	15-60%
Violations of blood lipids (total cholesterol> 5.2 mmol / l or 200 mg / dl)	45-80%
Overweight (body mass index> 30)	11-38%

It was found that in most CINDI countries more than two thirds of the adult population have one or more major risk factors for cardiovascular disease. The risk of cardiovascular disease is significantly increased in persons with several risk factors, even with moderate severity. Recent studies indicate a direct relationship between dental caries, caries complications and periodontal diseases with common diseases (NA Yudina, 2004). Consequently, unsatisfactory dental status is one of the risk factors for human health. On the other hand, almost all common diseases appear in the oral cavity, often in the form of severe forms of chronic periodontitis and very difficult to treat.

Question 5. Factors of a healthy lifestyle

Smoking contributes to the occurrence of cancer and is a major factor in the development of cardiovascular diseases. The most effective means of health improvement the population is the eradication of smoking in industrialized and many developing countries. Many countries have launched a comprehensive anti-smoking campaign and this has led to a significant reduction in the number of smokers. CINDI programs can promote the development of complex anti-smoking campaigns through an intersectoral approach. There is a special responsibility in medical and preventive institutions for the staff of this institution to set an example for others to be free from the harmful habit of smoking. Highly effective dental smoking control program developed in the US. The number of young smokers is increasing in recent years in Belarus.

Fundamental importance for the prevention and control of certain risk factors for cardiovascular diseases, such as hypertension, diabetes, hypercholesterolemia, overweight is given to proper **nutrition** with maintenance of adequate energy balance and normal body weight (FDI, IDJ, 1994). There is data that increase the intake of vegetables and fiber, and decrease the intake of fats can help prevent certain types of cancer. Scientific-based nutrition recommendations have been developed in a number of countries within the framework of the CINDI program. Consumers should be able to buy healthy food at affordable prices and at the same time get the right information about food. The most effective will be the approach that is developed together with all institutions related to nutrition of the population in both the public and private sectors.

11-38% of all people aged 25-64 years are **obese**. Obesity is associated with a number of major risk factors for cardiovascular disease. The prevalence of obesity is becoming epidemic in developed and developing countries. The prevention of obesity includes: raising public awareness of the leading role of low physical activity in the development of obesity, information support of the population, stimulating self-evaluation of body

weight, developing special programs for nutrition and exercise in the workplace.

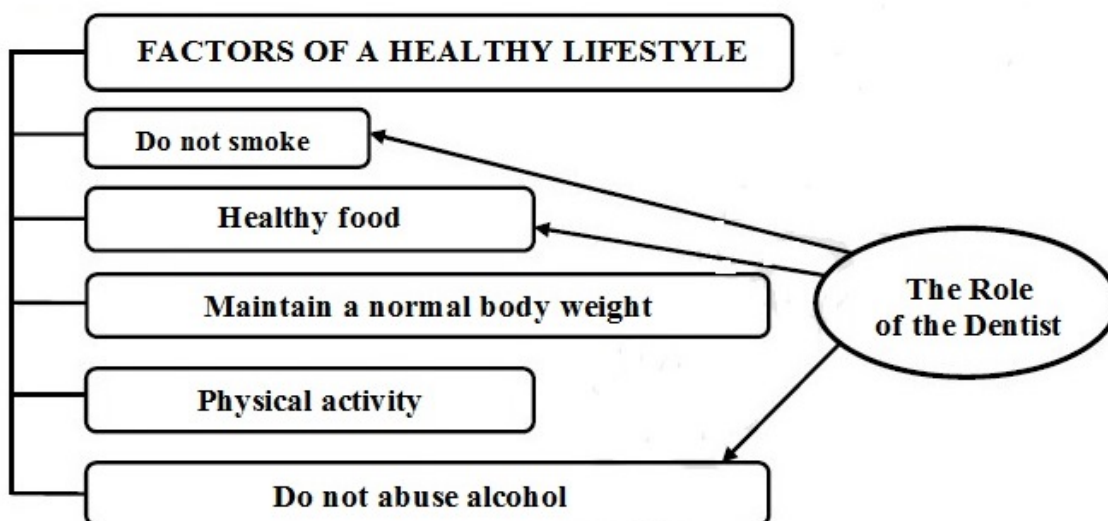
Physical activity is important in maintaining the energy balance, maintaining health and well-being in general. Every second adult has a sitting lifestyle, among older people the frequency of hypodynamia is even higher (data of participating countries). The CINDI program includes components related to physical activity aimed at children and adolescents. The most appropriate programs with a combination of exercise and diet for the primary prevention of disorders associated with nutrition (obesity, high blood pressure and hypercholesterolemia).

Alcoholism and drug addiction are an important health problem for many countries. The number of deaths caused by cirrhosis of the liver has increased significantly. There is convincing scientific data for a link between alcohol consumption and increased blood pressure, even in cases that do not usually refer to excessive consumption (less than 2 times a day). The goal of all CINDI programs is to promote the establishment of generally accepted norms that support moderate consumption of alcohol or the abandonment of this harmful habit.

Healthy teeth. Some CINDI programs include preventive dental activities. Often, they overlap with other CINDI goals, for example, related to nutrition. In addition, dentists can participate in CINDI prevention activities, such as smoking control. The dentist should not forget to focus on a number of activities that are most relevant to the prevention of dental caries and periodontal diseases. These are factors such as:

- deficiency of fluoride in water and food;
- frequent use of sweets;
- unsatisfactory oral hygiene.

Figure 13. The dentist role in maintaining a healthy lifestyle



Question 6. Dental enlightenment, ensuring public health (tasks, forms and means)

Dental enlightenment is the provision to the population of any cognitive possibilities for self-evaluation and the development of behavior and habits that exclude the risk factors for the occurrence of diseases and maintain an acceptable level of health.

Ensuring public health is the creation of human life conditions excluding harmful factors for health, providing the necessary medical care to maintain an acceptable level of health.

Dental enlightenment and ensuring public health are two inseparable parts of the system of preventive measures at the communal level (WHO, TRS 690, 1983).

Dental enlightenment should be designed so that it is effective in obtaining the final result - *the development of healthy habits* among the population. Months and years can pass from the moment of communication of information to the time of obtaining the positive effect of dental enlightenment.

1. Getting information
2. The manifestation of interest
3. Formation of conviction
4. Implementation of test actions
5. The appearance of unstable healthy habits
6. Implementation of systematic actions
7. Development of persistent healthy habits.

Feedback of the dentist with the population on the effectiveness of dental enlightenment is the control level of achieving the stated goal - the development of persistent healthy habits. Using the method of Questioning and, if necessary, a dental examination, you can easily identify at what stage of a healthy lifestyle an individual or population is.

The general goal of dental enlightenment and health is the development of persistent healthy habits and the maintenance of public health at an acceptable level. Specific tasks of dental enlightenment and health care can relate to a particular risk factor or disease, refer to a certain age group, place of residence, place of work.

Table 46. Examples of definition specific tasks of dental enlightenment and health:

Problem	Tasks
There are cases of cancer of the oral mucosa in the elderly who smoke cigarettes.	<ol style="list-style-type: none"> 1. To inform the all population about the risk factors for cancer of the oral mucosa, focusing on smoking 2. To convince children of school age about the dangers of smoking. 3. To provide measures that exclude the sale of

	tobacco products to schoolchildren. 4. To convince adults and older people to quit smoking. 5. To provide early diagnosis of precancer and cancer of the oral mucosa and treatment of patients.
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Methods of dental enlightenment:

- conversations
- lectures
- answers on Questions
- lessons
- seminars
- games
- distribution of printed and illustrated materials

Methods of ensuring public health:

- laws
- solutions
- regulations
- instructions

Means of dental enlightenment

- | | |
|----------------------------|------------------------|
| ✓ Radio | ✓ Cinema |
| ✓ TV | ✓ Moulages |
| ✓ Video | ✓ Board games |
| ✓ Newspapers | ✓ Representation |
| ✓ Magazines | ✓ Reminders |
| ✓ Enlightenment literature | ✓ Brochures |
| ✓ Posters | ✓ Literary exhibitions |
| ✓ Showcases | ✓ Slides |

Means of ensuring public health

- ✓ System of treatment-and-preventive institutions
- ✓ Healthy food
- ✓ Healthy life
- ✓ Environmental protection system
- ✓ Maintenance of harmless working conditions.

Question 7. Organizational forms of dental enlightenment and health

Individual. It is conducted by a dentist in clinic. Parents, buying toothpaste and telling about the need to brush their children's teeth, thus carry

out enlightenment (enlightenment of healthy habits) and ensure health (the acquisition of hygiene products).

Group. Examples of this type may be health lessons at school; planned dental care at school; classes with pregnant women in the school of a young mother about the proper nutrition of children; provision of high-quality products of baby food distribution points.

Mass. It covers all or large groups of people of the district, city, or republic (TV broadcast on the preventive value of oral hygiene). In this case, the recommended hygiene products available at a cost for acquisition by a wide range of people should be on sale.

The most effective organizational form of dental enlightenment is the group. It allows to achieve maximum results with minimal time and money.

TEST CONTROL

1. What is a "healthy lifestyle"?

1. A complex of state, social, hygienic, medical measures aimed at ensuring high levels of health and preventing diseases;
2. Peculiarities of everyday life of people (work, life, use of free time, material and spiritual needs, norms and rules of behavior) that contribute to the prevention of diseases and the preservation of health.

2. Professional recommendations of the dentist should be

1. Scientifically substantiated, tested in practice;
2. Competent, popular.

3. Indicate the forms of ensuring public health:

1. Laws, decisions, instructions;
2. Lectures, seminars, radio, talks;
3. All of the above.

4. Indicate the most effective way of forming a healthy lifestyle:

1. Dental enlightenment;
2. Ensuring health;
- +3. Enlightenment and health.

5. The CINDI program includes the following diseases

1. Tuberculosis, dental caries, cardiovascular;
2. Diabetes, AIDS, cardiovascular;
3. Diabetes, dental caries, cardiovascular;

6. Indicate the means of dental enlightenment:

1. Conversations, lectures, seminars, lessons, games;
2. Radio, television, newspapers, magazines, posters, notes;

3. Laws, decisions;

7. Indicate the organizational forms of dental enlightenment and public health:

1. Individual;
2. Group;
3. Mass;
4. All of the above

8. Indicate measures to ensure public health:

1. Provision of adequate nutrition;
2. Provision of quality drinking water;
3. Creation of normal conditions for work and rest;
4. Modern adequate dental care;
5. All of the above

9. Indicate diseases of the oral cavity that arise under the influence of factors of unhealthy lifestyles (smoking, excessive consumption of alcohol):

1. Caries and its complications;
2. Non-carious lesions of the enamel;
3. Diseases of the oral mucosa;

10. Indicate the main stages of acquiring healthy habits:

1. Obtaining information, the emergence of interest, the implementation of trial and systematic action;
2. Obtaining information, choosing the means of hygiene, carrying out systematic actions;
3. Choice of hygiene means, implementation of systematic actions;

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 11									
2	1	1	3	3	2	4	5	3	1

MAIN COMPONENTS OF LONG-TERM PLANNING OF DENTAL CARE AT THE COMMUNAL LEVEL

The questions to be studied for the learning of the topic:

1. The main components of long-term planning of dental care.
2. Stages of planning dental care for adults and children.
3. Primary prevention.
4. Systematic dental care to children. Types of programs for systematic dental care for schoolchildren (WHO, 1980)
5. Dental care for adults on handling.
6. Material and financial provision of dental care for the population.
7. Staff training. Stages of staff planning. Stages and methods for calculating staff needs.
8. Staffing standards in the Republic of Belarus and the model of dental staff recommended by WHO.

Question 1. The main components of long-term planning of dental care

The main components of long-term planning of dental care include:

- 1) primary prevention,
- 2) systematic dental care for children,
- 3) dental care for adults on request,
- 4) training of personnel in adequate quantity, quality and types for implementation of the above-named parts of the system,
- 5) material and financial provision of system components
- 6) evaluation and monitoring (information system).

Question 2. Stages of planning dental care for adults and children

1. Situational analysis (epidemiology of dental diseases).
2. Definition of measurable tasks of dental health & care:
 - Data situation analysis
 - Available resources (state, population)
 - Staff
 - Equipment
3. Calculations of the staff's needs (types and quantities) for performing 1 and 2.
4. Creating an evaluation program (for timely correction of the plan).
5. Adequate financing of the plan.

Situational analysis has been described previously. Tasks must be measurable so that their achievements in the future can be objectively evaluated.

Table 47. Measurable Tasks

Two types	Related to the measuring tasks Related to the coverage of the population
Two typical mistakes	Uncertainty - Confusion Excessive optimism - Impossibility
Two advantages	The ability to assess the implementation of the plan The possibility of correcting the plan and setting new tasks

Absolutely reliable data (at the communal level) on the effectiveness of planned methods of prevention should be used during the definition of measurable tasks of primary prevention of dental diseases. Otherwise, there will be a typical mistake - "excessive optimism", which will lead to the impracticability of the stated tasks of prevention. For example, measurable tasks of caries prevention with systemic and local fluoridation at different variants of intensity and tendencies of carious disease in children are given in the table.

Table 48. Definition of measurable tasks for the prevention of dental caries

Variants	DMFT of 12-year-old children	Tendency	Prevention F – salt	Prevention F – locally
A	Low DMFT 1.2-2.6	Stable	No information	No information
B		Increase	Stabilization	Stabilization
C	Average 2.7-4.4	Decrease	Decrease to 2.5-3.0	Stabilization or insignificant decrease
D		Stable	Decrease to 2.5-3.0	Without changes
E		Increase	Decrease to 2.5-3.0	Perhaps a small decrease

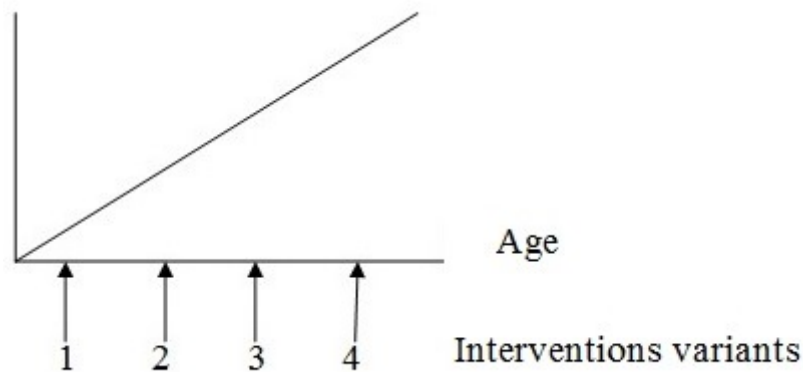
Question 3. Primary prevention (Table 49)

<i>Stages</i>	<i>Their characteristics</i>
1. Situational analysis	The incidence is determined and pathogenic factors or risk factors are identified. The dentist proceeds to scientifically-based planning after situational analysis. Certain difficulties may arise and mistakes may be made at this stage. The first most common mistake is the definition of too many dental problems that can not be solved within the framework of one program, and sometimes it is not necessary because of their low relevance.
2. Definition of measurable tasks of primary prevention	<p><u>Mistakes of this stage are:</u></p> <ul style="list-style-type: none"> ✓ absence of specific tasks, ✓ absence of scientifically-based tasks, ✓ measurements that can not be controlled ("less", "more", etc.) ✓ hyperbolization of problems, ✓ setting tasks without initial data on morbidity. <p>DMFT in specific numerals for a specific age group of the population can be a criterion in the case of determination the task of decrease the intensity of dental caries. Methods of communal prevention of dental caries and periodontal diseases recommended by WHO:</p> <ul style="list-style-type: none"> • restriction of sugars in the diet, • training in oral hygiene, • System fluoridation, • local application of fluorides, • secondary prevention, • upbringing and ensuring a healthy lifestyle.
3. Development of the program and Introduction	<p>1) <u>Preliminary planning</u>: a summary of the program, including the main tasks, methods, staff and cost. This plan is discussed with the administration of the appropriate level for the reality of practical implementation.</p> <p>2) Solution of organizational issues: confirmation of the plan by local authorities of the appropriate level;</p>

	<p>budget allocation; organization of staff training, if necessary; create a schedule for the implementation of the program; providing means of prevention; planning methods for monitoring the implementation of the program.</p> <p>3) <u>Selection of the contingent (age groups or at-risk groups):</u> The program of prevention should cover the entire population. Children, pregnant women, industrial workers are at risk in case of dental caries and periodontal disease. Therefore, they should be covered first. 6-7-year-old children include in the first place, since they have just erupted permanent teeth, needing protection from caries.</p> <p>4) <u>Staffing.</u> The most frequent mistakes in planning the provision of personnel are: absence of staff, inefficient use of personnel, use of unqualified or unprepared personnel; absence of measures to motivate staff to implement the program.</p> <p>5) <u>Determination the cost of the program and sources of funding.</u> The main components of the cost of the primary prevention program are: number of people covered by the program, conducted preventive measures, the cost of funds used in the prevention program, salary of staff, the cost of equipment and premises, transport, business trips, other associated costs.</p>
4. Evaluation of effectiveness.	<p>Evaluation of the program for the prevention of dental caries is carried out 3-5 years after the start of the program:</p> <ul style="list-style-type: none"> ✓ examine similar age groups, as in the beginning of the program; ✓ use control groups in places where prevention has not been done ✓ the study is conducted by the same doctors who conducted the basic examination, ✓ apply the same diagnostic criteria or indices

Question 4. Systematic dental care to children. Types of programs for systematic dental care for schoolchildren (WHO, 1980)

Figure 14. Increase of DMFT with age and possible interventions variants



<i>Code</i>	<i>Interventions</i>
1	Prevention of disease occurrence
2	Early treatment
3	Treatment in advanced stages
4	Prosthetics of toothless mouth

Planned dental care for children can be carried out in one of two ways:

- planned sanitation (carried out in Belarus),
- systematic dental care (WHO recommended).

Planned sanitation is the improvement of children (the population, selected groups of the population, etc.) according to the planned plan (for example, once a year).

1. Inspection, identification of those in need
2. Filling of teeth
3. Removal of teeth

Limitations:

- 1) dental equipment is required at school;
- 2) special staff is required (child dentist)
- 3) orientation on the treatment of diseases, not on prevention.

Systematic dental care: measures of primary prevention includes; adaptable to any material and technical conditions; can be carried out by the average medical staff (hygienist, dentist). The most revealing experience in the effective organization of dental care for children is the Danish system (FDI, 1982). Its main features are:

1. The program of medical and preventive care covers all children of school age from 7 to 15 years, whose parents agreed to participate in the communal program;
2. Treatment and prevention activities for children are free;
3. The most important components of the program are:
 - (a) annual inspection and treatment,
 - (b) systematic preventive measures
 - (c) an annual assessment of the dental status of each child and a computer analysis of the trends in the incidence of age groups, areas of residence, schools, etc .;
4. Adequate provision of all components of the program staff at a rate of 1 dentist and 1.6 rates of assistants for about 500 children;
5. The organization of special dental centers for the provision of medical care for children: 785 centers equipped by 2,039 dental units on 689,000 children;
6. Participation of teachers of schools and parents of schoolchildren in the program of education of a healthy lifestyle, including regular cleaning of teeth, provision with necessary means of prevention of dental caries, including fluoride preparations.

Negative experience in the organization of treatment and prevention care for children was typical for most countries of Eastern and Central Europe, based on systems only planned treatment (so-called sanation) or treatment on handling without mandatory measures of primary prevention and assessment of the level of dental health of the child population.

Table 50. Types of programs for systematic dental care for schoolchildren (WHO, 1980)

Type 1. Minimum	1.1. Forms 1-5: treatment of permanent teeth on handling and emergency care (removal) in the case of temporary teeth diseases. 1.2. Form 7: the challenge and treatment of permanent teeth in all needy.
Type 2. Limited	2.1. Form 1: treatment of permanent teeth in all needy and provision of emergency care (removal) in case of temporary teeth diseases. 2.2. Forms 2-5: treatment of permanent teeth on handling and emergency care (removal) in case of temporary teeth diseases. 2.3 Form 7: the challenge and treatment of permanent teeth in all needy.
Type 3. Call once every two years	3.1. Form 1: treatment for all who need it. 3.2. Forms 3,5,7: the challenge and treatment of all needy.
Type 4. Call once	4.1. Form 1: treatment for all who need it.

a year	4.2. All subsequent forms: a call once a year and treatment for all who need it.
Type 5. Challenge twice a year	5.1. Form 1: treatment for all who need it. 5.2. All subsequent forms: a call every 6 months and treatment for all needy.

The most optimal method in Belarus can be type 4 (call once a year). The difference between systematic preventive treatment of schoolchildren from planned sanitation:

1. Treatment covers first-formers,
2. Treatment is limited only by permanent teeth
3. Treatment is necessarily associated with primary prevention.

Table 51. Scheme of the program (type 4 according to WHO) for systematic treatment-and- prevention dental care for school-age children

School years	Time of program implementation										
	1 year	2 year	3 year	4 year	5 year	6 year	7 year	8 year	9 year	10 year	11 year
1 form	////	////	////	////	////	////	////	////	////	////	////
2 form	pet	////	////	////	////	////	////	////	////	////	////
3 form	pet	pet	////	////	////	////	////	////	////	////	////
4 form	pet	pet	pet	////	////	////	////	////	////	////	////
5 form	pet	pet	pet	pet	////	////	////	////	////	////	////
6 form	pet	pet	pet	pet	pet	////	////	////	////	////	////
7 form	pt	pt	pt	pt	pt	pt	////	////	////	////	////
8 form	pt	pt	pt	pt	pt	pt	pt	////	////	////	////
9 form	pt	pt	pt	pt	pt	pt	pt	pt	////	////	////
10 form	t	t	t	t	t	t	t	t	t	////	////
11 form	t	t	t	t	t	t	t	t	t	t	////

Notation:

//// - call, examination, treatment of permanent teeth, individual prevention

p - primary prevention

e - emergency care (removal) in diseases of temporary teeth

t - treatment of permanent teeth on request.

Systematic treatment and prevention dental care for children includes also the prevention and treatment of periodontal diseases. It is possible to accurately plan the volume of treatment and preventive care using the CPITN index.

Table 52. Prevalence of periodontal disease (in %) in 15-year-old children

Periodontal status (CPITN)	Prevalence of periodontal disease (in %) in 15-year-old children				
	Healthy "0"	Bleeding "1"	Tartar "2"	Pockets	
				4-5 mm «3»	>6 mm «4»
	10	23	60	5	2
Calculations of the need for treatment and preventive care		Teaching and control of dental cleaning (90%)			
		Professional hygiene (67%)			
		Complex treatment (2%)			

Question 5. Dental care for adults on handling

WHO recommends the organization of dental care for the adult population on handling: the patient is offered appropriate treatment and prevention when he applies (not necessarily about pain). The principles of planning this type of dental service in any health care system are exactly the same as in the case of planning for the prevention or treatment of school-age children.

Task: Percentage of population coverage

Usually: 40-50% in the Republic of Belarus - about 60% (from 10 to 90%)

The important role is played by such factors:

- Types and scope of dental care,
- Types of personnel performing dental care for the population.

The number and type of personnel can be calculated by the formula:

$$\text{Number of professionals specific type (types) of treatment} = \frac{(\text{type of treatment}) \times (\text{time of procedure}) \times (\text{number of patients contacted})}{\text{time of the doctor's work for the year}}$$

It is very difficult to plan the number of visits (on request) for the future. Attendance can be very high if individual preventive measures are taken (a great motivation of the population is needed). Usually the attendance of the population is low. On average, in highly developed countries in the world, it is determined at the level of 40-50% of the adult population. In developing countries, the percentage of people applying for dental care is very low, an average of 5% of the population.

Interpretation of handling of the adult population for dental care:

1. Optimal level of handling for the adult population 50-60%
2. Handling high:
 - high dental morbidity and unsatisfactory quality of care.

- if individual preventive measures are carried out (a great motivation of the population is needed).
- 3. Handling is low --- insufficient population education, lack of motivation, inaccessibility of dental care.

Orientation of dental education on society

- Health and quality of life (physical, psychological, social well-being)
- Dental health is an integral part of overall health
- A healthy lifestyle
- Accessibility of treatment for all
- Social orientation
- A team of professionals (dentist, hygienist, nurse, educator)

Question 6. Material and financial provision of dental care for the population

It is necessary to allocate an appropriate budget for the program, otherwise it will not be fulfilled. The sources of financing can be different:

- the state, • insurance, • personal funds

The prevention program is funded by the state in most countries of the world. Programs of systemic treatment of school-age children in most countries are included in prevention and are funded by the state. However, there are other schemes. Dental care for the population on handling in all countries, except for CIS countries, is at the expense of personal funds of patients.

Question 7. Staff training. Stages of staff planning. Stages and methods for calculating staff needs

Stages of staff planning

- 1) Definition of measurable tasks of dental health
- 2) Determine the total number of personnel needed to achieve the stated health goals
- 3) Distribution of personnel by type: dentist, hygienist, dental technician, etc.
- 4) Identification of the types and scope of work that can be performed by existing staff in the health system, and taking into account constant training of staff
- 5) Revision and adaptation of the tasks of dental health in connection with the available personnel and the real prospect of training
- 6) Revision of initial estimates of total staff requirements for new tasks of dental health

Stages and methods of calculating the need for dental staff

- 1) use of situational analysis data
- Situational analysis established (examples):
- average level of dental caries;

- attendance of 60% of the population per year;
- for 1000 visits:
 - ✓ teeth filling of caries - 600;
 - ✓ Endodontic treatment - 150;
 - ✓ removal of tartar - 10;
 - ✓ removal of teeth - 140;
 - ✓ orthopedic treatment - 50;
 - ✓ other (disease of the oral mucosa, trauma) - 50.

2) definition of system tasks

3) *Table 53. Calculation of time for treatment*

Treatment procedures and time	Staff
Filling - 30 min	Dentist
Endodontics - 45 min x 2	A dentist or an endodontist
Tooth extraction - 15 min	Dentist
Orthopedic treatment 60 min x 2	Dentist
Removal of tartar - 40 min	Hygienist
Others - 30 min	Dentist

4) determination of the total number of personnel

5)

$$\text{Total number of staff} = \frac{\text{amount [treatment procedures (min) x number of patients]}}{1750 \text{ hours}}$$

Question 8. Staffing standards in the Republic of Belarus and the model of dental staff recommended by WHO.

Table 54. Staffing standards in the Republic of Belarus

Doctors	<p>The positions of dentists, dentists - physicians, dentists-surgeons (in total) are established from the calculation: 0.48 posts per 1000 people of the adult population of Minsk; 0.46 positions per 1000 people of the adult population of the regions.</p> <p>0.46 posts per 1,000 children of the city of Minsk; 0.42 posts per 1000 children's regions.</p> <p>The posts of orthopedic dentists, dentists orthodontists (in total) held at the expense of extrabudgetary funds are established at the rate of 0.135 positions per 1000 people of the adult population and 0.1 posts per 1000 children.</p> <p>The posts of doctors for the provision of advisory and organizational and methodological work on dentistry are established in the staff of one of the dental polyclinics of the</p>
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	<p>regional subordination (Minsk) at the rate of 0.002 positions per 1000 people of the adult population of the region (Minsk).</p> <p>The positions of radiology-physicians are established at the rate of 1.0 post for 7,500 conditional radiological units per year.</p> <p>Positions of physiotherapists are established depending on the number of posts of physicians leading outpatient visits: from 10 to 20 - 0.5 posts; from 20 to 40 - 1 position; 40 and more - 1 position and an additional 0.5 positions for each subsequent 20 posts of doctors who are outpatient.</p> <p>Positions of anesthesiologists-resuscitators are established at the rate of 1 post for 10 posts of dentists.</p>
Nursing staffs	<p>The positions of nurses of medical offices are set at the rate of 1 post for: 1,0 post of dentist-surgeon; 1.5 posts of dentists, dentists - therapists; 1,5 posts of dentists-orthodontists (are held at the expense of extrabudgetary funds); pediatric dentists. 2,0 posts of orthopedic dentists (are held at the expense of extrabudgetary funds).</p> <p>The positions of dental technicians in the dental laboratory are determined depending on the amount of work, determined in accordance with the current norms of time, established for dental work (kept at the expense of extrabudgetary funds).</p> <p>The positions of X-ray lab assistants are set at the rate of 1 position per X-ray unit per shift.</p> <p>The positions of nurse anesthetists are established from the calculation of 2 posts for 1 post of an anesthesiologist-resuscitator doctor, stipulated in clause 6 of these approximate staff standards.</p>
Junior medical personnel	<p>Professions of clinical nurse manager are introduced in each clinic.</p> <p>Professions of nurses are introduced at the rate of 1 unit per:</p>

	1 position of a dentist surgeon; pediatric dentist - surgeon 2.5 posts of dentists, dentists - therapists; pediatric dentists; 2,5 posts of orthopedic dentists, dentists - orthodontists (are held at the expense of extrabudgetary funds): 2 nurse positions in physiotherapy, 20 posts of dental technicians (supported by extrabudgetary funds).
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WHO: 4 dentists per 10,000 adults. 1 dentist for 2-6 thousand children, depending on the intensity of dental caries. At 1 dentist should be 2 nurses (1 assistant dentist and 1 hygienist) and 2 dental technicians.

TEST CONTROL

1. The system of dental care for the population should include (according to WHO):

1. Primary prevention, assistance to children and adults on request, information system;
2. Primary prevention, systematic care for children, assistance to adults on request, monitoring, training of personnel;
3. Financial support, training of personnel, systematic assistance to adults and children, assessment of assistance;

2. The most effective method of systematic care for children is:

1. Prevention;
2. Early treatment;
3. Advanced therapy;
4. All interventions are equally effective;

3. Systematic treatment of children should be carried out

1. Call 1 every 2 years;
2. Call 1 time in 1 year;
3. Call 2 times a year;
4. It doesn't matter;
5. Depends on the socioeconomic and economic situation in the country.

4. Indicate features of the Danish system of dental care for children, as the most effective in the world:

1. Preschoolers are covered in the program, all activities are free;
2. The program covers school-age children, all activities are free;
3. The program covers schoolchildren and preschoolers, all activities are free;
4. The program covers the adult population, all activities are free;
5. The program covers the entire population, all activities are paid.

5. For the Danish Children's Dental Care System is characterized by:

1. Adequate staffing;
2. Participation of non-medical personnel (parents, teachers) in the implementation of the program;
3. Adequate financing;
4. All of the above.

6. The most effective in the case of assisting children is:

1. Treatment on handling;
2. Planned reorganization;
3. Systematic treatment without primary prevention measures;
4. Systematic treatment with mandatory prevention and assessment of the level of health;
5. Emergency treatment.

7. Indicate the types of programs for systematic care to school children (WHO, 1980):

1. Minimum, maximum, 1 time in 1 year, 1 time in 2 years, 2 times in 1 year;
2. Minimal, limited, 1 time in 1 year, 1 time in 2 years, 2 times in 1 year;
3. Limited, not limited, 1 time in 1 year, 1 time in 2 years, 2 times in 1 year;
4. Inspections 1 time per year by reference 4
5. Maximum, 4 times a year.

8. The limited type of systematic care for children is:

1. Treatment of permanent teeth and provision of emergency care to all schoolchildren;
2. Treatment of permanent teeth and provision of emergency care for children from 1 to 5 classes, 7 class - the challenge and treatment of permanent teeth for all needy;
3. Treatment of permanent teeth for all who need it and provision of emergency care in grades 1 and 7, from 2 to 5 classes - treatment for treatment;
4. Treatment of temporary teeth for emergency care;
5. Treatment of permanent teeth for all needy from 1 to 10 classes.

9. The minimum type of systematic care for children is:

1. Treatment of permanent teeth and provision of emergency care to all schoolchildren;
2. Treatment of permanent teeth and emergency care for children from 1 to 5 classes, 7 class - the challenge and treatment of permanent teeth of all needy;
3. Treatment of permanent teeth of all needy and provision of emergency care in grades 1 and 7, from 2 to 5 classes - treatment for treatment.
4. Treatment of temporary teeth for emergency care;

5. Treatment of permanent teeth for all needy from 1 to 10 classes.

10. Planning dental care for the adult population by handling includes:

1. Situational analysis and setting of measurable tasks, personnel planning and financial support, monitoring of assistance;
2. Development, implementation, monitoring;
3. Situational analysis, preliminary planning of personnel and financial security.
4. Epidemiological investigation;
5. Collection of demographic data.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 12									
2	1	5	2	4	4	2	3	2	1

INDICATORS OF AVAILABILITY OF DENTAL CARE. THE DENTAL CARE MODEL RECOMMENDED BY WHO

The questions to be studied for the learning of the topic:

1. Indicators of the quality of dental care: definition, properties, groups.
2. Indicators of public health protection by WHO, 1981.
3. Indicators of availability of dental care. Definition of concepts "availability", "accessibility", "use".
4. Use (coverage) of dental care of different population groups.
5. The quality of care, the program "dental status--the status EURO."
6. Staff of dental care
7. Monitoring of the cost and quality of the dental service.
8. Monitoring the quality of service.
9. Evaluation of dental care to the public.
10. Monitoring of the system of dental care.
11. Quantitative and qualitative criteria for the quality of dental care in Belarus.
12. WHO's model of dental care

Question 1. Indicators of the quality of dental care: definition, properties, groups

Indicators are a characteristic or a reflection of a particular situation. Indicators are variables that can be used to assess changes (WHO). Ideal indicators should be:

- 1) effective: must really measure what they are called upon to measure;
- 2) objective: they must show the same values in case of evaluation by different people in the same circumstances;
- 3) sensitive: to react to different changes;
- 4) specific: to reflect changes only in a specific situation.

Four groups of indicators characterizing health are used in the CIS countries:

- 1) demographic,
- 2) indicators of mortality,
- 3) indicators of disability,
- 4) indicators of physical development.

Question 2. Indicators of public health protection by WHO, 1981

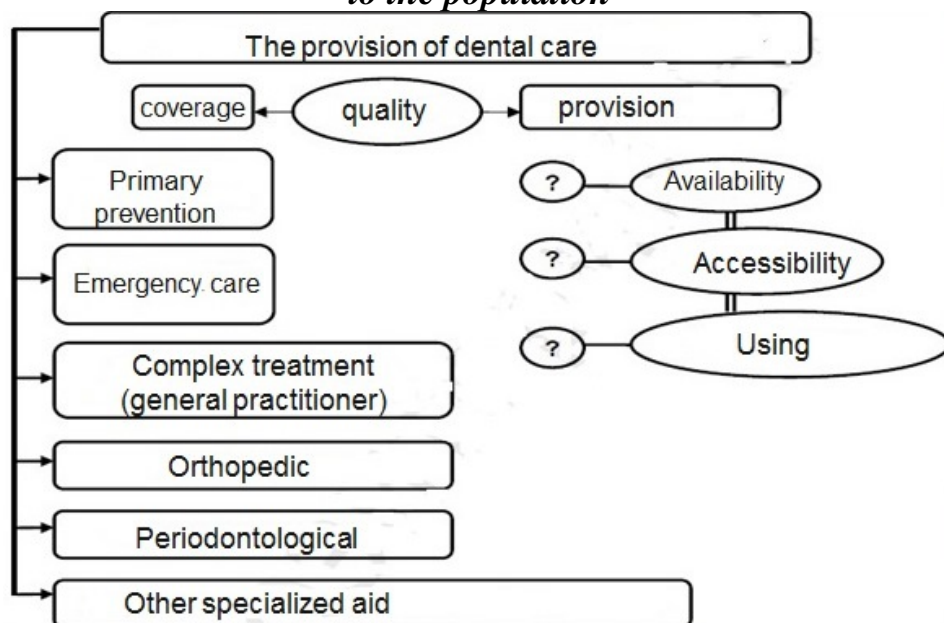
Table 55. Indicators characteristics of public health protection by WHO

Indicators	Their characteristics
1) Indicators related to health policy	<ul style="list-style-type: none"> ✓ political commitment to achieve health for all; ✓ resource allocation; ✓ the degree of uniformity in the allocation of health care resources;

	<ul style="list-style-type: none"> ✓ the degree of participation of the population in the work to achieve health for all; ✓ system of organization and leadership.
2) Social and economic indicators related to health	<ul style="list-style-type: none"> ✓ population growth rates; ✓ gross domestic product; ✓ distribution of income; ✓ working conditions; ✓ adult literacy rate; ✓ living conditions; ✓ food security.
3) Indicators of the provision of medical care:	<ul style="list-style-type: none"> ✓ population coverage of primary health care; ✓ coverage of the population by advisory services.
4) Health status indicators	<ul style="list-style-type: none"> ✓ life expectancy at birth; ✓ common diseases; ✓ dental diseases.

Question 3. Indicators of availability of dental care. Definition of concepts "availability", "accessibility", "use"

Figure 15. Scheme of interrelations for provision indicators of dental care to the population



Availability is the ratio between the population of the administrative-territorial unit (district, etc.) and health institutions, as well as their personnel (for example, the number of people per dental clinic, doctor). It can not be used as the only indicator of the provision of dental care to the population (a large number of medical institutions and personnel are not a guarantee of

excellent dental health of the population). Therefore, it should be supplemented with other indicators.

Accessibility is the number or proportion of a given population for whom there is a likelihood that it can benefit from the services of specialized agencies and health services. There are certain obstacles to access, which can be physical (distance, travel time), economic (travel expenses, maintenance costs), social and moral-psychological (for example, the language barrier):

Physical accessibility. It is necessary to specify the term "accessibility" at the time of the assessment of the system, for example, while walking or driving from the place of residence. The "standards" of physical accessibility can vary in different regions, and also depend on the type of care. For example, emergency dental care services should be located as close to the patient's place of residence.

Economic accessibility implies the possibility for individuals or society to pay for the cost of dental care.

Moral and psychological accessibility means that available services are acceptable to those to whom they are intended, should correspond to the primary needs of the population and provide an appropriate level of quality of dental care.

Use is the amount or proportion of the population using the services of this health service. This indicator can be correlated with the number or percentage of the population that needs the services of this service.

Question 4. Use (coverage) of dental care of different population groups

Table 56. Use of dental care of different population groups

1. Populations suffering from rare but dangerous diseases.	Some population groups suffer from very serious diseases of the oral cavity, which sometimes lead to death. Health organizers, planners and dental staff should be aware of the existence of special high-risk groups and are ready to conduct the necessary surveys to identify and develop specific programs for them. A major medical and social problem in Belarus is the contamination of the environment with radionuclides and a potential threat to the dental health of the population.
2. Groups of invalids and disadvantaged: ✓ invalids due to physical violations; ✓ Invalids with disabilities due to mental disorders; ✓ Persons in unfavorable conditions from the	<i>Invalids due to physical violations:</i> there may be an impairment of motion activity and other pathological conditions that violate their ability to perform self-help measures for the purpose of oral hygiene. They may not be able to abandon the diet, which involves dental and oral diseases, and at the same time experience difficulties in obtaining normal dental car.

<p>point of view of social environment, education, financial situation and emotional impact;</p> <p>✓ people affected by political action</p> <p>✓ the elderly.</p>	<p>The most serious problems of <i>people with disabilities due to mental disorders</i> include those related to self-help and oral hygiene, with an attitude towards them from dentists, with a feeling of fear and shame, and an inadequate reimbursement of expenses by insurance companies.</p> <p><i>Persons in unfavorable conditions from the point of view of social environment, education, financial situation and emotional impact:</i> these people are not financially secure, do not have a good housing, they may not have practical skills that contribute to the preservation of health. Where the level of education is low, more prerequisites for the formation of unhealthy eating habits and lower levels of general hygiene and oral hygiene. Some people are afraid to panic and are not able to cope with such situations.</p> <p><i>People affected by political action:</i> people and all families forced to leave their homes and their usual lives as a result of wars or other cataclysms.</p> <p><i>The elderly</i> often have problems with oral hygiene and difficulties in accessing dental services. This group is also characterized by such specific conditions as old, poorly fitted dentures and fungal infections.</p>
<p>3. Persons suffering from infectious diseases.</p>	<p>There are practical problems preventing cross-infection, ethical and practical problems of dentists who refuse to treat such patients in their offices.</p>

Question 5. The quality of care, the program "dental status--the status EURO"

The basic and highly informative index of the oral condition is the DMFT index (the average number of carious, removed or filled teeth). This indicator shows the degree of dental diseases and the level of dental care. For example, the average number is not more than three caries, removed or sealed teeth at the age of 12 years (WHO proposal).

The electronic information system for monitoring the quality of dental care for the population "Oratel" was developed in the European Regional Office (Copenhagen, Denmark) WHO, 1994). It has been successfully applied in several countries of Western Europe. Part of this system is proposed for the countries of Eastern Europe in the form of ORAL status - EAST. Positive results of using the system were obtained in Hungary, Poland and other countries wishing to improve the quality of dental care. This system can be used in public dental clinics and in private offices that have a

computer. The system allows to evaluate the quality of work of individual doctors, offices, departments, clinics, districts, regions, the republic, and also at the international level (the criteria for dental health "Oral Status-east" are comparable in all countries).

Table 57. Dental status--the status EURO

Computer program
Electronic patient form

Country	Region	District	Place
<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> 1 – city; 2 – village; 3 - suburb
Year	Month	Registration number	
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
Full name: _____			
Address: _____			
Age	<input type="text"/> <input type="text"/>	Sex	<input type="text"/> 1-male 2- female

Age 6 years

Free from caries	Yes	<input type="text"/>	No	<input type="text"/>
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Age 12 years

D	<input type="text"/> <input type="text"/>	F	<input type="text"/> <input type="text"/>	M	<input type="text"/> <input type="text"/>	DMFT	<input type="text"/> <input type="text"/>
---	---	---	---	---	---	------	---

Age 18 years

M	<input type="text"/> <input type="text"/>	CPITN	<input type="text"/> <input type="text"/> <input type="text"/>	Number of healthy sextants	<input type="text"/>
			<input type="text"/> <input type="text"/> <input type="text"/>		

Age 35-44 years old

Full adentia	Yes	<input type="text"/>	No	<input type="text"/>
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Number of available teeth	<input type="text"/> <input type="text"/>
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D	<input type="text"/> <input type="text"/>	F	<input type="text"/> <input type="text"/>	M	<input type="text"/> <input type="text"/>	DMFT	<input type="text"/> <input type="text"/>
---	---	---	---	---	---	------	---

CPITN	<input type="text"/> <input type="text"/> <input type="text"/>
	<input type="text"/> <input type="text"/> <input type="text"/>

Number of healthy sextants

Age 65-74 years old

Functioning dentoalveolar system	Yes		No	
----------------------------------	-----	--	----	--

Full adentia	Yes		No	
--------------	-----	--	----	--

CPITN

 The number of sextants with deep pockets

Table 58. The following indicators are used in the information system for the quality of dental care Oral Status EURO

Age 6 years	Percentage of healthy (dental caries free) children
Age 12 years	Average teeth DMFT
Age 18 years	<ul style="list-style-type: none"> – The average number of removed teeth "M" for complications of caries; – Number of healthy sextants by CPITN index
Age 35-44 years old	<ul style="list-style-type: none"> – Average number of extant teeth – Percentage of toothless persons – Average DMFT of teeth – The average number of sextants of periodontal with deep pockets
Age 65-74 years old	<ul style="list-style-type: none"> – Percent of persons who retained the function of the dentoalveolar system – The percentage of toothless persons – The average number of sextants with deep periodontal pockets.

Question 6. Staff of dental care

The geographical distribution of different categories of personnel and the determination of the ratio between them is great importance:

- the ratio between the size of the population and the number of workers in dental care of various categories, taking into account the geographical distribution, i.e. in provinces, districts, urban or rural areas. The "map" of such ratios across the country can be drawn up to show deviations from the average;
- the ratio between different categories of workers, for example, between doctors and nurses, hygienists, dental technicians;
- the ratio between all dental workers and the rest of the health system;

- the degree of coordination of the curricula of the dental faculty, the qualification characteristics of graduates and the real needs of the dental service to achieve dental health of the population in accordance with the goals set.

Methodology of management. Each management system should include (WHO recommendations):

1) monitoring of the most important elements of the dental care system, which can be used to determine and tendencies tracing in the oral health of population groups;

2) assessing the effectiveness and effectiveness of the system in strengthening human health;

3) assessing the relative importance of the components of the system with the positions of primary health care;

4) information about the effectiveness of the system of dental care at any level of consumption: from individual to international.

Question 7. Monitoring of the cost and quality of the dental service

A cost-effective program is a program that minimizes the costs associated with a certain level of functional activity. It should answer the following Question s:

- Is it worth carrying out the program? Is it effective from the point of view of usefulness?
- Which of the ways is more cost effective?
- Do the benefits of the program exceed the costs associated with it?

It is necessary to know the amount of financial costs and to determine what quality criteria for dental care will be used to provide a clear monitoring and evaluation of the cost and quality of dental care.

Financial provision of the dental program should be justified in terms of the stated goals of dental health of the population. The following most important Question s need to be monitored:

- What part of the current budget is allocated for the prevention of dental diseases? Limiting the financing of prevention will lead to an increase in diseases and an increase in costs in the future.

- How does the "return" of the rehabilitation program increase: faster or slower than the cost of it?

It is useful to classify administrative costs, program costs and training costs for *operational management* purposes.

1. Staff costs. These include salaries for persons directly involved in the provision of services.

2. Costs on basic services. These include the cost of buildings and equipment, including maintenance and repair work.

3. Costs on funds used. These include daily operating costs, including costs for dental materials and medicines.

Question 8. Monitoring the quality of service

Quality can be defined as the property, type or nature of a product or service that is related to the degree of its perfection. Quality can be determined taking into account 7 parameters for any aspects of dental care.

- 1) The factor of effectiveness is determined by the effectiveness of goals in relation to the demands of the population.
- 2) The planning factor includes aspects of the work that were carried out before the patient visited the service.
- 3) The maintenance factor itself characterizes the parameters of how dental procedures are performed.
- 4) The personal factor provides such categories as professionalism and hard work of health personnel. Quality is usually provided by such procedures as examinations, licensing.
- 5) The patient's personality factor. These include issues that directly depend on the patient and his behavior.
- 6) The quantity factor is the relationship between service capabilities and the needs of the population.
- 7) The cost factor compares the level of costs for dental care with existing resources and priorities in health care.

Resources. Program managers should analyze data related to human, material, technical, social, political, health and financial resources.

Social resources. Are communal and private non-stomatological institutions used in the interests of dental programs?

Political resource. Is the legislative power of the program of improvement of the oral cavity exactly determined enough?

Sanitary and educational resources. Is everything done to improve the level of health education and, consequently, improve health?

Financial resources:

- ✓ Is there an identifiable budget for the purposes of oral health improvement at the level of primary health care, the first and second treatment and advisory level?
- ✓ Can current activities be carried out on a constant basis within a given budget?

Staff resources:

- ✓ Are there appropriate categories and the necessary number of staff?
- ✓ Are the staff distributed according to the needs of the population?

Basic means:

- ✓ Are clinics located in places that provide easy access for the population, and do they meet their needs?
- ✓ Is the equipment and supply of clinics sufficient to achieve the program's goals and the needs of the population?

Question 9. Evaluation of dental care to the public

- 1) Knowledge of the population about oral hygiene after the sanitary-educational activities in comparison with the initial data;
- 2) Concentration of fluorides in drinking water (the work of sanitary and hygienic institutions is assessed);
- 3) The number of persons who received dental care at each level (primary, specialized, etc.) Of the system compared to the need for each type of care;
- 4) Average duration of rehabilitation treatment;
- 5) Dynamics of the number (%) of persons with healthy periodontal sextants;
- 6) Dynamics of the proportions of 18-year-olds with a full dentition (absence of the "M" component);
- 7) Dynamics of the proportion of 35-44-year-olds having 20 or more functioning natural teeth;
- 8) Dynamics of proportions of persons with a complete secondary adentia at the age of 65 years and older;
- 9) Dynamics of the proportion of healthy (free of dental caries) 5-6-year-old children;
- 10) The dynamics of the proportion of 12-year-old children, whose average DMFT of teeth does not exceed the goals of the prevention program. For example, the DMFT is not more than 1.5.

Question 10. Monitoring of the system of dental care

A typical example of monitoring the system of dental care for the population is the WHO Global Health Observatory Database (GODB). The main task of monitoring dental diseases at the country level is an objective assessment of the functioning of the dental care system in achieving the stated goals. Monitoring in the form of daily reports of doctors, annual reports of polyclinics and chief specialists is not included in internationally recognized criteria reflecting the dental health of the population and the quality of dental care in the CIS countries. Monitoring should include (WHO):

- 1) data on the incidence of the population:
 - DMFT of teeth;
 - CPITN;
- 2) percentage of healthy children;
- 3) others.

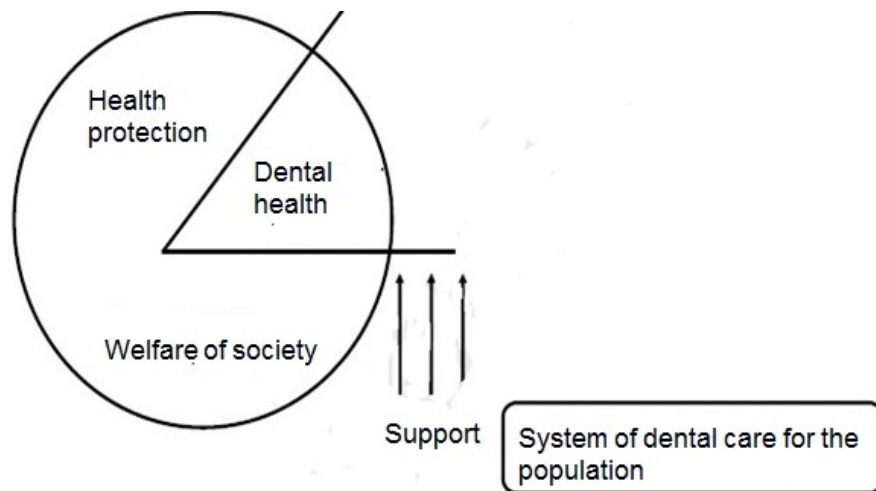
The information system in dentistry is developed and implemented in the Republic of Belarus. It uses health criteria recommended by WHO. It allows comparing the quality of dental care to the population with other countries of the world.

Question 11. Quantitative and qualitative criteria for the quality of dental care in Belarus (Table 59).

1. Therapeutic dentistry	1.1. Number of working days 1.2. Visits total, including primary 1.3. Labor Units 1.4. Filled teeth total 1.5. Filling of all 1.6. Complete endodontic treatment 1.7. Preventive measures carried out 1.8. Sanitized everything: - in order of scheduled sanitation - by handling. 1. Visits per day per rate 2. Work units per day on the rate 3. Fillings per day on rate 4. Sanitation per day on rate 5. Treated teeth in 1 session per day on rate 6. The percentage of fillings for new technologies 7. The ratio of uncomplicated caries to complicated caries. 8. The ratio of treated teeth to the removed teeth. 9. Percentage of sanitized persons from primary.
2. Orthopedic dentistry	2.1. Number of persons who received dentures (per 10000 adults) 2.2. Number of persons of preferential category who received dentures 2.3. The proportion of whole piece prosthesis (N = 8%). 2.4. The percentage of clasp prostheses from partial removable (N = 25%). 2.5. Number of visits per prosthetics per patient 2.6. The index of aesthetic works (norm = 25).
3. Surgical dentistry	3.1. Remote teeth per day per dentist-surgeon 3.2. Operations per day 3.3. The percentage of complications after surgical treatment 3.4. Number of days with temporary disability per doctor.
4. General	1. Availability of dental care (number of visits per resident). 2. Providing doctors with a dental profile (per 10 thousand population).

Question 12. WHO's model of dental care.

Figure 16.
Scheme of
WHO's model
of dental care



The effectiveness of the organizational model of the dental system care to the population can be assessed using the scheme (see below), proposed by A. Donabedian (USA, 1969):



**Figure 17. The scheme of practical implementation
of the dental care system**

This scheme allows you to develop, implement and evaluate the advantages and disadvantages of the health system, the results of scientific research, the effectiveness of training dental staff and dental services to the public.

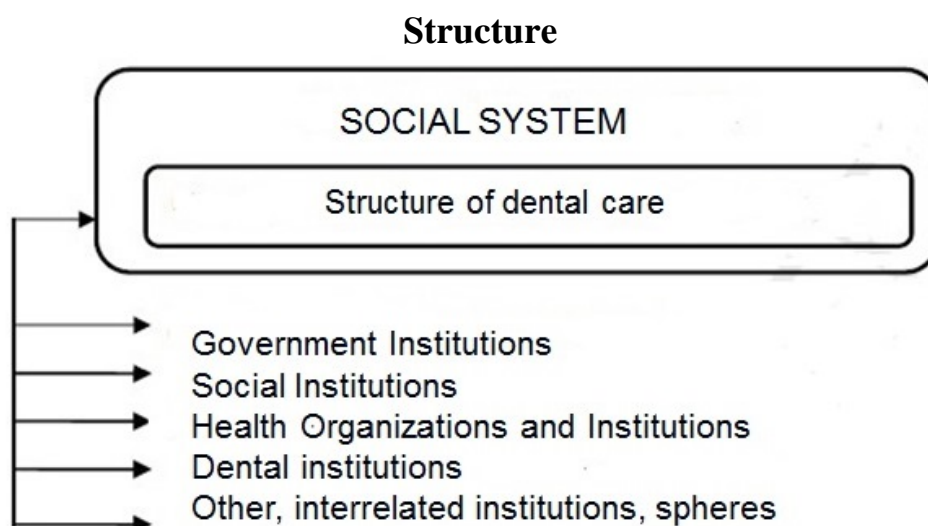


Figure 18. The scheme of social system

Table 60. Process of action

<i>Research of information</i>	<i>Conducting independent research</i>
Propagation of information	Printed editions
Application of knowledge and skills for the implementation of dental care, environmental monitoring and the production of healthy foods	Regulation of fluoride content in drinking water and food products
Evaluation of treatment and prevention activities	Professional ethics, laws, rules, recommendations of dental associations, criteria and quality standards.
Administrative management	Management of personnel, basic means, materials, funds and other resources to ensure the implementation of the above processes

Effectiveness. The factor of expectation the general population is used to analyze the effectiveness of dental care.

Table 61. Expectations are evaluated according to 4 parameters (reasons) of calls to the dentist:

Forced (episodic) treatment	Getting emergency care. This is in fact a fatalistic attitude to one's own health.
Compensation of the defect	Understanding the usefulness of dentistry,

	but the burden of responsibility for health rests with the staff
Rehabilitation. Restorative treatment	It is expected that the service personnel will restore the lost teeth.
Prevention	The patient assumes responsibility for maintaining a healthy state of the teeth

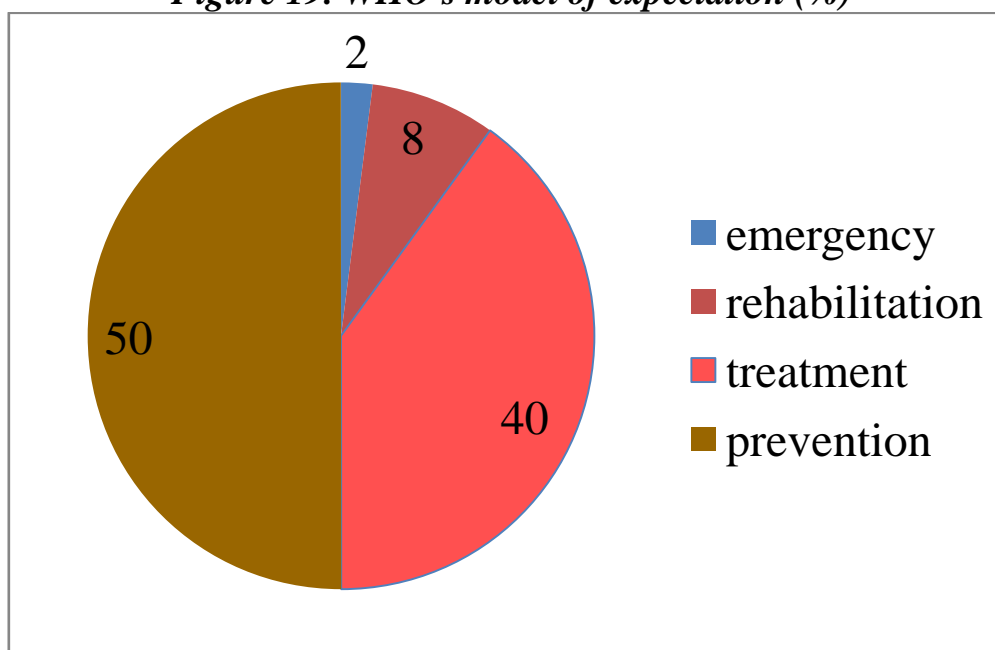
Forced (episodic) treatment. The patient appeals a doctor if necessary to get emergency care. The number of forced appeals must be minimal. If they constitute a large proportion among other types of appeals, then the prevalence of a fatalistic attitude towards one's own health is possible.

Compensation of the defect. This is the removal and prosthetics of the teeth. The population understands the usefulness of dentistry, but the burden of responsibility for dental health rests with the staff. Painless treatment and recovery of appearance are expected from the staff.

Restorative treatment. This is the manufacture of dentures, orthodontic devices, surgical treatment of periodontal diseases. Patients expect that the dental staff restores the chewing functions of the teeth. The more the proportion of this type of expectations among the population, the less the preventive focus of the functioning of the system of dental care.

Prevention. Includes enlightenment on healthy lifestyles, maintaining healthy teeth and preventing disease. The population assumes the primary responsibility for maintaining a healthy state of the teeth and oral cavity. This kind of expectations is most effective for achieving the goal of perfect dental health.

Figure 19. WHO's model of expectation (%)

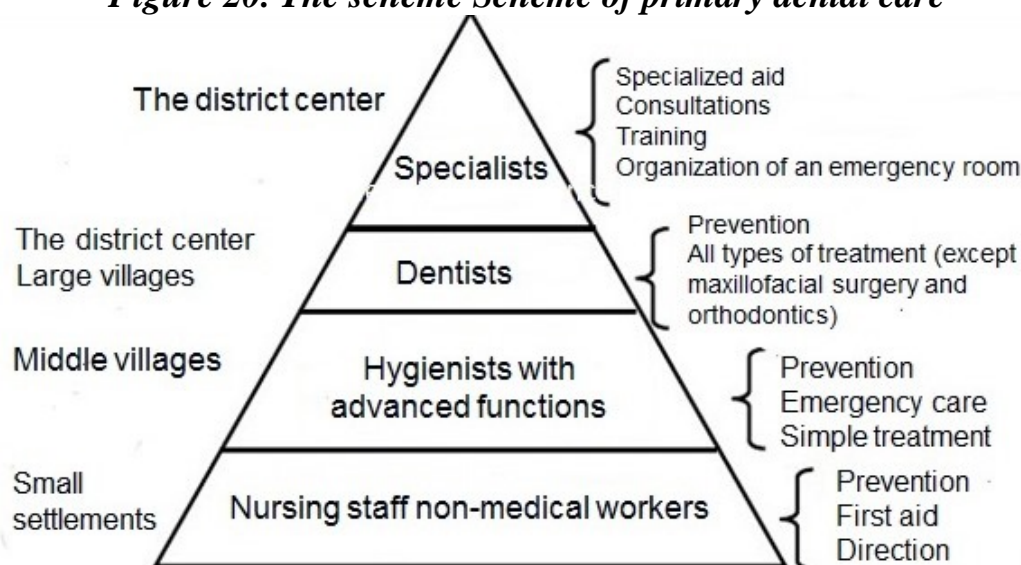


The WHO's model of dental care is based on the concept of primary health care. It has several levels: primary health care, the first level of treatment-and-consultation work and a second level of treatment-and-consultation work. But they can differ in different situations and different countries.

Table 62. Elements of the basic dental care model

Level of primary health care	<ul style="list-style-type: none"> ✓ Promoting the health of the oral cavity through the development of a healthy lifestyle ✓ Prioritize prevention ✓ Involvement of the population and institutions of leaders; Attention to the social acceptability and economic feasibility of the proposed measures. ✓ Integration of dental care into the overall protection of human health. ✓ Ensuring the availability of primary dental care for all. ✓ Maximum self-help, a stimulating state of self-sufficiency. ✓ Regular interaction with the population through: <ol style="list-style-type: none"> 1. receiving information from the public (examinations and surveys). 2. communication of information to the population on important issues for life and development of a conscious attitude towards health. 3. training and instructing the population. ✓ Minimal interventions with an emphasis on non-invasive methods of treatment. ✓ Adequate treatment and counseling. ✓ Provision of the necessary personnel and technology.
The first level treatment-and-consultation work	<ul style="list-style-type: none"> ✓ Restorative and rehabilitation treatment that does not require specialized care. ✓ Activities complementing each of the services at the primary care level.
The second level treatment-and-consultation work	Specialized services for treatment-and-consultation work.

Figure 20. The scheme Scheme of primary dental care



TEST CONTROL

1. Indicate health indicators recommended by WHO:

1. - Demographic;
 - Indicators related to health policy;
 - Indicators of the provision of medical care;
 - Social and economic;
2. - Indicators related to health policy;
 - Indicators of the provision of medical care;
 - Social and economic;
 - Health indicators, including quality of life;
3. - Indicators of the provision of medical care;
 - Social and economic;
 - Indicators of health status, including quality of life;
 - Indicators of physical development.

2. Indicate the parameters used to assess the population's dental health

1. Availability;
2. Availability;
3. Use;
4. All of the above.

3. What indicators determine the security of dental care?

1. The ratio between the population of the region and health facilities and their staff;
2. The number or proportion of the population that can use the services of dental institutions;

3. The number or proportion of the population using the services of the dental service;
4. All of the above.

4. "Availability" of dental care is:

1. The ratio between the population of the region and health facilities and their staff;
2. The number or proportion of the population that can use the services of dental institutions;
3. The number or proportion of the population using the services of the dental service.

5. "Accessibility" of dental care is:

1. The ratio between the population of the region and health facilities and their staff;
2. The number or proportion of the population that can use the services of dental institutions;
3. The number or proportion of the population using the services of the dental service.

6. "Use" of dental care is:

1. The ratio between the population of the region and health facilities and their staff;
2. The number or proportion of the population using the services of dental institutions;
3. The number or proportion of the population that can use the services of the dental service.

7. Indicate the types of accessibility to dental care:

1. Physical;
2. The economic;
3. Moral and psychological;
4. All of the above.

8. Indicate the groups of the population having restrictions in the use of dental care, if it is sufficient?

1. Suffering from rare dangerous diseases;
2. Persons with disabilities due to physical disabilities;
3. People with disabilities due to mental disorders;
4. Politically disadvantaged people;
5. The elderly;
6. All of the above.

9. Monitoring in dentistry is

1. Computer support of all dental institutions, equipping them with patient registration programs;
2. This is a single, constantly operating system for collecting, storing and processing data on the dental status of the population and its medical care, as well as the main trends in their development.

10. Monitoring of the cost of dental care includes

1. Staff costs (salary, training);
2. Costs for basic services (cost of buildings, equipment);
3. Expenses for the funds used (dental materials and medicines);
4. All of the above.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 13									
2	4	4	1	2	3	4	6	2	4

DENTAL CARE SYSTEMS FOR THE POPULATION

The questions to be studied for the learning of the topic:

1. The concept of "system of dental care". Types of dental care. History of development of dental care systems.
2. Private system of dental care.
3. Insurance system of dental care.
4. Communal system of dental care for the population
5. Advantages and disadvantages of different systems of dental care for the population.

Question 1. The concept of "system of dental care". Types of dental care. History of development of dental care systems

Community dentistry in practice can be defined as a constant cooperation between the dentist and the community:

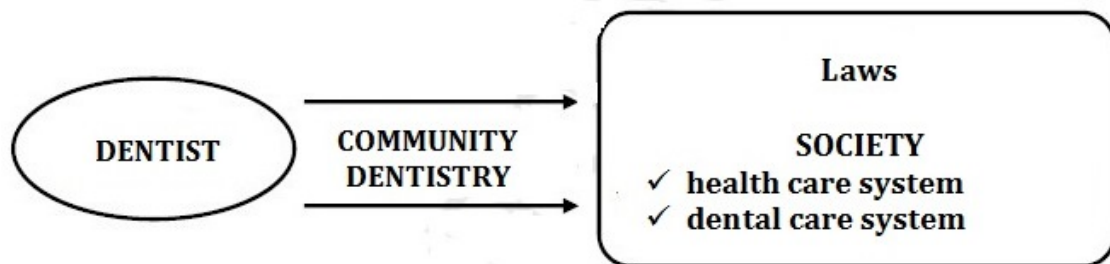


Figure 21. The cooperation of the dentist with the community

The health care system in the country is constantly changing and improving.

The **system** is a set of institutions of power and health protection, acting in a certain order to provide dental care to the communal.

There are three basic systems of dental care for the population in the world:

- a) communal or state,
- b) private,
- c) insurance.

The predominance of one of the systems is observed in different countries. The confusion of systems has occurred, due to the imperfect each of them. Each country chooses all the best that has been accumulated in the world experience and depending on political, economic and other conditions and factors.

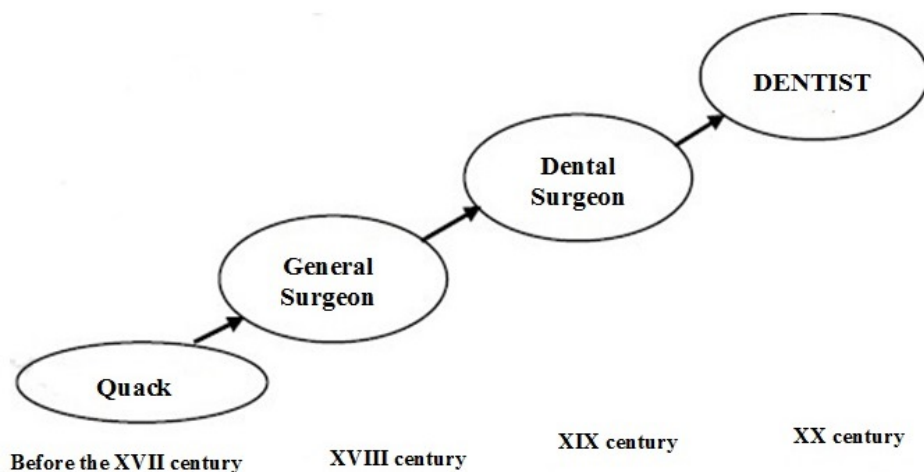


Figure 22. History of development of dental care systems

Problems in the provision of dental care began to arise gradually as the system of private enterprise and economic development of countries. WHO classifies them into 3 groups:

Biological factors affect the types and amount of dental care. Diseases of teeth, their prevalence and intensity are referred here.

The attitude of the population to the risk factors for the occurrence of diseases was not studied at that time. The private doctor was not interested in these problems in expectation of the patient and earnings.

Effective management of the system of dental care at that time was difficult due to the contradiction of its components and the absence of a scientifically based concept of dental health.

These problems led to the birth of an alternative private so-called insurance system of dental care (around 1880).

Question 2. Private system of dental care

Private practice of the dentist is one of the systems of dental care for the population during which the dentist receives patients paying the full cost of treatment. Private practice was a single system of dental care before the beginning of the 20th century. Private practice corresponds to a liberal economic and political concept in its original form and is a free profession. It means:

1. A dentist treats each case in the best interests of the patient. Follows the scientific principles, the rules of professional ethics, which is controlled by special professional institutions, such as the Association of Dentists.
2. The administration of the state controls the observance of laws by doctors.
3. The health administration shall ensure that the practice is carried out in accordance with the general rules of hygiene, sanitation, etc. Administration usually does not interfere with other aspects of the individual activities of the

dentist. A private dentist is not employed by the state, his diagnosis and treatment is based on his professional education and ability.

The objectives of private practice:

- To be available for caring for dental health: a convenient time for the patient, a friendly, pleasant environment;
- To provide high-quality dental care for patients in comfortable conditions;
- To do everything possible to prevent or decrease the intensity of dental diseases.

Approximate duties of a private dentist in the practical implementation of the National Program for the Prevention of Dental Caries and Periodontal Diseases

1. Definition the dental status of the patient with the entry of data in the outpatient card in full. The dentist of the private room himself plans the length of time the patient receives. The examination includes a Question naire and a manual and instrumental examination of the oral cavity, including the definition of indices.
2. Definition of the patient's predisposition to carious disease.
3. Definition of the general condition of the patient.
4. Motivates a systematic visit to the doctor for the purpose of prevention. This is the most important aspect of the preventive work of the dentist private cabinet. Only during regular observation of the patient can achieve his full dental health.
5. Teaching teeth cleaning.
6. Control the effectiveness of oral hygiene.
7. Conversations about a healthy way of life and control of their results.
8. Appointment of fluorides. Recommendation of fluorine-containing toothpastes.
9. Evaluation of the effectiveness of preventive measures.

The costs of a private office are divided into 3 groups:

1. Fixed costs are constant costs, don't depend on the work or rest of the personnel (rent of premises, property taxes, equipment costs, insurance, business expenses)

2. Variable costs. This is an ever-increasing expenditure with an increase in the amount of medical and preventive work (payment of dental laboratory expenses, payment of clerical and other goods, mail, Internet, telephone).

3. The semi-variable costs consist of fixed and variable components: staff salaries, equipment repair and maintenance, cost of magazines and books.

Question 3. Insurance system of dental care

The system of insurance dental care is one of the forms of individual insurance, which is financed from the funds contributed by the insured patient. The system first appeared in Central Europe, Austria-Hungary and Germany in the 1980s. Between the first and second world wars appeared in Czechoslovakia, Poland, Romania and Yugoslavia. Insurance dentistry spread to Belgium, Denmark, France and the Netherlands in the 1940s, partially introduced in Greece, Italy and Spain.

At first, insurance was limited only to workers. As part of the insurance, it was possible to expect the removal of teeth without anesthesia. Gradually, the volume of insurance dental care was expanded in three directions:

- 1) the coverage of all workers and employees of communal and private organizations and institutions;
- 2) family coverage of dental care;
- 3) an increase in the amount of dental care, including all surgical operations, teeth filling and partially orthodontic and orthopedic treatment.

Advantages of the insurance system over private:

- 1) the dentist gained confidence in his income, due to the growing interest of the population to maintain their health;
- 2) dental insurance premiums and incomes increased with the growth of the economic potential of countries.

Currently in the world there are two types of insurance in dentistry. One of them is insurance in the classical form: private, but mandatory insurance, guaranteeing each insured person compensation of costs for dental treatment. Another type of health insurance has appeared in Denmark and Sweden. It differs only in matters of financing, which are carried out at the expense of the state budget.

Variant of payment to the doctor for treatment of insured patients:

Indirect payment. The insurance company has an agreement with the employer (institution) at the place of work of the patient. The insurance company pays the employer 80% of the cost of dental treatment for filling, 50% - for prosthetics, 100% - for prevention. A certain agreed amount of money is calculated from the patient.

Direct payment method provides that the insurance company pays the bills of the private office, and the patient does not have financial obligations to the doctor. A serious disadvantage of this system is the absence of economic levers for motivating the patient for timely treatment. Patients of this group are characterized by:

- frequent non-attendance at the appointed reception;
- the patient comes to treatment only when there is pain
- dental treatment is least significant among other priorities

- there is no cooperation with a doctor in the performance of household appointments;
- non-compliance with the principles of a healthy lifestyle in relation to diet, etc .;
- disbelief in the need for regular dental treatment.

The maximum treatment in one visit is the tactic of working with this group of patients.

Capitation or poll tax. The dental office receives a monthly payment for all patients who visited the office. Patients have a list of dentist to whom they can apply for treatment. The payment for treatment is significantly decreased in this case.

Question 4. Communal system of dental care for the population

Date of birth: 1880

Place of birth: Strasbourg (France) and Zurich (Switzerland).

Directions of development:

- 1) systematic treatment of schoolchildren;
- 2) systematic treatment of other high-risk populations (including pregnant women);
- 3) communal prevention;
- 4) communal financing of programs of medical and preventive dental care for the entire population of the country.

Population groups are determined by age (for example, school children) or health status (pregnant women, nursing mothers, persons with physical or mental disabilities). All representatives of target groups have an equal right to receive dental care. There are three types of communal dental services.

The first of them is represented by the system of dental care created in the former USSR and in the former socialist countries of Eastern Europe. This is a state system financed from the state budget, its development is planned within the framework of national economic plans. The main management of systems is entrusted to the ministries of health. Available services operate in cooperation with regional, district and local health authorities. The activities of health systems are based on the premise that every citizen has the right to health and medical care. Medical care is free of charge. The staff works in the communal health system and receives a fixed salary.

Different forms of dental care, which can be attributed to the second type of communal dental care, are mainly children who are provided with more or less complete and regular dental care, including methods of prevention and health education. These forms of service have appeared at the initiative of the local administrative authorities of villages and cities, and they remain at this stage of development in a number of countries.

The third type of communal dental care systems is represented by systems created in countries where the number of doctors in relation to the population is small. Such a system consists of a network of hospitals and outpatient health centers, where dental care is provided by communal health doctors or dentists.

Question 5. Advantages and disadvantages of different systems of dental care for the population

Table 63. Advantages and disadvantages of different systems of dental care for the population

<i>Advantages</i>	<i>Disadvantages</i>
<i>Private system of dental care</i>	
<ul style="list-style-type: none"> • the doctor and the patient are interested in the results of work • high quality of dental care 	<ul style="list-style-type: none"> – limited access to risk groups – complexity of management – there is no prevention program at the communal level.
<i>Insurance system of dental care</i>	
<ul style="list-style-type: none"> • the doctor is confident in his income • ease of management • strictly defined amount of assistance. 	<ul style="list-style-type: none"> • Limitation of the volume and type of services • Restriction of dentist in activities • Disinterest of the doctor • Less interest of patient • Decreased population coverage • Difficulties in implementing community programs
<i>Communal system of dental care</i>	
<ul style="list-style-type: none"> • wide coverage and access for the whole population • ease of management • inculcation of utility programs • providing a wide range of services • the doctor is confident in his income 	<ul style="list-style-type: none"> • poor quality of treatment • the doctor is not interested in the results of labor • patient is not interested in maintaining health • depends on the income of the state • a smaller opportunity to introduce progressive methods of treatment.

TEST CONTROL

1. The system of dental care is

1. A set of institutions of power (Ministry of Health, Ministry of Social Protection), acting in a certain order to provide dental care;

2. A set of institutions of power and health, acting in a certain order to provide dental care.

2. Indicate the way of evolution that took place in the development of the system of dental care:

1. Private business → insurance system → state system;
2. Self-regulating system → mixed system;
3. Self-regulating system → private enterprise → insurance system.

3. What system of dental care existed before the end of the XIX century in all countries?

1. Private enterprise;
2. Insurance system;
3. Communal system.

4. What problems does WHO have in the development of dental care systems?

1. Management issues, biological factors, the attitude of doctors and the communal towards diseases;
2. Biological factors, socio-economic problems, organization issues.

5. What biological factors contributed to the appearance of alternative dental care systems?

1. High prevalence and intensity of dental diseases (caries became a pandemic); determination of the role of sweet foods in the development of caries; reluctance of private doctors to engage in prevention;
2. High prevalence and intensity of dental diseases (caries became a pandemic); the development of the first scientific theories of caries development (miller's theory); definition of cariogenic factors.

6. Insurance system of dental care is

1. Full financing of rendering medical aid to the population by insurance companies;
2. The form of individual insurance, which is financed from the funds contributed by the insured patient.

7. Insurance dental care first appeared in

1. Germany, Poland, Czechoslovakia;
2. Germany, France;
3. Germany, Austria-Hungary.

8. The insurance system of dental care was originally intended

1. For workers;

2. For workers and their families;
3. For workers and employees.

9. Which populations are at risk during planning dental care?

1. Schoolchildren;
2. Pregnant women;
3. People with disabilities;
4. All listed.

10. What system of dental care is recognized as the most effective in motivating the patient and increasing personal responsibility for one's health?

1. The communal;
2. Insurance;
3. Private.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 14									
2	3	1	1	2	2	3	1	4	3

EVALUATION OF THE LEVEL OF DENTAL CARE FOR THE POPULATION IN THE CONTEXT OF DIFFERENT DENTAL CARE SYSTEMS

The questions to be studied for the learning of the topic:

1. Evaluation of the quality and level of dental care in Algeria, Czech Republic.
2. Evaluation of the quality and level of dental care in Finland, England
3. Development of an alternative structure for the organization of systematic dental care to the population.

Question 1. Evaluation of the quality and level of dental care in Algeria, Czech Republic.

Until 1962: private practice;

1962 (independence) - 1974: transition to the public

since 1974: the communal system; limited private system (only in rural areas)

Until 1962 (before independence) in the country, dental care for the population was provided exclusively by private dentists who received education in French universities. The payment for the treatment was direct: the patient paid directly to the doctor. With the acquisition of independence Algeria lost almost all dentists, as they left the country. Algeria, as an independent state, experienced an acute shortage of dental personnel in 1962. after the mass departure of European dentists. Two main problems existed in the country: the preparation of dental personnel and the organization and management of dental services. Training of dental personnel is carried out at the Department of Surgical Dentistry of the Institute of Medical Sciences. All training is free (self-training and use of the toolkit), each student receives a training allowance in the future salary. A graduate must undergo military service at the end of training for 2 years, and 18 months of this period are assigned to practical professional activities in the hospital or the state polyclinic. After that, the graduate must perform his obligation to work in the civilian state dental service for 5 years. In the transitional period of time, which lasted 12 years, until 1974, the national cadres for dental care were prepared in a quantitative ratio of 1 dentist to 34 thousand people. Medical-social centers, a polyclinic and hospitals have been opened for treatment of the population in which rendered the dental help for a small payment. Some citizens received help for free. The private sector with direct full payment or through insurance agencies also existed in this period. The order of the dentist's work was defined as follows:

1. Every private sector dentist 6 times a week is required to work in the morning in the communal service
2. The attitude to the private practice of dentists is regulated.

Dental care in Algeria has acquired the following organizational forms based on legislative acts (since 1974):

- Private practice is allowed only in rural areas only for Algerian dentists after seven years of compulsory work in the communal sector of dental care. In addition, a dentist who has an office should work for five days in the state dispensary. Permission to private practice is issued by the Ministry of Communal Health, and it is issued for work only in "poorly secured" areas, and not in large cities.

- A network of communal dental institutions, which provides free assistance to the public. However, there is not enough staff, not enough dental materials and equipment.

The model of dental care in Algeria is typical for most developing countries in the Near and Middle East.

Czech Republic

Before 1900: private practice;

1900 - 1948: transformation of a private system into a national insurance system;

1948 - 1966: the insurance system;

since 1966: the state socialist (public) system - service of the population on districts and introduction of norms of patients reception. The treatment was free. Private practice was allowed, but it was limited.

~ 1990: transformation of the state system into insurance and private.

The transformation of the state system back into insurance and private takes place from 1990 to the present. Most dental clinics are closed or their offices are rented by private doctors. The offices are also organized in apartments and other premises, wherever possible. For the treatment of most patients and, first of all, children, dentists receive money from the state upon presentation of a report on the medical work done. In other cases, patients pay for the treatment directly to the doctor.

Question 2. Evaluation of the quality and level of dental care in Finland, England

Finland.

Until 1909: a private system;

1909-1972: development of the communal system for schoolchildren; private system for adults;

since 1972: a communal system for schoolchildren, students, military, disabled, elderly; a private system for the rest; state prevention program for the entire population.

High quality of dental care and a sharp decrease in the incidence of the population are typical for Finland. Since 1972, Finland has introduced a law on the expansion of the communal sector to the entire population of the

country. Health centers have been established, each of which serves about 10 thousand people. The objectives of these centers include prevention, education of a healthy lifestyle, as well as regular examinations, hygiene training and local applications of fluorides to all children and teenagers under 17 years free. The treatment is partially paid by patients, but its cost is much less than in private rooms.

England

Until 1907: a private system;

1907-1917; the introduction of a communal system for junior schoolchildren, pregnant mothers, mothers;

1907-1926: development of the insurance system for 10 million people;

1946: introduced a communal system for the entire population; A private system exists as an alternative.

Everyone in England can choose a doctor himself. As a rule, these are family multiskilled dentists. Expensive dental treatment, such as prosthetics, the patient partially (50%) pays. There are restrictions on prices for paid services, which are set by the department. The state pays salaries to private doctors in accordance with the contract concluded to serve the population. There is also a private system. There are communal clinics and where patients are sent from private rooms for more complex treatment. Treatment in the state clinics is free.

Question 3. Development of an alternative structure for the organization of systematic dental care to the population.

The existing systems of dental care for the population can not be considered perfect due to a number of disadvantages (advantages and disadvantages of systems are considered in the methodical development №8). It is advisable to propose an alternative system that will exclude these disadvantages and include the advantages of each system.

The alternative structure of a medical-preventive institution consisting of private and communal systems.

Cabinets.

- Therapeutic communal free: paid (in the ratio of 2: 1). In different offices, preferably on different floors (a paid department with its registry on the other floor). There is an endodontic cabinet, periodontology cabinet, preventive cabinet in the paid department.
- Orthopedic
- Surgical

Paid department: therapeutic help is provided to children and adults.
Communal: separate children's therapeutic department, orthopedic

department, orthodontic department (limited). There is no orthodontic paid department, patients can go to private offices for orthodontic care.

Support Services:

- in the communal clinic - X-ray room (dental pictures), dental laboratory,

- in a private clinic - panoramic x-ray pictures, computer visionography, dental laboratory

There is a centralized sterilization department at the state and private reception.

Staff

Therapeutic paid: 1 nurse: 1 doctor (nurse = assistant), 1 nurse: 1 doctor, 2 hygienists in the prevention room.

Therapeutic free: 1 nurse: 1 doctor: 0,5 nurses

Orthopedic paid: 1 nurse: 2 doctors: 1 nurse

Orthopedic free: 1 nurse: 3 doctors: 1 nurse: 1 dental technician

Surgical (paid and free): 1 nursing: 1 doctor: 1 nurse

2 endodontists and 2 periodontists

Types of provided dental care

Communal offices provide all kinds of dental care + prevention at the communal level. All kinds of dental care are free, orthopedic dental care are paid.

Private rooms provide the same services as communal + specialized endodontic, periodontal care, the possibility of an individual prevention program.

The communal system serves all groups of the population on handling. It conducts preventive examinations to children, assists risk groups (pregnant women, people with disabilities), dispensary surveillance of risk groups, and emergency care.

The private system serves on handling.

Table 64. Financing

<i>Communal</i>	<i>Paid</i>
2% of private dental care (from self-supporting institutions)	Self-repayment at the expense of citizens' funds
State budget funds allocated for health care.	State subsidy to the prevention program.

The alternative structure of a medical-preventive institution consisting of insurance and communal systems.

1. Therapeutic department, consisting of 3 communal offices and 2 cabinets provided by the insurance system. In this department, doctors work 6: 4, respectively.

2. Orthopedic department: rooms - 2: 1, doctors - 4: 2
3. Surgical departments: 2 offices on the communal self-financing, 4 doctors work in the offices.

4. Periodontology department: rooms - 2: 1, doctors - 4: 2.

This health facility is joined to the university. The following categories of citizens are served in the insurance system: higher-education teaching personnel and their children under 12 years. Retired (former university staff). Students of this institution and their children under 6 years. Communal: all categories of citizens of the district joined to the polyclinic.

The following types of services are covered by insurance:

- Therapeutic treatment of all forms of caries (modern dental materials will be used during treatment).
- Urgent surgical care (Sol. Ubistesini for anesthesia).
- Orthopedic treatment. All the help is free, except for products made of cermets, precious metals. The patient pays 50% of the cost.
- Periodontology - removal of dental deposits, treatment of the oral mucosa.

The following types of services are covered by communal:

Therapeutic treatment of all forms of caries

Surgical care, except implantation

Orthopedic treatment. All the help is free, except for products made of cermets, precious metals.

Periodontology - removal of dental deposits, treatment of the oral mucosa.

Measures for the introduction and implementation of preventive works.

Motivation, conducting talks, lectures on the topic: "Causes of dental diseases and periodontitis, the role of nutrition in maintaining dental health, oral hygiene and others."

Manufacturing of posters, brochures.

Teaching hygiene of the oral cavity.

Conducting preventive hygiene once a year, distributing fluorine-containing toothpastes, flosses once a year at the expense of the university.

Financing. The insurance part of medical services is provided at the expense of employees' contributions on insurance policies and transferred funds of the university. All other offices are on state cost accounting.

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1. Schoolchildren;
2. Pregnant women;
3. People with disabilities;
4. All listed.

9. What system of dental care is recognized as the most effective in motivating the patient and increasing personal responsibility for one's health?

1. The communal;
2. Insurance;
3. Private.

10. Are there any countries in the world where only a private dental care system works?

1. Yes;
2. No.

Test answers

Questions									
1	2	3	4	5	6	7	8	9	10
Lesson 15									
2	3	1	1	2	2	1	4	3	2

References

1. Leus, P.A. Dental health of the population: study guide / P.A. Leus // Mn.: BSMU, 2009. - 256 p.
2. Leus, P.A. Community Dentistry: work and practical publication for dentists / P.A. Leus // Brest: OJSC "Brest Printing House, 2000. – 284 p.
3. Electronic resources of VSMU E-LEARNING, Educational-methodical complex (Electronic educational-methodical complex for the academic discipline "Community Dentistry").
4. WHO. Dental examination. Basic methods. - 5 th ed. - Geneva: 2013. – 137 p.
5. WHO. Action Plan for the implementation of the European Strategy for the Prevention and Control of Noncommunicable Diseases 2012 - 2016. - Denmark: 2012. - 28 p.
6. Selection of the main indicators of dental health. Catalog - 2005. Original: www.egohid.eu.
7. Leus, P.A. European indicators of dental health / P.A. Leus // Economics and Management in Dentistry, 2011. - №3. - P. 47 - 53.
8. Leus, P.A. WHO criteria for assessment quality system of the dental care / P.A. Leus // Economics and management in stomatology, 2010. - №30. - P. 56-64.
9. Leus, P.A. Preventive community dentistry / P.A. Leus // M.: Medical book, 2008. - 444 p.
10. Leus, P.A. Situational analysis and planning of primary prevention of dental diseases / P.A. Leus // Mn., 1996. - 84 p.
11. Leus, P.A. Evaluation of specificity and informativity of subjective indicators in the definition of dental health of schoolchildren / P.A. Leus, L.P. Kiselnikova // Clinical stomatology, 2014. - №1. - P. 4-8.
12. Leus, P.A. A new interactive indicator of dentistry and its use in scientific research / P.A. Leus. ON. Yudina // Institute of Stomatology, 2010. - №1. - P. 86-87.
13. Leus, P.A. International indicators for monitoring dental health of the population // Dental Journal. - 2013. №1. - P. 6-11.
14. Petersen, P.E. Practical implementation of the WHO global dental program for the elderly in the Republic of Belarus / P.E. Petersen, L.G. Borisenko, P.A. Leus // stomatological magazine, 2005. - №2. - P. 4-8.
15. Popruzhenko, T.V. Prevention of major dental diseases / T.B. Popruzhenko, TN. Terekhova // M.: MEDPRESS-INFORM., 2009. - 464 p.
16. CINDI: protocol and practical guidance. WHO. European Regional Office. - M., 1994. - 102 p.
17. Oral Health Survey. Basic methods, 5th ed. Geneva, World Health Organization, 2013. - 137 p.

18. Marya, C.M. Public Health Dentistry / CM Marya. - India: Jaypee Brothers Medical Publishers, 2012. - 248 p.
19. Shakavets, N.V. Preventive dentistry. Part 1 / N.V. Shakavets, D. N. Naumovich, Zh. M. Burak. – Minsk: BSMU, 2015. – 111 p.
20. Kazeko, L.A. Epidemiological surveys in dentistry / L.A. Kazeko, O.A. Tarasenko. - Minsk: BSMU, 2018. – 36 p.
21. Kazeko, L.A. Situation analysis in dentistry/ L.A. Kazeko, O.A. Tarasenko. - Minsk: BSMU, 2018. – 24 p.

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**КОММУНАЛЬНАЯ СТОМАТОЛОГИЯ:
МЕТОДИЧЕСКИЕ РАЗРАБОТКИ ДЛЯ СТУДЕНТОВ
5 КУРСА СТОМАТОЛОГИЧЕСКОГО ФАКУЛЬТЕТА**

**COMMUNITY DENTISTRY: METHODOICAL
DEVELOPMENTS FOR THE 5TH YEAR STUDENTS
OF STOMATOLOGICAL FACULTY**

Учебно-методическое пособие на английском языке

Редактор Н.А. Байтус
Компьютерная верстка С.В. Суслина

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