



How to improve your OSCEs (learn from our mistakes!)

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Who are we?

- Responsible for all UoG OSCEs
- Summative OSCEs in years 2, 3 & 4
- Formative OSCEs in years 1 & 2
 - 14 stations in year 2
 - 15 stations in years 3 & 4



- Writing and reviewing OSCE stations
- How to choose suitable OSCE stations for your institution
- How to choose and train assessors
- Technology or paper? (Probably not enough time 😞)
- Advice on how to set up and run a multi-station, multi-stream OSCE



Writing & reviewing OSCE stations

What do we want to assess?

- Practical vs Knowledge
- OSCE vs MCQ, DIQ, EMQ, Essay, MEQ, SAQ, CDM, DI
- Theoretical knowledge: what is the normal range for pulse rate in the dog?
- Applied knowledge: Is the pulse rate normal in this dog?
- OSCEs are expensive – Focus on practical skills!

(Please see our poster for how much ours cost!)



Instructions to Assessor

- Title of Station
- What is the assessor allowed to say to the candidate?
- How to reset the station between candidates
- Equipment List

Instructions to Assessor	Practical skills – assisted breathing Placement of nasal oxygen catheter
<p>Indicate that this is a practical skills station.</p> <ol style="list-style-type: none">1. Ask the candidate to read the scenario and/or instructions.2. Remove butterfly tabs between students, wipe gel off cadaver, and rinse tubing	
<p>Equipment Needed:</p> <ul style="list-style-type: none">• Cadaver• Suitable nasal catheters labelled 'Do not inject' at luer end• K-Y gel• Intubease spray• 2.5cm Elastoplast• Mock superglue• Marker pen• Scissors• Surgical spirit to remove tape• Disposable gloves• Clinical waste bin• Blue roll• Assistant to restrain cadaver and reset station• Bucket of disinfectant for rinsing tubes	



Equipment Lists

- Comprehensive equipment list
- Don't forget the waste disposal! What bin is required?
- How many of each item is required?
- Is back-up equipment available?
- Batteries!
- Cadavers – whole or part; how many?
- Have the students seen the equipment before?
- Include diagrams if helpful





- Include assistants on equipment list.
- How much time will be required to re-set the station?
- Is an assistant required?
- If so, who?
- When will you train them?

Equipment Needed:

Cadaver
Suitable nasal catheters labelled 'Do not inject' at luer end
K-Y gel
Intubease spray
2.5cm Elastoplast
Mock superglue
Marker pen
Scissors
Surgical spirit to remove tape
Disposable gloves
Clinical waste bin
Blue roll
Assistant to restrain cadaver and reset station
Bucket of disinfectant for rinsing tubes



Instructions to Candidate

- Keep it brief!



Instructions to Candidate	Practical Skill
<p data-bbox="452 486 923 511">Using the provided equipment and materials;</p> <p data-bbox="452 586 1112 615">Scale and polish the teeth on the dental model.</p>	



- Signalment should be concise
- Number or bullet point instructions
- Don't include unnecessary information

Name.....Angus Smith

Breed...Labrador

Age....3 y.o.

The above patient requires a blood sample to be taken from the cephalic vein for biochemistry and haematology. The area has been clipped and swabbed with alcohol, and the vein has been raised.

1.Choose an appropriate needle for this procedure. 5ml syringes are provided.

2.Choose the appropriate blood tubes for biochemistry and haematology

3.Take a blood sample from the Cephalic IV model

4.Fill your chosen blood tubes

5.Dispose of all waste



Marksheet

- Is there a worksheet associated with the skill?
- Use this as a guideline when writing

Urinalysis using a refractometer and dipsticks.

To perform urinalysis you will need: gloves, distilled water, urine sample, a refractometer, pipettes, tissues and dipstick test strips.

- Step 1: Place 2-3 drops of distilled water on the prism surface of the refractometer.
- Step 2: Hold refractometer up to the light source and look down the eye piece.
- Step 3: Calibrate the refractometer to 1.000 on the USG (or W) Scale.
- Step 4: Lift cover and dry prism using a dry tissue.
- Step 5: Wearing gloves, invert tube to gently mix urine sample.
- Step 6: Pipette 1-2 drops of urine onto the prism surface, close the cover.
- Step 7: Hold up to light source. Read and record the urine specific gravity.
- Step 8: Rinse the prism with water and dry.
- Step 9: Select urine dipstick test strips, remove one test strip. Replace lid immediately.
- Step 10: Using pipette, cover test strips with urine. Note the time.
- Step 11: Wait appropriate length of time then read and record the dipstick measurements.



Action/Response	Done/Correct	Mark
Specific Gravity		
Calibrate the refractometer using distilled water.	2	
Wipe dry.	1	
Put on gloves.	1	
Mix sample.	1	
Read & record SG correctly.	3	
Clean plate with tissue and wipe with distilled water & dry (must use water to get this mark.	2	
Dipstick		
Check sticks are in date	1	
Replaces the lid immediately	1	
& student makes effort to avoid contamination during task	1	
Immediately start timing.	1	
Record results accurately.(1 mark per correct result, no error allowed)	5	
Dispose of all waste in clinical waste bin	1	
TOTAL	20	



Teaching

- Who taught the skill?
- How many tutors were involved in teaching?
- Are there multiple methods for completing the task?
- Does the question align with the teaching?

If not, Students will revolt!!!



- Develop the checklist based on teaching
- Break the skill down into steps, discard steps that are not vital
- Try not to include too many steps, combine if appropriate
- Allocate marks to each step
- Higher marks awarded to critical steps
- Check your arithmetic...then have someone else check it!



Drug and Fluid Calculations

- Theoretical or Applied Knowledge?
- Do we use these in the OSCEs?

- If yes, how?





You are required to set up a blood transfusion for an anaemic dog
The T-Connector has been flushed with saline.

Using the items provided

Choose an appropriate giving set for the administration of a whole blood transfusion in the dog

The assessor will provide you with a bag of fluids:

1. Set up the fluids and giving set and correctly attach these to the dogs T-Connector.
2. Assume the fluids have been warmed safely to room temperature
3. Calculate how much (in mls) you need to administer to this patient from the following information.

$$\text{Required volume of blood} = k \times \text{body weight} \times \frac{(\text{desired PCV} - \text{recipient PCV})}{(\text{donor PCV})}$$

K = 90

Target PCV = 30 %

PCV of the donor dog = 55 %

PCV of your anaemic dog (recipient) = 15 %

Weight of your anaemic dog = 18 kilograms

4. Tell the assessor your calculated total volume in mls



You are required to set up a blood transfusion for an anaemic dog

The T-Connector has been flushed with saline.

Using the items provided

1. Choose an appropriate giving set for the administration of a whole blood transfusion in the dog

The assessor will provide you with a bag of blood which has been warmed safely to room temperature:

2. Set up the fluids and giving set and attach these to the dogs T-Connector.

Set the regulator on the giving set to supply fluids at a rate of 60ml/hr



Autofails

- ***Any action which would endanger the life or safety of an animal or human will incur an automatic fail.***
- We no longer use them in our OSCEs (BRM)
- Candidate scores zero
- Pre-arranged
- Dangerous actions only



Action/Response	Done/Correct	Mark
Turns on oxygen cylinder successfully <i>Autofail if cannot turn on cylinder</i> <i>Autofail if attempts to undo wing nut of cylinder yoke</i>	1	
Flowmeter set to 4L (read from top of bobbin) (2) <i>Autofail if sets flow rate at <3L</i> Turned off again (1)	3	
Vaporiser correctly removed from machine (1) Replaced with alternative vaporiser (2)	3	
Vaporiser correctly set to 3% (1) and then turned off (1)	2	
Bain system selected <i>Autofail if Bain not selected</i>	2	
System attached to common gas outlet on machine	1	
Valve on system closed (1), end of tubing occluded (1), and oxygen flowmeter or oxygen flush used to fill bag until distended (1). Waits to see that pressure is held, or squeezes bag to make sure no leak (1 for either)	4	
Fresh gas flow of 2-6L/min set on oxygen flowmeter (1), suitable syringe plunger or finger used to occlude inner tube of Bain at patient end (1), bobbin on flowmeter should be seen to drop (1)	3	
Oxygen cylinder turned off	1	
TOTAL	20	



Action/Response	Done/Correct	Mark
Turns on oxygen cylinder successfully Assessor can turn cylinder on if the candidate is unable to but 0 marks awarded.	1	
Depress oxygen flush briefly	1	
Vaporiser correctly removed from machine (1) Replaced with alternative vaporiser (2) If tilt and say that they tilted vaporiser, zero marks	0/1/3	
Vaporiser correctly set to 3% and then turned off	1	
Lack system selected	3	
System attached to common gas outlet on machine,(1) and scavenging(1), without trial and error (1)	0/1/2/3	
Fresh gas flow of 2.4-3L/min set on oxygen flowmeter	3	
Oxygen cylinder turned off	2	
Entire procedure carried out safely (Award zero marks if if attempted to undo wing nut of cylinder yoke while cylinder is open or if vaporiser is tilted significantly, (45° or more, unless students recognises error), or gas flow set at <1.5l	3	
TOTAL	20	

<i>Candidate ran out of time (please record if this is the case)</i>					
<i>Other comments:</i>					
<i>Global Rating</i>	<i>Fail</i>	<i>Borderline Fail</i>	<i>Borderline Pass</i>	<i>Pass</i>	<i>Excellent</i>



Stopping the station

- The assessor must intervene and stop the station should the following events occur: Endangering the welfare or safety of the animal or if the student places themselves in danger
- Any manipulation or procedure that would cause pain or distress, or if you believe the animal is being handled in a rough or inconsiderate manner






Clinical Exam of the Sheep

The current welfare codes state "Lifting or dragging sheep by the fleece, tail, ears, horns or legs is unacceptable". Also, opening the mouth or examining the conjunctiva in a manner which causes discomfort to the animal is not acceptable. If candidates handle the animal in such a way please ask them to STOP what they are doing and immediately exit the station."

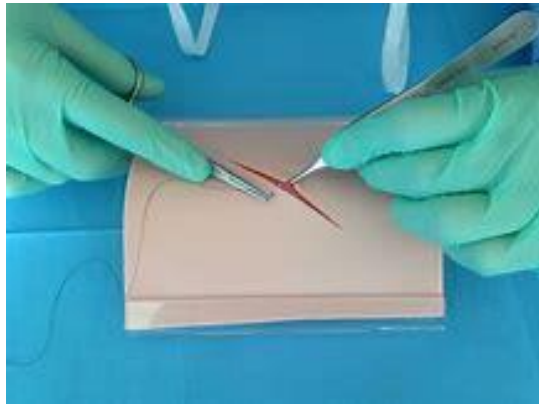




Finally.....

- Question Review
- Who makes up the panel?
- How many on the panel?
- Test Runs
- Feedback from assessors post OSCE 

What skills make a suitable OSCE?





- Skills List?
- Time?
- Equipment?
- Animals?
- Assessors?
- Access to Revision?
- Cost?
- Animal welfare?



	A	B	C	D	F	G	H
	First Year		Second Year		Third Year		Fourth Year
1							
2							
3	Comm Skills		Comm Skills		Comm Skills		Comm Skills
4							Euthanasia Consult
5	Surgical Skills		Surgical Skills		Surgical Skills		Surgical Skills
6	Instrument Handling and Identification		Suturing - Inverting and Everting Patterns		GI Surgery		Dog Castration
7	Suturing		Scrubbing Up		Lump Removal		Rabbit Castration
8	Skin Prep for surgical procedures		Gowning + Gloving		SA Ligatures & Hand Ties		Rabbit OVH
9	Surgical Approach and Closure Abd		Draping		Theatre Etiquette		Tendon Repair
10	Aberdeen Knot						
11	Intradermal sutures		Canine		Canine		Canine
12	Subcutaneous sutures		Clinical Exam of the Dog		Canine Cardio Exam		Canine dental extraction
13			ECG placement and Interpretation		Canine ECG Interpretation		Skin and Ears Path Exam
14	Canine		Cranial Nerve Assessment		Dental Extractions		
15	Cat and Dog H&R		Cranial Drawer Test		Heart Murmur Identification		Proprioception tests and spinal reflexes
16	Canine Dentistry				Jugular Blood Sampling		Canine Neurological exam
17					Blood Transfusion		Bandaging
18	Equine		Equine		Equine		Equine
19	Equine BCS & Ageing		Equine NBs		Equine ECG		Equine Nerve and Joint Blocks
20	Equine Dentistry		Clin Exam Horse		Equine Wound Management		Equine radiography
21	Rectal Scanning		Equine Radiography		Equine Clinical Exam		
22	Eq Handling and Restraint		Equine BCS & Ageing		Equine Colic Exam		
23	Stable Bandage				Equine IV Fluid set up		Ruminants
24	Eq Tail Bandage		Ruminants		Equine Peritoneal Tap		Bovine CE of cases
25	Horse identification and markings		Clin Exam Sheep		Equine Rectal Exam		Bovine rectaling
26	Equine IV injections and blood sampling		Clin Exam Cow				Bovine ultrasonography
27	Put on and take off a rug		Clin Exam Calf				Ram vasectomy
28					Feline		Semen analysis
29	Ruminants				Feline Clinical Exam		Bull/Ram breeding CE
30	Cattle H&R		Care & Treatment of Animals		ECC + Anaesthesia		Bovine Castration
31	Sheep H&R		Derm Samples		IV Catheter SA		Bovine abdominal surgery
32	Sheep BCS and Ageing		Nail Clipping		IPPV		Dehorning
33	Cattle BCS		Use of ophthalmoscope and Otoscope		Thoracocentesis		
34	Lambing		Fluorescein and Tear Testing		CPR		Exotics
35			Intubation		Anaes Machine Set Up		Small Mammal Clin Exam
36	Lab Skills		Nasal Oxygen Catheters & Feeding Tubes		Breathing Systems		Rabbit Dentistry
37	Blood smear				Anaes Monitoring		
38	Using Microscope				BP Measurement		
39	Urinalysis inc urine sediment				Blind Cystocentesis		Diagnostic Imaging
40	Identification and use of blood tubes		Exotics				Radiographic Interpretation
41	Packaging lab samples		Reptile Handling				Ultrasonography
42	PCV				Lab Skills		
43			Pathology		Measurement Plasma Protein		
44	Care & Treatment of Animals		Collection and packaging of pathological samples		Sample Submission		
45	Administration of S/C, IV & IM Inj's				FNA		
46	Drug Administration & Calculations				Use of glucometer		



Timing

- Can the task be completed within 5 minutes?
- If not, can the skill be broken down into multiple tasks?





This is a Clinical Examination station

You are presented with a stray adult dog that has come in today to a rehoming centre.

Please examine this dog.

As you are doing so you should tell the examiner

- what you are examining
- what you have found

Action/Response	Done/Correct	Mark
Approach to dog – friendly and unthreatening but in such a manner that if dog is aggressive then student can retreat – small dogs should be put on table, large dogs can be examined on floor.	2	
Looks at head and checks for symmetry	1	
Examination of eyes	1	
Examination of ears	1	
Examination of mouth/teeth including MMS & CRT	1 1	
Opens mouth	1	
Palpates submandibular nodes	1	
Palpates prescapular lymph nodes	1	
Auscultation of heart – both sides – at least 10 seconds on each side	2	
Auscultation of lung field – both sides	1	
Reports heart/pulse & respiration rates (just reports on appropriateness of these rather than reporting actual rates)	½ ½	
Palpation of abdomen – gentle but thorough – cranial to caudal and ventral to dorsal	1	
Checks femoral pulses (can be done at same time as cardiac ausc)	1	
Palpation of popliteal lymph nodes	1	
Requests thermometer or to perform temperature / indicates would want to take temperature	1	
Checks anus and genital area (& palpation of testes if male dog) all or none	1	
Examination of skin – check for fleas and other ectoparasites	½	
Examination of limbs – run hands all over checking for lumps	½	
Automatic fail: if candidate fails to auscultate thorax at all – record total mark as zero.		
Marks (20 max)	20	



This is a Clinical Examination station

You are presented with a stray adult dog that has come in today to a rehoming centre.

Please perform a cardiothoracic examination on this dog and palpate its superficial lymphnodes.

As you are doing so you should tell the examiner

- what you are examining
- what you have found



Action/Response	Done/Correct	Mark
Approaches dog – friendly and unthreatening but in such a manner that if dog is aggressive then student can retreat – small dogs should be put on table, large dogs can be examined on floor.	1	
Examines MMs and checks CRT	2	
Palpates at correct locations: - submandibular lymph nodes (both sides) - prescapular lymph nodes (both sides)	2 1	
Auscultates the heart correctly - both sides - at least 10 seconds on each side	4	
Auscultates lung field correctly - both sides - at least 2 areas of thorax each side (2) - at least 2-3 breaths each side (2)	4	
Checks femoral pulse in correct location (can be done at same time as cardiac auscultation)	2	
Palpation of popliteal lymph nodes at correct locations	1	
Correctly reports on heart rate/pulse rate and some quality statement (regularity, pulse deficit, strength)	1 1	
Correctly reports on respiration rate (if dog is panting student is allowed to state that accurate RR cannot be assessed)	1	
Marks (20 max)	20	



Equipment

- What equipment is required?
- How much of each item is available?
- Are they identical?
- Are there back ups available?
- Do the students know how to use it?





Live Animals

- Welfare is a priority
- Do you have enough suitable animals?
- How invasive is the procedure?
- How often will procedure be repeated?
- How stressful? Will animal be restrained?
 - Palpating the abdomen
 - Taking temperature
 - Ophthalmic and aural exam using ophthalmoscope/otoscope
 - Catching and turning sheep
 - Rectal palpation
 - Opening mouth?
 - Neurological Exam
- Clinically normal vs abnormal





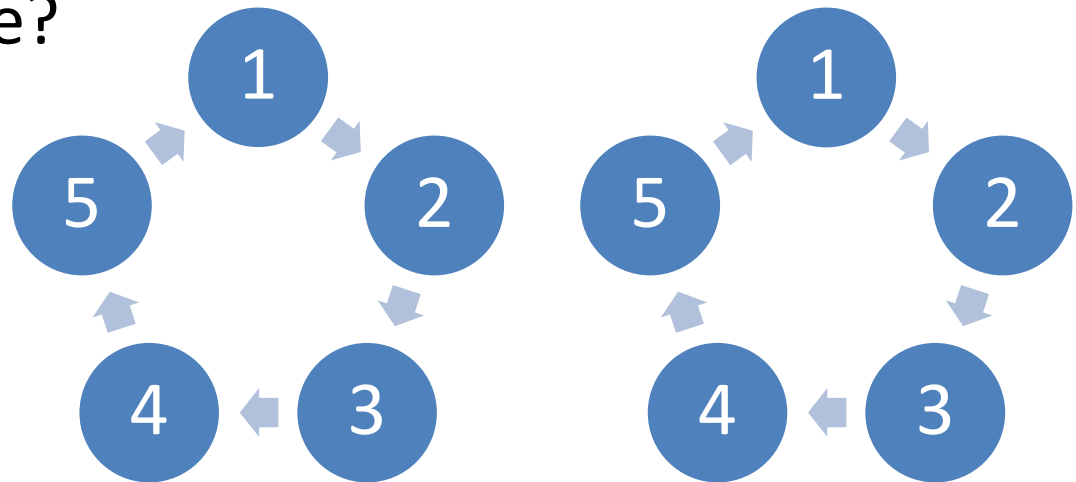
Cadavers

- Are they available?
- How many will be required?
- Were they used during teaching the skill?
- Do you need to purchase... Public perception
- Can a model/mannequin be used instead?



Assessors

- How many assessors will be required?
- Specialised skills – do you have enough?
- Are they available?



Access to Revision Sessions

Do the students have timetabled access to:

- Equipment
- Live Animals
- Specimens
- Tutors!





Cost

- External Assessors
- Consumables
- Models
- Actors
- Loss of revenue
- Invigilators
- Equipment
- Live animals
- Cadavers





Cohort Size

- How many students?

Impact on:

- Volume of consumables
- Welfare of animals
- Available equipment
- Available assessors
- Cost

First Diet vs Resit – some skills not suitable for first diet can be assessed with smaller numbers of students



- Competently perform a skin scraping (deep and superficial)
- Identify on the microscope the common skin parasites like mites, lice
- Identify on a microscope a normal and abnormal skin cell on cytology
- Differentiate fungal and bacteria on cytology
- Perform an impression smear (including staining)
- Identify a gastric dilatation-volvulus on radiography
- Perform an abdominal palpation and recognise presence of feces or gas
- Perform a dental examination of a horse includes using the right instruments
- Perform a dental examination of a dog/cat
- Demonstrate how to scale the tooth of a dog/cat (how to correctly position the instrument)
- Recognise abnormal abdominal fluid based on consistency, colour and specific gravity
- Show how to place a stomach tube into a horse
- Show how to place a oesophageal tube in a cat
- Explain how to a client how to manage an oesophageal tube at home.
- Describe what type of radiographs (position) to take in a dog showing GI signs
- Calculate drug dosage
- Perform a liver biopsy intra-abdominally competently
- Perform a simple floatation faecal examination.
- Identify common gut parasites in production/equine/companion animals
- Describe signs differentiating diarrhoea caused by small intestines or large intestines
- Show positions where to auscultate the rumen of a cattle
- Calculate nutritional requirement for cattle/equine
- Describe how to place a nasogastric tube in a cat/dog
- Perform an abdominal palpation on a rabbit/ dog/ cat
- Recognising the appearance of vomit vs regurgitation.



- Practical vs Knowledge
- Skills List
- Time
- Equipment
- Animals
- Assessors
- Access to Revision
- Cost



Knowledge

- Identify on the microscope the common skin parasites like mites, lice
- Differentiate fungal and bacteria on cytology
- Identify on a microscope a normal and abnormal skin cell on cytology
- Describe what type of radiographs (position) to take in a dog showing GI signs
- Describe signs differentiating diarrhoea caused by small intestines or large intestines
- Describe how to place a nasogastric tube in a cat/dog
- Calculate drug dosage
- Calculate nutritional requirement for cattle/equine
- Recognising the appearance of vomit vs regurgitation.
- Identify a gastric dilatation-volvulus on radiography
- Identify common gut parasites in production/equine/companion animals
- Recognise abnormal abdominal fluid based on consistency, colour and specific gravity



Welfare

- Perform an abdominal palpation and recognise presence of feces or gas
- Perform an abdominal palpation on a rabbit/
dog/ cat
- Show how to place a stomach tube into a horse
- Pregnancy check in cattle



How to choose and train assessors





Who to choose?.....

- Clinicians
- External vets
- RVNs
- Technical staff
- Students?

- Will you need back-up assessors?



Assessor Training

- Send question securely in advance
- Allow assessors to view station in advance
- Have them check the equipment
- Inform them of the flow of the stations
- Can they use the tablets?
- Have them examine live animals
- Session supervisor briefing



Assessor Training

- No small talk with candidates
- Same examination experience for each candidate
- Allot marks according to the mark scheme
- Ensure consistency of actors & assistants



Inter-rater reliability

- Assessing a given performance consistently
- Not deviating from mark scheme
- Being as objective as possible
- Collaboration with co-assessors

What if?

- A student arrives at your station upset
- Student injures themselves during exam
- Fire alarm goes off?
- Student faints at your station
- Equipment malfunction
- Animal seems distressed
- Student goes wrong way



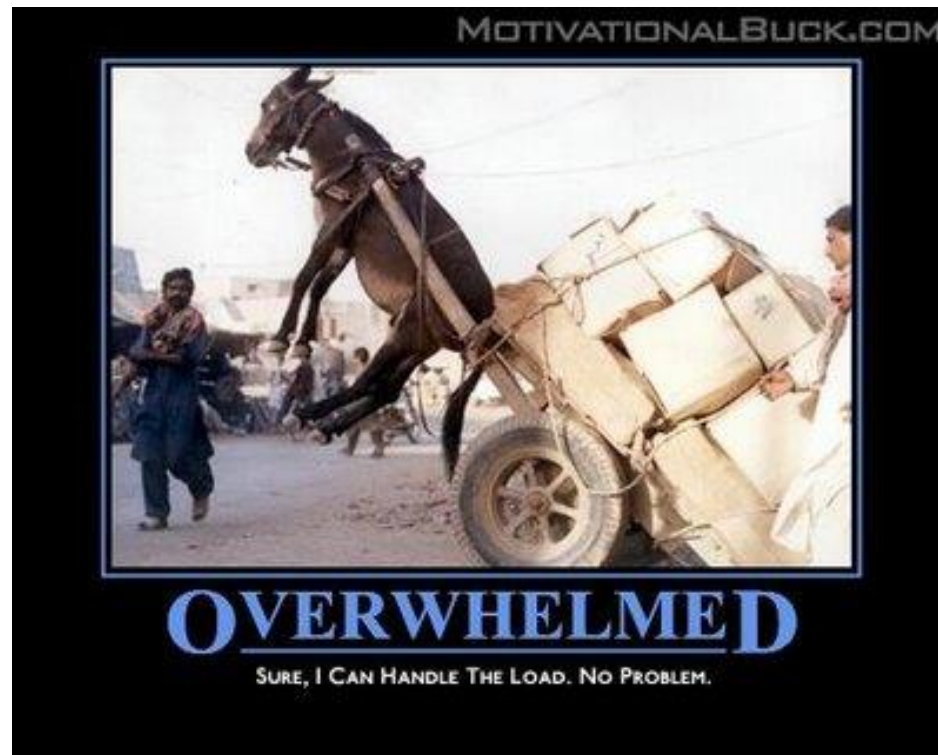


Stopping the station

- The assessor must intervene and stop the station should the following events occur: Endangering the welfare or safety of the animal or if the student places themselves in danger
- Any manipulation or procedure that would cause pain or distress, or if you believe the animal is being handled in a rough or inconsiderate manner
- **If candidates act in such a manner or handle the animal in such a way please ask them to STOP what they are doing and immediately EXIT the station. If the procedure is STOPPED for any reason, do not continue to mark the sheet and do not alter any marks already allocated. Note on the score sheet why the station has been stopped in the comments box.**



Running an OSCE....





Morning of.....

- Arrive early!!
- Finalise station set up:
 - Cadavers
 - Samples
 - Live animals
- Put folders & tablets at each station
- Check stations
- Check timer
- Tea and coffee!
- Take note of assessors/actors/assistants as they arrive





When Assessors Arrive....

- Show station location
- Go through folder & tablets
- Train on how to assess and reset station!
- Show flow of stations
- Introduce to other assessor on same station
- Provide them with a pen/stethoscope/lab coat
- Introduce to assistants
- Inform them of special needs of any students





10 minutes before.....

- Check students have arrived
- Debrief students
- Check which assessors/assistants have/have not arrived
- Try to track down missing personnel
- Answer as many questions as quickly as possible
- Ask admin staff to track down the missing student



5 minutes before.....

- Assessor debriefing
 - Lead students to their stations
 - Press start buzzer
- Speak with other staff who are assessing the same station
 - Do not deviate from mark scheme.
 - Initial marksheets/write number & colour of tablet
 - No small talk. – orange exit chairs and where to find them.
 - Equipment malfunction – spk to LA/ZM
 - Upset students – inform LA/ZM
 - Make sure you know where next station is
 - Stickers: Students will also leave their stickers behind
 - Fail/BF/BP/Pass/Excellent
 - Tablets: Use paper only if you must. Use candidate labels to write mark, and global judgement
 - 6 stations
 - Allocated break times.
 - Lunch – Collect vouchers from LW or ZM
 - Fire Alarm – go to meeting area outside Food Farm with student you are assessing. Do not allow students to speak to each other.
 - First aid



During.....

- Walk through repeatedly
- Monitor upset students
- Reply to queries from assessors
- Replace broken equipment
- Monitor live animals
- Monitor assessors and actors
- Direct students
- Administer First Aid
- Keep the urn full
- Hope you get bored





At the end of the exam.....

- Collect all of the folders/tablets
- Upload data
- Reset exam
- Check emails
- Go home
- Have a wine...or four





Borderline Regression Method

- Borderline Regression Method is a combination of:
 - Candidate Scores
 - Global Judgement
- 1. Fail, Borderline, Pass, Good Pass, Excellent Pass
- 2. Clear Fail, Borderline Fail, Borderline Pass, Clear Pass, Excellent Pass

Global ratings are converted to a numeric score

- Fail = 0
- Borderline = 1
- Pass = 2
- Good Pass = 3
- Excellent Pass = 4
- Clear Fail = 0
- Borderline Fail = 1
- Borderline Pass = 2
- Good Pass = 4
- Excellent Pass = 5

Borderline = 1

Borderline = 1.5



Cut Score

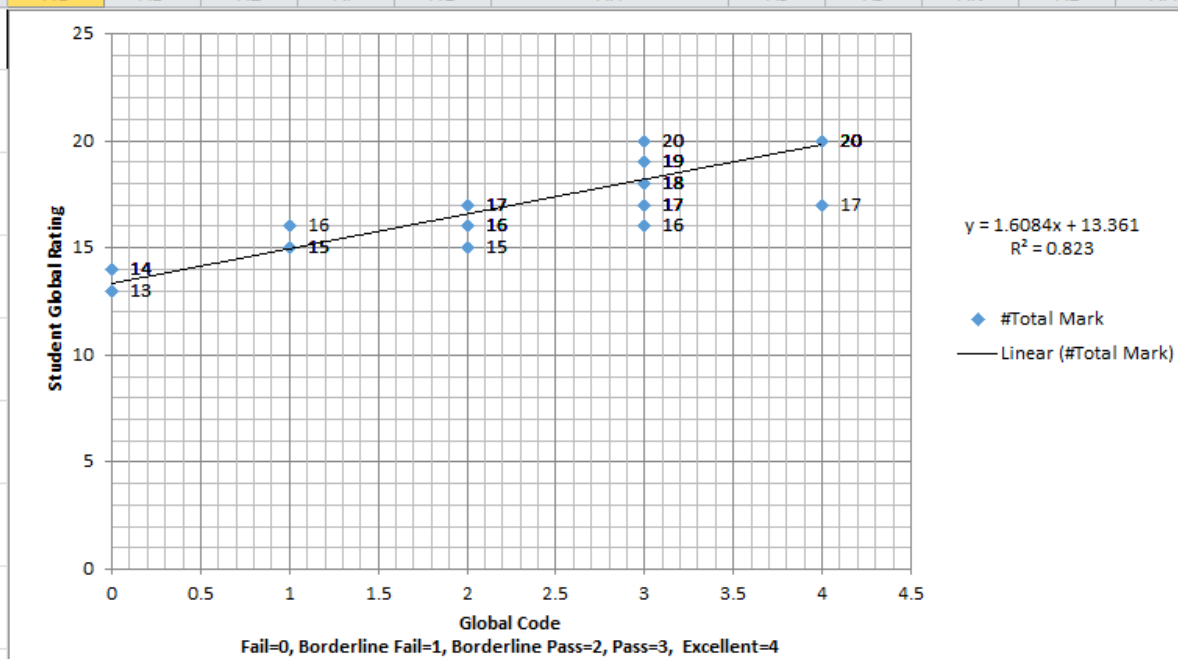
- *the score obtained from linear regression of candidates' scores against candidates' global judgements at the global judgement value that corresponds to a borderline (or minimally competent) performance.**

*

John Patterson, Hon Senior Lecturer in Medical Education, Barts and the London School of Medicine and Dentistry, Queen Mary University of London



- All of the scores that fall below the dotted line (cut score), fail the station.
- The cut score is based on the judgements of ALL of the examiners on the performance of ALL of the candidates.
- This therefore averages out the inter-assessor variance in scores and judgements.



Cut Score	16
A1 Score	20

OSCE station	BRM trendline equation	D3	A1
4	$y = 1.6084x + 13.361$	16	20



Questions?

If you would like to chat, please come and find us during the conference or email us at

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