

**Ministry of health of Ukraine**  
**National Pirogov Memorial Medical University**

**Objective structured clinical exam (OSCE) on Children`s diseases and children  
infectious diseases**  
**Information for students**

The two main principles of OSCE are objectivity and structuring. Objectivity is determined by the standardized scales of assessment and the fact that the same examiner asks the same questions to all examiners. At the same time, the structured OSCE station has a standardized flowchart, which allows to assess a certain clinical skills, taking into account the received training course.

**Station 1.**

**Clinical situation task on children`s infectious diseases**

The student should be able to formulate the diagnosis of the most common diseases in children; to be able to interpret the received clinical and laboratory results, taking into account anatomical and physiological features and age standards; complications of the most common infectious diseases of childhood, as well as diagnose conditions threatening the child's life; to provide emergency care in emergency situations.

*List of clinical tasks you can find on **children infectious diseases department site.***

**Station 2.**

**Cardiopulmonary resuscitation of newborns.**

**Skills:**

- Be able to identify neonatal adaptation disorders and the need for resuscitation.
- Carry out measures for initial stabilization of newborns.
- Perform a complex of cardiopulmonary resuscitation in newborns.

**Equipment of the station:**

- Newborn baby simulator.
- Scenario of the clinical situation.
- Resuscitation surface (radiant warmer), second hand clock (timer), bulb syringe or suction catheter, Ambu bag-and-mask ventilation for newborns, disposable gloves, diapers (4 pcs.), shoulder roller, neonatal stethoscope, medication (epinephrine, normal saline solution).

**Instruction for students.**

- 1) Initial care (stabilization), position and clearing the airways:
  - determine the need for initial help, put the newborn to the radiant warmer, take the position opposite the head of the newborn, dry with a diaper, put a roller under the shoulders and provide a position with the slightly extended neck;
  - carry out suction from the mouth and the nose with a suction catheter.
  - assess the condition of the child (adequate respiration, heart rate).
- 2) In case of absence adequate spontaneous breathing or heart rate <100 bpm Bag-and-mask ventilation:
  - check the correct position of the newborn; stimulate (slapping/flicking the soles of the feet);
  - put a mask on the face tightly, ensuring its tight fit;
  - perform bag-and-mask ventilation with a frequency of 30 breaths per minute for 30 seconds;
  - assess the newborn's condition after 30 seconds (adequate respiration, heart rate).
- 3) Chest compressions at heart rate <60 bpm after 30 seconds despite adequate ventilation:
  - determine the compression site on the lower third of the sternum (above the xyphoid apophysis); set on it the tips of thumbs, the rest of the fingers fix the newborn's back (ventilation continues the assistant);
  - initiate pushing on the sternum with a frequency of 90 per minute with a compression depth of 1/3 of the anterior-posterior chest diameter, the compressions should be implement perpendicular to the surface of the chest;
  - coordinate the heart compressions with ventilation in the ratio of 3: 1, avoiding the simultaneous execution of both procedures;
  - assess the child's condition after 30 seconds (adequate respiration, heart rate).

**4) The use of medications.**

Determine indications for the administration of medications.

Indications for the introduction of epinephrine: the heart rate remains < 60 bpm after 30 seconds despite adequate ventilation with 100% oxygen.

Indications for administration of 0.9% sodium chloride (normal saline solution): there is no response to previous resuscitation steps in the presence of signs of shock (pallor, bradycardia, weak pulse, positive symptom of "white spot" or there is evidence fetus's blood loss (bleeding, abruptio placentae)

- heart rate <60 bpm 0.1-0.3 ml/kg 0,01% epinephrine solution should be administered intravenously through umbilical vein;
- hypovolemia and signs of shock (for volume expansion) 10 ml/kg 0.9% sodium chloride should be slowly administered.

### **Station 3.**

#### **Clinical situation with a standard patient**

**(tasks content you can find in hall of simulation center and rest zones)**

##### *Skills:*

1. Demonstration of communicative skills
2. Be able to evaluate syndrome or most possible diagnose of the disease based upon received data.
3. Provide differential diagnose.
4. Be able to explain results of additional laboratory and instrumental investigations.
5. Prescribe additional laboratory and/or instrumental investigations of a patient to confirm evidence based diagnose.
6. Determine treatment strategy of the patient with estimated diagnose according to the actual algorithms and standard schemes.

*Report the results to teacher*

### **Station 4.**

#### **Clinical emergency care task with standard patient**

**(tasks content you can find in hall of simulation center and rest zones)**

##### *Skills:*

1. Demonstration of communicative skills
2. Be able to establish the most possible emergency case based upon received data.
3. Provide differential diagnose.
4. Be able to evaluate results of the additional laboratory and instrumental investigations.
5. Determine strategy of emergency medical support according to standard schemes.

*Report the results to teacher*