**Practical lesson on the topic**

**"The structure of children's treatment and prevention institutions, peculiarities of the organization of their work. Statistical indicators of work. Children's health groups»**

The place of the class: the city children's clinical hospital, department of the Medical Center of Medical Education, training room.

**TOPICALITY:**one of the main areas of health care of the population of Ukraine is the care of motherhood and childhood. Curative and preventive care for children is an integral part of this field, a system that should ensure the organization of medical monitoring of healthy children and adolescents and provide them with qualified medical care. To understand the basics of medical and preventive work, it is necessary to know the peculiarities of the structure of children's medical and diagnostic institutions, the scope and form of work of the district pediatrician, children's health groups, and basic statistical indicators.

**GENERAL PURPOSE** −to know the organization of medical care for children in Ukraine. To study the main statistical indicators.

**SPECIFIC GOALS**

*The student should know:*

1. Principles of organization and methods of medical and preventive care for children in Ukraine.
2. The main stages of medical care for the children's population in urban and rural conditions.
3. The structure of children's treatment and prevention institutions, peculiarities of the organization of their work.
4. Basic functional duties of a pediatrician.
5. Dispensary observation and rehabilitation of children in polyclinic conditions.
6. Scope and forms of work of a pediatrician.
7. Sanitary and educational work in pediatric practice.
8. The main statistical indicators of the activity of children's medical and preventive institutions.
9. Principles of ethics and deontology in clinical pediatrics.

*Be able to:*

1. Orientation in the structural organization of medical and diagnostic children's institutions.
2. Assess the child's health.
3. Differentiate the main statistical indicators.
4. Make a plan for dispensary supervision of the child.

**BASIC KNOWLEDGE, KNOWLEDGE AND SKILLS NECESSARY FOR STUDYING THE TOPIC**

**(interdisciplinary integration)**

|  |  |
| --- | --- |
| Names of previous disciplines | Acquired skills |
| Health care organization | Principles of organization and methods of medical and preventive care for children in Ukraine.  The structure of children's treatment and prevention institutions, peculiarities of the organization of their work |

**TASKS FOR INDEPENDENT WORK DURING STUDENT PREPARATION FOR THE CLASS**

**Theoretical questions for the lesson:**

1. To study the stages of medical care for rural and urban children.

2. Familiarize yourself with the structure of the children's hospital and polyclinic:

a) principles of work of the reception department;

b) principles of operation of the polyclinic registry;

c) structure of medical departments;

d) work of auxiliary services;

e) the main functions of a pediatrician;

e) the main forms of work of a pediatrician.

3. Concept of health:

a) WHO definition;

b) health assessment criteria.

4. To study the main statistical indicators of the activity of children's medical and preventive institutions:

a) morbidity;

b) health index;

c) primary and general morbidity;

d) birth rate;

e) infant mortality;

e) quality of diagnostics at the pre-hospital stage;

e) indicator of dispensation efficiency.

**BRIEF DESCRIPTION OF THE MATERIAL**

**Stages of medical care for children:**

1. In the conditions of the city:

- district pediatrician;

- family doctor;

- consultation of narrow-profile specialists and examination in diagnostic offices;

-inpatient examination and treatment in city hospitals;

- regional hospitals;

- republican hospitals;

- interregional, republican specialized centers.

1. In rural areas:

- paramedic-midwifery station;

- rural dispensary;

- district hospital;

- mother and child sanatoriums;

- boarding houses;

- outpatient care at resorts.

3. Rehabilitation treatment of the children's population - provision of medical care for children from birth to 18 years of age.

**The structure of children's medical and diagnostic institutions.**

1. Children's Polyclinic:

* + registry;
  + filter with boxes and insulator;
  + office of a healthy child;
  + offices of pediatricians and other specialists;
  + vaccination office;
  + office of infectious diseases;
  + rehabilitation treatment department;
  + medical and diagnostic rooms: X-ray room, laboratory, room for functional diagnostics, procedural rooms;
  + office of medical statistics;
  + Department of admission and discharge of patients.

2. The main structural subdivisions of the inpatient hospital:

- medical departments;

* medical and diagnostic departments;
* auxiliary departments and services;
* administrative and economic service.

3. Types of children's hospitals:

* multidisciplinary;
* specialized (infectious, tuberculosis,

psychiatric, restorative treatment).

4. Features of treatment departments in large hospitals:

- for sick newborn children;

- specialized children's departments (otolaryngological, eye, surgical, neurological, etc.);

- intensive care unit for newborns.

5. Features of the organization of the work of departments in children's hospitals:

- the possibility of a mother staying with a sick child;

- the principle of simultaneous filling of chambers;

- forecasting in the departments of canteens, rooms for games, school activities;

- availability of Methodist teachers.

**The work of a district pediatrician**

**Areas and scope of work of the district pediatrician**

|  |  |
| --- | --- |
| Forms of work | Amount |
| 1 | 2 |
| Preventive work | Preventive measures for the protection of the fetus and newborn. Dynamic monitoring of children of I and II health groups. Prevention of rickets, hypotrophy, anemia. Organization of rational feeding. Preparation of children for admission to kindergarten and school. Organization of complex dispensary examinations |
| Treatment work | Providing medical care to children who are acutely ill |
| Organizational work | Dispensary monitoring of children from risk groups. Analysis and planning of work. Work with medical documentation.  Work with the district nurse. Control over dispensation by specialist doctors. Planning and carrying out preventive vaccinations |
| 1 | 2 |
| Anti-epidemic work | Observation of patients with infectious pathology at home and their treatment, if necessary - hospitalization. Registration of infectious diseases (urgent notification to SES). Work in the focus of infection and isolation of patients, observation of contacts and convalescents, removing them from the register. Work with sanactiv. Sanitary education |
| Sanitary and educational work | Classes at professional development courses.  Implementation of advanced forms of work |
| Certification training | Training courses. Self-education |
| The quality of the work of the district pediatrician | |
| 1. Distribution of children in the 1st and 2nd year of life by risk groups.  2. The number of patients on dispensary registration.  3. Percentage of children of the 1st year of life who were breastfed up to 4 months.  4. Coverage of children with preventive vaccinations.  5. Number of complaints from the population.  6. Differences between the diagnoses of the polyclinic and the hospital | |

**The concept of children's health**

WHO definition: "Health is a state of complete physical, spiritual and social well-being, and not just the absence of disease and infirmity."

**Health assessment criteria:**

- presence or absence of chronic diseases;

- achieved level of physical (according to regional data) and neuropsychological development;

- degree of harmonious development of the child;

- level of functional state of the main body systems;

- the degree of resistance of the organism to adverse environmental influences.

**The main statistical indicators of the activity of children's medical and diagnostic institutions:**

**Infant mortality =**The number of children who died under the age of 1 in a given year: 2/3 of newborns who were born alive in the current year + 1/3 of newborns who were born alive in the previous year · 1,000.

**Health index =**The number of children who did not get sick in the 1st year of life: the number of children who have reached the 1st year of life, · 1000.

The norm is 20-25. Similarly, the health index for children of the 2nd year of life is calculated.

**Birth rate =**Number of births: average annual population · 1000.

**Primary morbidity =**Numberchildren who fell ill for the first time in the current year: average annual number of children · 1,000.

**Total morbidity =**Numberof all registered sick children in the current year: average annual number of children · 1,000.

**The scope of dispensary observation of children =**

The number of sick children who are under dispensary observation for 1 year: the average number of children in the ward · 1000.

**Efficiency of dispensation =**The number of sick children removed from dispensary registration due to improvement in health status: the number of sick children who have been registered since the beginning of the year, · 1,000.

From 20.03.2008 According to the order of the Ministry of Health of Ukraine No. 149 "Clinical protocol for medical care of a healthy child under the age of 3 years", the clinical protocol was developed with the aim of implementing a unified system of measures for the formation, preservation and strengthening of the health of young children.

**STUDENT'S PRACTICAL WORK ALGORITHM**

The first stage. Familiarize yourself with the structure of children's treatment and prevention institutions using the example of a children's regional (district) polyclinic and hospital.

II stage. In the statistical and methodological office of the hospital, familiarize yourself with the report documentation of the pediatrician, with the statistical reports of the work of medical and preventive institutions.

III stage. A conversation with a sick child and his mother, determination of criteria for assessing the child's health and whether he belongs to a certain health group.

**MATERIALS FOR SELF-CONTROL**

**SITUATION PROBLEMS**

***Problem.***A 7-year-old boy with suspicion of acute appendicitis was brought to the regional children's hospital by ambulance. It is known from the anamnesis that the boy's sister is currently ill with chicken pox.

*Task:*1. In which department of the hospital should the boy be hospitalized?

*Answer standard:*1. In the box of the infectious and diagnostic department, because the boy has contact with chicken pox.

**Practical lesson on the topic**

**"Organization of sanitary-hygienic and anti-epidemic regimes. Hospitalization of patients to a children's hospital. Organization of the work of the reception department. Examination for pediculosis. Sanitary processing and transportation of patients. Organization of the work of the medical staff of the children's department. Medical documentation of a junior nurse, rules of conduct"**

The place of the class: the city children's clinical hospital, department of the Medical Center of Medical Education, training room. Number of hours – 4 hours.

**TOPICALITY:**maintaining the necessary sanitary-hygienic and anti-epidemic regimes in children's medical and preventive institutions plays an important role in caring for children and preventing many diseases.

**GENERAL PURPOSE**- to study the organization of sanitary-hygienic and anti-epidemic regimes of children's medical and preventive institutions, the peculiarities of the work of the reception department of a children's hospital.

**SPECIFIC GOALS**

*The student should know:*

1. Rules of sanitary and hygienic regime in children's medical and preventive institutions (general hygiene).
2. Basic requirements for the equipment of group rooms for children (hygiene of children and adolescents).
3. Peculiarities of sanitary and hygienic regime for children of different ages (hygiene of children and adolescents).
4. The work of the reception department.
5. Principles of sanitary treatment of patients.
6. Rules for transporting patients.
7. Anti-epidemic regimen of a children's hospital.

*Be able to:*

1. Observe the rules of sanitary and hygienic and anti-epidemic regimes in children's medical and preventive institutions.
2. Organize a sanitary and hygienic routine for children of different ages.
3. Carry out sanitary treatment of the child, measures in case of detection of pediculosis.
4. Transport patients with various pathologies to hospital departments.
5. Carry out wet cleaning of the premises, having previously prepared disinfection solutions.

**BASIC KNOWLEDGE, SKILLS, SKILLS NECESSARY FOR STUDYING THE TOPIC (interdisciplinary integration)**

|  |  |
| --- | --- |
| Names of previous disciplines | Acquired skills |
| General hygiene.  Hygiene of children and adolescents. | Rules of sanitary and hygienic regime in children's medical and preventive institutions.  Peculiarities of sanitary and hygienic regime for children of different ages |

**TASKS FOR INDEPENDENT WORK DURING STUDENT PREPARATION FOR THE CLASS**

**I. Theoretical questions for the lesson:**

1. To study the sanitary and hygienic regime in group premises for children:

a) components of group facilities for children;

b) lighting;

c) room temperature;

d) requirements for children's furniture;

e) cleaning of premises.

1. Learn the sanitary and hygienic regime in the children's hospital:

a) department for newborn children;

b) wards for older children;

c) operating unit;

d) bathroom.

1. Study the work of the reception department of the children's hospital:

a) registration;

b) medical examination;

c) sanitary processing;

d) measures when pediculosis is detected.

1. Study the peculiarities of transporting patients to the department:

a) depending on age;

b) depending on the severity of the condition.

1. Learn the measures of the anti-epidemic regime of the children's hospital:

a) examination of patients;

b) sanitary treatment of patients;

c) detection of pediculosis and measures to eliminate it;

d) cleaning of premises.

**II. The main orders regulating the work of medical institutions:**

1. Order of the Ministry of Health of the USSR No. 288 dated 23.03.76 "On the sanitary and anti-epidemic regime and labor protection of the staff of pediatric hospitals (departments)".
2. Order of the Ministry of Health of Ukraine No. 38 of March 28, 1994 "On the organization and implementation of measures to combat pediculosis."
3. Order of the Ministry of Health of the USSR No. 916 dated 04.08.83 "On the sanitary and anti-epidemic regime and labor protection of personnel of infectious diseases hospitals (departments)".

**BRIEF DESCRIPTION OF THE MATERIAL**

I. Sanitary and hygienic regime of group premises for children of preschool institutions.

|  |  |
| --- | --- |
| The principle of group isolation | In each children's group:   * separate entrance and premises; * equipment; * personnel |
| The composition of the group room | * locker room; * play-dining room; * bedroom-veranda; * toilet room |
| The main elements of the indoor microclimate | * lighting - natural, artificial; * ventilation - transom is best; * area -2.2 m2for each child;   temperature regime: playroom, dining room, isolation room, medical room, toilet − 20−22°WITH; bedroom, veranda, music room - 18°WITH |
| Requirements for furniture for children | * in toilet rooms - furniture sizes correspond to the height and strength of children in accordance with GOST 19301.1-73 and   GOST 19301.2-73;   * the distance between the tables is not less0.5 m; * the distance of the tables from the window -1 m; * stationary beds are installed with the headboard facing the window; * in the dressing room - individual wardrobes with shelves for headdresses; * wall hangers with individual towels; * on the walls are colorful drawings accessible to the child's understanding |
| Basic rules for cleaning premises | mandatory wet, with open windows, at least 2 times a day |
| Sanitary treatment of premises | Washing:   * daily - painted floors with hot water; * parquet floor - twice a month; * painted panels - 1 time in 3 days; * panels, window sills, doors,   radiators - once a month.  Rubbing:   * daily - furniture, batteries, beds; * 1 time a month - window glasses and lamps.   General cleaning - once a month |
| Sanitary finishing of the bathroom | * the floors are washed with hot water and lye, wiped with a cloth moistened with a 1% solution of perchloric lime; * toilet bowls are washed with an alkaline soapy solution or 1% bleached solution of perchloric lime; 2 times a month, treat with a brush dipped in a 2% solution of hydrochloric acid, rinse;   all inventory is marked, separate for each room |

II. Sanitary and hygienic regime in schools

|  |  |
| --- | --- |
| Organization of the environment in schools | * educational and research zone; * physical culture and sports zone; * zone of initial military training; * recreation area; * economic zone |
| School premises | * educational sections for grades 1-4; * educational sections for grades 5-11; * premises for labor training and professional training; * educational and sports premises; * premises of cultural and mass purpose; * room for working groups; * premises for the organization   extended day;  general purpose premises: assembly hall, library, administrative and economic, medical service, bathrooms, vestibule with wardrobe |
| Sanitary rules and regulations for educational facilities for 1st graders | * classroom −2.4 m2for 1 student; * bedroom −2 m2for 1 student; * game room −2 m2for 1 student; * wardrobe for outerwear;   dining room or separate tables in the common dining room |
| Hygienic requirements for educational furniture and equipment | * the furniture should be comfortable, ensure the preservation of the correct working posture; * the furniture is selected correctly if the height of the chair seat is equal to the height of the shin with the foot in the shoe, and the depth is 5-6 cm less than the length of the thigh; * the height of the table cover should be 5-6 cm higher than the elbow of the child who is sitting with his arms down; * the chair should be pushed beyond the edge of the table by 4-8 cm |
| Control over the sanitary condition of the school | * at the entrance to the school, grates are installed for cleaning shoes; * there should be rugs and a broom in the vestibule; * use of changeable shoes; * room temperature:   in classes and offices - 17-21°WITH;  in metal processing workshops  and trees - 16-18°WITH;   * in the sports hall - 15-17°WITH; * in showers - 25°WITH; * in the assembly hall - 17-20°WITH; * in bedrooms - 16-18°WITH; * in the vestibule and cloakroom − 16−19°WITH; * in bathrooms - 17-21°WITH; * cleaning classrooms and offices: after the last lesson and again after the end of lesson preparation and group work; corridors and bathrooms are cleaned after each break; games - at the end of the day; dining room - after every meal; dressing rooms - after the start of each shift; assembly hall - at the end of the day; * wet cleaning of the sports hall is carried out at least 2 times a day; mothers are beaten outdoors at least once a week |

III. Sanitary and hygienic regime of a children's hospital

|  |  |
| --- | --- |
| Sanitary and hygienic mode of wards for newborns | * cyclical filling of the wards, the wards are spacious, bright, well ventilated;2.5 mfor one bed in the physiological department;4.5 m- in the observation department; * equipment: functional beds, tank for dirty laundry, changing table, device for oxygen therapy; * a set of care items: enamelware for nipples, bottles, brushes, rubber enema cylinders, spatulas, syringes; * 3-5 times a day wet cleaning with the use of disinfectants; * ventilation several times a day; * air temperature 22°C, relative air humidity 60%; * daily wiping of the bed with a 0.5% chloramine solution; * disinfection of mattresses in the decontamination chamber after each newborn is discharged; * wiping the changing table with a 0.5% chloramine solution or a 3% hydrogen peroxide solution after each child |
| Sanitary and hygienic regime of wards for older children | * equipment: beds, bedside tables or tables, chairs, common table, coat rack, trash can, wall thermometer; * there should be one for each patient in the ward25 m3air, or7 m2for one bed, at the height of the wall3.5 m; * beds are placed parallel to the outer wall with windows; the distance between the beds is close1 m; the windows of the chambers are oriented to the south or southeast; * children are washed under the shower or in the bath as planned once a week; after each patient, the bath is washed and disinfected with a chloramine solution; * wards lighting - electric and natural, the lamps have matte shades; * electrical sockets, switches at a height inaccessible to children; * air temperature 18−20°WITH; * ventilation: in winter - 2-3 times a day, in summer - around the clock; * cleaning |

IV. Reception department work

|  |  |
| --- | --- |
| Reception room  department | - registry office;  - examination rooms;  - sanatorium passer |
| Department | - urgent laboratory;  - X-ray room |
| The sequence of work of the reception department | - registration of patients;  - medical examination;  - sanitary processing;  - execution of relevant documentation;  - transportation |
| Transportation of patients  to the department | - on foot, accompanied by a medical worker - for mild and moderate forms of the disease;  - in the hands of children of the first two years of life;  - on a wheelchair - weakened patients;  - on a stretcher mounted on a gurney - seriously ill |
| Measures of the anti-epidemic regime of the children's hospital | - examination of the skin, mucous membranes, thermometry;  - examination for the detection of infectious diseases in boxed offices;  - treatment of furniture, examination items of each child with a disinfectant solution;  - detection of pediculosis;  - sanitary treatment of patients;  - wet cleaning of the premises using disinfectants |
| Sanitary treatment when pediculosis is detected | - when head lice are detected - treatment of the hair part with one of the means: 0.15% solution of water-emulsion karbofos; 5% methylacetophos ointment; 0.25% water-emulsion dicresil; 10% water-soap-oil emulsion; table vinegar heated to 27−30 °C; dust soap; 50% soap-solvent paste: "Nitifor", "Benzyl benzoate", "Longaceft", "Pedicide", "Para-plus" - aerosol;  - when lice are detected on the body and underwear - treatment of clothes with a disinfectant solution: hexachloran; 0.5% karbofosom; 1% Austophosom; processing of linen in a disinfection chamber;  - shaving body hair;  - treatment of the skin with one of the disinfectants;  - mark "P+" on the cover page of the medical card |

**STUDENT'S PRACTICAL WORK ALGORITHM**

The first stage.

1. Familiarize yourself with the principle of group isolation in children's preschool institutions.

2. Carry out sanitary treatment of children's group premises.

II stage.

Prepare disinfecting solutions: 1% chloramine solution, 0.5% bleached lime solution.

III stage.

Familiarize yourself with the work of the reception department of the children's hospital: register patients, conduct an initial examination, thermometry, sanitation, transport patients to the department.

**MATERIALS FOR SELF-CONTROL**

***Problem.***An 8-year-old boy is in the reception department of the regional children's hospital, who was referred to the gastroenterology department for treatment due to an exacerbation of chronic cholecystocholangitis. During the initial examination of the child, nits were found on the scalp.

*Task:*1. What is the sanitary treatment of the patient? 2. What notes should be made in the medical documentation? 3. What anti-epidemic measures should the nurse of the reception department take?

*Answer standard:*1. The hair is moistened with a cotton ball in one of the disinfectant solutions (for example, 0.25% water-emulsion dicresil), covered with a handkerchief for 15-20 minutes, washed with warm water, rinsed with a 6% solution of table vinegar. The hair is cut, collected in a special container with a lid, and then burned. 2. Mark "P+" on the title page of the medical card. 3. Send a message to the SES at the child's place of residence.

**Practical lesson on the topic**

**"Organization of the work of the medical staff of the children's department. Medical documentation, rules of conduct"**

The place of the class: the city children's clinical hospital, department of the Medical Center of Medical Education, training room. Number of hours – 4 hours.

**TOPICALITY:**the principles of organizing the work of the children's department, maintaining the necessary sanitary-hygienic and anti-epidemic regimes in children's medical and preventive institutions play an important role in the care of children, their treatment and prevention of many diseases.

**GENERAL PURPOSE**- to study the organization of the sanitary-hygienic and anti-epidemic regimes of children's medical and preventive institutions, the peculiarities of the work of the pediatric department of the children's hospital.

**SPECIFIC GOALS**

*The student should know:*

1. Rules of sanitary and hygienic regime in children's medical and preventive institutions.
2. Basic requirements for the equipment of group rooms for children.
3. Peculiarities of sanitary and hygienic regime for children of different ages.
4. Anti-epidemic regime of the pediatric department.
5. The work of a junior nurse in the children's department and a nurse.
6. Basic documentation of the pediatric department.

*Be able to:*

1. Observe the rules of sanitary and hygienic and anti-epidemic regimes in children's medical and preventive institutions.
2. Organize a sanitary and hygienic routine for children of different ages.
3. Carry out wet cleaning of the premises.
4. Prepare disinfectant solutions.
5. Fill out medical documentation correctly.

**BASIC KNOWLEDGE, KNOWLEDGE AND SKILLS NECESSARY FOR STUDYING THE TOPIC**

|  |  |
| --- | --- |
| Names of previous disciplines | Acquired skills |
| General hygiene.  Hygiene of children  and teenagers | Rules of sanitary and hygienic regime in children's medical and preventive institutions.  Peculiarities of sanitary and hygienic regime for children of different ages |

**TASKS FOR INDEPENDENT WORK DURING STUDENT PREPARATION FOR THE CLASS**

**Theoretical questions for the lesson:**

1. To study the main functional duties of a junior nurse and a nurse in the pediatric department.

2. To study the sanitary and hygienic regime of departments of the children's hospital:

a) department for newborn children;

b) wards for older children;

d) bathroom.

3. Learn the measures of the anti-epidemic regime of the children's hospital:

a) examination of patients;

b) sanitary treatment of patients;

c) detection of pediculosis and measures to eliminate it;

d) cleaning of premises.

4. Study the basic documentation of the pediatric department.

5. Basic orders regulating the work of medical institutions:

* order of the Ministry of Health of the USSR No. 288 dated 23.03.76 "On the sanitary and anti-epidemic regime and labor protection of the staff of pediatric hospitals (departments)";
* order of the Ministry of Health of the USSR No. 916 dated 04.08.83 "On the sanitary and anti-epidemic regime and labor protection of personnel of infectious diseases hospitals (departments)".

**BRIEF DESCRIPTION OF THE MATERIAL**

**Job description of a junior nurse for patient care**

**I. General part**

A person who has completed the courses of junior nurses in patient care is appointed to the position of junior nurse.

Appointed and dismissed by the chief physician of the hospital in accordance with current legislation.

Directly reports to the ward nurse. In his work, he is guided by the orders of higher officials and this instruction.

**II. Duties**

1. Assists the ward nurse in patient care.

2. Ensures cleanliness and orderliness of patients and premises.

3. Changes underwear and bed linen.

4. Systematically carries out wet cleaning of the premises and ventilates the wards.

5. Participates in the transportation of seriously ill patients.

6. Monitors the compliance of patients and visitors with the department's daily schedule.

7. Ensures proper use and storage of patient care items.

8. Participates in classes on the sanitary and technical minimum.

**III. rights**

A junior patient care nurse has the right to:

1. To make proposals to the management of the department to improve the organization of their working conditions.

2. To receive information necessary for the performance of one's duties.

**IV. Responsibility**

Bears responsibility for unclear or untimely performance of duties stipulated by this instruction and the rules of the hospital's internal work schedule.

**Job description of a junior nurse - cleaner of the department**

**I. General part**

A person who has undergone individual training is appointed to the position of a sanitary cleaner. Appointed and dismissed by the chief physician of the hospital in accordance with current legislation.

Directly reports to the senior nurse and the sister-in-charge of the department.

In his work, he is guided by the orders of higher officials, this instruction.

**II. Duties**

1. Cleans the premises in accordance with established rules.

2. Assists the senior nurse in obtaining medications, tools, equipment and delivering them to the department.

3. Receives from the sister-housekeeper and ensures the correct storage and use of underwear, household equipment and detergents.

4. Reports to the ward nurse about all changes in the condition of patients, about their complaints, about violations by patients of the ward's daily routine.

5. Cleans the bedside tables of bedridden patients after each meal.

6. When an infectious disease is detected in a patient, current and final disinfection is carried out.

7. Monitors patients' compliance with the rules of personal hygiene: washes, washes, combs and cuts the nails of patients who cannot do this due to their physical condition.

8. Prepares the room and baths.

9. Systematically (after each patient) carries out sanitary and hygienic treatment of the bath and sponges.

10. Provides assistance to patients while taking a hygienic bath, undressing and dressing the patient.

11. In the absence of the junior nurse for patient care, receives underwear and bed linen from the nurse-hostess and carries out her change.

12. Observes safety techniques.

13. At the direction of the ward nurse, the department will accompany patients to the treatment and diagnostic offices.

14. Performs the functions of a courier.

15. Immediately informs the sister-owner about the observed deficiencies in the operation of heating systems, water supply, sewage, electrical appliances, etc.

16. Participates in classes on the sanitary and technical minimum and advanced training held in the department for junior medical personnel.

**III. rights**

The ward nurse has the right to:

1. To receive information necessary for the performance of one's duties.

2. To make suggestions to the management of the department regarding the improvement of the organization and working conditions.

**IV. Responsibility**

Bears responsibility for unclear or untimely performance of duties stipulated by this instruction and the rules of the hospital's internal work schedule.

**Job description of the junior nurse of the procedure room (department)**

**I. General part**

A person who has undergone individual training is appointed to the position of nurse in the treatment room.

Appointed and dismissed by the chief physician of the hospital in accordance with current legislation. Directly reports to the procedure room nurse.

In his work, he is guided by the orders of higher officials, this instruction.

**II. Duties**

1. Cleans the treatment room in accordance with established rules.

2. Assists the procedure room nurse in obtaining medications, tools and delivering them to the room.

3. Receives from the hostess sister and ensures proper storage and use of household equipment, detergents and disinfectants.

4. When a patient with an infectious disease is detected in the department, current and final disinfection is carried out in the procedure room.

5. At the direction of the procedure room nurse, accompanies patients to the wards.

6. Immediately informs the sister-owner about the observed deficiencies in the heating system, water supply, sewage system, electrical appliances, etc.

7. Takes part in sanitary minimum and professional development classes held in the department for junior medical personnel.

**III. rights**

The sanitarian of the treatment room has the right to:

1. To receive information necessary for the performance of one's duties.

2. Make proposals to the management of the department to improve the organization of their working conditions.

**IV. Responsibility**

Bears responsibility for unclear or untimely performance of duties stipulated by this instruction and internal labor regulations.

**SANITARY AND HYGIENIC REGIME IN DEPARTMENTS**

Before hospitalization of the patient in the ward, the bed, the bedside table, the stand for the supporting vessel are wiped with a cloth moistened with a disinfectant solution. The bed is covered with bedding that has undergone chamber processing according to the regime for vegetative forms.

Individual items of care are allocated to the patient: a spittoon, a drinking bowl, a mug or a glass, a container, etc., which are thoroughly washed after use. After the patient is discharged, personal care items are disinfected.

When admitted to the hospital, the patient is given the right to take personal hygiene items into the ward.

Patients with pediculosis, initially treated in the reception room, are taken under special supervision and subjected to repeated treatment in the department until the lice are completely destroyed.

Each patient takes a hygienic bath in the department at least once every 7-10 days (if there are no medical contraindications).

Underwear and bed linen are changed at least once every 7-10 days after taking a bath and, in addition, the linen is changed every time in case of contamination.

When changing underwear and bed linen, it is carefully collected in bags made of cotton fabric or in a container with a lid. Do not throw used linen on the floor. Sorting and disassembly of dirty linen is carried out in a specially designated room. After changing the linen, the floor and objects in the ward are wiped with a cloth soaked in a disinfectant solution.

Patients are provided free of charge with the services of a hairdresser:

a) shaving at least 2 times a week;

b) hair cutting according to indications.

The senior nurse of the department supervises the performance of the required regime by the hairdresser.

Every day in the morning and in the evening before going to bed, patients should wash themselves. Patients must wash their hands before each meal. For seriously ill and bedridden patients, washing is organized at the patient's bed. Severely ill patients are provided daily oral care.

Patients are prohibited from using the beds of neighboring patients for sitting; visitors are not allowed to sit on sick beds, wards must be equipped with chairs.

Wards are ventilated at least four times a day.

The afternoon quiet hour established for the hospital must be strictly observed by all patients and not violated by the hospital (department) staff.

In hospital departments, it is necessary to strictly observe the security regime and daily routine: loud conversations of patients and staff, cleaning of premises in the morning and late evening hours are unacceptable. It is forbidden for patients to go to other departments.

Clothes are subjected to chamber treatment before being transferred from one patient to another.

Patients are discharged in a separate room.

Slippers and other used shoes are wiped with a swab moistened with a 25% solution of formalin or a 40% solution of acetic acid. Then the shoes are packed in a polyethylene bag for 3 hours, after which they are taken out and ventilated for 10-12 hours until the smell of the drug disappears.

Treatment of the hands of service personnel is carried out in accordance with the order of the Ministry of Health of Ukraine No. 798 dated 10.21.10.

Surgical disinfection of hands, preparation of the operating field, preparation of surgical instruments for surgical interventions, sterilization of surgical instruments, rubber gloves, dressing material and surgical linen are carried out in accordance with the requirements of "Temporary methodological recommendations on the organization and implementation of a complex of sanitary and hygienic measures in departments, hospitals , clinics and surgical institutes".

Exemplary order and cleanliness are observed in departments. Cleaning is carried out at least 2 times a day with a wet method using disinfectants.

Cleaning equipment (buckets, rags, brushes, etc.) are marked and used separately for toilets, wards, bathrooms and other premises of the department.

Marked cleaning supplies are stored in clearly designated places and used only for their intended purpose. The use of this inventory for other purposes or for cleaning other premises is prohibited. After use, the cleaning material is disinfected by soaking for 60 minutes in a 1% solution of chloramine or a 0.5% bleached solution of perchloric lime.

Medical examinations and examinations of department personnel are carried out in accordance with the current instructions on mandatory medical examinations.

In the event of nosocomial infections in hospitalized persons, an emergency medical examination of all personnel is carried out.

*Identification of patients suspected of infectious diseases:*in all hospitals, measures are taken to detect infectious patients, for which a strict record of all patients with fever, in which the period of temperature rise (37.5°C and above) lasts 5 days or more; blood sampling for bacteriological research (typhoparatyphoid, rickettsial and other infections).

**Note.**In all patients with fever, citizens who came from the tropics, within 2 years after their return, regardless of the initial diagnosis, it is mandatory to examine the blood (thick drop, smear) for the presence of malaria parasites:

* in diseases with ongoing periodic increases in temperature, despite the treatment carried out in accordance with the established diagnosis;
* for any illness accompanied by an increase in temperature, with an undetermined diagnosis during the first five days;
* with an increase in temperature that developed during the next three months after a blood transfusion;
* with any disease accompanied by an increase in temperature in persons who have a history of malaria in the past two years;

- with enlargement of the liver and (or) spleen, anemia of unknown etiology.

When identifying patients with intestinal dysfunction, a bacteriological examination is provided to establish the nature of the disease.

The specified patients with suspicion of acute intestinal diseases are prohibited from using the common toilet; the latter are provided by individual vessels.

If a patient suspected of having an infectious disease is identified, he should be immediately isolated in a separate ward or isolation ward before being transferred to an infectious disease hospital.

In the ward (department) where the patient was found, necessary anti-epidemic measures are carried out with disinfection of the premises and equipment.

Monitoring of contacts is established during the incubation period and upon discharge from the hospital, contacts are to be reported to the SES at the patient's place of residence.

**Sanitary and hygienic mode of wards for newborns:**

* cyclical filling of the wards, the wards are spacious, bright, well ventilated;2.5 mfor one bed in the physiological department;4.5 m- in the observation department;
* equipment: functional beds, tank for dirty laundry, changing table, device for oxygen therapy;
* a set of care items: enamelware for nipples, bottles, brushes, rubber enema cylinders, spatulas, syringes;
* 3-5 times a day wet cleaning with the use of disinfectants;
* ventilation several times a day;
* air temperature 22°C, relative air humidity 60%;
* daily wiping of the bed with a 0.5% chloramine solution;
* disinfection of mattresses in the decontamination chamber after each newborn is discharged;
* wiping the changing table with a 0.5% chloramine solution or a 3% hydrogen peroxide solution after each child.

**Sanitary and hygienic regime of wards for older children:**

* equipment: beds, bedside tables or tables, chairs, common table, coat rack, trash can, wall thermometer;
* there should be one for each patient in the ward25 m3air, or7 m2for one bed, at the height of the wall3.5 m;
* beds are placed parallel to the outer wall with windows; the distance between the beds is close1 m; the windows of the chambers are oriented to the south or southeast;
* children are washed under the shower or in the bath as planned once a week; after each patient, the bath is washed and disinfected with a chloramine solution;
* wards lighting - electric and natural, on lamps - matte shades;
* electrical sockets, switches at a height inaccessible to children;
* air temperature 18−20°WITH;
* ventilation: in winter - 2-3 times a day, in summer - around the clock;
* cleaning twice a day.

**Sanitary finishing of the bathroom:**

* the floors are washed with hot water and lye, wiped with a cloth moistened with a 1% solution of perchloric lime;
* toilet bowls are washed with an alkaline soapy solution or 1% bleached solution of perchloric lime; 2 times a month, treat with a brush dipped in a 2% solution of hydrochloric acid, rinse;
* all inventory is marked, separate for each room.

**BASIC MEDICAL DOCUMENTATION OF THE CHILDREN'S DEPARTMENT**

* Sheet of accounting for the movement of patients and the bed fund of the hospital;
* Medical card of an inpatient;
* Temperature sheet;
* History of child development;
* Extract from the medical card of an outpatient, (inpatient) patient;
* Statistical coupon for registration of final (specified) diagnoses;
* Journal of accounting of manipulations and procedures.

**Record sheet of movement of patients and hospital beds, form No. 007/o,**is filled in each department allocated within the hospital in accordance with the estimate and the order of the higher health care authority.

In departments that have narrow-profile beds allocated by order in the hospital (for example, oncology beds in a surgical or gynecological department, etc.), the first line of the sheet contains information about the number of beds and the movement of patients in the department as a whole (including information about narrow specialty beds); the following lines indicate data on beds and the movement of patients in narrow specialties.

**Medical card of an inpatient (form No. 003/о)**is the main medical document of the hospital, which is filled out for each patient. It is conducted in all hospitals, inpatient dispensaries, clinics of universities and research institutes, as well as sanatoriums.

The medical card of a hospitalized patient contains all the necessary data that characterize the patient's condition throughout the entire period of stay in the hospital, the organization of his treatment, data on objective examinations and appointments.

The data of the medical card of an inpatient patient make it possible to control the correctness of the organization of the treatment process and are used to issue reference material at the request of departmental institutions (court, prosecutor's office, examination, etc.).

The passport part, the diagnosis of the medical institution that referred the patient, the diagnosis during the patient's hospitalization are filled out in the reception department.

The doctor of the reception department also fills out a specially designated sheet "Record of the doctor of the reception department", in which the data of the medical history and life, the objective condition of the patient are briefly noted.

Other entries in the medical card, including the clinical diagnosis, are filled out by the supervising physician. If the patient underwent surgery, the date (month, day, hours) of the operation, its name, method of analgesia and complications are indicated on the second page of the inpatient medical card. A detailed description of the operation is carried out in the "Log of recording surgical interventions in the hospital" (form No. 008/o).

When a patient is discharged or dies, the number of bed-days spent is indicated, while the day of hospitalization and the day of discharge (death) are considered as one day.

During the period of the patient's stay in the hospital, the card is kept in the folder of the supervising physician. The doctor makes daily records in form No. 003/o about the patient's state of health and treatment. Appointments are recorded in the card diary and prescription sheet. On the temperature sheet (form No. 004/o), the ward nurse graphically displays the patient's temperature, pulse, breathing, etc.

Upon discharge (death) of the patient, the supervising physician prepares an epicrisis, in which he briefly summarizes the data on the patient's condition during hospitalization and discharge (death), records the data, substantiates the clinical diagnosis, notes the medical measures taken and their effectiveness, recommendations for further treatment and the patient's regimen .

In case of death of the patient, the supervising physician makes a postmortem epicrisis. The pathologist fills out the "Extract from the protocol of the pathological examination". The main clinical and patho-anatomical diagnoses must be coded by the supervising physician.

The medical card of an inpatient is signed by the supervising physician and the head of the department. Based on the data of the inpatient medical card, a "Statistical card of a patient discharged from the hospital" (form No. 066/о) is drawn up, after which the medical card is transferred to the statistics office for processing, and then to the institution's archive.

**Note**. If the patient has a side effect of medicines, the attending physician must necessarily note the result of the side effect in form No. 003/o as the main, concomitant diagnosis or complication of the main disease, and after the discharge (death) of the patient, make a similar entry in form No. 066/ o "Statistical card of a patient discharged from a hospital".

The storage period is 25 years.

The temperature sheet (form No. 004/o) is an operational document for the graphic representation of some basic data characterizing the patient's state of health: pulse, blood pressure, temperature, etc.

Every day, the attending physician records data on the condition of the patient (birth, delivery, newborn) in the medical card of the inpatient (birth history, newborn development card). The ward nurse transfers data on temperature, pulse, blood pressure, breathing into the temperature sheet and draws the corresponding curves for these indicators.

In addition, the frequency of breathing, weight, amount of liquid drunk, daily amount of urine, bowel movements, number of baths are entered in the temperature sheet.

After the patient's discharge (death) from the hospital, the temperature sheet is glued to the medical card of the inpatient (form No. 003/о) and is kept with it for 25 years.

**"History of child development" (form No. 112/o)**is the main medical document of children's polyclinics, kindergartens, children's homes. The form is intended for keeping records of the child's development and state of health, his medical care from birth to 15 years inclusive (for schoolchildren - until the end of high school).

The history of the child's development is filled out for each child when he is registered: at the children's polyclinic - at the first patronage (home call) or at the first visit to the polyclinic; in kindergartens and children's homes - from the moment the child arrives at the preschool.

The passport part of the history of the child's development, including information about the composition of the family, is filled in at the registry office of the polyclinic when the child is registered on the basis of the data of the maternity hospital, maternity department of the hospital about the newborn (form No. 113/o) "Exchange card of the maternity hospital (maternity hospital hospital department)" or "Medical birth certificate" (form No. 103/о) and a survey of parents.

The absence of a medical birth certificate or registration data is not a reason for refusing to serve a child.

In kindergartens and children's homes, the passport part is filled out by a nurse.

The nurse (at the children's polyclinic - the district one) also fills in the "Family data" section at the first visit of the child at home or at the first visit to the children's polyclinic in the part concerning the presence of chronic diseases in the family. The last section of the history of the child's development "Sheet of current observations of the child by the patron nurse" is calculated for the registration of data on the current supervision of the child by the patron nurse.

All other records "Sheet for recording final (specified) diagnoses", "Recording of X-ray examinations", "Primary medical patronage for a newborn", "Stage epicrisis", "Preventive examinations and results of examinations of the child on the 2nd, 3rd, from 3 up to 7 years" are conducted by doctors. All records made by doctors must be signed by them.

Stories of the child's development are stored in the registry file by year of birth and are given to the doctor on the day of the child's visit to the polyclinic or when the doctor visits the child at home.

Child development histories for children up to 1 year old are usually kept in the district doctor's office for prompt use in order to ensure systematic supervision of the child and timely implementation of preventive measures.

When a child leaves the care of a given children's polyclinic, a corresponding note is made on the title page of the "Child's Development History" in point 7: the date of removal from the register and the reason (moving, death, leaving the children's institution) are indicated. When moving, be sure to indicate: where you left (address). In this case, in order to ensure consistency in the supervision of the child, the "History of the child's development" according to the requests from the new place of residence should be transferred to the appropriate children's polyclinic. In the absence of a request, the "History of the child's development" is kept in the registry file for 3 years, and then handed over to the archive.

When the child reaches 15 years of age (or after finishing school), the "History of Child Development" is replaced by form No. 025, which is then (after reaching 18) handed over to the polyclinic for adults at the place of residence.

"History of child development" is not only a medical, but also a legal document. It does not allow making corrections, crossing out, changes and additions in the records of current supervision.

**Statistical coupon for registration of final (specified) diagnoses (form No. 025-2/о)**are filled in city and rural polyclinics (outpatient clinics) for adults and children and women's consultations.

**Note.**In specialized institutions (psycho-neurological, oncological, anti-tuberculosis dispensaries), the statistical coupon is not filled out, but the accounting of morbidity in these institutions is carried out according to reports (forms No. 089/o, No. 090/o) and on the basis of "Control cards of dispensary records" (forms No. 030-1/o, No. 030-4/o, No. 030-6/o). In skin and venereological institutions, form No. 025-2/o is used only for patients with skin diseases.

In women's consultations, statistical coupons are filled out for all gynecological diseases and complications of pregnancy, childbirth and the postpartum period.

Statistical coupons for diseases of the mucous membrane of the oral cavity and lips are filled out in dental institutions, departments, and offices.

The statistical coupon is not filled out in consulting polyclinics, diagnostic centers, since the morbidity record is carried out at the patient's place of residence.

The statistical coupon is filled out on the basis of entries in the "List of final (specified) diagnoses" of the "Medical card of an outpatient" (form No. 025/o) for all diseases and injuries, except for infectious diseases, which are taken into account according to the notification (form No. 058/o). Exceptions are acute respiratory viral infections and influenza, for which form No. 025-2/o must be filled out. In addition, form No. 025-2/о is filled out on the basis of the "Signal signs" sheet of the "Medical card of an outpatient" (form No. 025/о) if the patient has diseases and conditions caused by the side reaction (effect) of medicinal products. The indicated negative reactions to medicinal products must be entered as the main, concomitant or complication of the main disease, and such statistical coupons are subject to double coding and color marking of the latter. Negative (side effects) of some medicines are provided for in separate classes of diseases (headings: A00-R95, T80.5.6, T88.2, T88.6, etc.). In addition, side effects of drugs are coded with additional rubrics Y40-Y59.

Depending on the system of organization of work in the polyclinic, the voucher is filled out after the appointment by doctors or nurses at the doctor's direction, or centrally, when statistical vouchers are filled out by a statistician based on an entry in the "Medical card of an outpatient".

For all acute diseases (influenza, pneumonia, SARS, angina, etc.) and for chronic diseases registered for the first time in this reporting year, statistical vouchers are issued only with a plus (+) sign; if the patient is diagnosed with several diseases at once, then the statistical coupon is filled out separately for each of the diseases.

For chronic diseases registered in previous years, the statistical coupon is filled out at the patient's first visit in a given reporting year with a minus (–) sign once a year.

Statistical coupons for patients who live in the service area of ​​the medical institution are stored by medical departments: therapeutic, pediatric.

On the basis of statistical vouchers, the "Summary list of diseases registered in this medical institution for the adult and children population" (forms No. 071/o, No. 071-1/o) and "Summary list of first registered injuries and poisonings" (form No. 071-2/o).

An extract from the medical card of an outpatient (inpatient) patient (form No. 027/о) is filled out by outpatient polyclinic institutions when the patient is referred for inpatient treatment and by inpatients of all profiles when the patient is discharged (or in case of death).

The discharge serves for mutual information of outpatient polyclinic and inpatient facilities regarding the diagnosis, the course of the disease, the condition of the patient at the time of referral (discharge), about the conducted research, treatment, medical and other recommendations to the patient.

Form No. 027/o is given to the patient or sent by mail. The storage period is 3 years.

Journal of accounting procedures (form No. 029/о)

"Procedure record log" is an operational document and serves to record medical procedures performed on a patient.

Logs are filled out by nurses in all offices of the polyclinic, where the procedures are carried out, as well as in the departments of the hospital.

The storage period is 1 year after the reporting period.

**STUDENT'S PRACTICAL WORK ALGORITHM**

The first stage.

1. Get acquainted with the job instructions of the junior nurse and nurse of the children's ward.

2. Familiarize yourself with the sanitary and hygienic regime of the children's department.

3. Familiarize yourself with the basic medical documentation of the children's department.

II stage.

Prepare disinfecting solutions: 1% chloramine solution, 0.5% bleached lime solution.

III stage.

Familiarize yourself with the work of the children's department of the hospital: register patients, conduct an initial examination, sanitation, conduct current and final disinfection of the ward, work with documentation.

**Practical lesson on the topic**

**"Personal hygiene of staff and patients. A child's toilet, features of girls' hygiene. Hygienic and medical baths. Caring for sick children"**

The place of the class: the city children's clinical hospital, department of the Medical Center of Medical Education, training room. Number of hours – 4 hours.

**TOPICALITY:**every medical worker must follow the rules of personal hygiene. A child's health and proper development depend on optimal hygienic care.

Medicinal baths are a mandatory component of the therapy of some diseases. The effectiveness of the baths depends on maintaining the technique of their execution.

**GENERAL PURPOSE**- know the rules of personal hygiene of the staff. Be able to take care of young children. Learn the technique of conducting hygienic and therapeutic baths.

**SPECIFIC GOALS**

*Be able to:*

1. Observe personal hygiene.

2. Change bedding and underwear for seriously ill patients.

3. Take care of children's skin.

4. Conduct a toilet of the external genitalia.

5. Clean the nose, eyes and ears of a young child.

6. Swaddling newborns.

7. Sanitize the bath.

8. Take a hygienic bath.

9. Take a therapeutic bath.

10. Organize measures to prevent bedsores.

**BASIC KNOWLEDGE, SKILLS, SKILLS NECESSARY FOR STUDYING THE TOPIC**

|  |  |
| --- | --- |
| Names of previous disciplines | Acquired skills |
| General hygiene.  Care for patients | Rules of personal hygiene.  Peculiarities of care for the skin and mucous membranes of children of different ages |

**TASKS FOR INDEPENDENT WORK DURING STUDENT PREPARATION FOR THE CLASS**

**Theoretical questions for the lesson:**

1. To study the rules of personal hygiene of the staff of children's institutions:

a) general appearance of the medical staff;

b) hand care;

c) overalls of a medical worker;

d) his state of health.

2. To study the features of skin care for children of different ages:

a) washing children;

b) toilet of the nose, ears;

c) nail care;

d) care of the hair part of the head;

e) eye care.

3. Learn ways to change bed linen and underwear.

4. To study the technique of conducting a hygienic bath:

a) bathroom requirements;

b) preparing the bath for bathing;

c) the value of a hygienic bath;

d) frequency of conducting;

e) contraindications;

e) method of implementation.

**BRIEF DESCRIPTION OF THE MATERIAL**

**Rules of personal hygiene of medical personnel:**

Mandatory medical examination before employment and periodically during work, namely:

- examination by specialists (therapist, dermatovenerologist, phthisiologist, gynecologist, dentist) - 2 times a year;

- mandatory examinations for intestinal, diphtheria and staphylococcal bacilli, helminthiasis - 2 times a year;

- X-ray (fluorography) of chest organs - 1 time a year.

Constant observance of the rules of personal hygiene - before the start of the work shift, there should be no abscesses or cuts on the hands; nails should be cut short, hands should be clean, etc.

In the presence of pustular skin diseases, acute respiratory viral infections, disorders of the digestive tract, and other abnormalities, the employee is not allowed to work until complete recovery. Identified bacterial carriers are also not allowed to work and undergo sanitation.

It is mandatory to have special clothing (gowns, cap, shoes, mask made of 4 layers of gauze, which is changed every 4 hours).

**Genitourinary toilet**

**Goal**- compliance with the child's personal hygiene.

To use the toilet, you need a oilcloth with a diaper or a moisture-resistant diaper; vessel, preferably two (can be rubber, enamel, plastic, earthenware); vessel for water or aseptic solution; water or aseptic solution, t −40 °C; if necessary - an apron; mask, gloves; a vessel with sterile forceps; a sterile tray with a sterile napkin or cotton-gauze tampon.

***Sequence of actions:***

1. Change gloves after presenting the vessel to the patient, wash and dry hands, put on new sterile gloves. If this manipulation is carried out independently before another, then fully prepare in advance, and put on gloves in the ward immediately before carrying out the toilet of the genitourinary organs.

The position of the child is "on the back" with legs bent at the knees.

2. Take a vessel with water (t − 40 °С) or an aseptic solution in your left hand, and in your right hand - a forceps with cotton-gauze medium or large tampon.

3. Pour water (solution) onto the napkin (tampon), so as to avoid splashing, keep the vessel at a fairly low level and wash only in one direction from top to bottom to the anus and be sure to change the tampon (napkin) to a new one after that.

First wash the inguinal folds in the direction only from the top down to the anus, change the napkins (tampon), then wash the pubis and labia majora in the direction only from the top down to the anus. Change the tampon, then wash the folds between the labia majora and minora and the labia minora to the anus. Change the tampon. Finally, wash the fold between the clitoris, the entrance to the vagina.

If the entrance to the vagina is gaping, then before washing or douching, it is tamponed (the same applies during the period of "menstruation" in older girls), then the tampon is removed and the vagina and perineum are washed to the anus.

They are dried in the same sequence, paying attention to the sacral area.

In boys, the sequence is preserved, only when processing the penis, it is necessary to take it in the left hand, slightly pull the foreskin, thereby freeing the head, wet a napkin in the solution and rinse it, changing the napkins.

In adolescent girls, during their period, the vagina is tamponed before washing and an aseptic solution is used, at the end of washing the tampon is removed and the vagina and perineum are washed, then the vagina is tamponed again.

**Features of newborn hygiene:**

1. Washing rules:

- from the age of 1.5-2 months with boiled warm water;

- from 4-5 months with tap water;

- frequency - at least 2 times a day.

2. Care of the external genitalia:

- wash with running warm water;

- in the direction from front to back;

- wet with a soft diaper;

- grease the folds with boiled oil.

3. Eye care:

- two cotton swabs;

- moisten with boiled warm water;

- wash in the direction from the outer to the inner corner of the eye;

- a separate tampon for each eye.

4. Personal hygiene:

- cleaning the ears and nose with cotton swabs dipped in oil;

- the oral cavity is not cleaned;

- on the hands, nails are cut once a week with a rounded line;

- on the legs once every 2 weeks in a straight line;

- scissors with rounded ends are used.

5. In the presence of gneiss:

- 2-3 hours before bathing, lubricate the head with sterile warm oil, in case of significant layering - an oil compress for 12 hours. After washing the head with warm water and soap, the gneiss is easily removed with a cotton swab or cut with scissors along with the hair. Gneiss cannot be removed with a comb.

**Methods of conducting baths:**

1. The purpose of the bath:

- hygienic;

- therapeutic;

- preventive.

2. Types of baths:

- general (immerse the whole body);

- local (half, hand, foot, sitting).

Depending on the temperature:

- cold (below 20 °C),

- cool (up to 33 °C),

- indifferent (34−36 °C),

- warm (37−39 °C),

- hot (over 40 °C).

Duration from 3 to 30 minutes.

3. Requirements for baths and bathrooms:

- air temperature in the room is 22-25 °C;

- treatment of the bath with a 1% solution of chloramine or a 0.5% solution of perchloric lime;

- washing with hot water and soap;

- sprinkle with boiling water.

4. The peculiarity of holding a bath for newborns:

- a folded diaper is placed at the bottom of the cleaned bath;

- fill with hot boiled water, which is diluted with cold boiled water to 37−38 °С;

- air temperature not less than 25 °C;

- gradual immersion of the child in the bath (buttocks, then the whole body to the level of the nipples);

- they begin to wash the child's head;

- the head is washed with a soft glove in the direction from the forehead to the back of the head;

- then wash all other parts of the body (neck, torso, limbs, buttocks, crotch);

- duration 3−5 min;

- after the bath, the child is turned upside down and doused with clean water, the temperature of which is 1−2 °С lower than in the bath;

- wrapped in a warm, soft sheet;

- dry with careful movements;

- lubricate the folds with boiled oil.

- the face is washed after the bath with a cotton swab moistened with boiled water cooled to room temperature;

- the face is washed in the direction from the mouth to the periphery.

5. Contraindications to hygienic baths:

- sudden excitement of the child;

- acute diseases accompanied by convulsions, delirium, skin lesions (pustular eruptions, erosions, massive ulcers), etc.

6. Frequency of hygienic baths:

- the first bath 1-2 days after the umbilical cord remains;

- up to 6 months - daily;

- bath with soap once a week;

- after 6 months up to 1 year - after 1 day;

- minimum frequency up to 2 years - 2 times a week;

- from 4-5 years old - 1 time a week.

7. Conditions for therapeutic baths:

- during the first procedure, a doctor must be present;

- in the future − the presence of a nurse;

- the water reaches the level of the child's nipples;

- time of implementation - no earlier than 1 hour after feeding or 40-50 minutes before it, 1-1.5 hours before bedtime;

- rest after the bath − 20−30 min.

8. General contraindications to therapeutic baths:

- decompensation of cardiac activity;

- neoplasm;

- active tuberculosis;

- diseases of the blood system and hematopoietic organs;

- infectious skin diseases.

**Prevention of bedsores and the fight against them:**

1. Places of typical bedsores: shoulder blades, sacrum, lower legs, elbows, heels, back of head.

2. Stages of bedsore formation: pallor – hyperemia – cyanosis – edema – formation of blisters – ulcer – necrosis.

3. Prevention:

- to activate the position of the patient in bed (changing the position during the day every 2-3 hours);

- follow the rules of hygiene and the frequency of changing bed linen and underwear;

- treat places of possible bedsores with warm water with soap, camphor alcohol, cologne, water with vinegar, vaseline, sprinkle with talc;

- use of inflatable circles, mattresses.

4. Treatment:

The stage of hyperemia or pallor and edema - quartz lamp, rubbing with camphor alcohol, vinegar solution, cologne, lubrication with a strong solution of potassium permanganate.

The stage of blister formation - lubrication with diamond green or 70% ethyl alcohol.

The stage of shallow ulcers - UFO, "Vinisol" aerosol, diamond green, sea buckthorn oil, syntomycin emulsion, application of an aseptic bandage.

The stage of deep bedsores - laying inside a turunda moistened with a hypertonic solution, an aseptic bandage. After cleaning from necrotic masses - bandages with Vishnevsky ointment, 1% synthomycin emulsion, sea buckthorn oil.

**Types of therapeutic baths**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Bath | Technology | Course | Temperature and duration | Indication |
| 1 | 2 | 3 | 4 | 5 |
| Chlorine-sodium baths  Conifer baths  1 | 50−100 g of sea or kitchen salt per10 literswater At the end of the bath, the patient is doused with clean water, 1-2 degrees cooler than the water in the bath  1 tsp. concentrate on20 literswater  2 | 8-10 baths through  1 day  8-10 baths  by  1 day  3 | 36−37 °С  3-5 min  Durability increases  4 | Rickets, muscle hypotonia, hypotrophy  Functional nervous disorders  5 |
|  |  |  | for 1 minute every 2−3 days 36−37 °С  5-7 min | systems |
| Pine-but-salt baths | Simultaneously | 8-10 baths  by  1 day | 36−37 °С  3-5 min | Functional disorders of the nervous system |
| Foam those baths | 250−400 g of sapo viridas are diluted in a small amount of water at t=45−50 °С, poured into a bath and whipped into foam (water in the bath is 8−10 cm). At the end of the bath, rinse with water. | 8-10 through  1 day | 5−10 min 38−39 °С | Dry and wet eczema with severe itching |
| Mineral baths | Heated water from a spring (hydrocarbonate-sodium, hydrogencarbonate-magnesium, Narzanny, etc.) | 8-10 through  1 day | 5−10 min  36−37 °С | Liver diseases |
| Sulfur-water baths | Concentration  80 mg/l | 8-10 baths in 1-2 days | 5−10 min  36−37 °С | Diseases of the peripheral nervous system, arthritis, peripheral diseases  river vessels |
| Iodo-bromine baths  1 | 1 literwater +100 gsodium iodide +  250 gpotassium bromide (in a dark dish).  2 | 8-10 baths through  1 day  3 | 36−37 °С 10−12 min  4 | Fire protection  sedative effect  5 |
|  | 100 ml of this solution for one bath +2 kgkitchen salt |  |  |  |
| Baby tubs | 100 gstarch on10 literswater Starch is diluted in a small amount of cold water and poured into the bath. After the bath - a shower | 8-10 baths  every day or every other day  1 day | 37−38 °С  8−10 min | Skin manifestations of exudative-catarrhal diathesis |
| Mountain baths | 40 gmustard is dissolved in10 literswater at  t−37 °C and poured into 1 bath,  filled with fresh water and stirred. Gradually raise the temperature of the water by 1-2 °C. A cold compress on the head | 8-10 baths  by  1 day.  Place-vi - if necessary | General: 36−38 °С 5−7 min.  Local:  39−40 °С  10−15 min | Distracted-repentant  a remedy for diseases of the respiratory organs of non-allergic origin |
| Baths with potassium permanganate | 5% solution of potassium permanganate is added to the bath until the water turns pale pink | 8-10 baths  daily | 37 °C  5−10 min | Disinfectant effect when the skin is wet |

**STUDENT'S PRACTICAL WORK ALGORITHM**

The first stage. Acquaintance and collection of anamnesis from the patient.

II stage. Assessment of the patient's position and regime. Compliance with the rules of personal hygiene, detection of their violations.

III stage. Assistance in caring for patients (personal hygiene, changing underwear and bedclothes).

IV stage. In writing, evaluate the patient's position in bed, his regime.

V stage. If necessary, prescribe a therapeutic bath for the patient.

**MATERIALS FOR SELF-CONTROL**

**Tasks for self-control**

***Task 1.***The child is 6 months old. Manifestations of exudative-catarrhal diathesis are restrained from birth. During the last three weeks, after consuming orange juice (100 ml), skin itching, spotty-bubble rashes on the skin are bothering. In this connection, the mother did not bathe the child. During the examination, the child's condition is disturbed, irritable, rashes on the buttocks, gneiss on the scalp, residual elements of the rash on the trunk (single spots, crusts), combing. Wetting in the inguinal folds.

*Task:*1. Name the cause of the disease. 2. What are your tips for caring for a child?

*Answer standard:*1. Introduction of a large amount of orange juice, which has a sensitizing effect; violation of care for the child, namely - for skin coverings. 2. Hygienic and medicinal (starch) baths, alternating them. Lubrication of diaper rash and wetting with "Fukortsin" solution, other skin folds - with boiled oil. Apply an oil compress to the gneiss areas in 2-3 hours. to the sanitary bath and wash your head with soap and water. Apply an ointment or emulsion prescribed by a doctor to areas of rash and scratching.

Technology of starch baths: potato starch from the calculation100 gon10 literswater is diluted in a small amount of cold water, mixed and poured into the bath. Water temperature 37-38 °C, duration 8-10 minutes. After the bath, it is necessary to pour water over the child. The course of treatment is 10-12 baths in 1 day.

***Task 2.***In a seriously ill child, the mother noticed areas of hyperemia of the skin on the lower back, heels and elbows. The integrity of the skin is not disturbed.

*Task:*1. What skin changes can you think about? 2. Your actions?

*Answer standard:*1. Bedsores in the stage of hyperemia. 2. Rub the affected areas with camphor alcohol, vinegar solution, cologne. Lubricate with a strong solution of potassium permanganate. Irradiation with a quartz lamp is used. It is recommended to change the position of the patient more often (every 2-3 hours). Place rubber circles under areas of the body where bedsores have formed.

**Practical lesson on the topic**

**"Organization of food for children in the hospital. Rules for issuing food in the department (somatic, infectious). Sanitary requirements for the food block, buffet, dining room. Treatment tables. Their characteristics"**

The place of the class: the city children's clinical hospital, department of the Medical Center of Medical Education, training room. Number of hours – 4 hours.

**TOPICALITY:**the organization of children's nutrition in the hospital is a component of successful treatment, since the full development of the child and the adequate formation of protective forces depend on the appointment of a diet, the full provision of the needs of the child's body in proteins, fats and carbohydrates.

Therapeutic nutrition is an integral part of complex treatment for various childhood diseases. In some cases, this is the only method of treatment, in particular, in congenital metabolic disorders - enzymopathies, when only a special diet can prevent a fatal outcome or the development of deep mental retardation and disability of the child, ensure its normal physical and mental development. In other cases, it is one of the methods of treatment without which other therapeutic effects are ineffective. First of all, these are allergic diseases, obesity, diabetes, chronic lesions of the alimentary canal and others.

**GENERAL PURPOSE**- be able to make a menu for a child of any age who is on a diet, taking into account the nature of the disease.

**SPECIFIC GOALS**

*Be able to:*

1. Collect complaints, history and examine all systems and organs of the child, assess the child's condition.

2. Calculate the daily amount of food, the feeding regime and the required amount of food per feeding depending on the age of the child, the nature of the diet and the appropriate energy value of the daily diet.

3. Make a menu for a sick child who is on a diet.

**BASIC KNOWLEDGE, SKILLS, SKILLS NECESSARY FOR STUDYING THE TOPIC**

|  |  |
| --- | --- |
| Names of previous disciplines | Acquired skills |
| 1 | 2 |
| 1 | 2 |
| Biochemistry.  Normal physiology | Know the peculiarities of metabolism in children.  Know the role of rational nutrition in human life |

**TASKS FOR INDEPENDENT WORK DURING STUDENT PREPARATION FOR THE CLASS**

**Theoretical questions for the lesson:**

1. Know the definition of medical nutrition.
2. Know the main task of medical nutrition.
3. Know the factors that are taken into account when preparing medical rations:

a) the child's age, condition and gender;

b) nature of the disease;

c) peculiarities of metabolic disorders;

d) form and stage of the disease;

e) treatment used;

e) taste habits;

f) reaction to one or another food.

1. To study the general principles of therapeutic nutrition of a sick child:

a) feeding regime;

b) hours of feeding;

c) nature of nutrition;

d) energy value of medical daily ration;

e) temperature of meals in medical nutrition;

e) quality of meals in medical nutrition.

1. To study the principles of organizing dietary nutrition for patients in hospital conditions:

a) organization of medical nutrition for patients;

b) prescription of dietary nutrition for the patient;

c) drawing up a portion requirement;

d) scientific, methodical and technological provision of medical nutrition;

e) control over the quality of food products and ready-made medicinal dishes;

e) places where patients eat in hospital conditions.

1. Know the characteristics of the main therapeutic diets used in hospital conditions:

a) testimony;

b) destination;

c) general characteristics;

d) culinary processing;

e) diet.

1. Know the peculiarities of diet therapy for certain congenital metabolic disorders:

a) phenylketonuria;

b) hypo- and alactasia;

c) galactosemia;

d) celiac disease.

1. Learn to make an approximate menu for a child who is on a diet:

a) choose medical nutrition depending on the nature of the disease;

b) mode of feeding, hours of feeding, daily amount of food and energy value of the therapeutic daily ration.

**BRIEF DESCRIPTION OF THE MATERIAL**

***Definition of medical nutrition, the main task of diet therapy***

|  |  |
| --- | --- |
| Therapeutic nutrition, or diet therapy | this is the nutrition of a sick child, which fully meets its needs for nutrients and energy, takes into account the peculiarities of metabolism and the state of individual organs and systems of the body |
| Diet | it is a certain composition of food and a diet used to treat one or more diseases |
| The main task of diet therapy | restoration of the balance in the body disturbed as a result of the disease by adjusting the diet to the changed metabolic processes using the selection and combination of individual products and dishes, as well as special culinary processing of food;  diet therapy is based on the concept of balanced nutrition, that is, to maintain the homeostasis of the body, full compliance of the chemical composition of the diet with the state of the enzymatic systems is required, without which the assimilation of food is impossible;  diet therapy promotes self-regulation of the body by mobilizing enzymatic systems at the subcellular and cellular levels |

***General principles of therapeutic nutrition of a sick child***

|  |  |
| --- | --- |
| Factors taken into account when drawing up medical rations | age and gender of the child;  child's condition;  nature of the disease;  features of metabolic disorders;  form and stage of the disease;  the treatment being carried out;  taste habits;  reaction to this or that food |
| Diet | feeding children 5 times, less often 6 times a day |
| Hours of feeding children with medical nutrition | with 5 feedings:  8.00breakfast  11.00 a.msecond breakfast  14.00dinner  18.00dinner  21.00for night,  with 6 feedings:  8.00breakfast  11.00 a.msecond breakfast  14.00dinner  17.00nooning  19.00dinner  21.00for night |
| Distribution of therapeutic daily ration | breakfast25%  second breakfast10%  dinner30%  dinner25%; for night10% |
| The temperature of food in medical nutrition | the temperature of the first and second dishes should be warm, but not exceed 4550WITH |
| Quality of meals in medical nutrition | dishes should have an attractive appearance, a pleasant smell;  have a certain temperature;  be diverse and prepare from high-quality products |
| Amount of food, volume of dishes | should correspond to the age of the child, as the child grows and develops, the nature of the food changes |

***Principles of organizing dietary nutrition for patients in hospital conditions***

|  |  |
| --- | --- |
| The chief physician of a medical treatment institution or his deputy for medical work | is responsible for the organization of medical nutrition for a sick child who is being treated in a hospital |
| Doctor-curator | directly prescribes dietary nutrition to a sick child in hospital conditions, taking into account the main and accompanying diseases, peculiarities of metabolism in the body and eating habits;  the diet is recorded in the appointment sheet along with the patient's regimen and other medical means;  when a sick child is hospitalized at night, an approximate diet is prescribed by the doctor on duty, which is subsequently adjusted by the attending physician |
| Senior nurse of the department | summarizes the needs of patients in the department in certain dietary nutrition, submits an order for medical nutrition to a dietitian nurse or a nutritionist |
| A dietitian nurse or a nutritionist | together with the cook, they draw up a menu, based on which the amount of necessary dietary products is calculated;  on the basis of the development of weekly menus, menus of separate diets are drawn up, according to which dishes are prepared;  carry out scientific, methodical and technological management of medical nutrition;  diet meals in the hospital food block are prepared by cooks who have special training in diet cooking;  they get food from the kitchen and distribute it to the sick barmaids |
| Quality control of food products and ready-made medicinal dishes | the first: during the arrival of food products at the hospital warehouse;  the second: when receiving products from the warehouse;  the third: after primary processing and production of semi-finished products;  the fourth: after preparing dishes before giving them to patients;  control is carried out by cooks, a dietitian, a nutritionist and a doctor on duty in the evening hours;  periodic control by the sanitary station with an assessment of the chemical composition of food |
| Eating places for patients in hospital conditions | dining room;  buffet;  seriously illin a sick bed |

***Characteristics of the main therapeutic diets***

|  |  |  |  |
| --- | --- | --- | --- |
| No-mer diet | Indication | Purpose | General characteristics |
| 1 | 2 | 3 | 4 |
| 1a | Ulcer disease of the stomach and duodenum in the period of exacerbation, acute gastroduodenitis, exacerbation of chronic gastroduodenitis | Maximum sparing of the stomach by eliminating chemical, thermal, and mechanical irritants | Restriction of energy value mainly due to carbohydratesproducts that stimulate gastric secretion are excluded |
| 1b | The same pathology at the beginning of the subsidence of the exacerbation | Moderate sparing of the mucous membrane | Energy value corresponds to age needs |
| 1 | 2 | 3 | 4 |
| 1 | The same pathology in the phase of convalescence | Moderate sparing of the mucous membrane | The energy value corresponds to the age requirements with the limitation of stimulants of gastric secretion |
| 2 | Chronic gastritis with secretory insufficiency, chronic enteritis, colitis | Complete nutrition | Physiologically complete diet, mechanically gentle;  there are chemical stimuli for secretion |
| 3 | Chronic intestinal diseases with a tendency to constipation | Physiologically complete | The menu contains a normal amount of basic food ingredients, mineral salts and trace elements;  more chemical and mechanical stimulators of intestinal motility |
| 4 | Acute and chronic colitis, enterocolitis, gastroenterocolitis in the period of exacerbation | Maximum mechanical, thermal and chemical sparing of the alimentary canal | The hypochlorite diet excludes milk and products containing coarse vegetable fiber, bile secretion stimulators;  energy value is reduced due to carbohydrates and fats |
| 5  1 | Acute and chronic hepatitis, liver cirrhosis, chronic  2 | Chemical sparing of the liver, stimulation of enzymatic  3 | Exclusion of refractory fats (pork, lamb,  duck, goose);  are excluded  4 |
|  | cholecystitis,  gallstone disease,  pyelonephritis | them, protein digestion and biliary processes in the liver | products that stimulate the secretion of the stomach and pancreas;  diet enriched with methionine  lecithin, choline;  increased amount of fluid |
| 5a | Chronic pancreatitis in the exacerbation phase | Inhibition of the exocrine secretory function of the gland, enhanced protein synthesis, prevention of fatty infiltration and gland dystrophy | Diet with a normal content of protein, lipotropic substances and vitamins, restriction of fats and carbohydrates, salt, extractive substances |
| 6 | Gout, uric acid diathesis, erythremia | Contribute to the normalization of purine metabolism and reduction of endogenous formation of uric acid | Dairy and vegetarian soups are allowed, meat and fish are not given every day and only in boiled form. Foods containing alkaline radicals are allowed (vegetables, fruits, berries and milk) |
| 7a  1 | Acute and chronic glomerulonephritis in the exacerbation stage  2 | Maximum sparing of kidney function, reduction  3 | Sharp restriction of proteins, moderate restriction of fats and carbohydrates, water, salt restriction and  4 |
|  |  | hypertension and edema, unloading of protein metabolism | allergenic  products |
| 7 | Acute glomerulonephritis,  chronic glomerulonephritis  in remission | Improvement of excretion of nitrogenous slags, increase of daily urination | Moderate restriction of proteins,  limitation  salt;  fats and carbohydrates within physiological limits  norms |
| 8 | Adiposity | Prevention and elimination of adipose tissue deposition | Reduction of energy value due to restriction of easily digestible carbohydrates, fats,  hypochlorite diet, restriction of free fluid |
| 9 | Diabetes | Normalization of carbohydrate metabolism, prevention of disturbances in fat, water-salt and protein metabolism | A moderate decrease in energy value due to the restriction of carbohydrates and fats;  easily digestible carbohydrates are excluded (sugar, sweets, jam, honey) |
| 10  1 | Heart disease in the compensation stage, rheumatism, hypertension  2 | Improving the function of the cardiovascular system,  3 | Moderate restriction of fats, reduction of the amount of free liquid, salt; increase in quantity  4 |
|  | disease III century | kidneys, liver | salts of potassium, magnesium, etc. substances |
| 11 | Tuberculosis of the lungs and bones, exhaustion after infectious diseases, operations, anemia | Increasing the body's reactivity to infections | A diet with an increased amount of animal proteins, vitamins, minerals, a moderate increase in fats and carbohydrates |
| 12 | Diseases of the nervous system | Sparing the nervous system | The table is mixed, with a restriction of meat, spicy dishes and seasonings, as well as stimulants (tea, coffee, chocolate, alcoholic beverages) |
| 13 | Acute infectious diseases | Strengthening the removal of toxins from the body, increasing the defense forces | The diet provides the body's physiological needs, is enriched with fresh fruits and vegetables, and is limited in fatty, salty, and difficult-to-digest foods. |
| 14 | Phosphaturia with an alkaline reaction of the urine and precipitation of phosphorus-calcium salts | Contribute to the restoration of the acidic reaction of urine and thus prevent precipitation | Contains products that contribute to changing the reaction of urine to acidic. Avoid foods that have an alkaline effect and are rich in calcium (milk, cheese), legumes, strong meat broths, chocolate |
| 15 | Diseases that do not require special diets, | Provision of full-fledged rational nutrition, | The diet is physiologically complete, 45 times |
| 1 | 2 | 3 | 4 |
|  | recuperation | all kinds of dishes |  |
| 0 | It is prescribed in the first days after surgery on the stomach and intestines, as well as in a semi-conscious state (impaired cerebral circulation, traumatic brain injury, high body temperature) | Food consists of liquid and jelly-like dishes | Whole milk is excluded. Tea with sugar, juices from fresh berries and fruits diluted with sweet water, weak broth, rice broth are allowed. Food is given often, in small portions during the day and at night for 23 days |

***Peculiarities of medical nutrition in certain congenital metabolic disorders (enzymopathies) in children***

|  |  |
| --- | --- |
| Phenylketonuria | * Congenital disorder of amino acid metabolism;   the basis is a congenital insufficiency of the enzyme phenylalanine peroxidase, which is involved in the oxidative transformation of phenylalanine into tyrosine;   * when phenylalanine and the products of its abnormal metabolism accumulate in the blood, mental retardation develops; * diet therapy as the only effective method of treating the diseasefrom the first months of the child's life; * in foodsharp restriction of intake of phenylalanine with food; * it is recommended to transfer to artificial feeding and to prescribe protein hydrolysates with the absence of phenylalanine: "Minafen" (England), "Berlofen" (Germany), "Ketonil" (USA), "Lofenac" (USA), "Hypofenat" (Russia) |
| Galactosemia | * A congenital disorder of carbohydrate metabolism associated with a congenital deficiency of the enzyme galactose-1-phosphate-uridyltransferase, resulting in a block in the way of splitting one of the components of sugar-galactose; * with the accumulation of metabolic products, endogenous intoxication develops, which leads to serious consequences: damage to the brain, liver, eyes, complete disability or even death of the patient; * in nutrition: exclusion of milk and dairy products, appointment of low-lactose or lactose-free mixtures ("Nutrisoya", "Bonasoya", "Similak-isomil", etc.);   after 1 year, along with dairy products, products that may contain galactosides (chocolate, coffee, beans, peas) are excluded |
| Hypo- and alactasia | * Congenital disorder of carbohydrate metabolism, which is based on the deficiency or complete absence of the enzyme lactase, as a result of which the splitting of lactose in the intestine is disturbed; * main manifestations of the diseaseintestinal disorders, vomiting, flatulence, vomiting, development of hypotrophy;   in nutrition: excluding milk and dairy products from the diet, replacing them with low-lactose or lactose-free mixtures ("Nutri-soy", "Similak-isomil", "Bona-soy", etc.) |
| Celiac disease | * Congenital enzymopathy associated with a congenital insufficiency or absence of aminopeptidase enzymes involved in the digestion of the cereal protein-gluten, in particular its fractions-gliadin (wheat and rye), avenin (oats) and gardenin (barley); * the accumulation of products of their incomplete cleavage has a toxic effect on the intestinal mucosa with the development of dyspeptic syndrome; * in medical nutritionagliadin (gluten-free) diet with the exclusion of wheat, rye and oat flour, semolina, oat, bran, bread, crackers, pasta, confectionery flour products from the diet;   are allowedrice, buckwheat groats, corn flour, milk, cheese, fermented milk products, eggs, vegetables, fruits, juices, butter, sugar, honey, jam |

**STUDENT'S PRACTICAL WORK ALGORITHM**

The first stage. Conduct a comprehensive examination of the child's systems and organs. For this you need:

a) collect complaints and anamnesis from the child;

b) conduct a comprehensive examination of systems and organs according to generally accepted methods;

c) assess the child's condition, determine which system or organ is affected in the examined child;

d) recall the peculiarities of the functioning of the child's body in conditions of damage to the identified system or organ.

II stage. Make a one-day sample menu for a sick child who is on a diet. For this you need:

a) choose medical nutrition depending on the affected system or organ (character of the disease);

b) calculate the required amount of food per day;

c) establish the correct diet for the child, schedule feeding hours;

d) list the dishes allowed for this therapeutic diet for certain hours of eating, depending on the appropriate energy value of the daily ration.

**MATERIALS FOR SELF-CONTROL**

**Tasks for self-control**

***Problem.***A 1.5-year-old child suffers from celiac disease. The parents sought medical help in order to determine the tactics of the child's nutrition.

*Task:*1. What medical nutrition does this child need?

1. Choose the right diet for the child.
2. Make a one-day approximate menu for this child.

*Answer standard:*

1. This child needs an agliadin diet with exclusion of products containing gluten from the diet.

1. Correct diet5 times a day (breakfast, second breakfast, lunch, afternoon tea, dinner).
2. Sample one-day menu for this child:

9.00 – Breakfast

Buckwheat milk porridge with butter 200 g

Tea with milk 100 g

Cornflakes 15 g

11.00 a.mSecond breakfast

Fruit juice (carrot) 100 g

14.00Dinner

Vegetable puree soup. on bone broth 100 g

Meat puree with a vegetable side dish 80/100 g

Apple juice 50 g

Marshmallow 20 g

17.00 – Afternoon

Kefir 150 g

Pancakes from corn flour 20 g

1. Dinner

Mashed potatoes 100 g

Cheese 9% fat 75 g

Corn sticks 10 g

Rosehip infusion 100 g

**Practical lesson on the topic**

**"Caring for children with fever. Methods and technique of drug administration. Advantages and disadvantages of different types of input"**

The place of the class: the city children's clinical hospital, department of the Medical Center of Medical Education, training room. Number of hours - 4 hours.

**TOPICALITY**: one of the main areas of health care of the population of Ukraine is the care of motherhood and childhood. Providing qualified medical care to children in the pediatric department of a children's hospital is an integral part of this field. The effectiveness of the therapy depends on the clear organization of the work of the nursing post of the pediatric department, on the interaction not only of the post nurse and the doctor, but also of the junior nurse. Therefore, mastering the skills of caring for sick children with various pathologies, performing certain medical manipulations is quite important in the work of a junior nurse.

**GOAL**- get acquainted with the peculiarities of caring for children with fever, methods and ways of administering medicines.

**SPECIFIC GOALS**

*The student should know:*

* thermometry technique;
* rules for filling out the appointment sheet;
* peculiarities of drug administration;
* definition of fever;
* basic principles of care and care for children with fever.

*The student should be able to:*

* + - * + follow the rules of deontology in the work of a nurse;
        + conduct thermometry;
        + to provide assistance during fever;
  + take swabs from the throat and nose for research;
    - * + carry out oral distribution of medicines.

**BASIC KNOWLEDGE, SKILLS, SKILLS NECESSARY FOR STUDYING THE TOPIC (interdisciplinary integration)**

|  |  |
| --- | --- |
| Names of previous disciplines | Acquired skills |
| Ethics and deontology.  Babysitting | Peculiarities of deontology in the work of a pediatric department nurse.  Legislative and normative acts, features of sanitary and hygienic regime for children of different ages |

**TASKS FOR INDEPENDENT WORK DURING STUDENT PREPARATION FOR THE CLASS**

**Theoretical questions for the lesson:**

* thermometry technique;
* peculiarities of drug administration;
* principles of providing first aid to children with fever;
* the technique of taking smears from the throat and nose;
* rules for preparing a sick child for manipulations and research.

**Initial level of knowledge and skills**is tested by solving situational problems on each topic, by answering tests and constructive questions.

**BRIEF DESCRIPTION OF THE MATERIAL**

**Fever**- the general protective reaction of the organism to the influence, more often, of an infectious agent, is a change in thermal regulation with the accumulation of heat and an increase in body temperature.

An increase in body temperature by 1°C accelerates the heart rate by 10 beats. Breathing during fever increases in parallel with an increase in heart rate and body temperature.

Since the temperature reflects the degree of reactivity of the body, it can be a valuable indicator of its condition in the fight against infection, therefore it is quite important in the work of a nurse, as well as in the work of a junior nurse, to be able to correctly conduct thermometry, especially in children.

**Rules of thermometry**

Body temperature is measured twice a day (at 7-9 am and 5-7 pm). As a rule, systematic measurement of body temperature 2 times a day makes it possible to get an idea of ​​its daily fluctuations, so there is no need to measure temperature at shorter intervals (6−4−2 hours). Body temperature can be measured in different ways:

* + - in the armpit;
    - in the inguinal fold,
    - in the oral cavity;
    - in the ear canal;
    - in the rectum;
    - in the vagina

The results may vary: the temperature in the oral cavity is usually 0.5 degrees lower than the rectal temperature (measured in the rectum) and 0.5 degrees higher than the body temperature measured under the armpit. The body temperature in the ear canal is the same or slightly higher than the rectal temperature. Body temperature measured in the inguinal fold is close to the temperature in the oral cavity.

**Measurement of body temperature in the armpit**

The armpit is most often used in Ukraine to measure body temperature, as it is practically convenient. But at the same time, you need to know that measuring body temperature in the armpit is unreliable, because it gives less accurate results than when measuring in other cavities. Moreover, the temperature may be different in the left and right armpits (more often, it is 0.1-0.3 °C higher on the left). If the difference is greater than 0.5 °C during a comparative temperature measurement, this indicates an inflammatory process on the side where higher numbers are observed, or an inaccuracy of the measurement.

**Method**

Before placing the thermometer in the armpit, it is necessary to wipe the skin with a napkin (especially in sweaty ones). This prevents the thermometer from cooling down during temperature measurement due to sweat evaporation.

The thermometer should be installed so that the entire mercury reservoir is adjacent to the body from all sides in the deepest point of the armpit, without moving anywhere during the entire time of temperature measurement.

It is necessary to ensure that air does not enter the armpit, and the thermometer fits tightly to the skin. To do this, you need to press the shoulder and elbow to the body so that the armpit is closed. When measuring the body temperature of small children and patients who are in an unconscious state, it is necessary to additionally hold the hand until the measurement is finished.

The time for measuring the body temperature in the armpit is 5 minutes (when using a mercury thermometer, it is at least 10 minutes).

Normal body temperature when measured in the armpit is 36.3-36.9 °C.

**Measurement of body temperature in the inguinal fold**

Not the best way to measure body temperature, but it can be used in infants. The child is placed on his back and the leg is bent at the hip joint, bringing the thigh to the trunk. Keep the thigh in this position for the entire duration of the body temperature measurement (for 5-10 minutes depending on the type of thermometer used).

**Measurement of temperature in the oral cavity**

This method of measuring body temperature is common in English-speaking countries and is quite reliable. But it is contraindicated: children under 4-5 years old, children with increased excitability and mental patients, in the presence of patients with diseases of the oral cavity and nasal breathing disorder. It should be known that the temperature in the oral cavity can change with recent smoking or taking cold/hot liquids, and an increase in the frequency of breathing for every 10 respiratory movements above the norm can reduce the temperature in the oral cavity by 0.5 °C.

**Method**

Before measuring the body temperature of the elderly, removable dentures are removed.

The tip of the thermometer is placed under the tongue to the right or to the left of its bridle.

The patient is asked to keep his mouth tightly closed so that cold air does not enter.

The time of measuring body temperature in the oral cavity with a mercury thermometer is 3 minutes.

Normal body temperature when measured in the oral cavity is 36.8-37.3 °C.

If a patient accidentally bites off the tip of a mercury thermometer while measuring body temperature, there is no need to worry: mercury in the amount contained in the thermometer does not cause poisoning when swallowed, and small fragments of glass come out with feces.

**Measurement of body temperature in the ear canal**

This method is quite rare, but it is common in Germany when measuring body temperature in children, as well as when using a special ear infrared thermometer. The earlobe is pulled up and back to straighten the ear canal; after which the tip of the thermometer is carefully inserted into the ear approximately to the depth1 cm.

**Measurement of body temperature in the rectum**

The rectum is a cavity closed by the anal sphincter with a stable temperature, therefore, when measuring body temperature in the rectum, the most accurate results are obtained. In addition, the temperature in the rectum is as close as possible to the temperature of the internal organs. This method of temperature measurement is widely used in thermoneurosis, as well as in children under 4-5 years of age, exhausted and weakened patients (in whom the thermometer in the armpit is not tightly covered by soft tissues).

Contraindications: delayed defecation (rectal ampulla is sometimes filled with feces), diarrhea, diseases of the rectum (proctitis, hemorrhoids, etc.).

**Method**

Before inserting into the rectum, the tip of the thermometer should be lubricated with petroleum jelly or oil.

An adult patient takes a position on his side, a small child is placed on his stomach.

The thermometer is smoothly inserted into the rectum to a depth of 2-3 cm (an adult patient can be allowed to do this himself).

After the injection, the patient should lie down, the thermometer is restrained with the fingers (like a cigarette). Buttocks should fit tightly to each other to exclude the influence of cold air.

Do not insert the thermometer sharply, firmly fix it in the rectum, or move during the measurement of body temperature.

The time for measuring body temperature in the rectum with a mercury thermometer is 1-2 minutes.

Normal body temperature when measured in the rectum is 37.3-37.7 °C. After measuring the body temperature, the thermometer must be placed in a disinfectant solution. The thermometer used to measure the temperature in the rectum is kept separately from other thermometers.

**Measurement of body temperature in the vagina**

This method of measuring body temperature is mainly used to determine the time of ovulation.

**Method**

Body temperature is measured in the morning without getting out of bed.

The thermometer is inserted deep into the vagina.

The time for measuring body temperature in the vagina with a mercury thermometer is 5 minutes.

Normal body temperature when measured in the vagina (depends on the phase of the menstrual cycle) is 36.7-37.5 °C. After measuring the body temperature, the thermometer must be placed in a disinfectant solution. The thermometer used to measure the temperature in the vagina is kept separately from other thermometers.

**HELP WITH FEVER**

**(general principles)**

**GOAL**- providing assistance to the child during different periods of fever.

Three stages are distinguished in the development of most fevers, and the scope of patient care depends on one or another stage of the fever:

**1st stage**- temperature increase (short-term), characterized by the predominance of heat production over heat output and is manifested by chills, pain in the whole body, headache, there may be cyanosis (blueness) of the lips;

**The 2nd stage is the maximum increase in temperature**(heat period);

**3rd stage**- the period of temperature decrease, can be critical and lytic. A critical decrease in temperature is characterized by a sharp decrease from high to low numbers (for example, from 40 to 37 degrees), which is often accompanied by a sharp decrease in vascular tone, which is manifested in a sharp decrease in blood pressure to 80/20 mm Hg. Art. and the appearance of a thread-like pulse, increased sweating (hyperhidrosis), pronounced weakness and pallor of the skin. This condition of the child is called collapse and requires urgent measures from the medical staff.

Lytic hypothermia is characterized by a gradual decrease in temperature from high numbers to normal (below normal).

**To help with the first stage of fever, it is necessary to prepare**a heating pad, a towel, a blanket, a drinking bowl, a vessel, mineral water (soft drinks, juices) without gases.

For such a child, it is necessary to create peace, put him to bed, put a heating pad at his feet, cover him well, give him strong freshly brewed tea and prevent drafts in the room where the child is. It is advisable to set an individual post. If this is not possible, then the nurse must constantly approach the child and monitor hemodynamic parameters (pulse, blood pressure, heart rate, systolic blood pressure) and physiological parameters. If changes for the worse appear, she should immediately call a doctor.

**At the 2nd stage**a bladder with ice, a towel, a tonometer with a phonendoscope, a drinking cup, a vessel are necessary.

***Sequence of actions:***

- if possible, organize an individual post;

- inform the doctor about a change in the patient's condition;

- monitor hemodynamic indicators;

- remove the blankets and cover the child with a sheet;

- use lotions for peripheral vessels and a bubble with ice for the head;

- ventilate the room, avoid drafts;

- take care of the oral cavity, nose and other organs of the child;

- help the patient with physiological discharges, prevent bedsores.

**The sequence of actions to help with a critical state of fever involves the following:**

- urgently notify the doctor by all available means, organize the provision of assistance to the patient;

- never leave the patient alone;

- quickly remove the pillow from under his head, raise the foot part of the bed by 20 degrees or use improvised means (blankets, pillows, etc.);

- the position of the child should be horizontal, with raised legs;

- attach heating pads wrapped in a towel to the child's hands and feet;

- use oxygen moistened with water;

- monitor hemodynamic indicators;

- correctly report the child's condition to the supervising doctor or the doctor on duty;

- follow the doctor's prescription;

- after removing the child from this state, wipe dry, change wet underwear and bedclothes;

- provide further care (hot sweet tea, etc.);

- control the mode of motor activity of the child prescribed by the doctor;

- ensure observation of medical staff on duty for 1 day;

- create conditions for the child to have a long deep sleep.

**Treatment tactics and care of children with fever**

The main task of a nurse or a doctor who has discovered a fever in a child is to solve two questions:

Is it necessary to lower the child's body temperature and by what method?

What should be the correct tactical decision?

It is necessary to lower the body temperature of a sick child in the following cases:

- a child of the first 3 months of life;

- with an unfavorable premorbid condition (presence of perinatal encephalopathy, convulsions, congenital heart disease);

- when the body temperature rises above 38.5 °C.

It is recommended to use antipyretics:

- in children of the first two months of life - at a temperature above 38 °C;

- in children older than 3 months - at a temperature above 39 °C;

- at a temperature of 37 to 38 °C, if it is accompanied by complaints of malaise, muscle pain or headache;

- at a temperature above 38 °C in children with a history of febrile convulsions;

- with malignant hyperthermia with microcirculation disorders.

First aid for hyperthermia depends on:

- from the magnitude of the fever;

- from the presence or absence of symptoms of peripheral blood circulation disorders;

Antipyretics are not recommended for use in children:

- Metamizol (Analgin) - causes suppression of hematopoiesis.

- Ibuprofen is more often the cause of side effects (dyspepsia, gastric bleeding).

Currently, such drugs as amidopyrine, antipyrine, and phenacetin are excluded from pediatric practice.

**Actions of medical personnel in case of hyperthermia:**

- immediately call a doctor;

- unfold diapers, remove extra clothes;

- apply physical methods of cooling.

**Methodology of alcohol wiping**

*Material support*: boiled water at room temperature; 40% alcohol, 9% table vinegar; sponge or pieces of cotton wool; a sheet for wiping.

*Execution progress*

1. Prepare a mixture consisting of water, 40% alcohol and 9% table vinegar in a ratio of 1:1:1.

2. Wet a sponge or pieces of cotton wool with this mixture, wipe the skin of the forehead, neck, limbs (especially in the area of ​​the main vessels), let it dry, repeat.

The higher the temperature and the greater its fluctuations, the more the child will lose weight, so in order to increase the body's resistance and fill energy losses, it is necessary to feed the child with high-calorie and easily digestible food in liquid or semi-liquid form 5-6 times a day in small portions. A large amount of liquid in the form of mineral water, juices, and juices is used as a detoxifying agent (reducing the concentration and removing toxic substances from the body).

**Ways of administration of medicines**

Medicinal substances can be administered naturally (inhalation, enteral, transdermal) and with the help of various technical means. In the first case, their transport to the internal environments of the body is provided by the physiological transport capacity of the mucous membrane and skin, in the second - it occurs invasively.

Routes of administration of medicinal substances are divided into enteral, parenteral, and inhalation.

**Enteral**the route (inside) involves the introduction of a medicinal substance through various sections of the alimentary canal. When taken under the tongue (sublingually) and buccally (subbuccally), absorption (transport, absorption) begins quite quickly, the substances act by bypassing the liver barrier, do not come into contact with hydrochloric acid of the stomach and enzymes of the alimentary canal. Fast-acting substances with high activity (for example, nitroglycerin), the dose of which is quite low, as well as substances that are poorly absorbed from the alimentary canal or destroyed in it, are prescribed sublingually and subbuccally. The drug should be in the oral cavity until complete absorption. Swallowing it with saliva reduces the benefits of this route of administration. Frequent use of drugs sublingually can lead to irritation of the mucous membrane of the oral cavity.

**Administration of drugs by mouth**(oral) involves the ingestion of a medicinal substance followed by its passage through the alimentary canal. This way is the simplest and most convenient for the patient, it does not require sterile conditions. However, only a small part of the medicinal substance begins to be absorbed (absorbed) already in the stomach. For most medicinal substances, the weakly alkaline environment of the small intestine is the most favorable for absorption, therefore, with oral administration, the pharmacological effect occurs only after 35–45 minutes.

The medicinal substance taken inside is affected by digestive juices and may lose its activity. An example can be the destruction of insulin and other protein substances by proteolytic enzymes. Some substances are affected by the hydrochloric acid of the stomach and the alkaline content of the intestines. In addition, substances transported from the stomach and intestines enter the liver through the portal vein system, where they begin to be inactivated by enzymes. This process was called the first-pass effect. That is why, and not due to insufficient absorption, the doses of some drugs (aminazine, narcotic analgesics, calcium antagonists) when administered internally should be significantly higher than when administered parenterally. Biotransformation of a substance during primary passage through the liver is called pre-systemic metabolism.

In most cases, oral medication is recommended to be administered on an empty stomach - 30 minutes before a meal, but in some cases the medication is taken during or after a meal.

Medicinal substances are injected inside in the form of solutions, powders, tablets, capsules, granules, etc. To prevent the destruction of some medicinal substances in the acidic environment of the stomach, tablets covered with a coating resistant to the effects of gastric juice, but soluble in the alkaline environment of the intestines, are used. There are pharmaceutical forms (tablets with a multilayer coating, capsules, etc.) that provide a gradual transport of the active substance, which makes it possible to continue the therapeutic effect of the drug.

In patients (especially the elderly) with disturbed esophageal peristalsis or in those who are in a horizontal position for a long time, tablets and capsules can be retained in the esophagus, forming ulcers in it. To prevent this complication, tablets and capsules should be washed down with a large amount of water. Reducing the irritating effect of drugs on the gastric mucosa can be achieved by making them in the form of mixtures with the addition of mucus. In the case of a significant irritant (or ulcerogenic) effect, drugs, especially those that require long-term course use (for example, sodium diclofenac), should be taken after meals.

Administration of drugs by mouth is impossible or difficult during vomiting, convulsions, in a state of unconsciousness.

**Sometimes medicinal substances are administered duodenally**(through a probe into the duodenum), which makes it possible to quickly create a high concentration of the medicinal substance in the intestine. This is how, for example, magnesium sulfate is administered (to achieve a choleretic effect or for diagnostic purposes).

**In the rectum (rectally**) medicinal substances are administered in the form of suppositories (candles) or enemas (adult volume no more than 50–100 ml). Rectal administration makes it possible to avoid the irritating effect of substances on the mucous membrane of the stomach, and also makes it possible to use them in cases where oral administration is difficult or impossible (nausea, vomiting, spasm or obstruction of the esophagus). Being transported from the rectum, the medicinal substance enters the blood not through the portal vein, but through the inferior vena cava system, bypassing the liver. Therefore, the strength of the pharmacological action of medicinal substances and the accuracy of dosage in the case of rectal administration are higher than in the case of oral administration, which makes it possible to administer medicinal substances not only of local action (local anesthetics, anti-inflammatory, disinfectants), but also of general action (hypnotics, analgesics, antibiotics, cardiac glycosides, etc.) actions.

**Inhalation route**is also a physiological natural way of introducing medicinal substances. In the form of aerosols, substances are prescribed mainly for obtaining a local effect (for bronchial asthma, inflammatory processes of the respiratory tract), although most substances (adrenaline, isadrin, antibiotics) introduced in this way are absorbed and also have a resorptive (general) effect. Inhalation of gaseous or finely dispersed solid and liquid medicinal substances (aerosols) provides almost the same rapid entry into the blood as intravenous administration, is not invasive, which is important for children, the elderly and exhausted patients. The effect is easy to control by changing the concentration of the substance in the inhaled air. The speed of transport depends on the volume of breathing, the area of ​​the active surface of the alveoli, the permeability of their walls, the solubility of substances in lipids,

To facilitate the inhalation use of non-volatile solutions, special nebulizers (inhalers) are used, and the introduction and dosing of gaseous substances and volatile liquids (ether for anesthesia, flurothane) is carried out with the help of devices (anesthetic, artificial lung ventilation).

**Parenteral route**(bypassing the alimentary canal) pursues one goal - to deliver the medicinal substance to the internal environment of the body or directly to the pathological focus faster and without loss.

**The skin way**widely used in dermatology to directly affect the pathological process. Some substances have high lipophilicity, can partially penetrate through the skin, enter the blood and have a general effect. Rubbing ointments and liniments into the skin promotes deeper penetration of medicinal substances and their entry into the blood. Of the ointment bases, lanolin, spermaceti, and lard provide deeper penetration of medicinal substances into the skin than petroleum jelly, since they are closer in composition to body lipids.

Recently, special pharmacotherapeutic systems have been developed for the introduction of medicinal substances through the skin (for example, nitroglycerin) into the blood. These are special medicinal forms that are fixed by an adhesive substance on the skin and provide slow transport of the medicinal substance, due to which its effect continues.

**Administration of medicinal substances into the conjunctival sac, the external auditory canal, the nasal cavity and the mucous membrane of the oral cavity**most often involves a local effect on the pathological process in the relevant organs (conjunctivitis, otitis, rhinitis, stomatitis). Some substances for local use have a resorptive effect (for example, cholinergic and anticholinesterase agents in glaucoma). To obtain a resorptive antidiuretic effect, patients with diabetes insipidus are prescribed nasal inhalation of the hormonal preparation adiurecrin.

**Administration of medicinal substances into cavities**used infrequently. As a rule, antibiotics are injected into the abdominal cavity during surgical operations. Introduction into joint cavities, pleura is expedient for elimination of inflammatory processes (arthritis, pleurisy).

**Among the parenteral routes of drug administration, the most common is injection: into the skin, under the skin, into a muscle, into a vein, into an artery, subarachnoid, subdural, suboccipital, intraosseous**etc.

Injection into the skin is used mainly for diagnostic purposes (for example, a test for increased individual sensitivity to antibiotics and local anesthetics, diagnosis of tuberculosis), as well as for vaccination.

Often medicinal substances are injected under the skin and intramuscularly. These ways are used when it is impossible to introduce substances through the mouth or into a vein, as well as to prolong the pharmacotherapeutic effect. The slow absorption of the medicinal substance (especially oil solutions) makes it possible to create a depot in the subcutaneous tissue or muscles, from which it gradually enters the blood and is contained there in the required concentration. Substances that have a significant local irritant effect should not be injected under the skin and intramuscularly, as this can cause inflammatory reactions, the formation of infiltrates, and necrosis.

**Intravenous administration**accelerates the transportation of medicinal substances, makes it possible to quickly create their maximum concentration in the body and obtain a clear therapeutic effect, which is very important in cases of emergency care. Only aqueous sterile solutions of medicinal substances are administered intravenously. It is strictly forbidden to inject suspensions and oil solutions (to prevent embolism of vessels of vital organs), as well as substances that cause intense blood clotting and hemolysis.

Medicinal substances can be injected into a vein quickly, slowly as a stream and slowly as a drip. Most often, they are administered slowly (especially to children), since a large number of medicinal substances have the ability to cause an effect too quickly (strophantin, ganglioblockers, plasma replacement fluids, etc.), which is not always desirable and can be life-threatening. The most rational is the drip introduction of solutions. They start, as a rule, with 10–15 drops in 1 minute, gradually increasing the speed; the maximum rate of introduction is 80–100 drops in 1 minute. The substance injected into a vein is dissolved in an isotonic solution of sodium chloride or glucose (5% solution). Dilution in hypertonic solutions (for example, in 20 or 40% glucose solution), except in individual cases, is impractical due to possible damage to the vascular endothelium.

Recently, rapid (within 3–5 minutes) intravenous administration of drugs is used - in the form of a bolus (Greek: bolos - lump). The dose is determined in milligrams of the drug or in milliliters of a certain concentration of the medicinal substance in the solution.

**Introduction into the artery**makes it possible to create a high concentration of the medicinal substance in the blood supply area of ​​this vessel. Antitumor drugs are sometimes administered in this way. To reduce their overall toxic effect, blood flow can be artificially slowed down (compression of veins). Radiopaque substances are also injected into the artery to clarify the location of the tumor, thrombus, aneurysm, etc.

Medicinal substances that do not penetrate well through the blood-brain barrier are injected under the membranes of the brain - subarachnoid, subdural, suboccipital. So, for example, some antibiotics are used in cases of infectious damage to tissues and membranes of the brain.

**Intraosseous injections**used if it is technically impossible to inject into a vein (children, the elderly), as well as sometimes to inject a large amount of plasma substitute fluids (into the spongy substance of the calcaneus).

**Advantages of the parenteral route of drug administration:**

1. Rapid development of the pharmacological effect.

2. High accuracy of dosing.

3. The possibility of administration of drugs that are destroyed when administered enterally (insulin, heparin).

4. The possibility of administering medicines to unconscious patients.

**Disadvantages of the parenteral route of drug administration:**

1. The need for sterility of medicines.

2. Need for equipment, training of medical personnel.

3. Danger of infection.

4. Administration of medicines is often accompanied by pain.

**Electrophoresis**often called a bloodless injection. Anions and cations of the ionized medicinal substance are able to penetrate into the body under the influence of an electric field through intact skin (ducts of sweat and sebaceous glands) and mucous membrane. They are partially retained in the tissues, bind to the proteins of cells and intercellular fluid, and partially enter the blood.

**Samples of test tasks and situational tasks**

***Problem.***A 4-month-old child developed a fever of 39.5 °C against the background of ARVI and acute rhinitis.

*Task:*your tactics?

*Answer:*

- immediately call a doctor;

- unfold diapers, remove extra clothes;

- apply physical methods of cooling.

**Practical lesson on the topic**

**"Laboratory methods of studying the functional state of organs and systems of the child's body. Rules and technique of taking material for research"**

The place of the class: the city children's clinical hospital, department of the Medical Center of Medical Education, training room. Number of hours – 4 hours.

**TOPICALITY:**the clear organization of the work of the nurse of the pediatric department for the care of children, her interaction with the younger nurse regarding the rules for taking material for research allow solving the urgent tasks of diagnosis and treatment in a fairly favorable time frame.

**GOAL**- acquire skillstechniques of taking material for research and preparing sick children for manipulations.

**SPECIFIC GOALS**

*The student should know:*

* Rules for caring for a child during vomiting.
* The technique of taking washing water for research.
* Rules for taking material from the respiratory tract, gastrointestinal tract.
* Rules for taking feces for research.
* Fence techniquein children, urine analysis for research according to the methods of Zimnytsky, Nechyporenko, Addis-Kakovsky.
* The technique of taking urine for sterility.
* Evaluation criteria for laboratory tests of urine.
* Rules for preparing a sick child for manipulations and research.

*The student should be able to:*

* Take washing water for research.
* Help the child during vomiting.
* Collect feces for research.
* Collect material for research on the respiratory tract, digestive system.
* To have fence techniquein children, urine analysis for research according to the methods of Zimnytsky, Nechyporenko, Addis-Kakovsky.
* Take urine for sterility.
* Prepare a sick child for manipulations and research.

**BASIC KNOWLEDGE, SKILLS, SKILLS NECESSARY FOR STUDYING THE TOPIC**

|  |  |
| --- | --- |
| Names of previous disciplines | Acquired skills |
| Ethics and deontology.  Babysitting. | Peculiarities of deontology in the work of a nurse in the pediatric department.  Peculiarities of sanitary and hygienic regime for children of different ages |

**TASKS FOR INDEPENDENT WORK DURING STUDENT PREPARATION FOR THE CLASS**

**Theoretical questions for the lesson:**

* Helping a child during vomiting.
* Rules for taking material from the respiratory tract, gastrointestinal tract.
* Fecal collection technique for research.
* Preparation of probes, catheters, tips for manipulations.
* Urine collection technique for researchmethods of Zimnytsky, Nechiporenko, Addis-Kakovsky, for sterility.
* Evaluation criteria for laboratory tests of urine.
* Rules for preparing a sick child for manipulations and research.

The initial level of knowledge and skills is checked by solving situational problems on each topic, by answering tests and constructive questions.

**BRIEF DESCRIPTION OF THE MATERIAL**

**Caring for a child during vomiting**

During vomiting, the infant's head is turned to the side so that the vomitus does not get into the respiratory tract and cause inflammation of the lungs. A tray is placed under the corner of the mouth or a towel is placed. An older child is offered to sit down, the pelvis is placed and the head is tilted forward. After vomiting, a small child is given water, and an older child is given water to rinse his mouth. Vomiting masses are kept in a closed container in a cold place until they are examined by a doctor. If there is a need for a laboratory test, they are poured into a jar with a lid, the last name, first name, age of the child and the purpose of the test are written on the label.

**Taking material from the upper respiratory tract**

***PREPARE:***

* sterile test tubes with a dry sterile cotton swab (2 pcs.);
* a bottle with a sterile physiological solution;
* lamp;
* chair;
* mask and sterile gloves.

***PREPARE THE PATIENT:***

* inform about the intended manipulation;
* inform the place of its holding;
* clearly explain the course of the manipulation and the necessary actions of the patient.

***SEQUENCE OF ACTIONS:***

1. Sanitize your hands.

2. Put on a mask and sterile gloves.

3. Offer the patient to sit comfortably on a chair, closer to the back.

4. Ask the patient to move both legs to the right (away from you).

5. Sit opposite the patient quite close and move both legs to the left.

6. Take a test tube with a tampon in your left hand and offer the patient to tilt his head slightly and turn slightly to the right (the test tube is marked "right nostril").

7. Pull the swab out of the tube with your right hand and gently insert the swab deep into the right nostril if there is sufficient content in the nostril. If it is not there, then pre-moisten the tampon with a sterile physiological solution.

***WARNING!***When removing a sterile tampon from the bottle, you should only touch the plug into which the metal or plastic rod with the tampon is mounted.

8. Carefully, trying not to touch the edges of the test tube, insert a tampon into it.

9. Repeat the same actions with the left nostril.

10. For further actions, see lower.

**Taking material from the pharynx**

***PREPARE:***

* sterile or disposable spatulas;
* a sterile test tube with a tampon;
* a mask;
* sterile gloves;
* stand for test tubes;
* glasses.

***PREPARE THE PATIENT:***

- inform about the intended manipulation;

- inform about the time and place of its implementation;

- in an accessible form, explain the course of the manipulation and the necessary actions of the patient.

***SEQUENCE OF ACTIONS:***

1. Carry out hygienic treatment of hands, dry them with a clean towel.

2. Put on glasses and a mask.

3. Invite the patient, offer him to sit comfortably on a chair.

4. Put on sterile gloves, having previously treated your hands with alcohol.

5. Sit opposite the patient and invite him to move both legs to the right of you, and move both of your legs to the left.

6. Take a test tube with a tampon in your left hand, offer the patient to tilt his head slightly and turn it towards you, opening his mouth wide.

***WARNING!***If the patient opens his mouth well, the spatula may not be used. If the mouth opens poorly, take a spatula with the test tube in your left hand, press with the spatula near the root of the tongue, but without touching it, because touching the root of the tongue can cause a vomiting reaction.

7. With your right hand, holding only the cork, remove the tampon from the tube and insert it into the throat:

- first pass a tampon over the right tonsil;

- then go to the palate;

- further - to the left tonsil;

- at the end - to the back wall of the pharynx.

***WARNING!***It is necessary to ensure that the tampon does not touch the mucous membrane of the mouth and tongue. Only one tampon should be used. The secret must be taken from the patient on an empty stomach or a few hours after a meal.

With obvious localized changes in the pharynx, the material is taken with two swabs:

- from the hearth;

- all other sectors.

8. Remove the tampon from the oral cavity and carefully, trying not to touch the edges of the test tube, insert it into the vial.

9. Release the patient, disinfect the workplace. solution

10. Treat the gloves in a container with disinfectant. solution, remove and soak in disinfectant. solution for at least 60 minutes.

11. Wash and dry your hands, make a referral to the laboratory and ensure its delivery.

**Taking material from the lower respiratory tract**

The content of bacterial flora in the lower respiratory tract and lungs is most often concluded based on the results of sputum examination.

***PREPARE THE PATIENT:***

- warn about the assigned study;

- about the time and technique of sputum collection;

- bring him a Petri dish;

- explain that the patient should not make an effort to expectorate, if at the time of collection he cannot produce sputum. In this case, advise to do or carry out inhalation yourself with a warm hypertonic solution.

***PREPARE:***

* a sterile Petri dish with a nutrient medium;
* glasses;
* a mask;
* sterile gloves;
* additional gown (surgical) or oilcloth apron;
* vessels with dez. solution for disinfecting the material.

***SEQUENCE OF ACTIONS:***

1. Carry out hygienic treatment of hands, dry them.

2. Put on glasses, a mask, an additional gown - especially if you suspect HIV or tuberculosis.

3. Invite the patient, once again clarify his actions, make sure that he understood you well.

4. At a distance of 5-10 cm, hold the petri dish with the nutrient medium vertically to capture 5-6 cough impulses within a few seconds.

5. Quickly close the inoculation cup with a lid and, protecting it from cooling, quickly ensure the delivery of the material to the laboratory (the accompanying direction is drawn up in advance).

6. Disinfect the workplace. solutions, rinse with running water, dry.

7. Remove the mask, glasses, soak them in a container with disinfectant. solution

8. Remove the robe, soak it in a container with disinfectant. solution

9. Take off the gloves last. Wash, dry your hands.

More modern methods of taking secretions from the lower respiratory tract are bronchoscopy and tracheal puncture, but they are performed only in pulmonology. These are the most advanced methods and are used to determine the qualitative characteristics of microorganisms.

**Sputum sampling for research in older children**

**Sputum**- pathological secretion of the bronchi, lungs, trachea, larynx, which is released during coughing and expectoration. Sputum can be:

- mucous;

- serous;

- purulent;

- mucous-purulent;

- serous-purulent;

- bloody.

**Goal**- diagnostic. Indications are determined by the doctor. Contraindications are determined by the doctor.

***PATIENT PREPARATION:***

* warn about the day and time of sputum collection;
* inform about the sputum collection technique;
* bring a spittoon.

***SEQUENCE OF ACTIONS:***

1. The patient collects morning fresh sputum.
2. Brushes teeth. Expects sputum into the spittoon without touching its edges (5 ml is enough).
3. Tightly twist the lid and put it in a cool place.
4. The nurse makes a referral to the laboratory and ensures its delivery.

**Collection of sputum for mycobacterium tuberculosis**

It is carried out by the method of flotation, that is, by the method of accumulation. Sputum after examination is burned in muffle furnaces.

***REMEMBER!***Sputum is better released with deep breathing and coughing.

**Sputum collection for sensitivity to antibiotics**

After processing the oral cavity and teeth, the patient spits several times into the Petri dish without touching its edges, preserving its sterility.

**Collection of sputum for atypical (tumor) cells**

Tumor cells are quickly destroyed, therefore, freshly secreted sputum collected in sterile dishes is used for research.

**Taking material from the gastrointestinal tract.**

**Oral cavity**

***SEQUENCE OF ACTIONS:***

1. Take the tube with the swab in your left hand.
2. Ask the patient to open his mouth wide, tilting his head slightly.

Observing all the rules of asepsis, take out the tampon with your right hand and pass it on:

* mucous membrane of the cheek;
* gums;
* tongue;
* openings of salivary glands;
* plaques, ulcers.

The material is removed from the gum pockets with a loop, and from the dental canal - with a dental instrument.

**Esophagus and stomach**

Most often, material is taken using esophagoscopy or gastroscopy.

Vomiting masses must be examined, even if they are collected in non-sterile dishes.

A good result is given by the study of washing waters, but only if they do not contain antiseptics.

***REMEMBER!***Wash water must be collected in a sterile container.

**Intestine**

1. Small intestine - the material is taken through the stomach with an endoscope that has sharp branches that open in the right place and close after taking the material. Thus, the minimum amount of bacteria from other departments is included in the analysis.

Due to the fact that taking the material with an endoscope is a rather complicated process, the material is taken after defecation.

***PREPARE:***

* sterile enamelware or a well-disinfected vessel;
* a sterile test tube with a loop, you can use a plastic or wooden stick, a spatula;
* a stand for test tubes or other dishes;
* sterile mask, gloves;
* glasses;
* an additional robe, an apron is possible.

***SEQUENCE OF ACTIONS***

After defecating the patient on a sterile dish, release him and use a sterile tool (loop, spatula, plastic or wooden stick) to select for examination in a sterile dish mucous and purulent inclusions taken from different places (at least three different places.

***REMEMBER!***It is impossible to send for a bacteriological examination of feces with bloody inclusions in the feces, because the blood has a pronounced bactericidal effect, the bacteria in it die.

If there is no independent defecation, then:

1. The patient is placed on his left side and asked to bend his legs at the knees and pull them to his stomach (if for some reason the patient cannot do this, he bends his left leg at the hip joint, and leaves the right leg straight).
2. Moisten the loop in a preservative and carefully insert it into the rectum 8-10 cm, rotating it around the axis, then carefully remove it from the intestine in the same way. Enter the loop into the test tube, following the rules of aseptic technique!

All used material must be disinfected. In cases where the material cannot be shipped within the next few hours of emptying, it must be placed in a preservative to prevent the process of rotting and fermentation that occurs during long-term storage.

As an exception, the material can be applied to strips of filter paper (2x2 cm), which after air-drying should be stored in test tubes or cellophane bags. When storing pieces of paper in the dark, pathogenic microorganisms are able to maintain their viability from 6 to 35 days.

**COLLECTION OF FACES FOR GENERAL ANALYSIS**

**Goal**- diagnostic. Indications are determined by the doctor. There are no contraindications.

***PATIENT PREPARATION:***

- to warn about the assigned study;

- explain to the mother the technique of stool collection;

- issue a vessel and a spatula for collecting feces;

- issue a referral to the laboratory and glue. If the child is without parents, the nurse does all this.

***PREPARE:***

* a clean, dry glass vessel;
* wooden spatula, matches;
* referral to the laboratory, glue;
* vessels with dez. solution;
* gloves.

***SEQUENCE OF ACTIONS:***

1. Put on gloves.

2. Place fresh feces (immediately after defecation – defecation), preferably in a warm form, in a vessel (a small amount) with a spatula, without touching its edges; burn the spatula, process the gloves and remove them.

3. Close the lid tightly.

4. Make out a referral to the laboratory, stick it.

5. Ensure the delivery of the material to the laboratory.

***ADDITIONAL INFORMATION***

For research, it is better to take feces after an independent act of defecation in the form in which it was excreted. Feces are examined macroscopically, microscopically, chemically and bacteriologically.

Macroscopically determine:

- color, density (consistency);

- shape, smell, impurities.

The color is normal with mixed food - yellowish-brown, brown, with meat - dark brown, with milk - yellow or light yellow, in a newborn it may be greenish-yellow.

***REMEMBER!***The color of feces can be changed:

- fruits, berries (blueberries, currants, cherries, poppies, etc.) in dark color;

- vegetables (beets, carrots, etc.) - in dark color;

- medicinal substances (calomel - in green, bismuth, iron, iodine salts - in black);

- the presence of blood depending on the degree of change in hemoglobin and its amount - the color of feces can be black, and the appearance of fecal masses - tarry.

The consistency of the stool is soft. In various pathological conditions, feces can be:

- mushy;

- moderately dense;

- dense;

- liquid;

- semi-liquid;

- putty-like (clay), is often gray in color and depends on significant impurities of undigested fat.

The shape of feces is normally cylindrical or sausage-like. With intestinal spasms, feces can be ribbon-like or in the form of dense balls (sheep feces).

The smell of feces depends on the composition of the food and the intensity of the processes of fermentation and decay. Meat food gives a sharp smell, milk - sour.

**Collecting feces for worm eggs**

**Goal**- diagnostic. Indications and contraindications are determined by the doctor.

***COOK IT***: see above.

***SEQUENCE OF ACTIONS:***

1. Put on gloves.

2. Take fresh feces with a spatula from 3 different places (from the surface) and place, without touching the edges of the vessel, inside, burn the spatula.

3. Treat the gloves in a 3% chloramine solution, remove, soak.

4. Close the lid, stick the referral to the laboratory and ensure the delivery of the material in a warm form to the laboratory.

**COLLECTION OF FACES FOR THE DETERMINATION OF DYSENTERY**

**Goal**- diagnostic.

*Indications and contraindications are determined by the doctor.*

***PREPARE:***

* a special test tube with an English mixture (glycerin, ammonia), inside which there is a rectal tube (glass or plastic);
* oilcloth with a diaper;
* gloves;
* referral to the laboratory, glue;
* stand for test tubes;
* vessels with dez. solution

***PREPARE THE PATIENT***: report manipulation.

***SEQUENCE OF ACTIONS:***

1. Put on gloves.

2. Ask the patient to lie down on his left side.

3. Carefully, with rotational movements, insert the tube into the anus by 5–6 cm.

4. Carefully remove the tube and, without touching the edges of the test tube, lower the tube into it.

For further actions, see above.

***WARNING!***The rectal tube is passed through the plug.

**Stool collection for occult blood**

**Goal**- diagnostic. Indications and contraindications are determined by the doctor.

***COOK IT***: see above.

***PATIENT PREPARATION***

- warn the patient about this 3-4 days before the study;

- warn him to exclude from his diet: food containing latent blood (meat, fish, eggs and products prepared from them);

- medicines containing iron;

- the patient should not brush his teeth with a toothbrush for 3-4 days.

***SEQUENCE OF ACTIONS***: see above.

**Preparation of the patient for x-ray examination of the gastrointestinal tract**

***REMEMBER!***The more thoroughly you prepare the patient, the more successful the study will be.

Preparation of the patient begins a few days before the examination, patients suffering from constipation and flatulence need special preparation.

The nurse is obliged, as prescribed by the doctor:

- to warn the patient about the prescribed examination, time and place of its conduct;

- warn about the prescribed diet, which excludes food rich in fiber, which contributes to increased gas formation:

a) fresh brown bread;

b) potatoes;

c) peas (all legumes);

d) fresh milk, carbohydrates;

e) fresh vegetables and fruits, etc.;

- warn about stopping eating 12 hours before the examination (in some studies, it is preferable not to drink, so seriously ill patients are prescribed studies only in the morning hours);

- warn the patient that on the day of the study he should not eat or drink;

- warn the patient that he should report if abdominal distension occurs on the eve of the study.

The nurse should know: if the patient eats on the day of the examination, the doctor will be in a difficult situation, and the patient will be at a disadvantage, because the examination will have to be repeated due to the fact that patients, especially those with impaired motor and evacuation functions, have a long delay in eating food.

In this regard, the patient is prescribed a light dinner on the eve of the study, no later than 19-20 hours.

The patient is allowed to consume: eggs, cream, caviar, cheese, meat and fish without seasonings, tea, coffee without sugar, porridge on water, etc.

***REMEMBER!***Complete starvation is undesirable because it promotes gas formation.

**X-ray examination of the stomach and duodenum**

This study is performed strictly on an empty stomach. It is not necessary to prescribe a cleansing enema, it is enough to follow a diet.

**Preparation for endoscopic examination**

**mucosa of the stomach and duodenum**

Endoscopy is an instrumental examination of the mucous membrane of hollow organs.

**Goal**- diagnostic, therapeutic. Indications are determined by the doctor. Contraindications: acute inflammations in the oropharynx, esophagus, stomach and duodenum.

***PATIENT PREPARATION:***

- warn about the scheduled examination the day before;

- inform that the study is conducted strictly on an empty stomach, the time and place of the study;

- during the research, the patient should not swallow saliva;

- after the examination, you should not eat for 30-40 minutes, because before the examination, anesthesia with a local anesthetic is performed.

**Taking material from the urinary system**

***REMEMBER!***Urine of healthy children is sterile! Its contamination begins in the distal part of the urinary tract, where microorganisms that enter here from:

- anus;

- the mucous membrane of the genital organs.

For bacteriological research, it is necessary to take 3–5 ml of the first morning urine in a sterile container, starting from the middle of urination.

Of great importance is a thorough toilet of the urinary organs, carried out according to all the rules - only from top to bottom with the replacement of a napkin with a new one every time!

***REMEMBER!***Morning urine, as a rule, remains in the bladder for several hours, which contributes to an increase in the number of microorganisms in it.

Urine should not be stored for more than 1 hour before examination. When stored in the refrigerator, it is suitable for research within 1 day, no more, because it undergoes a process of continuous increase of microorganisms, which can completely change the results of a quantitative study.

There is no need to collect urine with a catheter, because a sterile catheter inserted into the urethra captures microorganisms from the distal parts, and they enter the urinary bladder, as in natural urination.

**About bacteriuria**they say in the case when up to 100,000 bacteria are detected in 1 ml of urine, and only in the case of 3-fold detection.

**URINE COLLECTION FOR GENERAL ANALYSIS**

**Goal**- diagnostic. Indications are determined by the doctor. There are no contraindications.

***PREPARE:***

* a clean, dry vessel with a volume of 200–250 ml;
* gloves;
* utensils for urine;
* watering can;
* a vessel with dez. solution

***PATIENT PREPARATION:***

- psychological;

- technical preparation of the patient for the collection of this urine analysis.

Pay special attention to the thorough toilet of the genitourinary organs in women (a tampon is inserted into the vagina).

***SEQUENCE OF ACTIONS:***

1. After thoroughly toileting the urogenital organs and drying them, the patient pours the first drops of urine into the vessel or into the toilet, and the remaining portion into the urine vessel; for men, the first and last portions are flushed into the toilet, and the middle portion into the vessel.

2. Along the side of the watering can (so that the urine does not foam), the patient pours urine into a container (at least 100 ml) and closes it tightly with a lid.

3. Puts a container with urine in the sanitary room.

4. The nurse makes a referral to the laboratory, puts on gloves and glues it to the vessel.

5. Organizes the delivery of urine to the laboratory no later than 1 hour after its collection.

6. A watering can, a vessel for urine is soaked in a 3% solution of chloramine.

7. Treats gloves in des. solution, removes them and soaks them in a 3% chloramine solution.

***ADDITIONAL INFORMATION***

A day before the examination, the patient is temporarily withdrawn from diuretics (if he is taking them).

**It's normal**urine is straw-yellow in color, transparent, there should be no impurities. 1–3 leukocytes in the field of vision are allowed for boys, up to 5 for girls, erythrocytes – 1–2 in the field of vision, protein – up to 0.033 g/l, there should be no salts and bacteria.

**DAILY URINE COLLECTION FOR SUGAR**

**Goal**- diagnostic. Indications are determined by the doctor. Contraindications are determined by the doctor.

***PREPARE:***

- a clean, dry container (from 3 to 10 liters);

- a clean, dry container with a capacity of 300 ml;

- a glass stick;

- referral to the laboratory;

- diuresis registration sheet;

- urinal;

- a watering can;

- clock;

- gloves;

- a vessel with waste solution

***PATIENT PREPARATION:***

* psychological;
* inform about the assigned study;
* provide instruction in urine collection techniques.

***SEQUENCE OF ACTIONS:***

1. The morning portion of urine is poured into the toilet and the diuresis time is recorded, recorded in the diuresis record sheet.

2. The next portion of urine is in the diuresis, the patient notes the amount in the diuresis sheet, pours it into a common vessel and so on until the next morning.

3. The morning portion is taken into account, its amount is measured and poured into a common vessel.

4. The nurse puts on gloves, carefully stirs the urine with a glass rod, paying attention to the sediment (the specific gravity of sugar is higher than the specific gravity of water).

5. He pours 200 ml of urine from the total amount along the wall of the watering can, closes the lid, and pours the rest of the urine into the toilet.

6. Place the general vessel, glass rod, watering can in the disinfectant solution.

7. The gloves are processed in the dis. solution, removes and soaks them in it.

8. Makes a referral to the laboratory.

9. The nurse ensures delivery of urine to the laboratory.

***Additional Information:***

- normally there is no sugar in the urine;

- the diet remains normal;

- the toilet of the genitourinary organs before each portion of urine is not mandatory;

- the container with the daily amount of urine is stored in a cool place and covered with a lid.

**Urine collection for studying the glucosuric profile**

**Goal**- diagnostic. Indications are determined by the doctor. There are no contraindications.

***PATIENT PREPARATION:***

* psychological;
* the day before, the nurse is obliged to inform the patient about the prescribed study;
* bring 3 vessels to the patient;
* familiarize the patient with the technique of passing urine.

***SEQUENCE OF ACTIONS:***

1. The patient pours the morning portion of urine into the toilet and notes the time.

2. In the future, successively collects urine in 3 vessels:

- 1st portion – from 8:00 a.m. to 2:00 p.m.;

- 2nd portion - from 14.00 to 20.00;

- 3rd portion – from 8:00 p.m. to 8:00 a.m.

4. The patient measures the amount of urine in each portion, records the diuresis in the sheet and leaves no more than 100 ml in each vessel.

5. The nurse makes a referral to the laboratory, where, in addition to general data, she notes the amount of urine in each portion.

6. Diureznitsa, watering can is placed in the waste. solution (in gloves).

***ADDITIONAL INFORMATION***

The patient should be on a normal diet. Depending on the frequency of urination, the patient urinates in each vessel one or more times, but only within 6 hours. Containers with collected urine are stored in a sanitary room in a cool place.

**Urine collection for sugar (one-time portion)**

**Goal**- diagnostic. Indications are determined by the doctor. There are no contraindications.

***PATIENT PREPARATION:***

- psychological;

- inform the patient about the study and the technique of its implementation:

morning or, if necessary, any portion of urine is collected.

***PREPARE:***

- diuretic;

- a watering can;

- a vessel for urine;

- gloves;

- a glass stick;

- referral to the laboratory.

***SEQUENCE OF ACTIONS***

The patient collects only an average portion of urine in the diuresis, pours it into a container, see below. above (paragraphs 5–6).

**WATER BALANCE MEASUREMENT**

**Goal**- to determine urine output per unit of time, taking into account the injected and drunk fluid. Indications - as prescribed by the doctor. There are no contraindications.

***PREPARE:***

* diuretic;
* watering can;
* a vessel with a capacity of3 liters;
* referral;
* record sheet of diuresis and injected fluid.

***PATIENT PREPARATION:***

* psychological;
* patient instruction.

***SEQUENCE OF ACTIONS:***

1. Put on gloves.

2. Place an oilcloth, a diaper under the patient.

3. Place the patient on the vessel (or provide a urinal).

4. Wake up the patient at 6 o'clock in the morning and empty his bladder (disregard this portion).

5. Collect the following portions in a diuretic, each time taking into account the amount of urine received.

6. The last time the patient urinates at 6 o'clock in the morning the next day.

7. Calculate the amount of urine excreted in 1 day and the amount of fluid drunk in 1 day.

8. Record the obtained results in a special column of the temperature sheet.

***ADDITIONAL INFORMATION.***

Normally, an adult patient should excrete 1.5–2 liters of urine per day, a child – depending on age. However, its amount depends on the drinking regime, physical activity, etc. Normally, a person loses approximately 80% of the fluid they drink in 1 day.

When calculating the amount of liquid drunk, the volume of: (in ml) first dishes (75% liquid) is taken into account; second courses (50% liquid); liquids drunk during 1 day - 250 ml in a glass (kefir, juices, mineral water, vegetables, fruits); of solutions administered parenterally and when drinking medicines.

**Urine collection according to Nechiporenko**

**Goal**- diagnostic - determination of the number of formed elements of blood in 1 ml of urine. Indications are determined by the doctor. Contraindications: menstruation (if absolutely necessary, after a thorough toilet of the genitourinary organs, the vagina is closed with a tampon and urine is taken with a catheter).

***PREPARE:***

* a clean, dry vessel of at least 250 ml;
* diuretic;
* watering can;
* referral to the laboratory;
* disinfectant solutions.

***PATIENT PREPARATION:***

* psychological;
* instruction on the thorough toilet of the genitourinary organs and the collection of urine only its middle portion, explain what the "middle portion" is.

***SEQUENCE OF ACTIONS:***

1. The day before, give the patient a clean, dry container with a lid, a diuretic and a watering can.

2. Explain to the patient that in the morning he should collect an average portion of urine in a container (the first and last - in the toilet).

3. Explain that the container with urine must be placed in the sanitary room no later than 7:30 in the morning.

4. Ensure the correct registration of referral to the laboratory and delivery of urine there no later than one hour after its collection.

***ADDITIONAL INFORMATION***

If necessary, urine is collected at any time of the day. The patient must collect at least 10 ml of urine.

**Normally in 1 ml:**

- leukocytes – up to 4 ∙ 103 (in children – up to 2);

- erythrocytes - up to 1 ∙ 103;

- cylinders - up to 250 (hyaline).

**Collection and examination of urine according to Kakovsky–Addis**

**Goal**- determination of formed elements (leukocytes, erythrocytes), protein, cylinders in 1 ml. Indications are determined by the doctor. There are no contraindications.

***PREPARE:***

- a clean, dry vessel of 0.5–1 l;

- gloves;

- a watering can;

- preservative (formaldehyde).

***PATIENT PREPARATION:***

1. Warn the patient about providing urine for analysis.

2. Report that you need to collect urine within 10 hours (from 10:00 p.m. to 8:00 a.m.).

3. If the patient cannot hold urine until 8 o'clock in the morning, he urinates into the vessel in portions. A preservative is added there (formaldehyde – 4–5 drops).

4. The entire volume of urine is thoroughly mixed in the morning, 200 ml is poured, pouring over the wall of the watering can (so that it does not foam), and delivered to the laboratory.

***SEQUENCE OF ACTIONS:***

1. After a thorough toilet of the genitourinary organs, the patient urinates in one vessel every 22 hours.

2. Retains urine from 10 p.m. to 8 a.m.

3. After a thorough toilet of the genitourinary organs, at 8 o'clock in the morning, he urinates into one vessel.

4. Mix the urine thoroughly with a glass stick, pour 200 ml;

5. Make a referral to the laboratory and ensure delivery of urine to the laboratory.

***ADDITIONAL INFORMATION***

The container for urine should be clean, dry, preferably not used before.

A preservative is added so that erythrocytes and leukocytes are not destroyed if the patient is forced to urinate into the vessel during this time.

**Normally in 1 ml:**

- leukocytes – up to 4 ∙ 106 (in children – up to 2);

- erythrocytes - up to 1 ∙ 106;

- cylinders - up to 20,000 (hyaline).

**Urine study according to Amburger**

**Goal**- determination of excretion of formed elements (leukocytes, erythrocytes), protein, cylinders in 1 minute. Indications are determined by the doctor. There are no contraindications.

***PATIENT PREPARATION:***

1. Inform the patient about the need to pass urine.

2. Instruct the patient in the technique of passing urine.

3. Warn about the need for careful toileting of the genitals.

***PREPARE:***

* sterile tray;
* sterile glycerin;
* sterile Falley catheter;
* sterile test tube;
* tripod;
* gloves;
* a mask;
* urinal or vessel;
* a vessel with dez. solution

***SEQUENCE OF ACTIONS:***

1. Urine collection is carried out for 3 hours (from 6 to 9 in the morning).

2. Put on gloves, a mask.

3. Give the patient a thorough toilet of the genitourinary organs, dry them.

4. Prepare a sterile tube.

5. Ask the patient to pour the first portion (at 6 o'clock in the morning) into the toilet, and from the 9 o'clock portion, take 2/3 of its volume from the middle portion into a test tube.

6. Close the test tube with a sterile stopper.

7. Make a referral to the laboratory and ensure its delivery to the tank. the laboratory

8. Gloves, vessel (ureter) after decontamination. processing soak in dez. solution for at least 1 hour.

***ADDITIONAL INFORMATION***

The test tube is received in the tank. laboratories If the patient cannot urinate, urine is taken with a catheter.

**Normally, in 1 minute, the following is released:**

- leukocytes – up to 4 ∙ 103 (in children – up to 2);

- erythrocytes - up to 1 ∙ 103;

- cylinders - up to 250 (hyaline).

**Collection of urine for research according to Zimnytskyi**

**Goal**- determination of the concentration and excretory function of the kidneys. Indications: doctor's appointment. There are no contraindications.

***PATIENT PREPARATION:***

1. Explain to the patient that drinking, eating and movement regimes should remain unchanged.

2. It is necessary to collect urine for 1 day, every 3 hours.

3. The doctor cancels diuretics 1 day before the study.

***SEQUENCE OF PATIENT ACTIONS***(or nurses, if the patient is on bed rest):

1. Give the patient 8 numbered vessels with an indication of the time and the 9th - spare. At 6 o'clock in the morning, the patient urinates in the toilet.

2. Then, every 3 hours, the patient urinates into the appropriate vessels until 6 o'clock in the morning the next day, the morning portion is included in the study.

3. The resulting vessels must be tightly closed with lids with pasted labels on which are written:

- P.I.P/b of the patient;

- branch number;

- room number;

- time interval (6–9; 9–12; 12–15; 15–18; 18–21; 21–24; 24–3; 3–6).

4. Provide delivery of urine to the laboratory.

5. Treat used gloves, a watering can, a diuretic, a vessel (urinary receiver) in a disinfectant solution, then soak each separately in it for at least 60 minutes.

***ADDITIONAL INFORMATION***

The nurse must remember that she must wake up the patient every three hours at night.

Urine collected at 6 o'clock in the morning the day before is not examined, as it is released at the expense of the previous day.

If the patient has polyuria and lacks the volume of one vessel, the nurse gives him an additional vessel, on which the corresponding time period is noted.

If the patient has no urine at some time interval, this vessel should remain empty.

***EVALUATION OF RESEARCH RESULTS***

The nurse should know that daily portions are collected from 6:00 a.m. to 6:00 p.m.

Daily diuresis is 2/3–4/5 of a day.

The density of urine is normally 1010–1025. Daily diuresis is normally 1.5–2 L and depends on many factors.

*When evaluating the results, the nurse should determine:*

- daily diuresis;

- the sum of all volumes of all samples;

- first 4 (day) and last 4 (night) volumes separately;

- ratio between night and day diuresis;

- with a urometer, the density of urine in each portion.

* after pouring urine from the vessel into the measuring cylinder and lowering the urometer into it so that it reaches the bottom, determine on which dividing line the level of urine is on the lower meniscus;

- record the result in the referral.

Normally, daytime portions of urine have a lower density than nighttime, but not lower than 1010.

A decrease in the density of urine below 1010 indicates a decrease in the concentration function of the kidneys.

If it is not enough to determine the density of urine, then its density is determined as follows: the obtained sample is diluted 2 times with water, measured with a urometer and the result obtained is multiplied by 2.

If the volume of urine is very small, you can dilute it 3 times or more and multiply the result by this value accordingly. Enter the received data in the form in the appropriate column.

The concentration capacity is considered preserved if the lowest density is not less than 1007, the highest density is not more than 1027, and the difference between the maximum and minimum values ​​of the density is not less than 7, or the density in at least one sample is not less than 1017. The amount of separated liquid must be not less than 70 – 80% of what was drunk.

**Intravenous urography**

(x-ray examination of the kidneys, which requires careful preparation)

The doctor prescribes an individual training plan for each patient, but there are also general recommendations.

***The nurse is obliged to:***

- warn the patient about the scheduled examination at least two days in advance;

- monitor the patient's compliance with the prescribed diet and from the second half of the day preceding the examination, limit fluid intake;

- the day before, perform a deep, to "clean" washing water, cleansing enema;

- in the morning, on the day of the study, 2 hours before it, perform a cleansing enema of 6 glasses of warm water + chamomile infusion.

The study is carried out strictly on an empty stomach, in the x-ray room, a contrast agent (verographin, urographin, etc.) is injected intravenously.

The nurse must remember that contrast agents are injected into the patient's vein in a horizontal position at a rate of 0.3 ml/s.

Preparation for the ultrasound examination consists in releasing the intestines from gases. This is achieved by following a special diet. At this time, enemas and taking carbolene, cerucal are practically not used.

**SAMPLES OF SITUATION PROBLEMS**

***Task 1.*** Normative data of leukocytes and erythrocytes in urine analysis according to Nechiporenko in children are, respectively:

a) <4000 and <1000; b) 4000 and 1000; c) <2000 and <1000; d) <4000 and <500; e) <2000 and <100.

***Task 2.***Normative data of leukocytes and erythrocytes in urine analysis according to Amburger in children are, respectively:

a) <4000 and <1000; b) 4000 and 1000; c) <2000 and <1000; d) <4000 and <500; e) <2000 and <100.

**Answers to situational problems:**

**Task 1:**the correct answer is

**Task 2:**the correct answer is

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