MINISTRY OF HEALTH OF UKRAINE
NATIONAL PIROGOV MEMORIAL MEDICAL UNIVERSITY

«APPROVED»
at Methodical Meeting
of pediatric disciplines
Protocol № 8 «21» _03_ 2025
The Head
_____ Veronika DUDNYK

« AGREED »
Head of Examination
Commission № 1
«_21_» ____03_____2025 p
_____ Anna DEMCHUK

EXAMINATION MATERIALS

STATION № 8 «EMERGENCY CONDITIONS IN PEDIATRICS» OSP(C)I

SPECIALTY	**222 Medicine**
EDUCATIONAL PROGRAM	**«Medicine»**
FACULTY	**Faculty of Foreign Citizens Training**

Vinnitsa - 2025

APPLICATIONS OF EXAMINATION MATERIALS

1. Instructions for students at the station (Appendix 1)
2. List of practical skills (Appendix 2)
3. Algorithms for practical skills (Appendix 3)
4. Sample task (Appendix 4)
5. Regulatory documents (Appendix 5)

Appendix 1

INSTRUCTION OF STUDENTS AT STATION № 8 "EMERGENCY CONDITIONS IN PEDIATRICS"

The applicant for higher education at the station **must:**

- greeting, introduce yourself and say that you should examine the child
- assess the patency of the respiratory tract and ensure their patency, as well as prescribe interventions in accordance with the findings
- determine RR, respiratory pattern, recognize respiratory noises, measure SpO2, perform lung auscultation, and prescribe interventions according to findings
- determine the color of the skin, the presence and frequency of the pulse, compare the pulse on the central and peripheral arteries, determine BP, the time of capillary filling, pulsation of the jugular veins, liver enlargement, and also prescribe interventions in accordance with the findings
- assess the state of consciousness by AVPU/GCS, determine the reaction of the pupils to light, determine the level of glucose, and also prescribe interventions in accordance with the findings
- assess skin for rash, trauma, injection marks, etc., measure body temperature, and prescribe interventions according to findings
- collect additional information (complaints and history) on SAMPLE
- assign blood sampling for the level of electrolytes, glucose, blood gases
- analyze cardiac monitoring indicators and determine the rhythm
- identify an emergency condition
- identify tactics and treatment
- define prevention
- wait for the signal about the expiration of the time spent at the station, leave the station and go to the next

The applicant for higher education at the station **is prohibited:**

- communicate with the examiner;
- Use training and support materials;
- use gadgets;
- transmit, copy, and distribute any information relating to the exam and is not publicly available.

Note. In case of violation of the above norms by the applicant for higher education, the exam is terminated, the score for passing the exam is "not passed" (violation of the rules of academic integrity)

TO HAVE gloves, phonendoscope.

Appendix 2

LIST OF PRACTICAL SKILLS AT THE STATION

№	Diagnosis	Symptom	Manipulation	Diagnostics

1	Cardiac arrest, non-shock rhythm (asystole)	Loss of consciousness	Assessment of general condition and clinical examination of children with various somatic diseases Differential diagnosis of the leading syndrome Evaluation of vital parameters according to the ABCDE scheme in a child with a suspected severe disease or signs of shock. Assessment of airway patency and measures to restore or maintain them - installation of an oropharyngeal, nasopharyngeal tube, laryngeal mask Assessment of the breathing of a pediatric patient in critical condition, determination of basic breathing parameters, determination of the type of breathing disorder Conducting interventions and stabilizing the condition of a critical patient with respiratory disorders - oxygen therapy, mechanical ventilation of the lungs using an Ambu bag Assessment of the circulation of a pediatric patient in critical condition, determination of the main parameters of	Identification of rhythm and conduction disturbances on a standard ECG and/or cardiac monitor, assessment of shock and non-shock rhythms.
2	Paroxysmal tachycardia with narrow complexes, hemodynamically stable	Compression/pain behind the sternum, dizziness, feeling of lack of air, loss of consciousness, palpitations, dizziness		
3	Paroxysmal tachycardia with narrow complexes, hemodynamically unstable			
4	Paroxysmal tachycardia with broad complexes, hemodynamically stable			
5	Anaphylactic shock	Hypotension, dyspnea, rash, edema		
6	Hypovolemic shock	Vomiting, diarrhea, loss of consciousness		
7	Poisoning with an unknown substance	Hypoxia, bradypnea		
8	Diabetic ketoacidosis	Thirst, polyuria, nausea, abdominal pain, vomiting, drowsiness		
9	Severe hypoglycemia	Hunger, sweating, irritability, headache, then dizziness, loss of consciousness, convulsions		
10	Febrile seizures	Convulsions		
11	Severe exacerbation of asthma	Shortness of breath		
12	Beta-blocker poisoning	Confused consciousness, bradycardia		

			central and peripheral circulation, determination of the type of shock Interventions and stabilization of a critical patient with circulatory disorders - CPR, heart defibrillation, synchronized cardioversion Calculation of the dose and administration of drugs: adrenaline, adenosine, amiodarone, atropine, KCl 7.5%, NaCl 0.9%, glucose solution 10%, dexamethasone, tranexamic acid, salbutamol, insulin, glucagon. Assessment of the consciousness of a pediatric patient in critical condition - AVPU, check of pupils, glucose level Assessment of the influence of environmental factors of a pediatric patient in critical condition: bleeding, trauma, rash, body temperature. Assessment, detection and correction of reverse causes of cardiac arrest - 4G-4T Secondary assessment of the patient's condition according to the SAMPLE scheme. Conducting basic life support activities for a	

			young child and adolescents with/without the use of an automatic external defibrillator.	

Appendix 3

ALGORITHMS OF PRACTICAL SKILLS EXECUTION

Applicant HE at the station with a standardized patient must:

- say hello, introduce yourself and say that you should examine the child
- assess the patency of the respiratory tract and ensure their patency, as well as prescribe interventions in accordance with the findings
- determine BH, respiratory pattern, recognize respiratory noises, measure SpO2, perform lung auscultation, and prescribe interventions according to findings
- determine the color of the skin, the presence and frequency of the pulse, compare the pulse on the central and peripheral arteries, determine BP, the time of capillary filling, pulsation of the jugular veins, liver enlargement, and also prescribe interventions in accordance with the findings
- assess the state of consciousness by AVPU/GCS, determine the reaction of the pupils to light, determine the level of glucose, and also prescribe interventions in accordance with the findings
- collect additional information (complaints and history) on SAMPLE
- assign blood sampling for the level of electrolytes, glucose, blood gases
- analyze cardiac monitoring indicators and determine the rhythm
- identify an emergency condition
- identify tactics and treatment
- define prevention

Appendix 4

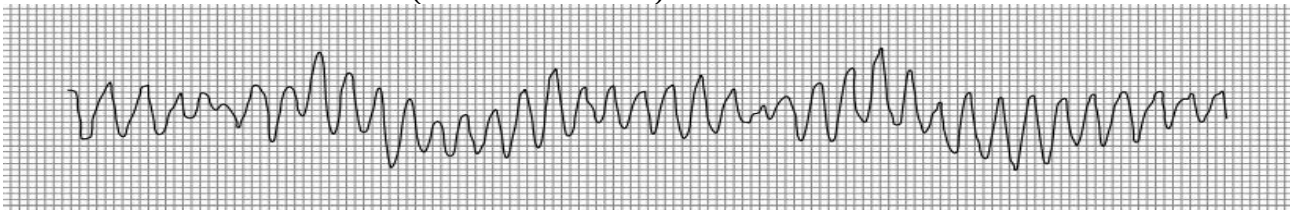
SAMPLE TASKS

Station №. 8 "Emergency conditions in pediatrics"

Clinical situation № 1

A 9-year-old girl with diabetes was accidentally injected with a much larger dose of insulin, delivered to the admission department with confused consciousness. At the time of examination: there is no consciousness, the girl is on examination, pain stimuli do not respond. Airways are passable, no breathing. Pulse is absent on the central and peripheral arteries, AT - is not determined. There is no reaction of the pupils to light. The skin is clean, cyanotic.

Indicators of the cardiomonitor (II standard branch):



1. Show communication skills
2. Assess the patient's condition

3. Collect complaints and history (by SAMPLE)
4. Assign the necessary list of laboratory and instrumental tests
5. Stabilize the patient
6. Prevention

Tutor-student dialogue script

Primary patient assessment (pediatric triangle):
Consciousness - no reaction to voice and pain stimuli
Breathing -no breathing
Skin color - cyanotic

Start CPR
Cardiac monitor connection (rhythm assessment - ventricular fibrillation)
Ensuring venous access

Assessment after recovery of sinus rhythm:
Step A - Airway passable
Step B - spontaneous breathing, 17 per minute, SpO2 - 85%
Step C - the skin is pale, with a marble tint, the pulse is determined, on the central and peripheral arteries, AT - 75/45 mm Hg, the capillary filling time is 3 s.
Step D - the girl reacts to the examination, slowly answers the questions, the reaction of the pupils to light is present and symmetrical, the capillary blood glucose is 2.8 mmol/l
Step E - body temperature 36 ° C, skin clean, no signs of injury

Results of laboratory and instrumental methods of examinations:
Blood glucose - 2.8 momol/L
Blood gases are the norm
K - 4.7 mmol/L
Na - 147 mmol/L

Complaints and medical history:
S - has diabetes, accidentally injected a much higher dose of insulin
A - no allergies
M - insulin administration an hour ago
P - diabetes mellitus, there were no such conditions before
L - last meal 4 hours ago
E - administered a higher dose of insulin than usual

CHECKLIST OF OSP (K) I STATION EVALUATION

Practical skills	Scores per skill	Applicant Score
Communication	**0,75**	
Greeting	0,15	
Introduced himself	0,3	
Informed that he should interview the patient and examine	0,3	
Manipulation	**1,5**	

Initial assessment of the patient (pediatric triangle): the level of consciousness, the presence of breathing was checked and the skin color was evaluated	0,15	
Step A - an assessment of the patency of the respiratory tract and their patency is ensured. Assigned interventions according to findings	0,15	
Step B - determined RR, respiratory pattern, recognized respiratory noise, measured SpO2, performed lung auscultation. Assigned interventions according to findings	0,3	
Step C - the color of the skin, the presence and pulse rate, the pulse on the central and peripheral arteries are determined, the blood pressure, the time of capillary filling, the pulsation of the jugular veins, and the liver enlargement are determined. Assigned interventions according to findings	0,3	
Step D - assessment of the state of consciousness by AVPU/GCS was carried out, the reaction of the pupils to light was determined, the level of glucose was determined. Assigned interventions according to findings	0,3	
Step E - the skin was evaluated for rash, trauma, injection marks, etc., body temperature was measured. Assigned interventions according to findings	0,3	
Patient complaints and history	**1,65**	
Additional SAMPLE information collected		
What happened to you? Why did you call ambulance?	0,15	
Does the child have allergies?	0,3	
Have medications been used lately? If so, which ones	0,3	
Was this condition before? Are there chronic diseases?	0,3	
The time of the last meal and what exactly?	0,3	
What events preceded the deterioration of the condition?	0,3	
Diagnostics	**0,75**	
Blood sampling for electrolytes, glucose, blood gases	0,15	
Analysis of cardiomonitoring parameters: ventricular fibrillation was recognized.	0,3	
Emergency identified - cardiac arrest, shock rhythm, hypoglycemia	0,3	
Tactics and treatment	**0,75**	
CPR started	0,15	
4 J/kg defibrillation is provided	0,15	
Prescribed IV or IO administration of epinephrine (1:10000) 0,01mg/kg with repeated administration every 3-5 minutes, if necessary	0,15	
Prescribed IV amiodarone 5 mg/kg, with repeated administration after 3-5 minutes, if necessary	0,15	
Prescribed glucose IV injection 10% 2 ml/kg bolus	0,15	

Prevention	**0,6**	
Compliance with diet and physical activity	0,3	
Compliance with insulin therapy	0,3	
Maximum scores per station	**6,0**	**###**
The amount of applicant scores	###	

Appendix 5

REGULATORY DOCUMENTS (only for the last 5 years)

on the basis of which clinical cases were created.

1.European Resuscitation Council Guidelines 2021. Perkins, Gavin D.Ainsworth, S. et al. Resuscitation, Volume 161, 1 – 60

2.Order of the Ministry Health of Ukraine from 09.03.2022 № 441 "On Approval of Procedures for the Provision of Pre-Medical Care to Persons in Emergency Situations"