International lessons in training a fit-for-purpose health workforce for health and growth

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For the Training for Health Equity Network
What are the issues?

- Investments in health workforce are effective in terms of health, social capital and economic growth (High-Level Commission on Health Employment and Economic Growth, 2016)

- However, achievement of Universal Health Coverage limited by failure of current health professional education models to produce an appropriate health workforce (Bulletin of WHO, 2010)
What are the issues?

Achievement of Universal Health Coverage limited by who, what and where we teach:

• Both a shortage of health practitioners and maldistribution (Strasser and Neusy 2010)

• Geographic mismatch between areas of greatest burden of disease and location of training institutes (Frenk et al, 2010)

• Curricula (both explicit and hidden) focused on specialist, hospital-based practice (Murray, Larkins et al, 2012)

• Traditional selection strategies favour the privileged
Aim

• To consider how recent Australian rural health research from JCU and THEnet aligns with and has informed international policy documents
Methods

• Synthesis of evidence from international policy docs:
  (i) High-Level Commission report - Working for Health and Growth;
  (ii) Global strategy on human resources for health: Workforce 2030 (WHO, 2016)

http://www.who.int/hrh/com-heeg/reports/en/
Methods

Synthesis of evidence from:
(i) international policy documents
(ii) THEnet research program - Graduate Outcome Study;
(iii) evidence from graduate tracking studies at James Cook University
The Training for Health Equity Network

• Growing community of practice

• Currently 12 medical schools and one physician assistant program from 9 countries

• Strive to reduce health inequalities through provision of socially accountable medical education

• **Key strategy:** recruit learners from underserved communities as they are more likely to return and address local health priorities
The Training for Health Equity Network

Northern Ontario School of Medicine
Ghent University
Patan Academy of Health Sciences
University of the Philippines
Ateneo de Zamboanga University
Flinders University

Physician Assistant Program, Utah University
Sherbrooke University
Escuela de Medicina Latinoamericana
Gezira University
Walter Sisulu University

University of New Mexico

James Cook University
**Underlying logic**

**Analysis of need**
- 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
The Framework for Social Accountability in Health Workforce Education

- Collaboratively developed, pilot tested and implemented across THEnet partner schools (Larkins et al, 2013; Ross et al, 2014)

- THEnet research program addresses key components of The Framework
  Graduate Outcome Study - prospective cohort study
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 2013)
Changes needed to maximise return on investment

1. **JOB CREATION**
   - Stimulate investments in creating decent health sector jobs, particularly for women and youth, with the right skills, in the right numbers and in the right places.

2. **GENDER AND WOMEN’S RIGHTS**
   - Maximize women’s economic participation and foster their empowerment through institutionalizing their leadership, addressing gender biases and inequities in education and the health labour market, and tackling gender concerns in health reform processes.

3. **EDUCATION, TRAINING AND SKILLS**
   - Scale up transformative, high-quality education and lifelong learning so that all health workers have skills that match the health needs of populations and can work to their full potential.

4. **HEALTH SERVICE DELIVERY AND ORGANIZATION**
   - Reform service models concentrated on hospital care and focus instead on prevention and on the efficient provision of high-quality, affordable, integrated, community-based, people-centred primary and ambulatory care, paying special attention to underserved areas.

5. **TECHNOLOGY**
   - Harness the power of cost-effective information and communication technologies to enhance health education, people-centred health services and health information systems.

6. **CRISES AND HUMANITARIAN SETTINGS**
   - Ensure investment in the International Health Regulations core capacities, including skills development of national and international health workers in humanitarian settings and public health emergencies, both acute and protracted. Ensure the protection and security of all health workers and health facilities in all settings.
Changes needed to maximise return on investment

Social accountability in health profession education designed with local stakeholders to address maldistribution and skill shortage
- Selection strategies
- Curriculum strategies

3 EDUCATION, TRAINING AND SKILLS
Scale up transformative, high-quality education and lifelong learning so that all health workers have skills that match the health needs of populations and can work to their full potential.
## Findings

<table>
<thead>
<tr>
<th>Medical school</th>
<th>Participants (Response rate %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Entry (N=2557)</td>
</tr>
<tr>
<td>Ateneo de Zamboanga University, Philippines</td>
<td>143/146 (97.9)</td>
</tr>
<tr>
<td>Flinders University, Australia</td>
<td>218/303 (71.9)</td>
</tr>
<tr>
<td>Gezira University, Sudan</td>
<td>570/888 (64.2)</td>
</tr>
<tr>
<td>Ghent University, Belgium</td>
<td>294/462 (63.6)</td>
</tr>
<tr>
<td>James Cook University, Australia</td>
<td>736/862 (85.4)</td>
</tr>
<tr>
<td>Northern Ontario School of Medicine, Canada</td>
<td>22/64 (34.4)</td>
</tr>
<tr>
<td>Walter Sisulu University, South Africa</td>
<td>563/616 (91.4)</td>
</tr>
<tr>
<td>University of the Philippines, Philippines</td>
<td>11/15 (73.3)</td>
</tr>
</tbody>
</table>
To what extent are **underserved populations** represented in the student cohorts of medical schools aspiring to social accountability?

<table>
<thead>
<tr>
<th></th>
<th>Mean age (SD)</th>
<th>Female n/N (%)</th>
<th>Lowest two quintiles of income (background) n/N (%)</th>
<th>Identify as underserved population n/N (%)</th>
<th>Neither parent attended university n/N (%)</th>
<th>Years of public schooling (&gt;4 years) n/N (%)</th>
<th>Rural background 1-3* n/N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entry (N=2557)</strong></td>
<td>n=2530</td>
<td>1535/2556 (60.1)</td>
<td>475/1643 (28.9)</td>
<td>645/2303 (28.0)</td>
<td>515/2502 (20.1)</td>
<td>691/2250 (30.7)</td>
<td>825/1904 (43.3)</td>
</tr>
<tr>
<td></td>
<td>20.07 (4.005)</td>
<td>19.91-20.23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exit (N=789)</strong></td>
<td>n=755</td>
<td>492/786 (62.6)</td>
<td>142/617 (23.0)</td>
<td>118/704 (16.8)</td>
<td>131/783 (16.7)</td>
<td>370/779 (47.5)</td>
<td>216/538 (40.1)</td>
</tr>
<tr>
<td></td>
<td>25.25 (3.213)</td>
<td>25.02-25.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OR at entry versus exit; p-value for Pearson’s χ² for OR</strong></td>
<td></td>
<td>0.90; p = 0.202</td>
<td>1.36; p = 0.005</td>
<td>1.93; p &lt; 0.0001</td>
<td>1.29; p &lt; 0.0018</td>
<td>0.49; p &lt; 0.0001</td>
<td>1.14; p = 0.188</td>
</tr>
</tbody>
</table>
Findings

Odds ratio 3.8 for THEnet students coming from lower two income quintiles (27.3%) compared with all US med students (9%; p<0.0001) (Youngclaus & Fresne 2013)
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) (MSOD, 2012)
Findings

What are the practice intentions of these medical students at entry and at exit and how do these correlate with student background?

Predictors of intention to work in a rural location where binary variable is rural versus urban location.* (final model n=1333)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Number in analysis</th>
<th>Unadjusted odds ratios (95% CI; p-value)</th>
<th>Adjusted odds ratios (95% CI; p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>2686</td>
<td>1.02 (1.00-1.03; 0.071)</td>
<td>1.05 (1.02-1.08; 0.003)</td>
</tr>
<tr>
<td>Female</td>
<td>2724</td>
<td>1.29 (1.11-1.50; 0.001)</td>
<td>1.36 (1.08-1.71; 0.010)</td>
</tr>
<tr>
<td>Income bottom two deciles</td>
<td>1752</td>
<td>2.13 (1.74-2.61; &lt;0.001)</td>
<td>1.73 (1.34-2.23; &lt;0.001)</td>
</tr>
<tr>
<td>Identify as underserved group</td>
<td>2442</td>
<td>1.92 (1.60-2.30; &lt;0.001)</td>
<td>1.07 (0.82-1.39; 0.635)</td>
</tr>
<tr>
<td>Rural background (Quintiles 1, 2 and 3)</td>
<td>2312</td>
<td>2.77 (2.34-3.29; &lt;0.001)</td>
<td>2.29 (1.80-2.90; &lt;0.001)</td>
</tr>
<tr>
<td>Exit cohort</td>
<td>2726</td>
<td>0.74 (0.62-0.89; 0.001)</td>
<td>0.52 (0.39-0.71; &lt;0.001)</td>
</tr>
</tbody>
</table>
Findings

What are the **practice intentions** of these medical students at entry and at exit and how do these correlate with **student background**?

Predictors of **intention to work abroad** at African and Filipino schools (final model n=591)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Number in analysis</th>
<th>Unadjusted odds ratios (95% CI; p-value)</th>
<th>Adjusted odds ratios (95% CI; p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1037</td>
<td>0.83 (0.80-0.86; &lt;0.001)</td>
<td>0.82 (0.76-0.87; &lt;0.001)</td>
</tr>
<tr>
<td>Female</td>
<td>1048</td>
<td>0.97 (0.76-1.24; 0.818)</td>
<td>1.07 (0.74-1.55; 0.72)</td>
</tr>
<tr>
<td><strong>Income top two deciles</strong></td>
<td>709</td>
<td>3.39 (2.22-5.18; &lt;0.001)</td>
<td><strong>2.49 (1.50-4.13; &lt;0.001)</strong></td>
</tr>
<tr>
<td>Doesn’t identify as underserved group</td>
<td>970</td>
<td>2.55 (1.95-3.32; &lt;0.001)</td>
<td>1.66 (1.12-2.46; 0.012)</td>
</tr>
<tr>
<td>Urban background (Quintiles 4 and 5)</td>
<td>942</td>
<td>1.73 (1.34-2.24; &lt;0.001)</td>
<td><strong>1.82 (1.23-2.68; 0.002)</strong></td>
</tr>
<tr>
<td>Exit cohort</td>
<td>1050</td>
<td>0.40 (0.29-0.55; &lt;0.001)</td>
<td>0.86 (0.50-1.46; 0.567)</td>
</tr>
</tbody>
</table>
Findings

What are the practice intentions of these medical students at entry and at exit and how do these correlate with student background?

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)
Rural background, practice intention and actual practice location at JCU

• Interest in ‘working in a rural area’ increased over course duration (Sen Gupta, Murray & Woolley, 2013)

• 88% of graduates intended to practise outside capital cities compared with 31% from other medical schools (Sen Gupta, Murray & Woolley, 2013)

• 65% of JCU graduates undertook internship outside RA1: 20% in RA2, 44% in RA3-RA5 (Sen Gupta, Murray, et al., 2014)

• RA of internship location associated with subsequent practice location during PGY2-PGY7 (Sen Gupta, Murray, Hays & Woolley, 2014; Woolley, Sen Gupta, Murray & Hays, 2014)

• 43% of PGY1-PGY7 graduate years in RA3-RA5 location (Sen Gupta, Woolley, Murray, Hays & McCloskey, 2014)
Implications

• Supports evidence about the importance of selection and the “rural pipeline” for training a fit-for-purpose health workforce

• Postgraduate follow up will determine the relative impact of rural internship and postgraduate training opportunities (Sen Gupta, Woolley et al, 2013 and 2014)

• Need to replicate for other parts of the health workforce

• R&R innovation through necessity is showing the way

• Our work is well placed to continue to influence the international policy agenda
“...we find meaning in what we do; we find purpose in what we do. That is basically what the school is trying to embed in us...” medical student, Zamboanga

Questions?

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www.thenetcommunity.org
Acknowledgements

- Multiple colleagues at JCU and from our THEnet partner schools
Impact of selection strategies on representation of underserved populations and intention to practise: international findings

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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 socio-economic 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 socio-economic 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.
References


Global Commission on Social Accountability Report [online]


References


