



# ROUNDTABLE ONLINE DISCUSSION SERIES 2022: REPORT MEETING 1.

Digital Health in Medical Education and Workforce  
Development – A collaboration between the Health  
Education England (HEE) and Australian Medical  
Council (AMC).

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## Purpose of this document

HEE and AMC are collaborating to explore, in an online roundtable series of sessions, issues of mutual interest in workforce development and medical education in digital health in medicine. This is the report of the discussion from meeting 1 which took place via zoom on Thursday 21 April 2022 8-10 am GMT, 5-7pm AEST, 7-9 NZST. Further roundtable sessions will take place on Thursday 26 May 2022 and Thursday 14 July 2022.

## Round Table Session 1: Building a Digitally Capable Medical Workforce - Digital Health Literacy and AI Literacy for Medical Practitioners

### Session Description

This online HEE and AMC round table series session acknowledged that technology change has significant implications for the skills development of health professionals. In this session we explored the digital health literacy and AI literacy requirements to prepare the medical workforce for current, emerging and future technology change. We shared good practice examples of innovations in digital health medical education and also discuss the gap between real life medical services and medical education. In Australia and the UK and globally, digitally enabled hospitals are emerging, EMRs and other systems are being implemented. A key question we explored in this session is - are we training our current and future medical workforce to work in this environment?

### Background

**HEE** is tasked to develop the digital and AI literacies of the health workforce and is progressing this through the development of capability frameworks, interactive assessment tools and providing learning resources and development opportunities, including partnerships, peer and senior leadership development to support effective implementation of tools and strategies.

Excellent digital and AI capabilities are not just about technical skills but include a positive attitude towards technology and innovation and its potential to improve care and outcomes. The frameworks planned are intended as a developmental and supportive tool that can empower and enable all staff and, additionally, that anyone accessing them can be provided with guidance towards extending their digital capabilities enabling them to provide better care in our complex, ever-changing digital world.

Core to the **AMC** strategy is a commitment to building a digitally capable medical workforce – Digital Health Literacy and AI literacy including a focus on the exploration of the ethical impacts of AI has been core to this strategy. The AMC has presented on these topics at a number of conferences. A further project undertaken by the AMC in recent times has been the development of a Digital Health in Medicine Capability Framework. For details see the link to the digital capability framework for medicine on the AMC website <https://www.amc.org.au/amc-strategic-projects/>

Session 1 of the HEE and AMC Roundtable was chaired by **Mr Patrick Mitchell** of the HEE and **A/Professor Clair Sullivan** who represented the AMC. The introduction was followed by presentations from the AMC and HEE to prompt reflection and discussion.

#### Presentations

**Dr Amandeep Hansra** provided a presentation on a project the AMC conducted in 2020-2021 to develop a [\*Digital Health in Medicine Capability Framework\*](#).

The framework was developed by a cross sectorial, cross-continuum and interprofessional working group. It is aligned with the [\*National Digital Health Workforce and Education Roadmap\*](#) with its three horizons of: embedding safe, ethical and effective use of systems and records; integrating new ways of working and digital transformation.

Building a medical workforce that is digitally enabled is especially relevant given the impacts on medicine caused by the current COVID-19 pandemic. Over the past two years there has been an unprecedented acceleration in the development and introduction of digital health innovation and Australians are now experiencing what it means to have a better-connected healthcare system. We have seen the delivery of more than **82 million telehealth** consultation and **25 million electronic prescriptions** issued during the COVID-19 pandemic. The 23 million Australians with a My Health Record now have immediate access to their vaccination status, plus their prescriptions, information on allergies and pathology and diagnostic test results.

Central to the capability framework is a focus on exploring how technology is allowing us to reimagine care delivery. It is based on the idea that digital technologies can impact all aspects of care from how we monitor patient and population health, and how and when we intervene, and how we deliver care and by whom. It also explores how digital technologies open up health care sites by bringing the health practitioners into the home, and better integrating community and hospital healthcare delivery.

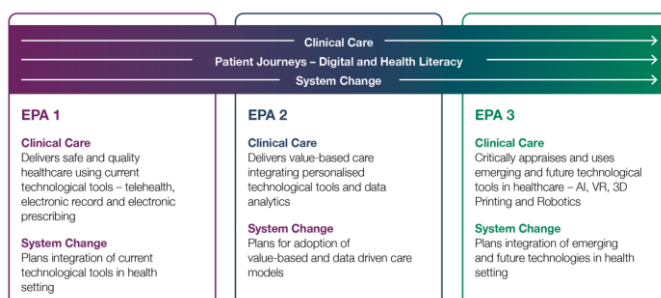
The educational model is based on the core purpose of providing culturally safe, people and value based care. Seven domains of learning enable this to be achieved:

- Professionalism and interagency action
- Integrated health settings and access
- Appraisal and risk
- Data and information quality
- Medicine, ethics and the law
- Future preparedness
- Health system innovation.

A key challenge in medical education programs is how to integrate learning and assessment into busy clinical environments. A Dutch medical educationalist ten Cate has built an innovative solution to this longstanding challenge in medical education with his concept of Entrustable Professional Activities. In a nutshell EPAs are priority work tasks which a learner needs to show that they are able to perform independently with the support of an educational supervisor through direct observation in work based assessment.

In our framework we propose three EPAs which align with the three horizons of the National Digital Workforce and Education Roadmap. The three EPAs each have two subtasks so that they can be used by both doctors focused on clinical care delivery and population health.

Figure 1: the tasks.



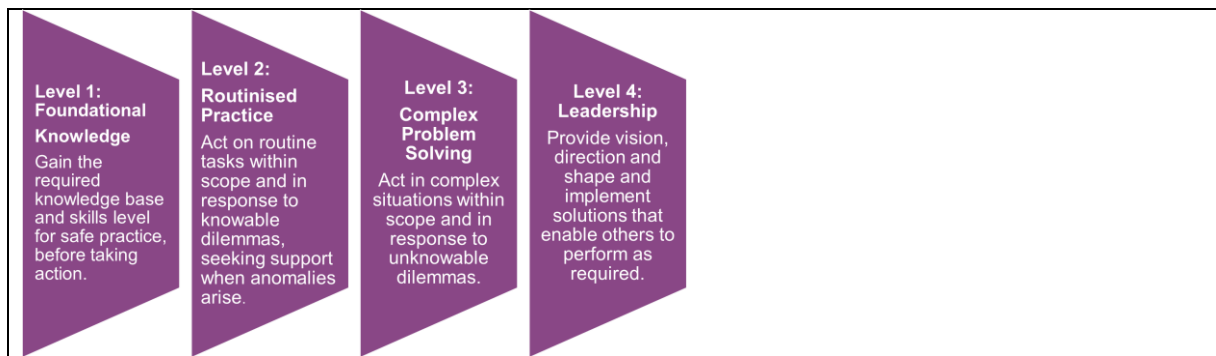


Figure 2: Four levels of entrustment.

The tasks operate at four levels of complexity for progressive skills development. These levels are based on the work of UK educationalist and workplace based learning expert Stephenson (2000).

Integral to the success of innovations in medical education is how learning is supported by access to learning resources and broader implementation strategies. The Agency has developed resources in digital health. These resources are designed to support healthcare providers in utilising digital health tools, and include [Online Training, Podcasts, and Events & Webinars](#). Medical education providers are encouraged to embed these resources as part of their digital health curricula.

As next steps the AMC is also progressing with a review of the primary medical school accreditation standards. Accreditation is a recognised lever for curriculum change and we anticipate greater uptake of digital capabilities across the continuum in medical education in the coming years. The planning for the review of other stages of the accreditation standards is also in progress.

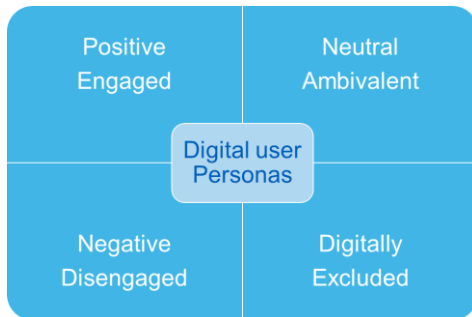
Our next steps for the project on securing further project partnerships are:

- To conduct a pilot which would be really important to test the framework on the ground.
- Develop support for supervisors. During this project the supervisors in medical education expressed concern that they did not feel confident teaching digital capabilities – this is a known challenge which we need to address to maximize success and uptake of digital health.
- Continue thought leadership - the workshops we did through the project were really successful and can be accessed on our [AMC Strategic Projects website](#)

For further information visit the [AMC Strategic Projects website](#) for information on building and embedding digital health capability and training into medical workforce education.

**Henrietta Mbeah-Bankas** presented the work that Health Education England is doing to support development of the digital literacy skills for the health workforce.

- HEE has defined digital literacies as those capabilities that fit someone for living, working, learning, participating and thriving in a digital society
- HEE developed and published the [Health and Care digital Capabilities framework](#) in 2018
- An interactive Digital Skills Assessment Tool has been developed to overlay the tool to help individuals identify their digital skills gaps and be signposted to relevant learning
- Developing digital literacy is important but developing digital readiness is recommended. This will ensure that individual and system ability and willingness to embrace digital
- It requires targeted interventions to different digital user personas, fig 1



- A focus on people, process and technology is important to ensure establishment of digital communities and organisations.
- HEE's Digital Readiness Education programme has established an ambitious learning and development programme looking at the digital skills needs of the workforce on a continuum from future workforce right through to digital board awareness training.

**Dr Hatim Abdulhussein** presented an overview of the DART-Ed (Digital, AI and Robotics Technologies in Education) programme at Health Education England. The programme aims to support the workforce to use AI-based solutions through training, skills development, and clinician involvement in future developments.

- The strategic and contextual drivers for the programme include the Wachter report (2016) NHS Long Term Plan (2019) and more recently the Topol review (2019)
- Areas of educational challenges were identified, including what was currently here and was to come, training needs analysis and how to incorporate it in curricula and Continuing Professional Development (CPD)
- Timelines, activities and deliverable were presented in fig 1

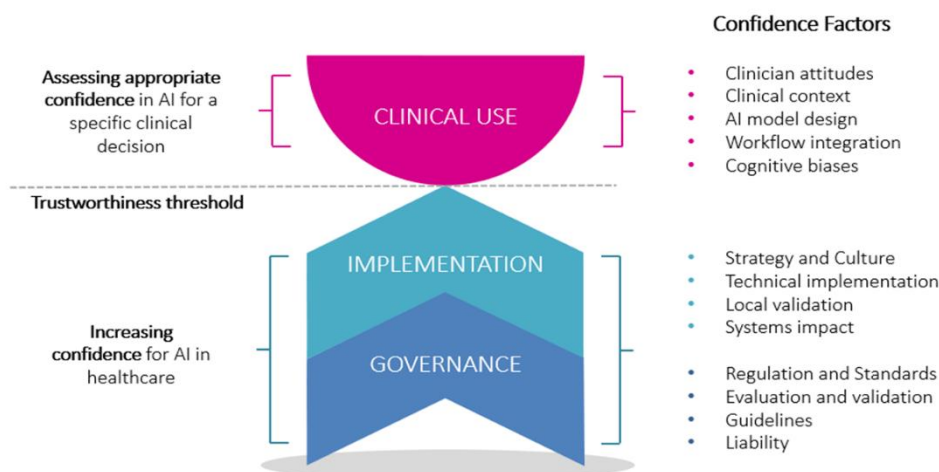
Fig. 1



- Identification of the health professionals who would be mostly affected was highlighted with medics in clinical radiology and general practice the most affected professionals and adult nurses the least affected
- A systematic review, workshops with three different stakeholder groups and wide engagement through surveys have been completed to help with the development of the AI framework
- A matrix developed to understand the knowledge needed for the AI capability framework was presented. This included areas such as transformation, digital health for patients and the public. Ethical, legal and regulatory knowledge was also required alongside human factors, health data management and AI.
- Five workforce archetypes and examples of their professional roles were presented. These were; Shapers, drivers, embedders and users.
- Confidence factors in clinical use, implementation and governance are presented in Fig. 2

Fig 2.

## AI confidence in healthcare: A framework



Achievements were presented which included:

- Developing a catalogue of learning on the NHS Learning Hub
- Launching the Clinical AI Fellowships at the London Centre for AI Value Based Healthcare

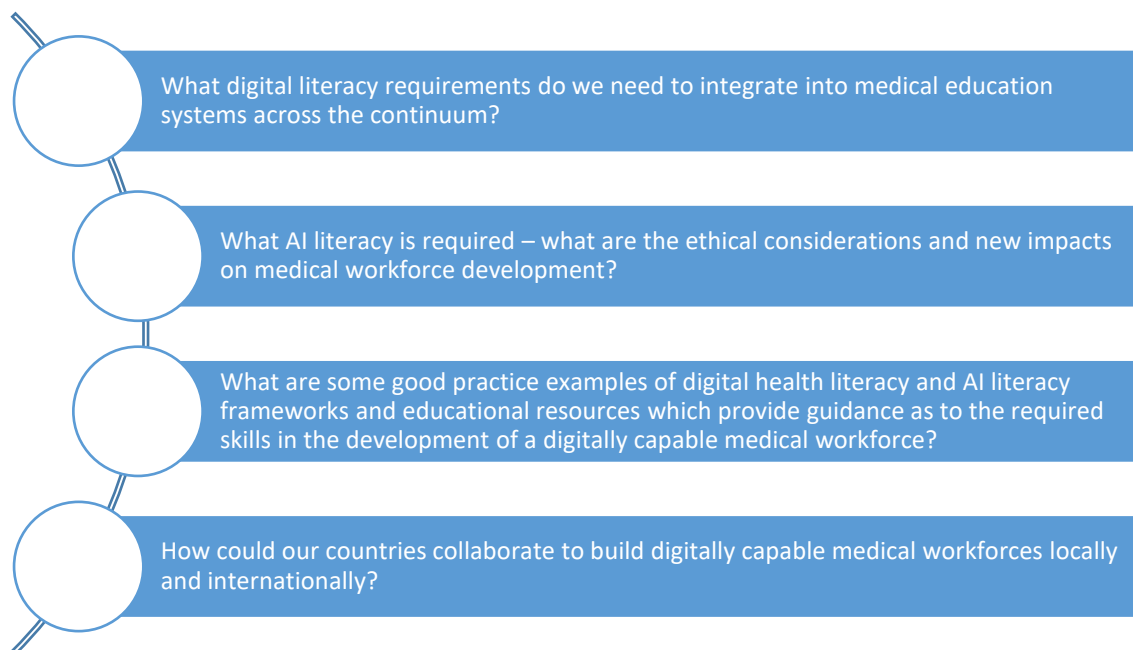
And it was acknowledged that to develop the clinical workforce,

- Future, current and specialist workforce strategies are needed and should be supported by collaboration and action and driven by evidence and standards

## Breakout Discussions

Participants focused on one of four key questions related to the roundtable session 1 topic.

### Questions



### Key Breakout Discussion Points

#### Question 1: What digital literacy requirements do we need to integrate into medical education systems across the continuum?

**Facilitator: Professor Kerrynd Butler-Henderson**

In this session participants introduced themselves providing background about what their involvement in developing digital literacy requirements – there was a combination of UK and Australian experts:

- Participants noted that COVID-19 has really emphasised the need to develop digital capabilities. It was raised as an issue that it is not always easy to gain digital capabilities through self-directed learning and technology delivery of learning.
- HEE is focused on self-assessment of digital capabilities – the importance of building the confidence of individuals in their own capabilities and the flow on into system capability with a focus on AI capabilities and now expanding into other emerging technologies. Thinking about the Dunning-Kruger effect can be useful which purports that a little knowledge is a dangerous thing where people may be over confident but lack the skills without having the insight that they don't have the required knowledge. We need models to progress people beyond this stage and a self-assessment tool can prompt reflection and insight into skill levels as well as point to follow up resources to guide future learning.
- Importance of thinking through partnerships with universities to explore how we can transform our workforce in rural and remote areas – an interest for both UK and Australian participants.
- Importance of interprofessional perspectives including pharmacy and nursing perspectives on digital health literacy and AI literacy.
- Need to think about the whole continuum of learners across systems and professions in health. The point was made that everyone in the workforce from junior to senior doctors need to make



a step change. One idea is to try to build some common learning experiences to build a community of practice and support resource sharing.

- A challenge is that it is not clear what the continuum actually is, it is multi-dimensional and complex – the different levels, across professions and the archetypes of what different people’s roles are with the possibility of people wearing multiple hats.
- Workforce roles are evolving and it can be complex to develop literacy for roles and functions which have not yet been invented.
- The Australian National Workforce and Education Roadmap highlighted 8 different profiles with the need for different digital literacy requirements for each role. The HEE is exploring use of the self-assessment across the continuum and different roles for professionals which are in practice.
- As a medical professional you need different skills dependent on the context you are operating in, however, there are generalizable skills which are required by all. Understanding critical analysis and looking at how you use clinical decision making tools are two clear requirements. This can be applied for a range of different current, emerging and future technologies.
- Developing digital capabilities provides an opportunity to develop some broader skills i.e. bias in decision making and patient safety.
- Lack of engagement in digital health can be a barrier to change and can leave people behind.

## **Question 2: What AI literacy is required – what are the ethical considerations and new impacts on medical workforce development?**

**Facilitator: Dr Hatim Abdulhussein**

The discussion was completed with combination of experts from UK and Australia

- Digital and AI literacy skills is required across the educational continuum from undergraduate training into practice and maintaining that ongoing professional development.
- The system needs to get better at learning to work alongside technologists and the other support personnel to deliver health professional education and care as the nature of multidisciplinary teams are changing.
- Technologies such as AI can be made accessible to the whole of the workforce by describing it in an understandable “language” and pitching it at the right level to avoid disengagement
- Making AI accessible is not limited to communication with other members of the team but also when communicating with patients and using AI as an interface or in conjunction with your interaction.
- There is potential for patients to struggle with understanding new clinical technology roles and what the roles will do, as evident with the introduction of Nursing Associates (NAs) and Physician Associates (PAs) in England- this is an example of changes to multi professional teams.
- Introducing digital and AI literacy need to start very early, from primary school to develop fluency and ensure that the “language” has been socialised into the professional’s working life- example cited about a Digital Health project with a cluster of secondary schools in England where the young people are already engaging with AI, bioinformatics etc.
- In the context of language, medics can speak a different language, converting to lay terms from medical knowledge, indicating the critical emphasis on communication skills in medical education- in some instances it can be more important than clinical skills. For example, most fitness to practice hearings are not due to clinical failures but communication failures.
- AI has a real potential to speed up treatment and support more patients as every health service is under pressure. This potential of AI and benefits need to be communicated with patients, staff and leaders, including politicians
- While health practitioners are usually translators for their patients in a lot of clinical instances, if technological language is seen as different, then translators will be needed to interpret it until clinicians become conversant with the language. This is similar to the use of translators in clinical care when someone speaks a different language.

- There are lay people who may see all of this as inaccessible, so there is some degree in expecting that people working in the field can translate things and support others to understand it a bit more- integration between people using it and people developing it will be key. However, some translational work to ensure that benefits can be established as much as negative impacts is needed.
- If user-centred designs are used in creating new technology, it will be done well and make it easy to use, such as seamlessly using the iPhone which has been adopted as part of people's life, hence not requiring translators.
- An additional point was made around the use of simple but effective technologies such as a measuring tape which provides significant information but not always fully utilised
- Ethical use of AI requires various areas to be addressed including,
  - conversation around blood pressure and the perception that it is fixed as a number- and it is a problem if high or low and whether there should be a balance of trust between the professional and the AI with the risk of trusting the machine and distrusting the human and vice versa
  - In some instances, developing trust that AI can sometimes make better judgements than human- this was illustrated by the distrust of assessment outcomes by surgical trainees being assessed using AI
  - Informed consent and whether sometimes an AI may use information in a different way than it has been consented for- AI is heuristic and can behave in an unpredictable way, so it is important to ensure that it does not use the information it has and come up with things that the patient has not consented for. This requires constantly reviewing how the machine is behaving- also paying attention to liability when the AI goes wrong. People don't mind too much when clinical judgement is used with technology rather than when technology just does it.

**Question 3: What are some good practice examples of digital health literacy and AI literacy frameworks and education resources which provide guidance as to the required skills in the development of a digitally capable medical workforce?**

**Facilitator: Professor Clair Sullivan**

- There are some great examples of frameworks from various organisations and countries such as the those developed by the AMC and the NHS
- While there are some fantastic examples of professionally and clinically driven tools, frameworks and initiatives, there is a need to establish service user driven requirements. An example was given in relation The Royal College of Paediatricians and Child Health in the UK developing a co-produced user-driven resource during the pandemic with Children, Young People and families. It is envisaged that this approach will be adopted by future paediatricians
- Reference was made in the presentation about the continuum of expertise, from fundamental digital skills for all the workforce and developing the skills of practitioners with greater interest in digital. This highlights a gap in digital skills development programmes and resources in the postgraduate space
- The group felt that while it was important to discuss best practice, there was also some value in discussing "worst" practice, especially in bringing practitioners (laggards) that require the most help along. An example was given in relation to the different attitudes to technology with younger people generally embracing it and having a good skill level
- A point around whether efforts should be made with very experienced clinicians who may not want to adopt digital was debated. Examples such as, electronic prescribing and the WHO surgical checklist was given to illustrate that clinicians were happy to adopt them because they knew it supported delivery of safer care, hence the important to articulate how digital enhances care provision rather than telling practitioners to be better on how they use it
- The provision of context is important, alongside communicating benefits in a clinically meaningful way. While in some instances using digital means longer or repetitive processes,

they have been established for various reasons, especially safety. Example being the introduction of handwashing which was initially seen as slow and was not part of medical care however, when the safety benefits became apparent, practitioners who did not do it were deemed unsafe

- Making digital useful for users will encourage them to use it, so having frameworks is not the issue, a shift in focus to implementation is what is required now
- Incorporating digital into curricula requires fundamental changes to how the curricula is developed and delivered. For example, every medic completes medical records and prescriptions, so the learning becomes doing it with digital technology safely. Every doctor needs critical appraisal skills which can be applied to technologies such as AI in establishing the questions to ask including, what data set was used in the training, is it representative, governance etc.
- Incorporating digital into curricula requires research, accreditation, lots of creativity from education providers with an acknowledgement that it will be an iterative process with a period of learning, sharing and upscaling and requires tenacity
- Digital literacy development needs to be tied to professional development programmes and conversations need to be happening with staff about where they are at with this, what can be done together to make this more relevant for them as practitioners may not always know what skills they need and using a tool that requires that knowledge may not be beneficial
- Whatever approach is taken, there needs to be a strong system drive to make it work. It shouldn't be a top-down approach. System design will be a key factor but also there has to be an acceptance that not everybody will embrace change and sometimes, enthusiasts will need to start with others following when they can see the value, to maximise resources.
- Application of frameworks to address inequalities requires data. HEE commissioned health literacy geodata <http://healthliteracy.geodata.uk/> and also, are about to share maps of digital exclusion alongside health literacy to target interventions
- Implementing frameworks is a balance of vision and pragmatism. There is a need to acknowledge the reality of the healthcare environment it is to be applied in and ensure equity of access. Having consumers/patients and frontline healthcare providers input helps markedly with this
- It is important to ensure that we include everyone in the digital revolution

#### **Question 4: How could our countries collaborate to build digitally capable medical workforces locally and internationally?**

**Facilitator: Patrick Mitchell**

After introductions, this group discussed the need for collaboration and how it may be achieved.

- It would be beneficial to have an ongoing knowledge exchange program that:
  - Covers a variety of topics.
  - Includes a wider audience relevant to the topic.
  - May find areas for international collaboration on projects.
  - Includes ongoing seminars.
- The UK and Australasia have differently structured health systems but face similar implementation issues. We could produce a guide for other jurisdictions taking similar steps by sharing our challenges and concerns and how we overcome them.
- We can gather and share examples of successful digital health implementation.
- Digital health goes across disciplines, the clinician, nurses, and hospital administration. It would be helpful to take a look at the average day in the life of the modern practitioner and how they use digital health to interact in their work environment.
- The important question is how do you educate doctors in a rapidly changing environment?
- Collaboration can be challenging in the health system and it is important that we break down the barriers to allow for better sharing.

- People do not need training when they get a new model smart phone and it would be the ideal if digital health systems were also this intuitive. More clinicians engagement with technology is required. As clinicians are the end users, if they are involved with the design and development of new technologies it will produce a better product for them. It is important to have collaboration with other health sectors and industry to get the right products.
- The difficulty in Australia is the fragmentation of electronic medical records. It is critical to work with medical colleges, private and public hospitals.
- There is a strong need for a global effort, to work with other countries to share challenges and solutions.
- A platform could be created for those travelling between countries to find the right people to meet with to discuss relevant topics and collaborate.
- A portal could be created to allow information sharing and for questions to be asked of the wider global community to allow international dialogue.

### Next Session

This 120 mins round table session will be conducted via zoom.

Round table Session 2: Levers of Change – Maximising Integration and Uptake of Digital Health in Medical Education and Medical Practice

Thursday 26 May 2022

8-10am GMT, 5-7pm AEST, 7-9 NZST

**Please note that if you have any issues prior or during the event please contact**

[digitalmedicine@amc.org.au](mailto:digitalmedicine@amc.org.au)