PAEDIATRICS OSCE

Instructions at each station

INFORMATION FOR CANDIDATES

Time available at this station: 10 MINUTES,

Marks from station; 20

Specimen; REAL CHILD/MANIKIN/LAB RESULT /ETC

Main skill tested; PHYSICAL EXAMINATION/HISTORY/ETC

INSTRUCTIONS

Read and understand the given tasks and perform them. You are being watched and assessed on your skills. Talk as you undertake the skills.

STUDENT TASKS

Depending on the objectives and the expected findings of the case

General Rules

- Greet the patient, family, or the caregiver
- Wash hands. Introduce yourself (name and position) to parent and child.
- Explain what you will do. Ask permission.
- “Do you have any pain”
- Observe the child + environment → describe
- Give a running commentary- State loudly what they are doing and communicate their findings to the examiner.
- Child or parent should undress. If the child does not do what you want it to do → ask the examiner
- Explain elements you will postpone to the end
- “I would like to weigh the child and plot these ideally ċ previous measurements. (know how to do these).
- Say when finished. Stand ċ hands behind back. Give important +ve and -ves succinctly. Look confident.
- Thank the patient and the examiner for the time and effort.

STATIONS

- Systemic Examination
  - Abdominal System
  - Respiratory System
  - Cardiovascular System
  - Central Nervous System
- History Taking
- Neonatology
- Communication skills
- Analysis stations
- Laboratory tests
- Prescribing

Paeds

1. CVS
   a. Precordium
   b. Pulses
   c. Pulsus paradoxicus
2. Resp
3. Abdominal
   a. Ascites
   b. Palpate
   c. Inspection
4. CNS
   a. Sensory
   b. Motor
   c. Meningitis
   d. Cerebellar tests
5. Hx/Counseling
   a. Growth curve
   b. HIV
   c. Breastfeeding
   d. Malnutrition
   e. TB
6. Hx/Counseling
7. Neonatal Resuscitation
8. Photo
   a. Skin lesions
   b. Phototherapy
9. Lab
   a. Know basics
   b. BGA
   c. GFR
10. XRAY
    a. Chest
    b. Wrist
    c. CT Scan

*LP
*Generel Exam

Systemic Examination - Abdominal System

- Do a general examination relevant to the GI system
- Make a detailed abdominal examination of this child

THEN

1. Name the 3 most likely differentials or
2. List the 3 most important investigations or
3. How do you manage the number 1 differential or
4. Ask for relevant history to help in diagnosis

Palpate the abdomen of the child with abdominal pain

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- From the right side, adequately expose the abdomen
- Ask for any area of tenderness
- Light palpation: **LOOK AT FACIAL EXPRESSION!!** In a sequential manner. Nodules or Masses? Tenderness?
- Deep palpation
- Organ specific palpation: liver, spleen, bimanual palpation of kidneys
- Palpate the inguinal region for lymph nodes or hernia
- IN MALES: Palpate the testes- first ask parents + child
- Cover the patient
- Thank the patient

Examine the child with ascites

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- Adequately expose the abdomen and inspect from the foot of the bed
  - Abdominal fullness
  - Symmetry
  - Movement with respiration
  - Scars, superficial blood vessels
  - Umbilical stump
- Light palpation: **LOOK AT FACIAL EXPRESSION!!** In a sequential manner. Nodules or Masses? Tenderness?
- For ascites elicit fluid thrill and shifting dullness

- Differential diagnosis – Fat, Fluid, Flatus
- Liver disease
- Portal HTN
- Protein losing enteripathy
- Abdominal malignancies
- Nephrotic syndrome

Possible Abdominal System Examination Answer Sheet

PERFOMANCE OF STUDENT	Not Done [0 marks]	Done but incomplete [1 mark]	Done completely [2 marks]
Good social interaction with patient/parent			
General examination			
EACH OF THE IMPORTANT STEPS IN THE ABDOMINAL EXAMINATGION			
THREE DIFFERENTIALS			
Overall quality of presentation			
TOTAL [OUT OF 20]			

Setup: ask to lie flat

- General: in pain, jaundiced, nutrition status, obese
- Hands: clubbing, anaemia
- “I will perform BP @ end of exam”
- Face + neck: LNs, mouth
- Abdomen:
  - Inspection: Distensions, scars, gastrostomy tube, stoma, obvious masses, distended veins
  - Palpation: “do you have any pain”.
    - Light then deeper in each quadrant
    - Palpate liver (start RIF) and spleen (start LIF)
    - Ballot kidneys
    - Feel for hernias
  - Percussion: Enlarged organs, liver, masses, ascites
  - Auscultation: bowel sounds, bruits over masses

Systemic Examination – Respiratory System

- Child presenting with fever, cough and difficulty in breathing-for three days each. Associated difficulty in feeding.

1. Examine the child: Inspection
2. Relevant DIAGNOSIS with classification

Examine the child: Inspection

- Greet the patient and Introduce yourself
- Explain the examination and ask for consent for examination
- Physical examination: INSPECTION
- Hands: colour, temp, clubbing, tremor, pulse
  - Pallor
  - Peripheral cyanosis
  - Finger clubbing
- Respiratory distress
  a) Head nodding
  b) Nasal flaring
  c) Grunting
  d) Central cyanosis
  e) Anaemia
  f) Count respiratory rate for one minute
  g) Chest symmetry
  h) Chest wall indrawing
  i) Accessory muscle use
  j) Abdominal movement with respiration
- Cover the patient
- Thank the patient

- Diagnosis: Pneumonia
- Classification:
  1. Very severe pneumonia
  2. Severe pneumonia
  3. Pneumonia
- Definitive treatment: DEPENDS ON CLASSIFICATION
  1. Crystapen+ gentamycin
  2. Oxygen

Systemic Examination – Cardiovascular System

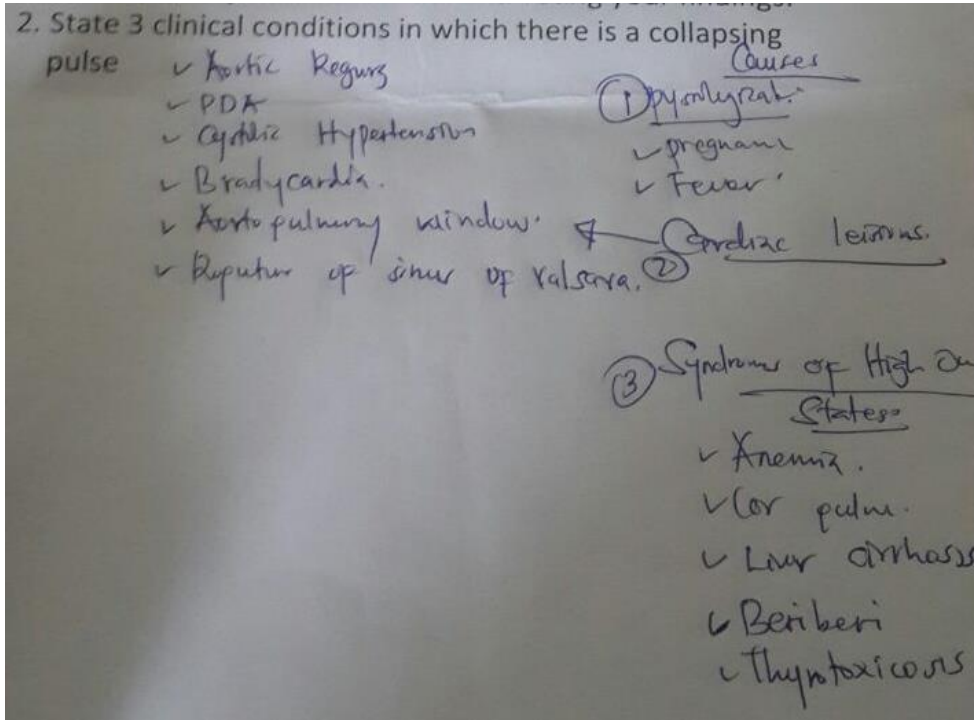
1. **Examine the pulses and narrate the findings**
2. **State in which conditions a collapsing pulse is found**

EXAMINATION

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- Radial pulse:
  a) Pulse rate for 1 min
  b) Rhythm
  c) Volume
  d) Character
  e) Symmetry between radial pulses
  f) Radio-femoral delay
  g) Collapsing pulse
- Brachial pulse
- Carotid pulse (UNILATERAL!!)
- Popliteal pulse
- Posterior tibialpulse
- Dorsalispedispulse

COLLAPSING PULSE IS FOUND IN:

a) Aortic regurgitation
b) Hyperdynamic circulation
c) PDA
d) Large A-V defect



1. **Examine the precordium and narrate the findings for a patient with suspected congestive heart failure**
2. **State the management of a child with congestive heart failure**

EXAMINATION

- Greet the patient and Introduce yourself
- Explain the examination and ask for consent as you warm hands
- Perform the examination when patient is propped up (45 degrees preferred)
- Inspection: from the foot of bed-
  - Symmetry and nipples
  - Expansion: Ask child to take deep breath in (normal, asymmetrical)
  - Active: Hyperactive precordium?
  - Blood vessels?
  - Masses?
  - Scars
  - AP diameter, Harrisons sulci
  - RR.
- Palpation:
  - Apex beat - Assessing midline shift
  - Left parasternal heave
  - Areas of the valves: look for thrills
- Auscultation
  - All areas of the valves: Mitral, Aortic, Tricuspid, Pulmonary
  - Lower back of the chest wall

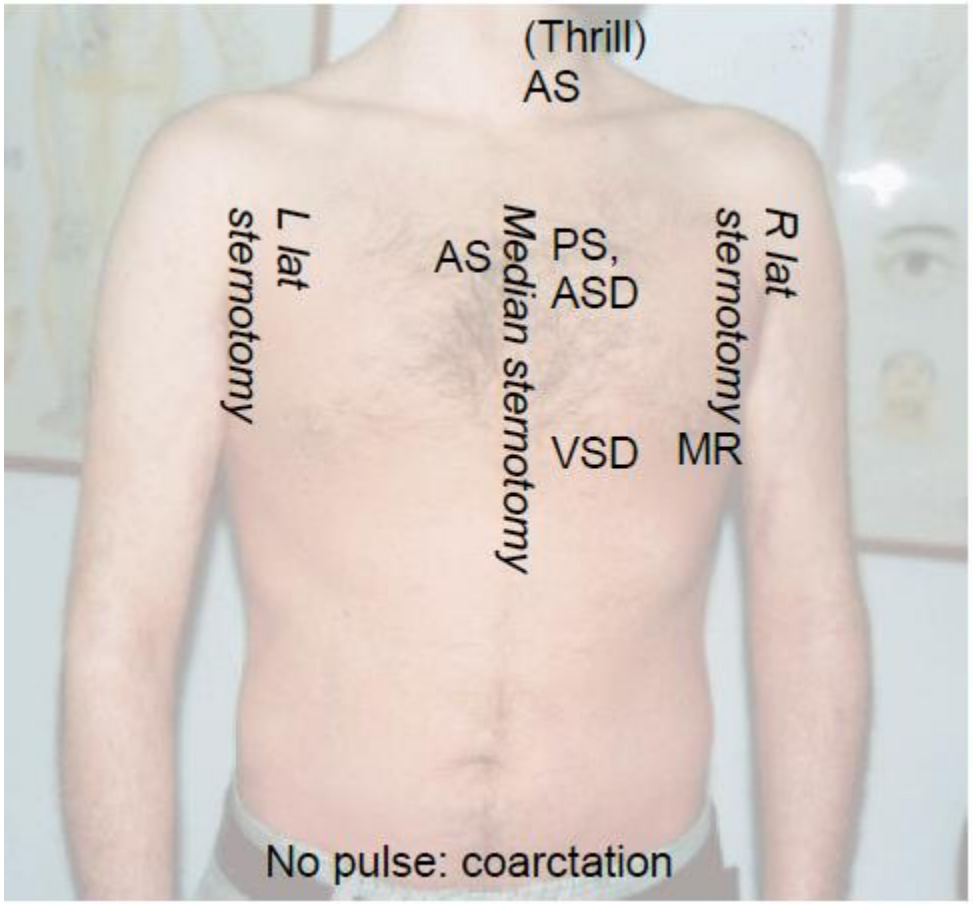
MANAGEMENT OF A CCF PATIENT

1. Prop up in bed
2. Give oxygen if in distress
3. Administer diuretics
4. Administer Digoxin
5. Treat any underlying problems

Setup: > 6y lying on bed ċ pillows @ 45 degrees. Younger then mothers lap or flat on bed.

- Look at end of bed
- Hands: colour/cyanosis, capillary return (<2s), temp, clubbing (visible @ 6m)
- Pulses: antecubital fossa ċ elbows straight using thumbs (child's HR much faster than yours) → ra te
- rhythm, character
- "I will perform BP @ end of exam"
- Head and neck:
  - Anaemia (ask pt to look up. Do not put fingers in eyes of babies cos causes crying).
  - Central cyanosis: Tongue
  - JVP (only if > 4y): head is turned towards you, so can look @ alternate side
  - Carotid thrill: thumb, proof of aortic stenosis

- Praecordium
  - Inspection: RR, midline sternotomy scars, lat thoracotomy scars, asymmetry, AP diameter
  - Palpation:
    - Apex beat (both hands)
    - Thrills (palpable murmurs)apex for LV heave, L parasternal for RV heave, upper L sternal edge
  - Auscultation: start ċ bell @ apex. LS edge, aortic, pulmonary. Radiation to neck, back, axilla.
  - Report I+II and extras. Listen to lung bases.
- To finish
  - Feel liver
  - Peripheral pulses
  - Blood pressure: correct sized cuff, locate brachial pulse by palpation first.



Ejection Systolic (top)

Pansystolic (bottom)

SYSTEMIC EXAMINATION – CENTRAL NERVOUS SYSTEM 1

Child with history of weakness

1. Perform a motor exam of the lower limb
2. Perform a motor exam of the upper limb
3. State the investigations and give differential diagnosis of a child with flaccid paralysis of lower limbs

1. Perform a motor exam of the lower limb

- Greet the patient and introduce yourself
- Greet the patient and parent, introduce oneself, explain and ask permission for your task, as you warm hands
- Vital signs
- Assess how well or sick is the patient
- Look for clues (cardiac monitor, Oxygen mask, IV line, NG tube, urinary catheter)
- Anthropometric measurements (plotted on percentile charts)
- General examination (head, skin, dysmorphic features)
- Always examine the back for spinal abnormalities
- From right side of bed
- Inspect: Lower limb posture, gait, muscle bulk, fasiculations, abnormal movements
- Palpate:
  - Muscle bulk, tenderness
  - Tone across all joints
  - Power
  - Reflexes: Knee jerk, ankle, ankle clonus, Babinski - (check sides for asymmetry)

1. Perform a motor exam of the upper limb

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- From right side of bed
- Inspect: Upper limb posture
- Palpate:
  - Muscle bulk
  - Tone across all joints
  - Power
  - Reflexes, biceps, triceps, suppinator

3. Investigations and Differentials

Investigations for flaccid paralysis of lower limbs

- MRI or CT of spine
- Nerve conduction studies for peripheral neuropathy
- Stool test for polio

Differential of flaccid paralysis of the lower limbs

- Polio
- Transverse myelitis
- Guillain Barre Syndrome

SYSTEMIC EXAMINATION – CENTRAL NERVOUS SYSTEM 2

1. **Child who has undergone craniopharyngioma removal**
2. **Examine cranial nerve I, II, III, IV & VI**

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- From right side of bed
- CN II- Optic
  - Visual acquity and colour vision: ask for Snellen chart and Ishihara chart.
    - Without, can ask to read or name pictures. One eye @ a time.
    - Ask parent if visually alert (do they look @ things they can't hear)
  - Visual field: confrontational, can wriggle or count fingers
  - Pupillary reflex: direct and consensual

- CN III: Movements of eyeball
  - Elevation
  - Depression
  - Adduction
  - Upwards and outward
- CN IV:
  - Movement of eyeball-Abduction
  - Pupillary reflex: Direct & consensual
- CN VI: Downward and inward movement of eye

- 1. Olfactory: ask about smell
- 2. Optic:
  - Fundoscopy: leave until end
  - Visual acuity: Snellen charts. Without, can ask to read or name pictures. One eye @ a time. Ask parent if visually alert (do they look @ things they can't hear)
  - Visual fields: can wriggle or count fingers
- 3. /4./6. Eye movements:
  - Nystagmus + ask about double vision
  - Light reflexes, accommodation
  - Strabismus
- 5. Trigeminal:
  - Motor → feel jaw muscles
  - Sensory → light touch to 3 facial divisions
- 7. Facial: muscles of facial expression
- 8. Auditory: difficult in young children. Can progressively whisper louder by occluding the other ear
- 9. /10. Glossopharyngeal and Vagus: “Ahhh”
- 11. Accessory: shoulder shrugging (trapezius), head turning (SCM)
- 12. Hypoglossal: movement + symmetry of tongue

The Squint Test

- Shine a light in to eyes and observe where the pinpoint is → same place? then nm anifest squint.
- Following for latent squints.
- Child stares at target. Cover one eye, does the other move?
- Uncover eye. Does this eye move?
- Can move from eye to eye to exaggerate result
- Pseudosquint → if large bridge of nose/epicanthic folds

Peripheral Limbs (Neuro, Musculoskeletal)

- Examine the back for spina bifida

Nervous:

- General inspection: Asymmetry/wasting/abn movements
- Sensation: light touch and proprioception adequate
- Tone
- Reflexes inc planter: hard. Do it lightly ċ hammer, or ċ hand
- Power : v hard, needs practice
- Coordination
- Gait

Musculoskeletal

- Ask about pain or tenderness
- General inspection
- Pain, tenderness, deformity, wasting
- Range of movement
- Power
- Gait

SYSTEMIC EXAMINATION – CENTRAL NERVOUS SYSTEM 3

1. Child who has fallen from a motor bike

2. Examine Cranial nerve V and VII

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- From right side of bed
- CN V:
  - Sensory: light touch with cotton wool on face and corneal reflex
  - Motor: clench teeth, open mouth against resistance, palpate the bulk of the masseter muscle
- CN VII
  - Frown
  - Raise eyebrows
  - Smile
  - Inflate the mouth (Blow out cheeks) with air then tap gently bilaterally

Give the differences in upper and lower motor neuron lesion in facial nerve palsy

- UMNL: Spares eye closing and brow muscles

COMMUNICATION SKILLS: NEONATOLOGY 1

1. Talk to a mother who had a baby with **LIFE THREATENING CONGENITAL**but **POTENTIALLY TREATABLE HEART DISEASE**
2. Discuss the situation with the mother

- Greet the mother/guardian and Introduce yourself
- Ask the patient to have a seat
- Be empathetic!
- Introduce and talk about the situation at hand:
  - Ascertain if the mother is aware that the baby is born with the birth defect (baby not properly formed)
  - Explain that you aren't sure of the cause
  - Reassure the mother that the medical team is doing their best
  - Inform about the care to be provided; also that a team will be looking after the baby
  - Describe the investigations required
  - Reassure that the chances of cure are good
  - Give the mother the opportunity to ask questions
  - Explain that surgical intervention is required with long term follow up
  - Also, inform the mother that subsequent pregnancies will require monitoring

COMMUNICATION SKILLS: NEONATOLOGY 2

A 6 year old child with history of vomiting blood. Next step is to do an Upper G.I.T. endoscopy

Your task:

1. **Take a focused history**
2. **Take an informed consent**

Focused history

- Greet the mother/guardian and the child
- Introduce yourself
- Ask the patient to have a seat
- History of general condition of the child
- History of vomiting: onset, projectile?, frequency, volume, colour, smell
- History of melena stool
- History of causes of upper G.I. bleeding; prior episodes? Retching?
- History of pre-existing conditions: Liver disease, P.U.D., G.E.R.D., use of drugs-N.S.A.I.D.s or steroids

Procurement of an informed consent to do an Upper G.I.T. endoscopy:

- Explain the procedure
- Explain the risks involved:
  a) During procedure: bleeding, perforation
  b) Risks associated with and side effects of anaesthesia
- Explain the benefits:
  a) Establish source of bleeding
  b) Able to stop the bleeding
- Give the Specific Treatment
- Closure: thank the patient and answer any questions

COMMUNICATION SKILLS: CHILD HEALTH 3

There is an outbreak of watery diarrhea confirmed to be caused by cholera in your district. You are invited to address the public as the MOH

1. **Explain to them about the disease and how it is contracted**
2. **Describe to them the preventive measures they should undertake**
3. **Inform them about the essential treatment both at home and in hospital**

Station 2 Answer sheet

PERFOMANCE OF STUDENT	Not Done [0 marks]	Done but incomplete [1 mark]	Done completely [2 marks]
Greats the audience and introduces self			
Describes the bacterium and describes the role of personal hygiene on aetiology			
Describes preventive measures			
-Fecal disposal			
-Hand washing			
-Food preparation			
-Crowding			
Describes treatment modalities			
-Increasing fluid intake			
-Hospital care			
-Antibiotics			
Overall quality of the presentation			
TOTAL [OUT OF 20]			

COMMUNICATION SKILLS: HIV 1

RVD positive pregnant lady attending ANC, referred by the obstetrician

Counsel mother

Plan management for the child in terms of:

- Feeding
- Follow-up investigations

Counseling:

- Greet the mother and introduce yourself
- Ask the patient to have a seat
- Be empathetic!
- Confirm if the mother is aware of her HIV status
- Confirm the awareness of the impact on the baby
- Feeding either: EBF (given with Nevirapine) or Replacement feeing(must meet the AFASS criteria)
  - Do not give mixed feeding!! Increases chances
- Start complementary feeds at 6 months

Investigations:

- At 6 weeks: HIV DNA PCR
- If the test above is positive results: start ART.
- If the test above is negative : Repeat HIV rapid antibody test at 9, 12 and 18months
  - If negative – Child is HIV free
  - If positive – Do confirmatory HIV PCR
- For all HIV positive infants – At 18 months: Test HIV 1 and 2 antibodies via ELISA

Closure:

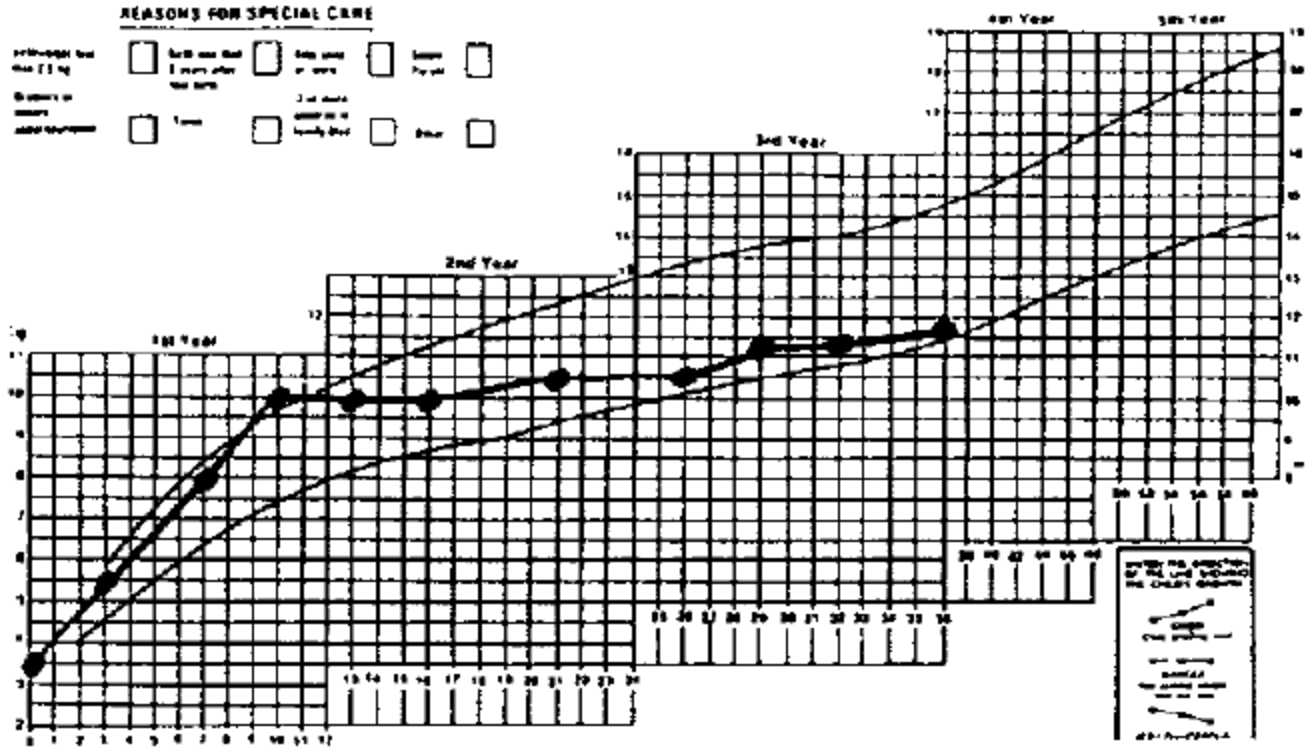
- Ensure the mother understands the plan
- Allow the mother to ask questions
- Allow mother to take leave

COMMUNICATION SKILLS: HIV 2

- Counsel a **newly diagnosed RVD** patient referred by the obstetrician with **preterm labor**
- Explain the immediate risks Greet the mother and introduce yourself
  - Ask the patient to have a seat
  - HIV-Explain: The new diagnosis is associated with high viral load and the lack of ARV usage and instrumentation during labor can increase chances of transmission
  - Prematurity: need for resuscitation, higher chances of RDS, TVH and feeding difficulties
- Long-term complications to the child:
  - Increased suseptibilty to infections
  - Chronic lung disease
  - Growth and developmental delay
  - High mortality rate
- In subsequent pregnancies
  - ANC is vital
  - ARV usage is a must: Adherence is supposed to be 90%
  - Need for planned pregnancies

ANALYSIS STATION 1

Discuss the growth chart given below and discuss the prevention measures



- **Discuss the growth pattern observed on the chart:**
  - Explain-birth weight
  - The patient was doing well for the first few months
  - No growth afterwards for a certain duration
  - Any weight gain afterwards.
- Identify that the growth chart indicates growth faltering: also state the age of onset and the duration

Preventive measures for growth faltering

- i.Breast feeding:
  - Start shortly after birth (within 30 mins)
  - EBF for 6 months
  - Breast feed until 2 years of age
- ii.Complementary feeding:
  - Start at 6 months
  - Should contain animal protein
  - 4 feeds a day
- iii.Good maternal nutrition
- iv.Reducing the impact of illness
  - Early diagnosis
  - Appropriate intervention
- v.Family:
  - Birth spacing
  - Family size
  - Income
- vi.Education
  - By the health worker
  - Of the family
  - Of the community

Milestones

Milestones

Gross motor • Can hold head supine and lift higher when prone: 6w • Sitting up: 6m • Primitive reflexes: go by 4-6m • Crawling: 8m • First steps: 1y	**Speech, language, hearing** • Coos + babbles: 6m • Appropriate "mama": 13m • Joining 2 words @2y. 3w @ 3y • Know age and few colours: 3y
Fine motor and vision • Newborns will fix+follow • Turn head to follow: 6w • Reach + grasp: 6m • Pincer grasp: 10m • Transferring objects btw hands: 6m • No hand dominance below 1y • Pencil scribbling: 14m	**Social, emotional, behaviour** • Smiling 6m • Solid food: 6m • Drink from cup: 1y • Solid food: 6m • Bladder+bowel: approx 18m • Play ċ others: 3y

UNMANNED STATION I

This is a picture of a 6yr old child

1. Describe the findings
2. State the possible etiology
3. State the complications
4. Management with justification: prevention and treatment

Findings:

- Wide spread distribution of lesions on the face and neck.
- Lesions are in different stages: papule, pustule, vesicle, crust
- Chicken pox

Possible etiology:

- Varicella zoster virus

Complications:

- Skin and soft tissue infections
- Pneumonia
- Otitis media
- Keratitis
- Hepatitis
- Myelitis or encephalitis
- Zoster multiplex: shingles
- Ramsay-Hunt syndrome

Management

- Prevention
  - Vaccination
- Treatment
  - Calamine lotion-pruritis
  - Antihistamine
  - Analgesic: Paracetamol
  - Anti-microbials
  - Good nutrition

UNMANNED STATION 2

PICTURE OF CHILD WITH ECZEMA

1. Describe the picture
2. What are the general principals of management?

Describe the picture

- Lesions: dry, hyperpigmentedlesions, with areas of thickening due to a chronic condition. Some parts are lichenified

What are the general principals of management?

- Removing the insulting agent
- Maintaining the skin hydration: adequate water intake and lotion
- Controlling the pruritis: Calamine lotion
- Anti-inflammatory: corticosteroids
- Management of any infections with anti-microbials

LABORATORY RESULTS I - FBC

- **The results are for a one year old child:**
  - Hb: 6g/dl
  - MCV: 52
  - MCH: 22
  - WBC: 5.4 X 109/L
  - PLATELETS: 776
- **Interpret the results**
- **State the differential diagnosis**

- Interpretation:
  - Low Hb
  - Low MCV
  - Low MCH
  - High Platelet
  - Indication of Hypochromic microcytic anaemia with reactive thrombocytosis
- Differentials
  - Iron deficiency anaemia
  - Sideroblastic anaemia
  - Anaemia of chronic disease
  - Thalasemia trait
  - Lead poisoning

LABORATORY RESULTS 2 - C.S.F.

- Specimen of a child with a chronic headache
  - ✓ Appearance: Fibrin web
  - ✓ Protein: 0.5 g/L
  - ✓ Glucose: 1.6 mmol/L
  - ✓ CSF Glucose: Protein ratio: 0.4
  - ✓ WBC : 180
- Interpret the results
- State the differential diagnosis

Interpretation:

- Appearance: abnormal (fibrin web)
- Increased proteins
- Reduced glucose
- Reduced CSF Glucose: Protein ratio
- Increased WBCs

Differentials:

- TB meningitis, fungal meningitis

CSF Interpretation

	Normal	Normal Neonate	Viral Meningitis	Bacterial Meningitis	Fungal Meningitis	TB Meningitis
Appearance	Clear	Clear	Clear	Cloudy and Turbid	Fibrin Web	Cloudy and Viscous
White Cells ($x10^6$/L or per cumm)	Normal <5	Normal <20	↑ 10-1000	↑↑↑ 100-10,000	↑ 100-500	↑ 50-1000
Predominant White Cell Type	All mononuclear	Mainly mononuclear, 5% polymorphs	Mononuclear	Polymorphs	Mononuclear	Mononuclear
Red Cells ($x10^6$/L or per cumm)	Normal <10					
Protein (g/L)	Normal 0.2-0.4	Normal <1	N/↑ 0.4-1	↑↑ >1	↓ 0.1-0.5	↑ 1-5
Glucose (CSF: blood ratio)	Normal >60% plasma			↓ <40% plasma	N/↓ <40% plasma	↓↓ <30% plasma
Opening CSF Pressure* (cmH_2O)	Normal 10-20			May be increased		

*CSF pressure ≥25cmH2O = intracranial hypertension (idiopathic, meningitis, intracranial haemorrhage, tumours etc)

Typical Pathogens

- Bacteria in newborns: group B strep, E. coli, listeria monocytogenes
- Bacteria in young children: N. meningitidis, strep pneumonia, Haemophilus influenzae
- Bacteria in teens/adults: N. meningitidis, strep pneumonia
- Virus: VZV, enterovirus, HSV, HIV, mumps
- Fungal: cryptococcus neoformans

Additional Tests

- Culture: grow bacteria
- PCR: for viruses e.g. CMV, herpes simplex, EBV and enterovirus
- Electrophoresis: oligoclonal bands (MS)
- Acid-fast stain: TB
- Xanthochromia/bilirubin: subarachnoid haemorrhage
- India ink stain: Cryptococcus
- Cytology: to look for malignant cells

LABORATORY RESULTS 3 - RENAL

- Very sick, nine month old child with no urine output for 2 days and height of 70cm
- Results:
  - Urea: 32
  - K+: 6.8
  - Na+: 128
  - HCO3-: 6
  - Creatinine: 280
- Interpret the results
- State the indications for dialysis
- Know how to calculate the GFR
  - k (40) x height/creatinine=ml/min/1.73m^2

Interpretation:

- Hyperuricemia
- Hyperkalemia
- Hyonatremia
- Increased bicarbonate
- Increased creatinine

Conclusion:

- Metabolic Acidosis

Indications for dialysis:

- Fluid overload
- Hyperkalemia
- Uraemia
- Intractable metabolic acidosis

Radiology 1

- CXR with Opacity of the right lung apex
- Interpret the specimen
  - Say it is a chest xray of who? View, adequate exposure, good inspiration, bony cage, trachea, lungs
  - CXR: AP view
  - Skeletal cage
  - Lungs-right Upper lobe with opacity
  - Heart size
  - Diaphragm
- DIAGNOSIS:
  - Pneumonia
- INVESTIGATIONS
  - Oxygen (KNOW DOSE)
  - Benzyl penicillin (KNOW DOSE)
  - Feeding

Radiology 2

- Evaluation of a child with fever, cough and progressive difficulty in breathing for two days
- Report the specimen
  - CXR: AP view
  - Skeletal cage
  - Tracheal deviation- Hutchison?
  - Lungs-pneumothorax, COLLAPSED LUNG
  - Mediastinal shift
  - Gas in the pleural cavity
  - Heart size
  - Diaphragm
- Management
  - Chest tube insertion
  - Oxygen
  - Treat underlying disease
  - Appropriate feeding

Radiology 3

MCU

Diaphragmatic hernia

Lobar Pneuomonia

lung collapse

Neonatology 1 - Neonatal Resuscitation

- **Term infant delivered with severe bradycardia**
- **List the essential equipment required (preparedness) arranged in order of priority**
- **Initial resuscitation till time of FIRST ANALYSIS**
- **Explain any differences in resuscitating a child with:**
  1. Congenital diaphragmatic hernia
  2. Extreme preterm

EQUIPMENT

- For personal safety: Gloves, face mask, hair net
- Firm surface
- Warm, dry towels
- Suction
- Functioning Ambubag (manual resuscitator or BVM) with right sized face mask
- Functional laryngoscope
- Different endotracheal tubes
- Guedel airway

Initial resuscitation upto first evaluation

- Wipe and dry neonate as you stimulate him/her
- Wrap the child in a dry cloth
- Airway
  - Ensure patency –suction if required
  - Position: neutral head position with head tilt and chin lift
- Assess breathing for 5 seconds: look, listen and feel
- Fit the mask start ventilation for 30 breaths/min ensuring that the chest rises
- Check for heart rate (**FIRST ANALYSIS**)

Differences in resuscitating:

- Congenital diaphragmatic hernia
  - Avoid BVM
  - Intubate immediately
- Extreme preterm
  - Wrap the neonate in cotton wool
  - Form a cap for the neonate with a face mask
  - Put them in a plastic bag without covering the face

Neonatology 2 - Neonatal Resuscitation

- The resuscitation of a neonate with meconium stained liquor
- Resuscitation until:
  - 1 min
  - 5 min
  - 1st Analysis

Neonatology 3- Neonatal Jaundice

- A 18 hour term neonate is noted to have jaundice
- The ten most important questions one would ask the mother are:
  1. Onset and progression of jaundice
  2. Fever
  3. Ability to breast feed
  4. Presence of convulsions or lethargy
  5. Delay of cry at birth
  6. Antenatal inferctions
  7. Prolonged rupture of membranes
  8. Blood group of mother
  9. Previous history of a baby with jaundice
  10. Preterm delivery

Neonatology 4- Neonatal Convulsions

Main skill tested; **PRACTICUM**

Specimen; **MANIKIN & EQUIPMENT**

STUDENT TASKS

This is a two year old child who has just been brought to the PFC convulsing.

1. Make the initial clinical evaluation of the child
2. Perform the first 4 treatment steps
3. What are the emergency tests required for such a child

Station 4 Answer sheet

PERFOMANCE OF STUDENT	Not Done [0 marks]	Done but incomplete [1 mark]	Done completely [2 marks]
Checks the airways and breathing			
First 3 steps in Management			
-Oxygen supplementation			
-Intravenous access			
-Glucose infusion			
-Anticonvulsant administration			
Emergency laboratory tests			
-Blood sugar			
-Serum Electrolytes			
-Lumber puncture/Malaria parasites			
Overall quality of the presentation			
TOTAL [OUT OF 20]			

HISTORY STATION

(Take a focused history from the parent of an 8 year old child with recurrent seizures)

- Greet the patient and parent, introduce oneself, explain and ask permission for your task
- Onset, frequency, types, and time (upon awakening, during sleep)
- Pre-ictal (provoking factors such as fever, illness, ingestion, compliance, trauma)
- Ictus (aura, duration, focal features, motor signs, consciousness, cyanosis, urination)
- Postictal (unilateral headache, weakness, aphasia, visual field defects)
- Evolution (improving or getting worse)

- Past medical history (prenatal, natal, postnatal)
- History of febrile seizures, head trauma, meningitis, status epilepticus
- Hospital or intensive care admissions
- Developmental history (fine & gross motor, receptive & expressive language, social & adaptive skills)
- Drugs (past and present, doses, side effects, allergy)
- Family history (consanguinity, epilepsy)
- Social history (behavioral, educational, financial problems)

ACYANOTIC HEART DEFECTS

LEFT TO RIGHT SHUNT

- Extra blood in the R side of heart:

1. Ventricular Septal Defect
2. Atrial Septal Defect
3. Patent Ductus Arteriorsus

OBSTRUCTIVE LESION

- Coarctation of the Aorta
- Aortic Stenosis
- Pulmonary Stenosis

	VSD	ASD	PDA
Signs and symptoms	• SOB • Pallor • Failure to thrive • Tachycardia • Sweating while eating • Frequent respiratory infections • MURMUR- LLSE Ejection systolic murmur	• SOB especially with activity • Frequent chest infections • Heart palpitations • ?murmur	Tachypnea Failure to thrive Sweating with exertion Murmur- continuous, ULSE
Investigations	ECHO, CXR, ECG	ECHO, CXR, ECG	ECHO, CXR, ECG
Treatment	Small= monitor. Large= surgical closure	Small= monitor. Large, causing cardiac failure or signs of cardiomegaly= surgical closure	Small= monitor until 1 year old, if still open- cardiac catherisation Large= cardiac catheterisation
Complications	Pulmonary hypertension Heart failure Failure to thrive	Pulmonary Hypertension Heart failure Stroke	Pulmonary hypertension Heart failure

	Coarctation	Aortic Stenosis	Pulmonary Stenosis
Signs and symptoms	SOB Hypertension Shortness of breath, especially during exercise Murmur -Left sternal edge	Fatigue SOB- especially on exercise If severe- fainting Murmur – URSE	Chest pain Fainting Exhaustion Cyanosis Abdominal Bloating Failure to thrive
Investigations	ECHO, CXR, ECG	ECHO, CXR, ECG	ECHO, CXR, ECG
Treatment	Surgical balloon stenting Repeated as child grows	Symptomatic Balloon valvotomy/ valvoplasty Surgical replacement	Symptomatic Severe= Surgical replacement
Complications	Hypertension Stroke Aortic Rupture Aneurysm	Infective Endocarditis Heart failure LVH Arrhythmias	Pulmonary regurgitation Heart failure Death

What are the normal values for vital signs in children?

Age (yr)	Respiratory Rate (breaths/min)	Heart Rate (beats/min)
<1	30-60	100-160
1-2	24-40	90-150
2-5	22-34	80-140
6-12	18-30	70-120
>12	12-16	60-100
Lower limits of systolic pressure†		
0-28 days: 60 mm Hg 1-12 months: 70 mm Hg 1-10 years: 70 mm Hg + (2¥ age in years)		