

# Objective Structured Clinical Examination (OSCE)

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# Traditional examination

- ❑ Short questions and short answer
- ❑ Multiple choice questions
  - ✓ A statement with 4-5 questions. You choose one correct answer
  - ✓ A statement with 5 questions. You choose 'Yes' or 'No' for each question
  - ✓ All of the following are correct except

Short questions and MCQ tests your knowledge:  
It does not test your skills, attitude, clinical  
competence or professionalism



# Choose one correct answer

A 40-year-old man presents to the Emergency Department with 30% body surface area severe thermal injury . He requires immediate intubation and ventilation. Which of the following is the most appropriate for induction of anaesthesia?

1. Inhalational induction with sevoflurane
2. Modified rapid sequence induction with propofol and rocuronium
3. Rapid sequence induction with propofol and remifentanyl
4. Rapid sequence induction with thiopentone and succinylcholine
5. Fiberoptic intubation under local anaesthesia



# Oral boards

Assess medical knowledge, clinical reasoning and interpersonal skills.

**Oral boards** is a face-to-face encounter with examiner. It is the examiner and examinee in the room

**Disadvantage:** the potential for examiner bias and intimidation.



# Oral boards/Viva

You are given a clinical scenario and the examiner has a set of questions to ask and he marks

A 28-year old parturient presents with pre-eclampsia and a blood pressure of 160/90 mmHg. She also has a history of genital herpes.

1. How would you provide pain relief for labor
2. What antihypertensive medication would you use?
3. How would you anesthetize for cesarean section?
4. If epidural is in place, will you inject narcotics for pain relief? Why or why not?



# What is an OSCE

## Objective

all candidates are presented with the same scenario

## Structured

Specific essential and functional competence are tested and marking

## Clinical Examination

Test of performance of clinical competence, skills and attitudes



# What is OSCE

## □ OSCE combines

- Multiple observations
- Standardization of content
- Range of difficulty



# What is an OSCE

## Effective method to assess foundational competencies

- Professionalism
- Scientific knowledge & methods
- Reflective practice
- Individual & cultural diversity
- Relationships
- Ethical & legal standards & policy





# Competency Assessment Toolkit for Professional Psychology

OSCEs are useful for assessing

- Are you ready to practice?
- Are you doing well as a resident
- How much you know
- Recertification requirement



# Assessment of competence: Examination

## Classification: 4 stages

- **knows**: Multiple choice question
- **knows how**: Oral examination
- **shows how**: OSCE
- **Does**: OSCE

—A higher level of medical competency,



# OSCE: Methodology: Standardized Patient (SP)

- Persons who are trained to act medical scenarios accurately and consistently
- SP encounters are credible and reliable



Labor Epidural



Post spinal headache



Grieving husband



Stressful patient

# OSCE: Methodology

- Evaluation tool that allows people to be observed performing in many different clinical situations



# OSCE Stations

## Resuscitation of a child



## Communication skills



## Physical Examination



# Role of Examiners

- Observe the performance of the trainee at a particular task
- Do not give advise
- Treat all equally
- Score according to the marking scheme
- Ask the same question to all candidates
- Contribute to the good conduct of the examination





# Role of Examiners - NO

- Re-write the station
- Interfere with the student answer
- Interfere with standardized patient
- Bad attitude
- Design your own marking scheme
- Teaching



# OSCE Station: Airway assessment

A 55 year old male weighing 134 kg is posted for Laparoscopic cholecystectomy.

His PMH include thyroid cancer for which he has received radiation therapy and has limited neck mobility

You are here to assess his airway





# Your answer

1. Wash your hands
2. Introduce yourself
3. Examine the patient for obesity, bearded, scar, burns
4. Mobility of the neck: Extension, flexion, left to right movement
5. Position of the mandible: overbite
6. Ask the patient to open the mouth as much as possible
7. Assess mouth opening
8. Look for loose tooth, missing, dentures
9. Mallampati score
10. Thyromental distance and sterno-mental distance
11. Biting upper lip
12. Thank the patient and answer any concerns

Examiner may ask specific questions with your examination

What are your options if you say the patient will be difficult to intubate?



# Technical Skills: Interpretation of monitors

- *Identify clinical conditions associated with patterns of data presented on monitors*
- • Electrocardiogram
- • Arterial blood pressure
- • Central venous pressure – waveform and value
- • Cardiac output - value
- • Pulse oximetry – waveform and value
- • Capnography – waveform and end tidal value
- • Airway pressure – waveform and peak, PEEP values
- • Airway flow - waveform



# Application of ultrasound

The candidate will identify the relevant anatomy using an ultrasound probe with a simulated patient

1. Internal jugular vein
2. Subclavian vein
3. Femoral vein
4. Brachial artery
5. Radial artery



# Clinical skill: Internal Jugular Vein Cannulation

A 55 year old male underwent exploratory laparotomy for severe ulcerative colitis and now he is in ICU with septic shock. In view of his need for vasopressor support with nor-epinephrine you are asked to insert a triple lumen central venous catheter

You will demonstrate using an ultrasound the location and your approach to right internal jugular vein on a standardized patient. Talk to the examiner what exactly you are doing



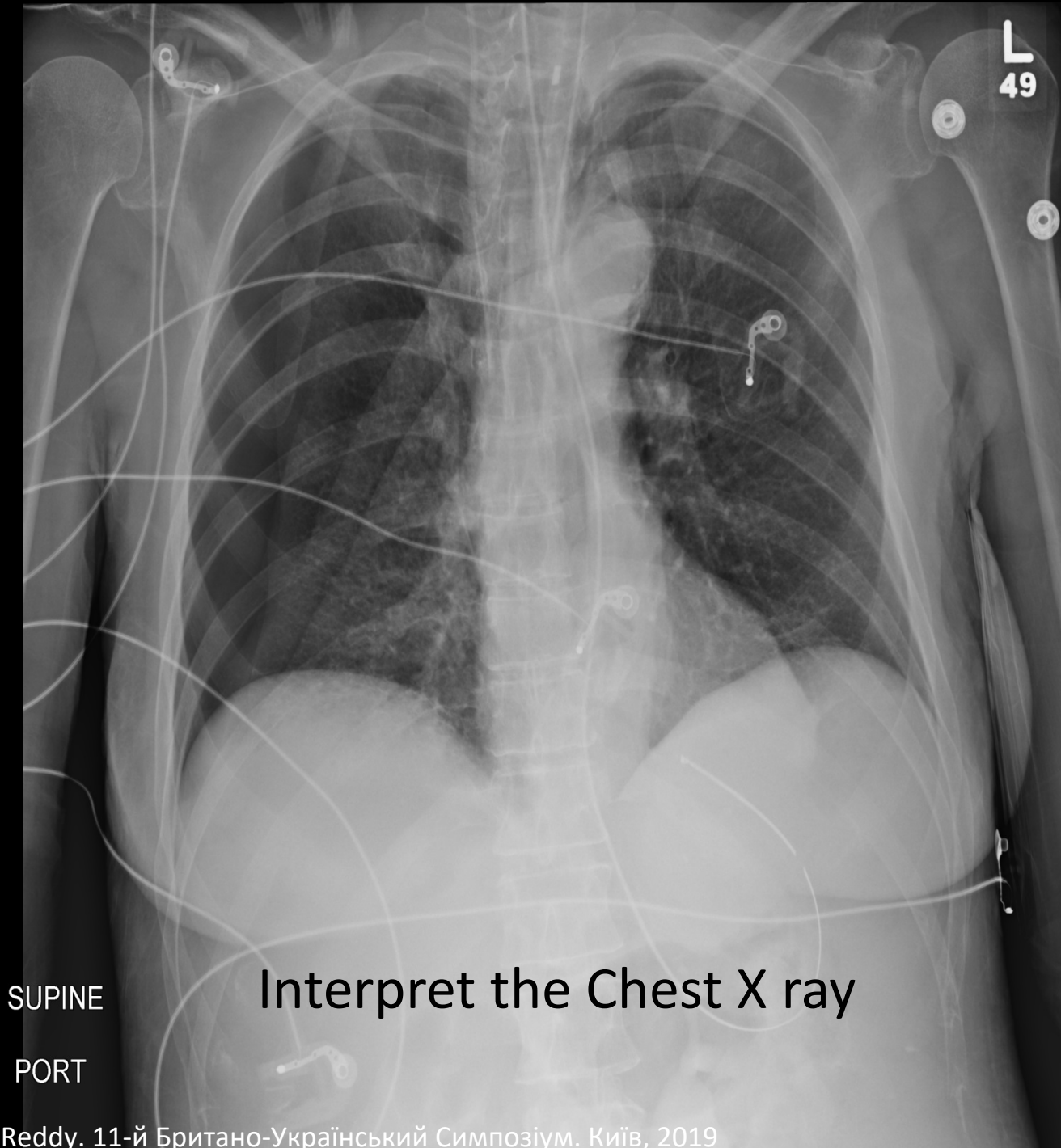
# Skill testing

- Introduce yourself
- Confirm patient name, date of birth and consent with nurse
- Check hemodynamic status
- Informs examiner he will wash hands and wear surgical mask, cap and gown
- Informs examiner he will drape the patient in a sterile manner
- Cover the ultrasound probe with sterile cover
- Position of the patient Trendelenburg
- Head turned to the opposite side
- Consider local anesthesia
- Examine the neck for anatomical landmarks
- Using an ultrasound locate the internal jugular vein (demonstrate)
- Identify the carotid artery
- Demonstrate the technique
- Orders chest X ray

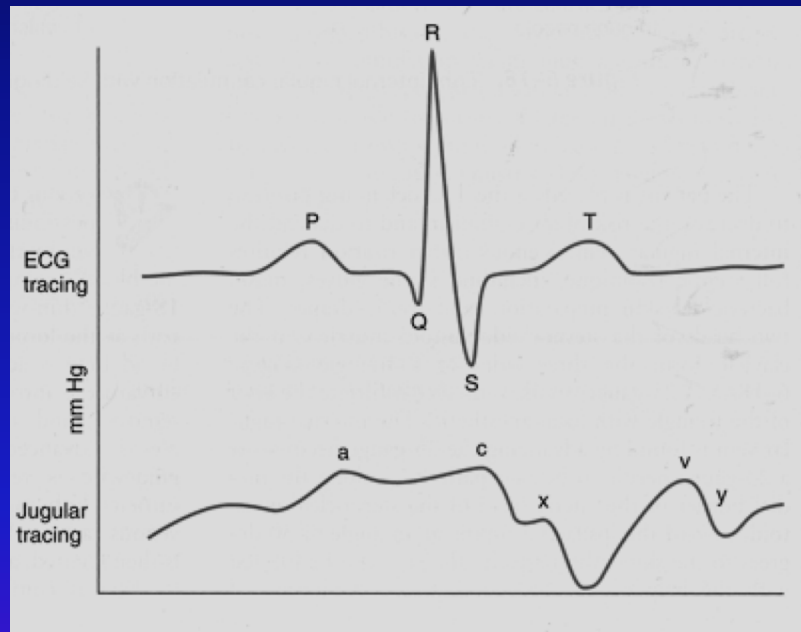




# Chest X ray after the insertion of Central venous cannulation



1. In the picture shown what are 'a' 'c' and 'v' waves
2. When do you see abnormality in 'a' wave
3. Name two complications associated with the technique
4. Name two etiologies that could increase CVP



- A wave:** Due to atrial contraction  
Absent in atrial fibrillation  
Enlarged in tricuspid stenosis, pulmonary stenosis and PHT.
- C wave** Due to bulging of tricuspid valve into the right atrium or possibly transmitted pulsations from the carotid artery.
- V wave** due to the rise in atrial pressure before the tricuspid valve opens.  
Enlarged in tricuspid regurgitation.
- X descent:** due to atrial relaxation.
- Y descent:** due to atrial emptying as blood enters the ventricle.



# Central Venous cannulation

- **Complications of CVC**
- Pneumothorax \*\*
- Arterial puncture \*\*
- Hematoma
- Infection
- Thrombosis
- **Name two etiologies that could increase CVP**
- Fluid overload
- Pulmonary hypertension
- Pneumothorax
- Pleural effusion
- Bronchospasm





# Application of ultrasound: Questions

Examiners copy	Marks
Tell briefly the anatomy of the vessel	
Show the functions of ultrasound	
Which side and why?	
Show sterile technique how to use the probe	
Sterile technique of the operating site	
Position of the patient	
Local anesthesia/pain relief for awake	
Talk through as you do the procedure	
Identify complications related to the procedure	



# Clinical skill station

Call from ICU: A-40 year old obese male post status exploratory laparotomy for a gunshot wound is intubated and on mechanical ventilation for ARDS secondary to sepsis

SIMV + PS mode

$V_T$  430 mL

RR 14/min

PEEP 9 cm H<sub>2</sub>O

FIO<sub>2</sub> 0.5.

**Sedation:** Propofol 50 mcg/kg/min and fentanyl 50 mcg/hr IV infusion

He has been fed continuously through a feeding tube.

The Respiratory therapist checks the ventilator and found ventilator alarms for low “**Tidal volume**”, and “**minute volume**”. She also noticed a “**Low oxygen saturation**” from 99% to 90%. You have been requested to change the Endotracheal tube.



# Changing endotracheal tube

- ☐ Quickly assess the situation (End Tidal CO<sub>2</sub>, O<sub>2</sub> Sat, Vitals)
- ☐ Inquires about previous intubation (say difficult to intubate, needed Fibreoptic)
- ☐ Call for additional help and air way adjuncts
- ☐ Informs RT FIO<sub>2</sub> to 1
- ☐ Checks the ETT position, cuff leak, and at what depth the ETT is secured
- ☐ Aspirates the feeding tube
- ☐ Confirms sedation and analgesia
- ☐ Suctions oral cavity
- ☐ Introduces the cook exchanger bougie
- ☐ Deflates the cuff and extubates the ETT
- ☐ Introduces the new ETT under vision (laryngoscopy) over the bougie
- ☐ Inflates the cuff and confirms the correct placement of the tube by ETCO<sub>2</sub> and auscultation



# Clinical scenario using a mannequin

A 78 year male has just been admitted to SICU after an emergent posterior thoracic spinal cord decompression.

He remains intubated and mechanically ventilated on SIMV mode.

He has radial arterial line

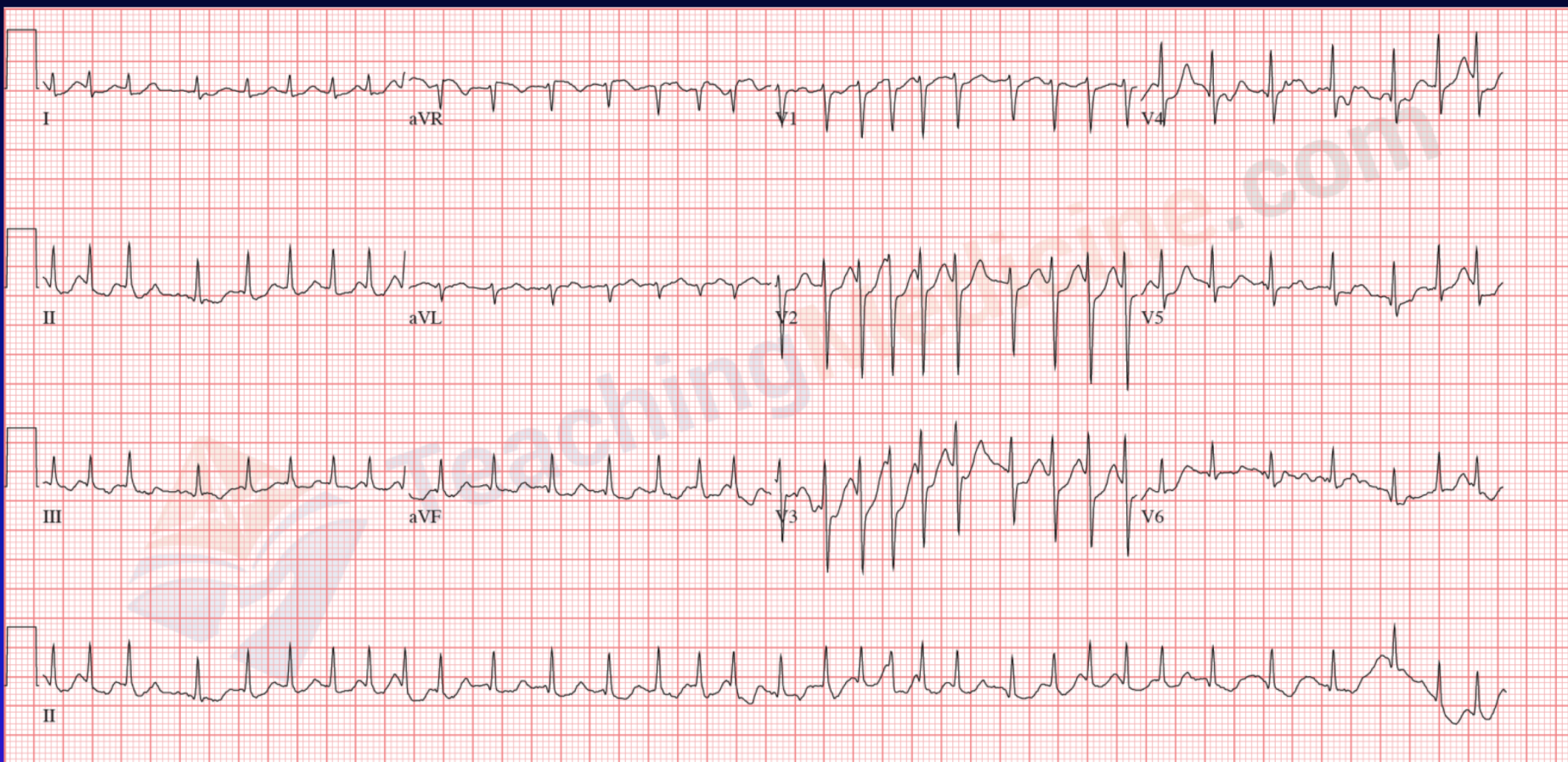
**PMH:** CAD s/p CABG 5 years ago. He also has a history of atrial fibrillation, hypertension, obesity and diabetes.

The SICU nurse calls you to the bedside to evaluate for sudden hypotension and ECG being ????

**BP is 52/36, O<sub>2</sub> Saturation 88% on FIO<sub>2</sub> 0.5**



# 12 lead EKG



BP is 52/36, O<sub>2</sub> Saturation 88% on FIO<sub>2</sub> 0.5



A 22 year old lady post delivery comes to the Emergency department with history of severe head ache. She had an uneventful delivery of a live male baby under epidural analgesia. She was not told about accidental dural puncture. She has severe head ache and very apprehensive. The ED attending confirms the headache is related to post dural puncture. She has no past or present medical history or on any medications. She weighs 80 Kg and her vitals are stable. You are asked to review. You also heard '*she is a difficult patient*



# Examiners copy

- ☐ Knocks the door before entering
- ☐ Washes hand
- ☐ Greets and introduces himself or herself
- ☐ Elicits history of headache
- ☐ Elicits symptoms and signs: Neck stiffness, blurring of vision, Nausea, vomiting
- ☐ Listens with sympathy
- ☐ Narrates briefly the differential causes of head ache
- ☐ Offers various modalities of relief of pain
- ☐ Bed rest and fluids
- ☐ Analgesics
- ☐ Role of caffeine
- ☐ Epidural blood patch
- ☐ Answers all queries
- ☐ Leaves the room with an assuring note



# Conclusion

- OSCEs are a valuable and well-developed assessment approach in Anaesthesia assessment
- It allows to assess the student the essential components of foundational and functional competencies
- It is uniform throughout and is the same for all

<https://youtu.be/Elxu9y3eFEg>

