Appendix 1

Ministry of Science and Higher Education of the Russian Federation
Ministry of Education and Science of the Kyrgyz Republic

Interstate Educational Institution of Higher Education "Kyrgyz-Russian Slavic University named after the First President of the Russian Federation B.N. Yeltsin"

Assessment Toolkit for the Discipline (Practice)

Title: Pediatric Surgery

Level of Higher Education

SPECIALIST

Field of Study

31.05.01_26_1 General Medicine

(Code and Title of the Field of Study)

Specialty RF - 31.05.01, KR - 560001 General Medicine

Qualification

Physician

Bishkek 2026

The Assessment Toolkit is designed to monitor student learning outcomes in the discipline (practice) for the field of study / specialty RF - 31.05.01, KR - 560001 General Medicine.

Pediatric Surgery

name

The Assessment Toolkit was reviewed and approved at the meeting of the Department of Pediatrics and Pediatric Surgery, minutes No. 1 dated "26" 08 2026

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1. LIST OF COMPETENCIES INDICATING STAGES OF THEIR FORMATION IN THE PROCESS OF MASTERING THE DISCIPLINE

Competencies to be formed	Planned learning outcomes in the discipline characterizing the stages of competency formation	Types of assessment tools / Section code in this document
PC-9 Readiness to manage and treat patients with various nosological forms in outpatient settings and day-care hospital conditions	**Know:** • Etiology, pathogenesis, and clinical features of major diseases with various nosological forms. • Main types and methods of treatment for patients with various nosological forms. • Methods of management and treatment of patients with various nosological forms in outpatient settings and day-care hospital conditions.	**Block A, D -** Reproductive level tasks. Interview questions. Test items (MCQs). Closed-ended tasks. Verification of knowledge of terminology, classifications, regulatory acts, and medical devices. [L1.1, L1.2, L1.3, L1.4], [L2.1, L2.2, L2.3, L2.4, L2.6, L2.7, L2.8, L2.9], [L3.1, L3.2, L3.3, L3.4, L3.5, L3.6, L3.7, L3.8, L3.9, L3.10, L3.11, L3.16, L3.17, L3.18] [E1-E13].
	Be able to: • Correctly identify a given disease. • Compare various types and methods of treatment for patients with various nosological forms; develop a treatment plan for diseases. • Manage and treat patients in outpatient settings and day-care hospital conditions.	**Block B, D** – Reconstructive level tasks. Case studies / RPR, RGZ / Peer-reviewed practical work. Calculation and graphic assignments / Calculations of infusions, dosages, burn areas, and indices /. Clinical situations requiring diagnosis and choice of tactics. [L1.1, L1.2, L1.3, L1.4], [L2.1, L2.2, L2.3, L2.4, L2.6, L2.7, L2.8, L2.9], [L3.1, L3.2, L3.3, L3.4, L3.5, L3.6, L3.7, L3.8, L3.9, L3.10, L3.11, L3.16, L3.17, L3.18] [E1-E13].
	Own: • Skills in analyzing various types of treatment for patients with various nosological forms. • Techniques for searching and comparing different methods of treatment for patients with various nosological forms. • Skills in managing and treating patients with various diseases in outpatient settings and day-care hospital conditions.	**Block C, D -** Practice-oriented and/or research level tasks. Practical skills (PS). Tasks of the «Own»; level. Demonstration of manipulations on phantoms, mannequins, or in a clinical setting. [L1.1, L1.2, L1.3, L1.4], [L2.1, L2.2, L2.3, L2.4, L2.6, L2.7, L2.8, L2.9], [L3.1, L3.2, L3.3, L3.4, L3.5, L3.6, L3.7, L3.8, L3.9, L3.10, L3.11, L3.16, L3.17, L3.18] [E1-E13].
PC-8 Ability to determine tactics for managing patients with various nosological forms	**Know:** • Etiology, pathogenesis, and clinical presentation of diseases. • Main types and methods of treatment for patients with various nosological forms. • Key directions and issues in managing patients with various diseases.	**Block A, D -** Reproductive level tasks. Interview questions. Test items (MCQs). Closed-ended tasks. Verification of knowledge of terminology, classifications, regulatory acts, and medical devices. [L1.1, L1.2, L1.3, L1.4], [L2.1, L2.2, L2.3, L2.4, L2.6, L2.7, L2.8, L2.9], [L3.1, L3.2, L3.3, L3.4, L3.5, L3.6, L3.7, L3.8, L3.9, L3.10, L3.11, L3.16, L3.17, L3.18] [E1-E13].

	Be able to: • Explain the rationale for determining management tactics for patients with various diseases. • Compare various types and methods of treatment for patients with various nosological forms; develop a treatment plan for diseases. • Highlight the practical value of individual management tactics for patients with various nosological forms.	**Block B, D -** Reconstructive level tasks. Case studies / RPR, RGZ / Peer-reviewed practical work. Calculation and graphic assignments / Calculations of infusions, dosages, burn areas, and indices /. Clinical situations requiring diagnosis and choice of tactics. [L1.1, L1.2, L1.3, L1.4], [L2.1, L2.2, L2.3, L2.4, L2.6, L2.7, L2.8, L2.9], [L3.1, L3.2, L3.3, L3.4, L3.5, L3.6, L3.7, L3.8, L3.9, L3.10, L3.11, L3.16, L3.17, L3.18] [E1-E13].
	Own: • Skills in presenting and analyzing the etiology and pathogenesis of various clinical diseases to establish a diagnosis. • Techniques for searching and comparing different methods of treatment for patients with various nosological forms. • Skills in determining management tactics for patients with diseases.	**Block C, D -** Practice-oriented and/or research level tasks. Practical skills (PS). Tasks of the «Own»; level. Demonstration of manipulations on phantoms, mannequins, or in a clinical setting. [L1.1, L1.2, L1.3, L1.4], [L2.1, L2.2, L2.3, L2.4, L2.6, L2.7, L2.8, L2.9], [L3.1, L3.2, L3.3, L3.4, L3.5, L3.6, L3.7, L3.8, L3.9, L3.10, L3.11, L3.16, L3.17, L3.18] [E1-E13].
PC-6 Ability to determine key pathological conditions, symptoms, disease syndromes, and nosological forms in a patient in accordance with ICD-10	**Know:** • Methodologies for conducting diagnostic examinations to identify key pathological conditions, symptoms, disease syndromes, and nosological forms. • Specific aspects of identifying various types of pathological conditions, symptoms, disease syndromes, and nosological forms in accordance with ICD-10. • Main organ and system involvement syndromes and their specifics in the differential diagnosis of various nosological forms in accordance with ICD-10.	**Block A, D -** Reproductive level tasks. Interview questions. Test items (MCQs). Closed-ended tasks. Verification of knowledge of terminology, classifications, regulatory acts, and medical devices. [L1.1, L1.2, L1.3, L1.4], [L2.1, L2.2, L2.3, L2.4, L2.6, L2.7, L2.8, L2.9], [L3.1, L3.2, L3.3, L3.4, L3.5, L3.6, L3.7, L3.8, L3.9, L3.10, L3.11, L3.16, L3.17, L3.18] [E1-E13].
	Be able to: • Interpret the obtained examination results of key nosological forms of diseases; analyze various types of pathological conditions, symptoms, disease syndromes, and nosological forms in accordance with ICD. • Highlight the practical value when comparing specific pathological syndromes and	**Block B, D -** Reconstructive level tasks. Case studies / RPR, RGZ / Peer-reviewed practical work. Calculation and graphic assignments / Calculations of infusions, dosages, burn areas, and indices /. Clinical situations requiring diagnosis and choice of tactics. [L1.1, L1.2, L1.3, L1.4], [L2.1, L2.2, L2.3, L2.4, L2.6, L2.7, L2.8, L2.9], [L3.1, L3.2, L3.3, L3.4, L3.5, L3.6, L3.7, L3.8, L3.9, L3.10, L3.11, L3.16, L3.17, L3.18] [E1-E13].

	disease symptoms.	
	Own:• Skills in identifying key pathological conditions, symptoms, and disease syndromes. Techniques for searching, identifying, and systematizing key pathological conditions, symptoms, disease syndromes, and nosological forms in accordance with ICD-10. • Skills in providing independent justification for grouping various symptoms and syndromes into nosological forms in accordance with ICD-10.	**Block C, D -** Practice-oriented and/or research level tasks. Practical skills (PS). Tasks of the «Own»; level. Demonstration of manipulations on phantoms, mannequins, or in a clinical setting. [L1.1, L1.2, L1.3, L1.4], [L2.1, L2.2, L2.3, L2.4, L2.6, L2.7, L2.8, L2.9], [L3.1, L3.2, L3.3, L3.4, L3.5, L3.6, L3.7, L3.8, L3.9, L3.10, L3.11, L3.16, L3.17, L3.18] [E1-E13].

2. TECHNOLOGICAL MAP OF THE DISCIPLINE / PRACTICE

The Technological Map of the Discipline (TMD) is a document that determines the order of studying an academic discipline, the set of types of academic load for a master's/postgraduate student, the schedule for checkpoint assessments, evaluation forms, and scoring ranges for checkpoints.
The number of modules is determined by the number of discipline credits.
A course paper (project) is included in the total credit load of the discipline (one credit). When filling out the fields with module titles, ensure that these titles strictly match the course syllabus (RPD).

Sample Content:

Technological Map of the Discipline
"PEDIATRIC SURGERY"

Year / Semester:	6 / 12
Number of credits (ECTS / Credits):	2
Grading / Assessment format:	**Graded credit (Graded pass)**

Name of modules disciplines according to the RPD	Control	Form of control	Credit minimum	Classification Maximum	Control schedule
Module 1					
Elective surgery	Current control	Frontal questioning Situational tasks Brainstorming Activity *For each missed and not worked lesson, 0.5 points are deducted.* *For activity - +0.5 points.*	15	25	9 week of the semester
	Boundary control	Testing Presentation defense; Situational task.	5	10	
Module 2					
Emergency surgery	Current control	Frontal questioning Situational tasks Activity when participating in the work of small groups *For each missed and not worked lesson, 0.5 points are deducted.* *For activity - +0.5 points.*	15	25	Week 18 of the semester
	Boundary control	Testing Presentation defense; Situational task.	5	10	
TOTAL per semester			40	70	
Intermediate control (Exam)		Oral questioning Situational tasks	20	30	19 Week
Semester Ranking by Discipline			60	100	

Module	a logically complete part of the discipline
Current control	independent work of the student, attendance and activity in the classroom
Boundary control	checking the completeness of knowledge and skills (achievement of educational results) on the material of the module as a whole
Intermediate control	A completed documented part of an academic discipline is a set of closely related modules of the discipline.

1. STANDARD CONTROL TASKS AND OTHER MATERIALS NECESSARY TO ASSESS THE PLANNED LEARNING OUTCOMES IN THE DISCIPLINE / PRACTICE (ASSESSMENT TOOLS)

Block A

A.0 Fund of test tasks in the discipline.
A.1 Questions for the survey:

1. ***Topic.*** **Esophageal atresia.**

   a) How to conduct the Shashkov test (with sound probing) in the delivery room?
   b) Clinical significance of the presence or absence of gas in the intestine on X-ray in atresia.
   c) Features of preoperative aspiration from the blind end of the esophagus.

2. ***Topic.*** **Congenital diaphragmatic hernia.**

   a. Why is mask ventilation strictly prohibited if a diaphragmatic hernia is suspected?
   b. Criteria for "stabilizing" the condition of the newborn before surgery.
   c. What is the pathogenesis of pulmonary hypertension in this defect?

3. ***Topic*.** **Congenital intestinal obstruction (high).**

   a. X-ray double bubble symptom – what pathologies is it typical for?
   b. Differences between vomiting in pyloric stenosis and duodenal atresia.
   c. Tactics for Ladd syndrome (volvulus of the middle intestine).

4. ***Topic.*** **Anorectal malformations (anal atresia)**

   a) Technique and interpretation of invertography according to Wangensteen.

   b) How to diagnose a fistula in the urinary system in boys (urine test)?

   c) Terms of radical proctoplasty for high forms of atresia.

5. ***Topic.*** **Gastroschisis and Omphalocele.**

   a. What is the fundamental difference in the tactics of organ protection in these malformations in the delivery room?
   b. The concept of "force-plastic" (Schuster bag) in large defect sizes.
   c. Causes of high intra-abdominal pressure after organ immersion.

6. ***Topic.*** **Hirschsprung's disease.**

   a. The pathomorphological essence of the disease (what plexuses are missing?).
   b. Method of performing the "test with a candle" and siphon enema.
   c. Indications for a preventive stoma.

7. ***Topic.*** **Acute appendicitis in children of different ages.**

   a. Features of the course of the disease in children under 3 years of age.
   b. Differential diagnosis with coprostasis and mesadenitis.
   c. Tactics for appendicular infiltrate (why can't you operate immediately?).

8. ***Topic.*** **Intussusception.**

a. The classic triad of intussusception symptoms.
b. Indications and contraindications for conservative air expansion.
c. Criteria for the viability of the intestine in case of deintussusception during surgery.

9. ***Topic.*** **Peritonitis in children.**

a. Classification of peritonitis by prevalence (local, diffuse, general).
b. Features of "primary" (diplococcal) peritonitis in girls.
c. Scope and goals of preoperative infusion preparation.

10. ***Topic.*** **Meckel's diverticulum.**

a. Clinical forms of manifestation (bleeding, inflammation, obstruction).
b. Why is the surgeon obliged to examine 1 meter of the ileum during appendicitis surgery?
c. Methods for diagnosing painless intestinal bleeding.

11. ***Topic.*** **Cholelithiasis and cholecystitis in children**

a. Factors that contribute to the formation of stones in childhood (hemolysis).
b. Features of laparoscopic cholecystectomy in adolescents.
c. Indications for ERCP in suspected choledocholithiasis.

12. ***Topic.*** **Acute hematogenous osteomyelitis**

a. Localization of the primary focus (why are the metaphyses of long tubular bones affected?).
b. Early X-ray signs (after how many days do they appear?).
c. Method of osteoperforation and administration of antibiotics.

13. ***Topic.*** **Necrotizing phlegmon of newborns**

a) Stages of development of the local process (edema, infiltration, skin detachment).
b) Tactics of surgical incisions (why should they be multiple?).
c) Causes of severe septic condition.

14. ***Topic.*** **Destructive pneumonia (pleural complications)**

a. Classification (pyothorax, pneumothorax, pyopneumothorax).
b. Technique of puncture of the pleural cavity in tension pneumothorax.
c. Indications for active drainage according to Bülau.

15. ***Topic.*** **Purulent mastitis of newborns**

a. Differential diagnosis with physiological engorgement of the glands.
b. Direction of incisions when opening the abscess (prevention of damage to the ducts).
c. Possible long-term consequences for girls.

16. ***Topic.*** **Edematous scrotum syndrome**

a. Differential diagnosis of testicular torsion and hydatid torsion.
b. «Золотой стандарт» времени (сколько часов есть на деторсию яичка?).
c. Методика мануальной деторсии (в какую сторону вращать?).

17. ***Topic.*** **Congenital hydronephrosis**

a. Anatomical causes of obstruction of the pelvicoureteral segment.
b. The role of excretory urography and ultrasound with diuretic load.
c. Principles of the Anderson-Hines operation.

18. ***Topic.*** **Features of traumatology and orthopedics of childhood**

a. Congenital hip dislocation
b. Congenital clubfoot, treatment methods, classification
c. Torticollis, indications for surgery, diagnosis.

19. ***Topic.*** **Cryptorchidism**

a. Differences between true cryptorchidism and false (testicular retraction).
b. Optimal age for surgical treatment.
c. Risks of malignancy of an undescended testicle in the future.

20. ***Topic.*** **Hypospadias**

a. Classification of forms (capitate, trunk, scrotum, perineum).
b. Why can't hypospadias be circumcised in infancy?
c. The main stages of straightening the penis and forming the urethra.

21. ***Topic.*** **Abdominal injuries**

a. Clinical signs of rupture of the parenchymal organ (the "vanka-vstanka" symptom).
b. Possibilities of conservative management of spleen injuries in children.
c. Diagnostic value of laparocentesis and FAST-ultrasound.

22. ***Topic.*** **Closed craniocerebral injury**

a. Features of the concussion clinic in young children.
b. The light gap in epidural hematomas is the mechanism of development.
c. Indications for CT of the brain in case of injury.

23. ***Topic.*** **Burn disease in children**

a. Calculation of the burn area according to the Lund-Browder table (why not the "rule of nines"?).
b. Parkland's formula for calculating infusion therapy on the first day.
c. First aid for a chemical burn of the esophagus.

24. ***Topic.*** **Wilms' tumor (nephroblastoma)**

a. The most common age of manifestation and primary complaints.
b. Why can't the abdomen be roughly palpated if a tumor is suspected?
c. Staging and the role of preoperative chemotherapy.

25. ***Topic. Pediatric*** **oncosurgery (teratomas and neuroblastomas)**

a. Localization of typical teratomas in newborns (sacrococcygeal region).
b. Specific markers of neuroblastoma (catecholamines in the urine).
c. Cava compression syndrome in mediastinal tumors.

A.2. Test tasks:

1. In case of esophageal atresia with inferior tracheoesophageal fistula, the abdominal radiograph determines:
   A) Absence of gas bubbles in the intestines
   B) Gas in the stomach and intestines
   C) Single gas bubble in the epigastrium
   D) Kloiber's bowl symptom
   E) Total opacity of the abdominal cavity
   Correct answer: B

2. A characteristic sign of high congenital intestinal obstruction on an X-ray is:
   A) Multiple fluid levels throughout the abdomen
   B) Double bubble symptom
   C) Absence of gas shadow of the stomach
   D) Presence of gas in the rectum
   E) Darkening in the pelvic area
   Correct answer: B

3. The optimal period of surgical treatment for congenital pyloric stenosis:
   A) Immediately after birth
   B) At the age of 6 months
   C) Immediately after preoperative preparation and electrolyte correction
   D) At the age of 1 year
   E) Only with the development of peritonitis
   Correct answer: B

4. The primary action of the doctor if a diaphragmatic hernia is suspected in a newborn in the delivery room:
   A) Mask ventilation under high pressure
   B) Tracheal intubation and gastric decompression with a probe
   C) Stimulation of the cry
   D) Laying on the healthy side
   E) Introduction of analeptics
   Correct answer: B

5. The most common cause of intussusception in children aged 5–9 months:
   A) Intestinal tumor
   B) Meckel's diverticulum
   C) Transition to complementary foods and impaired peristalsis
   D) Helminthic invasion
   E) Mesenteric vascular malformation
   Correct answer: B

6. Pathognomonic sign of intussusception on rectal examination:
   A) Aprofuse excretion of feces and gases
   B) Bloody discharge of the "raspberry jelly" type
   C) Melena (tarry stools)
   D) Complete absence of discharge
   E) Presence of scarlet blood on the feces
   Correct answer: B

7. The differential diagnosis of acute appendicitis in children under 3 years of age is most often carried out with:
   A) Renal colic
   B) Acute respiratory infection and abdominal syndrome
   C) Cholelithiasis
   D) Myocardial infarction
   E) Gastric ulcer
   Correct answer: B

8. Shchetkin-Blumberg sign in children with peritonitis:
   A) Always pronounced from the first hours
   B) May be doubtful due to protective muscle tension
   C) Checked only under anesthesia
   D) Is the only criterion for diagnosis
   E) Negative for perforation
   Correct answer: B

9. With appendicular infiltrate in the phase of dense infiltrate, the following is indicated:
   A) Emergency appendectomy
   B) Conservative treatment (antibiotics, physiotherapy)
   C) Immediate laparoscopy
   D) Ostomy
   E) Cleansing enema
   Correct answer: B

10. An early radiographic sign of acute hematogenous osteomyelitis is:
    A) Bone sequestration
    B) Osteoporosis after 24 hours
    C) Thickening and blurring of soft tissues near the bone (after 2-3 days)
    D) Callus
    E) Pathological fracture
    Correct answer: B

11. In necrotic cellulitis of the newborn, the main method of surgical treatment:
    A) One wide incision across the entire focus

B) Multiple incisions (incisions) in a checkerboard pattern
C) Puncture of the lesion with a needle
D) Applying an ointment bandage without incisions
E) Excision of the entire affected skin (necrectomy) on the 1st day
Correct answer: B

12. The symptom of "vanka-vstanka" (increased pain when moving to a horizontal position) is typical for:
A) Intra-abdominal bleeding (rupture of the spleen)
B) Acute appendicitis
C) Acute pancreatitis
D) Intestinal obstruction
E) Coprostasis
Correct answer: A

13. Congenital hip dislocation is:
A) Fracture of the proximal femur
B) Displacement of the femoral head from the acetabulum from birth
C) Inflammation of the hip joint
D) Shortening of the femur
E) Rupture of the ligaments of the hip joint
Correct answer: B

14. Testicular torsion, unlike orchitis, is characterized by:
A) Gradual onset of pain
B) Acute onset and pulling of the testicle to the inguinal canal
C) Decrease in body temperature
D) Pain relief when wearing a suspension
E) Normal skin color of the scrotum
Correct answer: B

15. With a strangulated inguinal hernia in a boy with a prescription of more than 12 hours, it is indicated:
A) Attempt at manual reduction
B) Warm bath and antispasmodics
C) Emergency operation
D) Observation until the morning
E) Bandage application
Correct answer: B

16. Gastroschisis differs from omphalocele in that:
A) Organs exit through the umbilical ring
B) Organs are covered by an amniotic membrane
C) The defect is located to the right of the umbilical cord, there are no membranes
D) Always combined with heart defects

E) The liver is always in the hernial sac

Correct answer: B

17. The main symptom of Hirschsprung's disease:
    A) Constant diarrhea
    B) Persistent constipation from birth and flatulence
    C) Vomiting with an admixture of blood
    D) Epigastric pain after eating
    E) Hyperthermia
    Correct answer: B

18. In case of tension pneumothorax, puncture of the pleural cavity is performed:
    A) In the 7-8th intercostal space along the scapular line
    B) In the 2nd intercostal space along the midclavicular line
    C) In the 5th intercostal space along the axillary line
    D) Above the clavicle
    E) In the place of the greatest dullness of the sound
    Correct answer: B

19. To assess the area of burns in young children, the following are used:
    A) Rule of "nines"
    B) Lund-Browder table
    C) Algover index
    D) Apgar scale
    E) Frank index
    Correct answer: B

20. Meckel's diverticulum is a remnant of:
    A) Urachus
    B) Yolk duct (ductus omphaloentericus)
    C) Umbilical vein
    D) Wolffian duct
    E) Müllerian duct
    Correct answer: B

21. Optimal age for surgery for cryptorchidism:
    A) Immediately after birth
    B) 6-18 months
    C) 7-10 years
    D) After puberty
    E) No surgery required
    Correct answer: B

22. Paraphimosis is:
    A) Inflammation of the foreskin
    B) Entrapment of the glans penis by a narrow ring of the foreskin
    C) Inability to open the glans
    D) Adhesion of the foreskin with the glans
    E) Absence of foreskin
    Correct answer: B

23. The main method of treating lymphangiomas in children is:
    A) Radiation therapy
    B) Surgical excision or sclerotherapy
    C) Chemotherapy
    D) Hormone therapy
    E) Observation until the age of 14
    Correct answer: B

24. If Wilms' tumor (nephroblastoma) is suspected, palpation of the abdomen should be:
    A) Deep and intense
    B) Superficial and as careful as possible
    C) Performed only in the lateral position
    D) Completely excluded before surgery
    E) Performed only under anesthesia
    Correct answer: B (to avoid capsule rupture and dissemination)

25. First aid for a chemical burn of the esophagus (first hours):
    A) Prescription of antibiotics
    B) Gastric lavage through a tube with copious amounts of water
    C) Induction of vomiting in a "restaurant" way
    D) Immediate bougienage
    E) Giving emetics
    Correct answer: B

1. *A.3 Questions for midterm control (colloquium)*

1. ***Topic 1.*** **Esophageal atresia**

    a. What symptoms allow you to suspect a defect in the first minutes of life in the delivery room?
    b. What is the Elephant test and what is its significance?
    c. What are the surgical tactics for a wide tracheoesophageal fistula?

2. ***Topic.*** **Congenital diaphragmatic hernia.**

    a. Why does pulmonary hypertension develop with this defect?

b. What are the signs of "navicular belly" syndrome?
c. Why is mask ventilation considered a mistake in this pathology?

3. ***Topic.*** **Congenital pyloric stenosis.**

a. At what age does the disease most often manifest itself?
b. Describe pathognomonic signs on examination of the abdomen (peristalsis, palpation).
c. What water-electrolyte disorders are characteristic of uncontrollable vomiting in pyloric stenosis?

4. ***Topic.*** **High intestinal obstruction (atresia of the 12-denum).**

a. What is the difference between vomiting with high obstruction and vomiting with pyloric stenosis?
b. What does the radiological symptom "two gas bubbles" mean?
c. What is the essence of Hayes surgery?

5. ***Topic.*** **Hirschsprung's disease.**

a. What is the essence of the innervation defect of the intestinal wall?
b. How is the "candle test" carried out and what is its result for this disease?
c. What are the current principles of one-stage surgical treatment (Soave-Bohley procedure)?

6. ***Topic.*** **Anorectal malformations.**

a. How are anal atresia classified in relation to the pelvic floor muscles?
b. How to suspect a fistula in the urinary system in boys according to a urine test?
c. What is the Wangensteen invertography technique?

7. ***Topic.*** **Gastroschisis.**

a. What is the difference between the location of the defect of the anterior abdominal wall in gastroschisis and omphalocele?
b. What are the rules for transporting a newborn with gastroschisis?
c. What is "force-plastic" and when is it used?

8. ***Topic.*** **Meconium ileus.**

a. What systemic genetic disease is meconium ileus most often associated with?
b. Describe the ground-glass radiological symptom (Neuhauser's sign).
c. What conservative methods are used to liquefy meconium?

9. ***Topic. Acute*** **appendicitis in young children.**

a. Why does appendicitis quickly turn into peritonitis in children under 3 years of age?
b. What non-specific symptoms (behavior, stool) prevail in the clinic?
c. What is the difficulty of palpation of the abdomen and how to do it correctly in a small child?

10. ***Topic.*** **Intussusception.**

a. What is the classic triad of intussusception symptoms?
b. In what cases is it possible to conservatively spread the intussusception with air?

c. What is the criterion for successful intussusception during the Rickhters test?

11. ***Topic.*** **Appendicular infiltrate**
    a. What are the clinical signs of the transition of acute appendicitis to infiltrate?
    b. Why is emergency surgery in the phase of dense infiltrate contraindicated?
    c. What is the time frame for elective (interval) appendectomy?
12. ***Topic.*** **Meckel's diverticulum**
    a. What is the embryological genesis of this formation?
    b. What clinical masks can complicated Meckel's diverticulum take?
    c. What is the main method for diagnosing painless intestinal bleeding in diverticula?
13. ***Topic.*** **Peritonitis in children.**
    a. What is the difference between primary (cryptogenic) peritonitis and secondary peritonitis?
    b. What is the scope of preoperative preparation for diffuse peritonitis?
    c. What are the principles of abdominal sanitation and drainage in children?
14. ***Topic.*** **Acute hematogenous osteomyelitis**
    a. Why is the lesion most often localized in the metaphysis?
    b. What are the early local signs of osteomyelitis (before the appearance of radiographic changes)?
    c. What is the meaning of osteoperforation in treatment?
15. ***Topic.*** **Necrotizing phlegmon of newborns**
    a. What are the stages of development of the local process in cellulitis?
    b. Why are multiple staggered incisions used for this disease?
    c. What diseases are differential diagnoses (erysipelas, mastitis)?
16. ***Topic.*** **Bacterial destruction of the lungs**
    a. What forms of lung destruction are distinguished by the X-ray picture?
    b. What are the doctor's tactics when detecting tension pyopneumothorax?
    c. What is the Bülau continuous aspiration technique?
17. ***Topic.*** **Edematous scrotum syndrome**
    a. What are the three diseases that most often cause this syndrome?
    b. What is the critical period (in hours) for saving the testicle during its torsion?
    c. What is Morgagni's hydatida and what are the tactics for twisting it?
18. ***Topic.*** **Cryptorchidism.**
    a. What is the difference between true cryptorchidism and false (retraction)?
    b. Why is orchiopexy surgery recommended for up to 1.5-2 years?
    c. What complications are possible when the testicle is preserved in the abdominal cavity or inguinal canal?
19. ***Topic.*** **Hydronephrosis in children.**
    a. At what level is the obstruction of urine flow most often localized?
    b. What imaging techniques can assess kidney function and the degree of pelvis dilation?

c. What is the essence of the Anderson-Hines operation?

20. ***Topic.*** **Congenital hip dislocation**

a. What clinical signs indicate congenital hip dislocation in newborns?
b. What symptoms are detected during the examination of the child (Ortolani's sign, Barlow's sign, etc.)?
c. What is the significance of the "click" symptom in diagnosis?

21. ***Topic.*** **Spleen injury in children**

a. What clinical signs indicate ongoing intra-abdominal bleeding?
b. Why is conservative management of spleen injuries a priority in pediatrics?
c. What is a "two-moment rupture of the spleen"?

22. ***Topic. Burn*** **disease.**

a. How is the burn area calculated in children of different ages (Lund-Browder table)?
b. What periods are distinguished during burn disease?
c. What are the features of infusion therapy for burn shock in children?

23. ***Topic.*** **Chemical burns of the esophagus.**

a. What is the first aid for a child who has swallowed an aggressive liquid?
b. When and for what purpose is a follow-up esophagogastroscopy performed?
c. What are the timing and objectives of prophylactic bougienage of the esophagus?

24. ***Topic.*** **Wilms' tumor (nephroblastoma).**

a. What symptoms are most often the first to be noticed by parents with this disease?
b. Why is rough palpation of the abdomen prohibited when nephroblastoma is suspected?
c. What is the role of preoperative chemotherapy in the treatment of this defect?

25. ***Topic. Traumatic*** **brain injury in children.**

a. What are the features of the light gap in epidural hematomas in children?
b. What signs indicate a fracture of the base of the skull?
c. What are the tactics of managing a child with a concussion?

Block B

Typical tasks*:*

Topic 1. Esophageal atresia.

Task 1.1. A newborn baby shows signs of anxiety immediately after birth. A large amount of foamy saliva ("false hypersalivation") is constantly secreted from the mouth and nose. When trying to feed for the first time, the child had a coughing fit, cyanosis (blueness) of the face and difficulty breathing.

Questions:

1. What malformation (complete lack of patency ...) should we think about?
2. What is the fastest and most affordable method of checking the patency of the esophagus in the delivery room (test with ...).

3. What is the Elephant test (injection of air through a probe) and what sound is heard over the epigastrium in atresia?
4. Why is it strictly forbidden to feed through the mouth with esophageal atresia until the diagnosis is clarified?
5. What is the cause of the development of aspiration pneumonia in the first hours of life with this defect?

Task 1.2. A child with suspected esophageal atresia underwent a plain X-ray of the chest and abdominal cavity with the introduction of an X-ray contrast catheter. In the image: the catheter rests on the blind end of the esophagus at the Th2-Th4 level.

Questions:

1. What is the most common form of atresia (with which fistula) is indicated by the presence of air in the intestine?
2. In which part of the respiratory system (trachea or bronchus) does the distal fistula most often open?
3. What does a "gasless abdomen" indicate on an X-ray in confirmed atresia?
4. Why can't barium suspension be used to contrast the esophagus in newborns (risk of severe pneumonia)?
5. What is the role of VACTERL syndrome (a combination of atresia with heart, kidney, and spinal defects) in the patient's examination?

Task 1.3. The diagnosis of "Esophageal atresia with inferior tracheoesophageal fistula" was confirmed. The child was transferred to the neonatal surgery department. The condition is serious, the phenomena of respiratory failure are increasing.

Questions:

1. What position in the incubator (raised head end) should be given to the child to reduce the reflux of gastric contents into the lungs?
2. How often (in minutes) should mucus be aspirated from the upper blind segment of the esophagus?
3. What is the purpose of echocardiography before surgery (determination of the position of the aortic arch)?
4. What is the main method of surgical treatment (direct...) for a slight divergence of the segments.
5. What is a "long gap" and what tactics (gastrostomy, staged treatment) are used in this case?

Task 1.4. On the 5th day after direct anastomosis of the esophagus, the child's condition worsened: shortness of breath, fever, swelling in the neck appeared. X-ray revealed the accumulation of air and fluid in the mediastinum (**mediastinitis**).

Questions:

1. What severe complication (incompetence ...) has developed in the child?
2. How long after surgery do you usually start a trial feeding (if there are no complications)?
3. Name a common long-term complication in the anastomosis area that requires bougienage (narrowing).
4. What is gastroesophageal reflux and why does it often accompany children after esophageal plastic surgery?
5. What is the role of tracheomalacia (weakness of tracheal cartilage) in the development of stridor in such children after surgery?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykiev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2].

Additional. 1. Omurbekov T.O., Mykiev K.M., et al. Selected issues of pediatric surgery: Textbook. Bishkek: KRSU, 2015 **[**L2.2] **2.** Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]**.** Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4] **Methodological recommendations**. Mykyev K.M. Congenital malformations of the esophagus in children: Guidelines for students of the pediatric and medical faculties Bishkek: KRSU 2015 [L3.5].

Topic 2. Congenital pyloric stenosis.

Task 2.1. The child is 3 weeks old. He was born full-term, weighing 3400 g. During the last 5 days, vomiting is noted "fountain" after each feeding. Vomit without an admixture of bile, in volume exceeds the portion eaten. The child has become lethargic, over the past week he has lost weight 200 g. Urination is rare, stool is scanty ("hungry").

Questions:

1. Make a preliminary diagnosis.
2. Indicate the characteristic signs of palpation of the abdomen in this pathology.
3. What visible symptom from the anterior abdominal wall are we talking about?
4. With what diseases should a differential diagnosis be made?
5. Which research method is the gold standard of visualization in this case?

Task 2.2. A 1-month-old boy was hospitalized in serious condition. From the anamnesis: vomiting "fountain" for 10 days. On examination: pronounced signs of exicosis (sunken fontanelle, dry mucous membranes), pale skin, reduced tissue turgor.

Questions:

1. What characteristic changes in the biochemical blood test (electrolytes, COS) are expected?
2. Why is there no bile in the vomit in pyloric stenosis?
3. What is the emergency preoperative preparation?
4. What formidable respiratory complication can occur against the background of severe metabolic alkalosis?
5. What is the main cause of hypokalemia in this patient?

Task 2.3. The child is 4 weeks old, complains of vomiting. Ultrasound of the pyloric part of the stomach was performed. Results: the thickness of the muscle layer is 5 mm (the norm is up to 2 mm), the length of the pyloric canal is 19 mm (the norm is up to 14 mm). It was decided to conduct an X-ray contrast study.

Questions:

1. Describe the classic X-ray signs of pyloric stenosis (the "beak", "thread" sign).
2. How long after taking barium suspension should evacuation from the stomach normally begin?
3. Which diagnostic method (ultrasound or X-ray) is a priority in modern protocols?
4. What data of the FGD confirm this diagnosis?
5. How will the shadow of the stomach change on a plain abdominal radiograph?

Task 2.4.

The diagnosis of congenital pyloric stenosis has been confirmed. The child is prepared for surgery. Classical surgery is planned.

Questions:

1. What is the name of the classic operation according to the author, used for this pathology?
2. What is the essence of the surgical maneuver (what exactly does the surgeon dissect)?
3. What dangerous complication can occur during surgery in case of accidental damage to the mucous membrane?
4. How many hours after surgery do test feedings usually start?
5. What are the surgeon's tactics when mucosal perforation is detected during pyloromyotomy?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykyev K.M., et al. Selected issues of children's surgery: Textbook Bishkek : KRSU, 2015 [L2.2] 2. Mykyev K.M., Omurbekov T.O., et al. Selected Issues of Pediatric Surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.A course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4] **Methodological recommendations**. Mykyev K.M., Namanov A.A., Zamirbekov K.Z. Congenital pyloric stenosis in children. Methodological recommendations for students of pediatric and medical faculties Bishkek : KRSU 2018 [L3.17].

Topic 3. Intussusception

Task 3.1. A baby (5 months old) suddenly fell ill in full health. He became sharply restless, pressed his legs to his stomach, screamed. The attack lasted 10 minutes, after which the child calmed down and fell asleep. After 15 minutes, the attack of pain repeated. The mother noticed that after the onset of the disease, the child had normal stools once, and during the next defecation, after 2 hours, a discharge resembling "raspberry jelly" appeared.

Questions:

1. Make a preliminary diagnosis and indicate the form of the disease.
2. Explain the origin of the stool in the form of "raspberry jelly".
3. What can be detected by palpation of the abdomen in the interictal period?
4. What is the mandatory examination to be performed by a surgeon in the emergency room through the rectum?
5. What is the most typical age period for this disease?

Task 3.2. A 7-month-old boy was delivered 6 hours after the onset of the disease with suspected intussusception. The condition is of moderate severity. The abdomen is soft, a tumor-like formation of elastic consistency is palpated in the right hypochondrium.

Questions:

1. Which method of X-ray diagnostics (with which contrast agent) is considered classic to confirm the diagnosis?
2. Describe the symptom of a "trident" or "two-pronged" during pneumocolography.
3. What specific signs of intussusception ("target" or "pseudokidney" symptoms) are visible on ultrasound?
4. With what diseases proceeding with hemocolitis (blood in the stool) should a differential diagnosis be made?
5. What is the diagnostic value of plain radiography of the abdominal cavity in this case?

Task 3.3. A 6-month-old girl was admitted to the clinic 4 hours after the onset of the disease. The diagnosis of ileocecal intussusception was confirmed clinically and by ultrasound. The child's condition is stable, there are no signs of peritonitis. It was decided to carry out conservative expansion.

Questions:

1. What is the maximum time from the onset of the disease (in hours) that allows an attempt at conservative expansion?
2. With the help of what (what substance) and under what pressure is the intussusception straightened?

3. What device is used to control the pressure when pumping air into the colon?
4. What are the clinical and radiological criteria for successful expansion of the intussusception?
5. What are the contraindications to conservative treatment?

Task 3.4. A 10-month-old child was hospitalized 24 hours after the onset of the disease. The condition is serious, intoxication is pronounced, vomiting with greenery, abdominal distension, peritoneal symptoms are doubtful.

Questions:

1. What are the further treatment tactics?
2. What is the name of manual expansion of the intussusception during surgery (term)?
3. How to check the viability of the intestine after its expansion?
4. What are the indications for bowel resection during intussusception?
5. What is the peculiarity of "secondary" intussusception in children over 2 years of age (search for an organic cause)?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykyev K.M., et al. Selected issues of children's surgery: Textbook Bishkek : KRSU, 2015 [L2.2]2. Mykyev K.M., Omurbekov T.O., et al. Selected Issues of Pediatric Surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.A course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4] **Methodological recommendations**. Mykyev K.M., Shakirova U.Sh. Intussusception: Guidelines for students of pediatric and medical faculties Bishkek: KRSU 2015. [L3.4].

Topic 4. Acute appendicitis.

Task 4.1. A 10-year-old boy was admitted with complaints of abdominal pain, which began 6 hours ago in the epigastrium, and then moved to the right iliac region. There was a single vomiting, temperature 37.4°C. On examination: the tongue was covered with a white coating, dry. The abdomen was tense and painful in the right iliac region.

Questions:

1. What is the symptom of the movement of pain from the epigastrium to the right iliac region called?
2. Describe the technique for checking the Shchetkin-Blumberg sign.
3. What specific symptom is associated with increased pain when pressing on the left side of the abdomen (gas pressure transfer)?
4. What is the most common localization of the vermiform appendix in children?
5. What changes in the general blood count (leukocyte formula) will confirm the diagnosis?

Task 4.2. The child is 2 years old. He has been ill for 12 hours. He has become capricious, refuses to eat, sleeps poorly. He vomited twice, loose stools 3 times (with a small admixture of mucus). The temperature is 38.5°C. When trying to examine the abdomen, the child screams and pulls his legs to the abdomen.

Questions:

1. What is the main difficulty of physical examination of the abdomen in young children?
2. What method of "medication sleep" (or examination method) is used for high-quality palpation in restless children?
3. Why do destructive forms of appendicitis develop faster in young children than in adults?
4. With which infectious pathology do you most often have to make a differential diagnosis in the presence of loose stools?
5. Is the Shchetkin-Blumberg sign decisive at this age?

Task 4.3. A 12-year-old girl complains of pain in the lower abdomen and above the pubis, frequent and painful urge to urinate. Temperature 37.8°C. Symptoms of peritoneal irritation in the right iliac region are mild.

Questions:

1. What atypical localization of the appendix can we think about with such a clinic?
2. What mandatory examination (except for ultrasound) should be performed to exclude the pelvic form of appendicitis?
3. What changes in the urine test can appear when the inflamed process is adjacent to the ureter or bladder?
4. Name a formidable complication of appendicitis, characterized by the formation of a limited conglomerate (intestinal loops, operative, omentum).
5. What are the tactics for detecting a dense, immobile appendicular infiltrate?

Task 4.4. The child was operated on for gangrenous appendicitis. Appendectomy was performed. On the 5th day after the operation, the condition worsened: the temperature rose to 39.0°C, pain appeared in the depth of the pelvis, loose stools with mucus and tenesmus (false urges).

Questions:

1. What postoperative complication can be suspected?
2. Which method of instrumental diagnostics (ultrasound, CT or X-ray) is the most informative for searching for abscesses in the abdominal cavity?
3. Name the "gold standard" of modern surgical access for appendicitis (a type of video surgery).
4. What is the most severe liver complication that can develop when an infection enters the portal vein system?
5. How Long After A Routine Appendectomy Is A Child Allowed To Get Up And Start Drinking?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykyev K.M., et al. Selected issues of children's surgery: Textbook Bishkek : KRSU, 2015 [L2.2]2. Mykyev K.M., Omurbekov T.O., et al. Selected Issues of Pediatric Surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M., Omurbekov T.O., and others. Acute appendicitis in children: Textbook Bishkek : KRSU 2022 [L2.7]. **Methodical recommendations**. Mykyev K.M. Acute appendicitis in children: Guidelines for students of pediatric and medical faculties Bishkek: KRSU 2015 [L3.3].

Topic 5. Appendicular peritonitis

Task 5.1. A 7-year-old boy was admitted on the 3rd day from the onset of the disease. Complaints of constant pain throughout the abdomen, repeated vomiting, which does not bring relief. The condition is serious, the facial features are pointed, the tongue is dry, "like a brush". Temperature 38.8°C, pulse 120 beats / min. Abdomen does not participate in breathing, tense in all parts, Shchetkin-Blumberg sign is positive everywhere.

Questions:

1. Formulate a **diagnosis** according to the classification by prevalence.
2. Describe the patient's appearance that corresponds to the term **"Hippocratic face".**
3. Why does peritonitis develop **faster** in children and proceed more severely than in adults (anatomical feature of the omentum)?
4. What change in intestinal **peristalsis** is characteristic of this stage (auscultative)?
5. What X-ray signs of **intestinal paresis** can be seen on the overview image?

Task 5.2. A 5-year-old girl was admitted with a diagnosis: Acute appendicitis, diffuse peritonitis. The condition is extremely serious, signs of pronounced exicosis (dehydration) and intoxication. Diuresis is reduced.

Questions:

1. What changes in the leukocyte formula (shift) are characteristic of purulent peritonitis?
2. Is it permissible to immediately bring the patient to the operating table without preoperative preparation for peritonitis?
3. What is the purpose of inserting a nasogastric tube before surgery?
4. What are the main components that should be included in infusion therapy before surgery?
5. What does the term "toxic leukocyte granularity" mean in a blood test?

Task 5.3. During laparoscopy, a 9-year-old child was found to have gangrenous-perforative appendicitis. In the right iliac region and small pelvis there is a significant amount of cloudy effusion with a fecal odor.

Questions:

1. Is it necessary to remove fibrin overlays from the intestinal loops?
2. What is the abdominal debridement procedure during surgery?
3. What are the indications for drainage of the abdominal cavity (where are the drains removed)?
4. What surgical approach is preferable for peritonitis of unknown localization (median laparotomy or Volkovich-Dyakonov approach)?
5. What is the main criterion by which the surgeon decides to remove drains in the postoperative period?

Task 5.4. On the 7th day after peritonitis surgery, the child's temperature rose again to 39.0°C (hectic), abdominal pain, stool and gas retention. Palpation through the rectum reveals overhanging and sharp tenderness of the anterior wall.

Questions:

1. What postoperative complication (local abscess) are we talking about?
2. Name 2 more typical sites of localization of interloop abscesses in appendicular peritonitis.
3. Which method of instrumental diagnostics is the most accurate for determining the size and boundaries of the abscess?
4. What are the treatment tactics for a formed abscess of the Douglas space?
5. What is early adhesive intestinal obstruction and how is it related to peritonitis?

Topic 6. Acute hematogenous osteomyelitis

Task 6.1. A 10-year-old boy complains of sharp pain in the lower third of the right thigh, because of which he cannot step on his foot. He fell ill acutely 2 days ago: the temperature rose to 39.5°C, there were chills. From the anamnesis: 10 days ago he suffered a boil of the forearm. On examination: the limb is in a half-bent position, active movements are impossible, on palpation there is a sharp local soreness over the metaphysis of the femur.

Questions:

1. Make a preliminary diagnosis.
2. Why is there no pathology on the bone X-ray in the first days of the disease?
3. What is the symptom of "axial load" and how does it manifest itself in this case?
4. What is the role of Staphylococcus aureus in the etiology of this disease?
5. What is the most typical anatomical localization of the primary focus in the long tubular bones?

Task 6.2. A 7-year-old child was delivered in serious condition. Complaints of pain in the left shoulder,

shortness of breath, general weakness. Temperature 40.0°C, consciousness is confused. On examination: pale skin, tachycardia, heart sounds are muffled. Locally: edema and hyperemia of the soft tissues of the left shoulder.

Questions:

1. What is the clinical form of acute hematogenous osteomyelitis observed in a child?
2. What changes in the complete blood count (leukocytosis, ESR) are characteristic of this form?
3. What does the appearance of wheezing in the lungs indicate (what complication develops)?
4. What is the mandatory blood test before starting antibiotic therapy?
5. What methods of detoxification therapy are indicated for this patient?

Task 6.3. The newborn is 14 days old. The mother noticed that the child stopped moving his right hand ("pseudoparalysis"), cries when swaddling. The right shoulder is enlarged, the joint is smoothed.

Questions:

1. What feature of the blood supply to the bone in newborns contributes to the rapid transition of inflammation to the joint?
2. What is the name of a joint complication (inflammation) that often accompanies CSOs at this age?
3. Describe the symptom of "pseudo-paralysis" of Parrot.
4. What instrumental examination (except for X-ray) will help to quickly identify effusion in the joint and tissue swelling?
5. What are the tactics of limb immobilization when a CSO is suspected in an infant?

Task 6.4. A 12-year-old child is suspected of having acute hematogenous tibial osteomyelitis. To confirm the diagnosis and alleviate the condition, it is planned to perform diagnostic and therapeutic manipulation.

Questions:

1. What is the procedure for creating holes in the bone for decompression and pus removal called?
2. Name the method of osteoperforation (how many holes and where are they located)?
3. What is a subperiosteal abscess and how does it form?
4. Which groups of antibiotics (with good penetration into bone tissue) are the drugs of choice?
5. How long (on average) does it take for the first signs of bone destruction to appear on the X-ray?

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and others. Acute appendicitis in children: Textbook Bishkek : KRSU 2022 [L2.7]. **Methodical recommendations**. Mykyev K.M. Acute appendicitis in children: Guidelines for students of pediatric and medical faculties Bishkek: KRSU 2015 [L3.3].

Topic 7. Bacterial destruction of the lungs

Task 7.1. A 5-year-old boy was admitted with complaints of high fever (39.5°C), shortness of breath at rest, obsessive dry cough and pain in the right side of the chest. He has been ill for 4 days, his condition is progressively deteriorating.

Questions:

1. What are the main clinical forms of BDL (pulmonary, pulmonary-pleural). What form does this case belong to?
2. What is the most likely pathogen that causes staphylococcal lung destruction?
3. What are "primary" and "secondary" lung destruction?
4. Which instrumental examination is decisive for primary diagnosis?
5. Describe the characteristic position of the child in bed with a unilateral lesion.

Task 7.2. In a 3-year-old child who is in the hospital for BDL, the condition suddenly deteriorated sharply: cyanosis of the lips appeared, pronounced anxiety, the heart rate increased to 60 per minute. On examination: the intercostal spaces on the left bulge, the mediastinum (cardiac impulse) shifted to the right.

Questions:
1. What acute complication did the child develop?
2. What is the mechanism of tension pneumothorax (valvular mechanism)?
3. What urgent measure (puncture) should be carried out to save life?
4. At what point (intercostal space and line) is the puncture of the pleural cavity performed in the air?
5. What will be visible on the X-ray (position of the lung and diaphragm dome)?

Task 7.3. A 7-year-old girl had a massive pleural effusion (pyothorax) against the background of right-sided staphylococcal pneumonia. A test puncture revealed thick creamy pus. The child's condition is serious, intoxication is pronounced.

Questions:
1. What is the main purpose of drainage of the pleural cavity according to Bülau?
2. In which intercostal space is a drain installed to evacuate purulent exudate?
3. What is the principle of underwater drainage (active and passive aspiration)?
4. What are the indications for the transition from conservative drainage to thoracoscopy?
5. What is the role of an antibiotic gram in the treatment of this condition?

Task 7.4. On the control X-ray of a 4-year-old child, after the acute stage of BDL, a thin-walled cavity with a diameter of 4 cm, filled with air, without a fluid level, was found in the upper lobe of the left lung. Clinically, the child feels satisfactory, the temperature is normal.

Questions:
1. What is the name of such a formation in the lung (bulla/pneumatocele)?
2. Does this formation require immediate surgical intervention?
3. What is the difference between a lung abscess and a tense cyst on an X-ray (the presence of a fluid level)?
4. What is the usual tactic for monitoring such cavities after discharge?
5. What formidable complication can arise when an abscess breaks into the pleural cavity?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykiev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2]2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4]. **Methodical recommendations**. Mykyev K.M., Kochkunov D.S. Acute bacterial destruction of the lungs (OBDL) in children: Methodological recommendations for students of the pediatric and medical faculty Bishkek : KRSU 2015 [L3.2].

Topic 8. Hirschsprung's disease.

Task 8.1. A newborn boy (3 days) does not excrete meconium. The abdomen is sharply swollen, intestinal peristalsis ("snakes") is visible. After the insertion of the gas tube, a large amount of gases and liquid feces came off, the abdomen slept. However, a day later the situation repeated.

Questions:
1. What is the pathomorphological essence of the disease (which nodes are absent in the intestinal wall)?
2. What is the main triad of symptoms of Hirschsprung's disease?
3. List the main clinical forms of the disease depending on the extent of the aganglionic zone.
4. What is the "spyglass sign" in the digital examination of the rectum?
5. Why does this disease develop a secondary expansion of the overlying parts of the intestine?

Task 8.2. A 5-month-old child with chronic constipation underwent irrigography (x-ray of the intestine with barium). The images revealed: the rectum is narrowed, has a funnel-shaped transition to a sharply expanded, looped sigmoid colon.

Questions:
1. What is the name of the characteristic radiological zone between the narrowed and expanded areas (zone ...)?

2. Which study is the "gold standard" and allows you to conclusively confirm the absence of nerve plexuses (biopsy according to ...)?
3. At what distance from the anus is a biopsy usually taken in order not to get into the physiological zone of hypogangliosis?
4. What is anorectal manometry and what result is expected for Hirschsprung's disease?
5. Why is it not possible to use a large amount of water for enemas in preparation for irrigography in such children (risk of intoxication)?

Task 8.3. A 2-year-old child with Hirschsprung's disease against the background of prolonged constipation suddenly had a fever, liquid stools with a putrid odor appeared, the abdomen increased sharply in volume, and a state of severe intoxication set in.

Questions:

1. What formidable complication has developed in the child (hirschsprung-associated ...)?
2. What is the reason for paradoxical diarrhea (loose stools) in the presence of a mechanical obstacle in the distal portions?
3. What is the daily conservative therapy ("bowel care") before surgery?
4. What is the danger of fecal stone forming in the enlarged section?
5. What changes in the electrolyte composition of the blood are characteristic of chronic fecal stasis?

Task 8.4. The child is prepared for radical surgery for the rectal form of Hirschsprung's disease. Options for modern one-stage interventions are considered.

Questions:

1. Name the main types of radical operations by author (at least 3: Swenson, Duhamel, Soave).
2. What is the essence of Soave surgery (extramucosal reduction)?
3. In what cases are surgeons forced to apply a preventive stoma as the first step?
4. Which modern method allows you to perform the operation without an incision on the anterior abdominal wall (transanally)?
5. What is the main purpose of surgical treatment (which part of the bowel should be removed)?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykiev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2]2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4].

Topic 9. Anorectal malformations.

Task 9.1. In the delivery room, during the examination of a newborn boy, the absence of an anus was found. In place of the anus there is a small depression (pigment spot) with radial folding of the skin.

Questions:

1. Formulate a preliminary diagnosis.
2. How many hours after birth is it advisable to perform X-ray diagnostics according to Wangensteen (invertography)?
3. What is the essence of the Wangensteen-Rice method (the position of the child and the mark)?
4. What is the distance (in cm) between the mark and the gas bubble of the intestine considered the boundary between "high" and "low" atresia?
5. What are the tactics of feeding such a child until the diagnosis is clarified?

Task 9.2. A newborn girl has no anus when examining the perineum. When crying, meconium is released from the genital fissure. The abdomen is soft, moderately swollen.

Questions:

1. What form of defect (fistulous form) are we talking about?
2. In which parts of the female genital area do fistulas most often open?
3. What is a persistent cloaca?
4. Why do fistulous forms of atresia not always require emergency surgery on the first day of life?
5. Which examination method (ultrasound or fistulography) best visualizes the course of the fistula?

Task 9.3. A boy 2 days old. The anus is missing. The mother noticed that when urinating, the urine is colored green (meconium), and gas bubbles are released from the urethra.

Questions:

1. Where does the fistula open in this case?
2. What formidable complication of the urinary system (ascending infection) can develop?
3. What are the stages of surgical treatment for high forms of atresia (first a stoma or immediately plastic surgery)?
4. What is the name of radical anal reconstruction surgery (the term "anorectoplasty")?
5. What is the role of magnetic resonance imaging (MRI) in diagnosing the condition of the pelvic floor muscles?

Task 9.4. A child of 1 month of age. Complaints of difficulty in defecation, stool comes out in a "ribbon" or "thin stream", the abdomen is constantly swollen.

Questions:

1. How is anal stenosis different from atresia?
2. What conservative method of treatment (expansion) is used for stenosis and after radical surgery?
3. What is the name of a special set of tools (metal rods) for bougienage of the anus according to the author?
4. How long (in months) does the course of prophylactic bougienage usually last after proctoplasty?
5. What complication can develop with too forced (rough) bougienage?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykiev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2]2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykiev K.M., et al.A course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4]. **Methodological recommendations.** Mykyev K.M., et al. Malformations and diseases of the anorectal zone in children. Methodological recommendations for students of the pediatric and medical faculties Bishkek: KRSU, 2018. [L3.15].

Topic 10. Hernias of the anterior abdominal wall.

Task 10.1. A 3-year-old boy. The mother noticed a swelling of elastic consistency in the right inguinal region, which appears when crying or running and disappears at rest. On palpation, the formation is painless, it goes into the abdominal cavity with a characteristic "rumbling".

Questions:

1. Make a preliminary diagnosis.
2. What is the main mechanism of the development of inguinal hernia in children (connection with the vaginal process of the peritoneum)?
3. What is the key difference between a congenital inguinal hernia and an acquired one (in relation to the elements of the spermatic cord)?
4. What is the name of the "push" symptom checked for coughing or straining?
5. What are the treatment tactics for an uncomplicated inguinal hernia in a child (conservative or surgical)?

Task 10.2. A 1-year-old girl was taken to the emergency room with complaints of acute anxiety, crying, vomiting. In the right inguinal region, a dense, sharply painful formation was palpated, which could not be adjusted into the abdominal cavity. The skin above it was slightly hyperemic.

Questions:

1. What complication did the child develop?
2. Which organ is most often incarcerated in the hernial sac in girls?
3. Is it permissible to attempt to forcibly reduce a hernia if there are signs of skin inflammation?
4. What are the surgical tactics (urgency and sequence of actions) in case of ineffectiveness of conservative measures within 2 hours?
5. What is the peculiarity of the examination of the contents of the hernial sac during surgery (viability assessment)?

Task 10.3. The child is 6 months old. When screaming, a protrusion the size of a cherry appears in the navel area, which is easily adjusted with a finger. The umbilical ring passes the tip of the index finger. There are no complaints of pain, the stool is regular.

Questions:

1. Formulate a diagnosis.
2. Up to what age (in years) is expectant management and conservative treatment justified for an umbilical hernia?
3. List the methods of conservative treatment of umbilical hernia in young children.
4. Why are umbilical hernias in children extremely rare, unlike adults?
5. What are the main indications for planned surgical treatment of an umbilical hernia?

Task 10.4. A 7-year-old boy complains of pain in the substrate area, which intensifies after eating and physical exertion. Examination in the epigastrium along the midline palpates a small (1x1 cm) dense, painful formation. There are no symptoms of peritoneal irritation.

Questions:

1. What pathology (hernia ...) can we think about in this case?
2. What is most often the contents of the hernial sac in hernias of the white line of the abdomen in children?
3. With which diseases of the gastrointestinal tract it is necessary to make a differential diagnosis due to the similarity of pain?
4. Why are hernias of the white line of the abdomen almost never healed on their own?
5. What is the essence of the Lexer operation used for this pathology?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykiev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2]2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M., Omurbekov T.O., and others. Hernias of the anterior abdominal wall: Textbook [L2.5] Bishkek: KRSU, 2020 **Methodological recommendations.** Mykyev K.M., et al. Hernias of the anterior abdominal wall in children. Methodological recommendations for students of the pediatric and medical faculties Bishkek : KRSU 2017 [L3.11].

Topic 11. Malformations of the urinary system.

Task 11.1. A 2-month-old boy. A planned ultrasound revealed a significant enlargement of the pelvis (30 mm) and calyxes of the left kidney. The renal parenchyma is thinned to 3 mm. The ureter is not visualized along its entire length.

Questions:

1. Make a preliminary diagnosis.
2. In which anatomical segment is the obstacle in hydronephrosis located?
3. Which radiopaque examination (excretory...) will help to assess the function of the kidney and the degree of expansion of the collector system?
4. What is the difference between hydronephrosis and ureterohydronephrosis according to ultrasound?
5. What is the main purpose of the Heines-Anderson (Kuchera) operation performed for this pathology.

Task 11.2. A 3-year-old girl was admitted with complaints of fever up to 39.0°C, lower back pain and cloudy urine. In a general urinalysis: leukocytes in the entire field of vision, bacteriuria. After the acute pyelonephritis subsided, micturitional cystourethrography was prescribed.

Questions:

1. What pathology (urine reflux) is planned to be excluded using cystography?
2. Describe the mechanism of reflux nephropathy (shrinkage of the kidney).
3. What degree of VUR (according to the international classification) is characterized by ureteral dilation and deformation of the calyxes?
4. What is the endoscopic treatment of VUR (administration of bulk-forming drugs)?
5. Why do recurrences of pyelonephritis often occur in VUR?

Task 11.3. Newborn boy. From the first day of life, there is a sluggish, intermittent stream of urine, urination in drops. Palpation above the pubis reveals a dense elastic formation (overfilled bladder). Ultrasound shows bilateral ureterohydronephrosis.

Questions:

1. Which malformation (valves ...) should we think about first?
2. Why is this defect found exclusively in boys?
3. What formidable complication of the kidneys (renal...) can develop already in the neonatal period?
4. What are the first aid tactics (bladder drainage) for acute urinary retention?
5. Which method of endoscopic correction is the method of choice for posterior urethral valves?

Task 11.4. In a 5-year-old child, during an examination for abdominal pain after injury, it was found that the lower poles of both kidneys are fused with each other, and the isthmus is located in front of the aorta and the inferior vena cava.

Questions:

1. What is this kidney fusion anomaly called?
2. Why are such kidneys more susceptible to injury when hit in the abdomen?
3. What changes in the excretory urogram (position of the renal axes) are characteristic of this pathology?
4. Does this anomaly require surgical treatment if there is no impaired urine outflow and pain?
5. What other form of fusion ("L-shaped", "S-shaped") is accompanied by dystopia of one of the kidneys?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykiev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2]2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M., Omurbekov T.O., and others. Hernias of the anterior abdominal wall: Textbook [L2.5] Bishkek: KRSU, 2020 **Methodological recommendations.** Poroshchay V.N., Mykyev K.M. Congenital malformations of the upper (kidneys, ureters) of the urinary tract in children: Methodological recommendations for students of the pediatric and medical faculties Bishkek : KRSU 2016 [L3.3].

Topic 12. Edematous scrotum syndrome.

Task 12.1. A 13-year-old boy woke up at night from a sharp pain in the left half of the scrotum. There was a single vomiting. On examination: the left half of the scrotum was enlarged, the skin was hyperemic, swollen. The testicle was pulled up to the root of the scrotum, located horizontally, sharply painful at the slightest touch.

Questions:

1. Make a preliminary diagnosis.
2. What is the essence of the negative Prehn's symptom in torsion (the connection of pain with the lifting of the testicle)?
3. What is the "gold standard" of a time interval (in hours) to save testicular viability?
4. What manipulation (external...) can the surgeon try to perform in the first hours of the disease before surgery?
5. Why is testicular torsion more common in puberty?

Task 12.2. An 8-year-old boy complains of moderate pain in the right side of the scrotum, which appeared last night. He walks with a slight limp. On examination: the edema is insignificant, localized in the area of the upper pole of the testicle. A dark blue formation the size of a pea shines through the skin.

Questions:

1. What pathology (torsion ...) are we talking about?
2. What is a hydatid (vestigial process) and where is it usually located?
3. What is the name of the pathognomonic visual sign - the "blue dot" symptom?
4. What are the surgical tactics for confirmed hydatid torsion (active or expectant)?
5. With what infectious disease (mumps) do you sometimes have to differentiate scrotum pain?

Task 12.3. A 15-year-old adolescent complains of pain in the scrotum, chills, fever up to 38.5°C. From the anamnesis: a week ago he had a sore throat. On examination: the scrotum is enlarged, the epididymis is clearly contoured, sharply thickened and painful. Urination is not disturbed, but in the urine test there is moderate leukocyturia.

Questions:

1. Formulate a diagnosis.
2. What routes of infection (hematogenic, lymphogenic) are most typical for children?
3. What auxiliary study (ultrasound with Doppler) will help to distinguish inflammation from torsion (by the nature of blood flow)?
4. What is the conservative treatment of orchiepididymitis (group of drugs)?
5. What complication of reproductive function can develop with a bilateral process?

Task 12.4. A 5-year-old boy was admitted with severe swelling of the scrotum. The skin is bright pink, shiny, the edema spreads to the penis and perineum. There is no pain on palpation of the testicles, they are freely identified in the scrotum, of normal size.

Questions:

1. What condition (allergic...) should I think about?
2. What is the palpation difference between allergic edema and testicular torsion?
3. Is an emergency revision of the scrotum required in this case?
4. What drugs (antihistamines, hormonal) are the first line of therapy?
5. What is the specific form of self-limiting swelling of the scrotum skin in children (infantile idiopathic edema) called?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykiev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2]2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M., Omurbekov T.O., and others. Hernias of the anterior abdominal wall: Textbook [L2.5] Bishkek: KRSU, 2020 **Methodological recommendations.** Poroshchay V.N., Mykyev K.M. Congenital malformations of the upper (

Topic 13. Cryptorchidism.

Task13.1. A 2-year-old boy. Examination in the clinic revealed the absence of the left testicle in the scrotum. The left half of the scrotum is hypoplastic (underdeveloped). Palpation in the left inguinal region reveals a dense-elastic formation measuring 1.5x1.0 cm, which cannot be lowered into the scrotum.

Questions:

1. Formulate a preliminary diagnosis (specify the side and the form).
2. What is the difference between inguinal retention and abdominal cryptorchidism?
3. What is false cryptorchidism (migratory testicle) and does it require surgery?
4. What is the main reason for the underdevelopment of the scrotum in this defect?
5. At what age (according to modern protocols [L1.1]) is it recommended to perform elective surgery?

Task 13.2. In a 3-year-old child, the left testicle is absent in the scrotum. Upon careful examination, it was found under the skin in the area of the root of the penis.

Questions:

1. What is the name of this anomaly of position (ectopy)?
2. Name 3 typical places of testicular ectopia (except for the root of the penis).
3. What is the anatomical difference between ectopy and cryptorchidism (migration pathway)?
4. Is hormonal therapy (hCG) possible for testicular ectopy?
5. What operation is indicated in this case?

Task 13.3. A 5-year-old boy was hospitalized for planned treatment of right-sided inguinal cryptorchidism. Testicular descent surgery is planned.

Questions:

1. Name the classic operation of testicular reduction and fixation according to the author (for example, according to Petrivalsky-Shomaker).
2. What concomitant disease (in 90% of cases) is detected during surgery for inguinal cryptorchidism (non-closure ...)?
3. What is the essence of mobilizing the elements of the spermatic cord?
4. What formidable testicular complication can develop in the postoperative period with excessive vascular tension?
5. Why is cryptorchidism considered a **precancerous condition** (risk of developing seminoma)?

Task 13.4. In a newborn, the testicles in the scrotum and inguinal canals are not palpable during the examination. Ultrasound of the scrotum and inguinal areas did not reveal testicles. Parents are concerned about the possible absence of organs.

Questions:

1. What form of cryptorchidism (abdominal) should we think about?
2. What is the total congenital absence of both testicles called?
3. Which modern diagnostic method (laparoscopy) is definitive for finding the testicle in the abdominal cavity?
4. What is the advantage of two-stage reduction according to Fowler-Stevens in "high" cryptorchidism?
5. What hormonal studies (testosterone, LH, FSH) will help distinguish bilateral cryptorchidism from anorchism?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykiev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2]2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M., Omurbekov T.O., and others. Hernias of the anterior abdominal wall: Textbook [L2.5] Bishkek: KRSU, 2020 **Methodological recommendations.**

Topic 14. Burn injury

Task 14.1. A 4-year-old child knocked over a cup of hot tea. On examination: on the front surface of the chest and abdomen there is diffuse hyperemia, against the background of which there are tense blisters with transparent contents. The child is sharply restless, cries.

Questions:

1. Determine the degree of burn according to the classification (I, II, III).
2. How to calculate the burn area in a child of this age (using the Lund-Browder table or the "palm" rule)?
3. What is the main anatomical and physiological feature of the child's skin that contributes to deeper burns at a lower temperature?
4. What are the tactics of first aid at the pre-hospital stage (cooling)?
5. From what area of lesion (in %) in young children does the development of burn shock begin?

Task 14.2. A 2-year-old boy was taken to the intensive care unit 2 hours after the fire in the apartment. Burns of the body and lower extremities (30% of the body surface) by flames. The condition is extremely serious, consciousness is preserved, but the child is inhibited. The skin is pale and cold. The pulse is rapid, weak. There is no urine.

Questions:

1. Name the phase of burn disease in which the child is.
2. What is the main difference between burn shock and traumatic shock (duration of the erectile phase, plasma loss)?
3. What formula (e.g. Parkland's) is used to calculate the amount of infusion therapy on the first day?
4. What indicator (except for blood pressure and pulse) is the main criterion for coming out of shock (hourly diuresis)?
5. Why is it necessary to exclude respiratory tract burns and thermal inhalation injury in flame burns?

Target 14.3. A 6-year-old child is in the hospital for the 5th day after an extensive burn (20%). Body temperature rose to 39.5°C, vomiting, delirium, tachycardia appeared.

Questions:

1. At what stage has the burn disease (acute burn ...) passed?
2. Name the main sources of intoxication during this period (tissue decay products, bacterial toxins).
3. What gastrointestinal complication (formation of acute ulcers) can develop against the background of severe intoxication (Kurling's ulcer)?
4. What is the role of nutritional support (high-protein nutrition) in the treatment of such patients?
5. Name the most common causative agents of burn wound infection (Pseudomonas aeruginosa, staphylococcus).

Task 14.4. In a 14-year-old teenager, after a deep burn (III degree), a dense dry black scab formed on the lower leg. After 2 weeks, rejection of the eschar began, the wound surface with dull granulations was exposed.

Questions:

1. What is necrectomy and when is it indicated for deep burns?
2. What type of skin grafting (according to the author, for example, according to Thiersch or split flap) is the main one for the closure of extensive defects?
3. What is the advantage of mesh grafts (perforated flaps)?
4. What physiotherapeutic methods and ointments are used to prevent the development of keloid scars?
5. What is burn contracture and how to avoid it when the burn is localized in the joint area?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykiev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2]2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M., Omurbekov T.O., and others. Hernias of the anterior abdominal wall: Textbook [L2.5] Bishkek: KRSU, 2020 **Methodological recommendations.**

Topic 15. Injuries of the abdominal cavity.

Task 15.1. A 10-year-old boy fell off a bicycle, hitting his left side on the handlebars. After 2 hours, he felt sharp weakness, dizziness. On admission: the child is pale, pulse is 110 beats / min, blood pressure is 90/60 mm Hg. The abdomen is moderately swollen, painful in the left hypochondrium.

Questions:

1. What damage to the parenchymal organ should be thought about in the first place?
2. What is the name of the "vanka-vstanka" symptom characteristic of a ruptured spleen?
3. Which ultrasound method (FAST-protocol) allows you to quickly detect free fluid in the abdominal cavity?
4. Name a characteristic change in the complete blood count (hemoglobin, hematocrit) with continued bleeding.
5. What is a two-stage rupture of the spleen (subcapsular hematoma)?

Task 15.2. A 7-year-old child was delivered after an accident. The condition is extremely serious, consciousness is confused, the skin is earthy, covered with cold sweat. Heart rate is 140 beats per minute, blood pressure is 70/40 mm Hg. The abdomen is sharply tense, during percussion **dullness is determined in sloping places** (right flank).

Questions:

1. What is the most likely localization of the injury in a blow to the right hypochondrium?
2. Which tactics is a priority: immediate laparotomy or long-term additional examination (CT, MRI)?
3. What is the purpose of laparocentesis ("floating catheter") with an unclear clinical picture?
4. What components of infusion therapy (crystalloids, colloids) should be injected in parallel with delivery to the operating room?

5. Why are liver ruptures more severe in children than in adults (features of the capsule and ligamentous apparatus)?

Task 15.3. A 12-year-old girl was hit by a ball in the epigastrium. After 6 hours, the pain intensified, became diffuse, and a single vomiting appeared. The temperature was 37.8°C. The abdomen was "board-like" tense, and there was a positive **Shchetkin-Blumberg** sign in all parts.

Questions:

1. What complication has developed as a result of a rupture of a hollow organ (duodenum or jejunum)?
2. What does the disappearance of hepatic dullness (the presence of gas) indicate?
3. What X-ray sign ("sickle" of air) confirms perforation of a hollow organ?
4. What kind of examination (plain radiography) is performed in a standing or lateroposition position?
5. What is the peculiarity of surgical debridement of the intestinal wound in case of its complete rupture?

Task 15.4. An 8-year-old child hit his stomach on the edge of the table. On the first day, the pain was moderate, but on the 3rd day it became girdle, repeated vomiting appeared, and the condition worsened. In the epigastrium, a painful tumor-like formation without clear contours is palpated.

Questions:

1. Damage to which organ (retroperitoneal) can be suspected?
2. Which enzyme in the urine and blood (amylase/diastase) will be sharply increased?
3. What is a post-traumatic pancreatic cyst and how is it formed?
4. What is the main tactics of conservative treatment for a gland contusion (hunger, cold, enzyme inhibitors)?
5. Why does intestinal paresis often develop with pancreatic injury?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykiev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2]2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume)Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M., Omurbekov T.O., and others. Hernias of the anterior abdominal wall: Textbook [L2.5] Bishkek: KRSU, 2020 **Methodological recommendations.**

Topic 16. Necrotic phlegmon of newborns.

Task 16.1. The newborn is 10 days old. The mother noticed a small red spot on the skin of the lumbar region, dense to the touch. After 6 hours, the spot increased 3 times, became purple-bluish, the skin above it was hot. The child became lethargic, refusing to breastfeed, the temperature was 38.9°C. Palpation in the center of the lesion revealed softening.

Questions:

1. Make a preliminary diagnosis.
2. What stages of the development of NSF (erythematous, alterative-necrotic, rejection) are observed in this case?
3. What is the main feature of the blood supply to the subcutaneous tissue in newborns, which explains the lightning-fast spread of the process?
4. What is the most common location of cellulitis (lower back, sacrum, chest).
5. Why is the affected area under the skin in NSF always larger than the visible redness?

Task 16.2. A 14-day-old child was delivered with extensive lesions of the skin of the back. The spot is bluish, in the center there is a black area (necrosis). With light pressure, the skin easily peels off from the underlying tissues. The condition is serious, intoxication is pronounced.

Questions:

1. With what diseases (erysipelas, sclerema, mastitis) should a differential diagnosis be made?
2. What is the difference between NSF and erysipelas (borders, nature of the edge)?
3. What is Nikolsky's sign and is it found in classic cellulitis of newborns?

4. What is the role of Staphylococcus aureus in collaboration with gram-negative flora in the etiology of the disease?
5. What does the appearance of fluctuations (fluctuations) in the lesion indicate?

Task 16.3. The diagnosis of NSF is confirmed. The child is taken to the operating room. The surgeon plans to make incisions to decompress and remove pus.

Questions:

1. What are multiple incisions made for cellulitis (checkerboard notches) called?
2. What should be the length of the incisions and the distance between them according to the recommendations.
3. Should the incisions cover healthy skin along the periphery of the lesion?
4. Which drainage method (with which antiseptics) is used after incisions?
5. What is the danger of an inadequate (too few) number of incisions in this pathology?

Task 16.4. The child was operated on for NSN. On the 5th day, mass rejection of the skin and subcutaneous tissue began, the fascia of the muscles was exposed. The condition remains serious, high fever persists, shortness of breath appeared, the liver was enlarged by 3 cm.

Questions:

1. What systemic complication (sepsis) develops with the progression of NFN?
2. What lung damage (metastatic...) often accompanies severe cellulitis?
3. What is the essence of the second stage of surgical treatment (after cleaning the wound from necrosis)?
4. What types of skin grafting may be required for extensive skin defects?
5. Why can children who have undergone NSF form rough deforming scars in the future?

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Topic 17. Craniocerebral injuries.

Task 17.1. A 5-year-old boy fell from a swing, hit the back of his head. Short-term loss of consciousness (up to 1 minute), single vomiting was noted. On admission after 2 hours: complaints of headache, weakness. Neurologically: pupils are equal, there are no pathological reflexes, there is a slight nystagmus with extreme abductions of the eyeballs.

Questions:

1. Make a preliminary diagnosis.
2. What is the main feature of collecting anamnesis in preschool children with head injury?
3. What is retrograde amnesia and is it characteristic of a concussion?
4. What is the minimum duration of inpatient follow-up for suspected TBI?
5. What are the tactics of drug treatment (regimen, dehydration) for this form?

Task 17.2. A 10-year-old girl was hit by a car. She was brought in serious condition. Consciousness is confused (sopor). A light fluid with an admixture of blood flows out of the right auditory canal.

Questions:

1. What severe damage (fracture of the skull base) do these symptoms indicate?
2. What is the name of cerebrospinal fluid leakage from the ear (otoliquorrhea)?
3. What are the typical signs of moderate or severe brain contusion?
4. Which method of radiation diagnostics (CT or MRI) is a priority in the acute period for the detection of bone injuries and hematomas?
5. Why is it contraindicated to rinse the ear canal and nose in case of a skull base fracture?

Task 17.3. A 7-year-old child fell from a tree. Immediately after the fall, he felt good ("light interval"). After 4 hours, the condition deteriorated sharply: there was an increasing headache, repeated vomiting, the child became drowsy.

Questions:

1. What formidable complication (intracranial hematoma) has developed in the child?
2. What is a "light gap" and for which type of hematoma is it most typical?
3. Explain the mechanism of anisocoria (on which side is the pupil usually dilated in relation to the hematoma)?
4. What emergency surgical intervention is indicated when the symptoms of brain compression increase?
5. What is the cause of bradycardia with increased intracranial pressure (Cushing's triad)?

Task 17.4. A baby is 4 months old. He fell out of the stroller. There are no external injuries, he did not lose consciousness. An hour later, he became lethargic, refuses to eat, there is a bulging and tension of the large fontanelle, regurgitation "fountain".

Questions:

1. Why are the classic symptoms of TBI often smoothed out or absent in the first hours in infants?
2. What does the tension of a large fontanelle in a baby after an injury indicate?
3. What fast and safe diagnostic method (neurosonography) is available through an open fontanelle?
4. What is a subdural ganglion cyst and why is it more common in children under one year old?
5. What is the danger of latent intracranial bleeding in infants (risk of a sharp drop in hemoglobin).

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykyev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2] 2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume) Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M. Traumatology and Orthopedics of Childhood: Textbook Bishkek: KRSU 2021 [L2.6]. **Methodological Recommendations.**

Topic 18. Chest injuries in children.

Task 18.1. A 12-year-old boy received a strong blow with a ball in the right side of the chest while playing football. Pain immediately appeared, it became difficult to breathe. On examination: the right side of the chest lags behind in breathing, the intercostal spaces are smoothed. Percutaneously on the right is a box sound, auscultatively - breathing is sharply weakened.

Questions:

1. Make a preliminary diagnosis.
2. In which direction do the mediastinal organs (heart) move when air accumulates in the pleural cavity?
3. In which intercostal space and along which line is the puncture performed to remove air?
4. What instrumental examination is confirmatory (X-ray in what projection)?
5. Describe the mechanism of the development of subcutaneous emphysema in chest trauma.

Task 18.2. A 7-year-old child was brought in after a fall from a height. The condition is extremely serious, pronounced shortness of breath (HR 50 per minute), cyanosis of the lips and face. The neck seems thickened, a crunch (crepitus) is felt on palpation of the skin.

Questions:

1. What acute complication (valvular ...) has developed in the child?
2. Why is this condition considered critical (effect on venous return to the heart)?
3. What is the essence of emergency decompression at the pre-hospital stage (needle with valve)?
4. What is the purpose of installing permanent drainage according to Bülau?
5. What is the "rebound phenomenon" when hitting the chest in children (why does the lung tear without breaking the ribs)?

Task 18.3. A 14-year-old teenager received a penetrating knife wound to the left side of the chest. He

complains of severe weakness, dizziness, shortness of breath. He is pale, pulse is 120 beats per minute, blood pressure is 80/50 mm Hg.

Questions:

1. What complication (blood accumulation) are we talking about?
2. What are the degrees of hemothorax according to the volume of blood spilled out (small, medium, total)?
3. How is the Rouvilois-Grégoire test (assessment of blood clotting from the pleural cavity) performed and what does a positive result mean?
4. What are the tactics for ongoing intrapleural bleeding (thoracotomy or conservative treatment)?
5. What lung complication can develop in the late period with unevacuated blood (coagulated hemothorax)?

Task 18.4. A 10-year-old child received a strong blow to the sternum in an accident (impact on the front panel). There are no visible injuries to the ribs. He complains of pain behind the sternum, palpitations. The ECG revealed rhythm disturbances and a decrease in the voltage of the waves.

Questions:

1. What kind of damage to internal organs (bruise...) can we think of?
2. Why are rib fractures less common in children than in adults, even with severe injuries (elasticity of the frame)?
3. What is the treatment tactics for lung contusion (infusion restriction, oxygen therapy)?
4. What formidable complication of the heart (tamponade) can develop when its membranes are damaged?
5. What is the danger of traumatic asphyxia syndrome (chest compression)?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykyev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2] 2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume) Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M. Traumatology and Orthopedics of Childhood: Textbook Bishkek: KRSU 2021 [L2.6]. **Methodological Recommendations.**

Topic 19. Fractures of the upper and lower extremities.

Task 19.1. A 6-year-old boy fell on an outstretched arm while running. He complains of pain in the forearm. On examination: there is a moderate deformation of the bones of the forearm in the middle third (the angle is open to the dorsal side), there is no significant swelling. Palpation is sharply painful.

Questions:

1. What is a typical "childish" type of fracture (type ...) that we are talking about?
2. Why is there often no complete displacement of the fragments (the role of the periosteum) in such a fracture?
3. What is a subperiosteal fracture and how does it differ from a complete fracture?
4. What is the treatment tactics for fractures of the "green branch" type (is reduction necessary for angular deformity)?
5. What is the average duration of immobilization for forearm fractures in children of this age?

Task 19.2. A 10-year-old girl twisted her foot while jumping. She complains of sharp pain in the ankle joint. On examination: pronounced swelling in the area of the outer ankle, local tenderness strictly along the line of the articular space.

Questions:

1. What is the name of a traumatic detachment and displacement of the pineal gland along the line of the germinal cartilage?
2. Name the classification of damage to the growth zone by authors (Salter-Harris).

3. What formidable long-term complication (disorder ...) can develop when the germinal cartilage is damaged?
4. Why are epiphyseolysis found only in children and adolescents?
5. Does this injury require perfect anatomical reposition?

Task 19.3. A 7-year-old child fell from the horizontal bar to the elbow. The elbow joint is sharply enlarged in volume, deformed. The forearm seems to be shortened. Palpation reveals bone crepitus above the ulnar process. The pulse on the radial artery is weakened, the fingers of the hand are pale and cold.

Questions:

1. Make a preliminary diagnosis.
2. What severe complication (compression of the brachial artery) is indicated by pallor and lack of pulse?
3. What is ischemic Volkmann contracture and how to prevent it?
4. Which fixation method (skeletal traction or closed reduction with Kirschner wires) is preferable for significant swelling?
5. Why is it important to check the function of the radial and ulnar nerves in this fracture?

Task 19.4. A 4-year-old boy was brought in after a fall from a great height. He complains of pain in the right hip. The right leg is shortened, rotated outwards, in the middle third of the thigh there is pathological mobility and deformity. The child cries, signs of pain shock are expressed.

Questions:

1. What are the tactics of first aid (transport immobilization) at the scene of the accident?
2. What is the main treatment method for children under 5 years of age for hip fractures (adhesive traction on ...)?
3. What is the advantage of vertical traction (according to Briand) in young children?
4. Is it permissible for children to shorten or lengthen the segment by 1-1.5 cm during fusion (ability to self-correct)?
5. How long (on average) does it take for a primary callus to form in a 4-year-old child?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional**. 1. Omurbekov T.O., Mykyev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2] 2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume) Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M. Traumatology and Orthopedics of Childhood: Textbook Bishkek: KRSU 2021 [L2.6]. **Methodical Recommendations.** Namanov A.A., Mykiev K.M. Fractures of bones of the upper extremities in children: Methodological recommendations for students of the pediatric and medical faculties Bishkek : KRSU 2016 [L3.9]. Mykiev K.M., Namanov A.A., Zamirbekov K.Z. Injuries of the lower extremities in children. Methodological recommendations for students of pediatric and medical faculties Bishkek : KRSU 2018[L3.18].

Topic 20. Congenital hip dislocation.

Task 20.1. During the examination of a newborn girl (from the 1st pregnancy, breech presentation) in the maternity hospital, the neonatologist drew attention to the asymmetry of the skin folds on the thighs. When trying to abduct the legs bent at the knee and hip joints, a characteristic "click" was heard on the left, after which the abduction became complete.

Questions:

1. What pathognomonic symptom (symptom ...) are we talking about?
2. What other visual signs (other than asymmetry of the folds) are characteristic of VVD in infants?
3. What is the role of breech presentation in the etiology of this defect?
4. Which method of radiation diagnostics (ultrasound or X-ray) is the method of choice for children under 3 months of age?
5. What is the essence of conservative treatment in the first days of life (wide swaddling)?

Task 20.2. The child is 4 months old. The mother complains of restriction of the abduction of the right leg. An X-ray of the hip joints revealed: sloping of the roof of the acetabulum, late appearance of the ossification

nucleus of the femoral head on the right, displacement of the proximal end of the femur upwards and outwards.

Questions:

1. Name the main X-ray indicator - the angle that characterizes the degree of sloping of the roof of the depression.
2. What is Shenton's line and how does it change with dislocation?
3. Describe the Putti triad characteristic of congenital hip dislocation.
4. Up to what age (in months) should the ossification nuclei of the femoral heads normally appear?
5. What is the name of the imaginary vertical line that helps determine the lateral displacement of the hip (Perkin's line)?

Task 20.3. A girl of 1 year and 2 months began to walk. The mother noticed that the child was "rolling" from side to side ("duck walk"). On examination: lumbar lordosis was pronounced, the greater trochanter on the right is located above the Roser-Nelaton line. When leaning on the right leg, the left half of the pelvis descends.

Questions:

1. What is the symptom of gluteal insufficiency (pelvic lowering) called?
2. Why is a "duck gait" formed with bilateral dislocation?
3. What is the relative shortening of the limb in VVB?
4. What are the tactics of treating a child at this age (staged plaster bandages or devices)?
5. Name the most well-known device for the functional treatment of VVD (stirrups ...).

Task 20.4. A 3-year-old child with congenital hip dislocation failed conservative reduction. It was decided to carry out open reduction of the dislocation with joint reconstruction.

Questions:

1. What anatomical obstacle (inside the joint) most often interferes with closed reduction in children over one year old?
2. What are the types of surgical interventions: on which part of the bone is corrective osteotomy performed?
3. What is aseptic necrosis of the femoral head and why can it occur after rough reduction?
4. What is the duration of immobilization in a coxite plaster cast after surgery?
5. What is the importance of rehabilitation (exercise therapy, physiotherapy) after removing the cast?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional.** 1. Omurbekov T.O., Mykyev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek: KRSU, 2015 [L2.2] 2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume) Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M. Traumatology and Orthopedics of Childhood: Textbook Bishkek: KRSU 2021 [L2.6]. Methodological recommendations. L3.18].

Topic 21. Nephroblastoma.

Task 21.1. The mother of a 3-year-old child accidentally found a dense sedentary formation in the abdomen on the right while bathing. The child is active, appetite is preserved. On examination: a tumor of 10x8 cm in size is palpated in the right half of the abdomen, the surface is smooth and painless. Urination is not disturbed.

Questions:

1. Make a preliminary diagnosis.
2. Why should extreme caution be exercised when palpating the abdomen in such a child (risk of dissemination)?
3. What is the most common age-related peak incidence of nephroblastoma in children?
4. What changes in the urinalysis (microhematuria) may occur, but are not mandatory?
5. Name a concomitant ocular symptom (aniridia) that is sometimes associated with Wilms' tumor.

Task 21.2. A 4-year-old child is examined for suspected nephroblastoma of the left kidney. The condition is satisfactory, blood pressure is 115/80 mm Hg (moderate hypertension). A set of diagnostic procedures is prescribed.

Questions:

1. What method of ultrasound (Dopplerography) is necessary to exclude the growth of a tumor into the renal and inferior vena cava?
2. What signs on the excretory urogram (deformation of the pelvis system, "amputation" of the calyxes) are characteristic of this tumor?
3. To which organ does nephroblastoma metastasis most often occur (chest X-ray is required)?
4. What is the cause of arterial hypertension in a kidney tumor (artery compression, renin release)?
5. With what diseases (retroperitoneal neuroblastoma, hydronephrosis) should a differential diagnosis be made?

Task 21.3. A 2-year-old child has been diagnosed with nephroblastoma. The tumor is limited to the kidney, the capsule has not germinated, there are no metastases. Comprehensive treatment is planned.

Questions:

1. Which stage of the disease (SIOP or NWTS) corresponds to this description?
2. What is the essence of combined treatment (combination of surgery and what else)?
3. Is a needle biopsy of a kidney tumor permissible if nephroblastoma is suspected (risk of seeding)?
4. Is preoperative chemotherapy (according to SIOP protocols) performed to reduce the volume of the tumor?
5. What is the name of a radical operation to remove the kidney along with the tumor and fatty tissue?

Task 21.4. A 5-year-old child was operated on for stage II nephroblastoma. Radical nephrectomy was performed. Histological conclusion: "favorable histological variant".

Questions:

1. What is the frequency of follow-up by an oncologist in the first year after surgery?
2. What indicators of the function of the remaining kidney (creatinine, urea) should be monitored?
3. What does an "unfavorable" histological type (anaplasia) indicate?
4. What is the approximate percentage of five-year survival with timely treatment of localized forms?
5. What restrictions on physical activity and vaccination are imposed on the child after chemotherapy?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional.** 1. Omurbekov T.O., Mykyev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek: KRSU, 2015 [L2.2] 2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume) Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M. Traumatology and Orthopedics of Childhood: Textbook Bishkek: KRSU 2021 [L2.6]. Methodological recommendations.

Topic 22. Posture disorders.

Task 22.1. A 10-year-old boy. The mother complains of the child's "slouching". On examination: the head is tilted forward, the shoulders are brought together, the shoulder blades protrude ("wing-shaped"), the chest is flattened. Thoracic kyphosis is intensified, lumbar lordosis is smoothed.

Questions:

1. What type of posture disorder (round back/slouching) are we talking about?
2. What is the main difference between posture disorders and scoliotic disease (fixed deformity)?
3. What is the main cause of functional slouching at school age (muscle weakness...).
4. How to check the rigidity of kyphosis (forward bend test)?
5. What is the role of the correct organization of the student's workplace in the prevention of this condition?

Task 22.2. A 12-year-old girl, asthenic build. On examination: physiological curves of the spine (kyphosis and lordosis) are practically absent, the back looks "straight as a board". The abdomen is pushed forward. The

child complains of rapid fatigue when standing.

Questions:

1. Formulate a diagnosis (flat back).
2. Why is a flat back considered a dangerous disorder (decreased spring function of the spine)?
3. What serious complication of the spine (osteochondrosis/spondylolisthesis) does the absence of curves predispose to?
4. What sports (swimming, exercise therapy) are most indicated for this type of posture?
5. Name an anthropometric indicator (index) that helps to assess the physical development of the child.

Task 22.3. In an 8-year-old child, the dispensary examination revealed: the right shoulder is 1 cm higher than the left, the waist triangles are asymmetrical (smoothed on the right). When leaning forward (Adams test), there is no muscle fold or costal protrusion. When the child is laid on a flat couch, the shoulder asymmetry disappears.

Questions:

1. Make a diagnosis (asymmetrical posture).
2. What is the Adams test and why is it negative for posture disorders?
3. What is the role of different lengths of the lower extremities in the formation of asymmetry of the pelvis and shoulders?
4. Is an X-ray of the spine required in this case?
5. What are the tactics of "active correction" (the role of the muscular corset)?

Task 22.4. A 9-year-old child was diagnosed with sluggish posture, flat feet of the 1st degree. A rehabilitation course in the clinic was prescribed.

Questions:

1. Why is flat feet often combined with posture disorders (violation of the "foundation" of the body)?
1. What exercises (symmetrical or asymmetrical) are basic in exercise therapy for functional disorders?
2. Is it permissible to use rigid corsets in case of posture disorders in children?
3. What is the recommended frequency of physical therapy to achieve a lasting effect?
4. Name 3 criteria for correct posture when examined from the side (the position of the earlobe, shoulder and greater trochanter in the same line).

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional.** 1. Omurbekov T.O., Mykyev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek: KRSU, 2015 [L2.2] 2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume) Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M. Traumatology and Orthopedics of Childhood: Textbook Bishkek: KRSU 2021 [L2.6]. Methodological recommendations.

Topic 23. Osteochondropathy.

Task23.1. A 7-year-old boy complains of moderate pain in the right knee joint and limping, which appeared 2 weeks ago without visible injury. On examination: no pathology in the knee joint was revealed, but there was a limitation of internal rotation and abduction in the right **hip joint**.

Questions:

1. What pathology (osteochondropathy of the head ...) should we think about?
2. Why does pain often radiate to the knee joint in Perthes disease (referred pain)?
3. Name the 5 stages of the disease according to Rheinberg (aseptic necrosis, impression fracture, etc.).
4. What is the main goal of conservative treatment (complete joint unloading, cuff traction)?
5. What diagnostic method (except X-ray) allows you to detect the disease at stage I (vascular disorders)?

Target 23.2. A 13-year-old teenager who is actively involved in football complains of pain and the appearance of a "lump" under the left knee. Pain increases when running, jumping and kneeling. On examination: in the area of the tuberosity of the tibia, a dense, painful protrusion is determined, the skin above it is not changed.

Questions:
1. Formulate a preliminary diagnosis.
2. What is the essence of the pathology (osteochondropathy of the tuberosity ...)?
3. Why is this disease characteristic of adolescence (intensive growth and traction of the patellar ligament)?
4. What are the tactics of outpatient treatment (load limitation, physiotherapy)?
5. What is the prognosis of the disease after the completion of skeletal growth?

Task 23.3. In a 15-year-old teenager, a pronounced thoracic kyphosis ("humped back") was revealed during the medical examination. The child complains of back pain after prolonged sitting. When trying to straighten up as much as possible, kyphosis persists (rigiden). On the X-ray of the spine: wedge-shaped deformity of the Th7-Th9 vertebral bodies, unevenness of the endplates.
Questions:
1. Make a diagnosis (osteochondropathy of the bodies ...).
2. Name a characteristic X-ray sign – the introduction of the nucleus pulposus into the vertebral body (hernias...).
3. What is the minimum number of wedge-shaped vertebrae needed to confirm the diagnosis?
4. What methods of conservative correction (exercise therapy, swimming, corseting) are used in stage II?
5. How does Scheuermann-Mau disease differ from functional posture disorder?

Task 23.4. A 6-year-old boy complains of pain in the area of the back of the foot and lameness. On examination: local swelling and tenderness in the projection of the scaphoid bone. Radiograph: the scaphoid bone is flattened, sclerosed, fragmented.
Questions:
1. What disease (Köhler...) are we talking about?
2. What is the difference between Köhler II disease and Köhler I disease (localization in the heads of the metatarsals, typical age)?
3. What is the main cause of the development of aseptic necrosis of the foot bones (microtraumatization, impaired blood supply)?
4. What are the tactics of immobilization (plaster "boot" or unloading insole)?
5. Is surgical treatment required for the typical course of these diseases?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional.** 1. Omurbekov T.O., Mykyev K.M., et al.Selected issues of pediatric surgery: Textbook Bishkek: KRSU, 2015 [L2.2] 2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3]. Mykyev K.M., Mykyev K.M., et al.Course of lectures on pediatric surgery: Textbook (3rd volume) Bishkek: KRSU, 2019 [L2.4]. Mykyev K.M. Traumatology and Orthopedics of Childhood: Textbook Bishkek: KRSU 2021 [L2.6]. Methodological recommendations.

Topic 24. Hemangiomas in children.

Task No1 In a newborn girl, 2 weeks after birth, a small red spot appeared on the skin of the cheek, which began to grow rapidly and rise above the surface of the skin. By 3 months, the formation reached 3 cm in diameter, acquired a bright red ("strawberry") color and a tense consistency.
Questions:
1. Make a preliminary diagnosis (specify the clinical form).
2. Name the 3 main phases of the development of infantile hemangioma (proliferation, stagnation, involution).
3. Why are hemangiomas of the maxillofacial region considered "dangerous" localizations (the risk of dysfunction of which functions)?
4. What is the mechanism of action of beta-blockers (propranolol) in the treatment of growing hemangiomas?
5. What is the diagnostic value of ultrasound with Doppler sonography (blood flow assessment)?

Task 24.2. The child is 5 months old. There is an extensive superficial hemangioma in the perineal area. Weeping appeared in the center of the formation, and then a painful wound with a gray plaque.

Questions:

1. What complication of hemangioma has developed in this case?
2. Why is localization in the perineum and natural folds most prone to ulceration?
3. What are the tactics of local treatment of ulcerated hemangioma (antiseptics, hydrocolloid dressings)?
4. Is there a risk of secondary infection and bleeding from such a wound?
5. Is ulceration an indication for immediate initiation of systemic therapy?

Task 24.3 In a 2-month-old child, a massive subcutaneous formation of bluish color, soft-elastic consistency was detected in the area of the right thigh. Over the past 3 days, the formation has sharply increased in volume, has become dense, petechiae (punctate hemorrhages) have appeared on the skin.

Questions:

1. What severe complication (syndrome ...) does the combination of giant hemangioma and thrombocytopenia indicate?
2. What is the pathogenesis of this syndrome (deposition and consumption of platelets within the tumor)?
3. What type of vascular tumors (kaposiform hemangioendothelioma or bundled hemangioma) does this syndrome most often belong to?
4. What are the tactics of emergency care (glucocorticoids, specific therapy)?
5. Why is thrombomass transfusion contraindicated in this syndrome (except in cases of active bleeding)?

Target 24.4. Parents of a 6-month-old child applied for removal of a small (0.5 cm) punctate hemangioma on the skin of the back. The formation has not grown for the last 2 months.

Questions:

1. What are the methods of local exposure to small superficial hemangiomas (cryodestruction, laser therapy, sclerotherapy)?
2. What is the advantage of selective photothermolysis (vascular laser) over cryodestruction (absence of scarring)?
3. In what cases is the tactic of active observation ("wait and see") justified?
4. What is the percentage of cases of spontaneous involution (spontaneous disappearance) of infantile hemangiomas by the age of 5-7 years?
5. What are the indications for surgical excision of hemangioma (residual skin deformities, ineffectiveness of conservative methods).

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional.** 1. Omurbekov T.O., Mykiev K.M., et al. Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2] 2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3].

Topic 25. Malformations of the upper jaw in children.

Task 25.1. In a newborn boy, during the examination in the delivery room, a defect in the soft tissues of the upper lip on the left was found, passing through the entire height of the lip and opening into the nasal cavity. The left wing of the nose is flattened, the tip of the nose is shifted towards the cleft.

Questions:

1. Formulate a preliminary diagnosis (indicate the side and completeness of the defect).
2. Name the main cause of sucking dysfunction in this defect.
3. What is the name of the classic lip reconstruction surgery (cheiloplasty) and at what optimal age is it performed?
4. Which specialists, in addition to the surgeon, should participate in dispensary observation (speech therapist, orthodontist)?
5. Describe the purpose of preoperative preparation (the use of special obturator plates).

Target 25.2. In a newborn girl, when crying, a defect in the palate tissues is visible, passing through the soft

and hard palate to the incisal opening. Communication between the oral and nasal cavities is free.

Questions:

1. Make a diagnosis according to classification (complete or partial cleft palate).
2. Why do such children often develop chronic otitis media and eustachiitis?
3. What is the name of the operation to close the palate defect (uranoplasty) and what are the terms of its performance [L1.2]?
4. What is the essence of velopharyngoplasty (lengthening of the soft palate)?
5. What is the risk of aspiration in newborns with this defect?

Task 25.3. An infant was born with a pronounced underdevelopment of the lower jaw (**micrognia**) and a cleft soft palate. In the supine position, the child experiences noisy breathing (stridor) and sinking of the tongue (**glossoptosis**), which leads to attacks of suffocation (asphyxia).

Questions:

1. Name this symptom complex (syndrome ...).
2. What position in bed (positional therapy) should be given to the child to prevent the tongue from sinking?
3. Why does cleft palate often have a U-shape in this syndrome?
4. What temporary surgical manipulation (lingual-labial adhesion) may be required if conservative measures are ineffective?
5. What is the method of compression-distraction osteogenesis for the correction of micrognia?

Task 25.4. The child is 5 years old, operated on in early childhood for a complete cleft lip and palate. On examination: there is a cicatricial deformity of the upper lip, narrowing of the upper jaw, speech is slurred with a pronounced **nasal tint** (gnusavity).

Questions:

1. What is the name of a speech defect associated with air leakage into the nose when pronouncing sounds (open rhinolalia)?
2. Which specialist (speech therapist) is the leading role in this age period?
3. What orthodontic appliances are used to expand the upper jaw and align the dentition?
4. What does the insufficiency of the palatopharyngeal ring after uranoplasty indicate?
5. At what age are the final cosmetic corrections (rhinocheiloplasty) on the face usually performed?

References. Basic. 1. Isakov Yu.F. Children's Surgery: National Guide: Textbook Moscow: GEOTAR-Media 2009. [L1.1]. 2. Mykyev K.M., Omurbekov T.O., et al. Children's Surgery: Classical University Textbook Bishkek: Typography of KRSU, 2021. [L1.2]. **Additional.** 1. Omurbekov T.O., Mykiev K.M., et al. Selected issues of pediatric surgery: Textbook Bishkek : KRSU, 2015 [L2.2] 2. Mykyev K.M., Omurbekov T.O., et al. Selected issues of pediatric surgery: Textbook (2nd volume) Bishkek: KRSU, 2018 [L2.3].

Block C

C. 0 Variants of tasks for the implementation of course projects/works are given:
Reference to the sources indicated in the lists of basic and additional literature in the work program
C.1 List of topics for discussion at the round table

C.2 Individual creative tasks

C2.1. Creation of a comparative table of differential diagnosis of appendicitis in children of different age groups.
C2.2. Development of step-by-step instructions for a district pediatrician in case of suspected intussusception.
C.2.3. Shooting of an educational video demonstrating the method of physical examination of a child with surgical pathology.
C.2.4. Preparation of an abstract-presentation on the transition from open operations to endoscopic methods in the treatment of hydronephrosis or esophageal atresia.
C.2.5. Modeling of a defect by making a model from improvised materials to demonstrate the mechanism of pathology and the principle of surgery.
C.2.6. Preparation of a medical history with a creative component.

Block D

List of questions and tasks for intermediate certification (credit)

I. Questions to check the level of learning to know (Theoretical base)

1. Anatomical and physiological features of the anterior abdominal wall and abdominal organs cavities in newborns.
2. Classification and etiopathogenesis of acute appendicitis in children of different ages.
3. Clinical forms of intussusception and the timing of the development of intestinal necrosis.
4. Embryogenesis and classification of esophageal atresia (according to Vogt and Ladd).
5. Pathogenesis of water-electrolyte disorders in pyloric stenosis and high intestinal obstruction.
6. Stages of the course of acute hematogenous osteomyelitis and theories of its development (Lexer, Vilensky, Derizhanov).
7. Classification of burns by depth and area (Lund-Browder table) in children.
8. Clinical picture and classification of malformations of the urinary system (hydronephrosis, PMR).
9. Timing of formation and types of congenital clefts of the upper lip and palate.
10. Types of traumatic bone injuries in children (fractures of the "green branch", Salter-Harris epiphyseolysis).
11. Symptomatology of Hirschsprung's disease depending on the extent of aganglionic disease zone.
12. Pathophysiology of open and tension pneumothorax in destructive pneumonia.
13. Clinical forms of cryptorchidism and causes of testicular migration disorders.
14. Differential diagnosis of umbilical cord hernias and gastroschisis.
15. Classification of anorectal defects (Krickenbeck system).
16. Indications for planned treatment of inguinal hernias, dropsy of the testicular membranes and phimosis.
17. Etiology and stages of ulcerative necrotic enterocolitis (JNEC) in premature infants.
18. Clinical signs of hip dysplasia and congenital hip dislocation.
19. Types of benign soft tissue tumors (hemangiomas, lymphangiomas, nevi).
20. Principles of antibacterial therapy for purulent-septic diseases in pediatrics.

Tasks to check the level of learning BE

Task 1 (Acute appendicitis**)**

An 8-year-old child complains of pain that began in the epigastrium, and after 6 hours was localized in the right iliac region. Temperature 37.5°C.

Task: Justify the diagnosis, describe the mechanism of pain displacement (Kocher's sign) and make a plan for differential diagnosis with mesadenitis.

Task 2 (Intussusception)

A 7-month-old boy, screaming fits every 15-20 minutes, pallor, single vomiting. He fell ill 4 hours ago.

Task: Determine the treatment tactics (conservative or surgical) based on the timing of the disease and describe the criteria for successful expansion of the intestine with air.

Task 3 (pyloric stenosis)

A 3-week-old infant, vomiting "fountain" without an admixture of bile. Body weight deficit 12%.

Task: Formulate an examination plan (ultrasound criteria) and explain which electrolyte disorders (hypochloremia, alkalosis) you need to stop before surgery.

Task 4 (Foreign body of the bronchus)

A 2-year-old child suddenly coughed while eating peanuts. Now: shortness of breath, during auscultation, breathing on the right is not carried out.

Task: Describe the X-ray picture of "valve" stenosis and determine the method of emergency removal of a foreign body.

Task 5 (Burn and burn shock)
A 3-year-old child knocked over a kettle. The front surface of the body and the right arm were burned.
Task: Calculate the affected area using the Lund-Browder table and determine the volume of infusion in the first 8 hours using the Parkland formula.

Task 6 (Fracture of the humerus)
The child fell on the elbow. Severe swelling of the elbow joint, deformity.
Task: Assess the risk of developing ischemic Volkmann contracture and choose the method of fixation (skeletal traction or closed reduction).

Task 7 (Acute hematogenous osteomyelitis)
A 10-year-old child, pain in the knee joint, temperature 39.2°C. X-ray of the lower leg bones without pathology.
Task: Justify the need for osteoperforation in the absence of radiological data and select groups of antibiotics for initial therapy.

Task 8 (Congenital hip dislocation)
Newborn, the "click" symptom is positive, the gluteal folds are asymmetrical.
Task: Make a diagnostic algorithm (the role of ultrasound according to Graf) and choose the type of orthopedic aid (Pavlik's splint or Freik's pillow).

Task 9 (Hydronephrosis)
Ultrasound revealed an expansion of the pelvis up to 25 mm in the fetus.
Task: Plan the diagnostic minimum (micturitional cystography, radioisotope rheography) to decide on surgical treatment.

Task 10 (Testicular torsion)
A 12-year-old boy with acute pain in the scrotum that developed at night. The scrotum is hyperemic, the testicle is pulled up to the inguinal canal.
Task: Make a differential diagnosis with hydatid torsion and justify the urgency of the revision of the scrotum organs ("golden 6 hours").

Task 11 (Hirschsprung's disease)
A 4-year-old child, chronic constipation from birth, a "frog" belly. Fecal masses are excreted only after an enema.
Task: Interpret the irrigography data (the concept of the "transition zone") and determine the extent of the required Swenson biopsy.

Task 12 (Chemical burn of the esophagus)
The child drank an alkaline solution. Complaints of pain behind the sternum, salivation.
Assignment: Describe the timing of primary esophagogastroscopy and schedule prophylactic bougienage to prevent stenosis.

Task 13 (Anal atresia)
Newborn, anus missing, meconium is released by drops from the urethra during urination.
Task: Determine the form of atresia (fistula) and draw up a step-by-step plan for surgical treatment (stoma is > radical surgery).

Task 14 (Craniosynostosis)
A 5-month-old child, the head is elongated in the anterior-posterior direction ("navicular skull"), the sagittal suture is palpated in the form of a crest.
Task: Make a diagnosis (scaphocephaly) and justify the need for early cranioplasty to prevent mental retardation.

Task 15 (Diaphragmatic hernia)
Newborn in the delivery room: cyanosis, sunken abdomen, breathing on the left is not heard, the heart

is shifted to the right.
Task: Describe the tactics of resuscitation (why can't you use the Ambu mask?) and determine the indications for emergency intubation.

Task 16 (Esophageal atresia)
Newborn, profuse foamy discharge from the mouth. The tube does not pass into the stomach.
Task: Interpret the "Elephant test" and suggest the optimal position of the child during transportation to the surgical hospital.

Task 17 (Necrotic cellulitis of newborns)
The infant has a crimson spot on the lower back, the skin above it is immobile, T = 38.5°C. There is no fluctuation.
Task: Justify the tactics of immediate incisions (why can't you wait for pus?) and choose the tactics of local treatment.

Task 18 (Strangulated hernia)
A 2-year-old boy, a dense painful formation in the groin, vomiting. The hernia does not heal for 2 hours.
Task: Describe the tactics of conservative reduction (warm bath, premedication) and indicate the time limit for waiting before surgery.

Task 19 (Scoliosis)
A 12-year-old girl, asymmetry of the shoulder blades, Cobb's angle on the X-ray is 25 degrees.
Task: Determine the degree of scoliosis and choose the method of correction (the role of the Chenot corset and exercise therapy).

Task 20 (Rectal polyp)
A mother noticed a drop of scarlet blood at the end of defecation in a 4-year-old child.
Task: Make a differential diagnosis with an anal fissure and suggest a method for removing the polyp (sigmoidoscopy, loop electroexcision).

3. Tasks/tasks to check the level of learning to OWN.

1. Esophageal atresia: The newborn choked on the first feeding, cyanosis developed, and foamy mucus is profusely secreted from the mouth. Task: Describe the technique of placing a probe to confirm the diagnosis and the tactics of preoperative preparation.
2. Gastroschisis: The child was born with a defect in the anterior abdominal wall, the intestinal loops are outside, hyperemic, covered with fibrin. Task: To master the algorithm of first aid in the delivery room and the method of protecting the eventrated organs.
3. Congenital diaphragmatic hernia: Immediately after birth, the child has severe respiratory failure, navicular abdomen, heart sounds are shifted to the right. Task: Describe the algorithm of respiratory support (why can't mask ventilation?) and the position of the child.
4. Anal atresia: The newborn did not lose meconium in 24 hours, the anus is missing. Task: To master the method of the Wangensteen test (invertography) to determine the height of atresia.
5. Pyloric stenosis: The child is 3 weeks old, vomiting "fountain" without an admixture of bile, body weight deficit. Task: Demonstrate the technique of palpation of pyloric olive and interpretation of ultrasound data.
6. Acute appendicitis: A 5-year-old child has abdominal pain that has moved to the right iliac region, the Shchetkin-Blumberg sign is doubtful. Task: To master the method of palpation of the abdomen in children (including during sleep) and rectal examination.
7. Intussusception: A 7-month-old child, paroxysmal restlessness, stool in the form of "raspberry jelly". Task: Describe the method of conservative expansion of intussusception with air (Rickhters test).
8. Peritonitis: A child with appendicitis has a high fever, the abdomen is plank-shaped, and intoxication is pronounced. Task: To master the algorithm of preoperative infusion preparation and the choice of operative access.

9. Hirschsprung's disease: Complaints of chronic constipation from birth, "frog" abdomen. Task: To master the algorithm of setting a siphon enema and the technique of taking material for rectal biopsy.
10. Strangulated inguinal hernia: In the inguinal area, there is a painful protrusion that does not fit into the abdominal cavity. Task: Describe the tactics for the prescription of strangulation up to 12 hours and more than 12 hours in boys.
11. Acute hematogenous osteomyelitis: A 10-year-old child has hip pain, high fever, and a limb in a forced position. Task: Describe the osteoperforation technique and the algorithm of local treatment.
12. Necrotic cellulitis of newborns: On the child's back, an area of hyperemia, dense to the touch, spreads rapidly. Task: To master the technique of making incisions in a checkerboard pattern and the principles of antibacterial therapy.
13. Acute paraproctitis: A 1-year-old child, hyperemia and infiltration in the anus. Task: To master the algorithm of opening an abscess and subsequent wound care.
14. Destructive pneumonia: Tension pyopneumothorax developed against the background of pneumonia. Task: To master the technique of puncture and drainage of the pleural cavity according to Bülau.
15. Edematous scrotum syndrome: Sudden pain in the scrotum, hyperemia, swelling. Task: Differential diagnosis of testicular torsion and hydatid; master the technique of "external reduction" of torsion.
16. Phimosis and paraphimosis: The glans penis is pinched by a narrow ring of the foreskin, swelling is pronounced. Task: To master the method of manual reduction of paraphimosis.
17. Hypospadias: Urination according to the "female type", curvature of the penis. Task: To know the classification by the localization of meatus and determine the timing of surgical treatment.
18. Spleen injury: After a fall, abdominal pain, signs of internal bleeding. Task: To master the algorithm of the FAST protocol (ultrasound) and the tactics of organ-preserving treatment.
19. Fracture of the "green branch": A child has a deformity of the forearm after a fall. Task: Describe the features of fixation of subperiosteal fractures in children.
20. Chemical burn of the esophagus: The child drank caustic soda. Task: To master the algorithm of first aid (lavage) and the tactics of early bougienage.

Example of building an intermediate certification ticket (exam):

INTERMEDIATE CONTROL EXAMINATION TICKET No ___

1. Question(s) to check the level of learning KNOW

2. Tasks/tasks to check the level of learning BE ABLE

3. Tasks/tasks to check the level of learning OWN

I. METHODOLOGICAL MATERIALS THAT DETERMINE THE PROCEDURES FOR ASSESSING KNOWLEDGE, SKILLS, AND (OR) EXPERIENCE

ACTIVITIES THAT CHARACTERIZE THE STAGES OF COMPETENCE FORMATION

DESCRIPTION OF INDICATORS AND CRITERIA FOR ASSESSING COMPETENCIES, DESCRIPTION OF ASSESSMENT SCALES

This section provides a methodological description of the procedure for assessing the acquired competencies (part of competencies). All types of assessment tools listed in the summary table for the discipline (module), as a rule, should be subjected to a methodological description of the procedure for their implementation. The purpose of such a description is to

familiarization with methodological materials, the student should get complete clarity on how exactly the assessment will be carried out (passing the test, writing a test, solving problems, defending an essay, term paper, project, etc.).

For example: The exam ticket includes two theoretical questions and a practical task that correspond to the content of the competencies being formed. The exam is conducted orally. The student is given minutes to answer and solve the problem. For answering theoretical questions, the student can get the maximum points, for solving the problem points. Converting points into grades: _____

Or based on the results, a differentiated grade is given, taking into account the assessment scale....

Testing is carried out using an automated program «_____».

Minutes are allotted for testing _____. Each version of the test tasks includes questions. Points are given for each correct answer to the question _____.

For example, attestation based on the results of the internship is carried out on the basis of a written report of the student drawn up in accordance with the established requirements and the feedback of the head of the internship from the organization. Based on the results of the certification, a differentiated grade is given.

Converting points into grades: _____

Examples of grading scales:

I. Template for the assessment scale of test tasks. There are 20 closed-ended questions in one test task.

1. Ready-made answers are given to the tasks to choose from, one correct and the rest are incorrect.
2. The student must remember: in each task with a choice of one correct answer, there must be a correct answer.
3. For each correct answer – 5 points
4. The overall score is defined as the sum of the points scored.
5. Mark (in %).

II. Template for holistic grading schemes

85-100% - Demonstrates a full understanding of the problem. All requirements for the task have been met.

70-84% - Demonstrates a significant understanding of the problem. All requirements for the task have been met.

60-69% - Demonstrates partial understanding of the problem. Most of the requirements for the task have been met.

31-60% - Shows little understanding of the problem. Many of the requirements for the task are not met.

0-30% - Demonstrates a lack of understanding of the problem or no answer and has not even attempted to solve the problem.

Example 1:

Scheme for assessing the performance of media work

85-100 - *Demonstrated confident mastery and integration of all elements of media work. Work is holistic, creative. Creative approach is used.*

70-84 - *Effective mastery and integration of all elements of media work is revealed. The content is deep and comprehensive.*

60-69 - *Mastery of the elements of media work. Basically, it is clear and holistic.*

31-60 - *Some degree of mastery of most elements of media work. There is some harmonious integration of elements into the whole, but the work is not original, and /or unfinished.*

0-30 - *Initial minimal or no perception of some basic elements of media work is demonstrated. It is simple and unfinished, fragmentary and incoherent, and/or it is not plagiarism.*

Example 2:

Colloquium Assessment Scale

«85-100%»

- *deep and solid assimilation of the material of the topic or section;*
- *complete, consistent, competent and logically stated answers;*
- *demonstration of knowledge to students in the amount of the completed program and additionally recommended literature;*
- *demonstration to students of the skills necessary for solving theoretical/practical problems that ensure the formation of competence(s) sufficient for professional activity «75-84%»*
- *the presence of insignificant errors that are confidently corrected by the student after additional and leading questions;*
- *demonstration of knowledge to students in the volume of the completed program;*
- *clear presentation of educational material.*
- *Demonstration to students of certain effective skills of activity necessary to solve theoretical/practical problems that ensure the formation of competence(s) sufficient for professional activity «60-74%»*
- *the presence of insignificant errors in the answer that are not corrected by the student;*
- *demonstration to students of incomplete knowledge of the completed program;*
- *unstructured, not coherent presentation of educational material when answering. Demonstration to students of certain methods of activity necessary for solving practical problems of professional activity, but not sufficient for its theoretical comprehension "less than 60%"*
- *lack of knowledge of the material of the topic or section;*
- *Serious errors occur when answering.*
- *Finds it difficult or unable to demonstrate the skills necessary for the implementation of professional activities*

III. Development of criteria for evaluating a task with a freely constructed answer.

Example 1.

Task. Two calcium-coated electrodes are in a vacuum, to which a capacitor with a capacitance C = 8000 pF is connected. When the cathode is illuminated for a long time with light with a frequency of n = 1015 Hz, the photocurrent that arose at the beginning stops. The work of the electron output from calcium A = 4.42×10 – 19 J. What charge q is exerted on the capacitor plates in this case?

The content of the correct solution of the problem and instructions for assessment:

Elements of the answer: (other wording of the answer is allowed, which does not distort its meaning).

1. Einstein's equation for the photoelectric effect has been recorded.
2. An expression for the locking voltage has been written.
3. An expression has been written that relates the potential difference on the capacitor plates with the electric charge on them.
4. An expression for calculating the charge on the capacitor plates is obtained, and a numerical answer. Evaluation Instructions / %

- The solution is correct and complete, including all the above elements (the figure is not mandatory) /85-100%
- The solution includes the 1st, 2nd and 3rd of the above elements / 70-84%
- The solution is incomplete, includes the 1st and 2nd or the 1st and 3rd of the above elements / 60-69%
- All elements are written incorrectly or only one element (1st, 2nd or 3rd) is written correctly / less than 60%

IV. Template for the analytical grading scale

	No Answer -0-30 %	**Minimal Response - 31-60 %**	**The above, Disclosed Answer - 60-69 %**	**Finished Full Answer - 70-84 %**	**Exemplary, exemplary, Worthy Imitation Answer - 85-100 %**	**Valuation**
Criterion 1						
Criterion 2						
Criterion n						
Final Score						

Example 1.

Assessment scale for a situational task

№	**Name of the indicator**	**Mark (%)**
1	Originality and persuasiveness	0-15
2	Understanding of the problem and adequacy of interpretation	0-25
3	Justified use of quantitative indicators and regulatory legal acts/methodological and other materials (relevance and reliability of information)	0-40
4	Key terms (their importance for the stated topic, correct use, quantity)	0-10
5	Logic and consistency of oral utterance	0-10
6	Performing practical actions necessary to solve the problem (if necessary)	0-20
Total Points		**Sum of points**

Example 2.

Assessment scales for analytical tasks

1.COMPILATION OF TWO-PART AND THREE-PART DIARIES

№	**Name of the indicator**	**Mark (%)**
SHAPE		**0-80**

1	Number of Comparative Indicators	0-10
2	Identification of the problems of the proposed topics	0-30
3	Maturity of ideas, their clear presentation and structuring	0-20
4	Availability of own conclusions and comments on the relevant indicator	0-20
ANSWERS TO QUESTIONS		**0- 20**
Total Points		**Sum of points**

2. SCHEMATIC REPRESENTATION OF THE JOB AS A CLUSTER

№	**Name of the indicator**	**Mark (%)**
SHAPE		**0-80**
1	Understanding of the problem and adequacy of interpretation	0-20

2	Determination of cause-and-effect relationships	0-30
3	Maturity of ideas, their clear presentation and structuring	0-10
4	Availability of own conclusions and comments on the relevant indicator	0-20
ANSWERS TO QUESTIONS		**0- 20**
Total Points		**Sum of points**

3.ORAL QUESTIONING on analytical group tasks

№	Name of the indicator	Mark (%)
1	Understanding of the problem and adequacy of interpretation	0-15
2	Originality and persuasiveness of the presentation of ways to solve the problem	0-25
3	Reasonable use of cause-and-effect relationships, statistical, sociological and other data (relevance and reliability of information)	0-40
4	Keywords and terms (their importance for the stated topic, correct use, quantity)	0-10
5	Logic and consistency of oral utterance	0-10
6	Performing practical actions necessary to solve the problem (if necessary)	0-20
Total Points		**Sum of points**

4. Coursework Assessment Template

Example:

№	Name of the indicator	Mark (%)
STRUCTURE AND DESIGN OF THE WORK		20
1	Structure of work in accordance with the requirements	10
2	Formalization of the work in accordance with the requirements	10
CONTENTS		60
1	Relevance of the topic	5
2	Goals and objectives of the work	5
3	Compliance with their theme	5
4	The presence of the main topic (thesis) in the introductory part and the appeal of the introductory part to the reader	5
5	Development of the topic (thesis) in the main part (disclosure of the main provisions through a system of arguments supported by facts, examples, etc.)	10
6	The presence of conclusions corresponding to the topic and content of the main part	10
7	Checking in the Antiplagiat system	15
PRESENTATION		10
1	Title page	2
2	Slide design and use of additional effects (slide changes, sound, graphs if necessary)	3
3	The text of the presentation is written briefly, presenting the key ideas of each chapter and each paragraph.	5
№	**Name of the indicator**	**Mark (%)**

	The slides contain intermediate (paragraphs, chapters) and final conclusions of the work	5
4	The slides are presented in a logical sequence	5
REPORT		10
1	Correctness and accuracy of speech during the defense	4
2	Breadth of outlook (answers to questions)	4
3	Compliance with the regulations	2
Total Points		**Sum of points**

5. Intermediate assessment template

Example:

Assessment criteria for intermediate control in the discipline "Life Safety" (max – 30 points) ORAL QUESTIONING

ASSESSMENT SCALE

When evaluating oral answers to the test of the level of learning of KNOW, the following criteria are taken into account:

1. Knowledge of the main processes of the subject area under study, depth and completeness of the disclosure of the issue.
2. Possession of the terminological apparatus and its use in answering.
3. Ability to explain the essence of phenomena, events, processes, the presence of conclusions and generalizations, reasoned answers.
4. Possession of monologue speech, logic and consistency of answers, the ability to answer questions, express one's opinion on the problem under discussion.

16-20 points – the answer that shows solid knowledge of the main natural and man-made hazards is evaluated; the student professionally discusses the nature of the impact of harmful and dangerous factors on humans and the environment, methods and ways of protection against them; demonstrates deep knowledge of the theoretical foundations of life safety in emergencies, legal, regulatory, technical and organizational foundations of life safety.

He is well versed in the anatomical and physiological consequences of the impact of traumatic, harmful and damaging factors on a person and knows the techniques of first aid.

10-15 points – the answer that shows good knowledge of the main natural and man-made hazards is evaluated; the student does not make minor mistakes when characterizing the impact of harmful and dangerous factors on humans and the environment, methods and methods of protection against them; finds it difficult to distinguish between the main and additional factors of man-made and natural hazards; knows the theoretical foundations of life safety in emergencies, legal, regulatory, technical and organizational foundations of life safety.

He is well versed in the anatomical and physiological consequences of the impact of traumatic, harmful and damaging factors on a person and knows the techniques of first aid.

5-10 points are given to the answer that shows that the student can name the main natural and man-made hazards, but at the same time is poorly versed in the nature of the impact of harmful and dangerous factors on humans and the environment, methods and ways of protection against them; has limited knowledge of the theoretical foundations of life safety in emergencies, finds it difficult to list the legal, regulatory, technical and organizational foundations of life safety.

Knows individual methods of first aid.

1-4 points are evaluated for an answer that shows very poor knowledge of the main natural and man-made hazards, the student does not understand the nature of the impact harmful and dangerous factors for humans and the environment, methods and ways of protection against them; does not know the theoretical foundations of life safety in emergencies, knows very poorly the legal, regulatory, technical and organizational foundations of life safety.

ASSESSMENT SCALE FOR ANALYTICAL AND PRACTICAL TASKS

When evaluating the answers to the test of the level of learning to BE ABLE and OWN, the

following criteria (situational tasks and tasks) are taken into account:

8-10 points are evaluated for the answer in which the student formulates problems in the situational task in his own words; evaluates the possibility of alternative solutions to the problem; professionally identifies the main dangers of the human environment, assesses the risk of their implementation; quickly makes decisions on appropriate actions in emergencies, recognizes life disorders in emergency conditions and injuries; knows how to provide first aid to victims.

Demonstrates a full understanding of the problem. All tasks and tasks have been completed.

4-7 points are evaluated for the answer in which the student formulates problems in the situational task in his own words; but does not provide alternative solutions to the problem; is able to identify the main dangers of the human environment, but does not assess the risk of their implementation; recognizes life disorders in emergency conditions and injuries and is quite good at providing first aid to victims.

Demonstrates a significant understanding of the problem. Most of the requirements for the task have been met.

1-3 points are evaluated for the answer in which the student formulates problems in the situational task in his own words; poorly identifies the main dangers of the human environment, and does not assess the risk of their implementation; poorly recognizes life disorders in emergency conditions and injuries and does not know how to provide first aid to victims.

More than 50% of the requirements for the task are not met.

A mark **(0 points)** is evaluated for an answer in which the student demonstrates a lack of understanding of the problem or no answer and there was not even an attempt to solve the problem.

5. METHODICAL INSTRUCTIONS FOR THE STUDENT ON MASTERING THE DISCIPLINE / PRACTICE AND PERFORMING CONTROL TASKS

This section provides methodological recommendations on the procedure for performing standard control tasks and other materials necessary to assess the planned learning outcomes in the discipline / practice.

The purpose of such a description is that when familiarizing himself with the methodological materials, the student should get complete clarity on how exactly it is necessary to complete the tasks (preparation for testing, writing a test, solving problems, writing and defending an essay, term paper, project, etc.).

Examples of guidelines:

BASIC REQUIREMENTS FOR INTERMEDIATE CONTROL

The teacher is given the right to give a grade without a survey on the ticket to those students/undergraduates who scored more than 60 points for the current and midterm controls.

At the intermediate control, the student/undergraduate must correctly answer the theoretical questions of the ticket and solve the situational task.

Students/undergraduates can use technical means, reference and regulatory literature, visual aids, curricula.

Assessment of intermediate control:

- min 10 points - Questions to check the level of learning KNOW (if the student correctly formulates the basic concepts when answering the questions asked)
- 10-30 points – Tasks to check the level of learning to BE ABLE and POSSESS (if the student correctly formulates the essence of the problem set in the ticket and gives recommendations for its solution and full completion of the control task)

BASIC REQUIREMENTS FOR CURRENT CONTROL.

To understand the material and assimilate it properly, the following sequence of actions is recommended:

1. After listening to the lecture and finishing classes, in preparation for subsequent classes in the discipline, you must first review and think about the text of the lecture.
2. Before the practical lesson/seminar, work through the recommended literature.
3. To prepare for seminars and perform independent work, it is recommended to use the methodological instructions for the course, lecture notes.
4. When performing the task, it is necessary to build an algorithm of activity:
    - analyze the questions, find the necessary material (lectures, recommended basic and additional literature, Internet resources)
    - outline a plan for answering each of the questions of the seminar
    - make a brief summary of the answer to each question, highlighting key terms, dates, names, formulas, etc.
    - think over and formulate conclusions on the topic/issue.
5. In preparation for intermediate and midterm controls, it is necessary to study theoretical issues, paying special attention to terms, formulas, regulatory legal documents, etc., necessary to answer questions; repeat the solution of problems/case studies and other practical issues. and independently complete several standard tasks.
6. Working out missed classes.

- Control over the assimilation of the material of the curriculum of the discipline is carried out systematically by the teacher of the department / other departments of the university (responsible for the educational program) and is reflected in the teacher's journal in points.
- A student/master's student who received an unsatisfactory grade in the current material is obliged to prepare this section and answer it to the teacher at an individual interview.
- A lecture missed without valid reasons must be worked out by the method of oral questioning by the lecturer or the preparation of an essay on the materials of the missed lecture within a month from the date of absence. Other methods of working out missed lectures are also possible (questioning at practical lectures, test control, etc.).
- Practicing seminars.
- Each lesson missed without a valid reason is worked out on a mandatory basis. Work is carried out during the period of the teacher's duty, according to the schedule agreed with the dean's office. The schedule of teachers' duty is posted at the relevant department/other division of the university (responsible for the educational program) and posted in electronic form in the section
- "educational activities" on the website of the department/other departments of the university (responsible for the educational program).

- Missed classes must be worked out within 10 days from the date of absence. Seminar classes missed without a valid reason are worked out no more than one lesson per day. Missed classes for a valid reason (illness, absences with the permission of the administration) are worked out according to the thematic material without taking into account the hours.
- For students/undergraduates who missed seminar classes due to a long illness, the work must be carried out after the permission of the dean's office according to an individual schedule agreed with the department/other departments of the university (responsible for the educational program).
- In exceptional cases (participation in inter-university conferences, competitions, Olympiads, duty, etc.), the dean and his deputy, in agreement with the department/other departments of the university (responsible for the educational program), may exempt students/undergraduates from working off some missed classes.

BEST PRACTICES FOR PREPARING FOR BRAINSTORMING

"Brainstorming" ("brainstorming") is a type of group discussion, which is characterized by the absence of criticism of search efforts, the collection of all solutions, hypotheses and proposals born in the process of comprehending a problem, their subsequent analysis from the point of view of the prospect of further use or implementation in practice. "Brainstorming" includes three stages: preparatory, the stage of generating ideas, the stage of analysis and evaluation of ideas.

The procedure for conducting classes using the "brainstorming" method consists of the following stages:

1. Formulation of the problem to be solved, substantiation of the problem to find a solution. Determination of the conditions of group work, acquaintance with the rules of behavior in the process of "brainstorming". Formation of working groups of 5-7 people and a separate expert group of "critics", whose responsibilities at the next stage will include the development of criteria, evaluation and selection of the best of the ideas put forward.
2. Warm-up session, i.e. exercises for quick search for answers to questions. The task of this stage is to help participants get rid of the influence of psychological barriers (awkwardness, shyness, isolation, stiffness, etc.).
3. A working session, i.e. the "storming" of the problem itself. Once again, the tasks are clarified, the rules of conduct in the course of work are reminded. The generation of ideas begins at the signal of the leader in all working groups. One expert is assigned to each group, whose task is to record all the ideas put forward on a board or a large sheet of paper.
4. Expertise is the evaluation of the collected ideas and the selection of the best of them in the group of "critics" on the basis of the criteria developed by them. Working groups are resting at this time.
5. Summing up - general discussion of the results of the work of the groups, presentation of the best ideas, their justification and public defense. Making a general group decision, fixing it.

Any participant at each stage of the "brainstorming" has the opportunity to express himself in a strictly limited time, usually within one to three minutes.

The leader of the "brainstorming" does not have the right to comment on or evaluate the statements of the participants. But he can interrupt the participant if he speaks off topic or has exhausted the time limit, as well as in order to clarify the essence of the proposals made.

Brainstorming can also be carried out without dividing into working groups.

RECOMMENDATIONS FOR PREPARING FOR A SEMINAR ON PROBLEM TOPICS

Stages of the

1. Formulation and comprehension of the problem. The teacher or one of the students/undergraduates offers their vision of a certain problem. Then, during the discussion (no more than 5 minutes), students/undergraduates offer their understanding of the problem situation, determine the "rules of the game", and stipulate what needs to be obtained at the end of the lesson.
2. Generation of options for solving the problem. Students/undergraduates offer their own ways of solving the existing problem, while the ideas expressed are voiced without evidence. All ideas are accepted for consideration: both real and fantastic, and funny, and difficult to implement. They are recorded either by the teacher or by one of the students. Each of the speakers is given no more than 30 seconds. The maximum limit of ideas is half of the number of students.
3. Search for arguments in support of the proposed solutions. During this stage, the group is divided into subgroups (3-5 people). A draw is made for previously put forward options. Next, the teams must provide as many proposals as possible in 7-10 minutes to argue the idea. It should be noted that students/undergraduates will have to work even with those options that they do not like, but got during the draw.
4. Selection of the most reasoned solutions. To defend their idea, 1 representative is delegated from each subgroup, who must present the work of the subgroup in front of the audience in 1-2 minutes. Based on the results of the presentations, half of the most successful ideas are selected, on which students/undergraduates will continue to work.
5. Criticism of the selected solutions. The student group is again divided into subgroups (3-5 people), among which the remaining ideas (options) are again drawn. The task of the subgroups this time is also to express the largest number of critical remarks about the idea in 7-10 minutes, to identify its weaknesses. The more shortcomings, weaknesses, ambiguities the subgroup finds in the solution of the problem, the better it will be possible to find solutions at later stages.
6. Selection of solutions that are most resistant to criticism. This stage is similar to the fourth. As a result, only half of the ideas will remain, the criticism of which will be the most convincing.
7. Thinking over the ways to implement the selected solutions. The subgroups are enlarged again, and the drawing of lots for the remaining ways to solve the problem posed at the beginning of the lesson is carried out. The task of each of the subgroups is to develop specific ways to implement the remaining proposals, i.e. to solve the problem itself.
8. Discussion of these methods. During the third round of discussion, both positive and negative speeches are allowed. It is advisable that in the end there are several winners. Therefore, the main task of this stage is to show students/undergraduates that there are different ways to solve the problem that will give the desired result.
9. Summing up. Here the teacher summarizes the work done. He can note the ways to solve the problem that are out of sight of students/undergraduates, can offer a plan of specific actions, and also ask students/undergraduates to make a self-analysis of the past lesson and their work in it.

GUIDELINES FOR WRITING AN INFORMATION AND ANALYTICAL REFERENCE

Information and analytical reference is a means that allows you to assess the student's ability to set out the essence of the problem in writing, independently analyze this problem using the concepts and analytical tools of the relevant discipline, and draw conclusions summarizing the author's position on the problem.

Purposes of the certificate:

the student acquires the skills of analytical work and at the same time demonstrates the level of his competence in the subject studied;
Students/undergraduates are offered a list of topics for writing an information and analytical reference (to choose from).

Guidelines for writing an analytical report:

Information and analytical reference includes an introduction, the formulation of one's point of view on the issue under consideration, an analysis of a specific situation, a reasoned part and conclusions.

Procedure for preparing a certificate:

1. First, the student/undergraduate finds the problem and coordinates it with the head of the seminar group;
2. Then the student/undergraduate begins to collect information. An initial idea of the topic and structure of the work can be formed from a textbook, reference book, monograph, Internet. At this stage, a reference plan is drawn up and agreed with the teacher;

3. After that, the student/undergraduate writes a certificate, paying special attention to:
the validity of the figures and facts, based on the statistics of the most recent years;
processing of information, summarizing it in tables, graphs and diagrams, as well as using mathematical apparatus, if appropriate;
compilation of a bibliography (list of sources used), referring to it in the text of the reference (in the form of footnotes at the bottom of the page indicating the name of the source, place and year of publication, page).

Recommended Help Structure:

1. Title page
2. Contents
3. Introduction (subject of research, purpose and its breakdown by tasks), how the topic is covered in the research literature, the most relevant and/or controversial aspects)
4. The main part (analytics) and conclusions, as well as recommendations for actions necessary to solve the problem (an Action Plan to solve the problem with an indication of measures, responsible organizations, possible financial costs is possible in the appendix)

REFERENCE VARIANT OF SOLVING A SITUATIONAL PROBLEM

Challenge

Does it make sense to engage in intermediary activities if your purchase price is 100 thousand soms; circulation costs are 50 thousand soms; the minimum acceptable profitability is 20%, the maximum possible selling price is 180 thousand soms?

Solution:

1. Option.

To answer the question, it is necessary first of all to calculate the intermediary fee in absolute terms based on the level of the possible selling price. The intermediary's fee is 180 - 100 = 80 thousand soms. Taking into account the costs of circulation, the absolute value of the intermediary's profit will be 80 - 50 = 30 thousand soms. According to these conditions, the level of profitability is (30 / 50) 100% = 60%. Since the minimum acceptable profitability for the intermediary is 20%, it certainly makes sense for him to engage in intermediary activities.

2. Option.

According to this option, the solution scheme is based on the calculation of the possible selling price by the intermediary, taking into account the desired profitability. Since, according to the condition of the problem, the minimum profitability acceptable for the intermediary is 20%, and the circulation costs are 50 thousand soms, his profit will be 10 thousand soms. In this case, the amount of the intermediary's desired remuneration is 60 thousand soms. (50 + 10). In this case, the acceptable

The intermediary's selling price is 100 + 60 = 160 thousand soms. According to the condition of the task, the possible (taking into account market conditions) selling price is 180 thousand soms. Therefore, it makes sense for the intermediary to engage in this transaction.

REQUIREMENTS FOR PREPARING A PRESENTATION AND ITS DEFENSE

1. The topic of the presentation is chosen by the student from the proposed list of FOS or proposed independently, but within the framework of the topic under study (its individual aspects) and must be agreed with the teacher.
2. Stages of preparing a presentation
   Drawing up a presentation plan (setting a task; goals of this work) Thinking through each slide, while it is important to answer the questions:
   - How does the idea of this slide reveal the main idea of the entire presentation?
   - What will be on the slide?
   - What will be said?
   - How will the transition to the next slide be made?
3. Making a presentation using MS PowerPoint or other presentation preparation programs:
   - Sloppily made slides (inconsistencies in fonts and indents, typos, errors in formulas) raise suspicion that the speaker approached the substantive issues half-heartedly.
   - The title page is necessary to introduce you and the topic of your report to the audience.
   - The number of slides is no more than 15.
   - The optimal number of lines on a slide is from 6 to 11, the font size is desirable at least 18.
   - A common mistake is to read the slide verbatim. It is best if detailed information (definitions, formulas) is written on the slide, and their meaning is told in words. The information on the slide can be more formal and strictly stated than in speech.
   - The optimal switching speed is one slide per 1-2 minutes.
   - It is recommended to use more drawings, pictures, formulas, graphs, tables in the presentation. Additional effects can be used, but they should not complicate the understanding of the presentation.
   - When explaining tables, it is necessary to say what the rows correspond to and what the columns correspond to.
   - Introduce only those designations and concepts without which it is impossible to understand the main ideas of the report.
   - In a short speech, you cannot repeat the same idea, even in other words – time is precious.
   - When presenting the main content of the problem revealed in the presentation, it is necessary to build a competent, clear and logical speech. Then the speech will be integral and leave a good impression.
   - The last slide with conclusions in short presentations does not need to be pronounced.
   - If there are many formulas on the slide, it is recommended to type it completely in MS Word (otherwise the formulas have to be placed and aligned on the slide manually). To do this, it is convenient to make a blank slide with one large Word object "Insert / Object / Microsoft Word Document", select its size once and multiply it on the required number of slides. It is recommended to change the main font in the text and formulas to Arial or similar; the Times font does not look good from afar. Be sure to set the basic font size in MathType to equal to the main font size in the text. Never adjust the size of the formula manually by pulling it by the corner.
4. A student/undergraduate is obliged to prepare and make a report at a strictly allotted time by the teacher, and within the established deadline.

5. Instructions for speakers.
    - communicate new information;
    - use technical means;
    - know and navigate well in the topic of the entire presentation;
    - be able to discuss and quickly answer questions;
    - clearly follow the established time limit: speaker - 10 minutes; discussion - 5 minutes; It should be remembered that the speech consists of three parts: introduction, main part and conclusion.

The introduction helps to ensure the success of the speech on any topic. The introduction should contain:

- the title of the presentation;
- communication of the main idea;
- modern assessment of the subject of presentation;
- a brief list of the issues under consideration;
- a lively interesting form of presentation;

The main part, in which the speaker must deeply reveal the essence of the topic raised, is usually built on the principle of a report. The task of the main part is to provide enough data for the audience to be interested in the topic and want to get acquainted with the materials. At the same time, the logical structure of the theoretical block should be accompanied by visual aids, audio and visual materials.

A conclusion is a clear summary and brief conclusions that listeners are always waiting for.