Workforce implications of innovative models of care – the missing middle!
What is a fit-for-purpose health workforce for rural and remote Australia?

Professor Sarah Larkins
sarah.larkins@jcu.edu.au
15 March 2024,
University of Wollongong Rural Health Research meeting, Shoalhaven.
Acknowledgement of Country

We acknowledge the traditional owners of the country on which we live, work and travel and recognise their continuing connection to land, waters and community. We pay our respect to them and their cultures and to elders both past and present.
Imagine……

Lexie, a remote area nurse in Boulia

Saturday afternoon

47 year old Eddy comes in….with a bit of an ache in his chest

ECG minor non-specific changes
# Health Care System Performance Rankings

<table>
<thead>
<tr>
<th></th>
<th>AUS</th>
<th>CAN</th>
<th>FRA</th>
<th>GER</th>
<th>NETH</th>
<th>NZ</th>
<th>NOR</th>
<th>SWE</th>
<th>SWIZ</th>
<th>UK</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OVERALL RANKING</strong></td>
<td>3</td>
<td>10</td>
<td>8</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>9</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Access to Care</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>10</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Care Process</td>
<td>6</td>
<td>4</td>
<td>10</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>8</td>
<td>11</td>
<td>7</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Administrative Efficiency</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>9</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Equity</td>
<td>1</td>
<td>10</td>
<td>7</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td>8</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Health Care Outcomes</td>
<td>1</td>
<td>10</td>
<td>6</td>
<td>7</td>
<td>4</td>
<td>8</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>9</td>
<td>11</td>
</tr>
</tbody>
</table>

Data: Commonwealth Fund analysis.

Source: Eric C. Schneider et al., *Mirror, Mirror 2021 — Reflecting Poorly: Health Care in the U.S. Compared to Other High-Income Countries* (Commonwealth Fund, Aug. 2021), [https://doi.org/10.26099/01DV-H208](https://doi.org/10.26099/01DV-H208)
What are the health systems issues in RRR Australia?

• Rising rates of chronic disease and still high burden of infectious diseases
• Rising health care costs driven by more services per person and perverse funding incentives
• Geographically dispersed communities with limited infrastructure and difficulty maintaining stable health services
• Limited coordination across care continuum
• Shortages, high turnover and maldistribution of health workforce
Higher health need and fewer services in the bush…

PPH rates in very remote areas 2.5 times that of cities

Note: The number of GP non-referred attendances per person was calculated using the estimated Resident Population at 30 June 2021.
(Source: Department of Health and Aged Care Annual Medicare Statistics 2022)
Health inequality is predictable

Quintiles of SES versus prevalence of chronic diseases

38 high priority areas with rates of ACSC more than 50% above state average

(Swerissen and Duckett 2016) (Duckett, 2016)
Priority Actions for Northern Australian Health System

1&2 – Health workforce training and support
3 – Cross-jurisdictional body
4 – Financing review
5 – Health-enabling infrastructure
6 – Place-based planning
7 – Northern-led research
Index of unmet health need – NQ Health Atlas

The Northern Queensland Health Atlas
(https://arcg.is/5a4Xq)

jcu.edu.au
Why place-based planning?

“Top down” health service planning

“Bottom up” community needs assessments
Figure 2. Proposed modified WHO Health Systems Framework

SYSTEM BUILDING BLOCKS

- Service delivery
- Health workforce
- Health information systems
- Access to essential medicines
- Financing
- Leadership / governance

Access
Coverage
Quality
Safety

Patient engagement

(Bodenheimer and Thomas, Farrell et al, 2023: image credit sketchbubble)
Participatory co-design process –

Local project governance
Local connector

ONE
“Essential basket of services”
Key health concerns
Services available
Strengths, gaps and barriers

TWO
New or modified ways of delivering care and services
Prioritise areas for early action

THREE
Workforce and skillsets required
Resources, training, funding required
Identify feasible strategies for action in project timeline

FOUR
Finalise plan and prioritized actions
Define measures of success

Implement, monitor & evaluate

Adapted from:
<table>
<thead>
<tr>
<th>Typology of primary health care services for RRR Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discrete</strong></td>
</tr>
<tr>
<td>- e.g. easy-entry, gracious exit</td>
</tr>
<tr>
<td><strong>Integrated</strong></td>
</tr>
<tr>
<td>- Multipurpose health services</td>
</tr>
<tr>
<td>- Coordinated care models</td>
</tr>
<tr>
<td><strong>Comprehensive</strong></td>
</tr>
<tr>
<td>- ACCHOs</td>
</tr>
<tr>
<td><strong>Outreach</strong></td>
</tr>
<tr>
<td>- FIFO, outreach models</td>
</tr>
<tr>
<td><strong>Virtual outreach</strong></td>
</tr>
<tr>
<td>- Telehealth services</td>
</tr>
</tbody>
</table>

Rural areas, more closely settled populations

Very remote areas
Small dispersed populations

(after Wakerman and Humphreys, 2011. AJRH.)
Medicare Benefits Schedule (MBS), Australia
Telehealth Summary

Total number of MBS consultations reported in Quarter 3, 2023 49.8M

Q3, 2023 ACTIVITY

Total number of telehealth consultations this quarter 8.8M
(overall % of MBS services delivered by telehealth this quarter) 18%
7.7M (88%) by telephone
1.1M (12%) by videoconference

General Practitioner Consultations
Total: 36.4M
Telehealth: 7.3M (20%)

Specialist Consultations
Total: 7.2M
Telehealth: 727K (10%)

Mental Health Consultations
Total: 3.0M
Telehealth: 618K (21%)

Nurse Practitioner Consultations
Total: 287K
Telehealth: 81K (28%)

Allied Health Consultations
Total: 2.9M
Telehealth: 47K (1.6%)


Total number of telehealth consultations since COVID-19 (Q2, 2020 to Q3, 2023) 158M
Total number of MBS consultations (Q2, 2020 to Q3, 2023) 690M

New Models of Service Delivery
Health systems that work for all

Fit for purpose health workforce

Understanding community priority health needs

Partnerships with health sector and communities
Reproduced from Future-focused primary health care, Australia’s PHC 10 year plan, (p12) under a CC4 licence.
Three reform streams in Australia’s PHC reform strategy

1. Future focused health care – technology to drive improvements
2. Person-centred PHC, supported by funding reform
3. Integrated care, locally delivered.
Changing demographics and chronic conditions

Digitisation and technological transformation

A ‘human-centred’ model of care

(PwC 2020. Health workforce of the future)
Skillsets required for RRR health workforce of the future

Collaborative mindsets and ways of working (and education)
Outcomes-focused and flexible
Collective leadership and co-design
New skills to leverage technology and life long-learning
Partners in improvement
What does all this mean for the workforce?

Need to manage a transition of current workforce to new and different ways of working

Consider what is needed to select and train a future health workforce that can deliver health outcomes in a very different health landscape into the future.
For the current workforce

- Foster organizational culture of **collective leadership**
- **Partnerships** for health service improvement
- Competency based, **flexible, modular upskilling and training** (…and understanding the baseline)
- **Mobility** in employment models – joined up credentialling, and joint – employment, especially in thin markets.
Better approaches to HRH planning for future workforce

• Priority health care needs (basket of services)
  .... and considering resource constraints, subgroup access, evidence for quality and effectiveness

• Options for configuration of health services THEN: Health workforce implications...

and what this means for training
and selection....

(WHO 2013 Guidelines for Transforming and Scaling-up Health Professional Education)
(and thanks to Richard Murray)
What about the future workforce?

What is the role of health professional schools?
To train health professionals to a set of professional standards?

To be a partner in producing a fit-for-purpose health workforce and addressing priority health needs of local populations?
Are we teaching:

the *right* people
the *right* things
at the *right* time
in the *right* places?

….to address the inverse care law in health care

(Thanks to Tarun Sen Gupta)
Who are the ‘right’ people?

It depends....
.....Representation is important!
STRENGTHENING SYSTEMS FOR INDIGENOUS HEALTH CARE EQUITY

Working It Out Together! - Aboriginal and Torres Strait Islander co-design for a strong and deadly health workforce

Working it out together! unites an experienced team of Aboriginal and Torres Strait Islander health service partners, policy representatives and research motivated PHC partners (Gidgee Healing, Katherine West Health Board, Northern Territory Health Department, Queenslandaboriginal and Islander Health Council, AMSANT, Queensland Health, Northern NSW Local Health District), community controlled peak bodies, government networks, and national Indigenous health workforce advocates.

What are the issues?

- High health workforce turnover in remote and rural areas causes problems for communities and their primary health care services in terms of trust, cultural security, and quality of care
- Limited research into building culturally-safe workforce models that are informed by local contexts to improve stability
- Previous attempts to address these issues have failed and have not involved Aboriginal and Torres Strait Islander perspectives in a systematic way
the right people....

Start with the end in mind
Define your outcomes, select appropriately

Turning on the tap is not enough
Design appropriate pathways, drivers towards generalism (incl. postgraduate)

Measure your outcomes  (Thanks to Tarun Sen Gupta)
What do we know about selection?

• Lots about academic merit in selection
• And about selection for non-academic personal characteristics
• Little on selecting to increase diversity in intake and output of medical schools

(Patterson et al. 2015 [https://doi.org/10.1111/medu.12817])
For a more equitable health system which is the right formula for health professional education?

- Traditional, city-based
- Sons and daughters of a city elite
- Sub-specialist focus
- Large acute hospital-based

- Socially-accountable, located in areas of need
- Diverse, including rural, Indigenous and underserved
- Generalist focus
- Community and team-orientated

Recruiting for the health care workforce of the future
Everyone is a genius. But if you judge a fish on its ability to climb a tree, it will live its whole life believing that it is stupid.

-A Einstein
The Training for Health Equity Network
Underlying logic

Analysis of need
- Know the population you serve
- Needs assessment in partnership with stakeholders

Core activities of School
- Teaching, research and service activities oriented to priority health needs of underserved populations
- Partnerships important

Improved outcomes
- “Fit for purpose” health workforce (contributing to UHC)
- Better health outcomes/Increased health equity
- Strengthened health systems

This is an iterative process
Key Components of the Evaluation Framework

How does our School work?
- What do we believe in?
- Who do we serve? (Reference Populations)
- What are the needs of these populations?
- What are the current and future needs of the health system?
- How do we work with others?
- How do we make decisions? (Governance)

What do we do?
- How do we manage our resources? (Resource Allocation)
- What, where and how do we teach?
- Who do we teach?
- Who does the teaching?
- How do our research activities address health and health system needs?
- What contribution do we make to the delivery of health services?

What difference do we make?
- Where are our graduates and what are they doing?
- What difference have we made to our reference populations?
- What difference have we made to our health system?
- How has our research affected policies?
- How have we shared our ideas and influenced others?
- What impact have we had on other schools?

(Larkins et al, Medical Teacher)
Impact of selection strategies on representation of underserved populations and intention to practise: international findings

Sarah Larkins, Kristien Michielsen, Jehu Iputu, Salwa Elsanusi, Marykutty Mammen, Lisa Graves, Sara Willems, Fortunato L Cristobal, Rex Samson, Rachel Ellaway, Simone Ros, Karen Joghroth, Anselme Derese & André-Jacques Neusy

CONTEXT Socially accountable medical schools aim to reduce health inequalities by training workforces responsive to the priority health needs of underserved communities. One key strategy involves recruiting students from underserved and unequally represented communities on the basis that they may be more likely to return and address local health priorities. This study describes the impacts of different selection strategies of medical schools that aspire to social accountability on the presence of students from underserved communities in their medical education programmes and on student practice intentions.

METHODS A cross-sectional questionnaire was administered to students starting medical education in five institutions with a social accountability mandate in five different countries. The questionnaire assessed students’ background characteristics, rurality of background, and practice intentions (location, discipline of practice and population to be served). The results were compared with the characteristics of students entering medical education in schools with standard selection procedures, and with publicly available socioeconomic data.

RESULTS The selection processes of all five schools included strategies that extended beyond the assessment of academic achievement. Four distinct strategies were identified: the quota system; selection based on personal attributes; community involvement, and school marketing strategies. Questionnaire data from 944 students showed that students at the five schools were more likely to be of non-urban origin, of lower socioeconomic status and to come from underserved groups. A total of 407 of 810 (50.2%) students indicated an intention to practise in a non-urban area after graduation and the likelihood of this increased with increasing rurality of primary schooling ($p = 0.000$). Those of rural origin were statistically less likely to express an intention to work abroad ($p = 0.003$).

CONCLUSIONS Selection strategies to ensure that members of underserved communities can pursue medical careers can be effective in achieving a fair and equitable representation of underserved communities within the student body. Such strategies may contribute to a diverse medical student body with strong intentions to work with underserved populations.
Findings

Odds Ratio 2.5 (95% CI 2.2-2.8) for THEnet students coming from rural origin (42.6%) compared with all Australian medical students (23.2%; p<0.0001; c.f. MSOD data)
For exit cohort, intent to practice in family medicine/general practice double that of entry cohort (OR 2.34; 95% CI 1.87-2.93; p<0.001)
Findings – Practice intentions

Intention to work abroad

5 schools in Africa, Philippines and Nepal combined

- Intention to work abroad significantly lower for exit cohorts (29.3%) compared with entry cohorts (61.9%) (OR 0.25, p<0.001)
- Proportion of learners intending to work abroad for >10 years also significantly lower (OR 0.24, p=0.005FET)
- Intention to stay in country motivated by desire to respond to the need for doctors in their country (55.2%) or preference to stay close to home or family (40.0%).
Graduate outcomes - Philippines

Practice locations for graduates from ADZU-SOM (red dots) and a conventional medical school (purple dots); both located on the island of Mindanao

Practice locations for graduates from SHS-Palo (red stars) and from a conventional medical school (purple diamonds); both located in the Eastern Visayas

And back to JCU… Metropolitan demand is growing but maintaining 2/3 RRR offers…
NATIONALLY...

1 in 5 Health Professionals in outer regional, rural and remote locations are JCU graduates

JCU graduates recruited from and trained in regional, rural and remote communities are more likely to stay in those locations

70% of JCU students from outer regional locations stayed outer regional

78% of JCU students from remote locations stayed outer regional or remote

Where do JCU MBBS graduates end up? Location of practice

JCU is producing well-trained doctors to join the workforce and meet community needs in regional, rural and remote Australia.

- 66% of medical students stay in the region after graduating\(^1\).
- Just under half of JCU’s medical graduates pursue careers in general practice, one third of those in rural generalism.
- 44% of North and Central Queensland towns with a hospital and/or medically led community health centre have one or more JCU medical graduates\(^2\).

---


(Map Source: AHPRA October 2022)
A comparison of rural and regional work locations and speciality choices between graduates from the University of Wollongong and all Australian medical schools using the Medical Schools Outcomes Database

Colin H. Cortie PhD | David Garne MBChB | Lyndal Parker-Newlyn BMed(Hons) | Rowena G. Ivers PhD | Judy Mullan PhD | Kylie J. Mansfield PhD | Andrew Bonney PhD

Abstract

Introduction: The shortfall in medical workers in rural and remote Australia has led to health discrepancies in these regions. The University of Wollongong’s medical program was designed to encourage graduates to work in these regions to address this shortfall.

Objective: To compare rural and regional locations of work and choices of speciality between University of Wollongong’s graduates and graduates from all Australian universities.
So to conclude….."start with the end in mind"

To respond to health care challenges in RRR Australia we need supportive policy, creative service delivery models and a flexible and responsive workforce to support the “missing middle” of sensible regional planning and codesign.

Call to heed evidence about the importance of selection and the “rural pipeline” for training a fit-for-purpose health workforce.

Selection processes must address diversity and equity as well as academic success and competence – they are not mutually exclusive.

Health workers must be partners in a learning health system with rural hubs of service delivery, education/training and research/improvement – implications for training.


Cleland JA, Johnston PW, Anthony M, Khan N, Scott NW. A survey of factors influencing career preference in new-entrant and exiting medical students from four UK medical schools. BMC Medical Education 2014;14:151


Global Commission on Social Accountability Report [online]


Larkins S et al. (2018). Practice intentions at entry to and exit from medical schools aspiring to social accountability. BMC Medical Education. 18:261


References


Youngclaus, J., Fresne, JA. (2013) Physician education debt and the cost to attend medical school. 2012 Update Association of American Medical Colleges [online]
QUESTIONS?

Funding acknowledgements: Working it out Together NHMRC GNT2006089. THÉnet was funded by Atlantic Philanthropies, CRCNA grants.
JCU: Experience has no substitute

jcu.edu.au