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

APPROVED BY

Director of the Institute of Dentistry
_____/ Pervov Yu.Yu./
"8th" of June 2026

COLLECTION OF ASSESSMENT TOOLS

B1.V.EC.03.02 Methods of minimally invasive dental treatment of the basic educational program of Higher Education

Specialty	31.05.03 Dentistry for foreign students (English-language program) (code, name)
Degree	Specialist's degree
Profile	02 "Healthcare" (in the field of providing health care in patients with dental pathology)
Mode of study	Full-time
Period of mastering the BEP	5 years (nominal length of study)
Institute	of Dentistry

Vladivostok, 2026

1. INTRODUCTION

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

1.2. Assessment tools allows to evaluate the development of universal, general professional, and professional competencies (UCs, GPCs and PCs respectively) outlined in Federal State Educational Standard of Higher Education and defined in the basic educational program of higher education for the specialty 31.05.03 Dentistry for foreign students (English-language program), profile 02 "Healthcare" (in the field of providing health care in patients with dental pathology).

([BEP HE for the 31.05.03 Dentistry for foreign students \(English-language program\)](#) specialty, section 3 Learning Outcomes Requirements of the Basic Educational Program of Higher Education)

2. DOCUMENT BODY

2.1. Types of Assessment, Formats of Assessment Tools

No.	Types of assessment	Assessment Tools Format
1	Continuous assessment	Interview Questions
		Tests
		Mini-Case Studies
		Checklist
2	Interim assessment	Tests

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

Interview questions

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.03	Dentistry for foreign students (English-language program)
C	PC-2	ability to administer and apply modern methods and/or digital technologies to treat dental patients as well as monitor the effectiveness and safety of the treatment
F	A/02.7	Prescribing and monitoring the effectiveness and safety of non-pharmacological and pharmacological therapies
I		ANSWER THE QUESTIONS
		1. Histogenesis of dental tissues. Development of dentin and enamel. 2. Histogenesis of dental tissues. Development of cementum and tooth root. 3. Pathological anatomy of caries in the spot stage according to S.P. Onishchenko and V.P. Zelenovsky. 4. De- and remineralization processes in tooth enamel. Their role in the development of dental caries. Diagnosis of focal demineralization. 5. The role of fluorides in increasing caries resistance of hard dental tissues

		6. Indications for choosing minimally invasive treatment methods. 7. Necessary examination methods before minimally invasive caries treatment. 8. Indications and contraindications for BATE-CAVE preparation. 9. Indications and contraindications for SLOT preparation, 10. Indications and contraindications for tunnel restoration. 11. Types of tunnel restoration 12. Selection of filling materials for filling cavities of different classes 13. Protocols for medicinal treatment of cavities during minimally invasive preparation 14. Features of drug treatment during minimally invasive preparation 15. of the frontal teeth using the Icon material infiltration method 16. Indications for treatment by infiltration method using the material "Icon" of the lateral group of teeth and contact surfaces 17. Modification of tunnel restoration. 18. BATE-CAVE design 19. Indications for slit restoration 20. Indications for hemetizing restoration 21. Indications and contraindications for the ART method. 22. Tools used in the ART method 23. Methods of working with hand tools according to the recommendations of BelMAPO
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Assessment criteria

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

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

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

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

Tests for continuous and interim assessment

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.03	Dentistry for foreign students (English-language program)
C	PC-2	ability to administer and apply modern methods and/or digital technologies to treat dental patients as well as monitor the effectiveness and safety of the treatment
F	A/02.7	Prescribing and monitoring the effectiveness and safety of non-pharmacological and pharmacological therapies
I		ANSWER LEVEL 1 TEST QUESTIONS (ONE CORRECT ANSWER)

	1. The prerequisite for the emergence of minimally invasive methods of treating dental caries was - introduction of amalgam for filling carious teeth - development and implementation of silicate cements into dental practice preventive dentistry and development of adhesive materials 2. The following methods of treating dental caries are based on the principles of minimally invasive intervention and maximum preservation of healthy dental tissue - invasive sealing - preventive filling - ART method - tunnel restoration all of the above 3. Minimally invasive methods of treating dental caries are characterized by preventive expansion of the carious cavity - maximum preservation of tooth tissue - creation of a stable retention form of the cavity - creation of additional retention points 4. The instruments used in the ART method of treating dental caries include - high speed handpiece and diamond burs low speed handpiece and carbide burs - excavator, enamel knife, carver 5. The following filling material is used in the ART method of treating dental caries - amalgam - chemically cured composite material - photopolymerizable composite material SIC 6. Preparation of cavities with minimally invasive intervention can be performed - under local anesthesia - without local anesthesia under anesthesia if necessary 7. Cavities that are treated using invasive sealing are located in - pits on incisors and canines - pits and fissures on the chewing surfaces of molars and premolars - intertubercular fissures and pits on the vestibular and oral surfaces of the molars all of the above 8. Invasive sealing is used when the lesion is localized on occlusal surface - approximal surface - cervical region - cutting edge 9. Methods for preparing carious cavities using minimally invasive interventions include
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		a) laser application b) use of ultrasonic scalers c) air abrasion d) classical preparation with burs
	10.	For preparation during invasive sealing, small sized burs with the following markings are used a) yellow and red b) green and blue c) yellow and white
	11.	ART-method of treating dental caries is recommended for a) small children b) mentally disabled people c) patients with severe general somatic pathology, for example, after acute heart attacks and strokes d) all of the above
	12.	The tunnel preparation method is used to localize carious lesions a) on occlusal surfaces of the molars b) on vestibular surfaces of incisors and canines c) on approximal surfaces of premolars and molars d) the location of the lesion does not matter
	13.	The tunnel preparation method is characterized by a) preparation of hard dental tissues beginning with the occlusal surface b) the marginal ridge preservation c) filling the cavity with glass ionomer cement d) all of the above
	14.	Tunnel restoration is contraindicated in cases of ____ intensity of dental caries a) low b) high c) doesn't matter
	15.	The most common complications observed in tunnel restoration of dental caries are a) marginal ridge fracture b) secondary caries c) there are no complications
	16.	Cavities that are treated using invasive sealing are located in a) pits on incisors and canines b) pits and fissures on the chewing surfaces of molars and premolars c) intertubercular fissures and pits on the vestibular and oral surfaces of the molars
	17.	How to translate the ART method a) Atraumatic preparation of dentin b) Atraumatic enamel preparation c) Atraumatic preparation of enamel and dentin d) Painless treatment e) Atraumatic restorative treatment

		18. What filling materials are used in the ART method - Zinc phosphate cements - Silicophosphate cements - Amalgam Chemically cured composite materials - Glass ionomer cements - low modulus composites 19. Specify the correct general indications for the use of ART methods childhood patients with severe general diseases - preparation of teeth for support of fixed denture structures - patients who have contraindications to the use of anesthetics the patient's categorical refusal of machine preparation 20. Which of the following instruments are used for preparation in the ART technique - spherical diamond machine burs Pro Taper (S1, S2, Sx, F1, F2) - enamel knife carbide spherical bur drill bit - excavator
I		ANSWER LEVEL 2 TEST QUESTIONS (MULTIPLE CORRECT ANSWERS)
		1. Bonding systems include: - orthophosphoric acid - primer and adhesive - hydrochloric acid - hydrofluoric acid - polyacrylic acid 2. Temporary filling materials: - phosphate - cement - glass ionomer cement (GIC) - dentin paste - aqueous dentin - composite 3. Filling materials must have: - good adhesion - stain tooth tissues - high toxicity - resistance to oral fluid - great hardness 4. The following materials are used as insulating gaskets: - silicate - zinc sulfate - silicophosphate - glass ionomer - composite
I		ANSWER LEVEL 3 TEST QUESTIONS (MATCHING QUESTIONS)

		1. Match treatment methods with the amount of tissue removed 1) Atraumatic restorative therapy (ART) 2) Treatment of caries according to Black 3) Fissurotomy A) ensuring the maximum possible preservation of tooth tissue B) expansion for the sake of warning C) only excision of the softened fissure 2. Match the tools and treatment method 1) Fissure bur 2) Blunt tip bur, reverse truncated 3) Three-blade excavator A) Black's treatment B) fissurotomy C) ART technique 3. Match the cutting tools and their purpose 1) chisel 2) knife (hatchet) 3) excavator A. remove demineralized enamel B. chipping and cutting of enamel B. for working with dentin
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Assessment criteria

“Very good” - more than 91% correct answers of questions of every level

“Good” - 81-90% correct answers of questions of every level

“Satisfactory” - 71-80% correct answers of questions of every level

“Unsatisfactory” - less than 71% correct answers of questions of every level

Standardized case studies and checklists for **B1.V.EC.03.02 Methods of minimally invasive dental treatment** course

Case Study No. 1

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.03	Dentistry for foreign students (English-language program)
C	PC-2	ability to administer and apply modern methods and/or digital technologies to treat dental patients as well as monitor the effectiveness and safety of the treatment
F	A/02.7	Prescribing and monitoring the effectiveness and safety of non-pharmacological and pharmacological therapies
I		READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS Patient F., 29, presented for a preventive examination and has no complaints. His medical history indicates that he saw a dentist for the first time in four years. Objectively, tooth 36 has a medium-depth carious cavity on the occlusal surface of the distal buccal cusp, filled with pigmented and softened dentin. Probing along the walls of the cavity is painful. Percussion of the tooth is painless. The reaction to cold is short-lived. The oral mucosa is pale pink, and no lesions are detected.

			
Q	1	Question: Make a preliminary diagnosis	
Q	2	Question: Specify the necessary additional examination methods	
Q	3	Question: Conduct differential diagnostics	
Q	4	Question: Make a treatment plan	
Q	5	Question: Characterize the class of this carious cavity in accordance with Black's classification	

Case Study No.1 Checklist

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.03	Dentistry for foreign students (English-language program)
C	PC-2	ability to administer and apply modern methods and/or digital technologies to treat dental patients as well as monitor the effectiveness and safety of the treatment
F	A/02.7	Prescribing and monitoring the effectiveness and safety of non-pharmacological and pharmacological therapies
I		READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS Patient F., 29, presented for a preventive examination and has no complaints. His medical history indicates that he saw a dentist for the first time in four years. Objectively, tooth 36 has a medium-depth carious cavity on the occlusal surface of the distal buccal cusp, filled with pigmented and softened dentin. Probing along the walls of the cavity is painful. Percussion of the tooth is painless. The reaction to cold is short-lived. The oral mucosa is pale pink, and no lesions are detected.

			
Q	1	Question: Make a preliminary diagnosis	
A		Correct answer: Moderate caries. Based on: 1. Complaints (none) 2. Anamnesis (came for the first time in 4 years for a professional examination) 3. Objective data: a medium-depth carious cavity filled with pigmented and softened dentin on the occlusal surface of the distal buccal cusp. Probing along the walls of the cavity is painful. Percussion of the tooth is painless. The reaction to cold is short-lived.	
R2	Very good	All descriptors of the correct answer have been listed	
R1	Good/Satisfactory	3 descriptors of the correct answer have been listed	
		1-2 descriptors of the correct answer have been listed	
R0	Fail	No descriptors of the correct answer have been listed	
Q	2	Question: Specify the necessary additional examination methods	
A		Correct answer: 1. X-ray 2. EOD 3. Transillumination	
R2	Very good	All descriptors of the correct answer have been listed	
R1	Good/Satisfactory	2 descriptors of the correct answer have been listed	
		1 descriptor of the correct answer have been listed	
R0	Fail	No descriptors of the correct answer have been listed	
Q	3	Question: Conduct differential diagnostics	
A		Correct answer: 1. Superficial caries 2. Deep caries 3. Chronic periodontitis	
R2	Very good	All descriptors of the correct answer have been listed	
R1	Good/Satisfactory	2 descriptors of the correct answer have been listed	
		1 descriptor of the correct answer has been listed	
R0	Fail	No descriptors of the correct answer have been listed	
Q	4	Question: Make a treatment plan	
A		Correct answer: 1. Antiseptic treatment of the oral cavity (chlorhexidine, hexoral)	

		2. Anesthesia (application anesthesia of the mucous membrane of the left branch of the lower jaw Sol. Lidocaine 5-15% aerosolum. Mandibular anesthesia Sol. Ubistersine-4%) 3. Preparation of the cavity and medical treatment (2% chlorhexidine) 4. Filling 5. Grinding and polishing (micro and macro contouring) of fillings
R2	Very good	All descriptors of the correct answer have been listed
R1	Good/Satisfactory	3-4 descriptors of the correct answer have been listed 1-2 descriptors of the correct answer has been listed
R0	Fail	No descriptors of the correct answer have been listed
Q	5	Question: Characterize the class of this carious cavity in accordance with Black's classification
A		Correct answer: 1. VI. Cavities on the cutting edge of the anterior teeth and on the cusp tips of the posterior teeth 2. The pathology is rare. 3. In the local form, filling is carried out without changing the bite height.
R2	Very good	All descriptors of the correct answer have been listed
R1	Good/Satisfactory	2 descriptors of the correct answer have been listed 1 descriptor of the correct answer has been listed
R0	Fail	No descriptors of the correct answer have been listed

4. Assessment criteria for learning outcomes

"Pass" is given to a student who has shown a sufficiently strong knowledge of the basic concepts of the subject; is able to complete specific practical tasks outlined in the program with no outside help, use recommended reference material, and correctly evaluate the results.

"Fail" is given to a student who has significant gaps in knowledge of the basic concepts of the subject, is not able reach the correct solution to a specific practical task outlined in the curriculum even with outside help.

Practical Skills Assessment Checklist

Practical Skill Name: Treatment with the ICON method

C	PC-2	ability to administer and apply modern methods and/or digital technologies to treat dental patients as well as monitor the effectiveness and safety of the treatment	
F	A/02.7	Prescribing and monitoring the effectiveness and safety of non-pharmacological and pharmacological therapies	
	Action	Performed	Not Performed
1.	Determine the indication for the method	1 point	-1 point
2.	Name the main instruments and tools for carrying out the method	1 point	-1 point
3.	Determine contraindications	1 point	-1 point
4.	Conduct the method	1 point	-1 point
5.	Determine the criteria for the effectiveness of the method	1 point	-1 point
	Total	5 points	

Assessment criteria:

"Pass" - at least 75% of required actions performed

"Fail" - 74% of required actions or less performed