

**THE MINISTRY OF HEALTH OF UKRAINE
NATIONAL BOGOMOLET'S MEDICAL UNIVERSITY**

GUIDELINES

for independent work of students during preparation to the class

Academic discipline: Child care in the conditions of a pediatric hospital

Field of knowledge: 22 "Health care"

Specialty: 222 "Medicine"

Pediatric department № 2

Discussed and approved at department meeting of the pediatric department № 2 of Medical faculty № 3 from 28 of August, 2023, protocol № 1

Discussed and approved at
CMC on the pediatric disciplines from 28 of August, 2023, protocol № 1

Topic of lesson:

**"Accounting and rules for storage of medicinal products. Care of patients
with fever, thermometry. Use of enemas in children"**

1. Aims: acquisition by the student of knowledge, abilities, skills and professional competences of the professional activity of a junior nurse of a children's hospital (department), namely:

- the student's acquisition of knowledge about the student's acquisition of knowledge about the care of children with fever and the features of temperature measurement in children of different ages.
- the student's acquisition of knowledge about the rules for storing and using medicines in a children's hospital, accounting for powerful and narcotic drugs.

2. Competencies:

- to demonstrate mastery of the technique of applying tablets, powders, mixtures, syrups, rectal suppositories, solutions for internal input to a child
- to demonstrate mastery of the technique of applying eye and ear drops to a child
- to know and demonstrate the features of inhalation for young children
- demonstrate the technique of the main types of enemas in children.

3. Plan and organizational structure of the lesson:

Name of the stage	Description of the stage	Learning levels*	Time (min)
Preparatory stage	Organizational measures Setting educational goals, students motivation		10
The main stage	Test control, verification and announcement of results on the topic "Accounting and rules for the storage of medicinal products. Care of patients with fever, thermometry. Use of enemas in children":	**	20
	Theoretical survey on the subject of the lesson, clarification of the most important points regarding accounting and storage rules and techniques for the use of medicines in children. Explanation of the basic rules for caring for a child with fever.	*, **, ***	35
	Demonstration of practical skills in measuring a child's body temperature and determining the type of temperature curve	*, **, ***	20
	Demonstration of the methods of using tablets, powders, mixtures, syrups, rectal suppositories, solutions for internal input to a child	*, **, ***	20
	Students' work on acquiring skills; Solving the exercise according to the subject of the lesson .	****	20
Final	Analysis and evaluation of the results of clinical work of students. Announcement of the topic of the next lesson, an indicative map for independent work with literature.		10
Total			3 academic hours
			135

* Introductory, ** reproducible, *** reconstructive, **** creative (levels of learning).

4. Topic content:

Care of children with fever, features of temperature measurement in children of different ages

In children, compared to adults, an increase in body temperature (hyperthermia) is observed more often, which is associated with the peculiarities of thermoregulation. High body temperature (38°C and higher) is accompanied by deterioration of the child's condition, the appearance of drowsiness, refusal to eat, sometimes vomiting, etc.

Normal body temperature, measured in the armpit of a child older than one year, or in the femoral fold of a child under one year, is equal to 36-38 °C. The temperature in the oral cavity or in the rectum (anal temperature) is 1 °C higher.

Body temperature measured in the armpit and equal to 37-38° C is called subfebrile, 38-38.9 °C – febrile, 39 – 40.5° pyretic, above 40.5° C – hyperpyretic.

Fever has three periods:

The first is characterized by a gradual increase in body temperature, fever, bluish lips and limbs, headache and general malaise. At this stage, the nurse should put a heating pad on the feet of the sick child, give him strong sweet tea, wrap him well and monitor the physiological indexes.

The second period is the period of maximum temperature increase, which is characterized by increasing intoxication, increased headache, and weakness. Sometimes hallucinations, delirium, convulsions can be observed. Such a patient is not allowed to be left unattended, because he may fall out of bed and injure himself. It is better to provide individual supervision of a nurse.

The third period is the period of lowering of body temperature. It can flow in different ways: critically, that is, quickly from a high to a low level, or lytic, that is, gradually. With a critical drop in temperature, the child is weak, sweats profusely, the extremities become cold, and the pulse is threadlike. A sick child should be covered with heating pads, given sweet tea, and dressed in dry, clean underwear.

A gradual decrease in temperature is accompanied by moderate weakness and moistening of the skin.

During the period of fever, it is necessary to feed the child more often to replenish the fluid loss. The patient is drunk with boiled water, 5% glucose solution or sweet tea, fruit juices. Drinks are given in small portions, but often.

An increase in temperature above 37° C requires additional fluid administration at the rate of 10 ml for each kilogram of the child's body weight.

Food for children with a high temperature should be appropriate for their age, but of a more liquid consistency.

In case of dryness of the lips, the appearance of cracks in the mucous membrane, the lips are moistened with water and lubricated with any fat (butter, vegetable oil). The child should be turned more often during the day, folds should be straightened, and if necessary, perform a proper hygienic toilet.

To provide assistance with hyperthermic syndrome, it is necessary to prepare the following materials:

- a mixture of vinegar and water in proportions 1:1:1;
- a bubble with pieces of ice or bottles filled with cold water;
- gauze sterile napkins;
- enema;
- gas outlet tube.

In case of hyperthermia, physical methods of cooling are used, for which the child is undressed and the body (limbs, abdomen, front surface of the chest) is rubbed with a mixture of

vinegar, alcohol and water in a ratio of 1:1:1. Tissue with ice or bottles with cold water are applied to the head and/or to the area of the main vessels. You can use a wet cold compress on the head. As prescribed by the doctor, the nurse can make a bath with a water temperature of 37° C, or a cooling enema (water temperature 10-20° C).

Enema with cool water (10 - 20° C). It is administered through the gas outlet tube at 20-150 ml for 2-5 minutes depending on age. The end of the tube is clamped, then after 2-5 minutes released, the water that was not absorbed is removed. The procedure is performed until the body temperature drops to 37 ° C.

Rules for storing medicines depending on their group affiliation, form of release and the possibility of mutual arrangement in the cabinet. Accounting for powerful and narcotic substances and their storage rules. A place to store medicines at the nurse's post

Selective provisions of the order of the Ministry of Health of Ukraine No. 584 dated 16.12.2003 "On the approval of the Rules for the storage and quality control of medicinal products in pharmaceutical establishments":

- Incoming quality control of pharmaceuticals (medicinal products) in the medical center (treatment and prevention facility) is carried out by authorized persons (head/senior nurses, pharmacists or pharmacists of hospital pharmacies), appointed by order of the manager of the medical center responsible for the quality of pharmaceuticals.

- State control of the quality of pharmaceuticals in the pharmaceutical industry is carried out by the State Inspection for Quality Control of Pharmaceuticals of the Ministry of Health of Ukraine (hereinafter - the State Inspection) and territorial inspections.

- Requirements for the premises of the treatment and preventive medical institutions (TPMI), intended for the storage of pharmaceuticals:

- the operation of the equipment of the premises of the TPMI, intended for the storage of pharmaceuticals, must ensure the preservation of their quality during the entire shelf life. The number of areas and premises for storage is determined by the number of drugs stored in them, taking into account their toxicological, pharmacological groups and physicochemical properties;

- the premises are provided with security and fire-fighting means;

- the premises must provide protection of medical equipment from dust and extraneous odors;

- in the premises, the temperature and humidity of the air must be maintained, which meet the requirements of the instructions, to monitor these parameters, there must be thermometers and hygrometers;

- the premises must be equipped with exhaust ventilation or cabins and transoms

- the premises must be equipped with the required number of racks, cabinets, refrigerators, and pallets. It is forbidden to store drugs on the floor;

- the premises are cleaned with a wet method at least once a day using approved detergents and disinfectants.

General requirements for the organization of storage of pharmaceuticals in the premises of the pharmaceutical industry:

- Drugs should be stored separately by pharmacological groups depending on the method of their administration, taking into account the physical and chemical properties of drugs, in accordance with the requirements of the instructions for the use of drugs;

- - in the process of storage, at least once a month, continuous visual control of the condition of the container and the appearance of the medicinal product is carried out. Signs of drug deterioration are changes in appearance (appearance of plaque, spots on tablets), appearance of an additional smell, changes in color;

- - if the container is damaged, the defects are immediately eliminated. Transferring, pouring into other containers, repacking or weighing pharmaceutical products, replacing their labels in pharmaceutical products is prohibited;

- - in the event of a change in the appearance of the medical device, the LPZ applies to the territorial inspection at the place of its location to establish their suitability for use

- - medicines, the expiration date of which has passed, or in respect of which there are doubts about their quality, must be removed and placed in a "quarantine" - a clearly separated area, to prevent their erroneous use.

-Medicines requiring special storage conditions:

- - which require protection from light (bromine, iodine) are stored in dark glass containers;

- - which require protection from moisture;

- - which require protection against evaporation;

- - which require protection from elevated temperatures (liquid medicinal products such as infusions and decoctions deteriorate quickly, so they must be stored in a refrigerator at a temperature of 2 to 10 °C). The same requirements apply to the storage of emulsions, some antibiotics, serums, and insulin;

- - which require protection against low temperature;

- - which require protection from the action of gases contained in the environment;

- - odorous (iodoform, lysol, ammonia), colored (iodine, diamond green)

- - disinfectants;

- - medical, immunobiological preparations;

- - flammable (flammable) substances.

The shelf life of drugs is determined by labeling. Each industrial batch of medicines has a factory series, which is indicated by 5 numbers. The last two on the right are the year of production, the next two are the month of production, and the last are the factory series.

Techniques of drug administration, features of use in children

Oral (through the mouth) administration of drugs is the most common, simple and convenient method, although it has some disadvantages, namely: incomplete absorption of drugs in the digestive tract, their partial destruction by digestive enzymes and inactivation in the liver, which does not allow for accurate determination of the concentration. Pills, dragees, capsules, granules, powders, liquids (drops, mixtures, infusions, decoctions) are used.

Before distributing the medicines, the nurse selects the necessary medicines according to the prescription list, carefully reads the names of the medicines and arranges them in the order in which they will be given to sick children. Particular attention is paid to compliance with the correct doses. A nurse must know how to take medicine: number of times per day, relationship with meals, doses. There are several ways to distribute drugs in a children's hospital. One can use trays divided into cells with the name of the patient. Another way is to use a mobile table, on which drugs for reception, a decanter with water and beakers are laid out. The nurse rolls this table into the ward and moves it to the bed of each patient in turn.

It is better not to give the prescribed "dose of liquid medicine" to infants, but in parts. Do not give medicines to children out of hand and allow them to be taken in the absence of adults. To a child of the first year of life, a nurse presses two fingers on the cheeks, opening the mouth, and carefully pours medicine. You can also pinch the nose and the child will open the mouth.

Drops are measured with a pipette or simply dripped from a bottle into a glass or a special bottle is used - a dropper. Having collected the required number of drops, add a little boiled water and drink. The mixture should be drunk with a spoon. If there is an insoluble sediment in the mixture, it is shaken before use. A teaspoon corresponds to 5 ml of medicine, a dessert spoon - 10 ml and a table spoon - 15 ml. For pouring mixtures, it is better to use special graduated glasses - beakers on which divisions are drawn - 5, 10, 15, 20.

Rectal method of drug administration. With this method of administration, the medicine is absorbed into the blood through the hemorrhoidal veins and spreads through the entire body. However, due to the lack of enzymes in the rectum, medicinal preparations of protein, fat and polysaccharide nature cannot pass through its wall and act only locally. Candles for rectal administration have the shape of a cylinder with a cone-shaped end. The pharmacy produces candles in wrappers. To insert a candle, the child is placed on the left side with half-bent legs and slightly fixed in this position. Before inserting the candle, it is removed from the cover and inserted into the anus with two fingers with a conical end, and then pushed behind the sphincter with one finger. Before inserting the suppository, it is necessary to put a cleansing enema.

Parenteral administration of drugs. Administration of medicinal substances is possible intradermally, subcutaneously, intramuscularly, into the spinal canal using a syringe. This method requires strict adherence to the rules of asepsis.

Intradermal injections. Indications for use: for intradermal diagnostic tests (in case of hypersensitivity to drugs). Technique: a syringe is used together with a thin injection needle with a diameter of 0.4 mm. It is necessary to hold the needle with the cut to the top, almost parallel to the skin, insert it to a small depth so that a papule in the form of a "lemon peel" forms when the medication is administered.

External use of medicinal substances.

Medicinal substances are injected into the nose by drops. Before the introduction of drops, the child's nose is cleaned of mucus and crusts. The child is placed horizontally, the assistant holds him, a medicinal solution is drawn into the pipette, and then, without touching the pipette to the nose, 2-3 drops are injected into one nostril and the child's head is immediately turned towards this half of the nose. After 1-2 minutes, the same amount of solution is injected into the second half of the nose.

Insertion of drops into the ear. Previously, the ear canal is cleaned of sulfur, crusts, secretions. The drops are heated to body temperature. The child is placed on his side, the ear is pulled back and up with the left hand, and the medicine is carefully dripped from the pipette into the ear canal with the right hand so that the drops hit the wall of the auditory canal and flow down it to the eardrum. The child should lie on this side for 10-20 minutes. If the medicine needs to be instilled in both ears, it is not done at the same time.

In case of eye diseases, instillation of drops or rubbing of ointments is carried out according to the doctor's order. Before the procedure, the nurse thoroughly washes her hands with soap and a brush, wipes them with alcohol. The pipette for instilling drops and the spatula for laying the ointment are boiled before use.

For instillation of drugs into the eyes, a medicine is collected in a pipette. The lower eyelid is slightly pushed down with the index finger, and one drop is slowly released from the

pipette with the other hand (closer to the nose). At the same time, the patient should look in the opposite direction. Then the second eye is covered and the child is asked to close it.

The main types of enemas, methods and rules for their administration to children of all ages

Enemas are used to cleanse the intestines (cleansing enemas) or to introduce nutrients or medicinal substances (nutritional, medicinal enemas). The enema enhances peristalsis of the colon and small intestines, has a laxative effect, and in some cases eliminates intestinal obstruction.

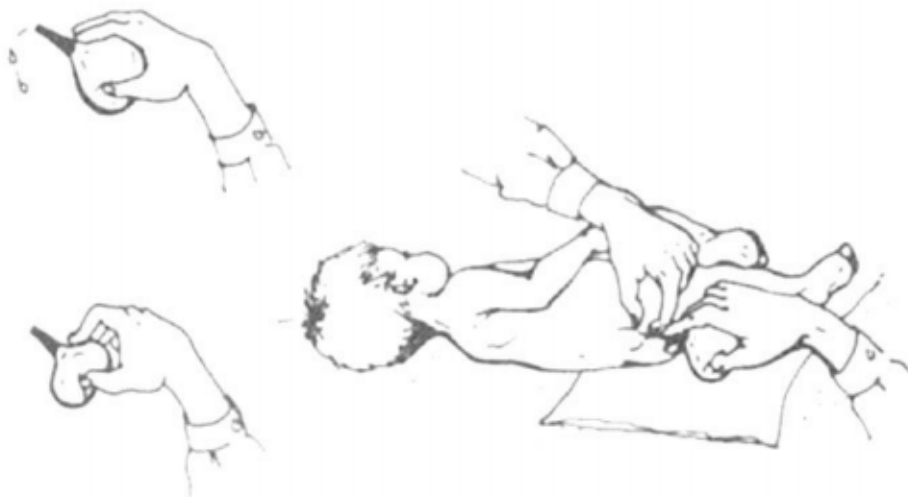
Cleansing enema is prescribed for constipation, for the purpose of cleaning the intestines from feces and gases, for poisoning, during preparation for surgery and X-ray examinations. Cleansing enemas cannot be given to children who have inflammatory, ulcerative, and purulent processes in the colon and large intestine. They are also contraindicated in case of gastrointestinal bleeding, appendicitis, peritonitis, after operations on abdominal organs, collapse and some other conditions.

Depending on the age of the child, rubber, pear-shaped balloons of various capacities from 30 to 100 ml and larger are used for cleansing enemas. Balloons with a solid tip have not been used in pediatric practice. Children 5-6 years old and older already need a large amount of water for cleansing enemas and it is administered with the help of an Esmarch cup.

All items used for a cleansing enema are boiled. Boiled water with a temperature of 28-30 ° C is administered to intestines of children of young age, and 25-30 ° C to older children. In case of spastic constipation, in order to relieve spasms of the smooth muscles of the intestine, water at an elevated temperature (37-38 ° C) is used. For anatomical constipation, cool water (22-24° C and even 20° C) is used, which strengthens the tone and peristalsis of the colon.

The balloon is filled with water, the tip is well lubricated with vaseline or sterilized oil, then, turning the balloon with the tip up, gently pressing on its bottom, release the air until water appears from the tip.

The child is placed on the left side with knees bent and legs pressed to the body.



The tip of the rubber balloon is inserted into the anus by 3-5 cm, depending on the age, after which the liquid is gently squeezed into the cavity of the rectum. Keep the buttocks closed for 8-10 minutes so that the liquid does not spill out. During this time, they prepare a diaper that absorbs liquid well, put it between the legs, then release the buttocks so that the child defecates. Babies older than 9-10 months can be put on the potty so that the rectum is completely free of water and feces.

Hypertonic enema stimulates intestinal peristalsis more than usual, so it is prescribed to fight intestinal paresis. Depending on the age, 25 - 100 ml of 10% salt solution is injected into the rectum.

Too long constipation sometimes dictate the use of oil enemas, they are applied with a small spray bottle, the tip of which is inserted to a depth of 10-12 cm (so that the child retains the oil as long as possible) and from 30 to 100 ml of any oil heated to 37-38 ° C.

If the oil and cleansing enema are not effective, a siphon enema is performed. A siphon enema is used as a therapeutic measure for spastic colic to wash the intestines with disinfectant solutions. A cleansing enema should be placed before the siphon one.

For a siphon enema, it is important to have: a watering can with a volume of 500 ml, a rubber tube 1-1.5 m long by the tip, a 3-5 liter jug with warm boiled water (35-36 ° C), an oil pan, a basin or a bucket for washing water.

The method of conducting a siphon enema: the patient is placed on the left side with bent legs, an oilcloth is laid under the buttocks so that the other end of it reaches the bucket or drain basin, where the washing water will be poured. Lubricated with a sterilized oil, the flexible tip is inserted 20-40 cm into the large intestine with careful rotational movements. A watering can filled with water is raised to a height of 60-80 cm above the patient, then it is lowered down and the washing water is poured into a bucket or basin. The manipulation is repeated 8-10 times until clear water pours out of the intestines. An enema requires 3-5 liters of water, sometimes more. After the procedure, the rubber tip is left in the colon for 15-30 minutes instead of a gas discharging tube. In addition to gases from the intestines, water is also poured out through the tip.

The condition of the child should be monitored. In case of severe abdominal pain, deterioration of the child's condition, the appearance of blood in the washing water, the procedure is immediately stopped.

Medicinal enemas are used when it is necessary to inject a medicinal substance into the rectum. It is carried out immediately after arbitrary cleansing of the intestines, or after 10 - 15 minutes after a cleansing enema. The volume of medicinal enemas depends on the age of the child: up to 5 years - 20 - 25 ml; 5-10 years - up to 50 ml; older than 10 years - 50 - 75 ml.

The tip of the enema is injected to a depth of 10-12 cm. In the form of medicinal enemas, the following remedies are administered: 0.5% tannin solution; decoction of chamomile (15 g of flowers are boiled for 2 minutes in 250 ml of water and cooled to 40 - 42 ° C), rosehip oil, sea buckthorn oil. Starch enemas are often used to reduce intestinal peristalsis (dissolve 5 g of starch in 100 ml of warm water and add 100 ml of boiling water, then cool to 40 - 42 ° C).

Gas evacuation in children occurs when gases accumulate in the large and small intestines. Flatulence causes sharp pain in the abdomen, increases the secretory and motor functions of the gastrointestinal tract, limits the excursion of the diaphragm and thereby complicates breathing.

For the removal of gases, a gas outlet tube of different lengths is used: 30-50 cm for schoolchildren, 15-30 cm for preschoolers and young children. The end of the tube must be rounded. It is lubricated with petroleum jelly and carefully introduced into the rectum with rotating movements as deeply as possible, to the sigmoid colon: for infants to a depth of 7-8 cm; from 1 to 3 years 8-10 cm; from 3 to 7 - by 10-15 cm; of school age by 20-30 cm or more. Before the procedure, it is advisable to put a cleansing enema.

5. Control questions for mastering the topic.

1. How are eye and ear drops used?
2. Describe the purpose and techniques of performing enteral methods of drug administration.
3. Describe the purpose and technique of parenteral drug administration.
4. Specify the features of measuring body temperature in children.
5. How to care for sick children with fever?
6. List the main types of enemas and their purpose and performance technique.

6. Practical tasks

1. Measure the body temperature and draw a conclusion about compliance with the norm and about type of temperature curve
2. Prepare and demonstrate the necessary equipment for a cleansing enema the method of its application

Recommended literature

Basic literature:

1. Tyazhka O.V., Antoshkina A.M., Vasyukova M.M. etc. Basics of child care. Techniques of medical procedures and manipulations: a study guide for university students of III-IV levels of accreditation / edited by O.V. Heavy - K.: "Medytsyna", 2013. - 152 p.
2. V.G. Square Propaedeutic pediatrics: a textbook for students of higher educational institutions of IV level of accreditation. - 2nd edition, ed. and added – Vinnytsia: Nova kniga, 2018. – 872 p.
3. Basics of pediatrics according to Nelson: in 2 volumes. Volume 1 / Karen J. Marcdante, Robert M. Kligman; translation of the 8th Eng. edition. Scientific editors of the translation V.S. Berezenko, T.V. Rest Kyiv: VSV "Medicine", 2019. T1-378 p., T2- 426 p.

Additional literature:

1. Nursing: a textbook / N.M. Kasevich, I.O. Petryashev, V.V. Slipchenko and others..; edited by V.I. Lytvynenko – 3rd ed., corr. K.: "Medicine", 2017. - 816 p.
2. General patient care and medical manipulation technique: textbook / N.M. Kasevich; edited by V.I. Lytvynenko - 7th ed., edition, K.: "Medytsyna", 2017. - 424 p.
3. Fundamentals of nursing: a textbook / V.M. Lisovyi, L.P. Olkhovska, V.A. Cabbage plant – 3rd ed., revised. and added K.: VSV "Medicine", 2018. - 912 p.

Methodical guidelines have been created

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