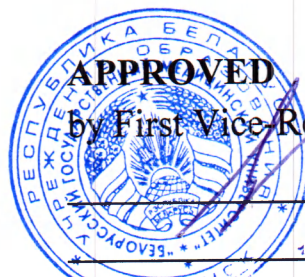


MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS
Educational Institution
BELARUSIAN STATE MEDICAL UNIVERSITY

Контрольный
экземпляр



by First Vice-Rector, Professor

I.N.Moroz

16. 11. 2022

Reg. # UD-1.01-20/2223/edu.

GENERAL SURGERY

**Curriculum of higher educational institution
in the academic discipline for the specialty:**

1-79 01 01 «General Medicine»

Curriculum is based on the educational program «General Surgery», approved 16.11.2022, registration # УД-Л.01-20/2223/уч.; on the educational plan in the specialty 1-79 01 01 «General Medicine», approved 18.05.2022, registration # L 79-1-1/2223/mf.

COMPILERS:

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RECOMMENDED FOR APPROVAL:

by the Department of General Surgery of the Educational Institution «Belarusian State Medical University»
(protocol # 3 of 21.10.2022);

by the Scientific and Methodical Council of the Educational Institution «Belarusian State Medical University»
(protocol # 9 of 16.11.2022)

EXPLANATORY NOTE

«General Surgery» is an academic discipline of the Surgical Module # 1, containing systematized scientific knowledge about the main pathological conditions in surgery, as well as rarely elements of surgical activity.

The purpose of the academic discipline «General Surgery» is the formation of specialized competencies for mastering the main areas of surgical work - compliance with the rules of asepsis and antiseptics when performing surgical operations, issues of anesthesia, stopping bleeding and compensating for blood loss, surgical methods of treating certain types of surgical diseases.

The objectives of the academic discipline «General Surgery» are to form students' scientific knowledge about:

the basic concepts of clinical surgery; non-operational skills in desmurgy; aseptic and antiseptic; basics of hemotransfusiology; methods of hemostasis and compensation of blood loss; fundamentals of anesthesiology and resuscitation; the basics of private plastic surgery, oncology and transplantology; basic principles of diagnosis and treatment of septic surgical diseases; methods of providing primary and specialized medical care to patients with certain acute surgical diseases, injuries and emergency conditions; skills and abilities necessary to identify the syndromes of major surgical diseases, traumatic injuries; diagnosis and treatment of septic surgical pathology, mastering the methods of primary medical care in the development of a number of conditions that threaten the life of patients, as well as resolving questions about the place of examination and treatment of patients with surgical diseases.

The knowledge, skills and abilities gained in the study of the academic discipline «General Surgery» are necessary for the successful study of the following academic disciplines: «Disaster Medicine», «Anesthesiology and Reanimatology», «Topographic Anatomy and Operative Surgery», module «Surgical Module # 3».

A student who has mastered the content of the educational material of the academic discipline should ensure the formation of students' specialized professional competence:

SC. Apply methods of examination, diagnosis, and primary care for the most common surgical diseases.

As a result of studying the academic discipline «General Surgery», the student should

know:

the main types of modern asepsis and antisepsis;
main methods of prevention and treatment of wound infection;
methods of disinfection and sterilization of instruments, dressings and sutures, gloves, implants;

methods of processing hands before surgical interventions;
rules for preparing the patient and the operating field for surgery, rules for working in the operating room;

local and general manifestations of traumatic injuries (mechanical injuries, thermal, chemical and radiation burns, frostbite), traumatic shock, crush syndrome;

general and local symptoms of bleeding and methods of hemostasis, indications and contraindications for the transfusion of specific components of blood products and blood products, blood substitutes, blood transfusion complications, taking into account the prevention and principles of basic treatment;

basics local anesthesia and basic resuscitation;

principles of diagnosis, classification of local and general treatment of individual nosological forms of surgical infection;

patterns of the wound healing process, types of wound healing and principles of their treatment, rules for dressings, taking into account the phases of the wound process;

basic principles of oncology, transplantology, plastic surgery;

be able to:

apply basic and additional methods of examination for the preliminary formulation of a clinical diagnosis;

carry out pre-sterilization processing of surgical instruments, perform packing of the sterilization box;

carry out certain types of local anesthesia using modern anesthetics;

perform primary and secondary surgical treatment of wounds, draining phlegmone and abscess of subcutaneous localization;

perform intradermal, subcutaneous, intramuscular injections;

gastric tube insertion and cleansing enemas performing;

carry out artificial ventilation of the lungs and closed heart massage;

determine the patient's blood group;

prepare the system for transfusion of blood products and blood substitutes;

perform a test for individual compatibility, compatibility by Rh factor;

perform a biological test before blood transfusion;

perform transport immobilization;

master:

method of processing hands in preparation for surgery;

how to put on a sterile gown, mask, gloves before surgery;

method of preparing the surgical field for surgery;

adjustment features of the operating lamp and operating table;

the technique of sterilization boxopening and the supply of sterile material during the operation;

methods of applying soft bandages of various types and types;

methods of temporarily bleeding control.

Total number of hours for the study of the discipline is 336 academic hours.

Classroom hours according to the types of studies: lectures – 32 hours (including 10 hours of supervised student independent work), practical classes - 144 hours, student independent work (self-study) - 160 hours.

Intermediate assessment is carried out in accordance with the curriculum in the specialty in the form of a credit (4, 5 semesters) and an examination (6 semester).

Form of higher education - full-time.

**ALLOCATION OF ACADEMIC TIME
ACCORDING TO SEMESTERS OF STUDY**

Code, name of the specialty	semester	Number of academic hours						Form of intermediate assessment
		total	in-class	including			out-of-class self-studies	
				lectures (including supervised independent work)	supervised student independent work	practical classes		
1-79 01 01 «General Medicine»	4	108	52	10	3	42	56	credit
	5	120	66	12	4	54	54	credit
	6	108	58	10	3	48	50	exam
Total hours		336	176	32	10	144	160	

THEMATIC PLAN

Topic (section) title	Number of in-class hours	
	lectures	practical
1. Introduction to the academic discipline «General Surgery»	2	2
2. Aseptic and antiseptic	2	10
3. Bleeding and blood loss	2	5
4. Fundamentals of clinical transfusiology	2	5
5. Endogenous intoxication. Water and electrolyte disturbances	-	2,5
6. Nutrition of a patient with surgical pathology	-	2,5
7. Fundamentals of anesthesiology	-	5
8. Fundamentals of intensive care	-	2,5
9. Surgical operation	2	7,5
10. Desmurgy. Transport immobilization	2	9
11. Trauma and injuries	2	15
12. Wounds and wound infection	2	6
13. Sepsis	-	3
14. Burn injury. Thermal, chemical and radiation burns. Electrical injury	2	6
15. Cold injury	-	3
16. Fundamentals of out-patient surgery	-	3
17. Fundamentals of oncology	2	3
18. Fundamentals of plastic and reconstructive surgery	2	3
19. Fundamentals of transplantology	-	3
20. Examination of patient with surgical pathology	2	3
21. Surgical infection	4	27
22. Arterial and venous circulation disorders. Chronic disorders of the lymphatic drainage	2	12
23. Syndrome of diabetic foot	-	3
24. Trophic and necrotic changes in soft tissues	2	3
Total hours	32	144

CONTENT OF THE EDUCATIONAL MATERIAL

1. INTRODUCTION TO THE ACADEMIC DISCIPLINE «GENERAL SURGERY»

Definition of the concept of surgery. Meaning, purpose, objectives and content of the academic discipline «General Surgery».

History of the development of surgery. Representatives of surgical schools and their role in the formation of the main periods of surgery (empirical, anatomical and morphological, great discoveries, physiological, high-tech).

Legislative legal acts regulating surgical activity. Issues of ethics and deontology in surgery. The concept of medical secrecy, iatrogenics in the provision of surgical care. Rights and obligations of surgical patients.

Stages of surgeon training in the Republic of Belarus. Communication of surgery with other medical disciplines. Development of surgery in the Republic of Belarus.

2. ASEPTIC AND ANTISEPTIC

Aseptic. Routes and sources of infection spread. Organization of a surgical hospital, operating unit. Zones of sterility. Types of cleaning in the operating room. Prevention of endogenous infection, airborne infection. Prevention of nosocomial infection.

Prevention of exogenous airborne infection. The peculiarity of organizational measures aimed at the prevention of exogenous airborne infection.

Prevention of contact infection. Characteristics and features of the main high-temperature and low-temperature sterilization methods. Treatment of the hands of the surgeon and the operating field. Features of sterilization of surgical instruments, dressings and surgical linen. Prevention of implantation infection. Characteristics of the suture material. Metric system. The effectiveness of sterility control, taking into account physical, chemical and biological methods.

Prevention of exogenous implantation infection. Characteristics of the suture material: structure, biodegradability, source of production, thickness. Metric system for measuring surgical threads. Sterility efficiency control: features of physical, chemical and biological methods.

Prevention of endogenous infection. Features of intrahospital (nosocomial) infection (healthcare-associated infection). Prevention of nosocomial and HIV infection.

Antiseptic. Main types.

Mechanical antiseptic. Components of mechanical antiseptics: primary surgical treatment (PST), secondary surgical treatment (SST), wound cleansing. Components of physical antiseptics. Types of drainage. Environmental factors.

Physical antiseptic. Characteristics of wound drainage methods: passive, active, flow-washing. Technical means of physical influence: ultrasonic cavitation, ultraviolet irradiation, hyperbaric oxygenation, local ozone therapy, photodynamic therapy.

Chemical antiseptic. Classification and representatives of chemical antiseptics. The concept and types of chemotherapeutic drugs.

Biological antiseptic. Classification and representatives of biological antiseptics. Classes of immunocorrective preparations and bacteriophages. Methods for correcting immunoresistance. Classes and representatives of antibiotics. The concept of antibiotic prophylaxis.

3. BLEEDING AND BLOOD LOSS

Hemostasis system. Methods and mechanisms of physiological hemostasis. The concept of physiological anticoagulants and the fibrinolysis system. Syndrome of hypocoagulation (DIC) and hypercoagulability. Causes, treatment tactics.

Bleeding: types, classification, severity, outcomes and complications.

Blood loss: Estimation of the loss of circulating blood volume. Moore's formula. Types of therapeutic hemostasis. Reconstructive and restorative and endovascular interventions, special devices for final hemostasis (Blackmore's probe, Cook's rings, Danita's stent). The concept of intrahepatic portosystemic shunting. Types of coagulation. Types of local and systemic hemostatics. Types of local biological hemostatics.

4. FUNDAMENTALS OF CLINICAL TRANSFUSIOLOGY

Blood groups. Basic immunological aspects. Characteristics of ABO groups and its anomalies. Rh factor system. The concept of stem hematopoietic cells. Indications, contraindications, methods of transfusion of blood components. Routes of administration, preservatives. Methods for determining blood group and Rh factor. Compatibility tests, biological testing. Posttransfusion reactions and complications. Types, manifestations, treatment tactics.

Blood products: classification, components, indications for use, shelf life.

Blood substitutes. Classification, mechanism of action, indications for use, features of administration. Features of replenishment of acute blood loss with various loss of circulating blood volume.

5. ENDOGENOUS INTOXICATION. WATER AND ELECTROLYTE DISTURBANCES

Water-electrolyte disorders and disorders of the acid-base state (ABS) in surgical practice. Basic concepts. Types of toxins. Varieties of endotoxemia. Principles of diagnostics. Medical directions. Types of extracorporeal detoxification. Types of water spaces. Types of electrolyte imbalance. The main buffer systems of the blood. Types of ABS disorders. principles of their treatment. Groups of blood substitutes for correction.

6. NUTRITION OF A PATIENT WITH SURGICAL PATHOLOGY

Nutritional status. Assessment of nutritional status. Parenteral nutrition: indications, the concept of carrying out, varieties of blood substitutes used and the mode of their administration, indications. Types of standard diets in surgery. The concept of sip. Types of artificial parenteral nutrition. Types of basic endopits. Ways and modes of introduction of endopits. Indications for their introduction.

7. FUNDAMENTALS OF ANESTHESIOLOGY

Features of the pain syndrome. The concept of transduction, transmission, modulation, perception. Types of algogens. Pain classification. Diagnostic criteria for pain syndrome (VAS-, SVO-scales). Principles of treatment. Anesthesia methods. Groups of analgesics and their representatives. Treatment of chronic pain syndrome. Routes of administration of anesthetics.

Local anesthesia. Indications and contraindications. Classification of local anesthetics. Types of local anesthesia. Other types of anesthesia: intravenous, intraosseous, infiltration, conduction anesthesia. Novocaine block. Technique, indications for certain types.

8. FUNDAMENTALS OF INTENSIVE CARE

Critical conditions. Types of shock, their clinical manifestations, principles of preclinical diagnosis and treatment. Preagony, agony, clinical death, signs. Stages of basic cardiopulmonary resuscitation. Criteria for its effectiveness. Management of cardiac arrest. Electrical defibrillation. Inotropic support.

9. SURGICAL OPERATION

Surgical operation: definition, indications and contraindications. Degrees of operational risk. Classification of the main types. The concept of robotic operations VR-, 3D-, NOTES-technology. Stages of the operation. Types of completion of operations. Ways to prevent postoperative complications.

Preoperative period: definition, tasks, varieties, features of the stages and their components. Preoperative preparation. Treatment of the operating field. Operational risk assessment (ASA scale). Treatment of the operating field. Premedication. Antibacterial prophylaxis, Prevention of thrombosis.

Postoperative period: definition, purpose, tasks. Characteristics of the phases of the course of the uncomplicated period. The concept of the program and method of accelerated recovery (Fast Track Surgery; ERAS). Complicated postoperative period. The main types of complications, their prevention. Assessment scales: Claven-Dindo, Satave.

10. DESMURGY. TRANSPORT IMMOBILIZATION

Types and characteristics of dressings.

Soft bandages. Classification, bandaging rules. Soft headbands, neck, chest and shoulder girdle, abdomen, pelvis, upper limb, lower limb. Features of the use of bandages using elastic bandages of various compression classes, sports taping, adhesive plaster and contour bandages, scarves, elastic corsets and bandages.

Hardening bandages. Plaster bandages: types, features and characteristics, indications and contraindications for application, application rules, care and removal.

Transport immobilization: definition, indications, immobilization rules. Standard transportation splint. Indications for use.

11. TRAUMA AND INJURIES

Trauma and injuries. Definition. Classification of damage by type of agent, nature of damage. Types of damage: concussion, bruise, sprain, rupture, compression.

Closed injuries of the skull and brain: clinical manifestations, diagnosis, treatment.

Closed injuries of the chest: clinical manifestations, diagnosis, treatment. Hemothorax, pneumothorax: clinical manifestations, diagnosis, treatment.

Closed injuries of the abdomen and retroperitoneal space: mechanisms of injury, clinical manifestations, diagnosis and treatment.

Dislocations: definition, classification, reliable and probable signs, diagnosis. Shoulder dislocation reduction. Indications for surgical treatment.

Fractures: definition, classification, reliable and probable signs, instrumental diagnostics. First aid for fractures of long bones, pelvic bones, spine. Features of transport immobilization in fractures. Indications for surgical treatment. Osteosynthesis: types, indications, contraindications. Skeletal traction: indications, contraindications, overlay rule. Bone tissue regeneration: morphogenesis, timing, types of callus.

Traumatic shock: definition, etiology, pathogenesis, classification, clinical symptoms, diagnosis. Monitoring of the patient's condition. Basic therapeutic measures.

Crush syndrome: definition, etiopathogenesis, clinical symptoms and diagnosis depending on the periods of the pathological process. First aid. Approaches to the treatment of patients in a hospital setting.

12. WOUNDS AND WOUND INFECTION

Wounds. Definition. Components of the wound: mandatory, possible. Classification of wounds. Features of gunshot wound zones. Pathogenesis of the wound process. Clinical symptoms. Types of wound healing. Treatment (operative, conservative). Wound suturing. Seam classification.

Wound infection. Causes of wound infection. Complications of wound infection. Open wound management. Types of sutures in the complicated course of the wound process. Indications for removal of primary and secondary sutures. Active and passive drainage of septic wounds. Local treatment of infected wounds, taking into account the phases of the wound process: features and main drugs. Types of wound dressings and their representatives used in the presence of wound infection.

13. SEPSIS

Definition, pathogenesis, classification. clinical symptoms. Diagnostic markers of sepsis. Sepsis treatment.

14. BURN INJURY. THERMAL, CHEMICAL AND RADIATION BURNS. ELECTRICAL INJURY

Burn injury: definition, pathomorphological changes in tissues and classification. Prognosis.

Thermal burns: classification and clinical symptoms. Determination of the depth and area of the burn. Formulation of the diagnosis of burn injury. First aid. Principles for the provision of specialized care. Prognosis. Burn disease and its periods.

Chemical burns: classification and clinical symptoms. Severity assessment. First aid. Principles for the provision of specialized assistance. Prognosis.

Radiation (radiation) burns: causes, pathogenesis, clinical symptoms. First aid. Principles for the provision of specialized assistance. Prognosis. The concept of radiation sickness.

Electrical injury. Features of direct and indirect effects of current (thermal, electrochemical, biological). General and local disorders that occur in the body as a result of electrical injury. Degrees of electrical injury. First aid. Principles for the provision of specialized assistance. Prognosis.

15. COLD INJURY

Definition, types of cold injury. Factors that increase the risk of cold injury.

General cooling (freezing): clinical picture, degree of cooling. First aid. Principles for the provision of specialized assistance. Prognosis

Frostbite: definition, pathogenesis, classification, clinical symptoms in pre-reactive and reactive (early and late) periods. Methods for determining the viability of tissues in the late reactive period. First aid and principles of frostbite treatment. Complications of frostbite in the early and late remote periods. The concept of trench foot.

16. FUNDAMENTALS OF OUT-PATIENT SURGERY

Organization of outpatient surgical care in the Republic of Belarus. Continuity between outpatient and inpatient levels of surgical care. Indications and contraindications for outpatient surgery. Organization of observation of an outpatient surgical profile. Indications for planned and emergency hospitalization.

Ingrown toenail: causes, modern methods of treatment. Skin formations (dermoid cyst, atheroma), ligature fistula: clinical symptoms, surgical treatment.

Pilonidal cyst: causes, diagnosis, treatment.

17. FUNDAMENTALS OF ONCOLOGY

Organization of cancer care in the Republic of Belarus.

Tumor: definition, etiopathogenesis, international classification (TNM). Precancerous conditions (facultative and obligate precancers). Clinical symptoms and diagnosis of the tumor process. Biopsy, its types. Types of metastasis. Features of radical, palliative and symptomatic treatment. Clinical stages.

18. FUNDAMENTALS OF PLASTIC AND RECONSTRUCTIVE SURGERY

Plastic surgery: definition, tasks and directions of plastic surgery. Classification by types of transplanted tissues. Skin plastics: indications, types. Modern types of skin allografts.

Reconstructive and restorative surgery of organs and tissues. Peculiarities of plastics of tendons, cartilaginous and bone tissue, nerves, vessels. Plastic surgery on the hollow organs of the chest and abdominal cavities. Endoprosthetics: concept, types, indications. Replantation: indications, conditions for implementation.

19. FUNDAMENTALS OF TRANSPLANTOLOGY

Transplantology: definition, tasks, classification. The concepts of «donor» and «recipient». Organization of a transplant service in the Republic of Belarus. Moral-ethical and legal aspects. Principles for ensuring the viability of a donor organ. Tissue incompatibility and ways to overcome it.

20. EXAMINATION OF PATIENT WITH SURGICAL PATHOLOGY

Examination of a patient with surgical pathology: examination, collection of complaints and anamnesis of the disease, physical examination, formulation of a preliminary diagnosis. Laboratory and instrumental diagnostic methods.

Provisional and clinical diagnosis. components of a diagnosis. Medical documentation: medical record of an inpatient, rules for storage and use. Distinctive components of the academic medical record of an inpatient with surgical pathology.

21. SURGICAL INFECTION

Surgical infection: definition, epidemiology, pathogenesis factors, classification of surgical infectious processes. Clinical symptoms: local and general reaction to a septic infection. Methods of rehabilitation of a septic focus: physical, enzymatic, mechanical and autolytic.

SURGICAL INFECTION OF THE SKIN AND SUBCUTANEOUS TISSUE: types, classification according to the level of damage and localization of the septic-infectious process.

Furuncle: definition, etiopathogenesis, clinical symptoms, treatment. Multiple boils, furunculosis: clinical symptoms, treatment features.

Carbuncle: definition, etiopathogenesis, clinical symptoms, treatment.

Hidradenitis: definition, etiopathogenesis, clinical symptoms, treatment.

Abscess: definition, clinical picture, diagnosis, treatment.

Phlegmon: definition, classification, clinic, diagnosis, treatment.

Complications of phlegmon.

Erysipelas: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment. Prevention of relapses.

SURGICAL INFECTION OF THE LYMPHATIC AND VENOUS SYSTEM

Lymphadenitis: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Acute lymphangitis: definition, pathogenesis, classification, clinical picture, diagnosis, treatment.

Acute thrombophlebitis: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Adenophlegmon: definition, etiopathogenesis, clinical picture, diagnosis, treatment.

SURGICAL INFECTION OF THE GLANDULAR ORGANS

Acute mastitis: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Acute parotitis: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Acute paraproctitis: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment. Chronic paraproctitis.

SURGICAL INFECTION OF FINGERS AND HAND

Panaritium: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Phlegmon of the hand: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

SURGICAL INFECTION OF BONES AND JOINTS

Osteomyelitis: definition, classification.

Acute hematogenous osteomyelitis: etiopathogenesis, clinical symptoms, diagnosis, treatment.

Chronic non-hematogenous osteomyelitis: etiopathogenesis, clinical symptoms, diagnosis, treatment. Rare primary chronic forms of osteomyelitis (Broddy, Garre, Ollie).

Acute septic arthritis: definition, etiopathogenesis, clinical symptoms, diagnosis, treatment.

Acute septic bursitis: definition, etiopathogenesis, clinical symptoms, diagnosis, treatment.

ACUTE SPECIFIC SURGICAL INFECTION

Anaerobic infection: definition, classification.

Anaerobic clostridial infection: etiopathogenesis, clinical symptoms, diagnosis. Gas gangrene. Principles of local and general treatment of anaerobic infection. Prevention (specific and non-specific).

Anaerobic non-clostridial infection: etiopathogenesis, clinical symptoms, diagnosis, treatment.

Tetanus: definition, etiopathogenesis, classification, clinical symptoms. Early signs of tetanus. treatment. Specific and non-specific emergency prophylaxis of tetanus.

Anthrax: definition, etiology, pathogenesis, classification, clinical symptoms and diagnosis, treatment.

Rabies: definition, stages, features of anti-rabies care and topical treatment of bite wounds.

SURGICAL INFECTION OF THE SEROUS CAVITIES

Septic pericarditis: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Septic pleurisy: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment. Methods (closed and open) of surgical treatment.

Septic peritonitis: definition, classification, stages of peritonitis and their clinical manifestations. Diagnostic criteria for peritonitis. Principles of treatment.

CHRONIC SPECIFIC SURGICAL INFECTION

Actinomycosis: definition, etiology, pathogenesis (paths of infection), clinical symptoms and diagnosis of various forms (cervical-facial, abdominal (intestinal), pulmonary), treatment.

Osteoarticular tuberculosis: phases of the course, clinical symptoms, diagnosis and treatment.

22. ARTERIAL AND VENOUS CIRCULATION DISORDERS. CHRONIC DISORDERS OF THE LYMPHATIC DRAINAGE

Acute arterial insufficiency of the main arteries of the lower extremities: definition, etiology, pathogenesis, classification, clinical symptoms, diagnosis of blood flow disorders. Methods of treatment (medical and surgical). Complications. Prevention.

Chronic arterial insufficiency (CAI) of the main arteries of the lower extremities: etiology, pathogenesis, classification of stages, clinical symptoms, diagnosis of blood flow disorders. Methods of medical and surgical treatment of CAI (X-ray endovascular and reconstructive and restorative operations).

Acute venous insufficiency: definition, etiopathogenesis. Thrombophlebitis: clinical symptoms, diagnosis, complications, treatment.

Phlebothrombosis: clinical symptoms depending on the level of the lesion (subclavian-jugular, iliac-femoral, tibial segments), diagnosis, complications, treatment.

Chronic venous insufficiency (CVI): definition, etiology, pathogenesis, classification (CEAP), diagnostics (non-invasive and invasive), clinical symptoms. Treatment of varicose veins and post-thrombotic syndrome of the lower extremities. Prevention of varicose veins of the lower extremities.

Chronic disorders of lymph drainage: etiology, pathogenesis of primary and secondary lymphatic insufficiency, clinical symptoms and diagnosis, methods of medical and surgical treatment.

23. SYNDROM OF DIABETIC FOOT (SDF)

Definition, pathogenesis, classification (clinical forms). Clinical signs of polyneuropathy, angiopathy and osteoarthropathy in SDF. Diagnosis (assessment of the state of peripheral blood flow, innervation, the state of the bone structures of the foot, chronic wounds (ulcers) of the foot). Treatment of neuropathic and neuroischemic forms of SDF. Prevention of SDF.

24. TROPHIC AND NECROTIC CHANGES IN SOFT TISSUES

Gangrene: definition, causes, pathogenesis, classification, clinical symptoms, differential diagnosis with necrosis, treatment.

Trophic ulcer: definition, causes of formation, clinical manifestations, diagnosis of the main types of trophic ulcers (arterial, venous, diabetic). Treatment (local and general).

Fistula: definition, pathogenesis, classification, clinical manifestations, diagnosis of internal and external fistulas, treatment.

Pressure sore: definition, causes. Stages of formation of a decubitus. Clinical symptoms, diagnosis and treatment, taking into account the stages. Treatment. Prevention of bedsores.

ACADEMIC DISCIPLINE CURRICULAR CHART

Number of section topic	Name section, topic	Number of classroom hours			out-of-class self-studies	Form of knowledge assessment
		lectures (including supervised independent work)	supervised student independent work	practical		
4th semester						
1.	INTRODUCTION TO THE ACADEMIC DISCIPLINE «GENERAL SURGERY»	2	0,5	2	3	
	Introduction to the academic discipline «General Surgery». History of surgery. Organization of surgical care in the Republic of Belarus	2	0,5	-	-	
	Introduction to the academic discipline «General Surgery». History of surgery. Organization of surgical care in the Republic of Belarus	-	-	2	3	Conversation, quiz
2.	Aseptic and antiseptic	2	0,5	10	12	
	Aseptic and antiseptic	2	0,5	-	-	
	Aseptic. Prevention of endogenous infection	-	-	2,5	3	Conversation tests, quiz
	Prevention of contact infection	-	-	2,5	3	Reports, tests, computer tests situational cases, quiz
	Antiseptic. Mechanical antiseptic. Physical antiseptic. Chemical antiseptic. Biological antiseptic	-	-	2,5	3	Reports, tests, situational cases, quiz
3.	Bleeding and blood loss	2	0,5	5	7	
	Bleeding and blood loss. Hemostasis. Methods of	2	0,5	-	-	

	temporary and final bleeding control								
	System of hemostasis	-	-	2,5	3	3	3	3	Reports, tests, quizzes, computer test
	Bleeding	-	-	2,5	4	4	4	4	Reports, tests, situational cases, quiz
4.	Fundamentals of clinical transfusiology	2	0,5	5	7	7	7	7	
	Fundamentals of clinical transfusiology. Blood groups. Donation. Transfusion of blood and its components	2	0,5	-	-	-	-	-	
	Clinical hemotransfusiology. Blood types	-	-	2,5	4	4	4	4	Conversation, reports, tests, quizzes, computer test
	Clinical hemotransfusiology. Blood components	-	-	2,5	3	3	3	3	Reports, tests, situational cases, quiz
5.	Endogenous intoxication. Water and electrolyte disturbances	-	-	2,5	3	3	3	3	Reports, tests, situational cases, quiz
6.	Nutrition of a patient with surgical pathology	-	-	2,5	3	3	3	3	Tests, situational cases, quiz
7.	Fundamentals of anesthesiology	-	-	5	7	7	7	7	
	Fundamentals of anesthesiology.	-	-	2,5	3	3	3	3	Reports, tests, situational cases, quiz
	Anesthesia	-	-	2,5	4	4	4	4	Reports, tests, situational cases, quiz
8.	Fundamentals of intensive care	-	-	2,5	4	4	4	4	Reports, tests, situational cases, quiz, assessment using simulation equipment
9.	Surgical operation	2	1	7,5	10	10	10	10	
	Surgical operation	2	1	-	-	-	-	-	
	Surgical operation	-	-	2,5	4	4	4	4	Conversations, reports, tests, quiz
	Preoperative period	-	-	2,5	3	3	3	3	Reports, tests, situational cases, quiz
	Postoperative period	-	-	2,5	3	3	3	3	Tests, situational cases, quiz, reports. Credit
5th semester									
10.	Desmurgy. Transport immobilization	2	0,5	9	9	9	9	9	
	Desmurgy. Types and types of bandages. Transport immobilization	2	0,5	-	-	-	-	-	conversation
	Soft bandages	-	-	3	3	3	3	3	Reports, assessment using simulation equipment, quiz
	Hardening bandages	-	-	3	3	3	3	3	Reports, assessment using simulation equipment, quiz

	Transport immobilization	-	-	3	3	3	equipment, quiz
11.	Trauma and injuries	2	1	15	15	3	Reports, assessment using simulation equipment, quiz
	Trauma and injuries. Closed injuries of organs and tissues. Dislocations and fractures. Traumatic shock. Crush syndrome	2	1	-	-	-	
	Trauma. Injuries. Head injuries	-	-	3	3	3	Computer test, reports, tests, quiz
	Closed and open chest injuries	-	-	3	3	3	Reports, tests, situational cases, quiz
	Closed and open injuries of the abdominal cavity and retroperitoneal space	-	-	3	3	3	Reports, tests, situational cases, quiz
	Dislocations and fractures	-	-	3	3	3	Reports, situational cases, quiz
	Traumatic shock. Crush syndrome	-	-	3	3	3	Situational cases, quiz, reports, computer test
12.	Wounds and wound infection	2	0,5	6	6	6	Conversation, situational cases
	Wounds. Wound infection	2	0,5	-	-	-	Report, tests, situational cases, quiz
	Wounds	-	-	3	3	3	Reports, situational cases, quiz
	Wounds infections	-	-	3	3	3	Tests, situational cases, quiz
13.	Sepsis	-	-	3	3	3	
14.	Burn injury. Thermal, chemical and radiation burns. Electrical injury	2	1	6	6	6	Conversation, situational cases
	Burn injury. Thermal, chemical and radiation burns. Electrical injury.	2	1	-	-	-	Situational cases, quiz, reports
	Burn injury. Thermal burns	-	-	3	3	3	Situational cases, quiz, reports, computer test
	Chemical burns. Radiation (beam) burns. electrical injury	-	-	3	3	3	Report, situational cases, quiz
15.	Cold injury	-	-	3	3	3	Report, assessment using simulation equipment, quiz
16.	Fundamentals of out-patient surgery	-	-	3	3	3	Situational cases, quiz, reports
17.	Fundamentals of oncology	2	0,5	3	3	3	Situational cases, quiz, reports
18.	Fundamentals of plastic and reconstructive surgery	2	0,5	3	3	3	

	Fundamentals of plastic surgery and transplantology	2	0,5	-	-	Conversation, computer test
	Fundamentals of plastic and reconstructive surgery	-	-	3	3	Tests, situational cases, quiz
19.	Fundamentals of transplantology	-	-	3	3	Tests, situational cases, quiz. Credit
6th semester						
20.	Examination of a patient with surgical pathology	2	0,5	3	3	
	Examination of a patient with surgical pathology	2	0,5	-	-	
	Examination of a patient with surgical pathology. Preliminary and clinical diagnosis	-	-	3	3	Reports, assessment using simulation equipment, computer test
21.	Surgical infection	4	1,5	27	29	
	General issues of surgical infection	2	1	-	-	Conversation
	Chronic specific infection. Anaerobic infection	2	0,5	-	-	Computer test, conversation
	Surgical infection	-	-	3	3	Tests, situational cases, quiz
	Acute septic diseases of the skin and subcutaneous tissue	-	-	3	4	Reports, assessment using simulation equipment, quiz
	Surgical infection of the lymphatic and venous system. Infection of glandular organs	-	-	3	3	Tests, situational cases, quiz
	Fingers and hand infection	-	-	3	3	Reports, situational cases, quiz, test
	Surgical infection of bones and joints. Bone-articular tuberculosis	-	-	3	3	Tests, situational cases, quiz, computer test
	Chronic specific surgical infection. Actinomycosis	-	-	3	3	Reports, situational cases, quiz, test
	Osteomyelitis	-	-	3	3	Tests, situational cases, quiz
	Anaerobic clostridial and nonclostridial infection. Tetanus. Rabies. Anthrax.	-	-	3	3	Reports, situational cases, quiz, test
	Surgical infection of serous cavities. Septic pericarditis. Septic pleurisy. Peritonitis	-	-	3	4	Tests, situational cases, quiz. Computer test
22.	Arterial and venous circulation disorders. Chronic disorders of the lymphatic drainage	2	0,5	12	12	
	Arterial and venous circulation disorders. Chronic disorders of the lymphatic drainage	2	0,5	-	-	Conversation
	Acute arterial limb deficiency	-	-	3	3	Tests, situational cases, quiz
	Chronic arterial limb deficiency	-	-	3	3	Tests, situational cases, quiz

	Acute venous failure	-	-	3	3	Reports, situational cases, quiz, test
	Chronic venous deficiency. Chronic disorders of the lymph	-	-	3	3	Reports, situational cases, quiz, computer test
23.	Syndrome of diabetic foot	-	-	3	3	Tests, situational cases, quiz
24.	Trophic and necrotic changes in soft tissues	2	0,5	3	3	Tests, situational cases, quiz
	Trophic and necrotic changes in soft tissues	2	0,5	-	-	Tests, situational cases, quiz
	Trophic and necrotic changes in soft tissues. Necrosis. Gangrene. Trophic ulcer. Fistula. Bedsores.	-	-	3	3	Reports, situational cases, quiz, test. Examination
	Total hours	32	10	144	160	

INFORMATION AND INSTRUCTIONAL UNIT

LITERATURE

Basic:

1. Алексеев С.А. Хирургические болезни. Практикум. = Surgical diseases. Practice book : учеб. пособие для иностр. студентов учреждений высш. образования по спец. «Стоматология», «Медико-профилактическое дело» – Минск : Вышэйш. шк., 2020. – 222 с.

Additional:

2. Essential of general surgery/ - 5th ed. Philadelphia Lippincott Williams& Wilkins, 2013 – 586p.

3. Gostishchev, V. K. General Surgery = Руководство к практическим занятиям по общей хирургии (на англ. языке) : the manual / V. K. Gostishchev – Moscow : Geotar Media, 2015 – 220p.

4. Gostishchev, General Surgery textbook / V. K. Gostishchev – Moscow : Geotar Media, 2021 – 799p.

5. General Surgery : textbook / ed. by S. D. Khimich, M. D. Zheliba. – Kyiv : AUS Medicine Publishing, 2019. – 534p.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF STUDENT'S INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE

The time allotted for independent work can be used by students:

- preparation for lectures, practical classes;
- preparation for offices and exams in academic discipline;
- the study of topics (issues) made for independent study;
- problem solving;
- preparation of thematic reports, abstracts, presentations;
- fulfillment of practical tasks;
- abstracting educational literature;
- compilation of tests by students to organize mutual control.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF SUPERVISED STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE

Main forms of supervised student independent work:

- writing and presentation of the abstract;
- study of topics and problems that are not taken out at a lecture;
- computer testing;
- compilation of tests by students for organizing mutual control;
- preparation and participation in active forms of training.

Control of supervised student independent work is carried out in the form of:

- test work;
- final lesson in the form of an oral interview, written control work, testing;

discussions of abstracts;
 protection of training tasks;
 assessment of an oral answer to the question, message, report or situational cases;
 verification of abstract, reports, recipes;
 individual conversation.

LIST OF AVAILABLE DIAGNOSTIC TOOLS

The following forms are used to diagnose competencies:

Oral form:

reports;
 situational cases;
 conversation.

Written form:

tests;
 quiz.

The oral-written form:

credits;
 examination.

Technical form:

computer test.

Simulation form:

assessment using simulation equipment.

LIST OF AVAILABLE TEACHING METHODS

Linear (traditional) method (lecture, practical classes)

Active (interactive) methods:

Problem-Based Learning;
 Team-Based Learning;
 Case-Based Learning;
 Research-Based Learning;
 training based on simulation technologies.

LIST OF PRACTICAL SKILLS

1. Preparation a system for blood substitution solution transfusion.
2. Selection of blood substitution solutions acting as water-electrolyte balancers, detoxification and haemodynamical action, parenteral nutrition solutions
3. Determination pulsation of arteries: temporal, maxillar, subclavian, humeral, radial, femoral, dorsalis pedis, posterior tibial.
4. Application of a cloth tourniquet to stop arterial bleeding in the area of the hand, forearm, shoulder, foot, lower leg, thigh.
5. Terminal compression of main arteries: temporal, maxillar, subclavian, humeral, radial femoral, dorsalis pedis, posterior tibial. Performing a temporary stop of bleeding by maximum flexion in the elbow, knee and hip joints

6. Measurement of blood pressure. Stopping bleeding with a blood pressure cuff.
7. Execution on the phantom of a Z-shaped or purse-string suture for the final stop of bleeding.
8. Explanation and demonstration of the use of a three-lumen esophageal obturator tube (Blackmore's probe) for bleeding from esophageal varices.
9. Explanation of the sequence of installation of a peripheral venous catheter and demonstration of venipuncture on the forearm on phantom (dummy)
10. Explanation of the stages of blood typing in a patient, evaluation of the results of blood typing using double standard isohemagglutinating sera.
11. Explanation of the stages of determining the blood group using monoclonal antibodies, standard erythrocytes and sera.
12. To perform individual ABO-system compatibility test for recipient's blood and donor erythrocytes.
13. To describe bioassay technique in blood transfusion (on conscious and narcotized patient). To describe the principles of patient's monitoring during and after the transfusion.
14. The imposition of a typical bandage dressing: circular, creeping, spiral, spiral with flexion, cruciform, spica, «turtle» and returning.
15. The imposition of a typical bandage dressing:
 - on the head (X-dressing for occipital region, «baby cap», «Hippocratic cap», returning dressing for scalp, «Neapolitan» dressing region, for single and both eyes);
 - on the upper limb (Desault's bandage, spica bandage for shoulder joint, tortoise dressing (convergent and divergent) for elbow joint, X-dressing for wrist joint, dressing for thumb, «glove» and «mitten» (returning) dressing for hand, spiral with flexions dressing for forearm;
 - on the lower limb (spica bandage on the thigh, «turtoise» bandage on the knee joint (convergent and divergent), spiral on the lower leg, X-dressing on the ankle joint, «turtoise» on the foot, spiral with flexions dressing, returning dressing for stump (residual limb);
 - sling dressing for forehead, nape, jaw and nose;
 - on the scalp, upper limb;
 - to perform a protective dressing fixation using adhesive tape.
16. occlusive dressing application and its stage;
17. Dressing fixation using tubular reticular band in the head and limb.
18. Application of warming compress dressing onto auricular region.
19. Application of local hypothermia and to explain its action.
20. To perform a splinting of lower limb using Cramer's splint in: hip bone fracture, hip joint bones fracture, knee joint bones fracture, calf bones /tibia fracture, fracture in the foot.
21. To perform a splinting of lower limb using Cramer's splint in shoulder bone fracture, forearm fracture, metatarsal bone fracture,

22. Shoulder joint dislocation reduction – Kocher's, Hippocrates, Janelidze technique.
23. The choice of means of immobilization and indicate the methods of transportation for fractures and dislocations of various localization.
24. Free gas sign (X-ray, percussion).
25. Determination of the presence of free fluid in the abdominal cavity during percussion.
26. Explanation of the method for detecting the Shchetkin-Blumberg symptom.
27. Artificial lung ventilation «mouth-to-mouth» on phantom (dummy).
28. Artificial lung ventilation on phantom (dummy) using Ambu sac.
29. Indirect cardiac massage (cardiac compression).
30. Preparation of a set for puncture of the pleural cavity, outline typical points for its implementation.
31. Urinary bladder catheterization: equipment, technique
32. Hands hygiene and surgical scrubbing according to EN-1500 standard.
33. Operation field cleansing and draping.
34. Wound dressing, stitches removal.
35. Sterility assessment of instruments, dressing material and linen after autoclaving, dry heat sterilization.
36. Scrubbing in and gloving for surgery – as surgeon and as nurse.
37. Description immobilization procedure and transportation principles in patient with spinal fracture, with pelvic bones fracture.
38. Subcutaneous injection on phantom (dummy).
39. Intradermal injection on phantom (dummy).
40. Intramuscular injection on phantom (dummy).

LIST OF EQUIPMENT USED

1. Tables and slides on the topic of classes.
2. Simulation equipment (for practicing percussion methods, palpation of the chest, abdominal cavity during examination of the patient, performing the installation of a nasogastric probe, urinary catheter, to carry out layouts on the head, trunk and limbs), simulators (to practice suturing skills, removal of the seams, seaming of the seams, seams. Performance of intramuscular, intravenous and subcutaneous injections).
3. A set of surgical instruments (tweezers, clamps, scissors, needle holders, reusable needles).
4. Drainages.
5. Dressing material (gauze napkins, balls, turunda), adhesive plaster.
6. Antiseptics, disinfectant drugs.
7. Syringes of various volumes, sterilization boxes, linen, suture material.
8. A set of blood substitutes, tourniqueta (Esmarchz, CAT/twist).
9. A set of isogemagglutinating sera.
10. Ambu sac.
11. Video materials, presentations of lectures.
12. Medical patient's history.

12. Electronical tests for preparing students to classes.

LIST OF LECTURES

4th semester

1. Introduction to the academic discipline «General Surgery». History of surgery. Organization of surgical care in the Republic of Belarus.
2. Aseptic and antiseptic.
3. Bleeding and blood loss. Hemostasis. Methods of temporary and final bleeding control.
4. Fundamentals of clinical transfusiology. Blood groups. Donation. Transfusion of blood and its components.
5. Surgical operation.

5th semester

1. Desmurgy. Types and types of bandages. Transport immobilization.
2. Trauma and injuries. Closed injuries of organs and tissues. Dislocations and fractures. Traumatic shock. Crush syndrome.
3. Wounds. Wound infection.
4. Burn injury. Thermal, chemical and radiation burns. Electrical injury.
5. Fundamentals of oncology.
6. Fundamentals of plastic surgery and transplantology.

6th semester

1. Examination of a patient with surgical pathology.
2. General issues of surgical infection.
3. Chronic specific infection. Anaerobic infection.
4. Arterial and venous circulation disorders. Chronic disorders of the lymphatic drainage.
5. Trophic and necrotic changes in soft tissues.

LIST OF PRACTICAL CLASSES

4th semester

1. Introduction to the academic discipline «General Surgery». History of surgery. Organization of surgical care in the Republic of Belarus.
2. Aseptic. Prevention of endogenous infection.
3. Prevention of contact infection.
4. Antiseptic. Mechanical antiseptic. Physical antiseptic.
5. Chemical antiseptic. Biological antiseptic.
6. System of hemostasis.
7. Bleeding.
8. Clinical hemotransfusiology. Blood types.
9. Clinical hemotransfusiology. Blood components.
10. Endogenous intoxication in surgery. Water and electrolyte disturbances.
11. Nutrition for a patient with surgical pathology.
12. Fundamentals of anesthesiology.
13. Anesthesia.
14. Fundamentals of intensive care.

15. Surgical operation.
16. Preoperative period.
17. Postoperative period.

5th semester

1. Soft bandages.
2. Hardening bandages.
3. Transport immobilization.
4. Trauma. Injuries. Head injuries.
5. Closed and open chest injuries.
6. Closed and open injuries of the abdominal cavity and retroperitoneal space.
7. Dislocations and fractures.
8. Traumatic shock. Crush syndrome.
9. Wounds.
10. Wounds infections.
11. Sepsis.
12. Burn injury. Thermal burns.
13. Chemical burns. Radiation (beam) burns. electrical injury.
14. Cold injury. General cooling. Frostbite.
15. Out-patient surgery. Ingrown toenail. Skin formation. Pilonidal cyst.
16. Fundamentals of oncology.
17. Fundamentals of plastic and reconstructive surgery.
18. Fundamentals of transplantology.

6th semester


1. Examination of a patient with surgical pathology. Preliminary and clinical diagnosis.
2. Surgical infection.
3. Acute septic diseases of the skin and subcutaneous tissue.
4. Surgical infection of the lymphatic and venous system. Infection of glandular organs.
5. Fingers and hand infection.
6. Surgical infection of bones and joints. Bone-articular tuberculosis.
7. Chronic specific surgical infection. Actinomycosis.
8. Osteomyelitis.
9. Anaerobic clostridial and nonclostridial infection. Tetanus. Rabies. Anthrax.
10. Surgical infection of serous cavities. Septic pericarditis. Septic pleurisy. Peritonitis.
11. Acute arterial limb deficiency.
12. Chronic arterial limb deficiency.
13. Acute venous failure.
14. Chronic venous deficiency. Chronic disorders of the lymph.
15. Syndrome of diabetic foot.
16. Trophic and necrotic changes in soft tissues. Necrosis. Gangrene. Trophic ulcer. Fistula. Bedsores.

**PROTOCOL OF THE CURRICULUM APPROVAL
BY OTHER DEPARTMENTS**

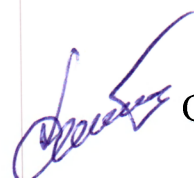
Title of the discipline requiring approval	The name of the department	Amendments to the curriculum in the academic discipline	Decision of the department, which designed the curriculum (date, protocol #)
1. Disaster Medicine	Department of Military Health Maintenance Organization and Emergency Medicine	There are no additions and changes	There are no additions and changes. Protocol № 3 10/21/2022
2. Anesthesiology and Reanimatology	Department of Anesthesiology and Reanimatology	There are no additions and changes	There are no additions and changes. Protocol № 3 10/21/2022
3. Operative Surgery and Topographic Anatomy	Department of Operative Surgery and Topographic Anatomy	There are no additions and changes	There are no additions and changes. Protocol № 3 10/21/2022

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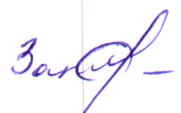
Curriculum content, composition and accompanying documents comply with established requirements

Dean of the Medical Faculty for International Students of the educational institution «Belarusian State Medical University»

 O.S. Ishutin

15.11. 2022

Methodologist of the educational institution «Belarusian State Medical University»

 S.V. Zaturanova

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