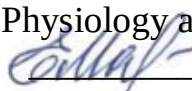


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Federal State Budget Educational Institution
of Higher Education
Pacific State Medical University
of the Ministry of Health of the Russian Federation

APPROVED BY
Head of the Department of Human
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 / Markelova E.V /
“17th” of April 2026

COLLECTION OF ASSESSMENT TOOLS

B1.C.14 Immunology of the basic educational program of Higher Education

Specialty	31.05.01 General Medicine (English-language program) (code, name)
Degree	Specialist's degree
Profile	02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system)
Mode of study	Full-time
Period of mastering the BEP	6 years (nominal length of study)
Department	of Human Physiology and Pathophysiology

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 31.05.01 General Medicine, profile 02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system).

([BEP HE for the 31.05.01 General Medicine \(English-language program\)](#), 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	Tests
		Interview Questions
		Mini-Case Studies
		Checklists
2	Interim assessment	Interview Questions
		Mini-Case Studies

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

Tests for continuous and interim assessment

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.01	General Medicine (English-language program)
C	UC-1	Able to carry out critical analysis of professional workplace challenge applying systematic approach and develop an action strategy
C	GPC-5	Able to assess morphofunctional status, physiological states, and pathological processes in the human body when working to achieve objectives of professional activity
I		ANSWER LEVEL 1 TEST QUESTIONS (ONE CORRECT ANSWER)
		1. Primary organs of the immune system include +1) bone marrow; 2) spleen; 3) liver; 4) Peyer's patches. 2. Which factor does not belong to thymus hormones? 1) thymosin; 2) thymopoietin; 3) serum thymic factor;

		+4) myelopid. 3. Cytokines are 1) lymphokines only; +2) peptide mediators of intercellular interaction; 3) immunoglobulins; 4) adhesins. 4. Which cells are not involved in the secondary immune response? 1) T-lymphocytes; 2) B-lymphocytes; 3) monocytes; +4) stem cells. 5. Which function is not typical for macrophages? 1) secretory function; +2) immunoglobulin synthesis; 3) antigen presentation; 4) phagocytosis. 6. What initiates the classical pathway of complement activation? 1) bacteria; +2) antigen-antibody complex; 3) C-reactive protein; 4) IL-1. 7. Which immunoglobulins participate in reagin-type allergic reactions? 1) IgM; 2) IgA; 3) IgD; +4) IgE. 8. Which studies belong to second-level tests for assessing immune status? 1) cytokine determination; +2) functional activity of T-lymphocytes; 3) immunoglobulin determination; 4) assessment of macrophage secretory function
		ANSWER LEVEL 2 TEST QUESTIONS (MULTIPLE CORRECT ANSWERS)
		1. Primary organs of the immune system include a) blood; b) lymphatic vessels; +c) bone marrow; d) spleen; +e) thymus. 2. IFN-gamma is produced by +a) Th1 cells; b) Th2 cells; +c) natural killer cells; d) B-lymphocytes; e) macrophages.

	3. Complement components involved in bacteriolysis include a) C3; b) C5a; c) C1; +d) C7; +e) C8; +f) C9. 4. Cellular immune defense protects against +a) intracellular bacteria; b) extracellular bacteria; +c) viruses; +d) fungi; +e) tumor cells. 5. Tests for humoral factors of immune response include a) phagocytosis; +b) IgM, IgG and IgA determination; +c) tests of specific antibody formation; +d) ELISA determination of IgE; +e) determination of specific IgE.
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Assessment criteria

“Very good” - more than 80% correct answers of questions of every level

“Good” - 70-80% correct answers of questions of every level

“Satisfactory” - 60-70% correct answers of questions of every level

“Unsatisfactory” - less than 60% correct answers of questions of every level

Interview questions

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.01	General Medicine (English-language program)
C	UC-1	Able to carry out critical analysis of professional workplace challenge applying systematic approach and develop an action strategy
C	GPC-5	Able to assess morphofunctional status, physiological states, and pathological processes in the human body when working to achieve objectives of professional activity
I		ANSWER THE QUESTIONS 1. Brief historical overview of the development of immunology. 2. Subject, goals and tasks of immunology. 3. General characteristics of the immune system. 4. Structure and characteristics of central and peripheral organs of the immune system. 5. Concept of immunity. Innate immunity. Active and passive forms of immunity. 6. Adaptive immunity and its role in protection against infectious diseases. 7. Protective function of the skin and mucous membranes. 8. Role of normal human microbiota in protection against infection. 9. Complement system, pathways of activation and mechanisms of action.

	10. Humoral and cellular variants of immune response. 11. Antigen processing and its role in immune response development. 12. T-lymphocytes and B-lymphocytes in immune responses. 13. Immunological memory. Primary and secondary immune response. 14. Concept of antigens. General properties of antigens. 15. Immunoglobulin classes and their functions. 16. Antigen-antibody interaction. Affinity and avidity. 17. Enzyme-linked immunosorbent assay. 18. Immunoblotting. 19. Hypersensitivity reactions. 20. Autoimmunity and loss of immunological tolerance. 21. Primary and secondary immunodeficiency states. 22. Mucosal immunity and secretory IgA. 23. Modern immunodiagnostics and interpretation of immune status.
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Assessment criteria

"Very good" grade is given to a student who has provided comprehensive, logical and complete answer.

"Good" is given to a student who has provided a generally correct answer with minor gaps.

"Satisfactory" is given to a student who demonstrates basic understanding of the material with inaccuracies.

"Unsatisfactory" is given to a student who has not mastered the required minimum knowledge.

Standardized case studies and checklists for the **B1.C.14 Immunology** course

Case Study No. 1

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.01	General Medicine (English-language program)
C	UC-1	Able to carry out critical analysis of professional workplace challenge applying systematic approach and develop an action strategy
C	GPC-5	Able to assess morphofunctional status, physiological states, and pathological processes in the human body when working to achieve objectives of professional activity
I		READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS A 45-year-old male patient was admitted into a hospital with general weakness, shortness of breath with progressive respiratory failure, fever lasting more than one month, chills, excessive sweating, persistent exhausting cough, diarrhea for more than one month and unexplained weight loss of 10%. Examination revealed anemia, leukopenia and thrombocytopenia. Chest X-ray showed multiple focal shadows described as a "cotton-like lung" pattern. Pneumocystis organisms were detected in respiratory tract material.
Q	1	Question: What syndrome complex can be suspected in this patient?
Q	2	Question: Indicate the possible cause or causes of its development.
Q	3	Question: Give a complete characterization of this syndrome complex.
Q	4	Question: Explain the mechanisms of the symptoms presented in the case.

Q	5	Question: Describe the principles of treatment for this syndrome complex.
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Case Study No.1 Checklist

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.01	General Medicine (English-language program)
C	UC-1	Able to carry out critical analysis of professional workplace challenge applying systematic approach and develop an action strategy
C	GPC-5	Able to assess morphofunctional status, physiological states, and pathological processes in the human body when working to achieve objectives of professional activity
I		READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS A 45-year-old male patient was admitted into a hospital with general weakness, shortness of breath with progressive respiratory failure, fever lasting more than one month, chills, excessive sweating, persistent exhausting cough, diarrhea for more than one month and unexplained weight loss of 10%. Examination revealed anemia, leukopenia and thrombocytopenia. Chest X-ray showed multiple focal shadows described as a "cotton-like lung" pattern. Pneumocystis organisms were detected in respiratory tract material.
Q	1	Question: What syndrome complex can be suspected in this patient?
Q	2	Question: Indicate the possible cause or causes of its development.
Q	3	Question: Give a complete characterization of this syndrome complex.
Q	4	Question: Explain the mechanisms of the symptoms presented in the case.
Q	5	Question: Describe the principles of treatment for this syndrome complex.
A		Correct answer: The case is consistent with secondary immunodeficiency with opportunistic Pneumocystis pneumonia. The syndrome may be associated with acquired immune deficiency, including HIV infection. Mechanisms include impaired cellular immunity, reduced resistance to opportunistic pathogens, chronic infection and systemic inflammatory response. Treatment principles include etiological therapy, management of opportunistic infection, immunological assessment and correction of immune dysfunction according to clinical guidelines.
R2	Very good	Correct answer is given
R0	Fail	No answer, incorrect or irrelevant answer is given

Case Study No. 2

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.01	General Medicine (English-language program)
C	UC-1	Able to carry out critical analysis of professional workplace challenge applying systematic approach and develop an action strategy

C	GPC-5	Able to assess morphofunctional status, physiological states, and pathological processes in the human body when working to achieve objectives of professional activity
I		READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS A 37-year-old female patient consulted a neurologist because of severe weakness, rapid fatigue, ptosis, diplopia and a lump-in-the-throat sensation when swallowing. The complaints had been increasing for two months. Sensitivity, reflexes and coordination were preserved; motor activity of facial muscles was markedly decreased and skeletal muscle activity was reduced. The patient has rheumatoid arthritis since adolescence and receives treatment from a rheumatologist.
Q	1	Question: What possible form of pathology can be suspected and what are the mechanisms of damage?
Q	2	Question: What additional diagnostic tests should be performed in this case?

Case Study No.2 Checklist

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.01	General Medicine (English-language program)
C	UC-1	Able to carry out critical analysis of professional workplace challenge applying systematic approach and develop an action strategy
C	GPC-5	Able to assess morphofunctional status, physiological states, and pathological processes in the human body when working to achieve objectives of professional activity
I		READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS A 37-year-old female patient consulted a neurologist because of severe weakness, rapid fatigue, ptosis, diplopia and a lump-in-the-throat sensation when swallowing. The complaints had been increasing for two months. Sensitivity, reflexes and coordination were preserved; motor activity of facial muscles was markedly decreased and skeletal muscle activity was reduced. The patient has rheumatoid arthritis since adolescence and receives treatment from a rheumatologist.
Q	1	Question: What possible form of pathology can be suspected and what are the mechanisms of damage?
A		Correct answer: The patient may have an autoimmune disorder of neuromuscular transmission clinically corresponding to myasthenic syndrome / myasthenia gravis. The mechanism is associated with autoantibodies to structures of the neuromuscular junction, most commonly acetylcholine receptors of the postsynaptic membrane, which disrupts impulse transmission and leads to muscle weakness, ptosis, diplopia and dysphagia.
Q	2	Question: What additional diagnostic tests should be performed in this case?
A		Correct answer:

	Additional diagnostics should include testing for antibodies to acetylcholine receptors and/or MuSK, evaluation of neuromuscular transmission, neurologist consultation, assessment of immune status and interpretation of inflammatory markers together with the clinical picture.
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Very good	Correct answer is given
Good/Satisfactory	Correct formula is used, but there is an error in calculations
Fail	No answer, incorrect or irrelevant answer is given

Examples of topics for discussions:

1. Innate and adaptive immunity as complementary defense systems.
2. Clinical significance of cytokines in immune regulation and inflammation.
3. Role of antigen-presenting cells in immune response formation.
4. Complement system in protection and tissue injury.
5. Immunological memory and vaccination.
6. Mucosal immunity and the role of microbiota.
7. Primary and secondary immunodeficiency states in clinical practice.
8. Hypersensitivity reactions and their diagnostic significance.
9. Autoimmunity and loss of immunological tolerance.
10. Modern immunodiagnostics and interpretation of immune status.

4. Assessment criteria for learning outcomes

"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.