Guidance on Organising and Running MBChB & PA Written (SBA & OSPE) Exams Using the MSCAA Exam-Write Platform

IEHMS Guideline

Intended for reference: Year Coordinators, Written Exam Coordinators, Assessment Administrators

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July 2022

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Contents

This guidance applies to all formative and summative single best answer written knowledge examinations using the Medical Schools Council Assessment Alliance (MSCAA) Exam-Write platform.

From 2021 all MBChB and PA SBA type written examinations will be hosted on the Medical Schools Council Assessment Alliance (MSCAA) Exam-Write platform. This may involve inputting questions into the MSCAA platform. When inputting previously used questions onto the platform the following data must also be entered if available:

- Date question created / reviewed – whichever is the latter
- Year group and dates question used
- Previous standard set with year group (summative exams only)
- Previous student performance on question
- Mapped onto GMC Outcomes for Graduates 2018 for the MBChB programme and the Faculty of Physician Associates curriculum for the PA programme.

BEFORE THE WRITTEN EXAM

Confirmation of Dates and Venues

MBChB:
- Year 1 and Year 4 (December formative) exams take place within the same diet as the main University exams so dates and venues are usually determined centrally. The central exam coordinator holds an exam spreadsheet which includes a standard request for when we would like the exams to be timetabled.
- Years 2, 3, 4 (June) and 5 exams occur out with the main University exam diet and dates and venues must therefore be booked separately. Written Assessment Administrator books exam venues for summative exams at least a year in advance.

PA:
- Year 2 of the programme has monthly formative assessments.
- Year 1 and Year 2 have a summative assessment in November. The PA Administrator books the exam venues.

The Senior Assessment Administrator contacts the External Examiners with dates of summative exams and dates of exam boards. External Examiners are informed / reminded that review of the exam papers will take place on the MSCAA Exam-Write platform.

Responsible Person

For summative exams it is the responsibility of the Written Exam Coordinator to blueprint, select, collate and standard set the questions. They must ensure the exam is reviewed by the External Examiners and respond to any comments.

See Appendix 1 Actions and Responsibilities

Setting the Written Exam

- Written Exam Assessment Administrator sends out request for summative exam papers to individual exam coordinators at least 4 months before the exam. NB: it is usually easier to compose main and resit exams at the same time.
- Only the Assessment Administrators and Written Exam Coordinators have access to the 'Exams' tab on the Exam-Write platform to create an exam.
- Exam Coordinators for each summative written exam should select summative exam ready questions from the UoA question bank on the MSCAA Exam-Write platform according to the blueprint and solicit new questions if there are gaps in provision.
  - Questions are tagged either as MBChB or PA programme
  - Years 1-3 MBChB may also have access to exam ready MSCAA Early Years questions for remote use.
  - Year 4 MBChB are taking place in the Medical Schools (MS) Applied Knowledge Test (AKT) pilot and have access to exam ready MSCAA Final questions for remote use.

Item Selection/Exam Blueprint

- Question / item selection for an examination should be based on the exam blueprint.
- Each summative written exam should have a named coordinator who holds the exam blueprint outlining the format of the exam (e.g., 80 SBAs) and the relative distribution of those questions to ensure that all topics are covered fairly, and which maps the assessment items to the learning outcomes:
  - MBChB GMC Outcomes for Graduates 2018
  - PA Faculty of Physician Associates curriculum
- The Years 1-3 MBChB blueprints consider the proportion of the curriculum for each module / subject block within that year, the number of questions from previous years and the total number of SBAs in the examination to give a range of the number of questions for each system / subject block.
- The number and variety of questions should broadly reflect the ensure core knowledge is covered and avoiding too many questions on obscure facts or conditions).
- Written Exam Coordinator to ensure all summative questions in the year question bank are blueprinted to the curriculum and to learning outcomes. This may be delegated to a qualified member of staff who is familiar with the taught curriculum in the block.

  Please refer to
  - **Standard Operating Procedure (SOP) on Blueprinting**.
  - MSCAA How to Blueprint Exam

Other considerations

When selecting questions check that the question has not already appeared in a previous examination undertaken by the cohort. This can be checked by matching previous use of the question to years and year groups.

Questions marked as formative should not be used in a summative assessment.

Questions marked as summative should not be used in a formative assessment.

Identify gaps in blueprint

- New written questions can be authored by any qualified member of staff.
- New questions must be reviewed by a subject expert, for example, the system clinical lead and by the relevant Written Exam Coordinator as a minimum.

   Please see IEMDS Guide to Written Question Writing (Healthcare).

Minimum of 12 weeks before a summative exam

- Written Exam Coordinator choses question items to accurately reflect the blueprint (i.e., correct number of questions and ensuring appropriate coverage of the curriculum) and informs Assessment Administrator so the first draft of the exam paper(s) can be created.
- Written Exam Coordinator ensures items are appropriately tagged.
- Normally no question should examine the same knowledge domain as another item, even if it is a different question. Occasionally duplication of assessment of knowledge domain may be acceptable if the items are suitably diverse.
- In the first sitting of assessment for MBChB years 1-3 no more than 30% of questions should be new written items.
- In the second sitting (re-sit) new questions (without performance data) should be avoided.
- The blueprint functionality of the Exam-Write platform allows the exam coordinator to allocate a blueprint to an exam to monitor the coverage of tags being selected for the exam. Assessment Administrators/Written Exam Coordinators can export the exam against the blueprint, or to export the exam as a matrix (with the tags and number of items selected).
- First draft of exam paper(s) prepared by Assessment Administrator.
   NB: The papers will only be available to view on the MSCAA Exam-Write platform.
- Written Exam Coordinator checks preview of exam e.g., number of questions, quality / suitability of images for online delivery, typos etc. NB: if using cut and paste text may become corrupted during transfer to platform.

- Written Exam Coordinator arranges date of meeting to standard set any summative questions that have not previously been used or that have been significantly amended.
- Assessment Administrator to create Standard Setting Event (Angoff methodology) including closing date ahead of the standard setting meeting. This must include the anchor statement that will be displayed to standard setters in the bank e.g., just safe candidate.
- Assessment Administrator to invite system/block leads, academics to standard set the questions (Angoff Methodology) ahead of the standard setting meeting. To include date of closure of online event.
- Assessment Administrator clicks 'notify standard setters' on the platform. The system will send the standard setters an automated email notifying them that the exam is ready for them to login and submit their scores for the items.
- If Standard Setters are not already registered with MSCAA they should receive an automated email to join.
- Standard setters to score 'blindly'
- Assessment Administrator to create further Standard Setting Event for the standard setting meeting (modified Angoff methodology).

Please refer to
  - **SOP on Standard Setting for Written Questions using Angoff Methodology.**
  - [MSCAA How to Standard Set for Standard Setters](#)
  - [MSCAA How to Standard Set Admin Exam Managers](#)

Minimum of 10 weeks before summative exam

- Written Exam Coordinator to proof read exam paper(s) and identify new / amended questions that need standard setting.
  - Check correct number of questions with no duplication
- Written Exam Coordinator to make changes where necessary.

Please refer to SOP on Checking Exam Paper

Minimum of 8 weeks before summative exam

- The Written Exam Coordinator chairs the Standard Setting Meeting (Modified Angoff Methodology), questions are discussed, and Standard Setters can modify their mark following discussion of the question at the meeting.
- Written Exam Coordinator to consider / action changes suggested at standard setting modified Angoff meeting. Any changes to the exam paper(s) must be clearly communicated to the Assessment Administrator.
- Assessment Administrator to make changes where necessary.

- Assessment Administrator checks room bookings and books rooms where necessary e.g., private rooms, computer rooms and arranges readers / scribes

Minimum of 6 weeks before summative exam

- Senior Assessment Administrator contacts External Examiners confirming dates of exams, dates of exam board, and asks if they will be attending the exam board in person or video conferencing (Including resit diet).
- Written Exam Coordinator assigns external examiners to the exam for review of final draft, including a deadline for return of comments (normally two weeks). Automated email sent to External Examiners via platform to review papers.
- External Examiners will be able to accept, reject or discuss items. Comments must be left for reject or discuss.
- External Examiner clicks External Review Complete –automated email generated to the exam manager.
- Exam Coordinators can respond to External Examiners via the platform.
  - The platform will not have a name linked to the response so please put your name or initials first before your reply.
  - To keep an audit trail, if further response is made please add the new comment after the previous response separated by a forward slash and date.
- Assessment Administrator arranges invigilators.

  Please refer to
  - [MSCAA How to External Examiners](#)
  - [MSCAA How to External Examiners Admin Exam Managers](#)

Minimum of 3-4 weeks before summative exam

- Exam Coordinator considers /actions changes suggested by external examiners and reports back changes (or reasons why their suggestions have not been accepted) to the external examiners via platform. Again, please keep copies of correspondence.
- Any changes to the exam paper must be clearly communicated to the Assessment Administrator.
- Assessment Administrator incorporates any changes to make up the final student version of papers.

Minimum of 2-3 weeks before summative exam

- Shortfalls in invigilators to be notified to Exam Coordinator for help to find extra volunteers.

Minimum of 2 weeks before summative exam

- Assessment Administrator emails invigilators / parking etc.

Minimum of 1 week before exam

- Assessment Administrator emails exam arrangements to the students.
- Assessment Administrator provides candidate list identifying students expected in the main exam venue, and those elsewhere, to invigilators.

Please refer to
- o [MSCAA Student Instructions iPad](#)
- o [MSCAA Student Instructions PC](#)

DAY OF WRITTEN SUMMATIVE EXAM

- Written Exam Coordinator normally invigilates the main cohort of students.
- Only Administrators and users added as invigilators to MSCAA exam delivery can access the invigilation pages.

Please refer to
- o **SOP for Invigilation.**
- o **University of Aberdeen Exams Manual for Invigilators** for guidance and information about the role and responsibilities of invigilators.
- o [MSCAA How to Invigilate an Online Exam](#)

AFTER THE WRITTEN SUMMATIVE EXAM

- Assessment Administrator sends item analysis report for SBAs to Exam Coordinator and psychometrician.
- Exam Coordinator checks SBA item analysis report for any poorly performing questions (keyed answer may be incorrect, question too difficult, too easy or ambiguous, two correct answers, subject has not been taught etc.). Incorrectly keyed items will have a low facility (difficulty) and a negative correlation. Incorrectly keyed answers must be corrected, and the marks rerun. A poorly written question will have little ability to discriminate. Items with a negative correlation are especially concerning as they indicate that candidates who do well on the paper overall do less well on this item. Very poorly performing questions may be removed entirely, and the marks rerun. Please discuss with Assessment Team.

Please refer to SOP for Quality Assurance of Summative Assessments

- Assessment Administrator / Psychometrician each prepare spreadsheet of marks for cross-checking and checks by Exam Coordinator.

- Exam coordinator and Psychometrician each performs conversion of raw marks to CSG grade for cross-checking.

Please refer to SOP for Conversion of Raw Marks to CGS in IEHMS using the Common Grading Scale.

- Exam Coordinator notes all SBAs with a point biserial of <2.0 or a facility of <40% for review before next exam diet.

Please refer to SOP for Quality Assurance of Summative Assessments

- Exam Coordinator prepares a written exam report for presentation at exam board and sends to Clerk to the Exam Board.

Please refer to SOP for Exam Board Presentation.

- At least 48 hours prior to the exam board, Assessment Administrator sends agreed CGS conversions and raw marks to Clerk to the Exam Board. All sheets to be double checked against registry lists for results to be awarded.
- Clerk to the Exam Board sends collated anonymised spreadsheets for all exams to the exam board.

THE EXAM BOARD

- Exam Coordinator presents results for the written exam at the exam board.

Please refer to SOP for Exam Board Presentation.

POST EXAM BOARD

- Written Exam Coordinator to review (or arrange for review) any UoA questions identified as requiring this and makes changes / updating version in the question bank.

Student feedback

- Assessment Administrator sends results to Learning Technologies for production of individual feedback graphs.
- Written Exam Coordinator prepares whole class generic feedback on areas where the cohort of students overall performed well and where they performed badly. This can be prepared in advance and should be sent to all students who sat that exam after the Exam Board. Only students who fail the exam should be given additional feedback.
- Exam Coordinator checks/approves feedback for publishing on MyMBChB or MyPA.

Please refer to SOP for Feedback on Summative Assessment.

Appendix 1: Roles and Responsibilities Summative Assessments

	Action	Whose responsibility
1	Choose questions to accurately reflect the exam blueprint (i.e., appropriate number of questions from each system and ensuring adequate coverage of the various topics within that system)	Exam Coordinator
2	Check for inaccuracies, spell check, grammatical errors, house style, formatting	Exam Coordinator
3	Identify new/changed questions that need standard setting	Exam Coordinator
4	Invite Standard Setters to online standard setting	Assessment Administrator
5	Invite Standard Setters to standard setting meeting	Assessment Administrator
6	Chair standard setting meeting	Exam Coordinator
7	Identify replacement items if required	Exam Coordinator
8	Replace items if required	Assessment Administrator
9	Final check of papers	Exam Coordinator
10	Final version released to External Examiners	Assessment administrator
11	Respond to External Examiners' comments	Exam Coordinator
12	Identify replacement items if required	Exam Coordinator
13	Replace items if required	Assessment Administrator
14	Organising invigilators including pre invigilation meeting if required	Assessment Administrator & Exam Coordinator
15	Invigilation main room	Exam Coordinator
16	Producing spreadsheet of results	Assessment Administrator & Psychometrician
17	Calculate and check CGS marks	Exam Coordinator & Psychometrician
18	Send SBA item analysis report to Exam Coordinator and Psychometrician.	Exam Coordinator
19	Check SBA item analysis report for poorly performing questions	Exam Coordinator & Psychometrician
20	Discuss very poorly performing questions with Year Lead and Assessment Lead or Deputy (written assessments)	Exam Coordinator & Psychometrician
21	Present results at exam board	Exam Coordinator
22	Send spreadsheet to Learning Technologies for generation of feedback graphs on MyMBChB / MyPA	Assessment Administrator
23	Check and authorise release of feedback graphs	Exam Coordinator
24	Review and revise poorly performing questions	Exam Coordinator

Appendix 2: Tagging of questions on MSCAA Exam Write Platform

Theme / overview of SBA item	One skill, one presentation e.g., diagnosis of abdominal pain
Primary Tags per item	You can select more than one tag for each domain, but please select one primary tag for each of the domains in bold: • **Year group**: Year 1, Year 2, Year 3 or Year 4 • **Type of question**: Formative or Summative • **MLA area of clinical practice*** Who would be looking after the patient. • Supplementary area of clinical practice e.g., Acute medicine, surgery, clinical imaging **&/OR** • **MLA area of applied knowledge*** • **Condition (MLA)** Relates to presenting symptom • **Patient presentation (MLA)** • **Skill**. Usually defined by lead-in for most items e.g., diagnosis, investigation, management, treatment or appropriate description

*System/specialty for PA programme

Aberdeen question bank will be able to continue with our own tags e.g., year group> 1-4, PA>Year 1 or 2, formative / summative etc
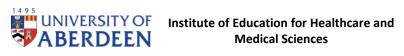
Appendix 3: Review checklist for SBAs

The theme is pitched at an appropriate level for the intended year group	
The question focuses on an important problem relevant to clinical practice	
The question can be answered without looking at the options	
There is a single best answer to the item / vignette	
The answer is correct, and evidence based	
The option list is consistent and does not mix different skill areas	
Options are plausible answers for the stem / vignette	
The lead in is specific and explicit	
There are no 'cues' that give away the answer	
The item title is appropriate and accurately reflects the content of all the question	
Only essential information is included	
The question can be read and answered in approximately one minute	
The whole question adheres to house style	

Extract from IEHMS Guide to Written Question Writing Healthcare Programmes

Appendix 4: Gantt Chart for Summative Written Exams

Step	Action		Responsibility	Minimum Timescale
1	Choose questions to accurately reflect the blueprint	Exam-Write platform	Exam Coordinator	**12 wks**
2	Prepare 1st draft of exams	Exam-Write platform	Assessment Administrator	**9 wks**
3	Prepare SSM Excel spreadsheet identifying new question/those that need SS	SSM spreadsheet	Assessment Administrator	**9 wks**
4	Proof-read exams (1)	Exam-Write platform	Exam Coordinator	**9 wks**
5	Make changes where necessary	Exam-Write platform SSM spreadsheet	Assessment Administrator	**9 wks**
6	Arrange SSM: Invite system leads Book room		Assessment Administrator	**8 wks**
7	Chair SSM		Exam Coordinator	**8 wks**
8	Make changes where necessary	Exam-Write platform	Assessment Administrator	**8 wks**
9	Book rooms where necessary	Main exam (resits) Small rooms etc.	Assessment Administrator	**7 - 8 wks**
10	Arrange invigilators		Assessment Administrator	**6 wks**
11	Proof-read exams (2)	Exam-Write platform	Exam Coordinator	**6 wks**
12	Make changes where necessary	Exam-Write platform	Assessment Administrator	**6 wks**
13	Review by External Examiners	Exam-Write platform	Assessment Administrator	**6 wks**
14	Respond & action External Examiners' comments	Exam-Write platform	Exam Coordinator	**3 - 4 wks**
17	Make changes where necessary	Exam-Write platform	Assessment Administrator	**3 - 4 wks**
18	Final proof-read exam(s)	Exam-Write platform	Exam Coordinator	**2 - 3 wks**
20	Email invigilators / parking etc		Assessment Administrator	**2 wks**
23	Email students with arrangements		Assessment Administrator	**1 wk**
	EXAM	EXAM	EXAM	

24	Prepare results spreadsheets	Exam-Write platform	Assessment Administrator Psychometrician	
25	Prepare CGS marks for checking		Assessment Administrator Psychometrician	
26	Check and agree final spreadsheets		Assessment Administrator Exam Coordinator Psychometrician	
27	Check SBA item analysis report for poorly performing questions		Exam Coordinator Psychometrician	
28	Discuss very poorly performing questions with Year Lead and Assessment Lead or Deputy for written assessments		Exam Coordinator Psychometrician	
29	Prepare results for Exam Board		Exam Coordinator	
30	Send results to Clerk of Exam Board at least 48 hours ahead of exam board		Exam Coordinator	- 48 hours
31	Prepare generic feedback for students		Exam Coordinator	
32	Prepare feedback for students – breakdown of areas of clinical practice		Assessment Administrator Exam Coordinator	
33	Present results at Exam Board		Exam Coordinator	
34	Send results to Learning Technologies Team for feedback Including generic feedback and breakdown of areas of clinical practice		Exam Coordinator Assessment Administrator	Post Exam Board
35	Check feedback prior to release		Exam Coordinator	
36	Revise poorly performing items prior to reusage if appropriate/salvageable		Exam Coordinator	