Future of Medical Education: Strategies and Anticipation

A view from Australia

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Director, Medical Education
University of Adelaide
Disclosures

- Accreditation work with the Australian Medical Council
- Member of a number of Medical Deans Australia and New Zealand working groups
Outline

• Sociopolitical Context

• Current Australian perspectives

• Some personal reflections
Sociopolitical Contexts

• Any education program exists within a local, national and international contexts

• Australia has a hybrid public and private health care system

• All citizens are “covered” by a universal health care system (Medicare), but in parallel there is a private health care system which may provide quicker and “better” access

• The private health care system is fee-for-service with significant incentives for certain behaviours

• The Public Health care system is not overly strong, and focuses somewhat on “infectious disease” with a lesser emphasis on preventive measures
Further Sociopolitical Contexts

- Medical Workforce has been highly dependent upon International Medical Graduates
- There is a significant geographical maldistribution of doctors in Australia, with underrepresentation of doctors in rural and remote regions. Constitutional inability to conscript doctors.
- There is a overrepresentation of doctors in certain disciplines (mainly procedural) and underrepresentation in others (psychiatry, aged care, chronic diseases, generalist skills).
- Little role substitution in health care in Australia
Training Tomorrow's Doctors:
all pulling in the right direction

Working Group

Working Group members

- Professor Stuart Carney, University of Queensland (Chair)
- Professor Gervase Chaney, University of Notre Dame Australia
- Professor Paul de Souza, University of Wollongong
- Professor Karen Dwyer, Deakin University
- Professor John Fraser, University of Auckland
- Professor Cheryl Jones, University of Sydney
- Professor Brian Kelly, University of Newcastle
- Professor Rathan Subramaniam, University of Otago
- Dabrina Issakhany, Medical Deans’ Senior Policy Officer
- Helen Craig, Medical Deans’ Chief Executive Officer
Findings

• **Generalist skills at the forefront of being a doctor** – ageing populations, co-morbid chronic conditions, models of patient-centred care.

• **Connected and aligned training pathways that effectively support key transition stages**

• **Students and graduates learning in and for our communities** – community-based settings, changes to funding models to support quality clinical supervision

• **Doctors in the right places and the right disciplines** – careers and training in the regions and specialties where doctors are most needed

• **A healthy workplace culture and environment**
Challenges to Academic Health Centres

• Much training occurs within large, city-based, tertiary and quaternary training hospitals (Academic Health Centres)
• Universities have “sunk” resources in AHCs, and those with highly specialized skills are likely to be leaders
• The “hidden curriculum” drives students towards the careers of those who they perceive as leaders. Need to diversify models of leadership
• Academic Health Centres need to extend their models of influence to community, and rural and remote, settings
• Need to balance advances in personalized and precision medicine, with generalized, prevention-focused chronic disease medicine
THE FUTURE OF MEDICAL EDUCATION: Perspective from the Philippines

Coralie Therese D. Dimacali, MD
One UP Professorial Chair for Teaching and Research
Flexner recommendations 1910

- Higher standards and quality control
- Medical schools should become an integral division of universities
- Faculty need to be involved in original research
- Students need to participate in active learning through laboratory study and real clinical experience

Abraham Flexner (1866-1959)
Evolution of medical education

1920
• Established structures for medical education

1940
• Scientifically oriented, university-based medical school and teaching hospital are norm

1960
• Revolution in biomedical research
• Transformation of clinical practice into megabusiness

1980
• Increased demand for clinical productivity by faculty
• Less teaching time by faculty; more by residents
• Mismatch between MD training and community needs
SPICES Model

S student-centered
P problem-based
I integrated
C community-based
E electives
S systematic learning

Ronald Harden

Medical Education 18:284-297, 1984
Reforms in Medical Education

**Basic science instruction**
- Reorganization into organ systems
- Elimination of discipline-based teaching blocks
- Integration with clinical sciences
- Recognition of the impact of molecular biology
- Revisited in the clinical years

**Clinical Instruction**
- Ambulatory care included in clerkships
- Primary care clerkships are being initiated in a variety of settings
- Continuity clinics for medical students
- Rotations in community hospitals
- Development of combined and integrated clinical clerkships to provide broader, more integrated experiences of students

Robert Wood Johnson Foundation 1992
SPICES 2.0

Simulation based preparation for practice
Portfolio-based monitoring
Individualized workplace learning
Competency-based education
Electronic media support
Structured workplace assessment

Online Learning: Barriers

**INSTITUTIONAL BARRIERS**
- Poor administrative organization → poor student-teacher communication
- Inadequate educator skills
- Excessive cognitive load
- Policies that neglect student welfare

**TECHNOLOGICAL BARRIERS**
- No devices or gadgets
- Limited access due to:
  - gadget sharing
  - issues with online learning platform
- Lack of technical skills

**COMMUNITY BARRIERS**
- Mobility restrictions
- Power interruptions

**INDIVIDUAL BARRIERS**
- Difficulty in adjusting learning styles
- Mental health issues
- Physical health issues
- Practical concerns

**DOMESTIC BARRIERS**
- Insufficient study space
- Conflicting home responsibilities
- Family conflicts/illness

*Medical Science Educator* (2021) 31:615–626
# Online Learning: Recommendations

<table>
<thead>
<tr>
<th>Conduct</th>
<th>Conduct needs assessment survey to identify students with limited access to resources.</th>
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<tbody>
<tr>
<td>Ensure</td>
<td>Ensure open channels of communication among administrators, faculty and students.</td>
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<tr>
<td>Implement</td>
<td>Implement asynchronous sessions that require minimum data.</td>
</tr>
<tr>
<td>Create</td>
<td>Create opportunities for meaningful interaction with peers and educators.</td>
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<tr>
<td>Maximize</td>
<td>Maximize use of curated online resources that are available for free or have an institutional subscription.</td>
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Baticulon et al. *Medical Science Educator* (2021) 31:615-626
## Online Learning: Recommendations

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<tr>
<th>Align</th>
<th>Align assessments to desired learning outcomes utilizing more frequent formative evaluations rather than a single high stakes examination.</th>
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<tbody>
<tr>
<td>Extend</td>
<td>Extend leniency to students who bear additional home responsibilities.</td>
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<tr>
<td>Provide</td>
<td>Provide proactive psychosocial support for students. Develop mental wellness programs.</td>
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<tr>
<td>Offer</td>
<td>Offer scholarships or financial assistance to cushion the pandemic’s economic impact.</td>
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<tr>
<td>Develop</td>
<td>Develop bridging programs for gradual return to clinical activities.</td>
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Baticulon et al. *Medical Science Educator* (2021) 31:615-626
SPICIER STRATEGIES FOR THE FUTURE

• Simulation strategies and structured assessments
• Population health, preventive medicine and primary health care
• Interprofessional practice and team-based learning
• Collaboration and networking
• Infrastructure support
• E-learning and technology including use of electronic health records
• Research collaboration and remote assessments
Future of Medical Education: Strategies and Anticipation

Gandes Retno Rahayu
Faculty of Medicine, Public Health and Nursing
Universitas Gadjah Mada
19 November 2021
CHANGES

- Exponential expansion of medical knowledge and technology
- Digitilized health care system
- Patient behaviour
- Growing understanding on how human learn
- Characteristic of medical students
- Impact of Covid-19 pandemic
Exponential expansion of medical knowledge and technology

Digitilized health care system

Patient behaviour

Growing understanding on how human learn

Characteristic of medical students

Impact of Covid-19 pandemic
Humanistic approach to patient
- Humanistic doctor
- Facilitating collaboration

Early experience and longitudinal integration
- Early exposure to patient-oriented integration
- Longitudinal integrated clerkship

Beyond hospital, toward society
- Responding to changing community needs
- Respect for diversity

Student-driven learning with advanced technology
- Individualized active learning
- Social interaction
- Resource accessibility
Student selection

Phase 1: Cognitive/Academic Performance
Phase 2: Non-cognitive Performance

For example:
- Communication
- Teamwork
- Volunteer works
- Agility
- Human literation
- Data literation
- Technology literation
- etc

Finding appropriate instrument to assess
Faculty Development

Structured and continuous

Information provider and coach
Facilitator and mentor
A curriculum developer and implementer
An assessor and diagnostician
A role model
Manager and leader
A scholar and researcher
A professional

Curriculum

- Defined standard, more flexible process and time
- Responsive Curriculum
- Interprofessional education
- Culture of critical inquiry
- More opportunities for personalized learning
<table>
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<tr>
<th>Technologies for face-to-face instruction</th>
<th>Technologies for online instruction</th>
<th>Technologies for simulation-based instruction</th>
<th>Technologies for assessment, evaluation, and administration</th>
<th>Technologies that integrate with clinical practice</th>
</tr>
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<tbody>
<tr>
<td>Audience response systems (ARS)</td>
<td>Augmented reality and virtual learning environments</td>
<td>Mannequins</td>
<td>Curriculum mapping tools</td>
<td>Bedside clinical technologies</td>
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<tr>
<td>Electronic whiteboards (“SmartBoards”)</td>
<td>Learning management systems</td>
<td>Virtual hospitals</td>
<td>Computer-aided assessment</td>
<td>Point-of-care learning</td>
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<td>Generative learning activities</td>
<td>Massive open online course (MOOC)</td>
<td>Virtual patients</td>
<td>Learning analytics</td>
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<td></td>
<td>Mobile devices and apps</td>
<td>Virtual reality (VR) simulators</td>
<td>Electronic-portfolios and coaching systems</td>
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Methods

We chose a scoping review to determine the extent of the literature on LE interventions and associated factors, which our preliminary search indicated might not be extensive enough for a full systematic review of the literature. Additionally, we did not set out to evaluate the efficacy of the influences, but rather to characterize for the health professions education community the types of interventions used to improve the LE. To guide this scoping review, we utilized Levac’s (Levac, Colquhoun and O’Brien, 2010) modified version of Arksey and O’Malley’s methodological framework (Arksey and O’Malley, 2005) for scoping reviews. This framework includes six steps, which we used to organize our methods (Steps 1-3) and results (Steps 5-6).

Step 1: Identify the research question

Based on several conference calls, we collectively discussed and agreed upon the purpose and rationale for this review, which informed the formulation of our research questions. In our discussions, we considered the population, types of relevant interventions, and impact on the LE.

Step 2: Identify relevant studies

We assembled a research team with expertise in health professions education, clinical medicine, and information science. All team members had interest and experience in health professional LEs as well as experience in conducting literature reviews in health professions education.

LM, a health professions education researcher trained in information science, collaborated with a medical librarian to search and manage results from PubMed, Embase, Scopus, CINAHL and ERIC. With input from the team, search
Thank you
Terima kasih
FUTURE OF MEDICAL EDUCATION: STRATEGIES AND ANTICIPATION
SHARING THE HAMAD MEDICAL CORPORATION EXPERIENCE (QATAR)

Dr. Kristen Al-Aamri, EdD, MBA
Associate Director of Medical Education
QATAR'S HEALTHCARE CONTEXT

- Population of 2.6M
- Predominantly expatriates
- National Health Strategy 2 launched in 2018
- Nationwide Academic Health System since 2011
- Universal healthcare for all, transitioning in 2022 to health insurance model
ABOUT HAMAD MEDICAL CORPORATION (HMC)

Our Organization

- Government-funded hospital system
- Main provider of secondary and tertiary care
- 2,300 beds across 12 hospitals, plus National Ambulance Service, and Home Healthcare Service
- JCI Accredited since 2009, with JCI Academic Medical Center accreditation since 2016
- 30,000 employees, including 3,000 doctors

Medical Education at HMC

- 21 residency programs and 60+ fellowship programs
- ACGME-I accredited since 2012
- Main clinical training site for two local medical schools
- 1,100 interns, residents, and fellows, and 500 undergraduates, in training at any given time
OUR PRIMARY MEDICAL EDUCATION CHALLENGES

Meeting the evolving healthcare needs of a diverse population

Establishing a sustainable pipeline of physicians who can deliver a high-standard of care

Careful stewardship of resources and transitioning to a new financial environment
STRATEGIES FOR ADDRESSING OUR MEDICAL EDUCATION CHALLENGES
I. DEVELOPING A LOCALLY TRAINED WORKFORCE

- Partnered closely with two local medical schools
- Clinicians have a deeper understanding of the health challenges that are of local relevance
- More economical, faster, and greater consistency in skills than recruiting trainees or senior clinicians from overseas
- We engage in sophisticated workforce capacity planning by matching medical school outputs to our health system needs
II. ENGAGEMENT IN INTERPROFESSIONAL EDUCATION AND PRACTICE

- Demonstrated to improve quality of care
- Recognized as an imperative in transforming how clinicians are educated to meet increases in complexity of care
- Participation of our trainees in interprofessional education initiatives
- We cultivate a hospital culture and professional environment that supports interprofessional practice
III. SIMULATION AS A KEY TRAINING MODALITY

- Preventable medical errors are a leading cause of death and disability
- Free of risk for patients
- Cost efficient
- Allows for engagement with most advanced and newest procedures and rare diseases, disorders or conditions
- State-of-the-art Simulation Center opened in 2021
IV. MAINTAIN AN ACADEMIC HEALTH FOCUS

- Demonstrated to improve quality of care
- Opportunities for cross-fertilization and collaboration across specialties, professional groups, and institutions
- Enhances HMC’s reputation as an academic institution
- Creating education and career pathways for Physician Scientists
Looking Ahead

- Increasing population size and growing complexity of care will augment pressure on healthcare professionals
- Imbalance and competition for skilled workers will increase between developed and developing nations (brain drain will accelerate)
- Accreditation of education and training programs can drive consistency and improve quality
- In Qatar, our locally developed workforce will be a beacon of security and stability for our health system
“WE ALL COME FROM THE SAME ROOT, BUT THE LEAVES ARE ALL DIFFERENT”

- John Fire Lame Deer
THANK YOU

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