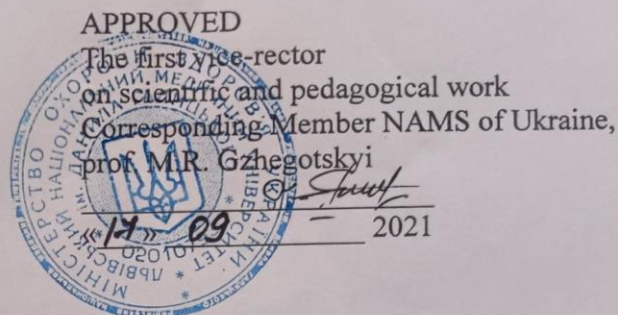


DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY

Department of Urology FPGE



**STUDY PROGRAM OF THE DISCIPLINE
UROLOGY**

training of students of fourth-year of the second (master's) level of higher education
field of knowledge 22 "Healthcare"
specialty 222 "Medicine"

Discussed and approved
at a meeting of the Department of
Urology FPGE
Protocol №3
from "30" August 2021
Head of Department
_____ prof. Borzhievsky A.Ts.

Approved
profile methodical commission
of Medical Faculty 1
Protocol №8
from "12" September 2021
Chairman of the profile methodical
commission
_____ Prof. Andryushchenko V.P.

Lviv – 2021

Working curriculum of the discipline "Urology" for students of the IV course of the medical faculty, studying in the specialty 222 "Medicine"

Compiled by the staff of the Department of Urology FPGE Lviv National Medical University named after Danylo Halytsky: prof. Borzhievsky A.Ts., prof. Vorobets DZ, prof. Mytsyk YO, docent Dmitrienko VV, docent Sheremeta RZ, docent Vitkovsky VF, docent Lychkovsky OE, docent Pasichnyk SM, as. Borzhievsky OA, as. Zagoruyko RR, as. Chaplia MM, as. Kobylnik YS, as. Nakonechnyy YA.

Based on the sample program of the discipline "Urology" and approved by the relevant methodological commission (" 24 "of September 2020)

Changes and additions to the curriculum for 2020 - 2021 academic year.

№	Contents of changes (additions)	Date and № minutes of the department meeting	Notes
1.			

Head of the Department of Urology FPDO Signature _____

Prof., MD Borzhievsky A.Ts.

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INTRODUCTION

Program of study of the discipline "Urology" according to the Standard of higher education of the second (master's) level areas of knowledge 22 "Healthcare" specialty 222 "Medicine" educational program of master of medicine

Description of the discipline (annotation) "Urology"- one of the elective disciplines in the system of higher medical education, knowledge of which is necessary for quality training of specialists in the field of health care. the study of the discipline lays an array of knowledge of students of instrumental methods of diagnosis, involves the integration of teaching with surgery, gynecology, oncology, nephrology, endocrinology, neurology, radiology, functional diagnostics, etc., forms the ability to apply acquired knowledge in professional activities at the level of general practitioner.

In recent decades, Urology has been supplemented by new approaches in the diagnosis and treatment of various pathologies. In this regard, the standards of higher medical education require the graduate of a higher medical educational institution to be able to use instrumental methods in the diagnosis of human diseases in a timely and sufficient manner.

Knowledge from the discipline "Urology" allows the future specialist to develop skills and apply the acquired knowledge in the process of professional activity.

The structure of the discipline	Number of credits, hours, of them			Self-study	Year of study semester	type of control
	Total	Classroom				
		Lectures (hours)	Practical classes (hours)			
Subjects: discipline "Urology"	3.0 credit / 90 hours	6	34	50	4th year (7/8 semesters)	Differen- tiated credit

The subject of study of the discipline are: knowledge of the pathology of organs of the urinary and male reproductive system and the ability to apply them in medical practice.

Interdisciplinary links:

The study of the discipline "Urology" is based on knowledge of basic disciplines - medical biology, medical and biological physics, bioorganic and biological chemistry, morphological disciplines - histology, cytology and embryology, human anatomy, pathomorphology, physiology and pathophysiology; clinical disciplines - propaedeutics of internal medicine, propaedeutics of pediatrics, radiology, pharmacology and integrates with these disciplines; lays down an array of students' knowledge of instrumental methods of functional diagnostics, provides for the integration

of teaching with gastroenterology, pulmonology, nephrology, functional diagnostics, etc .; forms the ability to apply the acquired knowledge in the process of professional activity.

1. The purpose and objectives of the discipline

1.1. The purpose of teaching the discipline "Urology" is the acquisition by students of medical faculty of knowledge on the anatomy and physiology of the urinary and male reproductive system, etiology and pathogenesis of major andrological diseases, their symptoms and diagnosis, acquaintance with modern methods of treatment and prevention in Urology.

1.2. The main tasks of studying the discipline " Urology " is to teach applied knowledge in the context of diagnosis, analysis and interpretation of research results, as well as treatment of patients with urologic and andrological diseases.

1.3 Competences and learning outcomes, the formation of which is facilitated by the discipline (relationship with the normative content of training of higher education seekers, formulated in terms of learning outcomes in the Standard of Higher Education).

In accordance with the requirements of the Standard of Higher Education, the discipline provides students with the acquisition of competencies:

- *general:*

- ability to abstract thinking, analysis and synthesis;
- ability to learn and master modern knowledge;
- ability to apply knowledge in practical situations;
- knowledge and understanding of the subject area and understanding of professional activity;
- ability to adapt and act in a new situation;
- ability to make informed decisions;
- ability to work in a team;
- interpersonal skills;
- ability to communicate in the state language both orally and in writing;
- ability to communicate in a foreign language;
- skills of using information and communication technologies.
- certainty and persistence in the tasks and responsibilities;
- ability to act socially responsibly and consciously;
- the desire to preserve the environment;
- ability to act on the basis of ethical considerations (motives).

- *special* (professional, subject):

- skills of interviewing and clinical examination of the patient;
- ability to determine the necessary list of laboratory and instrumental studies and evaluate their results;
- ability to establish a preliminary and clinical diagnosis of the disease;
- ability to determine the necessary mode of work and rest in the treatment of diseases;
- ability to determine the nature of nutrition in the treatment of diseases;
- ability to determine the principles and nature of disease treatment;
- ability to diagnose emergencies;
- ability to determine the tactics of emergency medical care;
- emergency medical skills;
- ability to carry out medical and evacuation measures;
- skills of performing medical manipulations;
- ability to carry out sanitary and hygienic and preventive measures;
- ability to determine the tactics of management of persons subject to dispensary supervision;
- ability to keep medical records;
- ability to assess the impact of the environment, socio-economic and biological determinants on the health of the individual, family, population.

Detailing of competencies according to NQF descriptors in the form of "Competence Matrix".

Competence matrix

№	Competence	Knowledge	Skills	Communication	Autonomy and responsibility
Integral competence					
Ability to solve typical and complex specialized problems and practical problems in professional activities in the field of health care, or in the learning process, which involves research and / or innovation and is characterized by complexity and uncertainty of conditions and requirements.					
General competencies					
1.	Ability to abstract thinking, analysis and synthesis	Have an abstract thinking, analysis and synthesis	Be able to abstract think, analyze and synthesize knowledge	The ability to effectively use the results of abstract thinking	Be responsible for the results of abstract thinking, analysis and synthesis

No	Competence	Knowledge	Skills	Communication	Autonomy and responsibility
2.	Ability to learn and master modern knowledge	Have modern knowledge	Be able to learn and use modern knowledge	Ability to use modern knowledge	Be responsible for the results of the use of modern knowledge
3.	Ability to apply knowledge in practical situations	Have specialized conceptual knowledge acquired in the learning process.	Be able to solve complex problems and problems that arise in professional activities.	Clear and unambiguous communication of own conclusions, knowledge and explanations that substantiate them to specialists and non-specialists.	Responsible for making decisions in difficult conditions
4.	Knowledge and understanding of the subject area and understanding of the profession	Have deep knowledge of the structure of professional activity.	Be able to carry out professional activities that require updating and integration of knowledge.	Ability to effectively form a communication strategy in professional activities	To be responsible for professional development, ability to further professional training with a high level of autonomy.
5.	Ability to adapt and act in a new situation	Have deep knowledge of adaptation and action in a new situation	Be able to use the acquired knowledge to adapt and act in a new situation	Communicate effectively in a new situation	Take responsibility for acting in a new situation
6.	Ability to make informed decisions	Have deep knowledge to justify the decision	Be able to make informed decisions based on knowledge	Use the acquired knowledge to justify the decision	Be responsible for informed decisions

N^o	Competence	Knowledge	Skills	Communication	Autonomy and responsibility
7.	Ability to work in a team	Know the methods of teamwork	Be able to work in a team	Use the acquired knowledge in teamwork	Be responsible for teamwork
8.	Interpersonal skills	Have interpersonal skills	Be able to use the skills of interpersonal interaction	Use the acquired knowledge for interpersonal interaction	Be responsible for interpersonal interaction
9.	Ability to communicate in the state language both orally and in writing	Have the skills to communicate in the state language both orally and in writing	Be able to communicate in the state language both orally and in writing	Use knowledge of the state language	Be responsible for communicating in the state language both orally and in writing
10.	Ability to communicate in a foreign language	Have the skills to communicate in a foreign language	Be able to communicate in a foreign language	Use knowledge of a foreign language	Be responsible for communicating in a foreign language
11.	Skills in the use of information and communication technologies	Have deep knowledge in the field of information and communication technologies used in professional activities	Be able to use information and communication technologies in a professional field that requires updating and integration of knowledge.	Use information and communication technologies in professional activities	Be responsible for the development of professional knowledge and skills.
12.	Definiteness and persistence in terms of tasks and responsibilities	Have persistence in the tasks and responsibilities	Be able to persistently perform tasks and responsibilities	Communicate with others in the performance	Be responsible for the performance of their

№	Competence	Knowledge	Skills	Communication	Autonomy and responsibility
				of tasks and responsibilities	duties and tasks
13	The ability to act socially responsibly and consciously	Have deep knowledge for social responsibility	Be able to act socially responsibly and consciously	Establish appropriate links for social and conscious responsibility	Be responsible for social actions
14	The desire to preserve the environment	Have in-depth knowledge of environmental protection	Be able to analyze the preservation of the environment	Use the acquired knowledge to preserve the environment	Be responsible for preserving the environment
15	Ability to act on the basis of ethical considerations (motives)	Have in-depth knowledge of ethical relations	Be able to use knowledge of ethical relations	Communicate effectively on the basis of ethical considerations (motives)	Be responsible for the actions of ethical considerations (motives)
Special (professional, subject) competencies					
1.	Skills of interviewing and clinical examination of the patient	Have in-depth knowledge of interviewing and clinical examination of the patient	Be able to use knowledge for interviewing and clinical examination of the patient	Use the acquired knowledge for interviewing and clinical examination of the patient	Responsible for interviewing and clinical examination of the patient
2.	Ability to determine the required list of laboratory and instrumental studies and evaluate their results	Have in-depth knowledge of laboratory and instrumental research and evaluation of their results	Be able to use laboratory and instrumental research	Use the acquired knowledge to evaluate laboratory and instrumental research	Be responsible for the evaluation of laboratory and instrumental research
3.	Ability to establish a preliminary and	Have special knowledge before	Be able to establish a preliminary and	Justify the establishment of preliminary and	Be responsible for

№	Competence	Knowledge	Skills	Communication	Autonomy and responsibility
	clinical diagnosis of the disease	establishing a preliminary and clinical diagnosis of the disease	clinical diagnosis of the disease	clinical diagnosis of the disease	establishing a preliminary and clinical diagnosis of the disease
4.	Ability to determine the required mode of work and rest in the treatment of diseases	Have the knowledge to determine the necessary mode of work and rest in the treatment of diseases	Be able to prescribe the necessary mode of work and rest in the treatment of diseases	Justify the necessary mode of work and rest in the treatment of diseases	Be responsible for prescribing the necessary mode of work and rest in the treatment of diseases
5.	Ability to determine the nature of nutrition in the treatment of diseases	Have the knowledge to determine the nature of nutrition in the treatment of diseases	Be able to prescribe the necessary diet in the treatment of diseases	Justify the necessary diet in the treatment of diseases	Be responsible for the prescribed diet in the treatment of diseases
6.	Ability to determine the principles and nature of disease treatment	Have the knowledge to determine the principles and nature of disease treatment	Be able to prescribe appropriate treatment of diseases	Justify appropriate treatment of diseases	Be responsible for the prescribed treatment
7.	Ability to diagnose emergencies	Have special knowledge for diagnosing emergencies	Be able to diagnose emergencies	Justify the diagnosis of emergencies	Be responsible for diagnosing emergencies
8.	Ability to determine the tactics of	Have specialized knowledge to determine the tactics of	Be able to determine the tactics of	Justify the tactics of emergency medical care	Be responsible for determining the tactics of

№	Competence	Knowledge	Skills	Communication	Autonomy and responsibility
	emergency medical care	emergency medical care	emergency medical care		emergency medical care
9.	Emergency care skills	Have knowledge of emergency medical care	Be able to provide emergency medical care	Justify the provision of emergency medical care	Be responsible for providing emergency medical care
10	Skills to perform medical manipulations	Have the knowledge to perform medical manipulations	Be able to perform medical manipulations	Use the acquired knowledge to perform medical manipulations	Be responsible for performing medical manipulations
11	ability to determine the tactics of management of persons subject to dispensary supervision	Have knowledge of determining the tactics of management of persons subject to dispensary supervision	Be able to identify groups of persons of dispensary supervision	Justify the definition of persons subject to dispensary supervision	To be responsible for the tactics of conducting persons subject to dispensary supervision
12	Ability to keep medical records	Have knowledge of medical records	Be able to keep medical records	Use the acquired knowledge in maintaining medical records	Be responsible for keeping medical records

Learning outcomes:

Integrative final program learning outcomes, the formation of which is facilitated by the discipline "Urology":

- mastering the algorithms of examination of patients with urologic and andrological profile
- practical use of instrumental methods of laboratory, radiological, functional diagnostics;
- solving clinical situational problems and test tasks;
- mastering the elements of research on patients and models;
- mastering the skills of applying instrumental methods of functional diagnostics.

Learning outcomes for the discipline " Urology ":

know:

- supervision of patients;
- study of symptoms of patients with andrological pathology of the genitourinary system;
- study of practical use of diagnostic methods in urology;
- mastering modern methods of surgical treatment of urological patients.
- acquaintance with the basics of maliovasive and laparoscopic surgery in urology.
- study of methods of radiation and chemotherapeutic treatment of patients with the pathology of the genitourinary system.
- solving clinical situational problems and test tasks;
- mastering the skills of using instrumental diagnostic methods during research of urological patients.

be able:

- 1) Collection of andrological anamnesis.
- 2) Assessment of the anatomical structure of the urinary and male reproductive system.
- 3) Assessment of the rate of sexual development in men.
- 4) Assessment of the functional state of the testicles, diagnosis of hypogonadism.
- 5) Assessment of age-related changes in hormonal and general metabolism in men.
- 6) Mastering the methods of clinical examination in men with inflammatory diseases of the genital organs.
- 7) Providing emergency medical care for urologic and diseases of the male genital organs.
- 8) Mastering the methods of clinical examination of traumatic genital injuries.
- 9) Providing emergency medical care for genital injuries in men.
- 10) Mastering the methods of clinical examination of patients with urologic tumors.
- 11) Provision of emergency medical care for tumors of the male genital organs.
- 12) Evaluation of the results of clinical-laboratory and instrumental diagnosis of infertility in men.
- 13) The choice of methods of treatment of urologic disieases.
- 14) The choice of treatment methods for andrologic disieases.
- 15) Choice of treatment methods for men with erectile dysfunction.
- 16) Mastering the methods of clinical examination in men with complaints of ejaculatory disorders.
- 17) Choice of treatment methods for men with premature ejaculation, retrograde ejaculation, anejaculation, dysorgasmia.
- 18) Use the basic principles of prevention of urological diseases.

2. Information volume of the discipline

3.0 ECTS credits / 90 hours are allocated for the study of the discipline.

Topic 1. Clinical anatomy, physiology and abnormalities of urinary and male genital systems.

Anatomical structure of the kidney, ureter, bladder, urethra, prostate, testis, penis.

Kidneys. Examination of the kidneys. Palpation of the kidneys. Differential-diagnostic value of changes in the contours of the lumbar region. The main pathological processes are palpatory simulating kidney diseases. Diagnostic value of the symptom of "knocking" on the lumbar region.

Bladder. The main pathological processes that lead to enlargement of the bladder. Diagnostic value of examination, palpation and percussion of the bladder.

Prostate seven ' wooden vesicles. Methods of rectal finger examination. Adenoma and prostate cancer. Changes in the prostate during its inflammation. Diagnostic value of prostate secretion analysis.

Urethra. Methods of examination and palpation and their diagnostic value.

Penis. Diagnostic value of palpation data.

Testicle. Methods of examination and palpation and their diagnostic value. Differential-diagnostic value of diaphanoscopy.

Topic 2. Semiotics of urology diseases and modern methods of urological patients examination.

Lumbar pain. Their general characteristics, etiology, localization, irradiation. Renal colic. Etiology and pathogenesis of pain in diseases of the bladder, prostate and external genitalia.

Disorders of urination. Definition, etiology, pathogenesis. Polyuria, pollakiuria, nocturia. Urinary incontinence, its types. Urinary incontinence. Acute and chronic urinary retention. Residual urine and methods for its determination. Paradoxical ischuria.

Quantitative changes in urine: physiological and pathological polyuria. Oliguria. Anury. Types of anuria: renal, renal, postrenal, their causes.

Qualitative changes in urine: hematuria, its types, causes. Pyuria. Bacteriuria, its types. Pneumaturia. Hiluria, its types. Urethrorrhagia, its causes. Urine reaction is normal and in pathology. Methods of quantitative assessment of leukocyturia by Addis-Kakovsky, Amburge, Nechiporenko. Provocative tests. Detection of atypical cells and urine and its diagnostic value.

Assessment of renal function. Samples for dissolution and concentration. Zymnysky's test. Determination of nitrogenous slag content in the blood.

The interpretation of the image, the shadow of bone-m ' muscle system, Skeletopy kidney pictures shadow kidney and pathologic entities.

Excretory urography, its types. Types of contrast agents. Method of execution. Interpretation of excretory urograms. Contraindications to excretory urography. Possible complications and their prevention.

Retrograde ureteropyelography. Types of contrast agents for retrograde ureteropyelography, the amount of drug that must be injected into the bowl. Interpretation of ureteropyelograms. Advantages and disadvantages of retrograde ureteropyelography.

Computer ' tomography and nuclear magnetic imaging, indications for use, diagnostic capabilities.

Renal angiography, its types. Phases of the angiogram. The value of renal angiography as a functional-morphological method. Indications and contraindications to renal angiography. Complications and their prevention. Angiographic signs of various pathological processes in the kidneys. Combination of diagnostic vascular methods with medical manipulations in urological diseases: balloon dilatation of renal artery stenoses, embolization therapy. Indications for them and methods of execution.

Cystography. The essence of the method, indications and methods of implementation. Modifications of cystography: sedimentary, urinary, polycystography, pericystography. Prevention of inflammatory complications during cystography.

Urethrography, its types: ascending and micturition descending, method of execution, diagnostic value. Complications of urethrography and their prevention. Lymphadenography. Genitography, method of execution, diagnostic value.

Iso topno renography, nephroscintigraphy, scanning, methods of execution. Diagnostic value.

Methods of studying urodynamics: X-ray pyeloureteroscopy, uroflowmetry, cystomanometry.

Thermographic methods: definitions, types, indications for use. Diagnostic value.

Ultrasound examination: definition, types: percutaneous endovesical, transrectal and transvaginal examination, indications for them. Puncture examination of the kidney, renal pelvis and prostate under ultrasound control.

Electrophysiological research methods: rheorenography, electromyography of the bladder and ureter. Definition, indications for use, diagnostic significance.

Types of catheters. Elastic catheters of Nelaton, Timans, Foley, Petzer, indications for their use. Scale Layer ' Pierre to determine the diameter of the catheter. Catheterization of the bladder of men and women. Complications of bladder catheterization, their prevention and treatment are possible. Method of holding a metal catheter in men.

Urethroscopy. Cysto- and chromocystoscopy. Tools for endoscopic examination. Technique of urethroscopy, cystoscopy, chromocystoscopy. Complications of cystoscopy, their prevention and treatment. Technique of ureteral catheterization. Ureteroscopy, pyeloscopy.

Topic 3. Nonspecific inflammatory diseases of the urinary and male genital system.

. Acute pyelonephritis. Classification. Etiology, pathogenesis, ways of infection spread. Significance of pelvic-renal refluxes, venous stagnation of the general condition of the organism, its immunobiological reactivity in the occurrence of pyelonephritis. Local factors that contribute to the development of pyelonephritis. Different pathomorphological forms of acute pyelonephritis: serous, apostematous, renal carbuncle, renal abscess, necrotic papillitis. Clinic, diagnosis. Treatment: conservative and operative. Urgent methods of restoring the passage of urine from the kidney: catheterization, stent placement, puncture percutaneous nephrostomy.

Chronic pyelonephritis. Etiology. Phases of the clinical course. Clinic. Diagnosis. Treatment.

Pyonephrosis: clinic, diagnosis, treatment. The most common antibacterial drugs. The value of determining the sensitivity of the urine microflora.

Acute and chronic paranephritis. Ormond's disease.

Paranephritis: definition, ways of infection penetration. Clinic. Ways of breaking through manure. Diagnosis. Treatment.

Ormond's disease or retroperitoneal fibrosis: definition, etiology, clinical picture, diagnosis, treatment.

Cysts, prostatitis, urethritis, epididymitis, cavernitis.

Cysts: classification, ways of infection. Factor and that contribute to the occurrence of cysts and an area common. Symptoms. Diagnosis. Treatment.

Prostatitis: definition, classification, etiology, clinic. Diagnosis. Ways of breakthrough of a prostate abscess. Treatment of prostatitis.

Urethritis: etiology and pathogenesis, classification. Types of pathogens. Clinical course, diagnosis. Treatment of urethritis and their complications.

Epididymitis: definition, etiology, pathogenesis. Clinical course, diagnosis and treatment.

Cavernitis: definition, etiology, clinical course, diagnosis, treatment.

Topic 4. Tuberculosis of urinary and male genital systems.

Renal tuberculosis: etiology, pathogenesis. Ways of penetration of the pathogen. Stages of disease development. Pathological picture. Semiology. Diagnostic methods. Provocative tests with tuberculin. Modern methods of treatment. Dispensary supervision. Indications for urgent surgical treatment.

Tuberculosis of the male genital organs: etiology, pathogenesis, clinical course. Diagnosis and treatment methods.

Topic 5. Urinary stone disease.

Etiology and pathogenesis. Characteristics of stones by shape, location and chemical composition. X-ray optical properties of stones.

Kidney stones: clinical picture, diagnosis, treatment. Coral nephrolithiasis, classification, clinic, diagnosis, treatment. Complications of kidney stones. Current treatments sechokam 'yanoyi disease. Indications for surgical treatment.

Bladder stones: etiology, clinical picture, diagnosis, treatment.

Prostate stones: clinic, diagnosis, treatment.

Hydronephrosis, ureterohydronephrosis: etiology and pathogenesis of the disease. Stages of hydronephrosis. Clinical course. Diagnosis. Methods of treatment. Principles and types of plastic surgery for hydronephrosis. Surgical correction of ureterohydronephrosis, technique of ureteroneocystoanastomosis, antireflux operations.

Topic 6. Trauma of urinary and male genital system organs.

Kidney damage: open and closed. Kidney damage in combination with injury to other organs. Classification. Clinic. Diagnosis. Conservative and operative treatment.

Iatrogenic damage to the kidneys and ureters: clinic, diagnosis, treatment.

Bladder injuries: open and closed, intra- and extraperitoneal. Urinary incontinence as a characteristic consequence of bladder damage.

Detachment of the bladder neck. Symptoms, diagnosis. Zeldovich test with filling of a bladder. Cystography is the main method of diagnosing bladder damage. Execution technique.

Damage to the bladder during surgery on the abdominal cavity, pelvis, gynecological surgery, childbirth, during endoscopic manipulations and operations. Diagnosis. Treatment.

Damage to the urethra. Causes of injury and mechanism of injury. Clinic, diagnosis, treatment. Ascending urethrocytography and its diagnostic value. Epicystostomy and urogenital drainage. Possibility of primary urethral plastic surgery. Plastic surgical interventions on the urethra: operations of Holtsov, Podrez-Vyshnevsky, Solovov, their features and long-term results.

Gateway injuries: types of injuries, symptoms, diagnosis, treatment.

Testicular torsion: etiology, symptoms, diagnosis, treatment.

Topic 7. Tumors of urinary system organs.

Kidney parenchymal cancer: etiology, pathological anatomy, symptoms, diagnosis, ways of metastasis, treatment.

Wilms' tumor - adenomyosarcoma: symptoms, diagnosis, treatment.

Renal pelvic cancer: symptoms, diagnosis, treatment.

Tumors of the ureters: symptoms, diagnosis, treatment.

Bladder tumors: etiology and pathogenesis. Classification. Symptoms, diagnosis. Methods of treatment: surgery, chemotherapy, radiation therapy. The place of endoscopic surgery in the treatment of bladder cancer.

Topic 8. Tumors of male genital system organs.

Prostate cancer. Etiology. Stages of the disease. Clinical picture, diagnosis, treatment. The value of PSA in the diagnosis of prostate cancer. Extragenotherapy of prostate cancer.

Testicular tumors. Pathogenetic significance of testicular injury and cryptorchidism in the development of testicular tumors. Ways of metastasis. Clinical picture. Diagnosis, treatment.

Penile cancer. Etiology. The role of phimosis and balanoposthitis in the development of penile cancer. Clinic, diagnosis. Principles of treatment.

Topic 9. Emergency urology.

Acute renal failure: etiology, pathogenesis, stages of the disease. Symptoms, diagnosis. Principles of conservative therapy. Intestinal dialysis, peritoneal dialysis and hemodialysis in the treatment of acute renal failure.

Etiology and pathogenesis of chronic renal failure. Stages and forms of clinical course. Clinic, diagnosis, treatment. Indications for peritoneal dialysis and hemodialysis.

Kidney transplantation. Indications for kidney transplantation. Preparation of the recipient. Donor selection. Management of the postoperative period. Modern immunosuppressive drugs.

The structure of the discipline

Topic	Lectures	Practical (seminar) classes	Self-study	Individual work
Discipline "Urology"				
Topic. 1. Clinical anatomy, physiology and abnormalities of urinary and male genital systems.	2	4	5	-
Topic. 2. Semiotics of urology diseases and modern methods of urological patients examination.		4	5	
Topic. 3. Nonspecific inflammatory diseases of urinary and male genital system.	2	4	5	
Topic. 4. Tuberculosis of urinary and male genital systems.		4	5	
Topic. 5. Urinary stone disease.		4	6	
Topic. 6. Trauma of urinary and male genital system organs.		4	6	
Topic. 7. Tumors of urinary system organs.	2	4	6	
Topic. 8. Tumors of male genital system organs.		4	6	

Topic. 9. Emergency urology.		2	6	
Total hours 90 / 3.0 ECTS credit	6	34	50	
Final control				Diff. credit

Thematic plan of practical classes

N	Topic	Pract. hours
1	Clinical anatomy, physiology and abnormalities of urinary and male genital systems.	4
2	Semiotics of urology diseases and modern methods of urological patients examination.	4
3	Nonspecific inflammatory diseases of urinary and male genital system.	4
4	Tuberculosis of urinary and male genital systems.	4
5	Urinary stone disease.	4
6	Trauma of urinary and male genital system organs.	4
7	Tumors of urinary system organs.	4
8	Tumors of male genital system organs.	4
9	Emergency urology.	2
	Differential credit	
	Total	34

Thematic plan of independent work of students

№	Topic of self education work	Pract. hours	Type of control
1.	Practical classes preparation. Theoretical backgrounds for practical skills.	18	Current control on practical classes
2	Topics for self educational learning		
	1) Classification, etiology, clinics, diagnostics and methods of nephroptotic disease treatment	2	
	2) Parasitic diseases in urology	2	

3) Disorders of urination. Classification. Etiology. Clinics. Diagnostics. Treatment.	2	
4) Urogenital fistulas in women.	2	
5) Nephrogenic arterial hypertension. Etiology. Clinics. Diagnostics. Treatment.	2	
6) Specific urethritis. Etiology. Clinics. Modern methods of diagnostic and treatment.	2	
7) Classification, etiology, diagnostic and treatment of male infertility.	2	
8) Azoospermia. Classification, etiology, diagnostic, methods of treatment. Operative modalities in obstructive azoospermia treatment.	2	
9) Acute and chronic renal insufficiency in urology practice.	2	
10) Classification, etiology, diagnostics, clinics and modern methods of urethral strictures treatment.	2	
11) Derivation of urine after radical cystectomy	2	
Patients care and case reports writing	4	Case reports documentary
Preparation for differential credit-clinical urology	6	
Total	50	

Thematic plan of lectures

N	Lectures	Hours
1	Semiotics of urology diseases. The modern methods of urological patients examination.	2
2	Urinary tract infections (UTI). Nonspecific and specific inflammatory diseases of urinary and male genital system Urolithiasis.	2
3	Tumors of the urinary tract (kidney, ureters, urinary bladder, prostate, testicles).	2
4	Total	6

6. Individual tasks are not provided

7. Teaching methods

In the process of studying the discipline "Urology" the following methods of teaching students are used:

- by type of cognitive activity:
 - explanatory-illustrative;
 - reproductive;
 - problem statement;
 - logic of cognition;
 - analytical;

- inductive;
- deductive;
- according to the main stages of the process:
 - knowledge formation;
 - formation of skills and abilities;
 - application of knowledge;
 - generalization;
 - fixing;
 - audit;
- according to the system approach:
 - stimulation and motivation;
 - control and self-control;
- by sources of knowledge:
 - verbal - lecture, explanation;
 - visual - demonstration, illustration;
- by the level of independent mental activity:
 - problematic;
 - partial search;
 - research;
 - method of problem-based teaching.

8. Control methods

Current control carried out at each practical lesson in accordance with specific goals, during the individual work of the teacher with the student for those topics that the student develops independently and they are not part of the structure of the practical lesson. Objective (standardized) control of theoretical and practical training of students is applied.

The following means of diagnosing the level of preparation of students are used: testing, solving situational problems, control of practical skills.

At each practical lesson, the student answers 20 questions (tests on the topic of practical training, standardized questions, knowledge of which is necessary to understand the current topic of practical training and independent work related to the current lesson; demonstrates knowledge and skills of practical skills).

The form of final control when studying discipline "Urology" is a semester test, which consists in assessing the student's mastery of educational material solely on the basis of the results of his performance of certain types of work in practical classes. Semester credit in the discipline is conducted after the end of its study, before the examination session.

Methods and tools of standardized assessment when compiling the final control

Regulations for the semester test

The form of final control is standardized, includes control of theoretical and practical training and is conducted at the last lesson based on learning outcomes.

9. Current control is carried out during training sessions and aims to check the assimilation of educational material by students.

Forms of assessment of current educational activities are standardized and include control of theoretical and practical training.

9.1. Evaluation of current educational activities. During the assessment of mastering each topic for the current educational activity of the student, grades are given on the 4th point (national). This takes into account all types of work provided by the discipline program. The student must receive a grade from each topic for further conversion of grades into points on a multi-point (200-point) scale. are estimated at 2 points. The maximum sum of points for the whole test is 22 points, the minimum number of points that a student must score to enroll in the theoretical part of the practical lesson is 9 points (50% of correct answers).

In each practical lesson, the teacher evaluates the knowledge of each student on a four-point scale.

Excellent ("5")- The student correctly answered 90-100% of the tests of format A. Correctly, clearly and logically and fully answers all standardized questions of the current topic, including questions of the lecture course and independent work. Closely connects theory with practice and correctly demonstrates the performance (knowledge) of practical skills. Solves situational problems of increased complexity, is able to summarize the material. Performed the planned individual work.

Good ("4") -The student correctly answered 70-89% of the tests of format A. Correctly, and essentially answers the standardized questions of the current topic, lecture course and independent work. Demonstrates performance (knowledge) of practical skills. Correctly uses theoretical knowledge in solving practical problems. Is able to solve easy and medium situational problems. Has the necessary practical skills and techniques to perform them in excess of the required minimum.

Satisfactory ("3") -The student correctly answered 50-69% of the tests of format A. Incomplete, with the help of additional questions, answers the standardized questions of the current topic, lecture course and independent work. Cannot build a clear, logical answer on their own. During the answer and demonstration of practical skills the student makes mistakes. The student solves only the easiest problems.

Unsatisfactory ("2") -The student answered less than 50% of the tests of format A. Does not know the material of the current topic, can not build a logical answer, does not answer additional questions, does not understand the content of the material. Makes significant, gross mistakes when answering and demonstrating practical skills.

At each practical lesson, student knowledge is assessed on a four-point scale ("5",

Control of solving situational problems is carried out in a practical lesson by assessing the quality and completeness of their implementation, the ability to interpret the results. For the practical part of the lesson the student can type:

4 points, if the work is done in full and the student freely and correctly explains the situational task and gives an assessment;

2 points, if the work is done with some errors, the student can not fully explain the situational task and give an assessment;

0 points if the work is not completed or the student cannot explain the situational task and give an assessment.

The final grade for the lesson is determined by the sum of the results of test control and practical work as follows:

The sum of points	Score on a four-point scale
from 22 to 26	5
from 17 to 21	4
from 11 to 16	3
<9 points for test control or 0 points for the practical part	2

The material for independent work of students, which is provided in the topic of practical classes at the same time as classroom work, is evaluated during the current control of the topic in the relevant classroom. Assessment of topics that are submitted for self-study and are not included in the topics of classroom classes, are controlled during the final control.

10. The form of final control of academic performance in the study of discipline "Urology".

Differentiated credit is a form of final control, which consists in assessing the student's mastery of educational material solely on the basis of the results of his performance of certain types of work in practical classes. Semester credit in disciplines is held after the end of its study, before the examination session.

11. Scheme of accrual and distribution of points received by students:

Maximum number of points, which a student can earn for current academic activities in the discipline, is 200 points.

Minimum number of points, which must be scored by the student for the current educational activity in the discipline is 120 points.

Calculation of the number of points is carried out on the basis of the marks received by the student on a traditional scale during studying of discipline, by calculation of the arithmetic average (CA) rounded to two signs after a comma. The resulting value is converted into points on a multi-point scale as follows:

$$X = (CA * 120) / 5$$

Below is a table of recalculation on a 120-point scale:

Recalculation of the average grade for current activity in a multi-point scale for disciplines culminating in the exam

4-point scale	200-point scale
5	120

4-point scale	200-point scale
4.45	107

4-point scale	200-point scale
3.91	94

4-point scale	200-point scale
3.37	81

4.95	119	4.41	106	3.87	93	3.33	80
4.91	118	4.37	105	3.83	92	3.29	79
4.87	117	4.33	104	3.79	91	3.25	78
4.83	116	4.29	103	3.74	90	3.2	77
4.79	115	4.25	102	3.7	89	3.16	76
4.75	114	4.2	101	3.66	88	3.12	75
4.7	113	4.16	100	3.62	87	3.08	74
4.66	112	4.12	99	3.58	86	3.04	73
4.62	111	4.08	98	3.54	85	3	72
4.58	110	4.04	97	3.49	84	Less than 3	Not allowed
4.54	109	3.99	96	3.45	83		
4.5	108	3.95	95	3.41	82		

The minimum number of points that a student must score for the current academic activity for the semester for admission to the exam is 72 points.

Independent work of students is assessed during the current control of the topic in the relevant lesson. Assimilation of topics that are submitted only for independent work is controlled during the final control.

The semester exam is a form of final control of mastering by the student of theoretical and practical material from a separate academic discipline for a semester which is spent as a control action. A student is considered admitted to the semester exam in the discipline if he attended all classes provided by the curriculum in the discipline, performed all types of work provided by the work program of this discipline and during its study during the semester scored at least minimum (72 points).

Semester examination is conducted in writing during examinations, according to the schedule. During the exam, the student receives a paper which included practical skills and 3 , thanks ting. First of all, it checks etc. aktychnyh skills . After that, the student receives a sheet of paper on which to record idpovidi the question paper. At the end of the exam the student pays the examination commission sheet with answers on paper. Practical skills maximum assessed th ARE 10 points . The first task consists of a test of 40 questions that evaluated the maximum 40 points. In the second task the student must cover the maximum specified issues. In the third assignment students solve situational problems. The second and third most tasks is estimated at 15 points each.

The maximum number of points that a student can score when taking the exam is 80.

The minimum number of points in the exam - not less than 50.

Determining the number of points that the student scored in the discipline

The grade for the discipline that ends with the exam is defined as the sum of points for the current academic activity (not less than 72) and points for the exam (not less than 50).

Assessment of disciplines, the form of final control of which is a differentiated test is based on the results of current educational activities and is calculated in points, according to table 1.

Evaluation subjects form which is the final control test (differentiated test) based on the results of ongoing training and expressed dvobalnoyu HQ aloyu "Passed" or "not passed". To be enrolled, a student must receive a score of at least 60% of the maximum amount of points in the discipline (120 points) for the current academic activity.

Points are converted regardless of discipline both in scale ECTS , and a 4-point scale. ECTS scale scores are not converted to a 4-point scale and vice versa.

The scores of students studying in one specialty, taking into account the number of scores scored in the discipline are ranked on the ECTS scale as follows:

ECTS assessment	Statistical indicator
A	The best 10% of students
B	The next 25% of students
C	The next 30% of students
D	The next 25% of students
E	The last 10% of students

Ranking with the assignment of grades "A", "B", "C", "D", "E" is carried out for students of this course who study in one specialty and have successfully completed the study of the discipline. Students who receive grades FX, F ("2") are not included in the list of ranked students. Students with an FX grade automatically receive an E score after retaking.

Discipline scores for students who have successfully completed the program are converted into a traditional 4-point scale according to the absolute criteria listed below in the table:

Points in the discipline	Score on a 4-point scale
From 170 to 200 points	5
From 140 to 169 points	4
From 139 points to the minimum number of points that a student must score	3
Below the minimum number of points that a student must score	2

The ECTS score is not converted to the traditional scale, as the ECTS scale and the four-point scale are independent.

The objectivity of the assessment of students' learning activities is checked by statistical methods (correlation coefficient between ECTS assessment and assessment on a national scale).

12. Methodical support

The list and content of the initial methodological support for the study of the "Urology" includes:

- thematic plans of practical classes and self-work;
- tasks for practical classes and self-work;
- questions, tasks, tasks for the current and final control of knowledge and skills of students.

Questions for the final control of knowledge for discipline "Urology" for 4th year medical students

1. The main stages of development of urology as an independent medical discipline.

2. History of urology development in Ukraine.
3. History of the Department of Urology of the University.
4. The main directions of development and achievements of modern urology.
5. Organs of the urinary and male reproductive system, their functional significance.
6. Clinical anatomy of the urinary and male reproductive systems.
7. Pain in kidney disease.
8. Pain in diseases of the ureters and bladder.
9. Pain in diseases of the urethra and male genitals.
10. Differential diagnosis of renal colic and acute surgical diseases of the abdominal cavity.
11. Nocturia, its diagnostic value.
12. Methods blockade seven elements 'yanoho cord and a round called 'bandages uterine Lorient-Epstein.
13. Polyuria and pollakiuria. In what diseases are they observed?
14. Urinary incontinence, its types.
15. Acute urinary retention.
16. Chronic urinary retention.
17. Symptom of residual urine.
18. Anuria, its types.
19. Causes of prerenal anuria.
20. Causes of renal form of anuria.
21. Causes of postrenal anuria.
22. What is "hidden leukocyturia" and methods of its detection?
23. Hematuria: types, causes, methods of determination.
24. Bacteriuria, its types.
25. Hiluria, its types.
26. Pyuria.
27. Pneumaturia.
28. Urethrorrhagia.
29. Review urography and its interpretation.
30. Excretory urography, its types, methods of execution.
31. Types of X-ray contrast agents.
32. Contraindications to excretory urography.
33. Retrograde ureteropyelography, method of execution.
34. Retropneumoperitoneum, indications for use, method of performance.
35. Renal angiography, its types. Diagnostic value.
36. Cystography, types: sedimentary, urinary, polycystography, indications for performance, diagnostic value.

37. Urethrography, types, methods of execution.
38. Radioisotope renography, method of execution, diagnostic significance.
39. Kidney scan.
40. Scintigraphy, types, diagnostic significance.
41. Computer ' tomography, nuclear magnetic imaging.
42. Ultrasound sonography.
43. Thermographic researches, their types, diagnostic value.
44. Uroflowmetry, cystomanometry.
45. Anomalies of renal vessels.
46. Kidney abnormalities.
47. Anomalies of the ureters.
48. Urachus anomalies.
49. Anomalies of the bladder.
50. Anomalies of the urethra.
51. Testicular anomalies.
52. Phimosis and paraphimosis.
53. Acute pyelonephritis, definition, classification.
54. Ways of infection in the kidney.
55. Symptoms of acute serous pyelonephritis.
56. Diagnosis and treatment of acute pyelonephritis.
57. Apostematous nephritis: symptoms, diagnosis, treatment.
58. Kidney carbuncle: symptoms, diagnosis, treatment.
59. Kidney abscess: symptoms, diagnosis, treatment.
60. Pyelonephritis of pregnant women: causes, clinic, diagnosis, treatment.
61. Bacteremic shock: stages, symptoms, diagnosis, treatment.
62. Etiology of chronic pyelonephritis, symptoms, diagnosis, treatment.
63. Pyonephrosis: symptoms, diagnosis, treatment.
64. Methods of detection of latent leukocyturia.
65. Nephrogenic hypertension: types, causes, diagnosis, treatment.
66. Acute paranephritis: definition, ways of infection penetration, symptoms, diagnosis, treatment.
67. Ways of pus breakthrough in paranephritis.
68. Retroperitoneal fibrosis: definition, etiology, symptoms, diagnosis, treatment.
69. Cystitis: classification, symptoms, diagnosis, treatment.
70. Cystalgia: symptoms, diagnosis, treatment.
71. Urethritis: classification, symptoms, diagnosis, treatment.
72. Prostatitis: classification, symptoms, diagnosis, treatment.

73. Ways of pus breakthrough at a prostate abscess.
74. Acute epididymitis: etiology, symptoms, diagnosis, treatment.
75. Cavernitis: symptoms, diagnosis, treatment.
76. Etiology and pathogenesis of renal tuberculosis.
77. Clinical and radiological classification of renal tuberculosis.
78. Symptoms and diagnosis of renal tuberculosis. Diagnostic value of provocative tests with tuberculin.
79. Modern methods of treatment of renal tuberculosis.
80. Symptoms, diagnosis and treatment of tuberculous epididymitis.
81. Etiology and pathogenesis sechokam ' yanoyi disease.
82. Clinical picture of kidney stones.
83. Complications of kidney stones.
84. Methods of diagnosis of kidney stones.
85. Current treatments sechokam ' yanoyi disease.
86. Coral-like stones, their classification.
87. Urethral stones: symptoms, diagnosis, treatment.
88. Bladder stones: clinic, diagnosis, treatment.
89. Hydronephrosis: stages, symptoms, diagnosis, treatment.
90. Classification of closed kidney injuries.
91. Symptoms, diagnosis and treatment of closed kidney injuries.
92. Classification of open kidney damage, symptoms, diagnosis and treatment.
93. Damage to the ureters. Symptoms, diagnosis, treatment.
94. Bladder damage, types, clinical manifestations.
95. Diagnosis and treatment of bladder injuries.
96. Damage to the urethra, symptoms, diagnosis, treatment.
97. Indications for the imposition of the primary urethral suture.
98. Types of plastic surgery for post-traumatic complications of urethral injuries.
99. Modern minimally invasive methods of treatment of urethral strictures.
100. Testicular damage, types, symptoms, diagnosis, treatment.
101. Classification of kidney tumors.
102. Local and extrarenal signs of a tumor of a parenchyma of a kidney.
103. Diagnosis and treatment of tumors of the renal parenchyma.
104. Kidney cancer, symptoms, diagnosis, treatment.
105. Wilms' tumor - adenomyosarcoma, symptoms, diagnosis, treatment.
106. Tumors of the ureters, clinic, diagnosis, treatment.
107. Etiology of bladder tumors.
108. Classification of bladder tumors.

109. Clinic, diagnosis and treatment of bladder tumors.
110. Modern minimally invasive methods of treatment of bladder tumors.
111. Hyperplasia of the prostate, stages of the disease.
112. Symptoms, diagnosis and treatment of prostate hyperplasia.
113. Types of surgical interventions in the treatment of prostate hyperplasia.
114. Conservative treatment of prostate hyperplasia.
115. Early and late complications of surgical treatment of prostatic hyperplasia.
116. Stages of prostate cancer.
117. Symptoms, diagnosis and treatment of prostate cancer.
118. The surgical treatment of prostate cancer.
119. Modern minimally invasive methods of treating prostate cancer.
120. What drugs are used to treat prostate cancer?
121. Clinic, diagnosis and treatment of testicular tumors.
122. The clinic, diagnosis and treatment of cancer of the penis.
123. Symptoms, diagnosis and treatment of nephroptosis.
124. Etiology, clinic, diagnosis and treatment of vesico-vaginal fistulas.
125. Etiology, clinic, diagnosis and treatment of urogenital fistulas.
126. Echinococcosis of the urinary system.
127. Filariasis of the genitourinary system.
128. Genitourinary schistosomiasis (bilgartiosis): etiology, clinic, diagnosis and treatment.
129. Neurogenic disorders of urination, causes, symptoms, diagnosis and treatment.
130. Foreign bodies of the kidneys and urinary tract: clinic, diagnosis, treatment.
131. Etiology, pathogenesis and classification of acute renal failure.
132. Symptoms, diagnosis and treatment of acute renal failure.
133. Etiology, pathogenesis of chronic renal failure.
134. Stages and forms of clinical course of chronic renal failure.
135. Diagnosis and treatment of chronic renal failure.
136. Indications for peritoneal dialysis.
137. Indications for hemodialysis.
138. Fibroplastic induration of the penis, clinic, diagnosis, treatment.
139. Priapism: clinic, diagnosis, treatment.
140. The value of hemofiltration and plasmapheresis in the treatment of chronic renal insufficiency.
141. Kidney transplantation. Preparing the patient for surgery, donor selection.
142. Management of the postoperative period after kidney transplantation.

143. Causes and symptoms of renal colic.
144. Methods of buying renal colic.
145. The method blockade seven elements ' yavyvidnoho duct in men and round called ' bandages cancer in women.
146. Causes of acute urinary retention.
147. Methods of catheterization of the bladder in men and women.
148. Hematuria, its types, causes.
149. Medical care for hematuria.
150. Anuria, its types.

151. Medical care for various types of anuria.
152. Emergency care for kidney injuries.
153. Emergency care for injuries of the bladder, urethra.

13. Recommended literature

a) basic

1. Urology. Edited by OF Vozianov, OV Lyulko. Dnipropetrovsk, 2002.
2. Atlas-guide to urology. Ed. AF Vozianova, AV Lyulko.- Dnepropetrovsk, 2002.- Vol. 1, 2, 3.
3. Urology. Ed. NA Lopatkina.- M.: Medicine, 2005.
4. Guide to urology. Ed. NA Lopatkina.- M.,: Medicine, 1998.- Vol. 1, 2, 3.

b) additional

1. Alyaev Yu.G., Krapivin AA Resections and I in the kidney rake.- M.: Medicine, 2001.
2. Alyaev Yu.G., Grigoryan VA, Sultanova EA, Stokov AV, Bezrukov EA Hydronephrosis.- M., 2002.
3. Kamyshan IS Guide to tuberculosis of the urogenital organs.- K., Nichlava, 2003.- 496 p.
4. Mazo E.B. Krivobokov GG Hyperactive bladder.- M.: RGMU, 2003.
5. Matveev BM, Bukharkin BV, Matveev VB Prostate cancer.- M.,
6. Matveev BM Clinical oncurology.- M., 2003.
7. Rusakov VI Urinary tract surgery.- Rostov-on-Don: Phoenix, 1998.- 342 p.
8. Tiktinsky OL, Alexandrov VP Urolithiasis.- S.-Pb: Peter, 2000.- 384 p.

An indicative list of practical skills for final control of modules Urology module

1. Palpate the kidney in 2 positions. +++
2. To conduct percussion and palpation of the bladder. +++
3. To conduct palpation of the scrotum and urethra. +++
4. Palpate the prostate. +++
5. Evaluate the indicators of the general analysis of urine. +++
6. Evaluate the indicators of biochemical analysis of blood. +++
7. Perform catheterization of the bladder with elastic and metal catheter. ++
8. Perform cystoscopy and chromocystoscopy. ++
9. Interpret the results: +++
 - a) review and excretory urography;
 - b) isotope renography;
 - c) ultrasound sonography.
10. Carry out differential diagnosis of renal colic with acute surgical diseases of the abdominal cavity. +++

11. To make the scheme of examination and treatment of patients with urological disorders. +++
12. Conduct blockade seven elements ' yavyvidnoho Strait men and a round called ' bandages cancer in women
13. Provide emergency care for renal ring, injuries of the organs of the urinary and male reproductive system, hematuria, anuria, acute urinary retention. ++
14. Replace the drainage tube in the bladder. ++
15. Install and fix a permanent catheter in the bladder. +++
16. Hadavaty help with phimosis and paraphimosis. +++
17. Carrying out primary surgical treatment of wounds of the urinary and male reproductive systems. ++
18. Flushing of drainages. ++
19. Taking swabs from the urethral cavity. ++
20. Nephrostomy toilet and nephrostomy drainage care. ++
21. Suprapubic function of the bladder. ++
22. Applying a suspensory. ++
23. Bandaging patients after operations on the kidneys, bladder, external genitalia. +++

(++) - **be able to perform .**

(+++) - **to master practical skills and apply independently.**