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Perspective

Under- and Postgraduate Education in Health Economics for Australia's Medical Practitioners: Time for Change?

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Abstract

Directly or indirectly, medical practitioners influence health-care policy and spending through their clinical decision-making. As medical expertise and technology has grown, and patient choice has been empowered by the consumer movement, there are now many more medical interventions than can be accommodated in a finite national health-care budget. We reviewed the Australian Medical Council, Medical School and Medical Specialist curricula. In Australia, medical students, doctors and medical specialists do not appear to have specific health economics education that would improve skills to select beneficial and cost-effective care. We propose a framework for medical practitioner health economics education.

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1. Introduction

'The ideas of economists and political philosophers, both when they are right and when they are wrong are more powerful than is commonly understood. Indeed, the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually slaves of some defunct economist' (Keynes 1936, p. 190).

1.1 Medical Practitioners Substantially Determine Health-Care Expenditure

Without the benefit of an intellectual and practical background in health economics, the decisions of medical practitioners determine the majority of health-care expenditures in Australia. Australia had approximately 105,000 registered medical practitioners ('doctors') in 2020 (AIHW 2023b). A substantial proportion of the overall health expenditure in Australia is under either the direct, or indirect, control of these doctors. This expenditure takes multiple forms, such as payments from the Medical Benefits Schedule (MBS) either directly to doctors ('bulk billing') or as cash transfers to patients after medical services (DOHAC 2023). Doctors also set their outpatient, procedural and hospital fees, which are decided upon based on complexity and costs of service delivery. In addition, doctors' consultation and

procedural fees, like all prices, will need to be indexed for inflation. The gap between the Medicare reimbursement subsidy that accrues to a patient for a particular consultation or procedure and the doctor's fees is described as the out-of-pocket cost.

When medications are prescribed for patients, many will be partially subsidised through the Pharmaceutical Benefits Scheme (PBS) (Services_Australia 2023). The ordering of tests—blood tests, tissue pathology, a range of other diagnostic pathology tests as well as imaging (x-rays, ultrasounds, CT and MRI scans) are partially or fully subsidised by partial reimbursement of the patient for the test cost. Doctors refer patients to other doctors and health professionals (such as dieticians, physiotherapists or psychologists), perform procedures (such as colonoscopies and breast biopsies) and operations (such as removing cancers found at colonoscopies or breast biopsies), as well as other treatments (for example, the chemo- or radiotherapy required to treat cancer).

Consultations, procedures and treatments require an infrastructure—consulting rooms or an operating theatre that must be maintained; disposable medical supplies and staff, not only to enable practice rooms or operating theatres, but at every point from admitting a patient to hospital; and providing post-operative and longer-term care, such as rehabilitation programs.

While it is difficult to provide a precise estimate of the total amount of expenditure across government and non-government sectors that directly results from the actions and decisions of doctors, most expenditures directly stem from the actions or decisions of medical practitioners. Most hospital care stems directly from medical decision-making, as does almost all spending on referred medical services, alongside the majority of primary-care spending reflecting either direct medical care or medical decision-making regarding the further services. As Dranove and Burns (2021) observe, 'the most expensive medical technology is not drugs or magnetic resonance imaging; it is the physician's pen'. Estimates from the United States indicate that doctors' decisions affect 80 to 85 per cent of all health expenditure in that country (Crosson 2009).

1.2 The Size of the Australian Health-Care Industry

Interaction with the health-care system by Australians is almost inevitable. The Australian Bureau of Statistics (ABS 2023) *Patient Experiences* report for the financial year 2021–22 estimates that 83.6 per cent of Australians had at least one consultation with a general practitioner (GP), 38.9 per cent saw a non-GP medical specialist (such as a surgeon or psychiatrist), and 14.8 per cent visited an emergency department (ED). During that year 12.8 per cent of Australians were admitted to a hospital.

The COVID-19 pandemic has greatly strained health-care systems globally, with significant impacts in Australia, and it is difficult to predict when demand for health services will return to pre-pandemic levels (Cutler 2021; Stobart and Duckett 2022). The emergence of conditions such as 'long COVID' and the ongoing increase in chronic disease means that it remains a possibility that health-care demand will be permanently altered (de Leeuw, Yashadhana and Hitch 2022).

The Australian Institute of Health and Welfare (AIHW) data release for the financial year 2019–20 estimated a total expenditure on health goods and services of (AUD) $202.5 billion, an average of $7926 per person (AIHW 2023a). This figure represents 10.2 per cent of Australia's gross domestic product (GDP), an increase from 10 per cent in 2018–19. Of this spending, governments funded $142.6 billion (70 per cent), with $86.4 billion from the Commonwealth Government and the remaining $56.2 billion from state and territory governments. Non-government entities—private health insurers ($16.7 billion), injury compensation insurers, other private sources and out-of-pocket costs for individual patients (who spent $29.8 billion)—were responsible for the remainder of the expenditure. The AIHW data estimated that a total of $83.5 billion (41.2 per cent) was

spent on hospitals, $66.9 billion (33.1 per cent) on primary care and $20.2 billion (10 per cent) was spent on referred specialist medical services from all sources. The remainder ($31.9 billion, 15.7 per cent) funded capital expenditure, research and other services.

1.3 Why Medical Practitioners Need Economic Knowledge and Skills

From the preceding discussion, medical practitioners substantially determine the very large expenditures in Australian health care. However, health care is delivered through finite societal resources. Economics is the science that helps understand and guide decisions regarding the allocation of limited resources. Health economics is the specific application of economic science to health care (Kernick 2003). Given medical practitioners' role in determining health-care delivery, and thus expenditure, health economics science should therefore form part of medical education across the practitioner's career lifespan. Foundational skills in health economics will improve the ability of medical practitioners to consider and participate in health-care policy, planning and delivery. Such skills will allow doctors to more effectively work with policymakers and administrators who are motivated by economic science and reasoning, through access to common skills and language.

2. What is Health Economics?

2.1 Defining Health Economics

Health economics, as a discipline, aims to inform decision-making regarding the distribution of finite resources in health care, including planning, development and delivery of health care (Kernick 2003). One main focus has been to maximise the benefits from health-care investment, while another is to distribute resources equitably, although the latter is a more complex task due to the challenges in agreeing on approaches to address equity.

Health economics modelling and evaluation can help make more transparent the reasons for resource allocation decisions (Kernick 2003). Perhaps the most useful skills relate to the development of a framework for measuring, valuing and comparing the costs (negative consequences) and benefits (positive consequences) of specific health-care interventions. Thus the benefits gained can be evaluated against those that are foregone.

2.2 Framing Health Economics Analyses

There are three main considerations for framing health economics analyses that are relevant to medical practitioners (Kernick 2003). Value is emphasised, since resources are finite, and investments in one area will necessarily result in lost opportunity in another unfunded area—this is opportunity cost. The viewpoint of the assessment—that is, the perspective—is also important. For example, are the health interventions assessed from the perspective of the patient, provider, health-care service, and so forth? Health-care interventions rarely show a linear relationship between investment and benefit, so marginal analysis, that is, the incremental benefits of interventions, need to be analysed (Kernick 2003).

2.3 Common Health Economic Analytic Methods

The commonly used methods of health-care economic evaluation are (Kernick 2003; Drummond et al. 2015):

(i) cost minimisation analysis—assuming that the outcomes of two interventions are equivalent, the analysis focuses on costs, and the cheapest option;

(ii) cost-effectiveness analysis—this compares the relative cost to achieve common health outcomes, for example, reduction in blood pressure from different interventions, for example, exercise, antihypertensive medicine, salt intake reduction;

(iii) cost utility analysis—this is used to assess benefits and costs of interventions

where there are a range of outcomes of interest for the intervention and to compare different interventions across different treatment programs. This is usually measured by the quality-adjusted life year (QALY), which is an overall index of health gain;

(iv) cost–benefit analysis—this is complex, as it attempts to monetarily value all benefits and costs of a health-care intervention. It is difficult in practice as data requirements are extensive and non-monetary, and important outcomes, such as lives saved, are not easily evaluated;

(v) cost consequence analysis can draw on all of the above to form a matrix of costs and outcomes so that they can be considered in parallel.

Unfortunately, health economics analysis can be fearsomely challenging for even experienced economists (Turner et al. 2021). Economic evaluations can help guide decision-making regarding allocation of resources in health care, but it is easy to underestimate the level of uncertainty in the evidence base regarding common conditions and their treatments, and economic assessments are predicated on how and what is valued and measured in economic models (Kernick 2003). Assessments of 'incremental cost-effectiveness ratios, costs, or health benefits (including quality-adjusted life years) are fraught with issues largely due to heterogeneity across study designs and methods and further practical challenges … [meaning that meta-analyses are] rarely feasible or robust' (Shields and Elvidge 2020, p. 1).

Understanding and applying these aspects of health economics evaluation can help medical practitioners in their decision-making that impacts directly on patient care and the use of limited health-care resources, that is, to assist with the 'Doctor's Dilemma' (Fuchs 2011) of health stewardship. This includes:

(i) better understanding how health-care systems work and how they can contribute to their improvement;

(ii) helping doctors understand how health-care policies affect patient outcomes and costs, such that they can make more informed decisions about treatment options and communicate effectively with patients about the cost–benefit options of different treatments;

(iii) enabling doctors with health economics data analysis and problem-solving skills to better engage with policy-makers and administrators, as well as the public.

3. The 'Doctor's Dilemma': Health-Care Stewardship

3.1 Health-Care Stewardship and the Dilemma for Medical Practitioners

The Australian Medical Association's (AMA) position statement 'Doctor's role in stewardship of health care resources' (AMA 2016) states that

> Health care resources need to be appropriately managed so that all patients can continue to receive the best quality care, now and in the future. Individual doctors (medical practitioners) affect health care expenditure through their clinical recommendations and decisions regarding patient treatment. As such, doctors have an important role as stewards of health care resources. Stewardship refers to avoiding or eliminating wasteful expenditure in health care. Stewardship aims to maximise quality of care and protect patients from harm while ensuring affordable care in the future. The primary ethical duty of the doctor is to care for, and protect the health care interests of, the individual patient. There is a secondary ethical duty to protect the interests of other patients and the wider community. This secondary duty involves managing health care expenditure to ensure resources are available for others. While decisions involving health care expenditure are often undertaken at a higher institutional, systems or government level, the individual doctor can play a pivotal role in reducing wasteful expenditure through responsible stewardship of their day-to-day practices. For example, through appropriate clinical decision-making, minimising diagnostic error and eliminating

> tests, treatments or procedures that are unnecessary, inappropriate or unwanted by the patient. (AMA 2016)

This statement is in direct conflict with what health economist Victor Fuchs termed the 'Doctor's Dilemma' (Fuchs 2011) which deals with the moral hazard inherent in publicly funded health care, which states that doctors commonly seek to provide.

> … all care that might possibly be of net benefit, regardless of cost. The physician may recognise that the intervention under consideration is not cost-effective but may recommend it anyway, for a variety of reasons: to keep the goodwill of the patient, to protect against a malpractice suit, or in the belief that the "primacy of patient welfare" makes the denial of such care "inappropriate" and "unethical". (Fuchs 2011, p. 586)

3.2 How Medical Practitioners' Choices Affect Health-Care Expenditures

In the current societal and fiscal environment, it is essential to ensure that health-care expenditure is appropriate to the needs of the community, and to 'avoid or eliminate wasteful expenditure in health care' as the AMA advocates. Apart from aiming for allocative efficiency in the delivery of health care, the identification of low-value health care—care that is ineffective, harmful or confers marginal benefit at a disproportionately high cost—is a key policy aim (Scott, Elshaug and Fox 2021). A substantial body of research aims to identify and deal with low-value care in Australia (Chalmers et al. 2019; de Oliveira Costa et al. 2021). At the same time, public education programs such as *Choosing Wisely Australia* aim to provide simple heuristics both for doctors and their patients to guide choice of tests and treatments (Muscat et al. 2019; Choosing_Wisely_Australia 2023). Many different factors have been shown to drive doctors towards recommending care which is unnecessary or low value, ranging from direct financial incentives through to cognitive biases (Hensher, Tisdell and Zimitat 2017). The success of initiatives that deal with Fuchs' (2011) Doctor's Dilemma and aim to reduce the delivery of low-value care while improving allocative efficiency will be, at least partially, contingent upon the doctors who drive expenditure putting these principles into action. As the AMA puts it, doctors have 'a pivotal role in reducing wasteful expenditure through responsible stewardship of their day-to-day practices' (AMA 2016).

3.3 Why Health Economics Education and Skills Are Important for Medical Practitioners

It is essential that doctors 'have an understanding of [health economics] basic principles and how it can be a tool to inform clinical decision making' (Kernick 2003, p. 147). Accordingly, health economics should be a core curriculum component for medical schools (the institutions that provide a basic medical degree) and specialist medical colleges (the bodies that provide postgraduate specialisation training, for example, to become an accredited specialist surgeon or psychiatrist). Health economics skills are recognised as part of the core health stewardship skillset that is necessary for any practising doctor in many OECD countries, especially in the development of health service policy and care delivery, from the individual patient level to the state, national and international level. Specifically Jain indicates:

> In the UK, the General Medical Council (GMC) clearly stipulates that upon completion of training, medical students should be able to discuss the principles underlying the development of health and health service policy, including issues relating to health economics. With the National Health Service (NHS) facing the threat of large gaps in funding, there is pressure on doctors to identify where and how savings can be made. Whilst many may be keen to learn about health economics, the teaching environment and level of student knowledge differs considerably across medical schools in the UK. There is a compelling argument to suggest that key concepts such as economic evaluation, equity and priority-setting should form part of the curriculum in UK medical schools. (Jain 2016, p. 45)

This has led to comments such as, 'A sound clinical education is no longer sufficient to prepare doctors for the working environment they will face within the National Health Service (NHS) or

elsewhere. In particular, doctors now require a basic understanding of health economics' (Beecroft 2016, p. 321). Concerns about doctors' literacy of health economics have extended beyond undergraduate training and into postgraduate specialist training. For example, observation has been made about surgical specialty training: 'It can be argued that in the upcoming years, our specialty's most important task will be the economic evaluation of the outcomes of our surgical care' (Buchel 2012, p. 64). Similar observations have been made regarding the companion specialty of anaesthetics: 'Now is an opportune time for anesthesiologists [anaesthetists] to become familiar with the tools and methodologies of health economics in order to facilitate and lead robust decision-making in quality-based procedures' (Martin and Cheng 2013, p. 918).

Surprisingly little is known about the knowledge base and attitudes of medical students and graduate doctors towards health economics. A study of German medical students found that the cohort understood the importance of the concepts yet had little exposure to their methods or applications (Spura et al. 2019). Recognition of this situation led some educators to develop shared online learning resources, aimed at medical students who do not have education in health economics principles as part of their curricula (Oppong, Mistry and Frew 2013). However, these resources are no longer being updated, and have now been archived.

Doctors, who are responsible for a large proportion of expenditure in the Australian health system, therefore necessarily require at least a basic understanding of the health economics principles that apply to that expenditure, and the resultant health-care and societal impacts. Accordingly, we map the current health economics training provided to doctors through undergraduate and postgraduate (specialty training) curricula in an Australian context.

4. The Current State of Health Economics Education in Medical Schools and Specialist Medical Training

4.1 Medical Student and Medical Specialist Education in Australia—Governance and Processes

An axiom of education is that curriculum drives learning and skills development. The Australian Medical Council (AMC) accredits both medical school and medical specialist training in Australia. Therefore, the AMC standards define both medical school and medical specialist training curricular standards in Australia, which these educational bodies must follow and are frequently accredited against. Most medical schools and medical specialist training bodies have adopted the CanMEDS curriculum model of physician competencies, which underpins their respective training and accreditation schemes (Frank 2005).

4.2 Core Health Economics Curriculum Based on the Royal Australasian College of Medical Administrators Model

The Royal Australasian College of Medical Administrators (RACMA), which is responsible for training and examination of specialist medical administrators, has the most comprehensive description of core health economics curricula competencies within its competency on 'Prioritise resources' (see Table 1). Accordingly, this framework has been utilised as a tool for this research, to audit for key health economics skills and knowledge curricular items recommended in medical school and specialist medical training guidance from the AMC (RACMA 2011). RACMA fellows might reasonably be expected to require the most advanced understanding of health economics as a specialisation. Several of these criteria include financial management skills, not just health economics.

Table 1 RACMA Medical Leadership and Management Curriculum (RACMA 2011, p. 24)

Competency Theme—Manager # 32: Prioritise resources
32.1 Develops and implements budgets for decision making and managerial control
32.2 Allocates resources effectively
32.3 Prepares and explains finance and performance reports
32.4 Has knowledge of accounting principles
32.5 Demonstrates the ability to act on financial information
32.6 Understands health financing models, for example, activity-based funding
32.7 Prepares business cases and cost benefits analyses
32.8 Identifies the drivers of demand and expenditure within health care
32.9 Demonstrates the ability to critically analyse, for example, financial statements, business cases, audits and complaints
32.10 Prepares services and capital plans

4.3 Australian Medical Council Medical Student Teaching Program Educational Standards

We conducted a systematic search of the AMC standards pertaining to medical school education for relevant specific health economics terms based on the RACMA management competency 32: Prioritise resources (Table 1) (RACMA 2011). Search terms included: accounting, audit, budget, business, cost, economy, economic, financial, funding, resources, steward and stewardship. There is the caveat that there is necessarily some circularity to this curriculum review process, as we had to search for pre-determined health economics keywords, but there is no other practical way to screen the multitude of medical school and medical specialist curricula in Australia.

4.4 Details of Australian Medical Council Primary Medical Program Standards—Currently Under Review (AMC 2012)

Results yielded from search terms relevant to medical education content:

2.5 Select and justify common investigations, with regard to the pathological basis of disease, utility, safety and *cost* effectiveness, and interpret their results.

2.11 Prescribe medications safely, effectively and *economic*ally using objective evidence … (p. 10—numbered 3 in the document).

3.2 Explain factors that contribute to the health, illness, disease and success of treatment of populations, including issues relating to health inequities and inequalities, diversity of cultural, spiritual and community values, and socio-*economic* and physical environment factors. (p. 3).

3.7 Understand and describe the roles between health agencies and services, and explain the principles of efficient and equitable allocation of finite *resources* to meet individual, community and national health needs. (p. 3).

4.10 Describe and apply the fundamental legal responsibilities of health professionals especially those relating to ability to complete relevant certificates and documents, informed consent, duty of care to patients and colleagues, privacy, confidentiality, mandatory reporting and notification. Demonstrate awareness of *financial* and other conflicts of interest. (p. 4).

4.5 Australian Medical Council Specialist Program Educational Standards (AMC 2015)

These standards describe the core requirements for all recognised medical specialist training programs, including General Practice, and other recognised medical specialists such as psychiatrists, obstetricians/gynaecologists and specialist surgeons. We conducted a systematic search of AMC accreditation standards for specialist medical programs for relevant specific health economics terms based on the RACMA management competency 32: Prioritise resources (see above).

Results yielded from search terms relevant to specialist training curriculum content:

3.2.6 The curriculum prepares specialists to contribute to the effectiveness and efficiency of the health-care system, through knowledge and understanding of the issues associated

with the delivery of safe, high-quality and *cost*-effective health care across a range of health settings within the Australian and/or New Zealand health systems. (p. 9).

No other results specific to health economic curricula were found.

4.6 Medical School and Specialist Medical College Curricula

The authors sought to directly examine the curricula of the medical schools and specialist medical colleges in Australia as summarised in Tables 2 and 3. However, much of this information is not publicly available from universities or colleges, highlighting a need for further investigative research done in partnership with universities and specialist medical colleges. We did not examine pre-vocational postgraduate medical training, as this type of training primarily focuses on core medical expertise skills, such as diagnosis and treatment, and much of this training is unaccredited.

We conducted a systematic search of AMC accreditation standards for individual medical school handbook entries for relevant specific health economics terms based on the RACMA management competency 32: Prioritise resources (see above). We could search only those curricula that were available online via university websites; these may not be the most up-to-date, or entirely inclusive of all curriculum requirements. Findings are included in Table 2.

Finally, we used the same search terms to conduct a systematic search of individual specialty medical college curricula for relevant specific health economics terms. Again, we note that the curricula searched were those available online via college websites, and may not be the most up-to-date, or entirely inclusive of all curriculum requirements. These findings are summarised in Table 3.

4.7 Identification of Key Health Economics Themes and Topics in Medical School and Medical Specialist Curricula

Table 4 summarises the findings of Tables 2 and 3 by grouping key themes and topics identified in the medical school curricula and college standards, based on the keywords derived from the RACMA health economics curriculum—that is, the frequency of reference to key health economics skills and knowledge in these curricula. The purpose was to identify common themes that might form the foundation for a medical practitioner health economics curriculum across a practitioner's career, from student to medical specialist. Strikingly, the social and economic determinants of health and inequity appeared in most of the college standards investigated, followed by resource allocation and cost-effectiveness. It is also noteworthy that seven college standards explicitly single out aspects of costs to patients (that is, out-of-pocket costs) as requiring specific attention.

In summary, there are very few references in both the medical school and specialty college training curriculum requirements specifically relevant to teaching of health economics. In the AMC medical school standards, the most relevant standards were 3.2, which requires universities to teach students about the cost-effectiveness of investigations and 2.11, requiring teaching regarding the economic impact of prescribing. Although these standards are welcome, they are lacking in specificity. Health economics teaching is lumped together with many other requirements such as safety and utility, which in medical education are likely to be prioritised, and thus economics teaching may be neglected. Standard 3.2.6 in the AMC specialist program accreditation standards improves on this, as it requires colleges to have curricula that are specific to cost-effectiveness and efficiency of the health-care system. This standard is promising, however, again, in the context of many other curriculum requirements, and a lack of specific guidance towards teaching this content, colleges are likely to focus on the 'efficiency' component and may avoid teaching complex concepts such as cost-effectiveness due to competing core clinical curriculum priorities, such as health, safety and well-being.

Table 2 Health Economics Curriculum Content in Australian Medical Schools

University medical school	*Curriculum content that refers to health economics*
The University of Melbourne	*Patients* 11. the ability to select and interpret the most appropriate and cost effective diagnostic procedures 12. the ability to formulate an evidence-based and cost effective management plan in collaboration with the patient *Society* 2. an understanding of the determinants of a well society and the economic, political, psychological, social and cultural factors that contribute to the development and persistence of health and illness *Health advocate* Employing a structured approach to improve the quality and safety of patient care, through a sound knowledge of the Australian health care system, social and environmental accountability and the judicious use of resources. *Systems of health care* 10. an understanding of the principles of efficient and equitable allocation and use of finite resources in health care systems, locally and globally[a]
University of Queensland	All students in Year 3 will complete a team scholarly project. Students will work in small groups on a specific scholarly topic of their choice that will relate to one or more theme(s) of the MD program (examples include a literature review; a clinical audit or service improvement initiative; a health promotion project). A more streamlined utilisation of teaching resources and engagement of discipline expertise Greater emphasis on advocacy and stewardship for the broader health care system and health improvement[b]
Monash University	*Stage one: Bachelor of Medical Science*—demonstrate awareness of the social, ethical, economic and environmental context of health and illness and psychological well-being and delivery of care *Stage two: Doctor of Medicine*—apply highly developed knowledge of the social, ethical, economic and environmental context of health and illness and psychological well-being and delivery of care[c]
Deakin University	Nil found[d,e]
University of Tasmania	Nil found[f]
University of Adelaide	Nil found[g,h]
Flinders University	Nil found.[i]
University of Western Australia	Nil found[j]
University of Notre Dame	Students will also complete a capstone project in the form of an audit or a piece of clinical research. Using an available granting body proforma, they will develop and provide an oral defence of a research plan that includes: a lay summary, abstract, background literature summary, research aims, an hypothesis and a detailed description of methodology (participant selection, power analysis, proposed statistical analysis), predicted outcomes, an interpretation of the possible results, project *budget*, timeline and an evaluation of the ethical issues that require consideration and accommodation

(Continues)

Table 2 (Continued)

University medical school	*Curriculum content that refers to health economics*
	They will present and defend the use of the research design and associated analytic techniques in light of relevance, *cost* effectiveness and ethical practice.[k]
Curtin University	Health and Illness in Society: knowledge of health systems, and the cultural, socio-economic and physical environment factors that contribute to health, illness, disease and treatment of populations.[l]
James Cook University	Nil found[m]
Griffith University	MD/PhD pathway This pathway will allow a small number of MD students (5 to 10 students) to complete the first two years of the program before commencing two years of full time PhD work in clinical research related to a range of fields such as neuropsychiatry, pathology, neurology, primary health care, health *economics*,
Bond University	Nil found[n]
UNSW	Nil found[o]
University of Sydney	Nil found[p,q]
Western Sydney University (shared curriculum with Charles Sturt University)	Nil found[r,s,t]
University of Newcastle/University of New England	Nil found[u,v]
University of Wollongong	Nil found[w,x]
Australian National University	Nil found[y]

[a] <https://handbook.unimelb.edu.au/2023/courses/mc-dmed/attributes-outcomes-skills>
[b] <https://medicine.uq.edu.au/files/94740/UQ-MD-PROGRAM-DESCRIPTION.pdf>
[c] <https://handbook.monash.edu/2023/courses/m6018?year=2023>
[d] <https://www.deakin.edu.au/course/doctor-medicine>
[e] <https://www.deakin.edu.au/__data/assets/pdf_file/0004/2164459/UG-Medicine-22-ls-v4.5-accessible.pdf>
[f] <https://www.utas.edu.au/health/students/medicine/student-guide/handbook-home-subpages/course-overview>
[g] <https://future.ask.adelaide.edu.au/app/answers/detail/a_id/2671/~/medicine-program-structure-and-curriculum>
[h] <https://www.adelaide.edu.au/degree-finder/bmbbs_bmbbs.html>
[i] <https://handbook.flinders.edu.au/courses/current/md>
[j] <https://handbooks.uwa.edu.au/coursedetails?code=91850>
[k] <https://www.notredame.edu.au/about/schools/fremantle/medicine/course-descriptions>
[l] <https://handbook.curtin.edu.au/courses/course-ug-bachelor-of-medicine-bachelor-of-surgery--b-mbbsv1>
[m] <https://www.jcu.edu.au/course-and-subject-handbook/courses/undergraduate-courses/bachelor-of-medicine,-bachelor-of-surgery>
[n] <https://bond.edu.au/program/medical-program-bachelor-of-medical-studies-doctor-of-medicine/graduate_outcomes>
[o] <https://www.handbook.unsw.edu.au/undergraduate/courses/2023/MFAC3501>
[p] <https://www.sydney.edu.au/handbooks/medicine_health_pg/coursework_mo/medicine_doctor.html>
[q] <https://www.sydney.edu.au/courses/courses/pc/doctor-of-medicine0.html>
[r] <https://hbook.westernsydney.edu.au/programs/doctor-medicine-4758/#text>
[s] <https://www.westernsydney.edu.au/future/study/courses/undergraduate/doctor-of-medicine>
[t] <https://www.csu.edu.au/handbook/handbook22/courses/DoctorofMedicineArticulatedSet.html>
[u] <https://www.newcastle.edu.au/degrees/bachelor-of-medical-science-doctor-of-medicine-joint-medical-program/doctor-of-medicine-handbook>
[v] <https://handbook.une.edu.au/courses/2023/BMSMD>
[w] <https://documents.uow.edu.au/handbook/yr2020/pg/H20009009.html>
[x] <https://coursefinder.uow.edu.au/information/index.html?course=doctor-of-medicine>
[y] <https://programsandcourses.anu.edu.au/program/8950XMCHD>

Table 3 Health Economics Curriculum Content in Australian Specialty Medical Colleges

Specialty medical college	*Curriculum content that refers to health economics*
RACS Surgeons	5.3 Demonstrates a commitment to the sustainability of the health care system. Gives due consideration to the *financial* and environmental effects relating to health care sustainability. Does not undertake investigations or procedures that are shown to have minimal or marginal improvement possibilities for patients.[a]
RANZCOG Obstetrics and Gynaecology	3.3.5 Show commitment to the best interests of the patient and the profession allocating finite health *resources* prudently[b]
RANZCO Ophthalmologists	3.5 Allocate finite health care *resources* appropriately 3.5.1 Recognise the importance of the equitable allocation of health care *resources*, balancing effectiveness, efficiency and access with optimal patient care 3.5.2 Recognise the role of the clinician in directing health care *resources*[c]
RACP Physicians	*No results yielded*[d]
ACD Dermatologists	Health advocate HA 3: Recognise that the health status of all people is impacted by social, political, environmental, *economic* and other determinants of health. Medical expert ME 4: Create, implement and evaluate the effective treatment and management plans, taking into account the patient's condition, context and priorities, their age and general health, the epidemiology and natural history of the disease, risks versus benefits and available health *resources*. Leader L 3: Demonstrate an understanding of the health care system and the related professional and organisational *resources*. L 4: Critically assess and employ finite health care *resources* appropriately and for optimal patient care.[e]
ANZCA Anaesthetists	AR_LM 2.6 Discuss how evidence-based medicine and management processes can be used to optimise *cost*-appropriate care for patients with significant co-morbidities AR_LM 3.2 Outline the relative *costs* of drugs and equipment in anaesthesia AR_LM 3.4 Optimise *cost*-appropriate care to minimise waste in the workplace and impact on the environment AR_HA 2.1 Develop an understanding of the determinants of health in the populations they provide care for including: The social and *economic* environment, Availability and barriers to access health care *resources* AR_PF 3.3 Disclose to patients all *costs* associated with their anaesthetic care to enable their informed *financial* decision making AR_PF 1.14 Discuss the tension between an anaesthetist's role as advocate for an individual patient and the need to manage scarce *resources*[f]
RANZCP Psychiatrists	Collaborator—5. Demonstrate decision making based on own workload, patient needs, access to services and *cost* implications Health advocate—1. Describe health inequalities and disparities in relation to broader health issues to mobilise additional *resources* when needed[g]
RACGP GPs	AH: 2.3.1 ensure care is relevant to Aboriginal and Torres Strait Islander peoples' social, cultural, *economic* and other unique needs[h] 2.2.1 identify and critically analyse quality evidence-based *resources* 3.1.2 utilise shared *resources* in a sustainable manner (acknowledging that *resources* will always be finite)[i] 4.4.2 participate in regular evaluations of clinical care, including appropriate clinical governance, incident review and clinical *audits*[j]
ACEM Emergency medicine	Patient safety and quality management 3.7 Conduct a simple clinical *audit*. 4.6 Design clinical *audits* to measure the impact of ethnicity, gender and age on equity of access to care and health outcomes. 4.7 Make recommendations based on an *audit* analysis. 4.11 Collate, analyse, and present *audit* data to peers.

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Table 3 (Continued)

Specialty medical college	*Curriculum content that refers to health economics*
	Operational management 1.4 Cumulative and relative *costs* for tests and treatments when creating patient care plans. 3.14 Create and justify *cost*-effective testing and treatment plans when performing patient care. 4.8 Outline the *cost* of health care to both the consumer and the hospital. 5.9 Add elements of a *business* case when drafting a proposal for change Observational management 4.1 Apply understanding of cost-effective ordering of diagnostic studies based on the pre-test probability of disease and the likelihood of the result altering further management to patients cared for in Observational Medicine. 1.4 Impact of historical and socio-*economic* factors, including the effects of colonisation, that increase the risk of addiction and involvement with the mental health and justice system. 1.1 Socio-*economic*, organisation, geographical, psychological, and cultural factors that influence the likelihood of a patient accessing health care. 3.1 Socio-*economic* and colonial context that contributes to health disparities within Indigenous populations. 4.4 Justify investigation selection based on the patient's presentation, pre-test probability, risk–benefit ratio and resources of the local health service. 4.1 Specify the resources that will be required to address ongoing post-disposition needs, with consideration of social and cultural factors.[k]
ACSEP Sport and exercise physicians	3.3 Ensure adequate medico-legal and business insurance coverage. Allocate health care resources for optimal patient care. Manage a practice including information technology, finances and health care resources, where relevant. 3.7 Access and utilise resources to help address the unique clinical needs of refugees and asylum seekers that may have had poor or interrupted health care access. Access and use resources available to support cross-cultural practices 1.2.2.6 Identify and select appropriate and cost-effective investigations (including special views) that can be used to refine a diagnosis 1.2.3. 6. Discuss the cost-effectiveness of the technique, considering the patient's contribution. 1.3.13. Identify and describe the determinants of health (for example socioeconomic, cultural and so forth).[l]
ACICM Intensivists	1.3.3 (j) Explain the need for regular audit of all aspects of retrieval and application of Quality Improvement principles 4.2 (a) Describe the need for and importance of clinical audit (for example mortality reviews, complications and so forth) and review other clinical indicators (d) Assist with data collection and clinical audit (a) Recognise the need for clinical audit and quality improvement activities not to be threatening or punitive to individuals (d) Encourage others to participate in clinical audit and quality improvement activities 4.3 (a) Explain the basic principles of departmental *budgeting*, *financial* management and *resource* utilisation 1.2.5 (g) Describe the concept of cost effectiveness of a therapy and the value of a specific treatment to both the individual and the community 2.4 (a) Take into account the opinion of the patient, the nature and probability of potential outcomes and the costs to the patient of pain, suffering, loss of dignity and loss of identity when withholding or withdrawing treatment. 5.1 (a) Identify the important determinants of health affecting patients including occupational and environmental exposures, socio-economic factors and lifestyle factors (c) Assist individual patients in navigating the health care system and accessing health care and resources 6.1 (a) Demonstrate the expertise to appraise levels of evidence for diagnostic tests, therapy, interventions and prognosis including integrative literature (systematic reviews, metaanalyses, practice guidelines and

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Table 3 (Continued)

Specialty medical college	*Curriculum content that refers to health economics*
	economic analyses) (b) Explain the importance of interdisciplinary co-operation and sharing of scarce research resources, equipment and facilities[m]
RACMA	32.4 Has knowledge of accounting principles
Medical administrators	24.7 Participates in peer review and audits 32.9 Demonstrates the ability to critically analyse, for example financial statements, business cases, audits and complaints 32.1 Develops and implements budgets for decision making and managerial control 30.1 Demonstrates a broad knowledge of business and medical ethics 31.2 Displays a broad knowledge of business and operational processes 32.7 Prepares business cases and cost benefit analyses 5.1 Has knowledge of health care system organisation and funding 5.5 Has knowledge of national health issues and priorities, for example mental health, funding priorities, rural health, structures, and so forth 7.1 Can defi ne health systems theory and practice, including funding models 32.6 Understands health financing models, for example activity based funding 16.1 Identifies the determinants of health of the population, including barriers to access to care and resources 32. Be familiar with methods used to prioritise resources and allocate these appropriately to achieve organisational priorities 32.2 Allocates resources effectively 33.1 Recruits, allocates and monitors human resources[n]
ACCRM Rural and remote medicine (core generalist)	CG.K.6 Describe where to access basic financial management, including: point of sale and accounting software and services, for example, tyro, xero, pracsoft 7.2 Undertakes record audits 7.5 Undertakes regular audit and improvement activities 7.8 Assists with staff rostering, employment and budget management as appropriate 7.10 Maintains a professional development plan that includes reflective practice, practice audit and outcome measures CG.K.4 Discuss the quality use of medicines: consider working with pharmacist eg Webster packing, medication reviews, and medication use or prescribing clinical audits re quality outcomes CG.S.13 Be able to use electronic health records for quality improvement eg clinical audits CG.S.18 Utilise computer records and eHealth measures in disease management and prevention, including the use of electronic communication between other health care provider s and for quality improvement audits CG.K.7 Discuss patient service principles, including: methods of continuous quality improvement applied within the organisation or practice including clinical/management audit… CG.S.3 Actively contribute to quality improvement, including: undertake clinical audit and quality improvement activities… CG.S.5 Undertake clinical audit to compare prevalence in practice population with national data, for example for diabetes CG.K.6 Describe where to access basic financial management, including: o how to develop a basic business plan, insurances, key person, income protection, business and premises, public liability, indemnity 2.9. Provide cost conscious care for patients, the service and the health care system: identifies cost implications for patient of treatment options, Provides clear and timely information to patients on cost implications and support processes, Partners with the patient to consistently use resources efficiently and cost effectively 7.3. Provide cost effective patient care through judicious use of resources by balancing own duty to individual patients with own duty to society, Knows and considers costs and risks/benefits of different treatment options in common conditions, Works in consultation with patient to consistently use resources efficiently and cost effectively including complex situations

(Continues)

Table 3 (Continued)

Specialty medical college	*Curriculum content that refers to health economics*
	1.8 Arranges referrals in concert with the patient and/or carer considering the balance of potential benefits, harms and costs, CG.K.4 Distinguish between relative cost of investigations CG.S.3 Weigh the costs and benefits of investigations in each clinical situation CG.S.4 Choose the most cost-effective investigative path, facilitate informed financial consent CG.S.2 Consider the cost, storage, safety issues, access to refrigeration and the socioeconomic status of the patient CG.S.8 Work within state legislation and relevant cost, availability and accessibility of services for termination of pregnancy CG.S.4 Implement efficiency and effectiveness measures, including: apply evidence and management processes to achieve cost-appropriate care 5.1. Analyse the social, environmental, economic and occupational determinants of health that affect the community 6.2 Behaves in a manner that acknowledges the impact of cultural, ethnic, spiritual, social, and economic factors on health CG.S.2 Consider the cost, storage, safety issues, access to refrigeration and the socioeconomic status of the patient CG.K.9 Explain current social and economic inequities experienced by Aboriginal and Torres Strait Islander peoples and the link between socio-economic factors and health status, including: CG.K.5 Explain the environmental, social, cultural and economic factors which contribute to the development and persistence and prognosis (or progression) of chronic conditions AS.S.7 Complete a funding application for and implement socially, culturally and economically appropriate local population health programs, for example: CG.K.1 Analyse the social, environmental, economic and occupational determinants of health that affect the community burden of disease and access to health-related services 7.8. Contribute to the management of human and financial resources within a health service CG.S.8 Describe informed consent, including financial consent CG.K.6 Describe where to access basic financial management, interpret basic financial statements including profit and loss and balance sheet and to be able to understand the basis of depreciation and depreciation schedules CG.S.4 Undertake the following: organise and allocate resources[o]
RANZCR Radiologists	1.6.3 Actively participate in continuing professional development to address learning needs. Participate in audit of clinical results, including *audit* of personal practice. 1.3.7 Recommend investigations for individual patients responsibly, with consideration of controlling costs of health care. 1.3.16 Be aware of the process and costs involved in establishing a new clinical radiology department or practice, including staffing, equipment and facility components. 1.4.3 Advocate for investigations that minimise risk, radiation exposure and cost to the patient. Adhere to safety protocols to minimise risk and protect patients. 1.6.19 Demonstrate knowledge of other types of research relevant to clinical radiology (for example laboratory, health economics and education research). 1.3.6 Discuss funding arrangements for clinical radiology service delivery in Australia and New Zealand. 1.1.10 Be familiar with and utilise resources as appropriate to help patients and their families make informed decisions regarding their care. 1.3.8 Allocate resources responsibly, considering and balancing the benefits to the patient and the hospital. 1.3.9 Promote the use of the Choosing Wisely recommendations and clinical decision rules to encourage clinicians to perform fewer scans to decrease potential harm to patients and target health care resources more effectively. 1.4.7 Advocate for resources for radiological services which are evidence based, that is government subsidisation of current and emerging technologies.

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Table 3 (Continued)

Specialty medical college	*Curriculum content that refers to health economics*
	1.7.1 Discuss the cultural determinants of health and its effect on equity, acknowledging that differences in health status are unfair and unjust and the result of differential access to the resources necessary for people to lead healthy lives. Display leadership in local and wider health care systems, initiating and implementing quality improvements, and exhibiting responsible stewardship of health care resources. Advocate for individual patients, groups of people and the general community in relation to minimising risk, allocation of resources and service delivery for optimal patient outcomes.[p]
RCPA Pathologists	1.3 Conform to specimen indexation conventions of the laboratory and use laboratory information systems to retrieve reports/specimens for examination and review to satisfy clinical *audit* and/or research purposes. 2.2 Participate in a quality audit and review the last audit assessment reports of your laboratory and identify any contentious issues 2.4 Demonstrate awareness of and comply with legal requirements in your jurisdiction and discipline, for example relating to *business* practice… 2.4 Comply with workplace policies relating to human resources management and anti-bullying, discrimination and harassment 2.4 Identify the government agencies that regulate medical funding and billing in your jurisdiction 2.5 Be aware of the possible budgetary effects of indiscriminate ordering of tests, both internal and external to the laboratory, and apply this to your own use of auxiliary investigations and special procedures 2.5 Be aware of the costs of common diagnostic tests and identify examples of inappropriate ordering and over-utilisation of pathology testing 2.5 Be aware of cost–benefit analysis for new technology 2.5 Discuss with senior colleagues the cost-effectiveness of current and proposed laboratory procedures and equipment in the context of limited resources 2.5 Explain factors which determine the cost of a test, considering budget planning 2.5 Review and discuss with senior staff laboratory budget reports including income and expenditure 2.5 Identify opportunities to reduce waste in the laboratory, for economic and environmental benefit, without compromising clinical care 2.5 Propose and practice strategies to reduce wasteful practice in the laboratory, for economic and environmental benefit, while optimising clinical care 2.5 Identify sources of public and private pathology funding, including government (for example, Medicare) and patient contributions Describe factors which influence pathology funding and how these may impact on service provision 2.6 Develop computer knowledge and use this knowledge to assist with effective teaching, audits and reviews 3.2 Demonstrate skill in developing a research proposal, selecting appropriate methods and methodologies, and identifying possible funding sources 4.3 Describe the implications of potential personal, financial, and institutional conflicts of interest, including conflicts of interest with industry 4.6 Describe obstacles that patients may face in accessing pathology services and other health care resources 4.6 Explain how public health measures and processes can be applied cost-effectively to improve patient care and promote public health, and to prevent or manage emerging health problems. 4.6 Identify determinants and potential threats to health (including socio-economic, environmental, climactic, behavioural, biomedical and genetic determinants) 4.7 Demonstrate an awareness of cultural diversity (including, but not limited to ethnicity, gender, spiritual beliefs, sexual orientation, lifestyle, beliefs, age, social status or perceived economic worth) 4.7 Understand the origins and health consequences of discrimination, socio-economic and other forms of disadvantage[q]

[a] <https://www.surgeons.org/-/media/Project/RACS/surgeons-org/files/skills-training/surgical-competence-and-performance-framework_final.pdf?rev=5d7978bc6ddd43e08e6092e29275db20&hash=1D5DDA1BA7986ABEB651029565AA5C9C>

[b] <https://ranzcog.edu.au/wp-content/uploads/2022/05/FRANZCOG-Curriculum.pdf>
[c] <https://ranzco.edu/wp-content/uploads/2022/01/09_Professional-Capabilities_-Curriculum-Standard_2022.pdf>
[d] <https://www.racp.edu.au/docs/default-source/about/membership/professional-practice-framework-professional-standards.pdf?sfvrsn=82543e1a_12>
[e] <https://www.dermcoll.edu.au/wp-content/uploads/2022/06/WOAMACD_InteractiveCurriculum2022.pdf>
[f] <https://www.anzca.edu.au/resources/all-handbooks-and-curriculums/anzca-anaesthesia-training-program-curriculum>
[g] <https://www.ranzcp.org/files/prefellowship/2012-fellowship-program/stage-2-curriculum-map.aspx>
[h] <https://www.racgp.org.au/education/education-providers/curriculum/curriculum-and-syllabus/units/domain-2>
[i] <https://www.racgp.org.au/education/education-providers/curriculum/curriculum-and-syllabus/units/domain-3>
[j] <https://www.racgp.org.au/education/education-providers/curriculum/curriculum-and-syllabus/units/domain-4>
[k] <https://acem.org.au/getmedia/9af41df8-677f-44ed-b245-440164155f56/FACEM-Curriculum-2021>
[l] <http://www.acsep.org.au/content/Document/2017%20Training%20Docs/ACSEP%202017%20Curriculum%20and%20Tutorial%20Program%20V6.pdf>
[m] <https://www.cicm.org.au/CICM_Media/CICMSite/Files/Training/T-30-Competencies,-Learning,-Teaching-and-Assessments-for-training-in-general-intensive-care.pdf>
[n] <https://racma.edu.au/app/uploads/2019/07/RACMA-Medical-Leadership-and-Management-Curriculum.pdf>
[o] <https://www.acrrm.org.au/docs/default-source/all-files/rural-generalist-curriculum.pdf>
[p] <https://www.ranzcr.com/doclink/ranzcr-cr-learning-outcomes/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJzdWIiOiJyYW56Y3ItY3ItbGVhcm5pbmctb3V0Y29tZXMiLCJpYXQiOjE2NDM2MDcyMDEsImV4cCI6MTY0MzY5MzYwMX0.XWzdgw4R3BQ5Yqva9CFpyfYDsmvLtQ3WfX2IYGpcgEQ>
[q] <https://www.rcpa.edu.au/getattachment/f2b5239d-1ee0-42d9-bc0d-8263fe79f262/Anatomical-Pathology-Trainee-Handbook-2023.aspx>

Table 4 Thematic Analysis of Health Economics Main Topics by Frequency in Medical School and Specialist Training Curricula

Topic	*Medical school curricula*	*Specialist medical college standards*
Understand social, economic and other determinants of health and inequity	2	10
Efficient and equitable allocation/prioritisation of finite resources	2	8
Understand concepts of cost-effectiveness	2	6
Understand/advise on costs to patients		7
Understand clinician's role in judicious/appropriate use of resources	2	3
Budgeting/financial management principles, write a business case	1	4
Health-system organisation and financing		4
Avoid low-value care and overuse		3
Access resources for particular populations at high need of support		2

5. Health Economics Education for Doctors: What Is the Prescription?

5.1 How Can Health Economics Education be Implemented?

Educating doctors in health economics will empower them to better steward health care at the individual and societal level. To do so will require recalibration of the core curriculum assessments and procedures for medical school and specialist medical training by the AMC, which then will introduce standards for medical schools and specialist medical training. This will need to be a gradual, but nonetheless essential, evolutional development. The AMC is currently reviewing the accreditation for medical schools and will be commencing a review of the specialty

training accreditation standards in 2023. Accordingly, we encourage the AMC, medical schools and specialist medical training programs to begin developing their own health economic curricula, with guidance from health economists, medical administrators, the different medical specialties and private medical practitioners. The key elements of such health economics education should include the RACMA (2011, p. 24) competencies. It is important to note that health economics is only one discipline among several to which medical students and specialist trainees will increasingly need to be exposed. Management and finance (Turner et al. 2021) and the interaction between climate change and environmental sustainability with health and health care (Shaw et al. 2021) are also vying for scarce medical curriculum space.

5.2 Developing a Health Economics Education Curriculum Framework for Medical Students and Medical Specialists

As Kernick (2003) has identified, there is an increasing need for doctors to be able to plan care against a background of limited health resources, a context of empowered patients and carers, and burgeoning interventions. Health economics, as a framework for understanding, can provide insights into how health care can be financed and organised (Kernick 2003), and interfaces with public health care, policy and practice. A now inactive health economics education website (Oppong, Mistry and Frew 2013) detailed a series of topics that might act as a preliminary framework for undergraduate or graduate medical school education which attempted to give an overview of all aspects of health economics. Such an approach is essentially the content of a typical two-year Masters in Health Economics course, yet arguably incorporates a considerable amount of material that is unlikely to be very relevant to most early career doctors (for example, modelling and econometrics). A more practical alternative approach would be to focus on the most relevant topics and themes identified in the medical school and college curricula and standards in Table 4, and to design a more tailored introductory course targeting those specific requirements. Table 5 presents a course outline which attempts to take this latter approach by more directly addressing the currently expressed requirements of medical schools and colleges.

Table 5 Introduction to Health Economics and Budget Management—Proposed Course Outline

- **(i)** Economic thinking: scarcity, opportunity costs and clinical stewardship of health-care resources
- **(ii)** Social, economic and commercial determinants of health and inequity
- **(iii)** The Australian health system: organisation and financing
- **(iv)** Markets, market failure and government role in health and health care (including third-party funding)
- **(v)** Need, demand and supply in health care (including overuse and low-value care)
- **(vi)** Efficient and equitable allocation of resources: approaches and dilemmas
- **(vii)** Understanding costs: health system costs and costs to patients, including doctors' consultation and procedural fees
- **(viii)** Understanding health outcome measures
- **(ix)** Introduction to economic evaluation:
  - a. Types of economic evaluation
  - b. Reading and interpreting an economic evaluation
- **(x)** Introduction to budgets and financial management
  - a. Understanding budgets and financial reports
  - b. Writing a business case
- **(xi)** Understanding the intersection of economic and environmental sustainability in health care (bridging point to planetary health and health-care sustainability units)

5.3 Delivering Health Economics Education for Medical Practitioners Across Their Careers

The remaining question is who shall teach and how can the teaching be delivered? We recognise that this is a developmental process, and this will require impetus from the medical profession, as well as inter-disciplinary educational expertise from health economists.

Health economists themselves remain a rather scarce resource, with only a handful of Masters in Health Economics teaching programs available in Australia. Many health economists work in research positions in research institutes and centres, rather than in teaching positions; and several health economics teams are based in business schools, rather than health faculties. These factors combine to create complex incentives which may limit the ability or willingness of an already small workforce to commit to significant teaching into medical education programs. A well-resourced, centralised online teaching platform serving all or multiple medical schools and colleges might therefore offer economies of scale and sustainability to overcome the risks of fragmented, local approaches. If a more localised or college-specific approach is preferred, it will be important for all concerned to be realistic about resource constraints on the availability of qualified teaching personnel.

There is significant potential for the AMC, colleges and universities to take a leading role in this space and develop curricula that can be promulgated widely, with careful planning of content and delivery. For doctors to lack skills in health economics will have ongoing real-world costs for individual patients, practitioners and societies. Doctors with health economics expertise can more effectively contribute to the development of health-care policy, planning and delivery, and will better ensure the Australian health-care system is cost-effective, efficient and equitable.

Data Availability Statement

Not applicable as this study does not involve original data collection.

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