Changes to the format and delivery of the Australian Medical Council (AMC) clinical examination for international medical graduates

Australian Medical Council

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Contents

Glossary

Ahpra	Australian Health Practitioner Regulation Agency, is the administrative arm of the National Registration and Accreditation Scheme. Among other things, it provides administrative and policy support to the Medical Board of Australia in its primary role of protecting the public, and manages the registration and renewal processes for health practitioners and students around Australia.
Assessment Committee	AMC Assessment Committee is responsible for developing policy and procedures for all international medical graduate assessments.
Blueprint	Contains the major content areas of an examination, and the percentage of the examination each area represents. The AMC clinical examination blueprint is a matrix of 5 medical disciplines (adult medicine, surgery, women's health, child health, mental health) and 4 PAAs (see PAAs).
BrightLink	Software company providing tablet technology used for digital marksheets at the National Test Centre (licensed through Pearson VUE).
Business with a Purpose pillar	One of the five AMC strategic pillars - Managing our business in an ethical, efficient and sustainable way.
CAT	Computerised Adaptive Testing is a form of computer-based testing that adapts to the examinee's ability level.
CAP	AMC Clinical Assessment Panel is responsible for the design, construction and ongoing review of the AMC Clinical examination.
CERG	AMC Clinical Examination Research Group is responsible for the clinical examination research and development program.
Clinical Examination Project Steering Committee	Group of key subject matter experts and stakeholders responsible to oversee the Clinical Examination Project as the key decision body.
Clinical Examination Results Panel	A panel of senior examiners & chairpersons analysing examination performance to formally approve clinical examination results.
IMG	International medical graduate.
Invigilator	A person assigned to supervise IMGs during their examinations and ensure examination regulations and rules are met.
LOPO	Levels of Performance Observed (used in the AMC clinical examination marksheets to measure performance in assessment domains).
Marshal	Marshals undertake key roles and responsibilities on examination days as invigilators and providing operational support for examination delivery at the NTC.
MCQ	Multiple Choice Question consisting of several possible answers from which the correct answer must be selected. The AMC uses A-type MCQs being 1 correct answer from 5 options.
MBA	Medical Board of Australia is responsible for regulating medical practitioners practising in Australia. Australian medical students, IMGs and Australian doctors seeking to practice medicine in Australia must be registered with the Medical Board of Australia.

National Law	The Health Practitioner Regulation National Law, as in force in each state and territory, empowers the National Boards to develop and approve codes and guidelines to provide guidance to the health professions
OSCE	An Objective Structured Clinical Examination designed to test performance and competence in a range of clinical skills and application of knowledge.
PAAs	Predominant Assessment Areas are four assessment domains of the AMC clinical examination blueprint. Specifically, history taking, management / counselling / education, diagnostic formulation, and physical examination.
Pearson VUE	The AMC test delivery partner for the MCQ examination as well as the BrightLink solution used at the NTC clinical examination (see BrightLink).
Pilots	Questions, or scenarios, that do not count towards the final examination score and are being trialled before inclusion as scored questions in the examination.
Quality Framework for Accreditation	The principal reference document for national boards and Ahpra to assess the work of accreditation authorities.
Scenario	Brief simulation of a clinical situation or event that is used in a clinical examination. The AMC clinical examination uses 16 scenarios in each examination.
SP	Simulated Patients are members of the community trained to simulate realistic patient-clinician scenarios.
WBA	Workplace Based Assessment. An assessment program delivered by AMC accredited health services as an alternative to the AMC clinical examination.

1 INTRODUCTION

The existing examination process for international medical graduates

The Australian Medical Council (AMC) is the accreditation authority for the medical profession, appointed to that role by the Medical Board of Australia. One of its accreditation functions is to oversee the assessment of the knowledge, clinical skills and professional attributes of international medical graduates (IMGs) who are seeking registration in the medical profession under the Health Practitioner Regulation National Law, and whose qualifications are not approved qualifications for the medical profession.

The AMC examination for non-specialist IMGs has two steps.

Step 1 is a Computer Adaptive Test (CAT) comprising 150 A-type multiple-choice questions (MCQs). Thirty of the 150 questions are pilot (un-scored) questions, and 120 are scored questions. It is undertaken in dedicated examination centres around the world through an arrangement with Pearson VUE.

Step 2 is a 16-station Objective Structured Clinical Examination (OSCE) involving interaction with examiners and simulated patients (SPs). Two of the 16 stations are pilot (un-scored) stations. It is conducted in a state-of-the-art and purpose-built National Test Centre (NTC) in central Melbourne.

A small number of IMGs undertake either 6 or 12-month Workplace Based Assessment (WBA) programs as an alternative to the Clinical Examination. These are offered by a small, but growing, number of AMC accredited providers that are mostly based in regional Australia.

2 THE AMC'S RESPONSE TO THE COVID-19 PANDEMIC

General response

In response to the COVID-19 guidelines and restrictions imposed by Australian Governments in late March, the AMC closed its Canberra office and the NTC, and prohibited interstate and international travel by staff and other participants in examination processes. AMC staff worked remotely and essential meetings have been conducted electronically. Some staff have since returned to the Canberra office, but the NTC has remained closed due to the additional level of restrictions imposed in Melbourne as a result of the rise of COVID-19 infections in Victoria.

The written MCQ Examination

Due to the closure of Pearson VUE Centres world-wide, the MCQ examination was suspended in April. Examinations re-commenced in June in Australian and international centres where local restrictions allowed. Strict COVID-19 protocols are followed.

The WBA programs

WBA providers initially sought approval from the AMC for adaptations to their programs in order to adhere to local COVID-19 protocols and for the safety of patients, staff and IMGs. There has been a progressive return to former practices where easing of restrictions has allowed.

The Clinical Examination

The Clinical Examination was suspended in March and it is unlikely that it can be held in its current form for some time. Due to the so-called 'second wave' of COVID-19 infections in Victoria, level 4 restrictions operate in central Melbourne[1]. The NTC remains closed. Travel to Melbourne from

[1] From 2 August 2020

regional Victoria, interstate and overseas is not allowed. Even when such restrictions are lifted it will be very difficult to conduct the Clinical Examination in its existing form while adhering to basic physical distancing protocols and ensuring the safety of examination personnel. The Clinical Examination is a 'people-intensive' operation involving AMC staff, examiners, IMGs, simulated patients, observers, marshals and other key participants.

This paper sets out a proposal for an alternative clinical examination conducted wholly online. It builds upon work previously completed by the AMC for clinical examination stations to be marked by examiners using visual and audio recordings rather than in-situ marking (the Remote Marking Project). This paper is primarily designed as a response to COVID-19 to operate while the Clinical Examination cannot be offered in its existing form. It is not possible to put a time-line on when the current examination delivery format might resume.

The standard of the examination and all existing blueprinting will remain. The examination will remain set at the level of knowledge, skills and professional attributes required of a graduating Australian medical student ready to commence internship. Only the method of delivery will change.

It is important to point out, however, that much of the AMC's work is likely to be conducted differently in the future as the organisation builds upon the learnings from its changed practices during COVID-19 restrictions. The Clinical Examination will not be immune from this.

It is expected that the new examination will be ready for implementation between the end of 2020 and February 2021.

3 THE BACKGROUND TO THE PROPOSAL

The imperative for an alternative Clinical Examination

There are at least three compelling reasons for the AMC to develop and implement an alternative Clinical Examination.

1 Waiting times and workforce implications

There is a backlog of IMGs who have been allocated examination slots, who wish to undertake the examination and, if successful, join the Australian medical workforce. When the AMC cancelled the Clinical Examinations, approximately 800 IMGs had been scheduled for examinations (600 located in Australia and 200 located overseas). The backlog will mount and is likely to cause some frustration among IMGs. It could be quite some time before the Clinical Examination, in its current form, can be offered thus increasing the backlog and potential frustration. The AMC has an obligation to the Medical Board of Australia to assess IMGs for practice. If the examination in its current form cannot be offered for quite some time, then alternatives must be sought. Historically, approximately 2,400 IMGs have undertaken the examination each year.

2 Revenue implications

Fees derived from the Clinical Examination represent a significant part of the AMC's revenue. The AMC has managed to date by reducing expenditure, utilising financial reserves and participating in government schemes such as JobKeeper. However, longer term loss of revenue would threaten the financial sustainability of the AMC.

3 Leadership in medical education and assessment in Australia

The AMC is not alone in having to cancel clinical assessments. Medical schools and specialist colleges have either cancelled assessments or sought alternative assessments that can be conducted safely.

The AMC has a proud tradition of national and international leadership in high-stakes medical licensing examinations, including the establishment of the National Test Centre. The latter is used by several specialist colleges and has influenced facilities development in other national licensing authorities. The AMC needs to continue this leadership through being an early adopter and disseminator of innovative clinical assessment in COVID-19 safe environments, and into the post-pandemic period.

Governance of AMC Assessment

The AMC's Assessment Committee is responsible for developing policy and procedures for all assessments. It reports to the AMC Directors, who make decisions concerning examination standards. Expert committees and panels report to the Assessment Committee for all three assessment modes. Membership includes clinicians, medical educators, community members and IMGs.

For the Clinical Examination, the two key groups are the Clinical Assessment Panel (CAP) and the Clinical Examination Research Group (CERG). The former is responsible for the design, construction and ongoing review of the examination. The latter is responsible for a research and development program.

The Director of Assessment and Innovation is a member of the AMCs Senior Executive team. This role is responsible for a team of staff in Canberra and Melbourne who undertake administration, development, and implementation of all assessments.

The origins of the alternative examination

The idea for an alternative Clinical Examination arose from discussions within the newly formed AMC Innovations Group. The group commissioned an international expert in assessment and medical education to prepare a paper proposing an alternative examination which could be conducted in an online environment. The paper was externally peer reviewed and discussed at the Assessment Committee and other relevant groups.

AMC Directors considered the proposal in June 2020 and asked for the implementation plans to be presented in September 2020.The CERG then workshopped the proposal and confirmed its feasibility for delivery of the examination blueprint and content.

In July 2020, an overview of the proposal was presented to the joint meeting of AMC Directors and Medical Board of Australia/Ahpra.

Governance of the project

The AMC has adopted a project management approach and established a Steering Committee to oversee the project. This Committee is jointly chaired by the Chief Executive Officer (CEO) of the AMC and the Chairperson of the Assessment Committee. Membership includes senior AMC staff and key assessment personnel.

A small medical education and assessment team was formed to advance the alternative examination model to prototype status for testing and piloting with relevant groups, such as final year medical students. The medical education and assessment team is comprised of the proposal author and Chairpersons of CAP and CERG. They work closely with experienced CAP members who are skilled item writers and discipline experts.

The Director Assessment & Innovation, as a project owner, is working with a team of operational and technology staff who are experts in the delivery and support of clinical examinations.

4 THE PROPOSAL

The existing Clinical Examination

The existing examination is a 16-station OSCE format examination. Two stations are pilots, which are not counted for IMG results. An IMG is required to pass 10 stations to be awarded a pass grade overall. Each station is eight minutes long with two minutes reading time.

IMGs are expected to perform a clinical task derived from a scenario and with an individual trained as a Simulated Patient (SP) or, in some instances, a trained patient with real clinical signs. A trained and clinically experienced AMC examiner is usually present in the room and marks the IMG according to a standardised marksheet. Examiners record Keys Steps, Levels of Performance Observed (LOPOs) and assign a Global Rating on a 7 point scale. A score below 4 in the scale results in failure of the station. Digital tablet technology enables the electronic recording and storage of marks. The NTC facility enable video and audio recordings of each station. Recordings are subsequently used in appeals, examiner feedback, training and quality improvement.

IMGs are examined across five disciplines: Adult Medicine, Adult Surgery, Child Health, Women's Health and Mental Health. Since 2014 each station has focused on one of four pillars of assessment or Predominant Assessment Areas (PAAs):

1. History taking (PAA 1)
2. Physical Examination (PAA 2)
3. Diagnostic Formulation (PAA 3)
4. Management, Counselling, Patient Education (PAA 4).

Remote marking

The AMC set up a Remote Marking Project Steering Group in 2018 to determine the feasibility of 'remote' marking of clinical examination stations. Remote marking does not require an examiner to be in the room with the IMG and SP. Examiners mark remotely from the examination centre from video recordings of the stations.

As part of this project, remotely marked stations were prepared and trialled along with supporting technology, operations and policy. The AMC planned to implement some stations in the second half of 2020. The cancellation of the Clinical Examination has not allowed this, however the facility for stations to be remotely marked has been a key enabler of the alternative examination delivery approach.

The alternative examination in concept

The principles of the proposal approved by AMC Directors includes two key pieces of research evidence that underpin the alternative examination delivery format.

1 Reliability is a product of testing time

Reliability or consistency is a key psychometric attribute in high-stakes testing. The original premise in the OSCE format of examinations was that reliability would be improved by paying attention to the 'objectivity' and the 'structure' of OSCE stations. Consistent international research has demonstrated that reliability of OSCEs is improved by increasing the number of stations, rather than refining individual stations.

2 Validity is a product of content

Validity or credibility is a second key attribute in high-stakes testing. Again consistent international research has shown that the content to be tested in an examination is more important in determining

validity than the format of the testing. This allows the possibility of using multiple formats in examinations, including online formats, without compromising quality.

Together these two pieces of evidence allow the AMC to proceed with a flexible and multi-station examination which can be delivered in a COVID-19 safe online format without necessarily compromising quality. The ability to remotely mark stations is a further enabler to this approach.

The essentials of the alternative clinical examination process

The examination will retain the current structure of 16 stations with two un-scored stations (pilots). The pass mark will remain at 10 stations. There will be no change to existing blueprinting, standard setting and monitoring processes. The Clinical Examination Results Panel will continue to analyse IMGs and examination performances as it formally approves IMG results.

The backbone of examination delivery will be a triad between an invigilator, an SP and the IMG. All contacts will be conducted initially via the Zoom platform, although in the longer term other delivery methods will be examined. Of key importance is the timely delivery of quality video-recordings to examiners and the confidential marking of stations.

On the examination day, a dedicated invigilator will manage the examination environment and provide important security, quality assurance, operations, and support functions. To the IMG the invigilator will be known as the 'case manager'. The AMC will have informed the IMG that an invigilator will be in the background monitoring during the whole examination. Each invigilator will remain with their allocated IMG for the duration of the examination.

The invigilator will initiate contact with the IMG whilst the SP is in the Zoom 'waiting room'. The invigilator will explain the examination procedure to the IMG using a standardised script. The invigilator will check the IMG's identity and surrounding environment, run through AMC policy regarding examination security and integrity, and gain the IMG's acknowledgement of the ramifications of breaching policy. This could include termination of AMC candidature and reporting to the Medical Board of Australia in cases of unprofessional conduct.

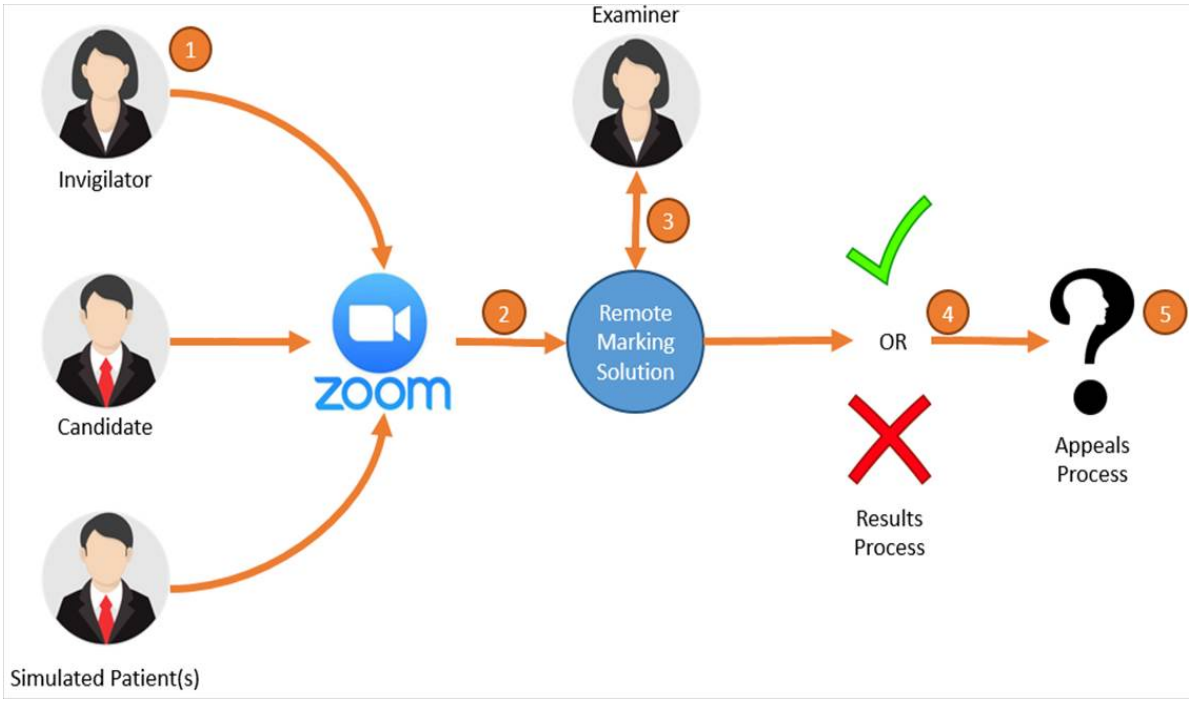
The invigilator will then present the IMG with the instructions for the first station. The IMG has a predetermined amount of time to read the instructions. The station will start at the same time for all IMGs. When the reading time ends, the invigilator will allow the SP into the Zoom meeting. The invigilator will mute the microphone and camera, but will remain on screen as a 'black box' with a descriptor such as 'case manager' or 'security'. The invigilator will continually monitor the interaction for quality assurance, including operational and technical assistance, and maintenance of security protocols/policy.

During the station, the invigilator will manage the presentation of necessary information to the IMG, such as results of laboratory tests, images, video-recordings and sounds, and provide the necessary time prompts. In some scenarios, the invigilator may also be required to receive a verbal summary of the IMG's findings on the case that will be recorded for an examiner to mark. Each invigilator will be trained, briefed on the station, and will work to a specific script.

A recording of the Zoom meeting will then be made available for remote marking through the AMC's remote marking portal. The Zoom video will replace the NTC video recording that was part of the original AMC remote marking application.

Dedicated teams of AMC staff will be allocated to support the administration and technology of each street.

The procedure is summarised in the diagram below.



Examination logistics

A plan for 36 IMGs a day, consistent with the current model, will be implemented to quickly restart the examinations with minimal technology developments. Retaining a logistical format as consistent as possible with the current model is also designed to assist IMGs already scheduled and preparing for the examination.

As a risk mitigation strategy, it is proposed that early piloting will consist of smaller numbers of IMGs with an escalation to larger daily capacity.

A key consideration of the original proposal is to enable sampling of an IMG's performance over time. With this model, it is recognised that some IMGs would need to schedule examination time over separate occasions, and this may create work conflicts. Offsetting this, the revised online delivery format will eliminate the cost and time of travel to Melbourne for the majority of IMGs. This will be a key question considered with the engagement of IMGs in piloting before being decided upon as a future approach.

Station development

CAP has developed a blueprint of stations for a set of examinations, and station development is underway. Stations for three of the PAAs; 1 History-taking; 3 Diagnostic Formulation; and 4 Management, Counselling and Patient Education are being adapted from those already written as remote marking stations.

The stations for the remaining PAA, 2 Physical Examination, provide some more complex issues. Such stations would normally require IMGs to conduct an examination on an SP. This is not possible in the online environment. Initially stations focusing on interpretation of physical examination findings were envisaged. However, a decision was made at the Steering Committee to also employ some shorter more focussed stations to permit increased sampling of relevant Physical Examination competencies. Physical Examination will be assessed through one eight-minute station and two four-minute stations. This will provide an equivalent number of stations to the current examination format. It will also

combine the 'depth' of the longer station with some greater 'breadth' offered by employing shorter stations. The shorter stations will carry the same weighting as longer stations. For example, two stations could be delivered within a typical eight minute time slot (plus reading time of two minutes) and with IMGs finishing earlier.

By the end of July 2020, sample stations had been developed across the five disciplines of the examination. Most of the cases were developed for PAA 1 History taking and PAA 4 Management, Counselling and Patient Education. More work is focussed on the remaining PAAs as part of the project plan.

The CAP is focussed on delivering new cases each week to address the blueprinting needs across PAAs, disciplines, topics, and systems. AMC staff have developed an approach to monitor and manage, on a weekly basis, the development of new cases for sign-off by the CAP.

With this approach, it will take approximately six to seven weeks to develop 100 cases with consideration for content exposure and potential 'bad neighbours' or similarity of content. Content development will then be ongoing with piloting and calibration.

Historically, the NTC marshals, who are current medical students, have been invited to participate in 'Pilot Days' to assist with the testing and calibration of new cases. A similar approach will be used for the cases developed for the online examination delivery. This will also enable testing of the examination operations and technology.

Simulated Patients

Experiences in the remote marking project pilots identified that, without an in-situ examiner, SPs were needing to perform 'in role' patient tasks as well as 'out of role' examiner tasks, which may have included the confirmation of IMG identification, the delivery of information such as blood test results, or other prompts normally performed by the examiner.

To eliminate the need for the SP to perform 'out of role' tasks, and to deliver a more authentic (in character) patient experience, a combination of different methods have been developed such as:

- The writing of cases that do not require examiner interaction. For example, blood test results are built into a case and delivered at certain prompts/times;
- The invigilator performs IMG identification and other security roles previously performed by the examiner; and
- The above two developments are supported by the examination technology and operations.

To ensure a high level of quality with the role of the SP, it has been decided to use more experienced AMC Level 2 trained SPs, with additional training provided for the online examination. Routine briefing and instruction, normally performed on the examination day, will be done the day before the examination. One of the examiners will meet online with the SPs to address specific questions related to the role. This will help to standardise role portrayals between SPs.

5 FEASIBILITY AND BUSINESS CASE

The feasibility and business case for the implementation of the clinical examination delivery format are based on the following principles:

1. A two phased approach of:
    a. An initial objective to recommence the clinical examinations as quickly as possible during COVID-19, while ensuring examination validity and reliability remain consistent, or better than, the current Clinical Examination delivery. This requires a

minimal change approach to content, blueprinting, operations, and technology to deliver the examination digitally.

b. A second objective to implement the broader principles of the proposal presented to AMC Directors in June 2020 for the long term development and improvement of the clinical examination in 2021. This will align to the AMC ICT strategy, also previously presented to AMC Directors, which will require technology development and retirement of legacy AMC technology.

2. The examination standard of a graduating medical student does not change.
3. The AMC continues to deliver its assessment functions in line with the domains and attributes of the agreed Quality Framework for Accreditation[2]
4. Support the future sustainability of the AMC, recovery from the impacts of the COVID-19 pandemic, and further development of AMC Assessment which is consistent with the principles of the AMC 'Business with a Purpose' Strategic Pillar. This extends beyond financial considerations to contributing value to stakeholders and communities.

Timeline & priorities

The first phase of the project will be implemented as quickly as possible to recommence the examination in order to:

- Benefit IMGs progressing toward registration and practising medicine in Australia;
- Meet the AMC's contractual obligations to the Medical Board of Australia/Ahpra under the National Law; and
- Recommence Clinical Examination income to support the AMC sustainability and recovery from COVID-19.

The project management streams are focussed upon recommencing the examinations according to the following IMG needs:

- Priority for IMGs who have already scheduled for examinations that were cancelled from February to June 2020 due to the COVID-19 pandemic. These IMGs have paid in advance for examination scheduling and retained their payment with the AMC with the offer of priority scheduling when examinations are able to recommence. When examinations recommence these IMGs could be assessed in six to seven weeks.
- Projected 'normal' Clinical Examination volumes in the 2021 calendar year following the priority given to previously scheduled IMGs mentioned above. This has been forecasted based upon historical IMG volumes. However, IMG volumes may be impacted by the COVID-19 pandemic through Australian border controls, Australian workforce needs, and other factors relating to COVID-19 internationally.

6 INFORMATION TECHNOLOGY

The Information Technology team at the AMC are centrally involved in the design of the alternative examination. This includes examining the capabilities of Zoom and ensuring that it has the necessary functions to deliver the examination, and to meet all specifications. Better tools and automation for the examination scheduling, examination administration and results processing are being developed. User-friendly interfaces, documentation, and support mechanisms are being developed which will standardise and simplify the delivery of content and management of examinations by the case managers. There is also attention to the important considerations of internet security and reliability

[2] https://www.ahpra.gov.au/Accreditation/Quality-framework.aspx

issues with contingency and redundancy plans and new supporting infrastructure to mitigate potential technology risks.

The technological approach to potential reliability and security issues will be supported by related policy and operations that is already being developed.

The IT team are also involved in developing guidelines for computer software and hardware for IMGs. This includes advice to examination participants such as SPs and invigilators regarding screen size, as well as internet bandwidth and reliability.

The Director ICT is a member of the Steering Committee described in the governance section of this report.

7 LEGAL AND POLICY ISSUES

The AMC's legal counsel has been engaged to re-write the legal specifications for the new examination. These will cover general conduct, requirements for passing the examination and appeals processes. The new regulations will be posted on the AMCs website and IMGs informed well in advance of attempting the examination.

Communication and engagement with stakeholders are key tasks and must be aligned to AMC policy.

The AMC has already established open and regular communication with key stakeholders such as the AMC President and Directors, AMC Council, the Medical Board of Australia and Ahpra. IMGs have also been informed and will continue to be engaged.

The AMC's Assessment Governance structure will also be used to ensure that panel members and leaders, station writers and examiners will be included in major decisions and developments. AMC legal counsel will contribute to these communications and the development of policy to help ensure consistency, quality, and defensibility of the related clinical examination documentation.

8 CONCLUSION

This is an important step for the AMC to enable IMGs to continue their progress towards registration for practice in Australia, and to continue the AMC's leadership role in assessment. It is primarily designed as a response to the changed circumstances brought about by the COVID-19 pandemic.

Nevertheless, it is unlikely that the AMC will return to a face-to-face Clinical Examination in one centre as a sole assessment of clinical competence. There are proposals, for example, to develop a Clinical Examination that could be administered in Canberra. It may also be possible to develop a modified examination that could be conducted in the NTC, alongside the online version. Some elements of the online alternative could be combined with face-to-face examination in a hybrid approach.

In October 2019 the AMC held an Assessment Summit, an outcome of which was a commitment to build a best practice assessment pathway for IMGs in Australia that combined the strengths of MCQ and Clinical Examinations, and the WBA programs. The flexibility afforded by the development of the alternative Clinical Examination will be a key enabler in the construction of the pathway.