

Improving knowledge and data about the medical workforce underpins healthy communities and doctors

Challenges with data infrastructure are affecting medical workforce research and access to medical care

Access to high quality medical care can save lives and help reduce the consequences of the growing burden of chronic disease. However, the delivery of this care relies on a well trained health and medical workforce organised to optimally respond to community need, working in supportive work environments within models of care that are fit for purpose, with minimal geographic or financial barriers to access for all communities.

There has been a long term need in Australia for coordinated, evidence-informed workforce policies. However, for many years the development of the medical workforce has been shaped by self-regulation and market forces. Short term and uncoordinated workforce planning has generated cycles of contraction and expansion of training places, sporadic regulation, and recent policy dilemmas.^{1,2} Most recently, a dramatic increase in numbers of graduates from Australian medical schools has occurred in the absence of clear plans as to how to use these additional doctors to optimally meet community need.

Early data suggest that flooding the market with more graduates has not addressed persistent rural shortages, with insufficient numbers willing or able to navigate a career pathway to work in areas of need.^{3,4} Oversupply continues to be an issue in some specialties (eg, emergency medicine or cardiothoracic surgery) while shortages persist in others such as general practice and psychiatry.⁵ Over-reliance on international medical graduates continues in many rural communities,¹ while the fierce competition for accredited training places in some specialties leaves many junior doctors caught in the middle.⁶

Furthermore, Australian doctors are increasingly reporting burnout and mental health problems,⁷ with significant negative effects on productivity and patient safety.⁸ With these problems seeming to defy solutions,⁹ it is not surprising that there have been calls to add the work–life balance of clinicians to the Institute for Healthcare Improvement’s set of principles to guide optimising health system performance (optimal patient experience, improved population health and reducing costs).¹⁰

In light of these issues, the development of Australia’s new National Medical Workforce Strategy (NMWS) scoping framework and consultation process for the final strategy is welcome. The NMWS is being designed to frame the development and coordination of national medical workforce policies to address our pervasive workforce challenges: geographic maldistribution; speciality over- and undersupply; the

balance of generalists and specialists; Indigenous and culturally safe workplaces; doctor work readiness; and changing models of care.¹¹ One of the six principles of the NMWS is to “[a]pply an evidence-based approach wherever possible, drawing on data and information from all stakeholders”.¹¹

Data on the medical workforce

Achieving an evidence-based approach to workforce policy requires more high quality longitudinal and linkable data that is both broad across different doctor groups and rich in doctor characteristics, compared with what is currently available (Box). Institutional bias, fragmentation, inconsistent definitions and restricted access provide substantial barriers to our ability to use those data for the social good. Few available sources offer a long term, holistic and objective view of the medical workforce: professional training bodies can only use data sourced from relatively brief periods of postgraduate training; the Department of Health relies on Medicare billing data and raw counts of medical practitioners through the Australian Health Practitioner Regulation Agency; and the states are limited to poor data on salaried, generally hospital-based practitioners.

Data that are made available to researchers are overly aggregated, especially geographically, often preventing useful evidence from emerging about medical workforce behaviours, training outcomes, career choices and treatment patterns. Many sources remain closely guarded by training and service providers and governments, such as surveys regularly completed by doctors on registration with the Australian Health Practitioner Regulation Agency (including the new national medical training survey¹²) or with individual colleges. Where data are controlled by individual agencies, there is minimal potential for multipurpose use and no process for linkage to other sources. Hence, it is impossible to understand and track career pathways of doctors even though these are a key element of policy.

The analysis of workforce data to generate evidence from these multiple sources has been relatively unsophisticated and preoccupied with the simple modelling of supply and demand — ignoring how practitioner behaviours, and the drivers of those behaviours, influence workforce numbers and practitioner quality. Although these data can be used to count and describe trends, they mostly cannot be used to understand why decisions are being made and how services are driven, which

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Available national datasets on the medical workforce*

Data source	Unit record data available to external researchers	Unique identifier to enable linkage over time	Data linked to patients	Rich data on doctor characteristics	Doctors grouped by organisation (practice, hospital)	Doctor group
Medicare provider file/ MBS	With consent	Yes	Yes	No	No	Private practice
Medical college surveys	No	Yes (but some surveys anonymous)	No	No	No	Vocational trainees and Fellows
National medical training survey ¹²	No	No (anonymous)	No	No	No	Pre-vocational and vocational
MABEL ¹³	With consent	Yes	No	Yes	Yes	All medical practitioners
BEACH ¹⁴	No	NA (random sample of GPs each year)	Yes	Yes	Yes	GPs
National Health Workforce Dataset¹⁵						
AHPRA registration data	No	Yes	No	No	No	All medical practitioners
AHPRA registration survey	No (table builder available)	No	No	No	No	All medical practitioners
Medical Education and Training dataset	No	No	No	No	No	Pre-vocational and vocational

BEACH = Bettering the Evaluation and Care of Health; GP = general practitioner; MABEL = Medicine in Australia: Balancing Employment and Life; MBS = Medicare Benefits Schedule; NA = not applicable. * States and territories also have their own data collections for the public hospital workforce, but these vary in what is collected and are not available to external researchers. Many hospitals in recent years also conduct surveys of health and wellbeing. Many clinical registries, epidemiological datasets, hospital separation data, and electronic medical record data focus on patients and do not include doctor identifiers or characteristics. ♦

are essential for designing policy. The Australian community deserves a broader understanding as to how different policies and programs are addressing their needs. Lack of this understanding has been a major contributor to the decisions that have led to the current situation of workforce oversupply.¹⁶ Neither are health workforce data linked to patient-level data — a factor overlooked in the NMWS scoping framework — that is, data on inputs are not linked to data on activities, outputs and health outcomes, making it impossible to determine how workforce and policy changes affect community needs and population health. Any policies aimed at the medical workforce should at least examine their effects on patients.

Finally, the availability of administrative medical workforce data to researchers is at an all-time low. There was a reduction in funding of the Medical Schools Outcomes Database in 2015 and the withdrawal of funding (from 2016) for the Australian Institute of Health and Welfare to produce health workforce statistics. The Bettering the Evaluation and Care of Health (BEACH) study¹⁴ was also discontinued as the only data on the clinical activities of general practitioners. Adding to the challenge, the internationally unique Medicine in Australia: Balancing Employment and Life (MABEL) panel survey of 9–10 000 doctors per year ceased in 2019 after 11 annual waves of data collection.¹³ Moreover, researchers skilled in using health workforce data will be difficult to sustain without addressing the availability of data, and this expertise will soon dissipate, adding to severe

reductions of health workforce analytical staff at the Commonwealth level when Health Workforce Australia ceased in 2014. It is notable that the new National Health Information Strategy makes no mention of health workforce data.¹⁷

Despite its ongoing reliance on competitive grant funding, MABEL data have played a key role in national medical workforce policy over the past 11 years. It was a World Bank exemplar of health workforce data collection internationally,¹⁸ and continues to guide the distribution of over \$1 billion funding to regional health care through its use in the design of the Modified Monash Model (used to classify which geographical areas are eligible to receive increased funding), as well as supporting the design of rural health workforce programs. Unlike other datasets (Box), MABEL data transcended traditional divides of salaried and private practice, different doctor types, career stages and career trajectories as the basis for supporting policy and program decision making at a national scale.

The future for medical workforce research

The medical workforce represents the backbone of the health care system and a major public investment, yet despite the large gap between supply and community need, the scope of available data does not support evidence-informed decision making. While existing administrative and registration minimum data support national medical workforce planning, they are unable to give insights into doctors’ career and clinical decisions. With the pressures on the health

care system and medical workforce at an all-time high, we believe that the Australian community deserves better insights into how different medical workforce policies and programs are promoting access to equitable, high quality care. We need to know more about the doctors being produced from long and expensive taxpayer-funded training programs, as well as why they choose disciplines, practice locations and practice patterns. Moreover, there is a growing awareness of the importance of maintaining the health and wellbeing of this workforce, but available national data to underpin key policies to prevent poor mental health are missing.

We propose that any reforms to the Australian health care workforce must be informed by robust evidence. The collection and availability of this evidence needs to be at the forefront of policy and planning, embedded

within objectives of key national strategies such as the NMWS and National Health Information Strategy. Future medical workforce data strategies need to be institutionally neutral, guided by a research strategy including agreed priority research questions with resources to conduct the research, and underpinned by openness and data sharing. Healthy national medical workforce data are fundamental to achieving healthy doctors and communities.

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