James Cook University
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Submission to the Productivity Commission Health Workforce Study

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1. Overview

James Cook University (JCU) has a major interest in the outcomes of the Productivity Commission review given our strong commitment and experience in rural, remote, tropical and Indigenous health. Having developed the first of the new Medical Schools in Australia for 25 years and with a major roll-out of health professional programs in an area of unmet need over the last seven years (Pharmacy, Occupational Therapy, Medical Laboratory Science, Physiotherapy, Speech Pathology, Sport and Exercise Science, Nursing specialities and external Nursing with local programs on Thursday Island and Mt Isa, and Aboriginal Health Workers) we have gained substantial experience in the development of a 'teaching health system'. JCU can therefore offer useful perspectives into the health workforce challenges and solutions that will be required to meet population health needs in under-served areas, particularly rural, remote and Indigenous Australia.

The Productivity Commission has identified many of the challenges in the Health Workforce Issues Paper (May 2005). In particular we would emphasise:

- Skills shortages and maldistribution of health workforce impacting most on rural, remote and Indigenous populations, the poor, the elderly and those with mental illness.
- The lack of policy coordination and alignment of interests in development of future health workforce and health service delivery between: Australian and State and Territory Governments; the education and health sectors and professional colleges; public and private health services; and the 'mono-professional' silos.
- The paucity of good data around workforce distribution and participation, skill requirements and the impact of national policy initiatives.
- Failure to evolve systems of teaching in the clinical disciplines in response to changes in the clinical profile of urban public teaching hospitals, the expanded role of the private sector (especially in procedural areas) and the need for team-based, community-orientated care, particularly for chronic disease.
- The increased costs and fragmentation of health care that has accompanied ever-increasing subspecialisation at a time when generalists have more ready access than ever before to best clinical evidence.
- The need to balance the benefits of 'market-friendly' health and education sector reforms against the distortions that can arise from the erosion of a culture of professional and organisational trust and cooperation, indicator-driven 'gaming' and the loss of local and regional flexibility to meet community needs.
- Substantial additions to already lengthy mono-professional training pathways as the main response to the community's need for better health workforce skills-mix and flexibility.
- Powerful obstacles to re-allocation of clinical tasks, realignment of conventional professional roles and development of new flexible health professional roles being: regulatory barriers, professional unease in an increasingly litigious practice environment, vested professional interests and the often not well-informed views of medical insurers.
- The need for specific policy attention and substantial targeted investment in Indigenous health workforce.

As the Commission has noted, the solutions to these challenges are complex and system-wide and there are powerful sectional interests at stake. This makes clear policy formulation difficult and increases the risk that there will be only incremental change or that decisions taken will be based on short-term political expediency. Nevertheless, there are indications of a growing consensus among governments, health professionals, academic institutions and the community of the need for systemic change.

We therefore emphasise the key areas for Government action that are most likely to lever systemic change and align sectional interests and incentives to address current and future challenges:

Education sector

- Education sector reform should include substantially greater investment in: the regionalisation of educational program delivery; the ruralisation of curricula; targeted recruitment and support of rural and Indigenous students; and repeated undergraduate exposures to rural and Indigenous health care practice.
- Regionalised and local-level teaching infrastructure should be multi-professional and support horizontal linkages of teaching programs between professional disciplines as well as vertical integration along the continuum of life-long learning (undergraduate, specialist/vocational and continuing professional development). Existing University Departments of Rural Health and Rural Clinical Schools provide an existing successful model that could be expanded to deliver health professional program delivery in under-served locations.
- All undergraduate health professional programs should be funded by the Australian Government through the Department of Education Science and Training at a level that reflects the true cost of delivering up-to-date, relevant and high-quality curricula. This should not only reflect the quantum of funds per student but the high level of retention of health students in Australian universities. The extra costs associated with clinical placement in rural and remote locations should be recognised and funded for all clinical disciplines.
- Rural and regional investment in education and training of health professionals has benefits beyond mere production of health workforce: it builds rural community capacity and viability; enhances professional retention; strengthens clinical and professional support networks; and provides capacity to conduct community-relevant health research.

Clinical teaching and research

- Clinical teaching is a critical consideration. The capacity of the health system to deliver adequate clinical teaching and supervision is likely to emerge as the major rate-limiting factor in national efforts to address health workforce supply and maldistribution.
- The model of urban public teaching hospitals as the main location for clinical learning needs to be replaced by a 'teaching health system' that harnesses both public and private institutions in the primary, secondary and tertiary health sectors, across all geographical locations.
- Clinical teaching capacity in the health system is a scarce resource that should be preferentially allocated to Australian undergraduates and professionals who will be providing health care in the Australian system.
- Clinical academics require quarantined time for clinical teaching and for conducting and supervising clinical research activity. Local level clinical teaching and clinical research should be regarded as core functions across the health care system (and are increasingly not considered to be core business by even many major tertiary hospitals).
- A shift to regionalised clinical training will require substantial capital investment in physical infrastructure, including student accommodation and teaching facilities.
- In the context of the crisis in public confidence regarding quality and safety of health care, it must be emphasised that clinical teaching is the bedrock upon which life-long learning and health system quality and safety is built.

Health workforce planning

- Whilst national, jurisdictional and mono-professional approaches to health workforce analysis and policy formulation are needed and should continue, the focus of implementation of broader health workforce policy should be at the level of the region.
- A regional approach to planning and investment in health workforce education and training will: better align professional, educational and community interests; enhance

clinical teaching and practice networks; increase transparency and community participation in planning; break down professional and institutional silos; foster innovation and cooperation; and minimise gaming, sectoral self-interest, cost-shifting and blame-shifting.

- There is a strong case for the Australian Government to assume the major role in funding the clinical teaching capacity of the health system. This should be regionally brokered among stakeholders, within broader state and national policy parameters. Direct investment would replace the current system of poorly auditable notional resource loadings for the clinical teaching capacity of designated public hospitals by State and Territory governments under Australian Healthcare Agreements. Clinical teaching and research activity must be a funded and accountable core business of the entire health system, particularly in regional areas.
- Regional boundaries should ideally align with meaningful university, health system management, health care provider and clinical referral networks.

Workforce flexibility

- The model of autonomous, regulated, advanced clinical practice by other than Medical Practitioners (as exemplified by the Nurse Practitioner) will be a significant part of the future healthcare landscape and should continue to be supported and expanded. Whilst there are inherent costs and inflexibilities, it is a model that is appropriate to a number of discrete areas of clinical practice (albeit mostly in urban settings to date).
- The greatest expansion in the delivery of clinical care is likely come through the devolution of 'medical' tasks to other members of the health team under the local supervision and delegated authority of a Medical Practitioner. This has a number of attractions: clear clinical governance in diagnosis, investigation and technical management; greater likelihood of uptake and acceptance by the medical profession; less regulation, red-tape and external constraint on scope of practice; opportunities for participation by a broad range of health professionals (Nurses, Allied Health Practitioners including Pharmacy, Aboriginal Health Workers, Ambulance Officers and others); easier uptake by the private sector; Medical Practitioners able to focus on complex and technically difficult cases; and simpler indemnity arrangements.
- A range of healthcare workers could formally assume roles as 'middle level professionals' via a shared post-basic training pathway in clinical assessment and management. The qualified 'Clinical Associate' (the Australian version of the US Physician Assistant) would bring a highly applied generalist skill set to clinical practice, and could also draw upon their base qualification as appropriate (for example, the nutritionist providing broader aspects of diabetes care).
- The Nurse Practitioner model (autonomous practice) and Clinical Associate model (delegated practice) represent complementary rather than conflicting approaches to health workforce reform. In the US, Nurse Practitioners and the Clinical Associate equivalent (the Physician Assistant) evolved around the same time, provide similar functions and have similar numbers in the workforce. The US experience is that 86% of qualified Physician Assistants in 2000 were currently employed as PAs (54% female) - most with Bachelor degrees. Only 57% of generally Masters degree-qualified Nurse Practitioners (96% female) were practicing as such.
- To formalise 'delegated' practice arrangements, State and Territory Medical Act Regulations need amendment to provide a clear legal framework for responsible delegation of tasks by registered Medical Practitioners. While 'guidelines for good medical practice' that have been developed by most Medical Boards contain guidance on delegation and represent an interim solution, they lack legal weight. This should be identified as an area for early action by COAG.

Vocational training for generalist and specialist Medical practice and post-graduate Nursing

- The current imbalance between sub-specialist and generalist medical practice is both unaffordable and unsustainable in the Australian context. Whilst super-specialisation has been driven by development of large populations in cities and rational coalescence of fields of practice, it is also a by-product of perverse financial incentives, perceived status and the history of metro-centric teaching in tertiary hospitals.

- There should be a renewed policy emphasis on broad skill-sets and generalist training outcomes for specialised Medical Practitioners - not only Rural Medicine, but also internal medicine, surgery and paediatrics. Direct or indirect public investment in subspecialty training should be supported where a narrower skill set can be related to improved patient outcomes.
- The emerging speciality of Rural Medicine is a welcome development that could eventually re-assert a wider role in the health system for the highly skilled generalist who spans the primary and secondary care continuum. The formal recognition of Rural Medicine as a speciality should be supported and training pathways appropriately resourced.
- Current arrangements for salary and teaching costs in specialist and generalist medical training preclude efficient use of both public and private sectors for training. Reforms should ensure that post-graduate medical training can cross the public-private divide with the allocation of funded training places determined according to regional need.
- Reform to teaching and supervision arrangements for medical graduates undergoing specialist training are required. Arrangements such as training rotations from a regional hub to smaller locations should be promoted, with rotations to major centres for requisite sub-specialty experience (rather than the other way around). Clinical simulation facilities for learning in procedural and emergency medicine should be located in regional centres as well as the capital cities.
- Harnessing the private sector and re-engaging private clinicians in public sector work, clinical teaching and peer support should be an immediate priority. Options include funding the 'Teaching Visiting Medical Officer' role to draw senior private sector clinicians back into public sector clinical teaching and practice. Similar solutions might apply in other areas of private professional practice (eg: pharmacy and physiotherapy).
- The length of time taken to complete medical specialist training could be shortened and ways of facilitating movement between one area of sub-specialty practice and another should be explored. Options include incorporating more early post-graduate year (PGY) time into specialist training pathways and creating short, structured training options for specialists qualified in one area to be credentialed in another. Pathways to conjoint specialist awards (eg: FRACS/FACRRM) should be promoted and ways find to make such combined practice financially viable in medically under-served areas.
- Vital specialised nursing practice disciplines (such as midwifery) should attract investment to support salary and training costs, particularly targeting Nurses from rural and remote areas.

2. Education sector

Recruitment from and teaching in rural, remote and Indigenous communities should be a major policy priority for Australian governments. In addition, funding through the Department of Education Science and Training (DEST) must reflect the actual cost of delivering up-to-date, relevant and high quality curricula across all the undergraduate clinical health disciplines, not just medicine. It is particularly important that the extra costs associated with teaching in rural and remote locations are recognised. Indigenous-specific investment (particularly mentoring and support of Indigenous students across the high school – university transition) and partnership with Aboriginal community organisations is required.

Rural, remote and Indigenous focus

The benefits of recruiting rural students into health professional courses and teaching in rural, remote and Indigenous communities are now well established in the literature. In Medicine, students are more likely to choose rural medical practice as a career if:

- they (or their partner) has a rural background;
- attended rural high schools;
- have repeated undergraduate rural clinical exposures; and
- have are opportunities to work rurally during the early post-graduate period.[1-5]

Academic institutions that are located in a rural population centres, that preferentially select rural students, have rurally-orientated curricula and deliver programs in rural locations are more likely to produce graduates who stay rural.[5] This mounting evidence helped inform Australian government investment in new rurally-orientated medical schools such as JCU[6] and other initiatives such at the University Departments of Rural Health[7] and various scholarship programs. It is reasonable to generalise the experience of undergraduate medicine to other health professional groups and there is also direct evidence emerging in relation to the rural/regional approach in allied health[8] and nursing[9] in Australia.

The loss of key teaching infrastructure in regional hospitals associated with the closure of hospital-based nursing training in the 1980s and 1990s has been only partly offset by investment in regional university campuses for delivery of all or part of undergraduate nursing courses. The success of devolved undergraduate teaching models is demonstrated by JCU's nursing program that is now delivered on Thursday Island and at Mt Isa with other sites in development.

Students with a rural, remote and/or Indigenous background face barriers to entry into health professional courses because of generally lower academic standards in rural schools and the financial and personal costs associated with moving to a regional centre or city.

At a national level, the entry of Indigenous students into undergraduate health courses is disappointing and relates to a range of factors impacting on Indigenous educational disadvantage including poverty, remoteness and negative experiences in schools. This goes right back to primary school: some 40% of Indigenous students did not meet national year 7 reading benchmark tests in 2001 (compared to 12% of non-Indigenous students). Those from remote areas faired significantly worse (evidenced by 70% failure rate in the Northern Territory). Nevertheless, with Aboriginal community partnerships, regional accessibility and well-resourced programs for student support, it is possible to substantially numbers of Indigenous students. JCU has some success in this with around 100 Indigenous students enrolled in nursing, medicine and allied health (substantially more than any other university).

Income support during training is a critical issue in attracting and retaining rural students who often have to relocate to live in regional or urban centres. Mature age Indigenous students with dependents are often in particular need of programs to assist with establishment in a distant population centre.

DEST funding arrangements

There are significant inequities in current Department of Education Science and Training (DEST) funding arrangements for health professional education. To develop innovative and

responsive health professional training programs, universities need adequate funding for nursing and allied health courses that are on a par with those for medicine.

Under the Higher Education Support Act 2003, health subjects other than medicine and nursing are funded by DEST at Cluster 6, *Computing, Built Environment, Health*.[*] This Cluster provides less money from DEST to universities per full time student, than L*anguages, Performing Arts and Journalism*. In 2005, Cluster 6 is funded by DEST at $7064[10] per EFTSL (Equivalent Full Time Student Load) compared to $14,738 per EFTSL for Cluster 9, *Dentistry, Medicine and Veterinary Science*. Nursing as a designated *National Priority*, is funded at $9,316 per EFTSL. The level of funding for the Clusters is based on an historical model (Relative Funding Model) that was developed over 15 years ago and does not take into consideration the significant developments in biomedical and medical science and clinical health practice that has occurred in the past two decades, and the consequent increased expectations of the knowledge and clinical preparedness of graduates.

Universities delivering clinical health programs other than medicine also struggle because the DEST retention model provides funding for only 75% (compounded annually for four years) of an initial cohort of students, on the presumption that there is a 25% annual student attrition rate. This rarely eventuates in health professional programs: most health professional programs have student retention rates approaching 85 – 95% over the full course of study. As a consequence, most health professional programs are teaching many more students than the university is funded for.

In many universities, the parlous state of funding across the range of fields of education has resulted in the cross-subsidy of non-health areas from health workforce load. For this and other reasons, health faculties have become increasingly reliant on income from fee-paying international students. In turn, this places pressure on the clinical teaching capacity of the Australian health system. This is an issue that requires specific consideration. In general, scarce clinical teaching capacity should be preserved for Australian undergraduates and graduates who will work in the Australian health system.

The education and training of new health professionals should be responsive to the changing health needs of the population, developments in the professions and evolving workforce requirements. This is important not just to ensuring a relevant and competent workforce, but also to ensuring that graduates do not become quickly disillusioned with the realities of existing health systems, and leave the health workforce. It costs money to develop new curricula and adapt existing curricula to be more responsive to current workforce needs, but under current DEST funding models universities have little chance of funding innovation in any of the health professional programs other than medicine which is funded at a much higher level.

Placement in rural areas costs more because smaller and more geographically dispersed placement sites increase the costs per student to provide adequate training and supervision; there are fewer opportunities for economies of scale. However it is in the national interest to encourage training in regional/ rural/remote locations for long-term workforce retention in these areas. Targeted funding has been provided for clinical placement in rural and remote areas for medicine, through funding provided by the Department of Health and Ageing (Rural Undergraduate Support and Co-ordination scheme (RUSC) and Rural Clinical Schools funds). DEST also provides a practicum component as part of the funding for nursing as a 'National Priority'. However, universities must fund clinical placement activities for other health professional programs from their core DEST funding.

In addition, the existing DEST funding levels do not provide sufficient income to universities to adequately support the smaller, more specialised health disciplines such as podiatry and prosthetics, that, despite the relatively small numbers of professionals needed in comparison to medicine and nursing, are still critical to the national ability to

[*] Total program funding also includes HECS payments by students as well as income from full fee-paying students

provide a comprehensive level of health services. These programs often require specialised and expensive equipment, and student intakes are small in comparison to the larger health professions, making it difficult to achieve economies of scale. There appears to be an assumption by DEST that these programs can be cross-subsidised by existing larger programs within the university, but this has become increasingly difficult to sustain as the costs of offering all health programs continues to exceed the income from DEST.

JCU has substantial experience in what happens when the stranglehold of regionally inadequate graduate supply is released and the consequent impact on the labour market, service delivery and ultimately, the load on the university sector (Box 1).

Box 1: Experience of growing health workforce production in northern Queensland

The Occupational Therapy (OT) and Pharmacy undergraduate programs at James Cook University have greatly increased workforce numbers in the northern and regional Queensland.

The University has produced approximately 160 OT graduates since commencement of the program in 1998. Pharmacy (which commenced in 1999) has graduated 150.

Senior hospital and community health staff across northern Queensland report that where jobs once went unfilled, they are now all filled promptly and their services run with a full complement. This is in stark contrast to what was occurring previously.

New positions and roles in Occupational Therapy have been created in fields such as mental health, the Australian Defence Force in Townsville, in mining companies and in community organizations and this can be directly attributed to the increased workforce production and the desire for graduates to remain in the region. Organisations that had not previously employed OTs, but who had hosted students on 'project placements' have since created positions (eg Cleveland Detention Centre, nursing homes, local government and the like).

In Pharmacy, the Townsville Hospital had 14 notional hospital positions, of which only 4 were filled. Between Townsville and Cairns, there were over 40 vacancies in community pharmacy. The new pharmacy graduates have not only addressed this gap, but have also greatly increased the supply of locum and relief staff and thereby enabled greater pharmacist involvement in quality use of medicines activities in nursing homes and in undertaking home medicines reviews.

This experience has also been shared in other new programs at JCU such as Medical Laboratory Science and Sport and Exercise Science.

The first cohort of 60 JCU medical students will graduate in 2005. Queensland Health has doubled the number of Intern positions in northern Queensland (although this will still not be enough to meet projected future workforce needs).

The new ability of northern Queensland to produce skilled, rurally orientated workforce has been recognised by overseas recruitment agencies who are now routinely targeting northern Queensland OT workforce to fill international vacancies.

3. Clinical teaching and research

Clinical teaching across the health system is a critical consideration for Australian governments. Given the scale of current workforce shortages, the capacity of the health system to deliver adequate clinical teaching and supervision is likely to emerge as the major rate-limiting factor in national efforts to address health workforce supply and maldistribution. For this and other reasons, Australia needs to build a 'teaching health system' to replace current reliance on urban tertiary 'teaching hospitals'.

Tertiary hospitals vs a 'teaching health system'

The changing role of tertiary hospitals, the increasing recognition of the role of geographic location of training in relation to under-served populations and the need to harness the capacity of the private sector - all make a transition to a 'teaching health system' in Australia a critical policy priority.

The teaching health system is not a new concept. There has been 30 years of international activity (particularly in medical education) that has helped crystallize the concept. The newer medical schools in particular now have a strong emphasis on broader health system

experience in training and JCU provides the strongest example of this approach. A systematic approach to this in the medical specialities and in the non-medical undergraduate health programs is now needed.

A countervailing trend in the health professional training system has been the pursuit of university-based education, reflecting the need for a better grounding in clinical sciences and an interest in professionalisation. This has tended to replace devolved training systems based on an apprenticeship model (eg: nursing and pharmacy). The main problem with this transition has been that universities have lacked the regional infrastructure to support a distributed model of health professional training.

The urban teaching hospital system has never been the ideal setting to develop generalist and rural health interests. Medical students are often subtly dissuaded from pursing rural practice as a career with much teaching delivered by sub-specialists who have little experience outside of the urban tertiary hospital environment and who tend to regard general practice and rural medicine as inferior and of low status.[11] Overt criticism of rural practice expressed to undergraduates by urban consultants is unfortunately common, and appears to impact on vocational choices in medicine.[12] While medical undergraduate training in general practice has improved significantly over the years, most junior doctors still spend their first two post-graduate years working in hospitals and do not have the opportunity to undertake General Practice terms that could help shape their learning and vocational choices.

The situation has generally worsened as the role of the public tertiary hospitals has evolved. The pattern of shorter and more intensive hospital stays, more highly selected patient groups and an ever greater emphasis on subspecialty practice, means that there is less opportunity for clinical teaching on cases that are relevant to health care practice in the local hospital or community setting.[13] Educationally, it is increasingly accepted that the context of learning on health topics is recognised as being educationally important in the ruralisation of curricula.[14]

Regionalised clinical teaching

Learning in clinical disciplines requires that students undertake a structured apprenticeship based on real patients in a context of care that is relevant to their future practice.

A regionalised educational and clinical teaching system will need substantial initial and recurrent investment. Whilst expensive, this development of regional and rural health education and training capacity is a best-buy in terms of health workforce outcomes. Quality teaching and educational outcomes in these settings requires well resourced, regionally supported teaching infrastructure that enhances local community and health professional capacity, rather than further extend already over-stretched resources.

Teaching and placement in rural and remote settings is currently limited by practical factors:

- There is a general shortage of short-term student accommodation in rural and regional areas.
- It is difficult to meet reasonable transport costs to remote locations (for instance the Torres Strait).
- Communication and internet access is often poor.

In spite of the increasingly critical workforce supply crisis in rural and regional public hospitals, there is widespread institutional ambivalence regarding clinical teaching and research. Commitment from individual hospitals and regional health administration to policy directives on teaching is often inconsistent if is perceived to be too hard or costly to implement.

This ambivalence appears to be a product of the narrow market ethos in health service management reforms over the last 15 years which have undermined partnerships between health professionals, health institutions and universities that are critical to patient-centred care and training. Health service executive management incentives to contain labour costs, to maximise throughput and reduce elective surgery waiting lists have not been balanced with incentives to invest in training, recruiting, retaining and developing people (and in particular, local health workforce). As a result, hospitals rely heavily on short-term

employment contracts, agency nursing staff, and international medical and nursing graduates. Staff continuity and a culture of teamwork, ownership and reflective practice have suffered.

As a consequence, universities now struggle to find adequate clinical placements for health professional students at the district and individual health service level in both urban and rural settings. The wholesale de-commissioning of hospital-based accommodation for students in regional areas of Australia is a case in point: it demonstrates the general lack of strategic commitment to regional teaching and development of the next generation of rural and regional health practitioners, let alone support for research and evaluation activities. The role and status of clinical academics within many public hospitals has also been undermined.

These factors have helped contributed to an exodus of senior health professionals from the public system and from clinical teaching and peer support roles.

The situation is generally worse for allied health professions given the lack of a history and culture of hospital professional training outside of medicine and nursing. Allied health students are generally regarded as the last priority in terms of access to clinical experience, teaching facilities and student accommodation.

Meanwhile, the capacity of the private sector for clinical teaching is underutilised. This is particularly important in areas such as physiotherapy and pharmacy where a significant private workforce exists. While the private sector needs to take some responsibility for training (it is a significant beneficiary of the trained staff who are almost entirely educated in the public system) the costs are not insignificant.

In medicine, development of a 'teaching Visiting Medical Officer' designation could bridge the public-private divide and re-engage senior private clinicians in both service delivery and teaching in the public sector as well as the private sector. Similarly, in other areas where there is a significant private sector professional workforce (such as physiotherapy and pharmacy) ways of engaging private sector professionals in teaching into both private and public sectors should be devised.

Broader benefits from local health professional teaching

There are other indirect benefits from investment in local health professional education and training programs. Clinical teaching and academic capacity is critical to quality and safety of health care. Public inquiries into incidents of poor healthcare practice triggered by whistleblowers in Australia (eg: Canberra, Camden, Cambelltown and King Edward Memorial hospitals) and overseas (eg: Bristol) have demonstrated that institutional accreditation, external reporting and mere existence of quality systems are not an assurance of institutional quality and safety. External performance indicators are not an appropriate substitute for a local culture of trust and excellence among clinicians and manager in relation to quality and safety of health care.[15] The Bundaberg hospital events represent a particularly salutary lesson.

Clinical teaching by all practicing health professionals is the bedrock upon which a culture of maintenance of professional standards, reflective practice and continuous quality enhancement is built.

In addition, rural and regional investment in education and training supports: rural community capacity and viability; enhances professional retention; strengthens clinical and professional support networks; and provides capacity to conduct community-relevant health research.

4. Health workforce planning

Whilst national, jurisdictional and mono-professional approaches to health workforce analysis and policy formulation are needed and should continue, the focus of implementation of broader health workforce policy should be at the level of the region. This will help address the problems of poorly coordinated health workforce planning and investment for undergraduate health professional programs and post-basic training between Australian and State/Territory governments, professional colleges, universities and the Vocational Education and Training (VET) sector.

Clinical education investment

Clinical education needs mechanisms for regional coordination, investment and monitoring. Whilst protecting the teaching functions of health systems is necessary, it is not easy or desirable to separate clinical teaching from provision of health services. Nevertheless, attempts have been made to quantify the additional investment needed to deliver clinical teaching. Most health systems apply clinical teaching loadings to designated 'teaching' institutions as funding over-and-above the level of recurrent resources associated with the delivery of health care. However, there is little or no monitoring of institutional performance delivering in teaching as core business at the institutional or regional level. Clinical academics are leant on to prop up service delivery and, as noted, there has been a general decline in investment in teaching facilities and student accommodation.

Recent Australian analysis of the costs of establishing teaching facilities in a large non-teaching regional hospital indicate that an additional teaching loading of the order of 20% is a realistic reflection of the costs of delivering integrated clinical teaching, consistent with the mid point of the range reported in the international literature. The challenge for the Australian system is how this investment is to be planned, funded and monitored.

There is a disconnect between parts of the system responsible for planning and investing in development of future health workforce and the delivery of health care services. For example, medical specialist training is controlled by professional colleges whilst salaries for trainee places are met up by state governments as part of service delivery in public hospitals. There is limited input from regional stakeholders in the determination of current and future workforce needs. Training arrangements that involve the private sector and/or innovative regional supervision approaches are generally not possible.

A role for the Australian Government

It is proposed that the Australian Government assume a more direct role in funding the clinical teaching of health professionals in Australia. The region should be the main level for detailed coordination, planning, investment and evaluation among stakeholders, within broad jurisdictional and national policy parameters. Given the complexities involved, it is only at the regional level that health, professional and education system interests can be appropriately aligned and monitored. Planning and performance monitoring only within a particular sector, or at a jurisdictional or national level, tends to stifle innovation and be prone to gaming and preoccupation with sectoral self-interest, cost-shifting or blame-shifting.

Regionally-brokered funding of clinical teaching and related academic research, principally by the Australian Government, will enhance responsiveness, coordination and transparency of investment in health workforce development in line with regional population needs and trends.

5. Workforce flexibility

The future will require a more adaptable and responsive health workforce than that afforded by conventional medical, nursing and allied health professional models. The ageing population, the burden of chronic disease, professional workforce shortages, changing demographics and aspirations of graduates, development of information and communication technology and emergence of new health disciplines - all mean that new ways of thinking about the organisation of health workforce labour and health service delivery structures need to be explored.

Skill areas that are likely to be distributed more widely include:

- assessment of undifferentiated health problems in the emergency and primary care settings and treatment of a range of common acute conditions;
- undertaking screening and health education;
- providing routine aspects of care and education for chronic conditions;
- social support, advocacy and counselling;
- maintenance of physical condition amongst older people; and
- performing common procedures (eg: upper GI endoscopy).

Rigid demarcation of roles and scope of practice inherent in 'mono-professional' approaches to health labour needs work against efficiency, effectiveness and sustainability of health care.[16]

Australian developments

To date, the policy focus in Australia has been on piloting and implementing Nurse Practitioner models in most States and Territories. The Nurse Practitioner provides "expert nursing care by working autonomously but in collaboration with other health professionals as part of a multidisciplinary team" (NSW Nurses and Midwives Board 2003). Expanded scope of advanced independent Nursing practice has an important place in health system reform and requires greater support and financial investment. The regulated, codified, independent Nurse Practitioner model has application in many discrete areas of clinical care, albeit mostly in major population centres and the public sector.

In reviewing the issue of advanced clinical practice roles for Nurses, the OECD notes the policy tension between further regulation and codification of advanced professional roles for Nursing as opposed to "allowing advanced practitioner roles to evolve locally … less defined by uni-professional groupings".[17]

The complementary approach, and one that is likely to see the most widespread changes to the organisation of health labour, will come from more flexible delegation of duties by Medical Practitioners at the level of the local health service. The Australian Government has sought to encourage this through the development of 'practice nurse' incentives for General Practitioners. GPs can now obtain subsidies to employ Registered Nurses, Enrolled Nurses or Aboriginal Health Workers and can also access fee-for-service rebates for wound dressings, immunisations and pap smears that are performed by the practice nurse on their behalf. Under Medicare guidelines, individual doctors are responsible for assuring the competence of workers to perform delegated clinical tasks.

For primary care and many areas of specialist practice, team-based approaches with 'middle level' workers providing elements of advanced clinical care under local delegation with doctors is likely to be the most practical way to extend the reach of health services. Under a delegated practice arrangement, the individual worker's scope of practice can be expanded to reflect their evolving skills, rather than be constrained by arbitrary external rules. This is the model that is already extensively applied in remote and Aboriginal communities.

The fact that the delegated practice role need not be restricted to a particular profession has attractions. Nurses, Allied Health Practitioners, Aboriginal Health Workers, Ambulance

Officers, even international medical graduates who are unable to gain registration – all could potentially make a contribution. For instance, the nutritionist could assume a greater role in providing routine care and support for people with diabetes, beyond only dietary advice.

Other benefits of the delegated practice model include:

- unambiguous clinical governance in diagnosis, investigation and technical management;
- greater likelihood of uptake and acceptance by the medical profession;
- getting Medical Practitioners able to focus on complex and technically difficult cases; and
- simpler indemnity arrangements

The 'Clinical Associate' (the Australian 'Physician Assistant')

Job design and recruitment would be made considerably easier if a broad range of health care workers could be equipped with a generic skill-set in clinical assessment and management to assure a predictable base-line level of competence in performing common clinical tasks. James Cook University has proposed a shared training pathway for a broad range of health professionals to undertake training as 'Clinical Associates'. A two-year Bachelor Degree program, delivered as combination of work-placement and block release study on top of a base qualification, is likely to be most appropriate. This draws on international experience with the US Physician Assistant.

The Nurse Practitioner model (autonomous practice) and Clinical Associate model (delegated practice) represent complementary rather than conflicting approaches to health workforce reform.

The US Physician Assistant model

The US Physician Assistant (PA) profession has been the prototype for development of other 'middle-level professionals' that have been introduced or are planned in Canada, the UK, the Netherlands, Singapore and other countries. Developed in the mid 1960s, registered PAs now number some 62,000 in the USA. Around half work in 'primary care' (including family practice, obstetric, paediatric and emergency settings). The remainder assume various specialist consulting and procedural roles. The profession is popular and is continuing to grow rapidly: the Bureau of Labour Statistics predicts a 49% growth in PA jobs in the 10 years to 2012 which makes Physician Assistants the third-fastest growing profession in the US.[18]

Physician Assistants work under the formal individual supervision of medical practitioners. The delegated practice model has enabled PAs to establish an extraordinarily flexible and broad scope of practice for a relatively new profession. Agreement on PA scope of practice is managed in the workplace and regularly reviewed in line with development of individual competence.

In the US, Nurse Practitioners and Physician Assistants evolved around the same time, provide comparable services and have similar numbers in the workforce. The US experience is that 86% of qualified Physician Assistants in 2000 were currently employed as PAs (54% female) - most with Bachelor degrees. Only 57% of generally Masters degree-qualified Nurse Practitioners (96% female) were practicing as such.[19]

A statutory framework to support delegated practice

To formalise 'delegated' practice arrangements, State and Territory Medical Act Regulations should be amendment to provide a clear legal framework for responsible delegation of tasks by registered Medical Practitioners. Whilst 'guidelines for good medical practice' that have been developed by most Medical Boards contain guidance on delegation and represent an interim solution, they lack legal weight.

Amendment of Regulations to support formal delegation will be an important early consideration for jurisdictions in improving workforce flexibility.

6. Vocational training for generalist and specialist Medical practice and post-graduate Nursing

The current imbalance between highly sub-specialised medical practice and generalist practice is unsustainable in the Australian context. It is as much a by-product of perverse financial incentives, perceived professional status and the history of teaching in tertiary metropolitan hospitals as it is a function of rational coalescence of fields of practice based on best evidence. There needs to be a greater policy emphasis on generalist post-graduate training across the major medical disciplines and in areas of nursing.

An emphasis on generalists

The contraction in urban GP scope of practice, together with subspecialisation and the decline of the general physician, paediatrician and surgeon, has left a void in health workforce. Ironically, this is occurring at a time when health informatics and the science of evidence-based medicine makes current best evidence from systematic research more accessible to the generalist clinician than ever before.

There is evidence in a number of areas of specialist and sub-specialist medical practice that generalists produce comparable outcomes (eg: birthing outcomes in small rural hospitals[20]). Policy decisions to prefer specialist or sub-specialist care over generalist care should be subject to explicit assessment of the evidence in terms of client outcomes, cost-effectiveness and impact on community access to services.

For increasingly prevalent chronic conditions such as type II diabetes mellitus, generalist care is both efficient and appropriate when compared to routine management by an endocrinologist, ophthalmologist, podiatrist, dietician and renal physician.

Given immediate and long-term medical workforce shortages, the policy priority for government should therefore be investment in generalist training (in primary care and specialist areas) to assure community access to care.

The push to recognise rural and remote generalist medicine as a specialty reflects a need to re-assert the role of the medical generalist with a broad scope of independent practice (in procedural areas as well as internal medicine and paediatrics). The emerging speciality of Rural Medicine is a welcome development that could eventually expand a role for the highly skilled primary care generalist more broadly in the health care system. The formal recognition of Rural Medicine as a speciality should be supported by Governments and training pathways appropriately resourced.

Greater support for specialised Nursing practice

As specialist training in nursing is usually in the university system, there is rarely salary support available (other than some support available through Australian Government Postgraduate Scholarships for nurses in rural or remote areas). Direct funding of Nurse salaries whilst undertaking strategic areas of post-graduate education and training would substantially increase the uptake of such programs and significantly enhance the quality of the workforce. Parity of funding arrangements for education across Medicine, Nursing and Allied Health would provide a more equitable system, enhance collaboration, and help break down entrenched professional barriers.

Specialised Nursing practice disciplines targeted areas (such as midwifery) should attract investment to meet HECS/university costs as well as provide salary support whilst training, particularly targeting Nurses from rural and remote areas.

Regionalised training of specialists

An emphasis on regionalised training of ‘generalist’ specialists can counter-balance trends towards sub-specialist training in metropolitan centres. Given population and capacity, tropical Queensland is well placed to be a national leader in the training of not only Rural Medicine specialists, but also generalist physicians, surgeons, paediatricians, obstetricians and anaesthetists.

However, current arrangements for salary and teaching costs in specialist and generalist medical training precludes efficient use of both public and private sectors for training.

Specialist Medical Practitioners are trained predominantly in public hospitals. As discussed above, designation of training places by specialist colleges or funding of Registrar trainee salaries by public hospitals often has little to do with analysis of the region's current and future need for specialist health workforce. The posts are not preferentially allocated to medical graduates with linkages in the area and the capacity of the private sector for teaching is not harnessed. As an example, there are no approved registrar posts in some major specialist disciplines in large regional population centres such as Mackay.

Meanwhile, generalist practice registrars (eg GPs, rural medicine, sports medicine and potentially others) are trained predominantly in the private sector with salaries derived from fee-for-service income. This tends to preclude public sector training rotations for GP registrars because salary costs cannot be met. There is a reluctance to subsidise salaries for GP Registrars in hospital medical officer positions out of concern for potential cost-shifting.

Regionalised specialist clinical training would see rotations out from a regional training hub to smaller rural locations, with rotations to distant major centres for requisite sub-specialty experience (rather than the other way round). Given the fact that acquiring clinical skills in procedural areas is a critical rate-limiting step, clinical simulation facilities for learning in procedural and emergency medicine should be located in regional centres as well as the capital cities.

To achieve substantial increases in supply of those areas of regional specialist medical workforce that are in short supply, innovation in designation of training posts through distant supervision arrangements and training rotations is required. Both private and public sector posts should be used and rigid guidelines such as 'three Fellows per designated training post' need revision.

The length of time taken to complete medical specialist training could be shortened and ways of facilitating movement between one area of sub-specialty practice and another should be explored. Options include incorporating more early post-graduate year (PGY) time into specialist training pathways and creating short, structured training options for specialists qualified in one area to be credentialed in another. Conjoint fellowships should also be developed. For example, common components of training time for Surgery and for Rural Medicine could be mutually recognised and a conjoint fellowship awarded (i.e.: FRACS/FACRRM).

It is important that conjointly-qualified specialists are able to generate viable incomes in smaller population centres. The current separation of Medicare funding into 'referred specialist practice' and 'unreferred primary care' (as a policy device to control medical costs) makes blended functions non-viable in these settings. There is therefore a strong argument that unreferred 'specialist' care in medically underserved areas such as rural health should be able to attract specialist insurance rebates.

As discussed above, there is therefore a strong case for the State/Territory and Australian Governments to restructure funding of salaries and teaching costs associated with medical graduates undergoing specialist and generalist training. A single system would support rational regional workforce planning and help bridge the public-private divide in training.

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