Ministry of Public Health of Ukraine
National O.O. Bohomolets Medical University

METHODICAL GUIDE
to practical classes for students

Educational discipline	Propaedeutics of Pediatrics including nursing practice, basic medical skills in the pediatric department
Training direction	22 " Public Health ", II (master's) educational and qualification level
Specialty	222 «Medicine»
Department	Paediatrics # 2
Thematic module 2	Anatomical and physiological features of organs and systems in children, clinical examination methods. Semiotics of damage syndromes of each of the systems and the most common diseases.
Topic:	Curation. Writing the Case History.
Course	3

Approved on methodic meeting of department of pediatrics №2 from «28» august 2023., protocol №1

Considered and approved: CMC on pediatric disciplines from «28» august 2023., protocol №1

Revised and re-approved: №____from_____20__ .

№____from_____20__ .

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Ministry of Public Health of Ukraine
National O.O.Bohomolets Medical University

Department of paediatrics # 2

Chief of department
professor À.P. Volosovets

STUDENT'S CASE HISTORY

The patient's name,

surname_____

Age

_____

Diagnosis_____

Student_____

_

Group_____

Year of education

Teacher_

I. Identifying Data:

1. Patient's name.

2. Age in months and days.

3. Sex (male, female).

4. Date of the admission to the hospital.

5. The diagnosis of the doctor who referred the patient

to the hospital

II. **COMPLAINTS :**

Ask the parents or the child about the causes of his (their) visit. First, enumerate complaints, second – ask about the details of the complaints. Be as specific as possible and try to record what the patient or his parents say accurately, without interpretation. How do patient feels? What's patients sleep and appetite?

III. History of Present Illness (HPI) **ANAMNESIS MORBI**

1. Development of the disease is described in chronological order since the moment of it's onset to the moment of examination. The cause of the disease. Development of symptoms: the date of the disease onset (acute or gradual); the first symptoms and signs of the disease; describe duration of remission and the patient's state in this period;

2. Preliminary examination and diagnosis, results of laboratory investigation;

3. Information about medical treatment: its effect.

4. Aim of the patient's hospitalisation and its way (planned or urgent admission).

ANAMNESIS VITAE

Previous infections and somatic diseases (in chronological order). Mark the character of the disease, peculiarity of the clinical characteristic, pay attention to the food and drug intolerance.

Perinatal History: 1. The child was born after I, II,… pregnancy.

2. *Obstetric history*: maternal age, mother's health during pregnancy; life, job, nutrition condition during pregnancy, term of gestation, and any omplications (gestosis, anemia). Labor: length in hours, type: spontaneous, induced.

Peculiarity of the delivery: method – natural, forceps, breech, cesarean section spontaneous anesthetic.

Place of delivery: hospital, home, in transit. Information about previous pregnancies: abortions, their causes, the term of pregnancy when abortion happened. Information about stillborn, early child death in the family and causes of child death.

3. The newborn's condition: specific data include

(1) weight and length, head and chest circumferences at birth;

(2) loss of weight following delivery;

(3) time of regaining birth weight;

(4) condition of health immediately after birth, such as quality of cry, level of activity, and color of skin;

(5) Apgar score (some mothers may be aware of this); and (6) possible problems, such as fever, convulsions, hemorrhage, snuffle, skin eruptions, desquamation, paralysis, birth injuries, bone deformities or congenital abnormalities, the term of the umbilical cord and healing of the umbilical wound. The term of the newborn discharging from maternity house. Home-nursing.

Nutrition:

4. Feeding of the newborn. When did the newborn have the first breast feeding, did the newborn have any difficulties during the first breast feeding? Feeding of the infant at first year of life (breast feeding, mixed feeding, artificial feeding). Type of feeding formula used. The term of introduction of solid food, ceasing (wearing) of breast feeding. Feeding of the child at the moment of admission to the hospital.

DEVELOPMENTAL HISTORY:

5. Characteristics of physical development of the child: weight, height, head, chest circumference gain. The most important previous growth patterns to record are (1) approximate weight at 6 months, 1 year, 2 years, and 3 years of age; (2) approximate length at 1 and 3 years; and (3) dentition, including age of onset, number of teeth, and symptoms during teething.

6. **Developmental milestones include:** (1) age of holding up head steady, (2) age of sitting alone without support, (3) age of walking without assistance, and (4) age of saying first words with meaning. Mark when the child started to fix the objects by eyes and to smile.

7. **Describe the patient's education**: when did he (she) go to kinder-garden (school), about school success, hobbies, free time activities and etc. Child's behaviour in the family, in children's collective, at school, progress at school.

Immunizations:

8. Information about tuberculin testing, if testing was done, the child's positive or negative intradermal Mantoux reaction should be recorded, date of testing.

9. Information about prophylactic immunization, adverse reactions to vaccination.

Allergies.

Ask about allergic reactions (local or general) on the food, medicine, pollen and dust.

Family history

(To identify the presence of genetic traits or diseases that have familial tendencies and to inform about chronic infections in a family member) Parents' age, health condition of other members of the family, including children (brothers and sisters) age, health condition. Is there a family history of heart disease, hypertension, cancer, diabetes mellitus, obesity, congenital abnormalities, allergy, asthma, tuberculosis, mental retardation, convulsions, syphilis or other venereal diseases, alcoholism, psychiatric diseases, hepatitis.

Social History:

1. The child's hygienic regime, who takes care after the child, sleep condition, bathing.

2. Family prosperity and living conditions.

3. Parents' working conditions. Free time activities, dietary regimen, and etc.

4. Draw up genealogical tree.

STATUS PRESENT OBJECTIVES

1. **General condition** of the patient (assess as good, (mild) moderate, severe, life threatening). According to the Level of consciousness (LOC), Vital

Signs: Respiratory rate (RR), blood pressure (BP), pulse (P) and body temperature (T 0). **Patient's position** is active, passive, forced, fixed.

Behavior (appropriate), mood (good, bad, anxiety, fear, posture, emotional lability, apathy), contact with parents and physician, reaction to examination, the

facial expression (calm, excited, dolorosa, lifeless, Hippocratic, masklike, etc.) and general appearance of the child (looks good, alert or ill ever severly).

2**. Physical development and its assessment.**

Weight (P) in kg, height (L) in cm, circumference of the head (H) in cm. Values for weight, length and head circumference are plotted on a growth charts, and the child's measurements in percentiles are compared to those of the general population.

Parameter	Values for measure	Percentile interval	Assessment of data
Height (length), cm			
Weight, kg			
Head circumference, cm			

Assessment of physical development

The final conclusion: the level of physical development is good or more less than average, very high, low, etc.; the harmony of development correspondence of weight to height). Suspect hypotrophy (for infants), nutritional marasmus or underfeeding or obesity.

3. **Developmental Assessment**. Delayed abilities for age on developmental screening Denver-test for age less then 7 yr.

4. NERVOUS SYSTEM.

Level of consciousness (LOC): alert and oriented to person, place, and time; loss of consciousness (lethargy, confusion, coma).

Examination of the child’s head: size, shape, asymmetry, for infants assess anterior fontanel (size, tension (bulging), closed abnormally late or early), sutures, dilated veins, cephalohematoma.

Cranial nerves:

I. (Olfactory N.) – smell;

II. (Optic N.) – vision, visual fields, ocular fundi;

II (Optic N.), III (Oculomotor N.) - papillary reactions;

III (Oculomotor N.), IV (Trochlear N.), VI (Abducens N.) – movements of eyes in respond to movement of object or bright light;

V (Trigeminal N.) – corneal reflexes, facial sensation and jaw movements;

VII (Facial N.) – movements of mimic muscles, sensivity anterior two thirds of tongue;

VIII (Auditory N.) – hearing;

IX (Glossopharyngeal N.), X (Vagus N.) – swallowing and rise of the palate, gag reflex;

XI (Accessory N.) – neck and shoulders movements;

XII (Hypoglossal N.) – movements of tongue.

Cranial Nerve Strategy

I Olfactory Testable in older children.

II Visual acuity Use Snellen chart after age 3 years. Test visual fields as for an adult. A parent may need to hold the child's head.

III, IV, VI Extraocular movements Have the child track a light or an object (a toy is preferable). A parent may need to hold the child's head.

V Motor Play a game with a soft cotton ball to test sensation. Have the child clench the teeth and chew or swallow some food.

VII Facial Have the child "make faces" or imitate you as you make faces (including moving your eyebrows), and observe symmetry and facial movements.

VIII Acoustic Perform auditory testing after age 4 years. Whisper a word or command behind the child's back and have the child repeat it.

IX, X Swallow and gag. Have the child stick the "whole tongue out" or "say 'ah'." Observe movement of the uvula and soft palate. Test the gag reflex.

XI Spinal accessory Have the child push your hand away with his head. Have the child shrug his shoulders while you push down 44 with your hands to "see how strong you are."

XII Hypoglossal Ask the child to "stick out your tongue all the way."

CRANIAL NERVE STRATEGY (FOR INFANTS)

I **Olfactory**

II Visual acuity Have baby regard your face and look for facial response and tracking.

II, III Response to light Darken room, raise baby to sitting position to open eyes. Light and test for optic blink reflex (blinking in response to light). Use the otoscope (without a speculum) to assess papillary responses.

III, IV, VI Extraocular movements Observe tracking as the baby regards

your smiling face move side-to-side. Use light if needed.

V Motor Test rooting reflex. Test sucking reflex (watch baby suck breast, bottle, or possibly pacifier).

VII Facial Observe baby crying and smiling, note symmetry of face and forehead.

VIII Acoustic Test acoustic blink reflex (blinking of both eyes in response to loud noise). Observe tracking in response to sound.

I**X, X** Swallow. Gag Observe coordination during swallowing. Test for gag reflex.

XI Spinal accessory Observe symmetry of shoulders.

XII Hypoglossal Observe coordination of Hypoglossal swallowing, sucking, and tongue thrusting. Pinch nostrils, observe reflex opening of mouth with tip of tongue to midline.

Examination of motor system: 1. posture or gait (describe physiological variants or pathological posture – spasticity, "frog-leg" position, ets; pathological gait – spastic, unilateral paralytic, ataxic, waddling gait).

Abnormal unconscious movements, chorea),

2. motor disorders (palsy, paresis), athetosis, tics, tremor.

Muscles: development (shape and contour of the body both in relaxed and tensed state); muscle bulk

(hypotrophy, hypertrophy); muscle tone (good, dystonia,

hypotonia, hypertonia); muscle strength (good or loss).

Deep tendon reflexes: biceps, triceps, brachioradial, knee and Achilles (symmetric, moderete,brisk or low).

For newborn's and infants assess reflexes – Moro's reflex, tonic neck reflex, stepping reflex, Babinsky'sign, planter reflex, palmar grasp, traction, root reflex, sucking reflex, swallow and gag reflex (reflex is present or not).

Romberg test: stand up steady pose with closed eyes (with minimal weaving).

Babinsky's sign (pyramidal) for children older 2 yr.

Meningeal signs: Brudzinski neck and leg signs, neck rigidity, Kerning's sign (positive or negative).

5. SKIN:

color (usual for skin type, pale, cyanotic, hyperemic, icteric, dark, etc.), abnormal pigmentation (depigmentation (vitiligo), hypopigmentation, hyperpigmentation); rashes (type, size, colour, distribution,localisation); scars (cause, site, size, shape, colour, connection with underlying tissues, mobility, and etc.); striae; hemorrhagic elementes; hemangiomas; Mongolian (blue), cafe-au-lait spots, etc. Describe the hair (color, thickness, pathological changes, 47 etc.) and nails (form, color, pathological changes).

Palpation: skin temperature, wetness of skin, skin elasticity.

6. **Visible mucous membranes and conjunctivae**: color, clear or not.

7. **Subcutaneous tissue**: its development (normal, poor, excessively developed) and distribution (uniform, deposits). Edema (location and distribution). Turgor.

8. **Lymph nodes: palpation** of lymph nodes (localization and their size in cm if enlarged, their consistence, tenderness, mobility, connection with underlying tissues and skin. You should routinely attempt to palpate suboccipital, pre- and postauricular, anterior cervical, posterior cervical, sub-maxillary, sublinqual, axillary, inguinal lymph nodes.

9. **Muscle system** characteristics: muscle mass: degree of development (well-muscled, atrophied, etc.), muscle tone, muscle strength.

10. Bone system: Head: bone shape, symmetry, craniotabes. Chest : shape, symmetry, Harrison's groove, flatting of the ribs, pigeon chest, funnel chest, shoulder height. Spine : signs of scoliosis, Extremities : deformations, symmetry, flatfoot. Joints : configuration, range of motion (ROM); active and passive, skin over the joints (smooth, freely movable joints with no swelling, full ROM), hip: Ortolani sing; (for infant)

11. **RESPIRATORY SYSTEM**

Inspection : cyanosis, finger clubbing, nasal flaring, the type of respiration (thoracic, abdominal, mixed; deep or shallow). Assess respiration rhythm ((regular, irregular, or periodic respiration: Chene-Stoke's, Biot's, respiration).

Respiratory rate (per minute); type of dyspnea (inspiratory, expiratory, mixed); the use of 48 accessory muscles in respiration. Assess the shape and symmetry of the thorax, veins, retractions (intercostal, subcostal), and pulsations. Grunting.

Palpation : Elasticity of the chest (the chest is elastic, elasticity of chest is decreased, the chest is rigid). Pain in the chest wall ("surface" pain) (the chest is painless, pain of the chest wall is localized or non- localized). Vocal fremitus (equally intensive vibrations over the both sides of the chest, or asymmetric decreased, increased on the one site, indicate localization).
Percussion: Comparative percussion of the lungs (clear pulmonary sound or resonance, hyperresonance, tympanic, dullness, flatness). Indicate localization. Topographic percussion: Assess the lower border of the lungs and describe them according to vertical topographic lines (the lower borders of the lungs are displaced downward or upward on one or on the both sides, the lower border of the lungs is in a form of Damoisean curve); identify the diaphragmatic excursion (respiratory mobility of the lower border of lung along the midaxillary line in cm).

Auscultation: breathing sound (vesicular, bronchial, bronchovesicular, tracheal, amphoric, diminished breath sounds, "mute lungs"). Adventitious respiration sounds (crackles fine and coarse, wheezes, rhonchi, pleural friction rubs). Bronchophony. Indicate localization.

12. **CARDIOVASCULAR SYSTEM**

Inspection . Presence of the chest deformity in the precordium (if the chest deformity is present, describe them, cardiac "humpback", a precordial bulge to the left of the sternum; a substernal thrust; an apical heave). Presence of the apex beat (the apex beat is not determined, the apex beat is determined (indicate location by attitude to the left medioclavicular line), a hyperdynamic precordium, a silent precordium with a barely detectable apical. Presence of the pathological signs in the precordium: the cardiac beat, the pulsation in the 3 rd _ 4 th interspaces to the left of the sternum, in the 2 nd interspaces to the left and to the right of the sternum, in the epigastric region, in the liver region. Aortic pulsation, peripheral arteries or subcutaneous veins (invisible, visible, indicate location).

Palpation. Assess the apical impulse:

- location (note the interspace(s) that the impulse occupies, and measure its in cm from the left midclavicular line),
- diameter (less than 1-2.5 cm and occupies only one interspace),
- amplitude (it's usually small and feels like a gentle tap, high-amplitude or hyperkinetic, low-amplitude, or hypokinetic),

- strength (middle strength, strong, weak, like a dome). Presence of the thrills, pulsation of the aorta or pulmonary artery (the epigastric area and the left and right 2 nd interspaces), liver pulsation.

Pulse examination . Pulse rate, rhythm, symmetry, contour, strength. Comparison of the pulse rate on both hands (bilaterally equal rate and rhythm). Rhythm of the pulse waves (rhythmic, arrhythmic), pulse rate per minute, (pulse satisfactory tension, hard or soft; full or empty; middle size, the large or small, threadlike; quick and high or slow and small).

Percussion . The borders of relative cardiac dullness (right, upper, left). **Auscultation** . Assess heart rate for child's age, note rate, rhythm, pitch, intensity, duration, timing in cardiac cycle, quality, location and radiation of S 1 and S 2 , splits, murmurs, clicks, innocent or functional systolic murmurs. Rhythm (regular, irregular, extrasystolia, fibrillation, etc).

The heart sounds (two, three, splitting of the second sound over). The heart rate is ___ per minute (according to the age norm, tachycardia, bradicardia), it should be the same as the radial pulse, pulse deficit.

Character of the heart sounds (clear and distinct, or muf- fled, diffuse, or distant). The heart sounds intensity is sufficient, or the heart sounds are dull, voiceless, and loud). The first heart sound at the apex is increased, snapping or diminished, the 2 nd sound over the aorta is increased or diminished, and the 2 nd sound over the pulmonary artery is increased or diminished, or splitted. Murmurs are not heard, or murmurs should be described as to their intensity, pitch, timing (systolic or diastolic), variation in intensity, time to peak intensity, area of maximal intensity, and radiation to other areas. **Examination of the blood pressure** (BP): 1. Systolic (SBP); 2. Diastolic (DBP); 3. Pulse pressure (PP) (EVALUATE IT – USE FORMULA FOR NORMAL BP – 90+2N)

13. **Digestive system and abdominal cavity characteristic**

Inspection: the oral cavity: mucosa, throat, tonsils (color - normal, pink, hyperemia, dry or moist, coated tongue, follicles, fissures, geographic tongue); teeth (temporary, permanent, teeth formula, caries). Shape and size of the abdomen (flat, symmetrical abdomen with no bulges, masses, distention, or diastasis recti; distended abdomen, scaphoid abdomen, board-like abdomen, frog abdomen), visible peristalsis, respiratory movement, umbilical veins, hernia. Examination of the perianal area (gaping anus, mucosal prolapse of the rectum, fissures of the anus). Palpation superficial : no masses or areas of tenderness or increased muscular resistance. Soft abdomen, abdominal distension, tense abdomen, "acute"/surgical abdomen, location of painful points. *Deep* palpation . Palpation of the large and small intestines. Presence or no

organ enlargement (note location, size, consistency, border, tenderness). Liver palpation: nonpalpable liver or its edge palpable 1-2 cm or more below the right costal margin, its consistency - soft, firm, shape smooth; type of margin - rounded, sharp, tenderness. Nonpalpable spleen. The tip of the spleen is normally felt during inspiration. It is sometimes palpable 1 to 2 cm below the left costal margin in infants and young children. Percussion of the abdomen: tympany in all four quadrants, dullness over liver and spleen. Liver percussion by Kurlov: from the 5 th or 7 th intercostals space at the right MCL to a point or just below the right costal margin; at the midsternal line, at the left costal margin (note the sizes). Detect ascites (fluid wave, fluctuation). Auscultation: intestinal peristalsis, or bowel sounds (loud sound or hyperperistalsis; absence; or normally e.g., 5 bowel sounds per minute)

Stool, its character, color, consistence, pathological admixture, frequency of stool (orange-yellow, pale grey, dark-brown, green, bloody; homogenous, sourish stool, shaped, dryish, foul, starvation stool, dyspeptic stool - loose, watery, in form of discrete flakes, admixture of mucus and blood, bulky, grayish).

14. Urinary system Inspection of lumbal region, bimanual palpation of kidneys (nonpalpable kidneys or solid, firm, smooth kidneys, if palpable), palpation and percussion of the urinary bladder (a smooth, elongated fluctuating tumescence is palpated above the symphysis pubis, percussion produces a flat sound above it). Painful points (pain in the lower abdomen, pain in the urethra, bladder pain, low back pain), renal colic. Pasternacky's sign. Pain on urination, frequency, urgency, hematuria, nocturia, polyuria.

15. **Endocrine system characteristic**. Disorders of growth (gigantism, nanism), and body weight (malnutrition, obesity), allocation of subcutaneous adipose tissue. Condition of thyroid gland (lobular and isthmus size). Observation of genitals (development of genitals correlate with the age, degree of development of secondary sexual characteristic). Delay or precocious puberty.

16. **Laboratory data** investigation (complete blood count, urinalysis, coprogram, bacteriologic tests, biochemical examination, ECG, X-ray examination). Assess the laboratory findings. Make and write conclusion about every analysis and pathological deviation.

17. Summary diagnostic conclusion: you should write most likely diagnosis (syndrome or name of disease) according to the patient's complaints, illness history, the findings of physical examination and paraclinical investigation.

Recommended literature

- Global strategy for infant and young child feeding. WHO, 2020.
- O.M. Kovaleva, et al. Care for the sick child.-K .: Medicine. - 2010.
- T. Kyle. Maternity and Pediatric Nursing, 3rd edition. Lippincott Williams & Wilkins. – 2017.
- N. Burton. Clinical Skills for OSCEs, 5th edition. - Scion Publishing Ltd. 2015. – 344 p.
- Nelson Texbook of Pediatrics. 20th edition. – V(1,2). – 2016. – P.5315.