PRACTICAL GUIDE FOR SPECIALTY TRAINING YEAR II - MEDICINE

1. Educational Objectives

1.1. General

• To learn the principles and basic techniques of communication with the patient, clinical department staff, relatives, etc.

• To describe and exemplify simple elements regarding patient approach – the patient's journey in the hospital and in exploration services, principles of basic care (accommodation, nutrition, hygiene, medication administration, etc.), and the collection of biological samples.

• To describe and explain the structure and functioning of the clinical hospital (the clinical department as a component of the public health system, the organization, functioning of departments and medical services, the daily activities of a clinical department).

• To define the categories of medical personnel and the medical team – specialist doctor, resident doctor, nurse, medical technician, nurse aide – and specify their duties and responsibilities.

1.2. Specific

At the end of the practical training, students will be able to:

• Adhere to hospital behavior and dress code norms, explain the risks students are exposed to, and the preventive measures for these risks.

- Use simple communication techniques with the patient.
- Explain the patient's journey in the hospital: admission, exploration, therapy, discharge, both for long-term hospitalization and day hospitalization.
- Explain and prepare the patient for routine paraclinical explorations.
- Collect biological samples (urine, feces, throat swab).
- Observe and participate in the administration of parenteral, oral, and inhaled medical treatment.
- Describe the organization of the clinical hospital department and exploration services.
- Describe hygiene rules in a clinical hospital department.

• Describe the risks of hospitalization in a public health system unit with beds and prevention methods.

• Familiarize with the daily activity procedures in the clinical department: patient interview, information analysis, clinical examination, diagnosis, treatment indication, and monitoring evolution by participating in the attending physician and resident physicians' rounds.

• Explain the composition of the observation sheet and enumerate other medical documents used (referral letter, medical letter, hospital discharge ticket, medical leave, health card, etc.).

• Describe the duties of medical staff (specialist doctors/resident doctors, nurse, nurse aide, etc.).

2. Analytical Program

- Description of the clinical ward with beds

- Clinical ward personnel

- Circuit of inpatients in the clinical ward with beds. Documents attached to the patient's hospital circuit

- Activities related to the hospitalized patient
- Communication with the patient

- Mastery of theoretical and practical notions of general surgical semiology, signs and symptoms of surgical diseases, application of surgical semiology notions in medical practice

- Theoretical knowledge of minimally invasive diagnostic exploratory surgical maneuvers
- Knowledge of surgical instruments
- Mastery of bandaging and dressing techniques
- Mastery of first aid techniques
- Application of all maneuvers learned in clinical internships in medical practice
- Development of normal working attitudes regarding the approach to the surgical patient

- Mastery of a logical, integrated, and flexible clinical thinking that operates efficiently with available data

- Integration of education in the European context

2.1. The Inpatient Clinical Ward - Organization, Duties, Operation

The inpatient clinical ward is a component of the clinical hospital that provides medical services. The medical services offered by the hospital are preventive, curative, rehabilitative, or palliative. Hospitals that include university clinical departments are called clinical hospitals. In these wards (and therefore in the clinical hospital), medical care is provided, alongside educational activities (post-secondary, undergraduate, and postgraduate), scientific research, and continuous medical education activities.

2.2. Clinical Ward Staff

In an inpatient clinical ward, there is the following hierarchy: head of department, senior doctors, specialist doctors, and resident doctors. The medium-level staff is coordinated by the head nurse and includes nurses, nurse aides, and porters. In imaging departments, coordinated by the radiologist, medical technicians work. The duties of medical staff are presented selectively below.

2.2.1. Duties of Senior and Specialist Doctors

- Consult the patient
- Complete the observation sheet (FO)
- Establish the investigation plan
- Establish the therapeutic plan
- Determine the patient's diet
- Monitor the patient's health evolution according to competencies, perform paraclinical investigations (ultrasound, endoscopy, biopsies, respiratory function tests, etc.)
- Participate in on-call duties and prepare on-call reports
- Prepare all medical documents (medication log, referral tickets, discharge letter/medical letter, electronic prescription, medical leave certificate, death certificate)
- Communicate with the patient's relatives
- Decide on the patient's discharge or the necessity of transfer to another service
- The head of the department verifies and signs all discharge letters/medical letters, as well as referral tickets to other institutions

2.2.2. Duties of Resident Doctors (Activity under strict supervision of the training supervisor)

Resident doctors are doctors included in the postgraduate specialty training cycle, functioning only in clinical hospitals, whose main obligation is to prepare through individual study, participation in various training forms (courses, seminars, conferences, etc.), and supervised practical specialty activity.

- Examine patients
- Complete the observation sheet (FO)
- Establish the investigation plan
- Establish the therapeutic plan
- Prepare all medical documents that are part of the "patient's hospital circuit"
- Perform on-call duties

2.3. Circuit of Inpatients in the Clinical Ward. Documents Attached to the Patient's Hospital Circuit

2.3.1. Observation Chart

It is the medico-legal document of each patient. The first page includes identification data (name, surname, date of birth, age, personal identification number (CNP), address, identification document details presented at admission – usually an ID card), as well as other socio-demographic data (education level, occupation), referral diagnosis, admission diagnosis (always completed by a doctor).

The first page is completed by the on-call doctor or the medical secretary responsible for this activity on the day of the patient's admission. The rest of the information in the observation sheet, referring to the clinical examination, investigation plan, treatment plan, and the patient's evolution, is completed by the attending physician or the resident doctor under the guidance of the specialist/senior doctor accurately, completely, and legibly. For each hospitalization day, the patient's evolution must be documented, including:

1. The exact date and time when the observations related to the patient's evolution are recorded

2. Subjective data - evolution of symptoms since admission, appearance of new symptoms

3. Objective data – blood pressure, heart rate, lung/heart auscultation, oxygen saturation (if applicable), diuresis, bowel transit, appetite, rest, or any other data relevant to the patient's evolution

4. Conducting some invasive investigations/procedures (paracentesis, thoracentesis, biopsies, imaging examinations with contrast substance, etc.) and their summarized result on the same day

5. Changes in the therapeutic plan and, if applicable, their justification (e.g., "STOP antibiotics" because the patient developed renal insufficiency)

6. The doctor's signature and stamp. Data on the patients' evolution will be recorded, signed, and stamped by the doctor whenever necessary (especially in severe cases, of unstable patients – e.g., terminal-stage heart failure).

2.3.2. Referral Tickets for Examinations (or Consultation, etc.)

For a specialty consultation in a clinical department within the same hospital, a simple standardized referral ticket is completed, including the patient's identification data (name, surname, age, CNP, observation sheet number (FO); the service to which the ticket is addressed, presumptive diagnosis, reason for referral (consultation, initiation of a therapeutic scheme, imaging examination), the attending doctor's stamp, the sending department's stamp.

If a consultation is performed in another medical service – state or private, it is first checked if there is a signed collaboration contract between the two institutions, then a referral ticket is issued in duplicate and must be correctly completed, bearing the signature and stamp that certify

the head of department's approval, respectively the medical manager of the hospital's approval and the sending medical unit's stamp.

2.3.3. Medical Letter, Therapeutic Recommendations, etc.

The medical letter is drafted either at the patient's discharge from the hospital or after consultations carried out in the specialized outpatient clinics within hospitals.

2.3.4. Informed Consent

Upon admission to the hospital, the patient signs an admission consent, agreeing to the admission as well as the investigations and treatments applied in the clinical department where they are admitted. However, some invasive procedures (for example, upper and lower digestive endoscopy for diagnostic or therapeutic purposes, bronchoscopy, liver biopsy or other tissue biopsies, percutaneous ablation of liver nodules, angiographies, electrophysiological procedures, etc.) that carry additional risks for the patient's health and are performed only in certain situations, require the signing of another specific informed consent.

Each clinical department has standardized forms that include the patient's identification data, a brief description of the procedure, its importance for diagnosis or treatment, and viable diagnostic/treatment alternatives, risks, and their consequences, disease prognosis without performing the procedure/applying the treatment. Minor and major, immediate or late complications of the procedure are also briefly presented. The consent is dated and signed by the patient, a witness, and the doctor performing the invasive procedure.

Certain procedures are performed under sedation of the patient, in the presence of a specialist/senior anesthesiologist. In this case, the patient also signs the informed consent for general anesthesia. If the patient is unconscious, lacks discernment, or their general condition does not allow them to sign the documents, these will be signed by the legal representative or the closest relative (spouse, son/daughter, brother/sister) of the patient.

2.4. Activities Related to Hospitalized Patients (see Year III)

2.5. Communication with the Patient

2.5.1. General Rules

At the beginning of the clinical interview:

- Greet the patient by name: "Good morning, Mr. Ionescu."
- Always address the patient using Mr., Mrs., or Miss, never by their first name.
- Invite the patient to sit down.

- Introduce yourself: "I am Gheorghe Pop, a second-year medical student..."
- Explain to the patient what you want to discuss: "I would like to ask you some questions about your health."
- Inform the patient how long the discussion will take and, if taking notes, explain why and ask for permission.

During the clinical interview:

- Maintain eye contact with the patient.
- Start the discussion with open-ended questions.
- Listen attentively.
- Be mindful of the patient's verbal and non-verbal behavior.
- Encourage the patient to talk, both verbally ("Tell me more") and non-verbally (using posture, nodding).
- When appropriate, use specific closed-ended questions.
- If there are any uncertainties, clarify what the patient has said: "What do you mean by..."

At the end of the clinical interview:

- Summarize what the patient has told you and ask if it is correct.
- Ask the patient if they would like to add anything else.
- Thank the patient.
- Say goodbye: "Goodbye."

2.5.2. Confidentiality

As medical students, it is very important to respect patient confidentiality:

- Do not use the patient's name when discussing cases observed during practice, even with colleagues.

- When discussing a patient with individuals not part of the medical team, ensure that the information shared cannot identify the patient (e.g., workplace, family situation, address).

- Do not discuss patients in public places or talk about patients on the phone in public or on public transportation.

- Do not take photos or videos of patients, even with their permission.

- In practice reports, do not write the names of patients, only their initials.

2.5.3. Informing the Patient

The most important information should be communicated at the beginning. Break down the information into smaller, easy-to-remember, and understandable parts. If necessary, use drawings or diagrams to supplement verbal information with more easily understood visual information.

2.6. Learning Theoretical and Practical Concepts of General Surgical Semiotics, Signs, and Symptoms of Surgical Diseases, Application in Medical Practice of Surgical Semiotics Concepts

The objective of Surgical Semiotics is to provide second-year students with the necessary informational and logistical support to understand the symptoms and signs of diseases, and to recognize major syndromes in surgical pathology. We aim for students to adopt appropriate behavior, use correct medical terminology, and work efficiently in a team, ensuring a high-quality medical act for patients. Students should be able to empathize with the sick person, understand the suffering caused by illness, and through their behavior, contribute to increasing trust in the medical act.

2.7. Communication with Medical Staff

In the medical field, teamwork and close collaboration between doctors, and between doctors and mid-level medical staff, are essential. This requires good communication between team members, based on mutual respect and trust, and an awareness that the quality of cooperation significantly impacts the quality of patient care. Messages conveyed by mid-level staff (nurses or orderlies) are important and essential, especially for immobilized patients or those with aphasia/consciousness disorders/mental issues.

2.8. Theoretical Knowledge of Minimally Invasive Surgical Diagnostic Maneuvers

Penetration with a needle or trocar into a natural or newly formed (pathological) cavity or parenchymal organ for exploratory or therapeutic purposes.

Punctures are the responsibility of the physician, except for venous puncture.

Peritoneal Puncture (Abdominal Paracentesis)

Peritoneal puncture involves entering the peritoneal cavity using a needle or trocar by traversing the abdominal wall. The procedure is performed to:

- Evacuate ascitic fluid when it is in large quantities and impedes circulation.

- For a polytraumatized patient.
- In cases of acute surgical abdomen.
- To determine the presence of abdominal fluid.
- To perform peritoneal dialysis.
- Exploratory purposes to establish a therapeutic diagnosis.
- Therapeutic purposes to evacuate fluid that causes respiratory and circulatory disturbances by exerting pressure on the diaphragm.

Spinal Puncture

Spinal puncture involves penetrating the subarachnoid space with a special needle at the:

- Lumbar level (lumbar puncture).
- Thoracic level (thoracic puncture).
- Suboccipital level (suboccipital puncture).
- Purposes/Indications:
- Measuring cerebrospinal fluid (CSF) pressure.
- Collecting a sample for cytological, biochemical, bacteriological examinations.
- In cranio-cerebral trauma and cerebrovascular accidents to assess CSF appearance (blood-stained indicating hemorrhage) and measure its pressure.
- Injecting contrast substances in myelography or radioactive isotopes.
- Administering anesthetics, antibiotics, or antimitotic agents.
- Decompression in case of increased CSF pressure.
- In meningitis.
- For cerebrovascular accidents (CVA) and degenerative diseases of the central nervous system.
- Cranio-cerebral trauma and cerebrovascular accidents.
- Diagnosing multiple sclerosis and autoimmune diseases.
- Spinal anesthesia.

Joint Puncture

Joint puncture involves penetrating the joint cavity with a needle or trocar.

Purposes/Indications:

- Detecting joint fluid (serous, purulent, blood-stained).
- Collecting fluid for diagnostic and treatment guidance.
- Evacuating fluid when it hinders movement, causes discomfort, in joint trauma with hemarthrosis.
- Administering medications in arthritis (acute and chronic).

Bone Marrow Puncture

Bone marrow puncture involves penetrating the spongy area of a short or flat bone with a trocar.

Purposes/Indications:

- Exploring hematological abnormalities.
- Confirming cancer diagnosis (Hodgkin's disease, chronic myeloid leukemia) after identifying diffuse adenopathy or splenomegaly.
- Confirming diagnosis of infectious diseases.
- Collecting bone marrow from healthy individuals for transfusion/transplantation.

Bladder Puncture

Purposes/Indications:

- Rarely, collecting urine directly from the bladder for laboratory tests when total exclusion of contamination is necessary.

- Emptying the bladder in acute urinary retention when catheterization cannot be performed: urethral strictures, prostate hypertrophy, urethral or vaginal trauma (when catheterization is contraindicated).

Liver Biopsy Puncture

Liver biopsy involves inserting a special needle into liver tissue to extract a fragment.

Purposes/Indications:

- Diagnosing unknown etiology hepatomegaly.
- Elevated liver enzymes.
- Suspected tumors, metastases.
- Jaundice of unknown etiology.
- Suspected hepatitis.

Kidney Biopsy Puncture

Kidney biopsy involves collecting a fragment from the renal parenchyma with a puncture needle for histopathological examination.

Purposes/Indications:

- Determining the cause of renal insufficiency.
- Monitoring nephrotic syndrome.
- Assessing the degree of damage in systemic lupus erythematosus (SLE).

- Suspected renal neoplasm.

Breast Nodule Biopsy Puncture

Breast nodule biopsy involves inserting a needle or trocar into a breast nodule to collect cells or a small fragment for diagnostic and therapeutic guidance.

For puncturing subclinical lesions (very small), such as microcalcifications, the procedure is performed under ultrasound guidance.

Douglas Pouch Puncture

Douglas pouch puncture involves transvaginal penetration with a needle into the Douglas pouch.

Purposes/Indications:

- Investigating and diagnosing ectopic pregnancy.
- Diagnosing ovarian cysts, pyosalpinx.

2.9. Surgical Instruments Knowledge

In addition to patient care techniques and professional conduct, serious knowledge about the "kit" that comes with this noble profession should be included in the theoretical and practical knowledge base.

- 1. Cutting instruments: classic and electric scalpel, surgical scissors.
- 2. Dissection instruments: "L" clamp (Overholt), anatomical forceps (without teeth).
- 3. Hemostasis instruments: Péan forceps, Kocher forceps.
- 4. Instruments for tissue handling: "en coeur" forceps, surgical forceps (with teeth).
- 5. Instruments for exposure (retraction of incised planes): Farabeuf retractors, valves.
- 6. Suture instruments: needles, needle holders, suture threads.

2.10. Learning Bandaging and Dressing Techniques

A simple aseptic dressing involves protecting the wound against any external harmful agents, absorbing exudate from the wound, and promoting healing.

Objectives:

- Avoid shock.
- Protect the wound from the external environment.
- Reduce the amplitude of movements.

2.11. Learning First Aid Techniques

The rescuer is by definition the first medically trained person to arrive at the incident scene. Initial care provided is essential because it is available sooner than advanced emergency medical care and can mean the difference between life and death. Initial care is followed by more sophisticated care provided by nurses and physicians.

3. Procedures/Activities (Description)

3.1. Correctly Completing the First Page of the Observation Sheet

The observation sheet is the medico-legal document of each patient. The first page includes identification data (name, first name, date of birth, age, personal identification number, address, identification document details presented at admission, usually an identity card), as well as other socio-demographic data (education level, occupation), referral diagnosis, and admission diagnosis (always completed by a doctor). The first page is completed by the on-call doctor or the medical secretary responsible for this activity on the day of the patient's admission. The rest of the information in the observation sheet, referring to the clinical examination, investigation plan, patient evolution, treatment plan, is completed by the patient's attending physician or by the resident doctor under the supervision of the specialist/primary doctor, accurately, completely, and legibly.

3.2. Accompanying the Patient to Exploratory Services and Describing the Examination

All patients are accompanied to explorations to effectively guide them to the location where the examination will be performed, to present the explorationist doctor the reason for requesting a specific exploration, and to supervise the patient during the examination and/or on their return to the ward (especially if sedated). Some explorations require specific patient preparation. The attending physician and the nurse are responsible for fulfilling these conditions, which either enhance the quality of the medical act (e.g., in imaging, better visualization increases the correct positive diagnosis rate) or reduce the risks of immediate and post-procedural complications.

3.3. Collecting Pharyngeal Secretions

Pharyngeal secretion collection is done in the morning, fasting, before oral cavity hygiene. Required materials are: sterile swab, sterile protective tube (with or without transport medium) that closes tightly, and a disposable spatula. The integrity and validity of the materials are checked before collection. Collection method: the patient is seated on a chair with the head slightly extended and face towards a light source; the tube is opened, the sterile collector is detached, ensuring it does not touch surrounding objects; the patient is asked to open their mouth, the base of the tongue is depressed with the spatula, then the swab tip is passed over the surface of the tonsils and, if possible, on the posterior pharyngeal wall and inflamed areas.

3.4. Collecting Sputum

Sputum is collected from the morning expectoration, after a gargle with sterile saline solution. The patient must be instructed to obtain true sputum, resulting from coughing, not saliva or nasal secretions. Required materials: sterile container with a wide neck, provided with a lid or sterile Petri dish. Sterile containers for urine culture can also be used. 1-2 ml of secretion is sufficient. The sample is labeled and sent to the laboratory within an hour for microscopic examination and culture inoculation.

3.5. Collecting Fecal Samples (for digestion/parasitology examination, stool culture, detection of occult bleeding)

Fecal samples are sent to the laboratory in special containers (stool culture container) provided by the laboratory.

- *Parasitological Examination:* Collection is done in a stool culture container and needs repetition to detect eggs, cysts, and larvae which are intermittently eliminated.
- *Bacteriological Examination (Stool Culture):* Collection is done in a stool culture container with culture medium.
- Detection of Occult Bleeding: The classic Gregersen reaction can be used.

3.6. Collecting Urine for Urinalysis and Urine Culture

For urinalysis and urine culture, the first morning urine is sent for analysis in a sterile collection container (urine culture container). Transport time should not exceed 1 hour. The patient will be informed about the correct collection method, which involves thorough genitourinary area hygiene, inserting a sterile tampon into the vagina for women with abundant vaginal discharge, drying the genitourinary area; the first urine stream is emitted into the toilet and, without stopping urination, the urine is collected in the urine culture container (midstream collection). It is important to avoid touching the container to the genital area or surrounding objects.

3.7. Determining Capillary Blood Glucose

Capillary blood glucose measurement is used when frequent determinations are necessary or when avoiding venous blood collection is desired. This procedure involves disinfecting the fingertip followed by a small prick with a fine, atraumatic needle (either those provided with the glucometer or intradermal injection needles) to obtain a drop of blood. The first drop of blood is wiped away with a sterile swab, and the second drop is applied to the test strip inserted into the glucometer slot.

3.8. Administration of Medications: Oral, Transdermal, Inhalation, Rectal, and Parenteral

3.8.1. Oral Administration

This method is indicated for both hospitalized patients and especially for outpatients. Each medication has clear instructions for administration based on meal times and with a sufficient amount of water. For emergency situations, there are medications that are absorbed through the buccal mucosa, thereby acting more rapidly. For example, patients with angina (chest pain due to coronary artery disease) are administered sublingual nitroglycerin tablets or sprays that dissolve under the tongue; patients experiencing hypertensive crises are frequently given sublingual captopril.

3.8.2. Transdermal Administration

Preparations are available for administration in this form, providing slow and relatively constant release of the medication as long as the patch remains on the skin.

3.8.3. Inhalation Administration

The respiratory route allows for administration of active substances with predominantly local action, such as sympathomimetic bronchodilators or anticholinergics, anti-inflammatory drugs, or their fixed combinations. There are various devices for medication inhalation, including sprays, dry powder inhalers, and nebulizers.

3.8.4. Rectal Administration

Rectal administration is one of the digestive routes for medication administration. Medications are administered via this route to patients with swallowing disorders, those who have undergone upper digestive tract surgery, or those with digestive intolerance (vomiting, nausea, bleeding), and to avoid portal circulation, i.e., high digestive absorption and passage through the liver. Medications are administered rectally in the form of suppositories or medicated enemas.

3.9. Oxygen Therapy (Administration Methods)

Oxygen therapy aims to enrich air with oxygen to combat hypoxia and improve oxygen concentration in the blood. Oxygen is administered through:

- Nasal cannula (tube) with multiple lateral openings.
- Oxygen "glasses."
- Oxygen mask (with rebreathing of exhaled air).

- Oxygen tent - cannot exceed 50% oxygen concentration, leads to poor air circulation, and can cause patient overheating.

3.10. Measurement of Arterial Blood Pressure, Pulse, Weight, Height, Abdominal Circumference (with BMI Calculation)

3.10.1. Measurement of Arterial Blood Pressure (BP)

Arterial blood pressure is measured using a sphygmomanometer (usually a mercury or electronic device) by auscultatory or palpatory methods (the latter is mainly used for lower limbs). For daily BP monitoring, measurements are taken at the upper limbs.

- The BP cuff is placed on the arm, either above the area where brachial artery pulsations are palpable (with the stethoscope held in place by the left hand) or covering at least partially the stethoscope bell.

- The sphygmomanometer bulb is held in the right hand.

- Inflate the cuff to a pressure 30 mmHg above the point where radial pulse disappears (indicating systolic BP).

- Slowly deflate the cuff at a rate of 2-3 mmHg per second and listen for the first sound in the stethoscope (Korotkoff sound), marking systolic BP.

- Continue deflating the cuff and note the pressure at which the last sound (diastolic BP) is heard.

3.10.2. Measurement of Pulse

Arterial pulse results from ventricular systole ejecting blood into the aorta, transmitting a pressure wave to the periphery. Radial artery pulse is commonly palpated (located on the internal side of the radius, 1-2 cm above the radial styloid process), gently compressed with fingers II-III-IV. A timer is used by the examiner.

3.10.3. Measurement of Weight

Each clinical section typically has at least one scale (electronic or mechanical). Ideally, weight is measured with the patient lightly clothed (in underwear).

3.10.4. Measurement of Height

Measured standing up, using a stadiometer or another measuring instrument (e.g., tailor's tape fixed on a vertical hard surface).

3.10.5. Measurement of Abdominal Circumference

Measured using a flexible tape measure (tailor's tape), at the level of the waist, at the height of the umbilicus.

3.10.6. Calculation of Body Mass Index (BMI)

BMI is the ratio of weight (in kilograms) to the square of height (in meters). Normal BMI values range from 18.5-25 kg/m2. This index accurately reflects a person's nutritional status, as per the table below:

- < 18.5 underweight
- 18.5-25 normal weight
- 25-30 overweight
- > 30 obesity

3.10.7. Monitoring Temperature

Aims to evaluate patient thermoregulation and thermogenesis function. Temperature is usually measured twice daily, in the morning between 7-8 AM and in the afternoon between 6-7 PM.

- Temperatures below 36°C indicate hypothermia, 37-38°C subfebrile, 38-41°C fever, and above 41°C hyperthermia.

- Measurement sites include axilla, inguinal fold (for peripheral temperature), oral cavity, rectum, vagina (for core temperature).

3.10.10. Monitoring Diuresis

Diuresis is the amount of urine excreted over a 24-hour period, typically expressed in ml/24 hours (e.g., 2500 ml/24 hours). Monitoring diuresis is crucial for daily patient follow-up, especially for patients on diuretic therapy, those with renal insufficiency, or receiving electrolyte solutions.

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