Writing Very short answer question for the MBChB-A guide for staff

Professor David Kluth, Director of Teaching

Introduction

Very short answer questions (VSAQs) form part of the assessment of applied knowledge in the MBChB programme. They should follow the style guide for single best answer questions (SBAs) but the candidate will type the answer. The rationale for this approach is that they more accurately mirror clinical decision making and are useful to assess that core aspects of knowledge have been acquired. The cueing provided by single best answer questions can result in a more strategic approach to answering which may not always reflect the candidates' true knowledge. However, the introduction of any new style of assessment requires careful analysis which is why we are introducing at a low level to begin with. It is also likely that the Medical Licensing Assessment (GMC mandated assessment) will initially focus on using SBAs so these will remain core for assessment.

Design of VSAQs

The question will involve a clinical vignette covering history, relevant examination findings and key investigations. This is identical to the style guide for SBAs. This will be followed by the lead-in (e.g. what is the most likely diagnosis?). Question writers should aim to remove unnecessary information to reduce the amount reading required by candidates. VSAQs use computer marking so they will not be used where a short sentence would be required to answer. The VSAQ style is most appropriate for areas of knowledge we would expect a lot of candidates to know and would often be considered easy if there was a list of 5 options. Candidates are used to using the design of questions and cueing to "spot" the correct answer, so removing this will make questions much harder. The most common lead-ins to use will be

What is the most likely diagnosis?
What is the most appropriate (diagnostic) investigation?
What is the most appropriate treatment?

The questions can be typed directly into Practique. Below is the sequence you should follow.
Step 1. Select "create new item"
Step 2. Select "very short answer question" from the question type drop down menu
Step 3. Give the question a title e.g, "Diagnosis of chest pain"
Step 4. Type question in box as normal including stem and lead-in (or paste from a word document)
Step 5. Type in all possible correct answers and variation you might consider acceptable. Include allowed abbreviations and fully type answers e.g. CTPA and CT pulmonary angiogram. Each new variation goes in a new box and should have a mark of 1. You may also add answers you think can be awarded partial marks. This would normally be a value of 0.5.
Step 6. Add a number in the Leveshtein threshold. The Levenshtein threshold is setting what degree of spelling error is permissible including adding in spaces. For drugs this will be set to zero for others it would reasonable to add a threshold of 1 or 2, depending on the complexity of the answer and how many words it includes.
Step 7. Save item
Step 8. Add any images on the resource page

Step 9. Blueprint as normal.
Step 10. Submit. You can leave in draft until you have finished, but ensure you save it.

Here are some practical examples of each style.

Example 1
A 30 year old man has a two day history of sharp central chest discomfort which is worse when he takes a deep breath. He smokes 10 cigarettes per day and drinks 30 units of alcohol per week.

His temperature is 37.9°C, pulse 80 bpm, blood pressure 127/80 mmHg and oxygen saturation 98% breathing air. His heart sounds are normal. He has no chest wall tenderness.

Investigations
Chest X-ray: normal

ECG: sinus rhythm, ST elevation and PR depression in leads I, II, III, avL, aVF and V2-V6

What is the most likely diagnosis?

The clinical picture fits with pericarditis. Below is a list of correct options all getting full marks.

pericarditis
acute pericarditis
pericardial inflammation
viral pericarditis

You do not need to worry about use of upper or lower case. For this question you may add a Leveshstein threshold of 1. This would mean an answer such as "percarditis" would still be automatically answered as correct or perhaps more reasonable an answer of "acute pericarditis" would be correct (there are two spaces between the words". If candidates type more than one answer e.g. "pericarditis acute myocardial infarct" it will be computer marked as incorrect and no marks will be awarded on review.

Once the exam has finished the computer automatically marks all those as correct which have any of the options included by the author (applying the Leveshstein threshold). These are labelled as green in the marking platform. The remainder appear as red. A member of the faculty will go through each answer to determine if it is wrong e.g. "acute myocardial infarction" or whether the answer may have merit e.g. pleuropericardial inflammation. If the answer is considered correct it will get full marks. Some answers may have merit but only a proportion of the mark will be awarded. Once an answer is added as correct all candidates who gave that answer will automatically receive the marks and it will be added to the database of correct answers for future use of the question.

Example 2
A 20 year old man has acute shortness of breath and left sided pleuritic chest pain. He has a history of asthma.

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His temperature is 36.7°C, pulse 98 bpm, blood pressure 117/80 mmHg, respiratory rate 24 breaths per minute and oxygen saturation 94% breathing air. His trachea is central. He has reduced expansion of the left side of his chest, with a hyperresonant percussion note and reduced breath sounds on that side.

What is the most appropriate diagnostic investigation?

The clinical picture is of a left sided pneumothorax and this would be best diagnosed by a chest X-ray.

The following answer would get full marks
chest X-ray
a chest X-ray
chest X ray
a chest X ray

The following would get half marks
CXR
This is not considered an appropriate abbreviation but does show relevant knowledge. A list of allowed abbreviations is provided in the appendix.

Example 3
A 68 year old man has acute shortness of breath. He has ischaemic heart disease, hypertension and type 2 diabetes mellitus. He takes lisinopril, aspirin and metformin.

His pulse is 96 bpm, blood pressure 140/72 mmHg, respiratory rate 28 breaths per minute and oxygen saturation 96% breathing high flow oxygen. His JVP is 6 cm above the sternal angle. He has bibasal inspiratory crackles to the mid-zones. He has a pansystolic murmur loudest at the apex. His blood capillary glucose is 12 mmol/L.

What is the most appropriate initial treatment?
(include route and drug but not dose)

The following answers would get full marks
intravenous furosemide
IV furosemide
intravenous bumetanide
IV bumetanide

An answer not included is "intravenous loop diuretic". This might be considered to get half marks as it shows partial knowledge. For drug names the Leveshstein threshold should be zero as a misspelt drug is still an error. These will be reviewed and partial marks awarded where merited e.g. IV frusemide would get half marks.

It is not always necessary to prescribe a drug so you may consider using a lead-in such as "What, if any, is the most appropriate additional treatment?". Correct options would be "no

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additional treatment" or "no treatment". This question style is useful in looking a management of multimorbidity and realistic medicine.

Other rules to writing VSAQs
1. Correct answers should be as accurate as possible e.g. acute cholecystitis is better than gallstone disease (partial marks may still be awarded for the latter).
2. Right and left must be written out in full, R and L will not get marks.
3. Include answers with and without hyphens as it will make the automatic marking easier
4. Do not worry about inclusion of special characters or accents used in non-English names e.g. Guillain Barre, Henoch Schonlein etc
5. Greek letters should be spelt out e.g. alpha blocker, beta agonist
6. Candidates are allowed 2 minutes per question for VSAQs and 90 seconds for an SBA, so question length is important.
7. Management questions that include a verb are difficult to include as there are too many variations.
8. A list of accepted abbreviations is attached in appendix 1

Use of VSAQs in Years 1 and 2.

The aim of knowledge tests in 1 and 2 is primarily to look at the application of knowledge and make it clinically relevant possible. However, there is also a degree of knowledge of core topics. VSAQs can be used for this purpose as well. This will look at factual recall of core topics. Reviewing previous SBA exams questions that >90% will give some questions that may be modified for a VSAQ. Examples could include:
- Identifying specific anatomical structures
- Name parts of an ECG
- Drug mechanism or side effects
- Naming chemicals/peptides or proteins involved in specific physiological effects
- Naming cells with specific functions
- Naming enzymes or parts of pathways