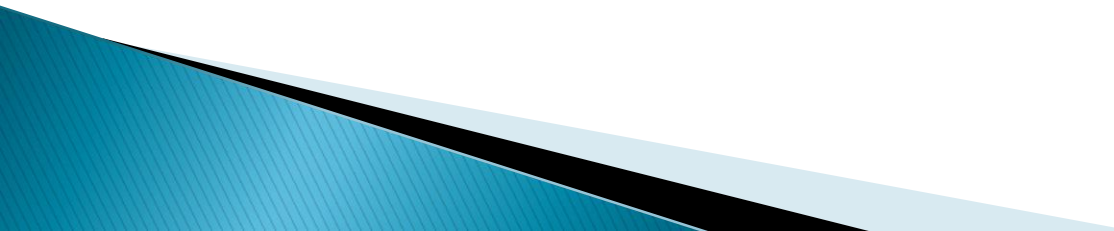


Construction of OSCE /OSPE Station

Prof. Mahmuda Hassan
Prof. Of Pediatrics
AWMC

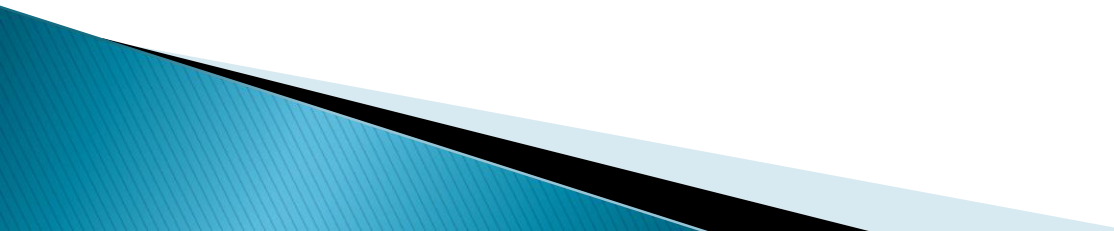
Objective

- ▶ To explain the basics of OSPE/ OSCE
 - ▶ To plan OSPE/ OSCE station
 - ▶ To construct of OSPE/ OSCE station
- 

OSCE

- ▶ O =Objective
 - ▶ S= Structured
 - ▶ C =Clinical
 - ▶ E= Examination
-
- ▶ How to construct

OSCE

- ▶ ➤ **Objective** : As examiners use a pre-determined checklist with marking scheme for evaluation
 - ▶ ➤ **Structured** : Because task is specified as well the marks. Every student will face same problem & perform the same task within same time frame
 - ▶ ➤ **Clinical** / Practical: Because the tasks are representative of aspects of those faced in real clinical situation
 - ▶ ➤ **Examination**
- 

OSCE

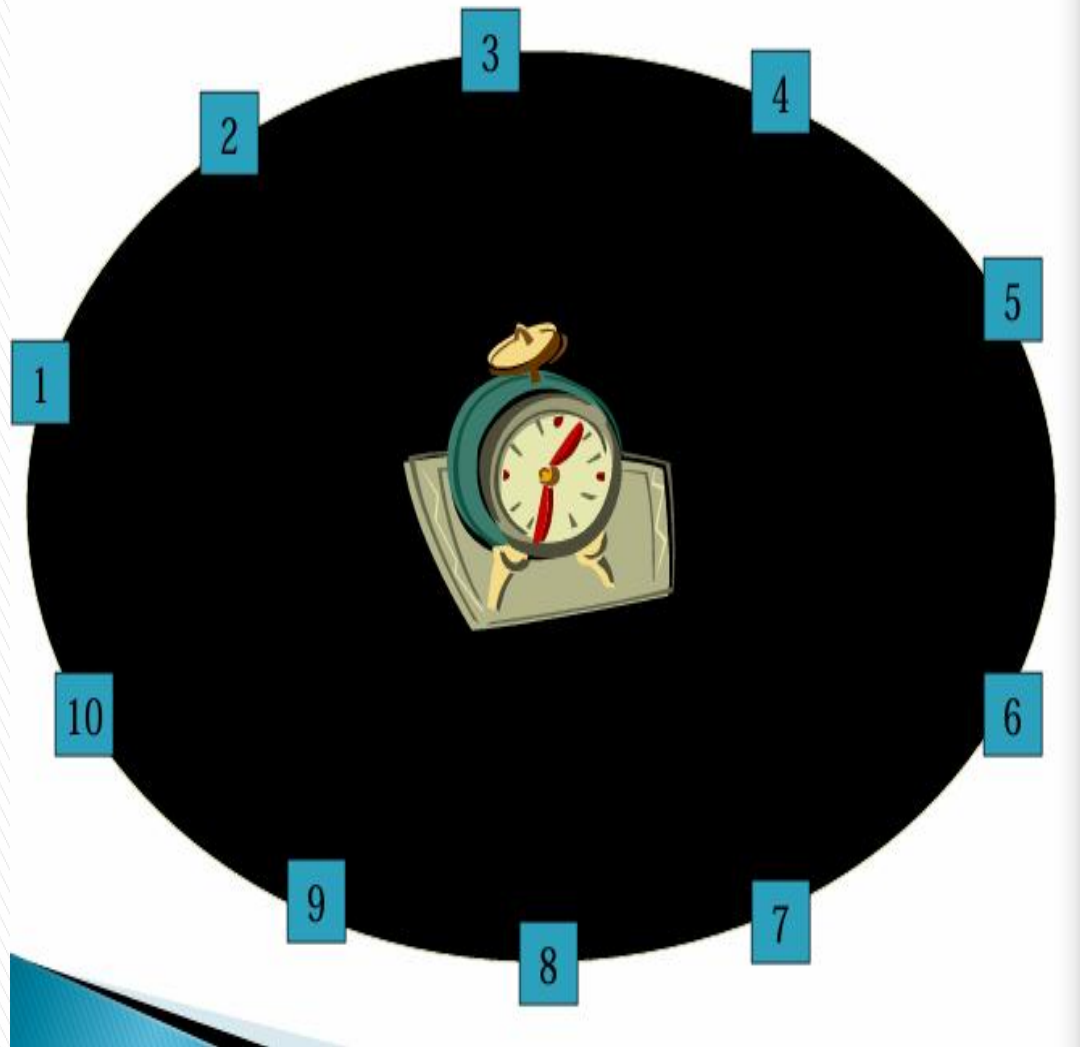
- ▶ ➤ **Objective :**
As examiners use a **pre-determined checklist with marking scheme** for evaluation

Check list for the observer:

	Marking
a) Greeting	0.5
b) Introducing yourself	0.5
c) Taking permission	0.5
d) Explaining the procedure	0.5
e) Performing the task-	
1. expose the area	1.0
2. choose the appropriate sized cuff	1.0
3. fix the cuff	1.5
4. palpate the brachial artery	0.5
5. place the stethoscope	1.0
6. inflate the cuff and record blood pressure	1.0
7. deflate and remove the cuff	0.5
8. maintain the sequences	1.0

OSCE

- ▶ ➤ **Structured** :
Because task is specified as well the marks. Every student will face **same problem** & perform the **same task** within **same time** frame



OSCE

- ▶ ➤ **Clinical/**
Practical:
Because the
tasks are
representative
of aspects of
**those faced in
real clinical
situation**

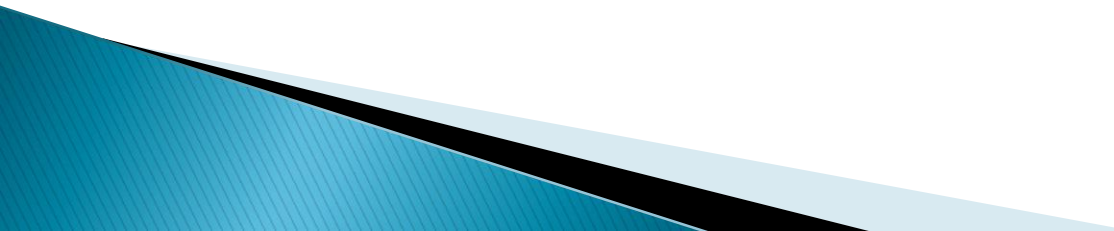
- ▶ Procedure or Checklist station.

Real or simulated Patient
Check BP

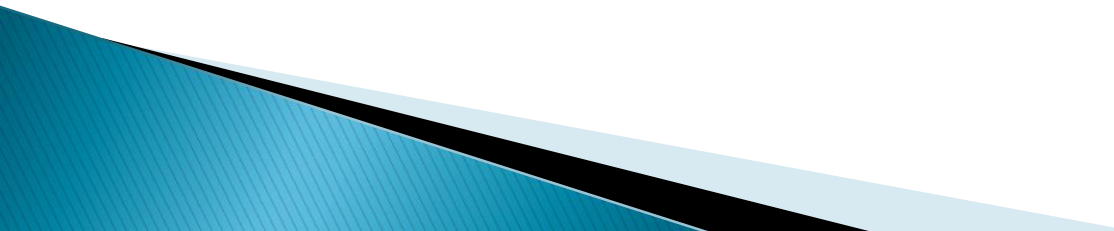
- ▶ Question or marked station

- ▶ Data, image, x-ray , write a prescription
- ▶ Specimen

OSCE

- ▶ OSCE/OSPE, an assessment format where clinical competencies are assessed –
 - ▶ **Uniformly** – Each and every students are getting the same type of problems and need to give the answer within a fixed period of time in same environment
 - ▶ **Objectively** – Unbiased, fair and consistent evaluation of all the students
- 

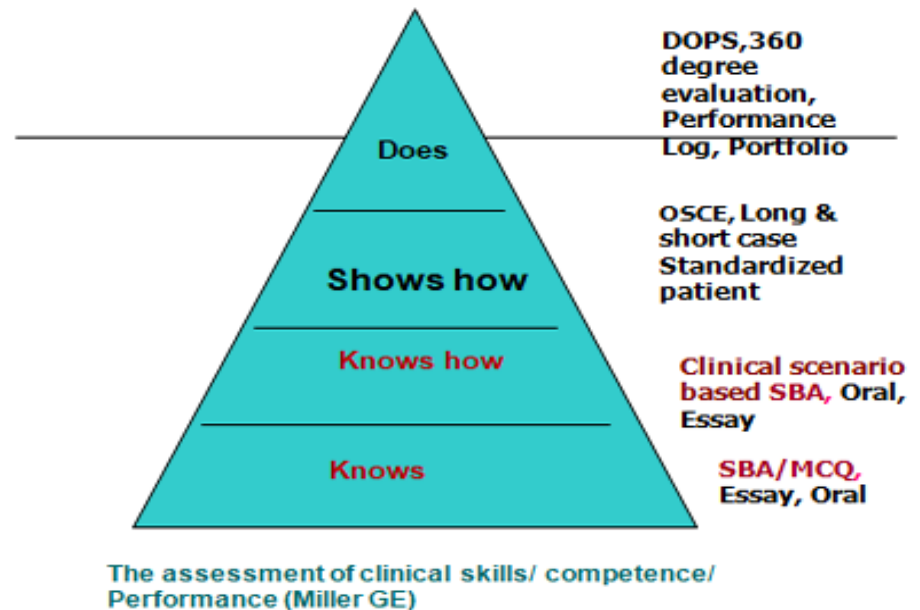
OSCE

- ▶ **Reliability**– Same tasks, same way with checklist
 - ▶ Multiple station
 - ▶ Structured marking
 - ▶ **Validity** –Cover broad range of relevant clinical task
 - ▶ Blueprint represents the curriculum
 - ▶ **Subjectivity**– reduced
- 

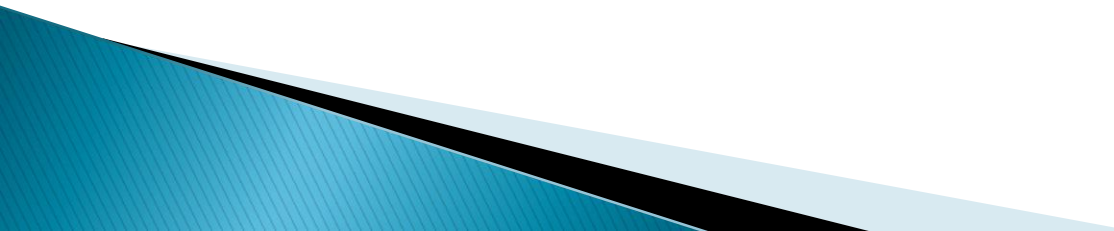
OSCE

- ▶ It is a performance assessment
- ▶ Based on authentic tasks such as activities, exercises or problems that require students to show---

What they can do



An OSCE/OSPE is focusing on the ability to

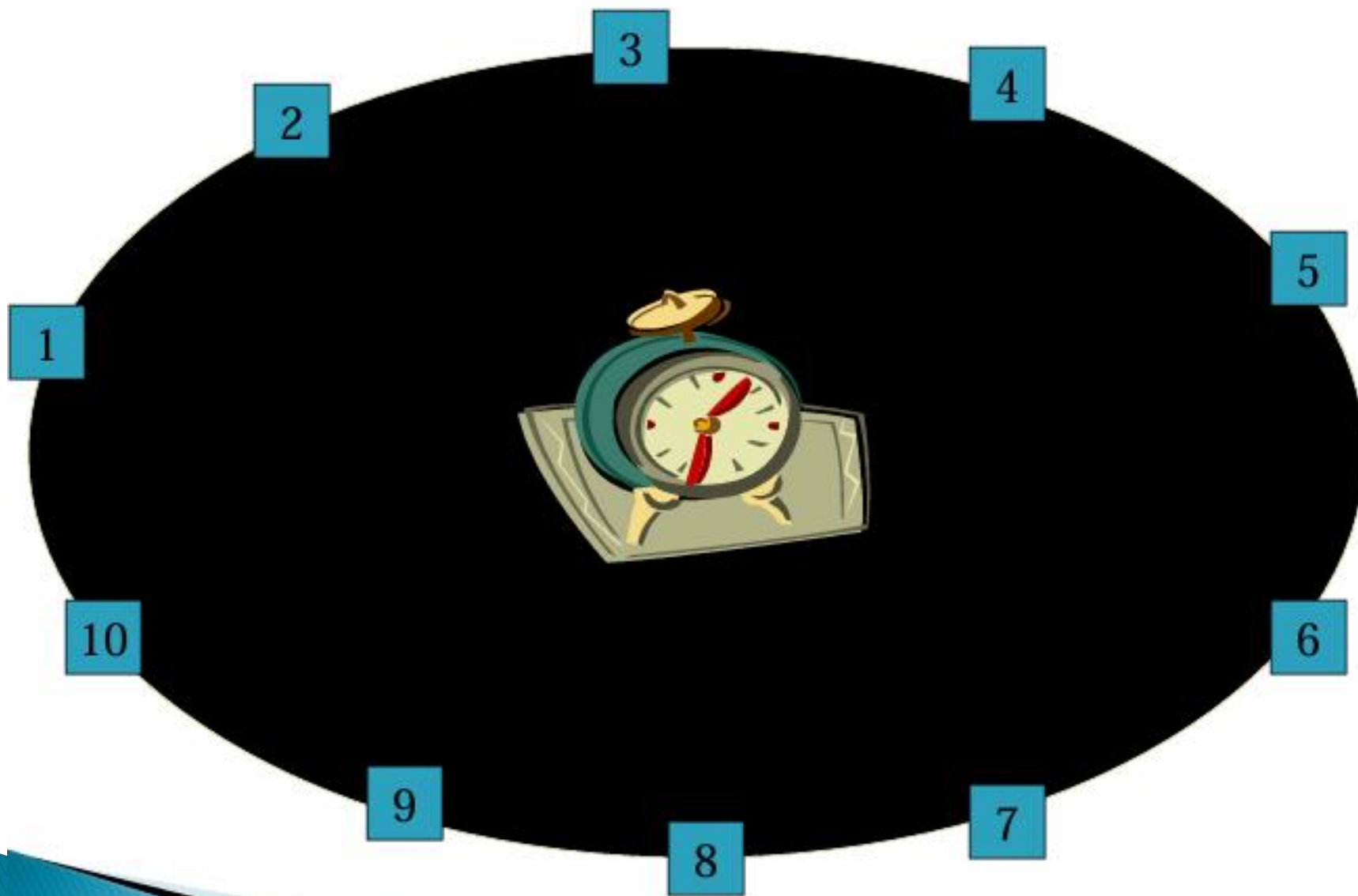
- ▶ Apply knowledge. (History taking with chest pain)
 - ▶ Perform particular procedure(Nebulization)
 - ▶ Interpret knowledge in clinical settings (Data CSF with meningitis)
 - ▶ Interact effectively with patient/ Simulated patients
 - ▶ Make justifiable conclusions
- 

OSCE

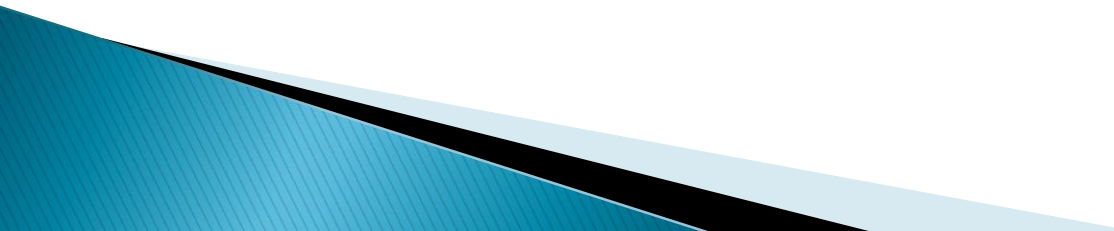
- ▶ The various competencies are assessed in different

Stations

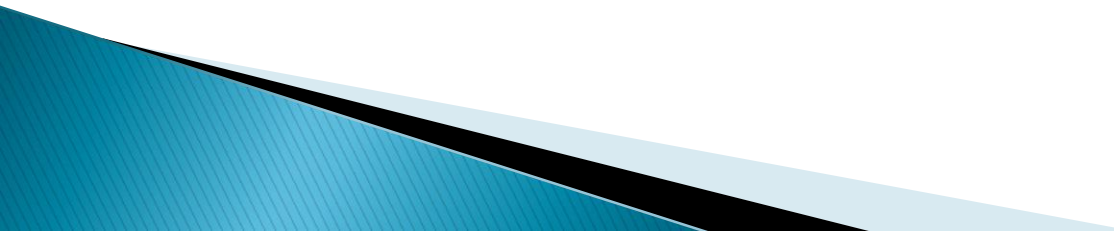
- ▶ through which the candidates rotate until they complete a cycle



Principle

- ▶ Task/ skill to be tested is given to the student in the form of a specific question in a Station (Task assigned to the student)
 - ▶ Each station focuses on testing a particular skill/ area of competency
- 

Organization

- ▶ **Procedure stations**— students are asked to perform a procedure/ lab test, history taking, system exam, communication skill)—
requires an observer
 - ▶ **Question stations**— practically oriented questions are asked (data interpretation, image, picture, X-ray, write a prescription).—
 - ▶ Answers to be written on an answer sheet – scoring is done using a standard answer & marking scheme after examination.
- 

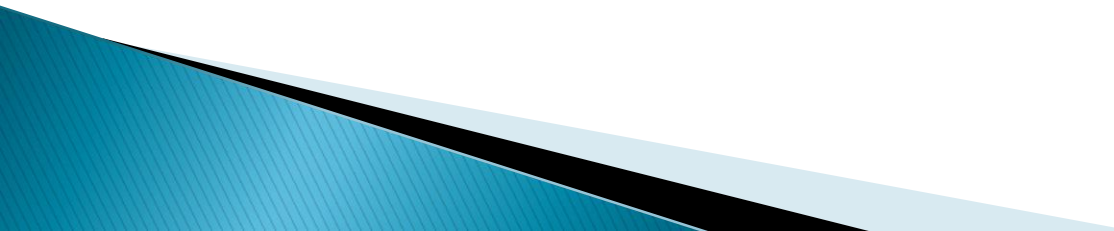
Principal

- ▶ Observer– keen but silent
 - ▶ Observer/ Assessors scores/Tick mark the performance on a **checklist**
 - ▶ Checklist is prepared in advance by the consensus of examiners before examination
 - ▶ Checklist is prepared by **breaking the skill** into vital components
 - ▶ All students are assessed on the same set of questions to make the assessment **uniform** & to ensure **standardization**
- 

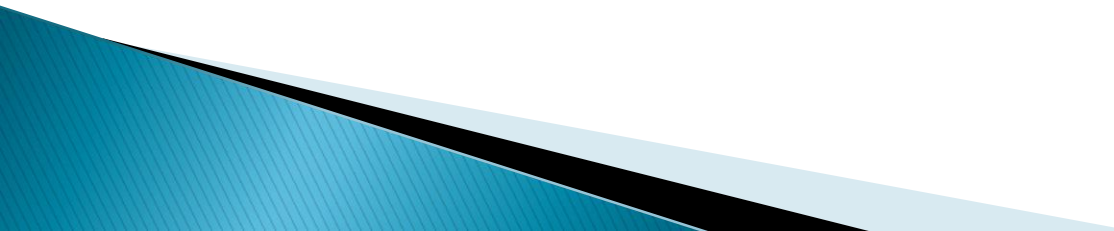


**Checklist is the heart of
OSCE /OSPE**

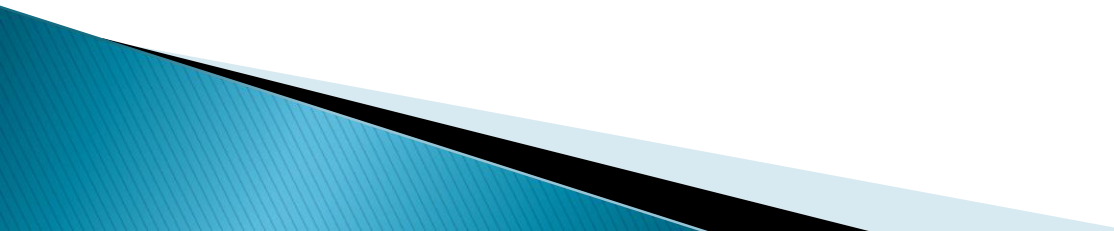
Principle

- ▶ **Structured marking scheme**– to reduce examiners variability & discretion/Choice
 - ▶ Provision of negative scoring for important omission / mistake
 - ▶ Preparation of 50% stations from **must know** part, in which low scoring may be associated with significant consequence.
 - ▶ Critical station – CPR, Procedure of Hand washing for infection control
 - ▶ Non-critical station–
- 

Material for OSCE

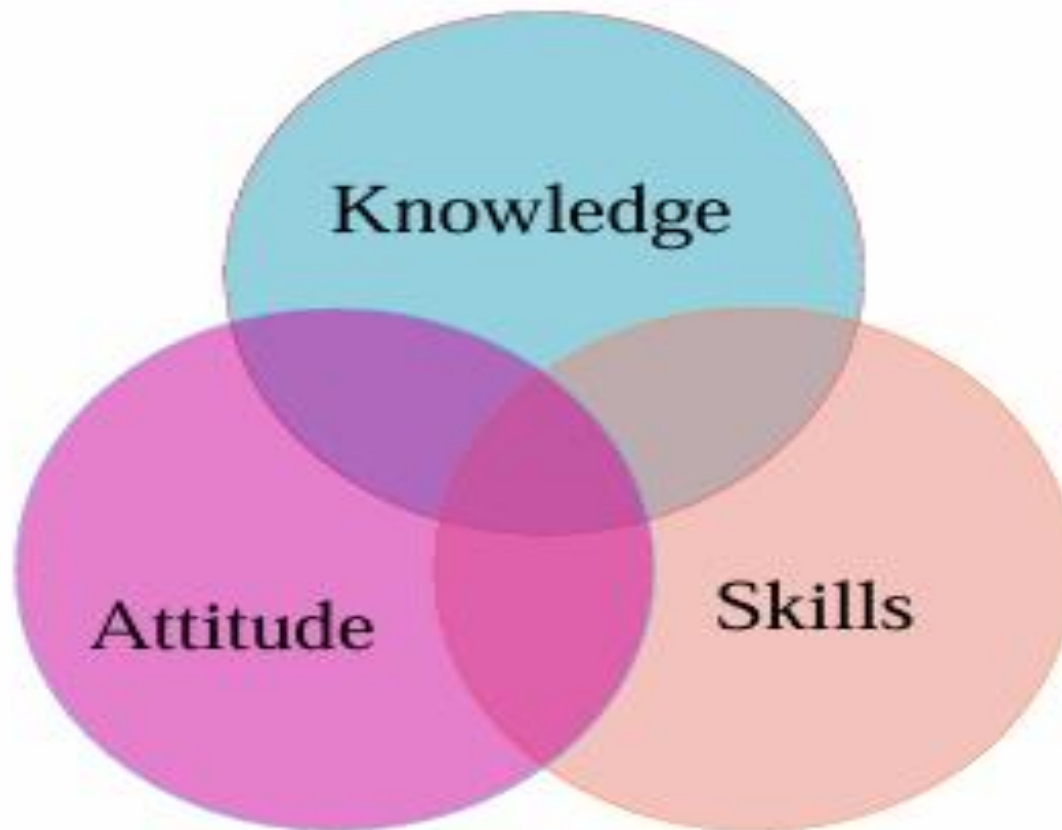
- ▶ ❖ Data
 - ▶ ❖ Photograph
 - ▶ ❖ X-Ray/CT
 - ▶ ❖ ECG
 - ▶ ❖ Instruments
 - ▶ ❖ Patient /Simulated patients
 - ▶ ❖ Models
 - ▶ ❖ Specimens
 - ▶ ❖ Procedures e.g–Nebulize
- 

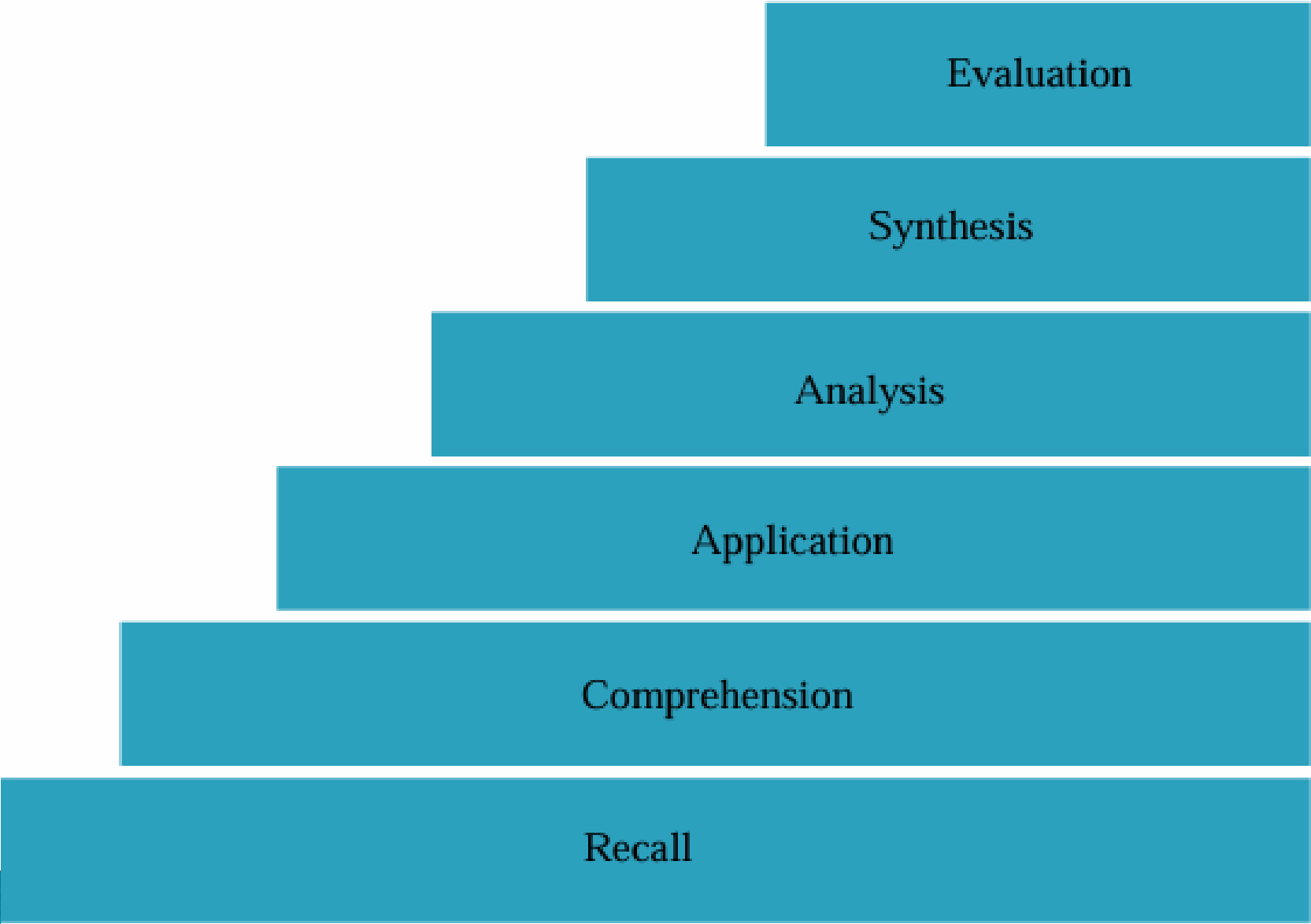
Planning an individual station

- ▶ Identify competencies to be assessed (learning objectives / domains)
 - ▶ ➤ Identify content / material / problem
 - ▶ ➤ Write appropriate task for candidates related to learning objectives / content / material
 - ▶ ➤ Write instructions for candidates / observers
 - ▶ ➤ Develop checklist / standard answer
 - ▶ ➤ Marking scheme
- 

Domains

educational objectives are allocated to 3 domains





Evaluation

Synthesis

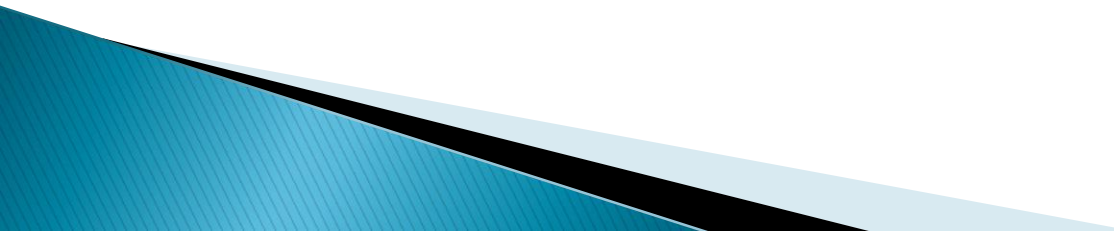
Analysis

Application

Comprehension

Recall

Station:

- ▶ Objective: To measure blood pressure ▪
Domain: knowledge, skill, attitude
 - ▶ System: CVS
 - ▶ Task: Measurement the BP
 - ▶ Instruction: Please measure the blood pressure of 50 year old patient
 - ▶ Time: 5 mins
 - ▶ Marks: 10
- 

Checklist for the observer

- a) Greeting
- b) Introducing yourself
- c) Taking permission
- d) Explaining the procedure
- e) Performing the task-
 - 1. expose the area
 - 2. choose the appropriate sized cuff
 - 3. fix the cuff
 - 4. palpate the brachial artery
 - 5. place the stethoscope
 - 6. inflate the cuff and record blood pressure
 - 7. deflate and remove the cuff
 - 8. maintain the sequences

[illegible]

Check list for the observer:

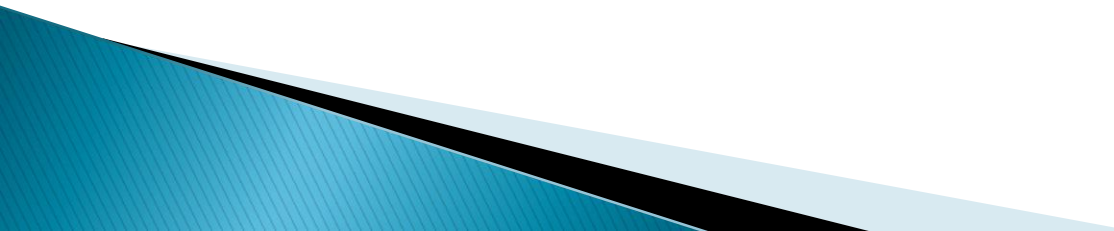
Marking

a) Greeting	0.5
b) Introducing yourself	0.5
c) Taking permission	0.5
d) Explaining the procedure	0.5
e) Performing the task-	
1. expose the area	1.0
2. choose the appropriate sized cuff	1.0
3. fix the cuff	1.5
4. palpate the brachial artery	0.5
5. place the stethoscope	1.0
6. inflate the cuff and record blood pressure	1.0
7. deflate and remove the cuff	0.5
8. maintain the sequences	1.0

Domain

- ▶ knowledge,
- ▶ Skill,

Station: Gynecology and obstetrics

- ▶ Instruction:
 - ▶ Please demonstrate the technique of taking Pap's Smear in a dummy with aseptic precaution and collect the required logistics before the procedure
 - ▶ Domain: knowledge, skill, attitude
- 

Checklist with marking

Components	Done	Not done
1. Select required logistics a) Cusco's speculum b) spatula c) glass slide d) Koplik's jar	✓ ✓ ✓	✓
2. Wear gloves		
3. Exposure of cervix a) introduce speculum b) fix the speculum	✓	✓
4. Take smear a) use Ayre's spatula b) narrow end inserted against Cx canal c) broad end against external os d) Rotate spatula 360 degree	✓ ✓ ✓	✓
5. Prepare slide a) smear slide b) put slide inside Koplik's jar	✓ ✓	✓
6. Remove speculum & gloves	✓	

Checklist with marking

Components	Done	Not done
1. Select required logistics		
a) Cusco's speculum	0.5	
b) spatula	0.5	
c) glass slide	0.5	
d) Koplik's jar	0.5	
2. Wear gloves	0.5	
3. Exposure of cervix		
a) introduce speculum	0.5	
b) fix the speculum	0.5	
4. Take smear		
a) use Ayre's spatula	1.0	
b) narrow end inserted against Cx canal	1.0	
c) broad end against external os	1.0	
d) Rotate spatula 360 degree	2.0	
5. Prepare slide		
a) smear slide	0.5	
b) put slide inside Koplik's jar	0.5	
6. Remove speculum & gloves	0.5	

Domain

- ▶ knowledge,
- ▶ Skill,

Station; Physiology

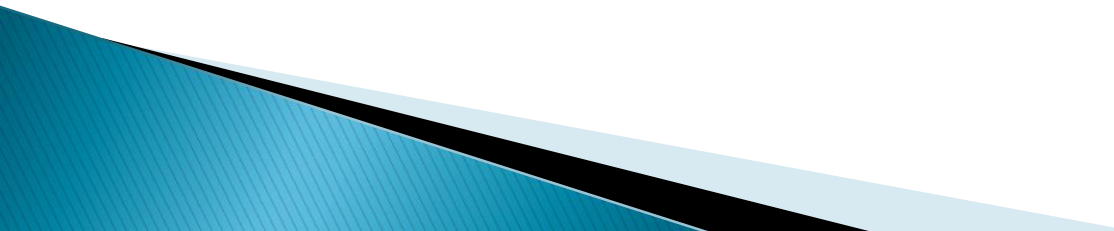
OSPE-Instruction: Prepare a blood smear

Sl no	Components			Marks
1	Slides cleaned	Satisfactory	Not satisfactory	
2	Slide selected as spreader	yes	no	
3	Method of making slide a) Amount of the blood b) The blood spread along the whole edge of spreader c) Angle of spreader with slide	Correct Yes correct	Incorrect No incorrect	
4	Quality of the smear	perfect	hopeless	

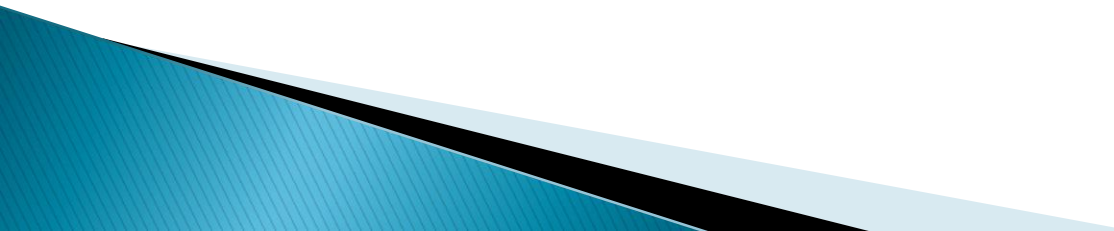
Station: Please do the Bed side test for albumin

no	Components	Done	Not done
1	Fill test tube $\frac{3}{4}$ th with urine		
2	Heat the tube by tilting so that the upper half is heated only		
3	Check for turbidity		
4	Acidify with acetic acid		
5	Check acidification with litmus paper		
6	Observe the top of the solution for turbidity & interpret		

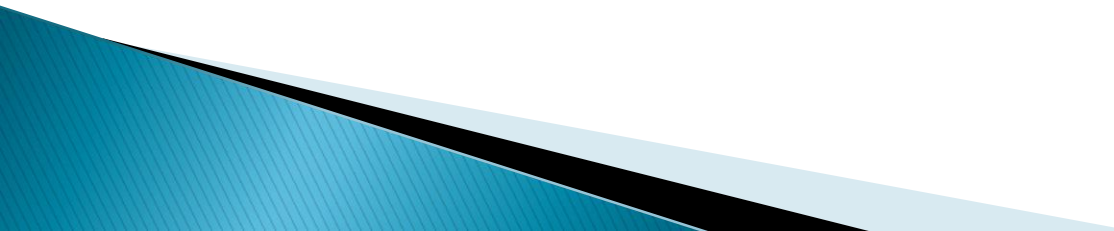
Station: Pediatrics

- ▶ Objective: To nebulize a patient
 - ▶ Domain: knowledge, skill
 - ▶ Task: Nebulization of a patient
 - ▶ Instruction: Please nebulizing a child with acute severe asthma
 - ▶ Time: 5 minutes
 - ▶ Marks: 10
- 

Instruction

- ▶ This 4-year-old child weighing 16 kg suffering from acute severe asthma & needs nebulized salbutamol.
 - ▶ You are supplied all necessities.
 - ▶ Please start nebulizing.
 - ▶ You are not required to counsel before starting
- 

Checklist for Observer

- ▶ Instruction +
 - ▶ ▪ Please observe the student's performance and tick the appropriate boxes in the checklist
 - ▶ ▪ Pl write down the code no. of the candidate on the top of the checklist
- 

Procedure	Done	Not done
Setting up the machine	✓	
Select salbutamol solution, not syrup	✓	
Draw 0.3–0.4 ml of salbutamol solution & pour into the medicine chamber		✓
Select normal saline. Not other distractor fluid	✓	
<i>Draw 2–3 ml of normal saline & pour into medicine chamber</i>	✓	
<i>Attach the cover & the mask properly</i>	✓	
Keep the container upright all the while	✓	
Switch on & observe for proper functioning		✓
Total score		

Procedure	Done	Not done
Setting up the machine	1.0	
Select salbutamol solution, not syrup	1.0	
Draw 0.3–0.4 ml of salbutamol solution & pour into the medicine chamber	1.5	
Select normal saline. Not other distractor fluid	1.0	
<i>Draw 2–3 ml of normal saline & pour into medicine chamber</i>	1.5	
<i>Attach the cover & the mask properly</i>	1.0	
Keep the container upright all the while	2.0	
Switch on & observe for proper functioning	1.0	
Total score	10	

Station: Breaking the bad news

- ▶ ALL ,
- ▶ Any malignancy
- ▶ Syndromic child

Station: Medicine

- ▶ Scenario: A 18 year old boy presented with fever. Dengue NS1 Antigen was done on 4th. day which was negative and anti-dengue antibodies were tested on 7th day
- ▶ Instruction: Please interpret the following possible test results

Dengue NS ₁ Antigen	Anti Dengue IgM	Anti Dengue IgG	Interpretation
-ve	-ve	+ve	
+ve	+ve	+ve	
+ve	+ve	-ve	
+ve	-ve	-ve	
-ve	+ve	-ve	

Dengue NS ₁ Antigen	Anti Dengue IgM	Anti Dengue IgG	Interpretation	Marks
-ve	-ve	+ve	Past infection	2.0
+ve	+ve	+ve	Present infection	2.0
+ve	+ve	-ve	Present infection	2.0
+ve	-ve	-ve	Present infection	2.0

Tasks on the Materials for construction of OSPE stations

- ▶ ❖ Identification of a Specimen ❖ Interpretation of ECG / X Ray / C T Film/ MRI
- ▶ ❖ Interpretation of Photographs of clinical/ lab findings
- ▶ ❖ Procedure on a dummy
- ▶ ❖ Interaction with Simulated Patient
- ▶ ❖ Writing prescriptions
- ▶ ❖ What would you do type of scenarios

OSPE (Variation of OSCE)

O= Objective

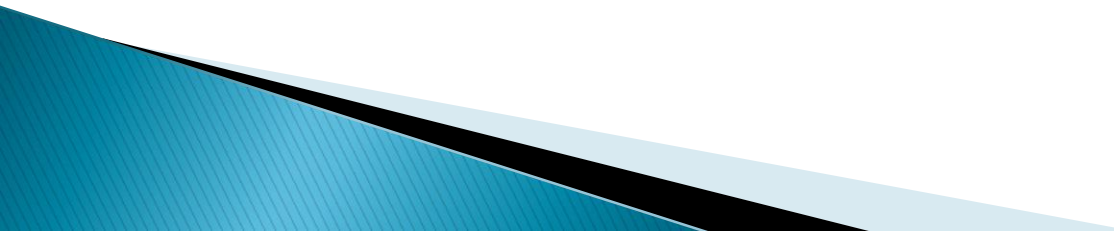
S= structured

P= practical

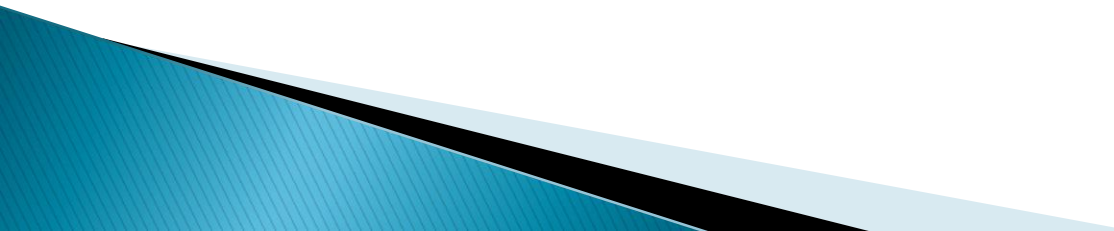
E = examination

Assess practical knowledge, and/or
interpretation of data in non clinical situation

Practical skills



Other variations of OSCE

- ▶ Objective Structured Assessment of Technical skill (OSATS)
 - ▶ Objective Structured video Examination (OSVE)
 - ▶ Team Objective Structured Clinical Examination (TOSCE)
- 

Photograph

- ▶ Please observe the photograph and answer the following



X ray

Instruction: Please look at the X-ray of 2 newborn babies who presented with respiratory distress and answer the questions

- a) Write the main findings in image A and B
2 + 2
- b) Write the diagnosis of each
1 + 1
- c) Mention the main treatment modalities in 2 conditions 2+ 2

X ray



Image -A



Image -B

X ray Answer key

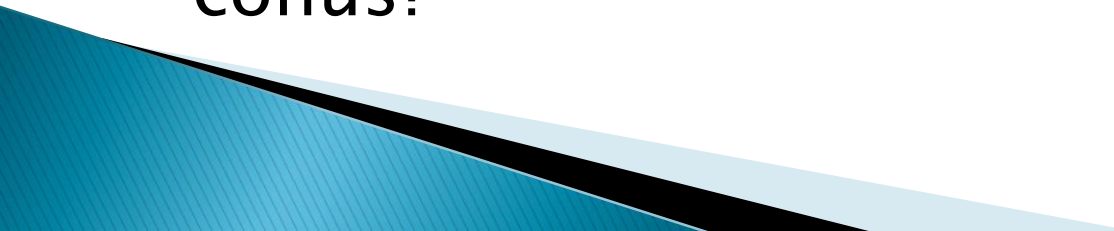
A

- a) Patchy opacity in right upper zone
- b) Congenital pneumonia
- c) Antibiotics

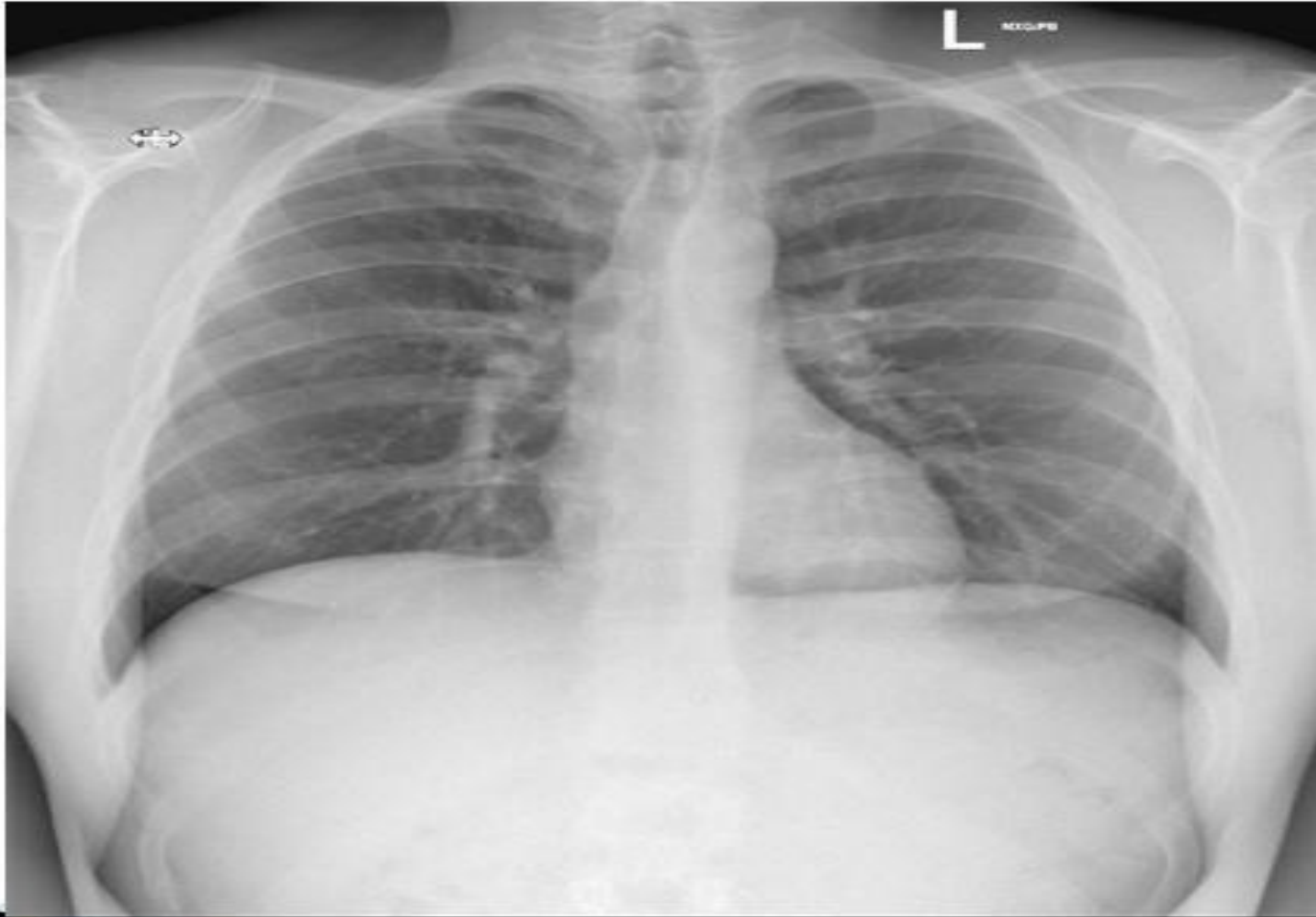
B

- a) Mediastinal shifting towards right
- b) Pneumothorax
- c) i) Antibiotics
ii) insertion of a needle/ chest tube between the ribs

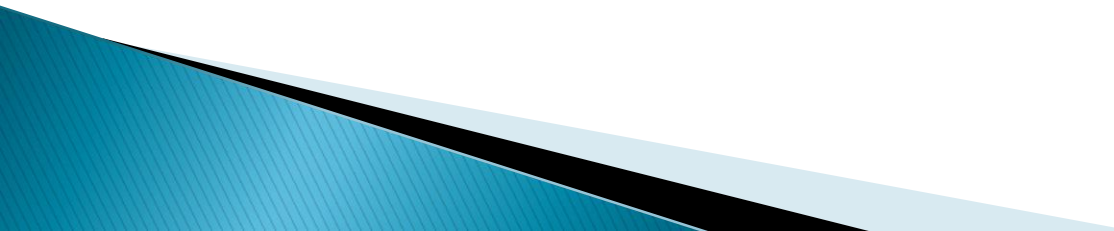
Instruction

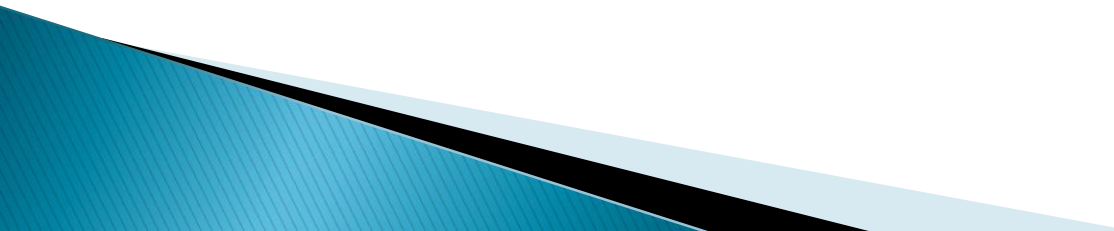
- ▶ Please look at the x-ray and answer the following questions
 - ▶ Q 1. What structures constitute the left border of heart?
 - ▶
 - ▶ Q 2. What structures constitute base?
 - ▶ Q 3. What do you mean by full pulmonary conus?
- 

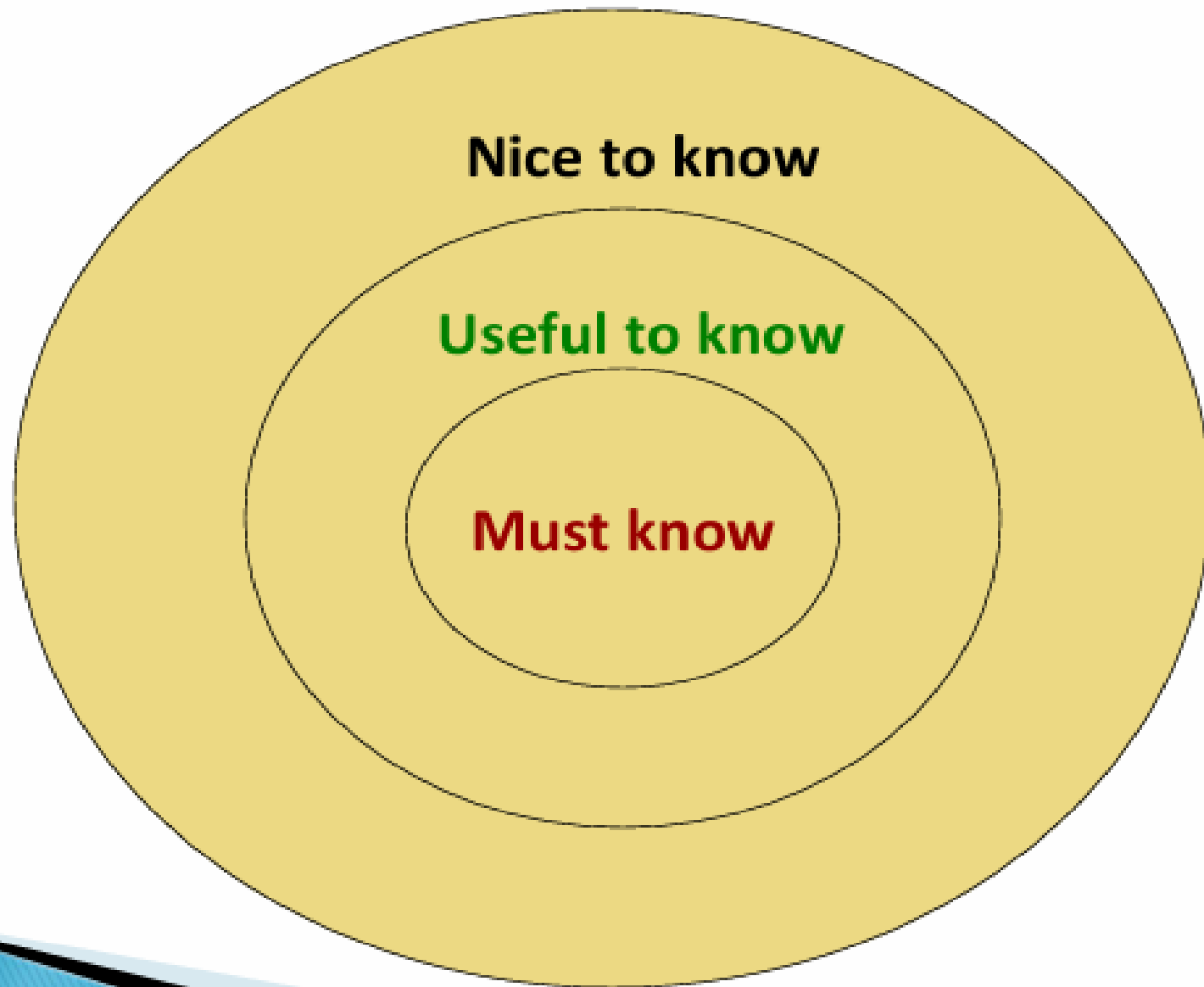
X-ray

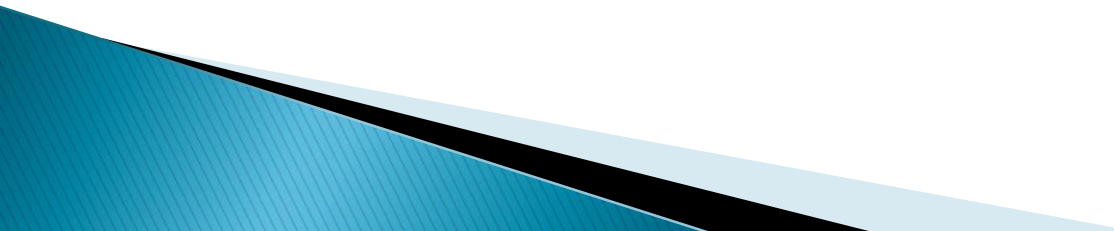


Answer key

- ▶ 1. From above down Left atrial appendage ii)
Left ventricle
 - ▶ 2 . Left atrium Right atrium
 - ▶ 3. Pulmonary hypertension
- 

- ▶ Important issues should be considered first rather than a trivial one
 - ▶ ❖ Must know
 - ▶ ❖ Useful to know
 - ▶ ❖ Nice to know
- 



1. Language should be Clear, Simple & Easily Understandable.
 2. Instruction must be specific
 3. Proper Weight should be given to the important points in the checklist
 4. Time & Task should be Consistent
 5. Always consider level of learning
- 

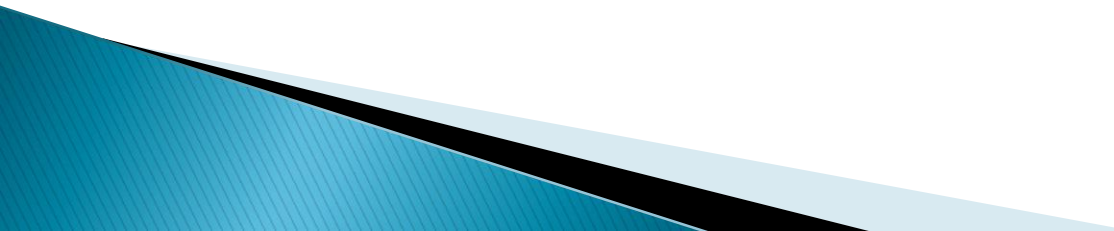
Test matrix (blueprint)

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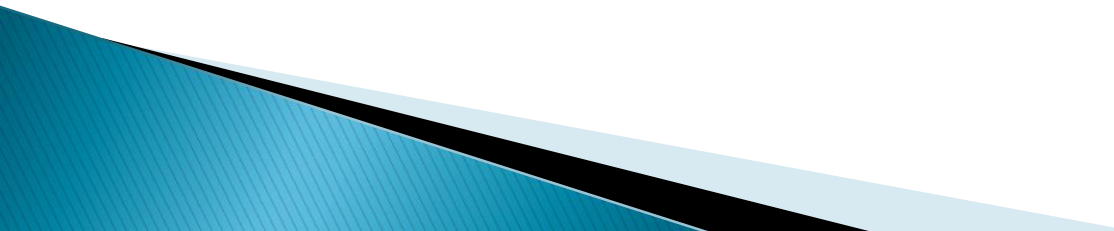
Test matrix (blueprint)

Competence categories	CVS	RS	Neuro	GI	GU/Renal	MSS	Endo/Metab	Haem/Oncology	Other
Interviewing skill									
Physical Exam									
X-Ray									
Data interpretation									
Instrument									
Write prescription									
Communication & Patient Education									

Summery of Construction of OSCE

- ▶ Step 1 – Identification of competency
 - ▶ Step 2 – Selection of content/ disease/ system
 - ▶ Step 3 – Construction of item
 - a) Instruction
 - b) Scenario
 - c) Questions
 - d) Checklist & marking
 - ▶ Step 4 – Pack up
 - ▶ Step 5 – Sending to
- 

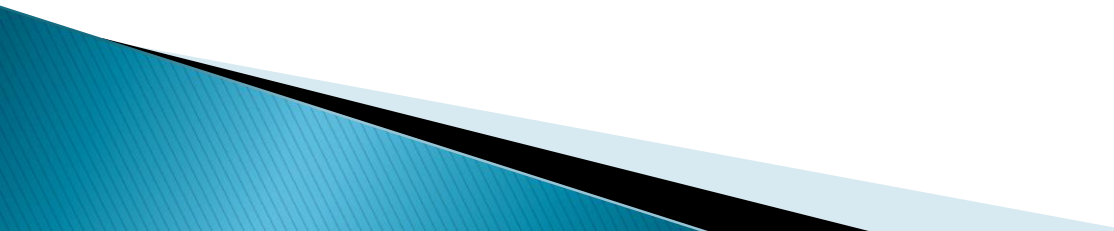
Conclusion

- ▶ ☐ Use of checklist ensure **objectivity**
 - ▶ ☐ **Prior agreement** among teachers on checklist & marking scheme ensure **validity & reliability**
 - ▶ ☐ Each examinee is facing the same question & doing the same task that ensure **fairness & standardization**
- 

Acknowledgement

Prof. Dr Tahmina Begum
FCPS MD MMEd(UK)

Medical education Department
BCPS



Thank you!

