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**Methodological guidelines for teachers on teaching clinical skills in
The center of practical skills
(using action algorithms)**

Specialty: General Medicine

Discipline: Pediatric surgery

Course: 4th course

Department: Pediatrics 1

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Considered at a meeting of the Department of Pediatrics-1

Protocol № 6 from 24.01.2024 year

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1. Name of clinical skill: Transport immobilization.

2. The purpose of learning: To teach students the imposition of transport immobilization in fractures of tubular bones.

3. Pre-training and time to display the skill on the dummy: 15 min

4. Time to master the skill 10 min

5. Theoretical knowledge required for mastering skills:

- Anatomy and physiology: know the anatomy and physiology of the musculoskeletal system;
- General surgery: know the rules of limb bandaging;
- Distinguish between transport tires;

6. A list of trainers, simulators, mannequins models:


- mannequin of a 5-year-old boy;

7. The list of medical products and equipment:

- Kramer's splints (for upper and lower limbs);
- Dieterichs tire;
- Bandage, cotton wool;
- Gloves;

8 Algorithm of execution skills:

№	Algorithm of execution skills	Execution		
		Yes	No	Note
1	Make sure that you are safe for yourself and for the victim. If there is no danger, then you can not move the victim			
2	Assess the condition of the victim: bleeding, head injury, spine. Evaluate changes in the respiratory and cardiovascular system, make sure that there is no clinic for traumatic shock.			
3	To diagnose limb fractures: measure the relative and absolute length of the limb, the limb is in a forced position, tissue hyperemia, subcutaneous hematoma, palpation of the limb is sharply painful, pathological mobility, integrity of the skin, assess capillary circulation.			
4	To prescribe analgesics for pain relief. Hand treatment, putting on sterile gloves.			
5	Before applying a splint, give the limb a physiological position. If it is impossible to ensure maximum immobility of the affected limb.			
6	Determine the length of the splint based on a healthy limb (the splint should capture the upper healthy joint and all lower joints). Select the desired type of transport bus.			
7	After choosing a splint, apply it to the limb			
8	To prevent necrosis, insert a cotton-gauze roller into the protruding bone places.			
9	With the help of an assistant or assistant to apply a splint, for fractures of the femur or humerus			
10	Fix the splint with a spiral bandage from the periphery to the center. Monitor the state of peripheral blood			

ОНТҮСТІК-ҚАЗАҚСТАН MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ		SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казakhstanская медицинская академия»
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circulation. Transport to the nearest hospital				
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9. Tasks

1) A 10-year-old boy fell during a game at school and injured his left leg. Complaints: pain in the lower 1/3 of the left shin and pathological mobility. General condition of moderate severity. Locally: on examination, swelling is noted in the lower third of the left shin, the skin is not damaged, palpation is sharply painful, pathological soreness, the boy is restless.

- a) Your preliminary diagnosis?
- b) Show in practice the rules for applying Kramer tires

2) A 12-year-old boy at a sports school without a warm-up started an intensive workout. While running, he tripped, fell and injured his right leg. Complaints: severe pain and abnormal mobility of the upper third of the right femur. The general condition is severe, the boy is restless, there is a pallor of the skin. Locally: on examination, there is swelling and pain in the upper third of the right thigh, the right leg is shorter compared to the left, palpation is sharply painful, there are movement restrictions.

- a) Your preliminary diagnosis?
- b) Show in practice the rules for applying the Dieterichs tire;

3) A 9-year-old boy fell while playing football and felt a sharp pain in his right elbow joint. Movement in the joint is limited. General condition of moderate severity. Locally: on examination, swelling of the left elbow joint is noted, the skin is not changed, palpation is sharply painful, active and passive movements are sharply painful, the boy is restless.

- a) Your preliminary diagnosis?
- b) Show in practice the rules for applying Kramer tires

10. Materials for evaluation on the topic of the lesson:

1) A 9-year-old boy fell while playing football and felt a sharp pain in his right elbow joint. Movement in the joint is limited. General condition of moderate severity. Locally: on examination, swelling of the left elbow joint is noted, the skin is not changed, palpation is sharply painful, active and passive movements are sharply painful, the boy is restless. After the X-ray diagnosis, the diagnosis was made "Closed transcondylar fracture of the right humerus. What tactics are acceptable?

- A) simultaneous reposition with external fixation
- B) intramedullary osteosynthesis
- C) compression osteosynthesis
- D) overlays of the Ilizarov apparatus
- E) open repository

2) An 11-year-old boy fell while playing football and felt a sharp pain in his right elbow joint. Movement in the joint is limited. General condition of moderate severity. Locally: on examination, swelling of the left elbow joint is noted, the skin is not changed, palpation is sharply painful, active and passive movements are sharply painful, the boy is restless. After the X-ray diagnosis, the diagnosis was made "Closed transcondylar fracture of the right humerus. Made a closed reposition. A plaster splint was applied. Optimal immobilization time?

- A) 15-21 day
- B) 5-9 day
- C) 10-14 day

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- D) 22-28 day
- E) 1-4 day

3) A 10-year-old boy fell while playing football and injured his right elbow. Movement in the joint is limited. After the X-ray diagnosis, the diagnosis was made "Closed transcondylar fracture of the right humerus. What is the most optimal immobilization?

- A) from the upper third of the shoulder to the fingertips
- B) from healthy shoulder to fingertips
- C) from the upper third of the shoulder to the lower third of the shoulder
- D) applying a circular plaster cast to the fracture site
- E) from the upper third of the shoulder to the lower third of the shoulder

4) During the obstetric aid, the newborn received an injury to his right hand. When examined, the arm hangs down, active movements are limited. Passive movements cause soreness in the elbow joint. With rotational movement, crepitation is noted in the elbow joint. The diagnosis was made: "Epiphysiolysis of the right brachial bone." The optimal tactics of a traumatologist?

- A) applying skeletal traction
- B) Spitz tire overlays
- C) plaster cast from shoulder to palm
- D) 8-shaped bandage
- E) Dezo Bandage

5) The boy is 7 years old. Complaints on admission: swelling, movement restrictions, soreness. From anamnesis: in the yard 4 days ago, he fell and injured his left collarbone. Status localis: edema in the left clavicle area, palpation is sharply painful, infiltration and slight hyperemia are noted, the local temperature is not elevated. Restrictions on the movement of the left hand. The arm is in a forced position. On the R-graph: there is a linear fracture on the left clavicle in the middle third, there is no discongruence. The most optimal therapeutic tactics.

- A) open repository
- B) immobilization with a plaster splint
- C) Dezo bandage
- D) Dezo plaster cast
- E) pin fixation

6) Boy A. 9 years old. Complaints upon admission: injured, soreness, swelling and deformity of the left arm. From anamnesis: 30 minutes before admission, a car was hit. Status localis: there is a sharp swelling in the area of the left thigh, it is sharply painful on palpation. The leg is in a forced position. Sharp restriction of movement in the leg. Neurological and vascular disorders are not noted. Choose the most informative research method:

- A) radiography of the left thigh
- B) CT scan of the left thigh
- C) radiography of the left thigh
- D) MRI
- E) Laboratory research

7) A 6-year-old boy has a forearm fracture with angular displacement, a violation of the cortical layer on the X-ray. For which fracture is this picture characteristic?

- A) transverse fracture with angular displacement
- B) fracture of the "green branch" type

- C) longitudinal fracture with angular displacement
- D) a fracture with an offset in length
- E) fracture with rotational displacement

8) A 13-year-old boy entered the emergency room. Complaints: triangular deformity of the shoulder joint. The X-ray shows a displacement of the epiphysis with a triangular-shaped part of the bone. For which fracture is this picture characteristic?

- A) osteoepiphyseolysis of the radius
- B) fracture of the radial bone diaphysis
- C) fracture of the metaphysis of the radius
- D) dislocation of the distal part of the radius
- E) proximal epiphyseolysis of the radius

9) A boy of 8 years old, complaining of pain in the shoulder joint. The X-ray shows the displacement of the epiphysis.

For which fracture is this picture characteristic?

- A) subcostal fracture
- B) osteoepiphyseolysis of the radius
- C) epiphyseolysis of the radius
- D) fracture of the "green branch" type
- E) epiphyseolysis of the radius

10) Boy A. 4 years old. Complaints upon admission: injured, swelling of the left elbow joint. From anamnesis: 1 hour ago at home I fell off a chair and fell on my left arm. Status localis: swelling in the area of the left elbow joint, soreness. Limitations of movement in the elbow joint. The arm is in a forced position. What is the most optimal tactic?

- A) MRI
- B) CT of the elbow joint
- C) Radiography of the middle third of the forearm
- D) Radiography of the elbow joint
- E) Laboratory testing


11. Evaluation criterions:

№	Execution	Evaluation criterions
1	Completed	All steps are taken into account when performed correctly.
2	Half - finished	It is counted for small errors during execution in 3 steps
3	Did not fulfill	Makes mistakes during execution by more than 3 steps.

12. Literature:

Basic:

- 1) Сборник клинических протоколов по профилю педиатрия, разработанных в 2014 году. 1 том- Астана, 2015ж- 616 бет.
- 2) Сборник клинических протоколов по профилю педиатрия, разработанных в 2014 году. 2 том- Астана, 2015ж-667 бет.
- 3) Г.А. Байров. Детская травматология. –С-Пб-2000г.
- 4) В.Ю. Юмашев Детская ортопедия М. 1991г.

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Additional:

- 1) Джумабеков Т.А., Ормантаев К.С., Курманбеков Г.К., Элиас Р.И. Анестезия и интенсивная терапия при тяжелой черепно-мозговой травме у детей.// метод.рек. Алматы. – 1996г.
- 2) Ашкрафт, К.У. Детская хирургия / К.У. Ашкрафт, Т.М. Холдер. Санкт-Петербург, 1997. В 3-х томах ISBN 5-90131-10-30
- 3) Под рук. Ю.Ф. Исакова. Хирургические заболевания детского возраста 2004 г. Учебник в 2-х томах

13. Standards of correct answers for the assessment material:

Answers: 1-A; 2-C; 3-B; 4-E; 5-D; 6-A; 7-B; 8-A; 9-C; 10-D



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