MINISTRY OF HEALTH OF UKRAINE

ODESA NATIONAL MEDICAL UNIVERSITY

Departments of Pediatrics №2

CONFIRMED by

Vice-rector for research and educational work

_____ Svitlana KOTYUZHYNSKA

September 1st, 2022

METHODOLOGICAL RECOMMENDATIONS ON PRACTICAL CLASSES FOR STUDENTS

International Medical Faculty, course 6

Educational discipline "**PEDIATRICS**"

Approved
at the meeting of the department of Pediatrics №2
Protocol No. 11 dated 28/08/2022

Head of the department of Pediatrics №2 _____ Tetiana STOIEVA
Signature

Authors:
Head of the department of Pediatrics №2, MD, PhD in Pediatrics, DM, Professor Stoieva Tetiana
Associate Professor of the department of Pediatrics №2, PhD in Pediatrics Prokhorova Svitlana
Associate Professor of the department of Pediatrics №2, PhD in Pediatrics Titkova O. V.
Associate Professor of the department of Pediatrics №2, PhD in Pediatrics Portnova O. O.
Associate Professor of the department of Pediatrics №2, PhD in Pediatrics Vesilyk N. L.
Associate Professor of the department of Pediatrics №2, PhD in Pediatrics Godlevska T. L.
Assistant of the department of Pediatrics №2, PhD in Pediatrics Fedin M. V.
Assistant of the department of Pediatrics №2, PhD in Pediatrics Jagiashvili O. V.
Assistant of the department of Pediatrics №2, PhD in Pediatrics Reshetilo O.V.
Assistant of the department of Pediatrics №2, PhD in Pediatrics Soboleva H. B.
Assistant of the department of Pediatrics №2 Bratkova L. B.

1. Topic #1:
Lesson № 1 “WHO / UNICEF Strategy for Integrated Management of Childhood Illness (IMCI)” - 2 h.
Lesson № 2 “Examination and treatment of children in the strategy of IMCI”- 2 h.
Lesson № 3 “HIV infection in the strategy of Integrated management of childhood illness” - 2 h.

2. **Relevance of the topic.**
Although the annual number of deaths among children under the age of 5 has declined by almost a third since the 1970s, this decline has not been evenly distributed around the world. According to the 1999 World Health Report, children in low- and middle-income countries are 10 times more likely to die before the age of 5 than children living in industrialized countries. In 1998, infant mortality rates were still higher than 100 per 1,000 live births in more than 50 countries. Every year, more than 10 million children in these countries die before reaching their fifth birthday. Seven of these 10 deaths - from acute respiratory infections (mostly pneumonia), diarrhea, measles, malaria or malnutrition - and often a combination of these causes.
In the mid-1990s, the World Health Organization (WHO), in collaboration with UNICEF and many other agencies, organizations and individuals, responded to this problem by developing a strategy known as Integrated Childhood Management (IDHM). Childhood Illness (IBD) is a systemic approach to children's health that focuses on the child as a whole. This means not only focusing on medical care, but also on disease prevention. UNICEF of the World Health Organization developed this approach. Although the main reason for developing an IVHD strategy is the need for medical care, the strategy also addresses aspects of nutrition, immunization and other important elements of disease prevention and health promotion. The goals of the strategy are to reduce mortality and the frequency and severity of illness and disability, and to contribute to the improvement of the child's physical development.

3. Objectives of the lesson
3.1. General goals
Get acquainted with the modern definition of "Integrated management of childhood diseases". Know what the IMCI strategy is, the leading causes of infant and perinatal mortality in the world and in Ukraine, tasks, principles, components and target population of the IMCI strategy, explain the "integral" aspect of IMCI, classification approaches for cough, dehydration, probable bacterial infection 2 months), problems with breastfeeding or underweight and difficulty breathing for IMCI. To study the assessment of urgent signs of the child's condition, assessment of priority signs of the child's condition, differential diagnosis of hyperthermia, and tactics of management of children with diarrhea by IMCI.

3.2. Educational goals:
Get acquainted with the recommendations of UNICEF of the World Health Organization, reduce mortality and the frequency and severity of illness and disability, as well as contribute to improving the physical development of the child.

3.3. Specific goals:
- *to know:*
- what is the IMCI strategy
- leading causes of infant and perinatal mortality in the world and in Ukraine
- tasks, principles, components and target population of the IMCI strategy
- important aspects of the impact of medicine on child health in Ukraine
- comparative analysis of the "standard" approach to the management of patients with IMCI
- explain the "integral" aspect of IMCI
- classification approaches for cough and shortness of breath according to IMCI

- classification approaches for dehydration by IMCI
- classification approaches for probable bacterial infection (in a child under 2 months) for IMCI
- classification approaches for problems of breastfeeding or underweight for IMCI
- assessment of urgent signs of the child's condition for IMCI
- assessment of priority signs of the child's condition for IMCI
- differential diagnosis of hyperthermia in children with IMCI
- tactics of managing children with diarrhea for IMCI
- principles of effective parental counseling

3.4. On the basis of theoretical knowledge on the topic:
- to be able:
- to carry out classification approaches for cough and shortness of breath and to choose tactics on IMCI
- to carry out classification approaches for dehydration and to choose tactics on IMCI
- carry out classification approaches for probable bacterial infection (in a child under 2 months) and choose tactics for IMCI
- to carry out classification approaches for problems of feeding or insufficient weight and to choose tactics on IMCI
- to assess the urgent signs of the child's condition and choose tactics for IMCI
- to assess the priority signs of the child's condition and choose tactics for IMCI
- to make a differential diagnosis of hyperthermia in children and to choose tactics for IMCI
- determine the tactics of management of children with diarrhea and choose tactics for IMCI
- determine the correctness of breastfeeding an older or older child in the family.
- provide effective counseling to parents

Master practical skills:
- diagnosis and emergency care in critical conditions after the assessment of urgent signs of IMCI
- to demonstrate mastery of moral and deontological principles of a medical specialist and the principles of professional subordination in pediatrics.

4. Materials of pre-classroom independent training (interdisciplinary integration)

№	Disciplines	To know	To be able
1	Propaedeutic of child ailments	The main anatomical and physiological features of the organism in fallowness from the child's age	The ability to collect anamnesis, examine the child according to systems, determine the parameters of physical development, prescribe feeding and nutrition for young children, prescribe care for a healthy and sick child, evaluate the results of a couple of clinical research methods.
2	Faculty pediatrics, neonatology, medical genetics, pediatric surgery	Differentiated approach to the child depending on the child's condition.	Clinic, classification, diagnosis, differential diagnosis of diseases accompanied by cough, sore throat, diarrhea, fever, malnutrition, jaundice, anemia, HIV infection, local bacterial infection. Prescribing treatment, emergency care.
3	Clinical pharmacology	Drugs used for the treatment of diseases	Knowledge of the pharmacodynamics and pharmacokinetics of drugs necessary for the treatment of the

			above diseases and conditions, the ability to prescribe them.
4	Children infectious diseases.	Differentiated approach to the therapy of a sick child depending on the etiology of the disease	Knowledge of the clinic, classification, diagnosis, differential diagnosis of infectious diseases accompanied by diarrhea, prevention, treatment

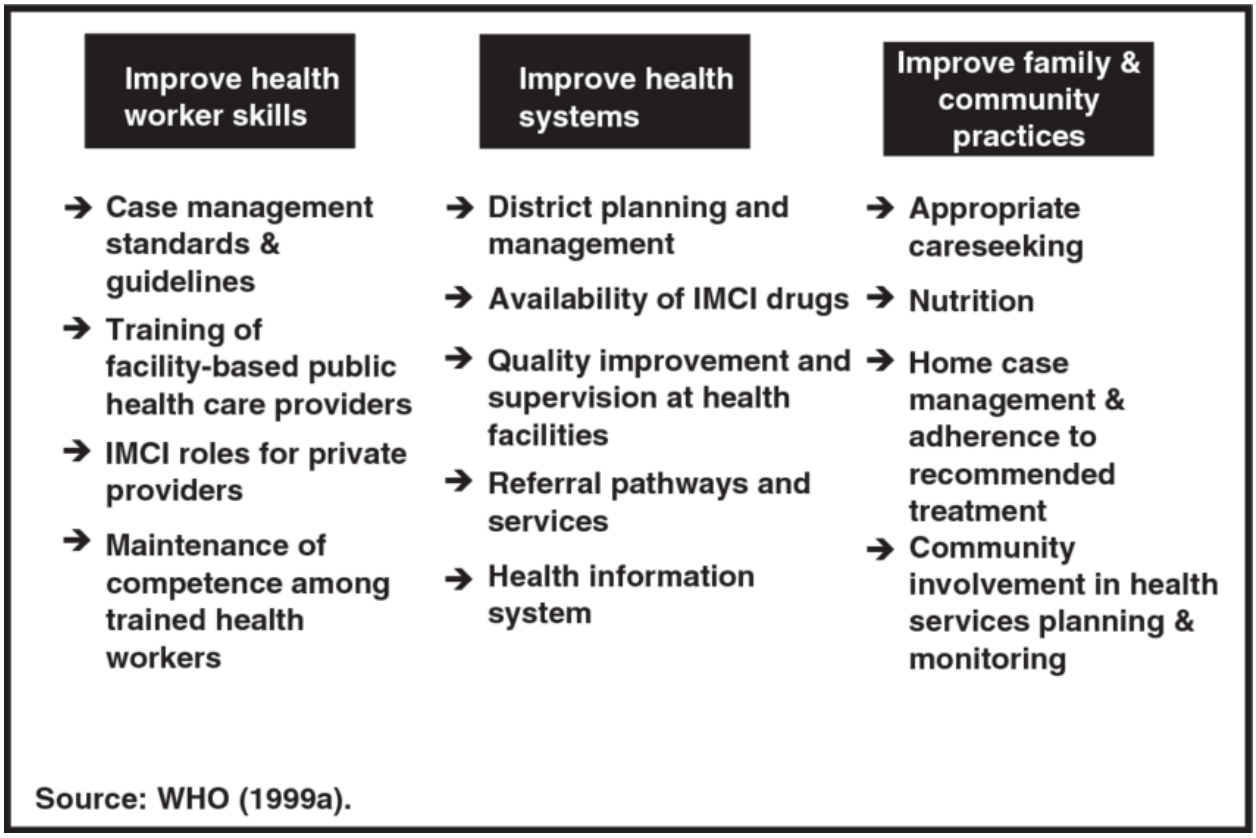
5. Content of the topic

WHO and the UNICEF Children's Fund have developed an Integrated Management of Childhood Illness (IMCI) strategy. Today it is used by more than 100 countries of the world. WHO, stated that seven out of ten children under the age of five who die in developing countries have acute respiratory infections (mainly pneumonia), diarrhea, measles, malaria, perinatal disorders, nutritional disorders or a combination of these causes as the main cause of death. in the 90s of the last century, it adopted the Integrated Management Childhood Illness (IMCI) program - Integrated Management of Childhood Illness (IMCI).

The IMCI strategy provides for standardization in assessing the condition of a sick child, approach to diagnosis, treatment tactics and communication with the mother, and further rehabilitation. The main emphasis is placed in the assessment of IMCI on the nutritional and vaccination status of the child, mandatory verification in all sick children of signs of dehydration, deficiency conditions, bacterial infectious process, life-threatening conditions requiring emergency assistance, the introduction into widespread practice of any stage of medical care of only measures, tested by evidence-based medicine. The IMCI strategy emphasizes the important role of the mother, the family in the development of the child, her treatment in case of illness, and hence the need for tremendous efforts in the medical education of the mother and the family, the provision of nutritional advice and other aspects of a healthy lifestyle for the child at the level of understanding of the mother, the daily conviction that that the doctor's recommendations are clear and will be followed.

Integrated Management of Childhood Illness (IMCI) is a systems approach to child health that focuses on the child as a whole. This means not only focusing on curative care, but also on disease prevention. Many well-known prevention and treatment strategies have already been proven to be effective in saving children's lives. The vaccination program has successfully reduced measles deaths. Oral rehydration therapy has been associated with a significant reduction in mortality from diarrhea. Effective antibiotics have saved millions of children with pneumonia. The proven malaria treatment method has enabled most children to recover and lead normal lives. Even modest improvements in breastfeeding practices have reduced infant mortality. While each of these activities has met with significant success, experience has shown that a more comprehensive approach to managing the management of sick children is needed to achieve greater results. Child health surveillance programs need to go beyond a single disease by addressing issues to assess the overall health and well-being of the child. Since most children have several signs and symptoms of the disease at the same time, only one diagnosis can be difficult to establish, and it may not even be possible or necessary. The target population of the clinical principles of IMCI is children under 5 years of age - an age group that bears the burden of high mortality from the most common childhood diseases. Every day, millions of parents seek medical help for their sick children in hospitals, medical centers, pharmacists, doctors and traditional healers. Research shows that many sick children are not adequately examined and treated in these health facilities, and parents receive insufficient information. At the first tier of health care facilities in low-income countries, diagnostic equipment such as X-ray equipment and laboratory services are scarce or nonexistent. Lack of apparatus and other equipment, combined with an irregular flow of patients, limits the

ability of doctors at this level to carry out work in the event of complex clinical episodes. Therefore, in these settings, health-care providers rely mainly on history and clinical signs and symptoms to determine the management of the patient with the most efficient use of available resources.



The objectives of the strategy are:
- to reduce mortality and the frequency and severity of the disease, and the risk of disability,
- to contribute to the improvement of the physical development of the child.

The strategy includes three main components:
• Improving the management skills of medical personnel
• Improving the overall health care system
• Improvement in family and public health practices.

In health care settings, the IMCI strategy promotes the accurate identification of childhood illnesses on an outpatient basis, provides appropriate combined treatment for all major illnesses, strengthens counseling and care, and accelerates the treatment of critically ill children. At home, promotes proper parental care of the child, improved nutrition and preventive care, and the correct implementation of the proposed care.

Thus:

Term	Definition
Integrated Management of Childhood Illness (IMCI)	An integrated approach to child health care aimed at achieving overall satisfactory health status.

IMCI goals	Reducing mortality, morbidity, disability, as well as improving the physical and mental development of children under 5 years of age.
IMCI strategy	Includes preventive, curative elements that are implemented by medical institutions and families. It contributes to the accurate identification of diseases in children, ensures the proper integrated management of diseases, and determines the need for referring seriously ill children to the hospital.
IMCI objectives	To reduce the incidence and severity of diseases at the primary health care level, to prevent mortality. Effective management of acute respiratory diseases, anemia, diarrhea, ear, throat infections, HIV / AIDS, local bacterial infections, neonatal jaundice, malnutrition, immunization of children, nutritional counseling.
IMCI steps	Step 1. Assess the child's condition. Step 2. Classify the disease. Step 3. Determine the treatment. Step 4. Treat the child. Step 5. Counsel the mother. Step 6. Conduct the next inspection.
Target audience of patients	Children under 5: - 0-2 months -2 months-5 years

The IMCI strategy provides for the effective management of the following conditions: acute respiratory infections, pneumonia, anemia, diarrhea, ear and throat infections, HIV / AIDS, local bacterial infections, sepsis, meningitis, malnutrition, neonatal jaundice. In addition, breastfeeding support, immunization, nutritional counseling.

The IMCI strategy is suitable for medical institutions of the first level of care, for example, outpatient clinics, polyclinics.

Although the main reason for developing the IMCI strategy was the need to provide patients with medical care, the strategy also pays attention to such aspects as rational nutrition of children, immunization and prevention of diseases, and promotion of healthy lifestyles. The IMCI strategy also promotes the active involvement of family and community members in the provision of health care.

IMCI is based on the following principles:

- All sick children under 5 years of age should be examined for general signs of danger, and all infants for signs of very serious illness. The presence of these signs indicates the need for an urgent referral of the child to the hospital.
- If the child does not have general signs of danger, and the infant has signs of a very serious illness, they should be examined for the presence of basic symptoms. For children 2 months to 5 years of age, the main symptoms include cough, diarrhea, fever, ear infection, and sore throat. In infants under 2 months of age, the main symptoms include local bacterial infection, diarrhea, and jaundice. In addition, all sick children should be routinely assessed for nutritional and immunization status and other potential problems.
- Only a limited number of clinical symptoms are used, which are selected based on their sensitivity and specificity for detecting the disease.
- Based on the combination of individual symptoms, the child is classified into one or more symptom groups, rather than diagnosed. The principle of this strategy is the algorithm for the

provision of primary health care according to the “traffic light rule”. The classification of the disease is based on a color-coding system:
- "pink" means that the child needs to be urgently sent to the hospital;
- "yellow" indicates the need to start a specific outpatient treatment;
- “green” indicates the possibility of home care.
- In the process of disease management in IMCI, a limited number of basic drugs are used and active involvement of parents in the process of treatment and child care is stimulated.
- Counseling caregivers about care, feeding and fluid intake, and conditions requiring immediate medical attention is an important component of the IMCI strategy.
- To ensure the consistency of the provision of medical care to children under 5 years of age with the most common conditions in each medical institution, therapeutic measures should be developed and implemented, in which the patient's clinical route and the volume of medical and diagnostic measures are determined, in accordance with the material and technical and personnel security. The interaction between medical institutions providing primary and secondary medical care should be determined by the relevant order of the structural unit on health issues of the local government.
The Integrated Management of Disease IMCI consists of a series of steps that must be followed by a healthcare professional to ensure effective disease management.

DISEASE MANAGEMENT SCHEMES. STEPS OF THE STRATEGY.
In order to facilitate the practical use of IMCI patient management principles, all the disease management steps described above are presented in a number of IMCI schemes. These diagrams show the sequence of steps and provide information on how to perform them. WHO has compiled all of these charts into the IMCI Patterns Booklet.

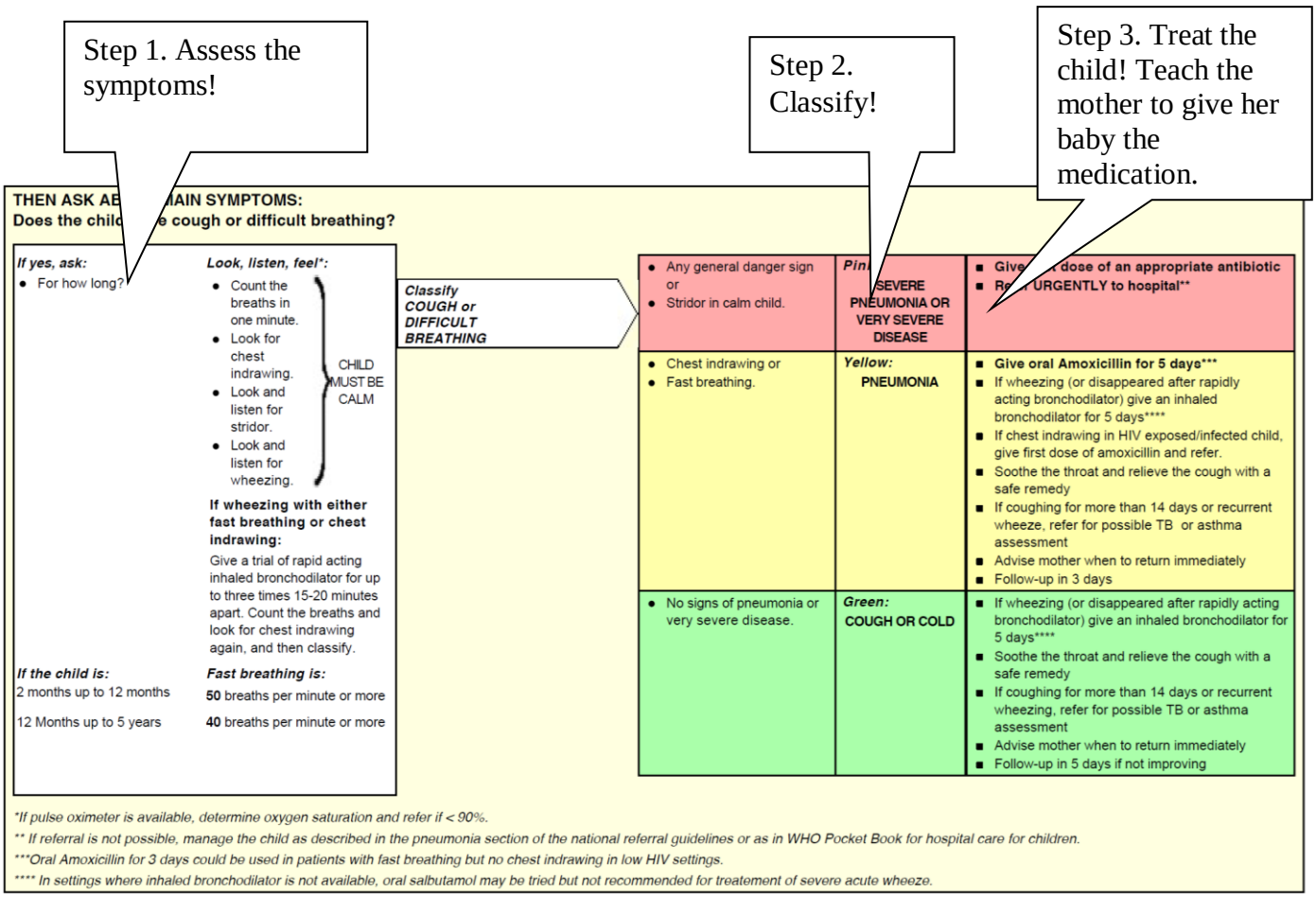
Registration of a child during a visit to a medical institution:
1. Reason for visit: illness, preventive examination, vaccination, trauma management.
2. Age: The clinical symptoms that can be found in sick infants and children are somewhat different, and since disease management procedures are also different for different age groups, the IMCI regimens booklet is also divided into two main parts:

A. SICK CHILD AGE 2 MONTHS TO 5 YEARS (all necessary guidelines, information and instructions regarding the provision of care for sick children aged 2 months to 5 years who are brought to a health facility).
B. SICK INFANT UNDER 2 MONTHS (guidelines for the management of diseases in infants under 2 months of age).

The 4 steps of IMCI:

1. . Assess the symptoms! The assessment column on the left side of the diagram shows how to take a history and conduct a physical examination.
2. Classify! The column CLASSIFY the schemes RATE AND CLASSIFICATE the clinical signs of the disease and their classification. "Classify" means deciding on the severity of the disease. It is necessary to select a category ("classification") for each of the main symptoms that the child has, corresponding to the severity of the disease.
3. Treat the child! Teach the mother to give her baby the medication. The DEFINE TREATMENT column will help you quickly identify the treatment for the selected classifications. A suitable treatment is recommended for each classification. If your child has more than one classification, you must look at more than one table to find the treatments you want. Include and give outpatient treatment, prescribe drugs or other drugs to be taken at home, and educate the mother or other caregivers on how to administer the treatment.

4. Follow up! (steps for different types of follow-up examinations, depending on the classification of the child's condition during the initial examination. During the follow-up examination it is necessary to understand whether the child's condition is improving due to the prescribed treatment or additional interventions are needed)**. Consult!** (The scheme provides guidance on feeding, fluid administration, and when the mother should return to the clinic with her baby. Feeding should be assessed and the mother should be counseled on identified nutritional problems. The mother should also be counseled about her own health).



Necessary actions of the health worker:

1. Assess the presence of general danger signs (see below).
2. Determine if the child currently needs hospitalization.
3. Classify states:
   - between the ages of 2 months and 5 years (general signs of danger, cough, diarrhea, throat problems, ear problems, fever, anemia, malnutrition, HIV status).
   - in children under 2 months of age (presence of a very serious illness and local bacterial infection, jaundice, diarrhea, assessment of feeding, HIV status).
4. Check immunization status.
5. Check the appointment of vitamin D.
6. Ask the mother about her own health problems.
7. Find out if the child has other health problems.
8. Fill in the form for managing a sick child of the appropriate age categories.

Treatment. When prescribing treatment, do not prescribe drugs without proven effectiveness.

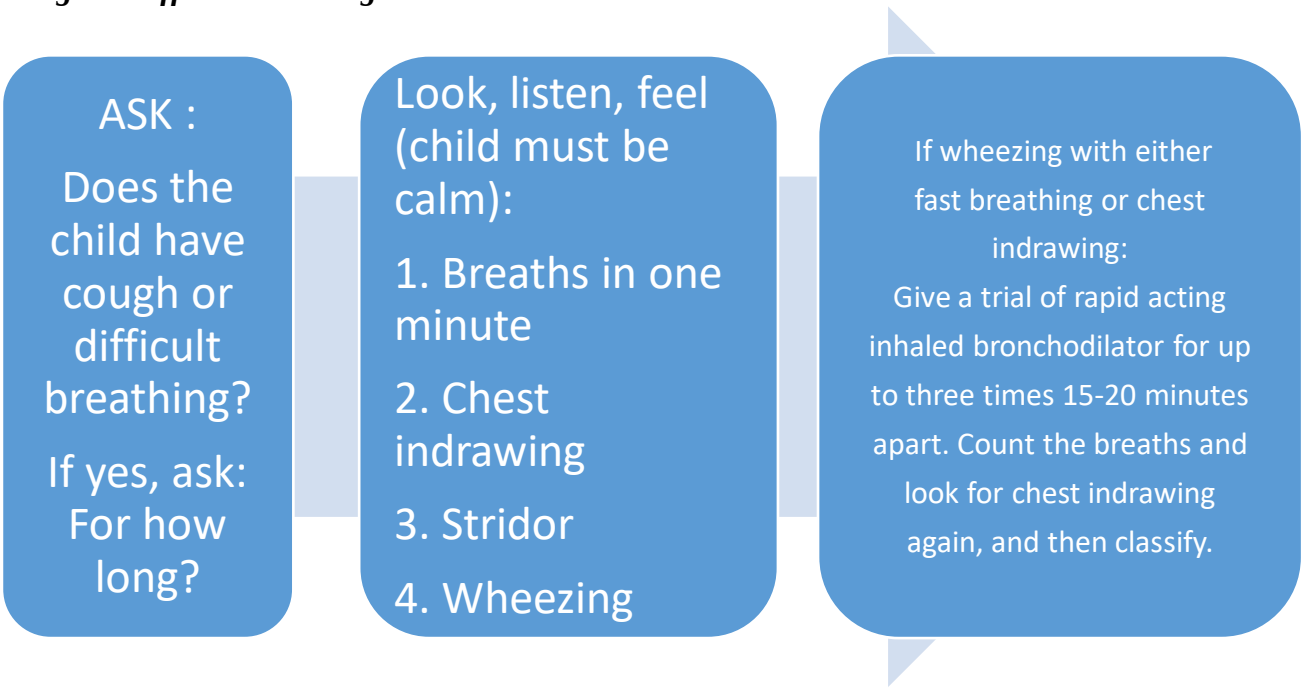
Determine the tactics of providing medical care in accordance with the classification of the child's condition:
1. Pink row: Provision of prehospital care and urgent hospitalization.
2. Yellow row: Prescribe outpatient treatment, follow-up plan and counseling mother / person caring for the child. Teach the mother to give her baby the drugs at home and make sure she understands it.
3. Green row: counseling mother / person, caring for child on follow-up, home care and conditions requiring immediate medical attention. Teach the mother to give her baby the drugs at home and make sure she understands it.

Outpatient management of children from 2 months to 5 years
General danger signs
• The child has had seizures during the illness or is seen on examination
• The child is lethargic or unconscious
• The baby is unable to drink or suckle
• The child is vomiting after any food or drink
Any of these signs is a very serious illness!

Algorithm of actions when common signs of danger are detected:
• If convulsions - diazepam (0.05 ml/kg IM or IV, 0.1 ml/kg rectally)
• Quickly complete (do not stop inspection!) Inspection
• Provide prehospital treatment
• Prevent hypoglycemia
• Explain to the mother how to keep the baby warm
• **Send to hospital IMMEDIATELY!**

Identifying the main symptoms

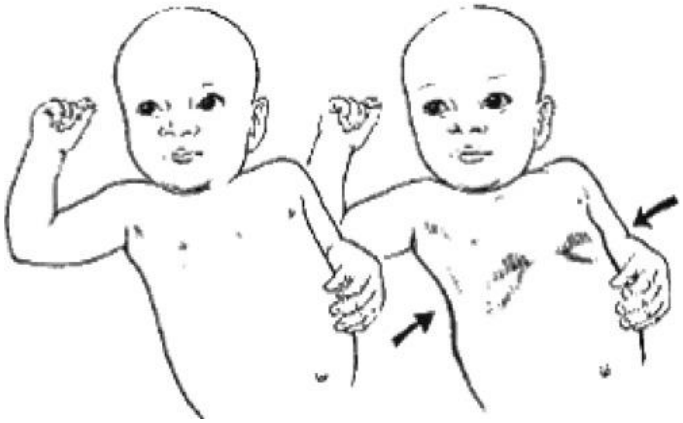
Cough or difficult breathing



In order to assess a sick child with a cough and breathing disorders, the following clinical signs are used:
- *Respiratory rate*, which allows you to distinguish children with pneumonia from children who do not have pneumonia. Rapid breathing in a child: from 2 to 12 months - 50 or more respiratory

movements per minute; at the age of 12 months to 5 years - 40 or more respiratory movements per minute.

- *Involvement of the lower chest,* which may be a sign of severe pneumonia.



- *Stridor at rest,* which makes it possible to identify patients with severe pneumonia or a very serious illness, requiring referral for inpatient treatment.
- *Astmoid breathing: a*pply an aerosol bronchodilator up to 3 times in 15-20 minutes, examine again.

Severe pneumonia or very serious illness:

• *any general symptom of danger OR*
• *chest retraction, OR*
• *stridor at rest;*
• it is necessary to administer ampicillin 50 mg/kg + gentamicin 7.5 mg/kg IM,
• if stridor - dexamethasone 0.15 ml/kg,
• quickly deliver to the hospital.

Prneumonia:

• tachypnea;
• outpatient treatment with antibacterial drugs due to the high likelihood of bacterial pneumonia - oral amoxicillin for 5 days,
• for asthmoid breathing - an aerosol bronchodilator for 5 days,
• drugs that soften cough,
• if the child's cough does not stop for more than 2 weeks, it is necessary to exclude Tvs, bronchial asthma or other problem,
• re-examination - in 2 days.

Cough or cold: Child does not need antibiotic treatment, safe cough relief should be prescribed, recovery after 1 or 2 weeks, re-examination after 5 days.

.

THEN ASK ABOUT MAIN SYMPTOMS:
Does the child have cough or difficult breathing?

If yes, ask:

- For how long?

Look, listen, feel*:

- Count the breaths in one minute.
- Look for chest indrawing.
- Look and listen for stridor.
- Look and listen for wheezing.

CHILD MUST BE CALM

If wheezing with either fast breathing or chest indrawing:

Give a trial of rapid acting inhaled bronchodilator for up to three times 15-20 minutes apart. Count the breaths and look for chest indrawing again, and then classify.

If the child is:	***Fast breathing is:***
2 months up to 12 months	**50** breaths per minute or more
12 Months up to 5 years	**40** breaths per minute or more

Classify COUGH or DIFFICULT BREATHING

• Any general danger sign or • Stridor in calm child.	***Pink:*** **SEVERE PNEUMONIA OR VERY SEVERE DISEASE**	■ **Give first dose of an appropriate antibiotic** ■ **Refer URGENTLY to hospital****
• Chest indrawing or • Fast breathing.	***Yellow:*** **PNEUMONIA**	■ **Give oral Amoxicillin for 5 days***** ■ If wheezing (or disappeared after rapidly acting bronchodilator) give an inhaled bronchodilator for 5 days****** ■ If chest indrawing in HIV exposed/infected child, give first dose of amoxicillin and refer. ■ Soothe the throat and relieve the cough with a safe remedy ■ If coughing for more than 14 days or recurrent wheeze, refer for possible TB or asthma assessment ■ Advise mother when to return immediately ■ Follow-up in 3 days
• No signs of pneumonia or very severe disease.	***Green:*** **COUGH OR COLD**	■ If wheezing (or disappeared after rapidly acting bronchodilator) give an inhaled bronchodilator for 5 days****** ■ Soothe the throat and relieve the cough with a safe remedy ■ If coughing for more than 14 days or recurrent wheezing, refer for possible TB or asthma assessment ■ Advise mother when to return immediately ■ Follow-up in 5 days if not improving

**If pulse oximeter is available, determine oxygen saturation and refer if < 90%.*

*** If referral is not possible, manage the child as described in the pneumonia section of the national referral guidelines or as in WHO Pocket Book for hospital care for children.*

****Oral Amoxicillin for 3 days could be used in patients with fast breathing but no chest indrawing in low HIV settings.*

***** In settings where inhaled bronchodilator is not available, oral salbutamol may be tried but not recommended for treatement of severe acute wheeze.*

Diarrhea

A child with diarrhea can have the following 3 potentially fatal diseases:
1) acute watery diarrhea (including cholera)
2) dysentery (bloody diarrhea)
3) prolonged diarrhea (more than 14 days).

All children with diarrhea should be assessed to determine the duration of the diarrhea, the presence of blood in the stool, and the presence of dehydration. In order to determine the degree of dehydration, the following clinical signs are used:

- *The general condition of the child.* Depending on the degree of dehydration, a child with diarrhea may be lethargic / unconscious (this is also a common danger sign) or appear restless / irritable.
- *Sunken eyes.*
- *The child's reaction to the offer to drink*. The child cannot drink if he is lethargic / unconscious. A child drinks poorly if he is weak and cannot drink without assistance. The child drinks greedily if he is dehydrated.
- *Skin elasticity*. Check the elasticity of the skin with a skin fold test. The skin fold straightens out either very slowly (more than 2 seconds), slowly (the fold remains for a short moment) or immediately.

After the child has been assessed for dehydration, it is necessary to ask how long the child has had diarrhea and whether there is blood in the stool. This will identify children with prolonged diarrhea and hemocolitis, which is most often caused by dysentery.

According to the classification, there are **3 degrees of dehydration:**

Severe dehydration ("pink" row, fluid deficit more than 10%):

2 of the listed signs

• *lethargic / unconscious*
• *sunken eyes*
• *cannot drink*
• *the skin fold straightens very slowly*
• Plan C calls for immediate initiation of intravenous (100 ml/kg), gavage or oral fluids (ORS 120 ml/kg in 6 hours) and promptly referred to hospital if other serious conditions are present.

Moderate dehydration (yellow row, 5-10% fluid deficit):

2 of the listed signs

• *anxious / irritable*
• *sunken eyes*
• *drinks greedily*
• *the skin fold straightens slowly*
• According to plan B, the child needs oral rehydration (ORS 75ml/kg in 4 hours) and outpatient treatment;
• continue feeding
• prescribe zinc 10-20 mg -14 days.
• If it is impossible to carry out plan B - send to a hospital.
• The next inspection is after 5 days if there is no improvement.

No dehydration ("green" row, fluid deficit does not exceed 5%):

• *the child does not have enough signs to classify severe or moderate dehydration*
• The child should be given an additional volume of fluid (50-100 / 100-200 ml after each liquid bowel movement).
• Zinc 10-20 mg -14 days.
• Continue feeding / feeding.

• The next inspection is after 5 days if there is no improvement.

If diarrhea lasts more than 14 days:

Severe persistent diarrhea (pink row):
• *any signs of dehydration.*
• Treat dehydration if the child does not have other severe classifications
• Send to hospital

Persistent diarrhea (yellow row):
• *no signs of dehydration.*
• Inform the mother how to treat and feed a child with persistent diarrhea.
• Prescribe multivitamins and minerals (including zinc) - 14 days.
• Counsel the mother about conditions requiring immediate medical attention.
• Re-examination after 5 days

If there is blood in the stool:

Dysentery (pink row):
• *blood in the stool.*
• First dose of ceftriaxone intramuscularly
• Send to hospital.

Does the child have diarrhoea?

If yes, ask:

- For how long?
- Is there blood in the stool?

Look and feel:

- Look at the child's general condition. Is the child:
  - Lethargic or unconscious?
  - Restless and irritable?
- Look for sunken eyes.
- Offer the child fluid. Is the child:
  - Not able to drink or drinking poorly?
  - Drinking eagerly, thirsty?
- Pinch the skin of the abdomen. Does it go back:
  - Very slowly (longer than 2 seconds)?
  - Slowly?

Classify DIARRHOEA

for DEHYDRATION	Two of the following signs: • Lethargic or unconscious • Sunken eyes • Not able to drink or drinking poorly • Skin pinch goes back very slowly.	***Pink:*** **SEVERE DEHYDRATION**	▪ If child has no other severe classification: o Give fluid for severe dehydration (Plan C) OR **If child also has another severe classification:** o **Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way** o **Advise the mother to continue breastfeeding** ▪ **If child is 2 years or older and there is cholera in your area, give antibiotic for cholera**
	Two of the following signs: • Restless, irritable • Sunken eyes • Drinks eagerly, thirsty • Skin pinch goes back slowly.	***Yellow:*** **SOME DEHYDRATION**	▪ Give fluid, zinc supplements, and food for some dehydration (Plan B) ▪ **If child also has a severe classification:** o **Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way** o **Advise the mother to continue breastfeeding** ▪ Advise mother when to return immediately ▪ Follow-up in 5 days if not improving
	Not enough signs to classify as some or severe dehydration.	***Green:*** **NO DEHYDRATION**	▪ Give fluid, zinc supplements, and food to treat diarrhoea at home (Plan A) ▪ Advise mother when to return immediately ▪ Follow-up in 5 days if not improving
and if diarrhoea 14 days or more	• Dehydration present.	***Pink:*** **SEVERE PERSISTENT DIARRHOEA**	▪ Treat dehydration before referral unless the child has another severe classification ▪ Refer to hospital
	• No dehydration.	***Yellow:*** **PERSISTENT DIARRHOEA**	▪ Advise the mother on feeding a child who has PERSISTENT DIARRHOEA ▪ Give multivitamins and minerals (including zinc) for 14 days ▪ Follow-up in 5 days
and if blood in stool	• Blood in the stool.	***Yellow:*** **DYSENTERY**	▪ **Give ciprofloxacin for 3 days** ▪ Follow-up in 3 days

Fever (temperature in the armpit is above 37.5 º C, rectal - above 38.0 º C)
A child with a fever should be assessed for the following:
- *stiffness of the occipital muscles - may be a sign of meningitis or another very serious illness;*
- *the risk of contracting malaria and other endemic infections;*
- *a fever with rhinitis, probably caused by a cold;*
- *the duration of the fever - with viral infections, the fever goes away after a few days, the fever for more than 5 days indicates the presence of a more severe illness (for example, typhoid fever);*
- *measles (fever, generalized rash, eye redness, runny nose or cough) - gives a high risk of fatal complications (pneumonia - 67%, diarrhea - 25%, encephalitis), disability (blindness, severe malnutrition, neurological dysfunction)*
- *petechial rash.*

Very severe febrile illness (pink row):
• *any general danger sign* ***OR***
• *a stiff neck* ***OR***
• *petechial rash* ***OR***
• *other heavy classification*
• administer the first dose of ampicillin 50 mg/kg + gentamicin 7.5 mg/kg i.m.
• petechial rash - give ceftriaxone and prednisolone
• at a body temperature of 38.5 º C and above, give one dose of paracetamol
• to carry out the prevention of hypoglycemia
• quickly send to the hospital

Possible bacterial infection ("yellow row"):
• *presence of classifications: probably pneumonia, acute ear infection or acute tonsilopharyngitis, probably bacterial OR other obvious causes of fever*
• prescribe treatment according to the leading classification.
• at a body temperature of 38.5 ° C and above, give one dose of paracetamol / ibuprofen
• counsel the mother about conditions requiring immediate medical attention
• reevaluation after 2 days if fever persists.

Fever ("yellow row"):
• *fever continues every day for more than 5 days for no apparent reason*
• give ibuprofen/paracetamol for fever of 38.5 ° C and above
• the child needs to be referred to a hospital for further evaluation.

Fever. Bacterial infection is unlikely (green row):
• *fever for 5 days or less for no apparent reason*
• one dose of paracetamol should be given at a body temperature of 38.5 º C and above, re-examination - after 2 days.

Does the child have fever?

(by history or feels hot or temperature 37.5°C* or above)

If yes:

Decide Malaria Risk: high or low

Then ask:

- For how long?
- If more than 7 days, has fever been present every day?
- Has the child had measles within the last 3 months?

Look and feel:

- Look or feel for stiff neck.
- Look for runny nose.
- Look for any bacterial cause of fever**.
- Look for signs of MEASLES.
  - Generalized rash and
  - One of these: cough, runny nose, or red eyes.

Do a malaria test: If NO severe classification***

- In all fever cases if High malaria risk.
- In Low malaria risk if no obvious cause of fever present.

If the child has measles now or within the last 3 months:

- Look for mouth ulcers. Are they deep and extensive?
- Look for pus draining from the eye.
- Look for clouding of the cornea.

Classify FEVER

If MEASLES now or within last 3 months, Classify

High or Low Malaria Risk		
• Any general danger sign or • Stiff neck.	***Pink:*** **VERY SEVERE FEBRILE DISEASE**	▪ **Give first dose of artesunate or quinine for severe malaria** ▪ **Give first dose of an appropriate antibiotic** ▪ **Treat the child to prevent low blood sugar** ▪ **Give one dose of paracetamol in clinic for high fever (38.5°C or above)** ▪ **Refer URGENTLY to hospital**
• Malaria test POSITIVE.	***Yellow:*** **MALARIA**	▪ **Give recommended first line oral antimalarial** ▪ **Give one dose of paracetamol in clinic for high fever (38.5°C or above)** ▪ Give appropriate antibiotic treatment for an identified bacterial cause of fever ▪ Advise mother when to return immediately ▪ Follow-up in 3 days if fever persists ▪ If fever is present every day for more than 7 days, refer for assessment
• Malaria test NEGATIVE • Other cause of fever PRESENT.	***Green:*** **FEVER:** **NO MALARIA**	▪ **Give one dose of paracetamol in clinic for high fever (38.5°C or above)** ▪ **Give appropriate antibiotic treatment** for an identified bacterial cause of fever ▪ Advise mother when to return immediately ▪ Follow-up in 3 days if fever persists ▪ If fever is present every day for more than 7 days, refer for assessment
No Malaria Risk and No Travel to Malaria Risk Area		
• Any general danger sign • Stiff neck.	***Pink:*** **VERY SEVERE FEBRILE DISEASE**	▪ **Give first dose of an appropriate antibiotic.** ▪ **Treat the child to prevent low blood sugar.** ▪ **Give one dose of paracetamol in clinic for high fever (38.5°C or above).** ▪ **Refer URGENTLY to hospital.**
• No general danger signs • No stiff neck.	***Green:*** **FEVER**	▪ **Give one dose of paracetamol in clinic for high fever (38.5°C or above)** ▪ **Give appropriate antibiotic treatment** for any identified bacterial cause of fever ▪ Advise mother when to return immediately ▪ Follow-up in 2 days if fever persists ▪ If fever is present every day for more than 7 days, refer for assessment
• Any general danger sign or • Clouding of cornea or • Deep or extensive mouth ulcers.	***Pink:*** **SEVERE COMPLICATED MEASLES****	▪ **Give Vitamin A treatment** ▪ **Give first dose of an appropriate antibiotic** ▪ **If clouding of the cornea or pus draining from the eye, apply tetracycline eye ointment** ▪ **Refer URGENTLY to hospital**
• Pus draining from the eye or • Mouth ulcers.	***Yellow:*** **MEASLES WITH EYE OR MOUTH COMPLICATIONS****	▪ **Give Vitamin A treatment** ▪ **If pus draining from the eye, treat eye infection with tetracycline eye ointment** ▪ If mouth ulcers, treat with gentian violet ▪ Follow-up in 3 days
• Measles now or within the last 3 months.	***Green:*** **MEASLES**	▪ **Give Vitamin A treatment**

* These temperatures are based on axillary temperature. Rectal temperature readings are approximately 0.5°C higher.

**Look for local tenderness; oral sores; refusal to use a limb; hot tender swelling; red tender skin or boils; lower abdominal pain or pain on passing urine in older children.

*** If no malaria test available: High malaria risk - classify as MALARIA; Low malaria risk AND NO obvious cause of fever - classify as MALARIA.

**** *Other important complications of measles - pneumonia, stridor, diarrhoea, ear infection, and acute malnutrition - are classified in other tables.*

Ear problem

Ear problems should be checked in all children.

Evaluate the following clinical signs:

1. *Is there any pain in the ear* (an early sign of acute otitis media, manifested by irritability, rubbing of the ear)?
2. *Is there a purulent discharge, for how long*?

Look and feel:

- *Look for pus draining from the ear.*
- *Feel for tender swelling behind the ear* (a sign of mastoiditis, often a one-sided process).

Mastoiditis ("pink row"):

• *painful swelling behind the ear;*
• give the first dose of ampicillin 50 mg/kg + gentamicin 7.5 mg/kg IM, one dose of paracetamol;
• Send to hospital immediately.

Acute ear infection (yellow row):

• *the child has ear pain OR*
• *purulent discharge from the ear for less than 14 days;*
• it is necessary to prescribe an antibacterial drug for 5 days;
• give paracetamol for pain;
• dry the ear with turunda;
• return visit after 5 days.

Chronic ear infection (yellow row):

• *the child has a purulent discharge from the ear for 14 days or more;*
• it is necessary to dry the ear by wicking;
• local treatment with ciprofloxacin ear drops for 2 weeks;
• return visit after 5 days.

No ear infection (green row):

The child has no signs of an ear infection and does not require any special treatment.

Does the child have an ear problem?

If yes, ask:

- Is there ear pain?
- Is there ear discharge?
  If yes, for how long?

Look and feel:

- Look for pus draining from the ear.
- Feel for tender swelling behind the ear.

Classify EAR PROBLEM

• Tender swelling behind the ear.	***Pink:*** **MASTOIDITIS**	■ **Give first dose of an appropriate antibiotic** ■ **Give first dose of paracetamol for pain** ■ **Refer URGENTLY to hospital**
• Pus is seen draining from the ear and discharge is reported for less than 14 days, or • Ear pain.	***Yellow:*** **ACUTE EAR INFECTION**	■ **Give an antibiotic for 5 days** ■ **Give paracetamol for pain** ■ Dry the ear by wicking ■ Follow-up in 5 days
• Pus is seen draining from the ear and discharge is reported for 14 days or more.	***Yellow:*** **CHRONIC EAR INFECTION**	■ Dry the ear by wicking ■ Treat with topical quinolone eardrops for 14 days ■ Follow-up in 5 days
• No ear pain and No pus seen draining from the ear.	***Green:*** **NO EAR INFECTION**	■ No treatment

Throat problems (introduced IMCI protocol in Ukraine)

One of the main tasks is to differentiate sore throat of viral and bacterial etiology. 50 - 80% of cases of infectious sore throat have a viral etiology, including influenza virus and herpes simplex virus. In addition, the Ebstein-Barr virus is the cause in 10% of cases. The most common bacterial pathogen is group A beta-hemolytic streptococcus. The following signs can help determine risk of infection with group A beta-hemolytic streptococcus:

- *plaque on the tonsils*
- *painful anterior cervical lymph nodes*
- *fever with this disease*
- *no cough/runny nose.*

Evaluate the following signs:

1. Is there a sore throat?
2. Can the child drink, swallow?
3. Is there a cough/runny nose?
4. Does the child have a body temperature of 37.5 or higher?

Look:

- *soreness of the anterior cervical lymph nodes;*
- *plaque on the tonsils.*

Pharyngeal abscess ("pink row"):

• *can't drink or swallow?*
• give the first dose of ampicillin 50 mg/kg + gentamicin 7.5 mg/kg i.m.;
• prescribe one dose of paracetamol;
• send to hospital immediately.

Acute tonsilopharyngitis, probably bacterial ("yellow row"):

• *plaque on the tonsils **AND***
• *soreness of the anterior cervical lymph nodes **AND***
• *the child has a body temperature of 37.5 and higher **AND***
• *no cough/runny nose.*
• Perform a swab for diphtheria from the pharynx and nose. If you suspect diphtheria - immediate referral to the hospital!
• Prescribe oral amoxicillin for 10 days.
• Give one dose of paracetamol/ibuprofen.
• Give a safe throat softener.
• Counsel the mother about conditions requiring immediate medical attention.
• Schedule a follow-up examination in 2 days.

Acute pharyngitis ("green row"):

• *plaque on the tonsils **OR***
• *soreness of the anterior cervical lymph nodes **AND***
• *the presence of a cough/runny nose.*
• For plaque on the tonsils, take a diphtheria swab from the pharynx and nose.
• Give one dose of paracetamol/ibuprofen.
• Give a safe throat softener.
• Counsel the mother about conditions requiring immediate medical attention.
• Schedule a follow-up examination if there is no improvement after 5 days.

No throat problems (green row):

• *no plaque on the tonsils **AND***
• *soreness of the anterior cervical lymph nodes*

• does not require any special treatment.

Checking nutritional status
For all children, the weight-to-height ratio (WFH/L) and mid-upper arm circumference (MUAC) should be assessed in accordance with the child's developmental charts. If these values are below the "-" 3rd median deviation, check for any complications and/or breastfeeding problems
• severe malnutrition;
• in children with insufficient growth due to an unbalanced diet and repeated episodes of infection (stunted growth);
• anemia.

In addition to weight for a given age, the following clinical signs are assessed in a child:
• *visible severe emaciation - severe weight loss of the shoulders, buttocks and legs, with clearly protruding ribs;*
• *swelling of two feet can be caused by kwashiorkor or other diseases;*
• *paleness of the palms reveals severe anemia, but the specificity of the laboratory test for the diagnosis of anemia is higher.*

Look and feel:
1. Look for oedema of both feet
2. Determine WFH/L* ___ z-score
3. Measure MUAC**____ mm in a child 6 months or older

If WFH/L less than -3 z-scores or MUAC less than 115 mm, then check for any medical complication present:
- Any general danger signs
- Any severe classification
- Pneumonia with chest indrawing

If no medical complications present:
1. Child is 6 months or older, offer RUTF (Ready-to-Use Therapeutic Food) to eat. Is the child:
- *Not able to finish RUTF portion?*
- *Able to finish RUTF portion?*
2. Child is less than 6 months, assess breastfeeding:
- *Does the child have a breastfeeding problem?*

Complicated severe acute malnutrition (pink row):
- *oedema of both feet OR*
- *WFH/L less than -3 zscores OR*
- *MUAC less than 115 mm AND any one of the following:*
- *medical complication present OR*
- *not able to finish RUTF OR*
- *breastfeeding problem OR*
- give first dose appropriate antibiotic
- treat the child to prevent low blood sugar
- keep the child warm
- refer URGENTLY to hospital.

Uncomplicated severe acute malnutrition ("yellow row"):
- *WFH/L less than -3 zscores OR*
- *MUAC less than 115 mm AND*
- *able to finish RUTF.*
- give oral antibiotics for 5 days

- give ready-to-use therapeutic food for a child aged 6 months or more
- counsel the mother on how to feed the child.
- assess for possible TB infection
- advise mother when to return immediately
- follow up in 7 days

Moderate acute malnutrition ("yellow row"):
- *WFH/L between -3 and -2 z-scores OR*
- *MUAC 115 up to 125 mm*
- assess the child's feeding and counsel the mother on the feeding recommendations
- if feeding problem, follow up in 7 days
- assess for possible TB infection.
- advise mother when to return immediately
- follow-up in 30 days.

No acute malnutrition (green row):
- *WFH/L - 2 z-scores or more OR*
- *MUAC 125 mm or more*
- if child is less than 2 years old, assess the child's feeding and counsel the mother on feeding according to the feeding recommendations
- if feeding problem, follow-up in 7 days

• a child under 2 years of age has a nutritional assessment * and a nutritional counseling for the mother.
* A child's nutritional assessment is carried out for all children under 2 years of age and all children whose disease is classified as anemia or very low weight, according to the following criteria:
• frequency of breastfeeding and night feeds;
• types of complementary foods or liquids, frequency of feeding and whether there are active feedings;
• the practice of feeding during the disease.

THEN CHECK FOR ACUTE MALNUTRITION

CHECK FOR ACUTE MALNUTRITION

LOOK AND FEEL:

Look for signs of acute malnutrition

- Look for oedema of both feet.
- Determine WFH/L* ___ z-score.
- Measure MUAC**____ mm in a child 6 months or older.

If WFH/L less than -3 z-scores or MUAC less than 115 mm, then:

- **Check for any medical complication present:**
  - **Any general danger signs**
  - **Any severe classification**
  - **Pneumonia with chest indrawing**
- **If no medical complications present:**
  - **Child is 6 months or older, offer RUTF*** to eat. Is the child:**

    Not able to finish RUTF portion?

    Able to finish RUTF portion?
  - **Child is less than 6 months, assess breastfeeding:**

    Does the child have a breastfeeding problem?

Classify NUTRITIONAL STATUS

• Oedema of both feet **OR** • WFH/L less than -3 z-scores **OR** MUAC less than 115 mm **AND any one of the following:** ☼ Medical complication present or ☼ Not able to finish RUTF or ☼ Breastfeeding problem.	***Pink:*** **COMPLICATED SEVERE ACUTE MALNUTRITION**	■ **Give first dose appropriate antibiotic** ■ **Treat the child to prevent low blood sugar** ■ **Keep the child warm** ■ **Refer URGENTLY to hospital**
• WFH/L less than -3 z-scores **OR** • MUAC less than 115 mm **AND** • Able to finish RUTF.	***Yellow:*** **UNCOMPLICATED SEVERE ACUTE MALNUTRITION**	■ **Give oral antibiotics for 5 days** ■ Give ready-to-use therapeutic food for a child aged 6 months or more ■ Counsel the mother on how to feed the child. ■ Assess for possible TB infection ■ Advise mother when to return immediately ■ Follow up in 7 days
• WFH/L between -3 and -2 z-scores **OR** • MUAC 115 up to 125 mm.	***Yellow:*** **MODERATE ACUTE MALNUTRITION**	■ Assess the child's feeding and counsel the mother on the feeding recommendations ■ If feeding problem, follow up in 7 days ■ Assess for possible TB infection. ■ Advise mother when to return immediately ■ Follow-up in 30 days
• WFH/L - 2 z-scores or more **OR** • MUAC 125 mm or more.	***Green:*** **NO ACUTE MALNUTRITION**	■ If child is less than 2 years old, assess the child's feeding and counsel the mother on feeding according to the feeding recommendations ■ If feeding problem, follow-up in 7 days

*WFH/L is Weight-for-Height or Weight-for-Length determined by using the WHO growth standards charts.

** MUAC is Mid-Upper Arm Circumference measured using MUAC tape in all children 6 months or older.

***RUTF is Ready-to-Use Therapeutic Food for conducting the appetite test and feeding children with severe acute malanutrition.

THEN CHECK FOR ANAEMIA

Check for anaemia

- Look for palmar pallor. Is it:
  - Severe palmar pallor*?
  - Some palmar pallor?

Classify ANAEMIA **Classification arrow**

• Severe palmar pallor	***Pink:*** **SEVERE ANAEMIA**	■ **Refer URGENTLY to hopsital**
• Some pallor	***Yellow:*** **ANAEMIA**	■ Give iron** ■ Give mebendazole if child is 1 year or older and has not had a dose in the previous 6 months ■ Advise mother when to return immediately ■ Follow-up in 14 days
• No palmar pallor	***Green:*** **NO ANAEMIA**	■ • If child is less than 2 years old, assess the child's feeding and counsel the mother according to the feeding recommendations ◦ If feeding problem, follow-up in 5 days

*Assess for sickle cell anaemia if common in your area.

**If child has severe acute malnutrition and is receiving RUTF, DO NOT give iron because there is already adequate amount of iron in RUTF.

Outpatient management of infants aged 0 to 2 months
Assessment of sick infants
The assessment process includes the following steps:
• Check for possible bacterial infection
• Assess if the baby has diarrhea
• Check for feeding problems or low weight
• Check immunization status
• Assess other issues

Principles for treating sick infants

Urgent measures before being sent to the hospital:
- the first dose of the antibacterial drug intramuscularly or orally;
- transportation of a newborn in warm conditions;
- prevention of hypoglycemia with breast milk or sweetened water;
- frequent administration of oral rehydration saline on the way to hospital.

Outpatient treatment of sick infants:
• the choice of antibacterial drug and its dosage differ from those recommended for an older child;
• treatment of diarrhea and prevention of hypoglycemia in newborns is carried out in the same way as in older children;
• the child should always receive the first dose of drugs in a health care facility.

Checking for the main symptoms.
Severe illness or local bacterial infection
Because signs of pneumonia and other severe bacterial infections may not be readily distinguishable in this age group, it is recommended that all sick infants be evaluated first for signs of possible bacterial infection. The following are the most informative and easy-to-assess signs:
- *Convulsions* (with this disease).
- *Fast breathing*. In this age group, 60 breaths per minute is the threshold for rapid breathing. If the count results in 60 breaths per minute or more, the count must be repeated because the infant's breathing rate is often irregular.
- *Severe chest involvement*. This is a sign that the infant has pneumonia or other severe bacterial infection.
- *The presence of pustules, redness of the navel, or purulent discharge from the navel or eyes* is a sign of a possible bacterial infection.
- *The presence of signs in the infant such as lethargy or unconsciousness, or decreased mobility*, also indicates a serious illness.
- *Body temperature (fever or hypothermia)* may also indicate the presence of a bacterial infection. Fever (axillary temperature above 37.5 ° C or rectal temperature above 38 ° C) is rare in the first two months of life. A fever in an infant may indicate a severe bacterial infection and may be the only sign of a severe bacterial infection. Infants may also respond to infection by dropping their body temperature below 35.5 ° C (36 ° C rectally).

Based on the above clinical signs, neonatal disease can be classified into the following categories:

Very severe disease and local bacterial infection (pink row): the child has any of the following symptoms:
• *refusal to eat,*
• *convulsions,*
• *rapid breathing (60 breaths per minute or more),*
• *significant chest involvement,*
• *fever / hypothermia,*
• *movement only when stimulated or no movement at all*;

- give first dose of intramuscular antibiotics
- treat to prevent low blood sugar
- refer URGENTLY to hospital
- advise mother how to keep the infant warm on the way to the hospital.

Local bacterial infection (yellow row):

• *redness around the umbilical sore OR*
• *discharge of pus from it*
• *pustules on the skin*
• it is necessary to give an oral antibacterial drug
• teach mom how to treat a local infection and take care of the baby
• follow up in 2 days.

Severe illness or local bacterial infection unlikely (green row):

• the child has no symptoms of a very serious illness or local bacterial infection;
• teach mom how to take care of the baby.

CHECK FOR VERY SEVERE DISEASE AND LOCAL BACTERIAL INFECTION

ASK:
- Is the infant having difficulty in feeding?
- Has the infant had convulsions (fits)?

LOOK, LISTEN, FEEL:
- Count the breaths in one minute. Repeat the count if more than 60 breaths per minute.
- Look for severe chest indrawing.

(YOUNG INFANT MUST BE CALM)
- Measure axillary temperature.
- Look at the umbilicus. Is it red or draining pus?
- Look for skin pustules.
- Look at the young infant's movements.

If infant is sleeping, ask the mother to wake him/her.
  - Does the infant move on his/her own?

If the young infant is not moving, gently stimulate him/her.
  - Does the infant not move at all?

Classify ALL YOUNG INFANTS

Any one of the following signs • Not feeding well or • Convulsions or • Fast breathing (60 breaths per minute or more) or • Severe chest indrawing or • Fever (37.5°C* or above) or • Low body temperature (less than 35.5°C*) or • Movement only when stimulated or no movement at all.	***Pink:*** **VERY SEVERE DISEASE**	▪ **Give first dose of intramuscular antibiotics** ▪ **Treat to prevent low blood sugar** ▪ **Refer URGENTLY to hospital **** ▪ **Advise mother how to keep the infant warm on the way to the hospital**
• Umbilicus red or draining pus • Skin pustules	***Yellow:*** **LOCAL BACTERIAL INFECTION**	▪ **Give an appropriate oral antibiotic** ▪ Teach the mother to treat local infections at home ▪ Advise mother to give home care for the young infant ▪ Follow up in 2 days
• None of the signs of very severe disease or local bacterial infection	***Green:*** **SEVERE DISEASE OR LOCAL INFECTION UNLIKELY**	▪ Advise mother to give home care.

** These thresholds are based on axillary temperature. The thresholds for rectal temperature readings are approximately 0.5°C higher.*

*** If referral is not possible, management the sick young infant as described in the national referral care guidelines or WHO Pocket Book for hospital care for children.*

Jaundice often seen in newborns, is assessed for the following**:**
- *time of appearance;*
- *localization;*
- *yellowness of the palms and soles***.**

Severe jaundice ("pink row"):

• *any jaundice that occurs before 24 hours of age, OR*
• *jaundice of the palms and feet at any age.*
• it is necessary to carry out the prevention of hypoglycemia
• quickly refer to the hospital
• advise the mother on how to keep the baby warm during transport.

Jaundice ("yellow row"):

• *jaundice that occurs between 24 hours of age, AND*

• *palms and soles are NOT yellow;*
• advise the mother to give home care for the young infant
• advise mother to return immediately if palms and soles appear yellow.
• if the young infant is older than 14 days, refer to a hospital for assessment
• follow-up in 1 day

No jaundice ("green row") - *no jaundice*; advise the mother to give home care for the young infant**.**

If jaundice present, ASK:	***LOOK AND FEEL:***	***CLASSIFY*** JAUNDICE		
• When did the jaundice appear first?	• Look for jaundice (yellow eyes or skin) • Look at the young infant's palms and soles. Are they yellow?	• Any jaundice if age less than 24 hours or • Yellow palms and soles at any age	***Pink:*** SEVERE JAUNDICE	▪ ***Treat to prevent low blood sugar*** ▪ ***Refer URGENTLY to hospital*** ▪ ***Advise mother how to keep the infant warm on the way to the hospital***
		• Jaundice appearing after 24 hours of age and • Palms and soles not yellow	***Yellow:*** JAUNDICE	▪ Advise the mother to give home care for the young infant ▪ Advise mother to return immediately if palms and soles appear yellow. ▪ If the young infant is older than 14 days, refer to a hospital for assessment Follow-up in 1 day
		• No jaundice	***Green:*** NO JAUNDICE	▪ Advise the mother to give home care for the young infant

THEN ASK: Does the young infant have diarrhoea*?

IF YES, LOOK AND FEEL:	***Classify DIARRHOEA*** for DEHYDRATION		
• Look at the young infant's general condition: Infant's movements ◦ Does the infant move on his/her own? ◦ Does the infant not move even when stimulated but then stops? ◦ Does the infant not move at all? ◦ Is the infant restless and irritable? • Look for sunken eyes. • Pinch the skin of the abdomen. Does it go back: ◦ Very slowly (longer than 2 seconds)? ◦ or slowly?	Two of the following signs: • Movement only when stimulated or no movement at all • Sunken eyes • Skin pinch goes back very slowly.	***Pink:*** SEVERE DEHYDRATION	▪ If infant has no other severe classification: ◦ Give fluid for severe dehydration (Plan C) OR ***If infant also has another severe classification:*** ◦ ***Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way*** ***Advise the mother to continue breastfeeding***
	Two of the following signs: • Restless and irritable • Sunken eyes • Skin pinch goes back slowly.	***Yellow:*** SOME DEHYDRATION	▪ Give fluid and breast milk for some dehydration (Plan B) ▪ ***If infant has any severe classification:*** ◦ ***Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way*** ◦ ***Advise the mother to continue breastfeeding*** ▪ Advise mother when to return immediately ▪ Follow-up in 2 days if not improving
	Not enough signs to classify as some or severe dehydration.	***Green:*** NO DEHYDRATION	▪ Give fluids to treat diarrhoea at home and continue breastfeeding (Plan A) ▪ Advise mother when to return immediately ▪ Follow-up in 2 days if not improving

*** What is diarrhoea in a young infant?**
A young infant has diarrhoea if the stools have changed from usual pattern and are many and watery (more water than faecal matter).
The normally frequent or semi-solid stools of a breastfed baby are not diarrhoea.

Feeding problems or low birth weight in newborns are assessed according to the following criteria**:**
• *frequency of breastfeeding, night feedings;*
• *use of other foods or liquids, the frequency of their use;*
• *feeding practice during the illness;*
• *weight for age.*
Please note that the algorithms for assessing this problem are different for breastfed and bottle-fed babies.

THEN CHECK FOR FEEDING PROBLEM OR LOW WEIGHT FOR AGE IN NON-BREASTFED INFANTS

Use this chart for HIV EXPOSED infants not breastfeeding AND the infant has no indications to refer urgently to hospital:

Ask:

- What milk are you giving?
- How many times during the day and night?
- How much is given at each feed?
- How are you preparing the milk?
- Let mother demonstrate or explain how a feed is prepared, and how it is given to the infant.
- Are you giving any breast milk at all?
- What foods and fluids in addition to replacement feeds is given?
- How is the milk being given?
- Cup or bottle?
- How are you cleaning the feeding utensils?

LOOK, LISTEN, FEEL:

- Determine weight for age.
- Look for ulcers or white patches in the mouth (thrush).

Classify FEEDING

• Milk incorrectly or unhygienically prepared or Giving inappropriate replacement feeds or Giving insufficient replacement feeds or • An HIV positive mother mixing breast and other feeds before 6 months or • Using a feeding bottle or • Low weight for age or • Thrush (ulcers or white patches in mouth).	***Yellow:*** **FEEDING PROBLEM OR LOW WEIGHT**	■ Counsel about feeding ■ Explain the guidelines for safe replacement feeding ■ Identify concerns of mother and family about feeding. ■ If mother is using a bottle, teach cup feeding ■ Advise the mother how to feed and keep the low weight infant warm at home ■ If thrush, teach the mother to treat thrush at home ■ Advise mother to give home care for the young infant ■ Follow-up any feeding problem or thrush in 2 days ■ Follow-up low weight for age in 14 days
• Not low weight for age and no other signs of inadequate feeding.	***Green:*** **NO FEEDING PROBLEM**	■ Advise mother to give home care for the young infant ■ Praise the mother for feeding the infant well

THEN CHECK FOR FEEDING PROBLEM OR LOW WEIGHT FOR AGE

Use this table to assess feeding of all young infants except HIV-exposed young infants not breastfed. For HIV-exposed non-breastfed young infants see chart "THEN CHECK FOR FEEDING PROBLEM OR LOW WEIGHT FOR AGE IN NON-BREASTFED INFANTS"

If an infant has no indications to refer urgently to hospital:

Ask:

- Is the infant breastfed? If yes, how many times in 24 hours?
- Does the infant usually receive any other foods or drinks? If yes, how often?
- If yes, what do you use to feed the infant?

LOOK, LISTEN, FEEL:

- Determine weight for age.
- Look for ulcers or white patches in the mouth (thrush).

Classify FEEDING

• Not well attached to breast or • Not suckling effectively or • Less than 8 breastfeeds in 24 hours or • Receives other foods or drinks or • Low weight for age or • Thrush (ulcers or white patches in mouth).	***Yellow:*** **FEEDING PROBLEM OR LOW WEIGHT**	■ If not well attached or not suckling effectively, teach correct positioning and attachment ◦ If not able to attach well immediately, teach the mother to express breast milk and feed by a cup ■ If breastfeeding less than 8 times in 24 hours, advise to increase frequency of feeding. Advise the mother to breastfeed as often and as long as the infant wants, day and night ■ If receiving other foods or drinks, counsel the mother about breastfeeding more, reducing other foods or drinks, and using a cup ■ If not breastfeeding at all*: ◦ Refer for breastfeeding counselling and possible relactation* ◦ Advise about correctly preparing breast-milk substitutes and using a cup ■ Advise the mother how to feed and keep the low weight infant warm at home ■ If thrush, teach the mother to treat thrush at home ■ Advise mother to give home care for the young infant ■ Follow-up any feeding problem or thrush in 2 days ■ Follow-up low weight for age in 14 days
• Not low weight for age and no other signs of inadequate feeding.	***Green:*** **NO FEEDING PROBLEM**	■ Advise mother to give home care for the young infant ■ Praise the mother for feeding the infant well

ASSESS BREASTFEEDING:

- **Has the infant breastfed in the previous hour?**

  If the infant has not fed in the previous hour, ask the mother to put her infant to the breast. Observe the breastfeed for 4 minutes.

  (If the infant was fed during the last hour, ask the mother if she can wait and tell you when the infant is willing to feed again.)

  ◦ Is the infant well attached?

  not well attached *good attachment*
- **TO CHECK ATTACHMENT, LOOK FOR:**
  ◦ *Chin touching breast*
  ◦ *Mouth wide open*
  ◦ *Lower lip turned outwards*
  ◦ *More areola visible above than below the mouth*

  (All of these signs should be present if the attachment is good.)
- Is the infant suckling effectively (that is, slow deep sucks, sometimes pausing)?

  not suckling effectively *suckling effectively*

Clear a blocked nose if it interferes with breastfeeding.

* Unless not breastfeeding because the mother is HIV positive.

HIV infection in the strategy IMCI
• dispensary department of the Ukrainian and regional (city) centers for the prevention and control of AIDS.
• rooms for infectious diseases polyclinics at the place of residence of patients.
• in the absence of the latter, district pediatricians or infectious disease doctors of children's hospitals.

According to the IMCI strategy, in certain situations, a child must be classified by HIV infection:
• repeated episodes of pneumonia over the past 6 months.
• prolonged diarrhea
• chronic otitis media
• anemia
• malnutrition
• the child is being watched or being treated for HIV infection
• the presence of HIV infection in the mother (for children 1 week -2 months)

Ask if the child or mother has been tested for HIV infection. If yes, determine your HIV status:
• *Mother: the result is positive or negative*
•*Child:*
- *virological test: positive or negative*
- *serological test: positive or negative*

If the mother's result is positive and the baby's is negative or uncertain, ask:
1. Was breastfeeding at the time of examination or for 6 weeks. before the examination?
2. Is the baby breastfeeding now?
3. If yes, are the mother and child receiving ARV prophylaxis?

If the mother's result is negative or uncertain, test the mother and baby.
Confirmed HIV infection ("yellow row"):
• *positive virological test in a child OR*
• *positive serological test in a child 18 months of age and older*
• Start ARV therapy and specific care for an HIV-infected child
• Give cotrimoxazole prophylactically
• Evaluate feeding and counsel mother
• Advise the mother on childcare
• Send the child for examination (Tbc)
• Provide regular supervision of the child

Child with unspecified HIV status born to HIV-infected mother ("yellow row"):
• *mother is HIV-positive AND*
• *negative virological test in a breastfed baby or breastfeeding was discontinued less than 6 weeks before the test OR*
• *the mother is HIV positive and the child has not been tested OR*
• *positive serological test in a child under 18 months of age.*
• Give cotrimoxazole prophylactically
• Start or continue ARV prophylaxis (+ Prevention of Maternal-To-Child-Transmission (PMTCT) of HIV infection for newborns)
• Perform virologic screening to confirm HIV status (for newborns 4-6 weeks old and repeat 6 weeks after breastfeeding stops)
• Evaluate feeding and counsel mother
• Advise the mother on childcare
• Provide regular supervision of the child

HIV infection is unlikely (green row):

• *negative test results in mother and child*
• Provide counseling, treatment, and supervision appropriate to the underlying problem.

A condition that requires testing for HIV infection ("green row"):
• *mother and child have not been examined*
• Conduct pre-test counseling
• Refer the mother and / or baby for testing
• Provide counseling, treatment, and supervision appropriate to the underlying problem.

Regular monitoring of a child with HIV infection who is receiving treatment includes an assessment of adverse reactions to ARV therapy:

Symptoms	**Providing assistance**
Yellow eyes (jaundice) or abdominal pain	Stop therapy immediately. Urgently refer to the hospital.
Rash	Taking abacavir: additionally find out severe, generalized rash, crusts, mucosal lesions, vomiting, fever. Stop therapy immediately. Urgently refer to the hospital.
Nausea	Recommend to give medication together with food. Duration more than 2 weeks/worsening: counsel the child.
Vomiting	Repeat dose, if in emetic masses have drug or passed at least 30 min. from the moment of admission. If vomiting continues, send for examination. If vomiting after each reception of food or have abdominal pain - immediately refer in hospital.
Diarrhea	Evaluate the child according to the diarrhea management plan. Reassure the mother, that it may be due to the reception of preparations and state of the child will soon improve. If the condition does not improve after a few weeks, send the child for examination.
Fever	Evaluate the child according to the fever management plan.
Headache	Give paracetamol. If a child gets EFV, reassure the mother, that it may be due to the reception of preparations and state of the child will soon improve. If headache lasts more than 2 weeks - to send the child for examination.
Deterioration of sleep, nocturnal nightmares, anxiety	May appear when receiving efavirenz give the medication at night, on an empty stomach with food with low content of fat. If the condition lasts more than 2 weeks, send the child for examination.
Tingling, numbness, pain in the feet or legs	If it appears for the first time, send the child for examination.

Basic principles of dispensary observation:
• Voluntary - dispensary observation is carried out on a voluntary basis.
• Confidentiality - the right of the patient (his family) to keep the confidentiality of the diagnosis (non-disclosure of information about HIV infection, minimizing the number of people who are aware of the fact of infection).
• Accessibility - maximum proximity of all types of medical care to a person.
• Versatility - a wide range of medical care, carried out on an outpatient basis.

The main tasks of dispensary observation of HIV - infected children:
• Provision of comprehensive medical and preventive care.
• Timely identification of signs of disease progression.
• Prevention of the development of opportunistic infections as factors in the progression of HIV infection.

• Consulting family and friends of the child on care and nutrition.
• Psychological support, assistance in social adaptation.

Dispensary observation procedure

1. Children born from HIV - infected mothers, before specifying their HIV- status:

• Clinical examination: examination by a pediatrician during the first month of life - every 2 weeks, then monthly during the first year of life, after 12 months before HIV status is clarified - once every 2-3 months.

• During each appointment, the doctor records in the medical documentation (card):

- ✓ condition of the skin and mucous membranes;
- ✓ the size of the lymph nodes;
- ✓ the size of the ear salivary glands;
- ✓ respiratory, cardiovascular and digestive systems, central nervous system (CNS);
- ✓ the size of the liver and spleen;

• The medical documentation records the past illnesses, fever, episodes of vomiting, loose stools, increased bleeding, which were noted in the child in the period between reviews, etc.

• Laboratory and instrumental examinations:

- ✓ detailed clinical blood test 1 time in 1-3 months;
- ✓ control of the degree of immunosuppression at 1 and 4 months, then to clarify the HIV status, depending on the presence of clinical indicators;
- ✓ level of immunoglobulins - once every 6 months;
- ✓ ALAT/ASAT, thymol test - once every 3-6 months;
- ✓ chest x-ray - according to indications;
- ✓ neurosonography - once every 6 months;
- ✓ tests to clarify the child's HIV status: PCR HIV DNA - at the age of 48 hours - 4 months, determination of antibodies to HIV - at the age of 18 months.

• Dispensary observation:

- ✓ vaccination in accordance with the vaccination schedule for HIV-infected children,
- ✓ prevention of Pneumocystis pneumonia from 4-6 weeks to 1 year or until HIV infection is excluded,
- ✓ annual Mantoux reaction.

2. The procedure for dispensary observation of children with confirmed HIV status:

• At each examination by a pediatrician or pediatric infectious disease specialist:

- ✓ measurement of body weight and height;
- ✓ measurement of head circumference in children under 2 years of age;
- ✓ assessment of neuropsychic development;
- ✓ assessment of the condition of the skin and mucous membranes;
- ✓ assessment of the condition of the lymph nodes;
- ✓ determination of the size of the behind-the-ear salivary glands;
- ✓ assessment of the state of the respiratory, cardiovascular systems, gastrointestinal tract and central nervous system;
- ✓ determination of the size of the liver and spleen.

• Laboratory and instrumental examinations:

- ✓ detailed general blood test (with counting the number of lymphocytes, platelets, hematocrit);
- ✓ general urine analysis;
- ✓ biochemistry (bilirubin, ALT, AST, glucose, total protein and protein fractions);
- ✓ the level of CD4 + lymphocytes (once every 3-6 months, depending on clinical indications);
- ✓ viral load (if possible);

• Dispensary observation:

- ✓ the need for additional examinations and consultations is determined by the pediatrician;
- ✓ Mantoux test once every 6 months to all HIV-infected children, regardless of the stage of HIV infection.

The frequency of observation by a pediatrician and laboratory examination depends on the stage of HIV infection and the clinical situation:

• HIV- infection Stage I (according to WHO classification, 2002):

- ✓ examination by a pediatrician 1 time in 3 - 6 months
- ✓ laboratory examination - once every 6 months

• HIV - infection Stage II (according to the WHO classification, 2002):

- ✓ examination by a pediatrician - once every 3 months
- ✓ examination - once every 3 - 6 months
- ✓ if a severe degree of immunosuppression is detected (CD4 + level <15%) - re-examination after 1 month

• HIV - infection Stage III (according to the WHO classification, 2002):

- ✓ examination by a pediatrician - once a month
- ✓ he frequency of supervision by a pediatrician, as well as the frequency of laboratory and instrumental examinations, depend on the clinical situation
- ✓ in case of opportunistic infections, inpatient treatment is indicated in a state of remission

6. Materials for methodological support of the lesson

6.1. Tests from the base of the KROK-2 licensed exam:

1. A 3 month old infant suffering from acute segmental pneumonia has dyspnea (respiration rate - 80 per minute), paradoxical breathing, tachycardia, total cyanosis. Respiration and pulse - ratio is 1:2. The heart dullness under normal size. Such signs characterise:

A. **Respiratory failure of III degree**
B. Respiratory failure of I degree
C. Myocarditis
D. Congenital heart malformation
E. Respiratory failure of II degree

2. The 7 m.o. infant is suffering from acute pneumonia which was complicated by cardiovascular insufficiency and respiratory failure of II degree. The accompanied diagnosis is malnutrition of II degree. Choose the best variant of therapy:

A. **Ampiox and Amicacin**
B. Gentamycin and Macropen
C. Ampiox and Polymixin
D. Macropen and Penicillin
E. Penicillin and Ampiox

3. A 3 year old child has been suffering from fever, cough, coryza, conjunctivitis for 4 days. He has been taking sulfadimethoxine. Today it has fever up to 39°C and maculopapular rash on its face. Except of rash the childs skin has no changes. What is your diagnosis?

A. Measles
B. Pseudotuberculosis
C. Rubella
D. Allergic rash
E. Scarlet fever

4. A mother consulted a pediatrician about her son. Her son was born with body mass of 3 kg and length of 48 cm. He is 1 year old now. What is the required normal mass?

A. 10,5 kg
B. 9,0 kg
C. 12,0 kg
D. 15,0 kg
E. 11,0 kg

5. 6 m.o. infant was born with bodys mass 3 kg and length 50 cm. He is given natural feeding. How many times per day the infant should be fed?

A. 5
B. 4
C. 6
D. 7
E. 8

6. Infant is 6,5 months now and is given natural feeding since birth. Body mass was 3,5 kg, with length 52 cm at birth. How many times per day the supplement (up feeding) should be given?

A. 2
B. 1
C. 4
D. 0
E. 3

6.2. List of recommended reading

- Basic Literature

1. Nelson Textbook of Pediatrics, 2-Volume Set, 21th Edition / Robert M. Kliegman, MD, Bonita M.D. Stanton, MD, Joseph St. Geme, MD and Nina F Schor, MD, PhD. 2019. - 4264 pages
2. O.P. Ghai. Essential Pediatrics 9th/2019 – 814 pages
3. Pediatrics\ I.V. Odinec, A.F. Ruchko, O.P. Poddubnaya.-224p. - 2003
4. Integrated management of childhood illness. Care for sick children at first-level health facilities https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/child-health/integrated-management-of-childhood-illness/
5. IMCI chart booklet https://www.who.int/publications/i/item/9789241506823

- Additional literature:

1. Improving paediatric referral care in the context of child survival activities and IMCI https://www.who.int/publications/i/item/9789241596428
2. Integrated Management of Childhood Illness (IMCI) global survey report https://www.who.int/publications/i/item/9789241512985
3. IMCI in-service training: Module 1 ASSESS AND CLASSIFY THE SICK CHILD AGE 2 MONTHS UP TO 5 YEARS https://www.who.int/publications/i/item/imci-in-service-training-module-1
4. IMCI set of distance learning modules: introduction-self-study modules https://www.who.int/publications/i/item/integrated-management-of-childhood-illness-set-of-distance-learning-modules

6.3 . Indicative map for independent work with literature

№	The main tasks	Directions	Answers
1	2	3	4
1.	Read the literature and the purpose of the lesson	To get acquainted with modern ideas about etiopathogenesis, classification, clinical course and additional methods for diagnosing diseases in children	Know the risk factors of development of disease, the modern classification, clinical picture of the manifestations of diseases, hematological, immunological, radiological and functional features of diseases and conditions, included in the IMCI
2.	Epidemiology	Know the prevalence in the child population.	Know: the prevalence of the most common diseases and pathological conditions in the child population

3.	Etiopathogenesis	Know the causes and mechanism of respiratory tract injury in children	Know, that these changes can be caused by defects of development, acquired and traumatic injuries, but more often they are the result of inflammatory bronchopulmonary diseases, violation of bronchial patency
4 .	Clinic	Describe the clinical picture	Know the difference in the clinical manifestations of diseases
5.	Diagnostics	Know the schemes of diagnosis and treatment of diseases within the framework of IMCI	Use schemes for the diagnosis and treatment of diseases within the framework of IMCI

7. Materials for self-control on the quality of training.

A. Questions for self-control.

Questions for self-control:

- General danger signs of the child's condition.
- What do the different steps mean in IMCI?
- Why do we need an integrated approach to the management of sick children?
- What is IMCI strategy?
- Leading causes of infant and perinatal mortality in the world and in Ukraine
- Objectives, principles, components and target population of the IMCI strategy
- Important aspects of the impact of medicine on child health in Ukraine
- Comparative analysis of the " standard " approach to managing patients with IMCI
- Explain the “ integral ” aspect of IMCI
- Classification approaches cough and shortness of breath on IMCI
- Classification approaches dehydration of IMCI
- Classification approaches of probable bacterial infection (in a child under 2 months old) according to IMCI
- Classification approaches to solving problems feeding or lack of weight of the IMCI
- Classification approaches of hyperthermia for IMCI
- Classification approaches anemia and inadequate nutrition of the IMCI
- Assessment of urgent signs of a child's condition according to IMCI
- Assessment of priority signs of a child's condition according to IMCI
- Differential diagnosis of hyperthermia in children with IMCI
- Tactics of conducting children with diarrhea for IMCI
- Principles for Effective Parent Counseling

B. Tests for self-control:

1. A child is 2 years old. The child complains of hoarse voice, dyspnea with obstructed inspiration. The disease started 3 days ago from dry cough and nose stuffiness. Objectively: general condition is unbalanced, stridor is present. The childs skin is pale. Body temperature is 37,7°C. The palatine arches are hyperemic. There is no deposit. Heart sounds are rhythmic. Auscultation of lungs reveals rough breathing sounds, crepitation is absent. Parainfluenza virus has been detected in nasopharynx lavage. What is the most likely diagnosis?

A. Acute laryngotracheitis
B. Foreign body
C. Epiglottitis
D. Diphtheria
E. Laryngospasm

2. An infant aged 1 year on the third day of common cold at night developed inspiratory stridor, hoarse voice and barking cough. Physical examination revealed suprasternal and intercostal chest retractions. There

is a bluish skin discoloration moistly seen over the upper lip. The respiratory rate is 52 per min and pulse- 122 bpm. The body temperature is 37,5°C. What disease does the infant have?

A. Acute infectious croup due to viral laryngotracheitis
B. Acute bronchiolitis with respiratory distress
C. Acute epiglottitis
D. Acute laryngitis
E. Bronchopneumonia without complications

3. A newborn aged 3 days with hyperbilirubinemia (428 mkmol/L) developed following disorders. From beginning there were severe jaundice with poor suckling, hypotomia and hypodynamia. Little bit later periodical excitation, neonatal convulsions and neonatal primitive reflexes loss are noted. Now physical examination reveals convergent squint, rotatory nystagmus and setting sun eye sign. How to explain this condition?

A. Encephalopathy due to hyperbilirubinemia
B. Spastic cerebral palsy
C. Brain tumour
D. Skull injury
E. Hydrocephalus

4. A 6 week old child is admitted because of tachypnea. Birth had been uneventful, although conjunctivitis developed on the third day of life and lasted for about 2 weeks. Physical examination reveals tachypnea, bilateral inspiratory crackles and single expiratory wheezing. Bilateral pneumonia is evident on chest X-ray. The child is afebrile and has no history of fever. White blood cell count is 15×109/l, with 28% of eosinophils. The most likely cause of this childs symptoms is:

A. Clamydia trachomanis
B. Varicella
C. Mycoplasma pneumoniae
D. Pneumocystis carinii
E. Visceral larva migrans

5. A 3-year-old child was playing in a playpen when he suddenly developed paroxysmal cough and shortness of breath. Objectively: dry cough, mixed dyspnea. Lung auscultation revealed some wheezes. Breathing sounds on the right are diminished. The child doesnt mix with other children. Immunization is age-appropriate. What pathological condition can be suspected?

A. Foreign body in the respiratory tracts
B. Pneumonia
C. Pertussis
D. Bronchial asthma
E. Acute respiratory viral infection

8. Materials for classroom self-study.

8.1. The list of educational practical tasks that must be completed during practical exercises.

1. Collect anamnesis, highlight data that indicate the disease.
2. To identify the most informative signs of the disease during an objective and laboratory and instrumental examination of the patient.
3. To establish a clinical diagnosis according to the modern classification.

9. Instructional materials for mastering professional skills.

9.1. Methodology for performing work, stages of implementation

1. Evaluate the received data of anamnesis of life and illness, identify risk factors.
2. Conduct a clinical examination of the patient.
3. Draw up a plan for additional examination.
4. Evaluate the results of laboratory and instrumental examination.

5. Formulate a clinical diagnosis according to the classification.
6. Prescribe treatment that is appropriate for the specific situation

10. Materials for self-control of mastering knowledge, abilities, skills

Situational tasks:

<table>
<tr><td colspan="2">The mother of a 4-year- old patient complains of fever in child up to 38.5 C for 4 days, dry cough, shortness of breath. During IMCI examination RR- 45/min., chest indrawing.</td></tr>
<tr><td>The task
1. Make a diagnosis using IMCI strategy
2. Indicate the steps required for the IMCI strategy.</td><td>Answer
1. Severe pneumonia or a very severe disease.
2. Pink code, immediate hospitalization, the appointment of the first dose of ampicillin + gentamicin intramuscularly. Advising the mother on the observation of the child at the time of transportation.</td></tr>
<tr><td colspan="2">A 2- year-old patient with pneumonia suddenly developed shortness of breath (48/min). The child turned pale, covered with cold sweat, there is a stridor.</td></tr>
<tr><td>The task
1. Accordingto IMCI, what condition did the child have?
2. Is outpatient treatment possible for children with pneumonia?
3. What should the mother of the child do first?</td><td>Answer
1. Severe pneumonia or a very severe disease.
2.Perhaps, if the condition of the child is not accompanied by general danger signs, not accompanied by stridor or retraction of the thoracic cage, only cough and tachypnea are present, with the appointment of a rational antibiotic therapy, counseling the mother, the appointment of repeated examinations by 2 days.
3. Seek medical attention immediately, the child needs hospitalization.</td></tr>
<tr><td colspan="2">At 10 months of the child at night on the background of the common cold came a barking cough, shortness of breath, stridor, chest indrawing.</td></tr>
<tr><td>The task
1. Make a diagnosis
2. What code do you need to use to classify the condition of the child?
3. What are your actions in the IMCI concept?</td><td>Answer
1.Stenosing laryngitis
2.Pink code
3.Immediate hospitalization , administration of the first dose of ampicillin + gentamicin, dexametozone intramuscularly</td></tr>
</table>