EDUCATIONAL PROGRAM

of postgraduate medical training - clinical residency

in the direction -530001- "General medicine"

qualification: "traumatologist-orthopedist"

Bishkek-2017
GENERAL PROVISIONS

about clinical residency in the specialty "traumatology-orthopedics"

Term of study is 3 years.

1. The purpose of clinical residency in the specialty of "traumatology-orthopedics"

Postgraduate training in the specialty "traumatology-orthopedics" provides for the professional training of a traumatologist-orthopedic specialist with deep theoretical and practical knowledge in the diagnosis, prevention and treatment of a wide range of musculoskeletal disorders and having the legal right to provide medical assistance in the amount corresponding to the qualification characteristics doctor of this specialty.

The tasks of residency in the specialty «traumatology-orthopedics» include:
- to teach and give theoretical knowledge on the socio-economic and medical-biological foundations of the organization of practical public health and therapeutic services, on the medical and biological and social aspects of medical activity, on the epidemiology of common adult diseases, on the main clinical sections of therapy, questions of a healthy way of life, preventive medicine;
- to develop independent critical thinking aimed to the effective use of the knowledge gained while providing timely, qualified medical and medico-social assistance to the adult population;
- to develop in the student the practical skills of hospital and community acquired diagnosis of common diseases and provision of qualified medical assistance, including medical manipulation of pre-hospital and hospital care, as well as training primary intensive care and emergency care;
- to provide a basic level of humanitarian knowledge and to teach the basics of practical use of medical informatics, medical psychology and psychotherapy, to provide an opportunity to learn a foreign language.

Regulations on clinical residency in the specialty «traumatology-orthopedics» is a normative document that establishes:
- professional appointments, the main provisions and conditions of activity of a specialist in the field of therapy;
- qualification characteristics of a physician-therapist;
- requirements for the attestation of a physician-therapist.

QUALIFICATION CHARACTERISTICS OF THE DOCTOR- TRAUMATOLOGIST-ORTHOPEDIST

2. Level of professional knowledge and practical skills of a traumatologist-orthopedist

The doctor should know:
- legal framework of health, the main provisions of legislative acts of the reform of management and financing of health care, health insurance, policy documents, governing the activities of bodies and institutions of health care, organization of primary care for patients with musculoskeletal disorders, principles of organization of the work of trauma and orthopedic offices and departments at various levels, the organization of medical-diagnostic process in stationary conditions, sanitary and hygienic requirements for work offices, offices, dressing, operating; questions of medical ethics and medical deontology;
- to know deeply the normal, pathological and topographic anatomy, the anatomical features of childhood, basis of aseptic and antiseptic, age physiology and pathophysiology; the interrelation of the functional systems of the body and the levels of their regulation, the reasons of the appearance of pathological processes in the body, the mechanisms of their development and clinical manifestations; know the basics of pharmacotherapy in diseases of the musculoskeletal system, microbiology, immunology, radiology and radiology;
- to have modern ideas about the prevalence of various pathologies of the spine, bones and joints, the possibilities of modern traumatology and orthopedics in leading domestic and foreign clinics, to understand deeply the leading etiological factors of these diseases, to know the pathophysiological mechanisms of complications development in different age periods;
- methods of differential diagnosis of diseases and injuries of the spine, bones and in leading clinical syndromes, methods of their laboratory and instrumental diagnostics; clinical manifestations of "borderline" diseases (therapy, surgery, oncology, etc.);
- principles and methods of anesthesia, intensive care and resuscitation in adults and children; pathological physiology of various types of shock, wound process, blood coagulation system, their therapy;
- know the stages of treatment of various pathologies of the musculoskeletal system, modern equipment and instruments, the connection of diseases of the spine, bones and joints with common somatic diseases, modern diagnostic methods;
- know the list of necessary equipment and tools for organizing the work of trauma and orthopedic surgery, dressing, manipulation, operation unit and for performing various types of medical interventions;
- the organizational structure of the system of care for patients of this category in the country and abroad, organizational mechanisms for the terminal, successive treatment of patients, indications for their outpatient and inpatient treatment; issues of medical examination, rehabilitation and examination of work capacity; questions of the organization of the activity of the service of traumatology and orthopedics in emergency situations and methods of sanitary-educational work.

3. Level (list) of professional skills:

The traumatology-orthopedics should be able to:

- organize the work of a traumatology room of department in a hospital, conduct preventive examinations, identify at an early stage of patients with diseases of the spine, bones and joints;
- to provide primary and qualified medical care, to determine indications for inpatient treatment and the need for special methods of examination and treatment, to identify general and specific signs of the disease, to correctly evaluate the results of additional researches, to determine indications for hospitalization, to organize it in accordance with the patient's condition; to carry out differential diagnostics of diseases, to carry out prophylactic medical examination, rehabilitation and examination of work capacity in patients with diseases of the spine, bones and joints;
- to determine the scope and sequence of resuscitation measures and to independently implement a set of measures to restore vital body functions;
- to justify the treatment plan for patients with diseases of the spine, bones and joints, indications and contraindications to the operation; to develop a plan for preparing a patient for an emergency or planned operation, to determine the degree of violations of homeostasis, to carry out the preparation of all functional systems of the patient's organism for surgery; justify the technique of anesthesia and, if necessary, perform it; justify the most appropriate tactics of surgery for this pathology and perform it in the required volume;
- to carry out qualified treatment of a patient in the postoperative period, to critically evaluate the causes of errors and complications, and to find ways to prevent and eliminate them;
- be able to make out and conduct medical documentation prescribed by the healthcare legislation, compile an annual report on the work of the cabinet, department and individual; to decide questions about the degree and timing of disability and to make out sheets of temporary and permanent disability and disability, to know the conduct of dispensary patients with pathology from the spine, bones and joints or complications and the criteria for including patients with this pathology in the dispensary group, to independently interpret the results of laboratory and instrumental methods diagnostics;

The traumatology-orthopedics must perform:

- examination of patients: collection of anamnesis, examination, palpation, percussion, auscultation, determination of blood pressure;
- independently clinically evaluate the results of laboratory, biochemical, immunological, electrophysiological, functional, radiologic and other instrumental methods of research, independently remove and decode electrocardiogram, conduct pneumotachometry;
- traumatologic, orthopedic and diagnostic interventions:
  ✓ direction of dislocations and primary care for sprains, bruises, ruptures, fractures of the musculoskeletal system,
  ✓ operative treatment of fractures of bones of the upper and lower extremities,
  ✓ provision of emergency and specialized care for head and spine injuries,
  ✓ operations in the pathology of joints,
  ✓ surgery for purulent-inflammatory diseases of the skeleton,
  ✓ surgery for urgent surgical operations, including injuries, injuries and other accidents
  ✓ wounds of various localizations and mechanisms of damage,
  ✓ tracheotomy and tracheostomy,
  ✓ carry out primary cardiopulmonary resuscitation, including recovery of airway passages, conduction of indirect heart massage, artificial respiration, direct laryngoscopy and intubation of the trachea, medical and electropulse heart defibrillation, determine blood type and rhesus compatibility,
  ✓ washing of the stomach and intestines,
  ✓ catheterization, bladder puncture,
  ✓ provide urgent and urgent assistance,
  ✓ carry out local anesthesia, conductive anesthesia, anti-shock measures,
  ✓ polytrauma, traumatic shock, acute blood loss,
  ✓ a syndrome of prolonged compression, traumatic toxicosis,
  ✓ closed injuries and wounds of the chest, open and closed hemopneumothorax, intense pneumomax, wounds of the heart, cardiac tamponade,
✓ injuries and closed damage to the main vessels,
✓ trauma to the skull and their complications,
✓ fractures of pelvic bones and their complications,
✓ fractures of the spine,
✓ closed injuries of the abdominal cavity organs,
✓ penetrating wounds of the abdomen,
✓ fracture of ribs and sternum,
✓ surgical interventions for external and internal bleeding,
✓ carry out primary treatment for burns, frostbites,
✓ to provide benefits for abscesses, panarits and other purulent-inflammatory diseases,
✓ to produce suturing and surgical treatment of penetrating and non-penetrating wounds,
✓ perform diagnostic and therapeutic puncture of articular cavities, pleural puncture, diagnostic laparoscopy.

4. **The level of general theoretical and humanitarian knowledge**
   - know and be able to convey information on the results of the assessment of environmental, epidemiological, sanitary-hygienic, social, economic risk factors to the health of the widest groups of the population;
   - understand the role of ethnic, national-cultural and behavioral factors that affect morbidity, disease prevention, a healthy lifestyle, organization and provision of medical services;
   - to have an idea about the status of development of medical science and technology, about the newest medical technologies; to know the basics of medical informatics with the methods of statistical processing of medical information;
   - to apply in practice the achievements of theoretical health sciences, including knowledge of human behavior, social sciences, demography, biological and medical statistics, epidemiology, environmental protection in order to prevent chronic and infectious diseases and accidents.

5. **Level of organizational and methodological skills**
   - To know the forms of organization of medical-diagnostic process (out-patient admission, day hospital, home care, hospital at home, planned and emergency hospitalization, stationary care), types of accounting and reporting documentation, orders for outpatient and inpatient activities, sanitary-epidemiological regime, the procedure of establishing and determining temporary disability, design of disability organizations in the dispensary, organizing the work process in the staff and the issues of labor discipline.
   - Be able to analyze the results of individual activities and the functioning of a medical institution.

**PROGRAM OF STUDY IN THE CLINICAL RESIDENCY ON SPECIALTY " TRAMATOLOGY-ORTOPEDICs"**

I. **The general part**

Preparation of the clinical resident is carried out in accordance with this educational program and according to the individual plan, which is approved by the supervisor of the resident and the department of residency. Training of clinical residents is conducted through self-training, their participation in the therapeutic, diagnostic, organizational and educational work of the department and medical institution.

For personal management of the daily work of the clinical resident is appointed a responsible teacher with the necessary experience of practical work and professional training. Management and control over the preparation of clinical residents is carried out by the supervisor.

**Treatment and preventive work:**

1. Curation of 5-8 patients in clinical departments under the guidance of an assistant, docent of the department with the development of methods of clinical and functional laboratory and instrumental examination of patients of various profiles. The clinical resident is trained in clinical, laboratory and functional departments. The clinical resident takes a direct part in the clinical examination of each patient, as well as in instrumental and laboratory researches.
2. Participation in the clinical rounds of the head of the medical institution, the head of the department, the staff of the department and scientific worker. When conducting rounds, in the supervised ward, the clinical resident presents his patients.
3. Representation of patients at medical conferences, meetings of professional and scientific societies with the preparation of demonstration material on a given topic.
4. The clinical resident monthly independently carries out two night duties and at passage of a cycle of reanimation and anesthesiology in addition works under the schedule of branch.
5. Obligatory presence of the clinical resident at autopsy of the deceased patients, supervised by the resident, with the subsequent participation in clinic-anatomical conferences.
6. The clinical resident performs self-medical manipulations (intravenous infusions, puncture of the subclavian vein, electro pulse therapy, puncture of the pleural, pericardial and abdominal cavities, blood transfusion, intubation of the trachea, joint injection of the drugs, bronchoscopy, etc.)

7. Independently draws up and maintains a medical history, forms a stage, fills the messenger list at the WTC, sanitation card and other documentation.

8. Participates in compiling reports on the activities of the clinical department, analyzes mortality, discrepancies in diagnoses, number of beds, availability of laboratory, instrumental survey methods, etc.

9. Participates in the reception of patients in the clinic and dispensary observation of them.

10. Development of functional methods of the research of cardiovascular, broncho-pulmonary, gastroenterological, urinary and other systems (ECG, PCG, echocardiography, radiography, respiratory function, bronchoscopy, gastroscopy, gastric secretion, duodenal sounding, organs, etc.)

11. Sanatorium and educational work.

**Academic work:**

1. Visiting lectures and classes with students.

2. Participation in the preparation of lectures and demonstrations of patients.

3. Independent study and referencing of the recommended special medical literature with the subsequent delivery of tests in the sections of traumatology and orthopedics according to the curriculum.

4. Participation in scientific conferences, congresses, symposia, etc.

5. Attending meetings of traumatologist-orthopedic societies with active participation in the preparation of abstract reports, demonstration of patients.

6. Visit to clinic-anatomical conferences.

7. Mastering the basics of clinical biochemistry, laboratory diagnostics, practical genetics, and principles of clinical pharmacology. Ability to carry out pharmacodynamic control over the prescription of drugs of various groups, prevent and stop possible complications and side effects of drug therapy.

8. Mastering the issues of medical and labor expertise with a temporary disability for various diseases of the musculoskeletal system.

9. Acquaintance with the basics of deontology, medical ethics, medical history, including national.

10. Mastering the principles of scientific research, acquaintance with the methods of working with scientific literature, compiling literary reviews, teaching the basics of working with a computer.

11. For 3 years of training, the clinical resident must pass examinations in all sections of traumatology and orthopedics.

12. Credits are accepted by the heads of departments, associate professors, senior researchers.

13. Every year, a certification of clinical residents is conducted by a commission headed by the head of the department and with the participation of the administration of the institution, where the total training and recommendations for further training and employment are conducted.

**II. Training program**

1. Fundamentals of health legislation, policy documents, legal basis for public health in the Republic.

2. General issues of the organization of the therapeutic service, the work of hospitals, specialized hospitals, polyclinics, the basis of family medicine, the organization of emergency medical care for children in the Republic.

3. Issues of public health care, sanitary and epidemiological service environment, ecology.


5. Fundamentals of the organization of treatment and preventive care for adults and children, outpatient and inpatient care for urban and rural populations.

6. Basics of the organization of emergency medical care

7. Organization of anesthesia and resuscitation service

8. The organization of specialized care for patients with pathology from the spine, bones and joints

9. Organization of work of narrow specialists in the conditions of a polyclinic

10. Organization and operation of insurance medicine

11. Organization of work of rehabilitation departments

12. Organization of work of sanatorium institutions.

2. Emergency traumatology is mastered during the whole period of stay in clinical residency in the process of rendering assistance to patients with urgent diseases and traumas. Each resident weekly on duty as part of an emergency brigade. This allows not only to gain experience in general traumatology, but also in related (border) sections of medicine - neurosurgery, anesthesiology and resuscitation, toxicology.

3. The basis for the development of traumatology and orthopedics are the following departments:
   - traumatology and orthopedics,
   - children's Traumatology and Orthopedics,
   - microsurgery.
- anesthesiology, resuscitation and intensive care,
- traumatology and orthopedic offices of polyclinics,
- admission department of the hospital.

4. In the department of traumatology and orthopedics, the clinical resident acquires (improves) the following skills:
   1.1. The technique of preoperative preparation for urgent injuries and diseases
   1.2. Practical skills in performing diagnostic and therapeutic manipulations are improved and mastered:
      - blockade of peripheral neural pathways
      - puncture and various types of drainage of pleural cavities;
      - Laparocenosis, examination with a gentle catheter, laparoscopy;
      - transfusion of blood and blood substitutes.
   1.3. The technique of operations is mastered (improved):
      - with fractures of the musculoskeletal system
      - with injuries and joint diseases
      - with injuries and diseases of the spine
      - with injuries and diseases of the head and neck
   1.4. The possibilities of additional methods of patient research and interpretation of their results are being studied:
      - all types of X-ray studies,
      - ultrasound examinations,
      - computed scan,
      - clinical, biochemical, immunological studies of blood,
      - pathological, histological and microbiological studies.
   1.5. Are being mastered non-surgical methods of treatment of patients with diseases of the spine, bones and joints;
   1.6. Is acquired the experience of postoperative management and treatment, detection and prevention of complications.
   1.7. Are studied and mastered in practice modern methods of detoxification (forced diuresis, intestinal and peritoneal dialysis, hemosorption, plasmapheresis, drainage of the lymphatic duct).
   1.8. Accumulated experience in the correct execution of medical records.

**TRAUMATOLOGY**

1. The main practical skills to help patients with injuries of the musculoskeletal system, soft tissues, skull, and clinical residents get on emergency duty.
2. The round-the-clock radiological service allows you to acquire the skills of qualified X-ray examination of traumatological patients, to give an objective assessment of the obtained results.
3. Clinical residents in practice master the treatment of wounds in accordance with modern ideas about the pathophysiology of the wound process.
4. The developed contingent of traumatological patients makes it possible to gain experience in providing assistance not only in damages complicated by vulgar microflora, but also in anaerobic, non-clostridial infection.
5. Manipulation, which can be mastered on the basis of a traumatology department:
   - conductive limb anesthesia,
   - puncture of joints,
   - simultaneous repositioning in fractures of limb bones,
   - correcting the dislocations of the shoulder, forearm, foot, hip, lower jaw,
   - gypsum technique during the immobilization of segments of damaged limbs,
   - adhesive (sticky plaster) traction for the immobilization of limbs,
   - superposition of the thoracobraheal tire for immobilization of the upper limb,
   - superposition of tires in fractures of the clavicle,
   - therapeutic immobilization in spine fractures,
   - therapeutic immobilization in fractures of pelvic bones.
6. In the departments of traumatology and microsurgery, clinical residents get acquainted, develop or improve their skills in the following operations:
   - primary surgical treatment of wounds;
   - delayed surgical treatment of wounds;
   - skeletal traction of limb segments;
   - osteosynthesis of the bones of the hand and fingers;
   - osteosynthesis of the clavicle;
   - osteosynthesis of the forearm and lower leg;
   - suture of tendons;
- seam of nerves;
- seam of arteries;
- compression-distraction osteosynthesis with Ilizarov's apparatus;
- surgical treatment of the wounds of the skull, decompression therapy (on duty) with the help of neurosurgical patients;
- opening and draining of osteomyelitic phlegmon;
- osteotomy, sequestrectomy with osteomyelitis;
- operations to restore ligament apparatus damage;
- patella suture;
- operative correction of foot defects;
- free skin plasty (various methods);
- plastic of soft tissues with a flap with feeding "leg".

7. Are improved the skills of conservative treatment of injuries of the musculoskeletal system.
8. Is being developed complex of measures for the rehabilitation of traumatological patients.
9. Are being developed number of additional research methods:
- general and special X-ray methods (with double contrast, under hypotension, cholangiography);
- angiography;
- ultrasound and others.
- endoscopic methods of diagnosis and treatment:
- puncture biopsy of joints with cytological examination.
10. Continuous independent work in the chambers under the guidance of a professor and an assistant allows to the resident to master the diagnosis and differential diagnosis of diseases, learn to perform all necessary manipulations, perform operations that meet the requirements of the qualification characteristics of a traumatologist orthopaedist.

PEDIATRIC TRAUMATOLOGY-ORTHOPEDICS

Features traumatology and orthopedics in childhood are learned by clinical residents in the process of providing emergency care on duty and while working in the children's department of traumatology and orthopedics.

Knowledge is acquired of the features of the clinic and diagnosis of the pathology of the spine, bones and joints in children of different age groups, the skills of performing emergency operations, resuscitation and intensive care of emergency conditions.

In a planned manner, operations are mastered and performed in connection with the pathology of the spine, bones and joints.

PURULENT SURGERY OF BONES AND JOINTS

1. The issues of purulent surgery of bones and joints are mastered during the entire period of study in clinical residency.
2. In the purulent department the resident acquires (improves) the following skills:
2.1. Methods of rational antibiotic therapy and correction of immunity in patients with surgical infection.
2.2. The problems of treatment of purulent infection in patients with diabetes mellitus
2.3. Surgical tactics in anaerobic clostridial and nonclostridial infections.
2.4. Modern methods of local treatment of purulent diseases (laser irradiation, ultrasound, proolitic enzymes, antiseptics)
2.5. Modern methods of detoxification in patients with surgical infection (plasmapheresis, hemosorption, endolymphatic administration of drugs)
2.6. Is being studied The possibility of additional methods of diagnosis of purulent diseases:
- clinical, biochemical, immunological;
- cytological, histological, microbiological studies;
- X-ray studies;
- ultrasound diagnostics;
- thermometry and computed tomography.
3. In the purulent department, the clinical resident acquaints himself, develops and improves his skills in the following manipulations and operations:
- surgical intervention in purulent diseases of the skin and subcutaneous tissue (furuncle, carbuncle, hidradenitis, cellulitis cellulitis);
- surgery for purulent diseases of the joints, joint capsules, tendon sheaths (arthrocentesis, art, opening, draining buroitov, tenosynovitis);
- surgical intervention in purulent processes in fiber spaces and anatomical formations in it:
4. Are mastered and improved methods of prevention and treatment of surgical infection:
- sepsis; clinic, diagnosis, treatment,
- abscesses and phlegmon of various localizations,
- purulent inflammation of the skin and subcutaneous tissue,
- purulent diseases of the hand and fingers,
- hematogenous and traumatic osteomyelitis,
- specific and anaerobic infection (tetanus, gas gangrene).
5. Are improved the skills of conservative therapy of patients with purulent diseases of various locations.

Is attached curriculum of the educational program of postgraduate medical study in the specialty "traumatology-orthopedics".

Educational program of postgraduate medical training - clinical residency - in the direction - 530001 - "general medicine", qualification: "the doctor-traumatologist-orthopedist" was developed by the International Higher School of Medicine

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