Australia and New Zealand's contribution to Pacific Island health worker brain drain

Joel Negin

School of Public Health, University of Sydney and George Institute for International Health, New South Wales

Abstract

Objective: The paper aims to quantify Australia and New Zealand's contribution to the brain drain of Pacific Island health workers and to contribute firm evidence to the ongoing, highly-contested health professional migration issue.

Methods: The study uses the Australian and New Zealand 2006 census data to examine the number of Pacific Island born health professionals living in Australia and New Zealand and uses World Health Organization data to compare it against the numbers of health workers in Pacific Island countries.

Results: Six hundred and fifty-two Pacific Island born doctors and 3,467 Pacific Island born nurses and midwives are working in Australia and New Zealand, more than half of whom are from Fiji with significant numbers from Papua New Guinea, Samoa and Tonga as well. There are almost as many Fiji-born doctors in Australia and New Zealand as there are in Fiji. There are more Samoa, Tonga and Fiji-born nurses and midwives in Australia and New Zealand than in the domestic workforce.

Conclusions: Migration of Pacific Island health professionals to Australia and New Zealand is very high and contributes to the shortage of health workers in Pacific Island countries.

Implications: Australia and New Zealand are encouraged to actively address the issue in collaboration with Pacific Island partners with a number of solutions proposed.

Key words: Oceania, health manpower, emigration and immigration, Pacific Islands, nurses, physicians

Aust N Z Public Health. 2008; 32:507-11

doi: 10.1111/j.1753-6405.2008.00300.x

The 'brain drain' of skilled professional health workers from developing countries is being seen across the world with most of the emphasis centred on the effect on sub-Saharan Africa.[1,2] At the same time, it is widely acknowledged that the migration of skilled health workers from Pacific Islands is having a significant negative effect on health in the Oceania region as well.[3-6] Despite the increased understanding of the importance of health worker migration from Pacific Island countries, data on the level of migration and the magnitude of the problem is lacking – thus limiting evidence-based decision making and problem solving.

The health worker migration issue is heavily contested and yet remains without a sufficient evidence base. A recent article by William Pick noted "that much more information is needed to persuade those responsible for health services, and especially human resources for health, to take decisions that will contribute to the solution of the global crisis in the staffing of health systems."[7] This study aims to address this lack of information by contributing to the growing research on Pacific Island health worker migration by providing region-wide, comparable data on migration levels. The study uses recent census data, rather than limited sample data, from Australia and New Zealand, to quantify the number of Pacific Island-born health workers in Australia and New Zealand in 2006.

Background

The provision of adequate human resources for health is a major global challenge. It has significant impacts on some of the poorest developing countries and is hampering the achievement of the Millennium Development Goals. The insufficient number of health workers in less-developed countries leads to delays in providing care, the closure of services, a lack of services in remote areas, excessive workload, demoralisation, burn-out, an inability to meet health goals and loss of life.[8] The World Health Organization's World Health Report in 2006 asserted that "there is a strong correlation between the density of health care providers and the attainment of high levels of population coverage with essential health interventions."[2] A Pacific Island ministerial report noted that:

"The shortage of health workers is a chronic problem for Pacific Island countries. The health worker density per 1,000 population (mainly doctors, nurses, and midwives) is critical in Solomon Islands... (below the minimum threshold density of 2.5 worker per 1,000 needed to sustain basic health services), Papua New Guinea and Vanuatu."[8]

Beyond health indicators, the migration of health workers has a significant financial burden on the health sector. The annual cost to the Fijian government of the 23 doctors who resigned in 1999 was US$7,000,000 in training costs and the hiring of expatriate doctors to replace them was an additional US$1,400,000 per year over and above what it would have cost to employ the local graduates.[4] Furthermore, the cost of overseas referrals, much of which is due to lack of local capacity, was, for example, 20% of the total health budget in Samoa.[4] With

Submitted: March 2008 **Revision requested:** August 2008 **Accepted:** August 2008

Correspondence to:
Joel Negin, Edward Ford Building, School of Public Health, University of Sydney, NSW 2006.
Fax: +61 2 9351 5049; e-mail: jnegin@health.usyd.edu.au

© 2008 The Authors. Journal Compilation © 2008 Public Health Association of Australia

most health sectors under-resourced, these lost expenses have a massive effect on the opportunity to improve population health in less developed countries.

It is generally accepted that the reasons for migration include low remuneration, lack of training opportunities and poor working conditions – a situation that is only exacerbated by the lost funds that could have been spent on strengthening health systems and improving pay.[4] While some would argue that some of the financial loss is made up in remittances, in fact, little of the remittance income is invested in maintaining or improving health service delivery.[3] Brown and Connell's analysis of remuneration of Pacific Island health workers in Australia and New Zealand demonstrates the forceful migration pull: "[Sampled Tongan, Samoan and Fijian] nurses working in Australia or New Zealand enjoy a mean income of $1,100 per month in comparison with $318 per month for return migrants and $221 per month for non-migrants."[5]

Developed countries such as Australia and New Zealand have not simply been passive recipients of this migration of health workers. Australia, much like the US and UK, acknowledges that it has growing health worker needs and that it will have a continuing dependence on overseas-trained health professionals to cover the shortfall.[9] From 1992 to 2002, the number of overseas-trained doctors arriving in Australia annually to work in rural and remote areas increased from 667 to 2,899.[10] In order to fill this need, Australian health organisations actively recruit from less developed countries.[11] A 2004 article by Scott and colleagues stated: "Australia has participated in this 'brain drain', although the extent and impact of this on different countries has not been adequately assessed."[12] This paper aims to respond to this knowledge gap.

Methods

Using Michael Clemens' critical work on African health worker migration as a starting point, this study uses the Australia and New Zealand 2006 census data to examine the migration of Pacific Island-born health workers.[13-15] One of the strengths of the source is the ability to gather data on all 22 Pacific Island countries and territories except for Pitcairn Islands rather than a small subset. While Pacific Island countries are often left out of large World Health Organization datasets, census data is able to capture data for all countries.

The focus on country of birth allows the use of a consistent measure across all countries in the region and across the two census datasets. While acknowledging that country of birth is not a perfect measure of an individual's country of origin, it is the most appropriate one for this study. The most likely alternative, country of qualification, is particularly troublesome for the Pacific region as a large number of Pacific Island countries do not have sufficient training facilities for health workers. The International Medical Education Directory lists nine medical schools in the whole of the Pacific but the only ones that train substantive numbers are in Fiji and Papua New Guinea (PNG).[16] Doctors in many countries have no choice but to go overseas for qualification – most likely to Fiji, Papua New Guinea, the US, Australia or New Zealand. Therefore, using country of qualification as the measure of origin would lead to a situation where there are, for example, zero Solomon Islands or Tongan doctors globally and would lead to significant over-reporting of Fijian, Australian and New Zealand health workers. While nursing education is generally available in-country, other studies confirm that existing training institutions in the Pacific cannot produce adequate numbers of health professionals.[5]

To paraphrase Michael Clemens who addressed these same challenges in his study, defining who is a Pacific Islander is inherently complex and forces a number of questions to be asked: is it someone resident in the Pacific, someone born in the Pacific, someone whose ancestors are from the Pacific, or is citizenship the best marker?[8] Country of birth allows consistency across countries and across the two censuses used. In the census data, occupation

Table 1: Pacific Island born doctors in Australia and New Zealand, 2006.

Country of Birth	Australia	New Zealand	Total
Fiji	247	114	361
Papua New Guinea	151	9	160
Samoa	15	27	42
Tonga	14	12	26
Cook Islands	3	9	12
Solomon Islands	9	3	12
Niue	4	3	7
Kiribati	0	6	6
New Caledonia	4	0	4
Vanuatu	4	0	4
Nauru	4	0	4
Tokelau	0	3	3
Tuvalu	0	3	3
Marshall Islands	0	0	0
Federated States of Micronesia	0	0	0
Palau	0	0	0
French Polynesia	0	0	0
American Samoa	0	0	0
Guam	0	0	0
Northern Mariana Islands	0	0	0
Wallis and Futuna	0	0	0

Table 2: Pacific Island born nurses and midwives in Australia and New Zealand, 2006.

Country of Birth	Australia	New Zealand	Total
Fiji	1249	579	1828
Samoa	214	255	469
Papua New Guinea	429	12	441
Tonga	238	183	421
Cook Islands	41	36	77
Solomon Islands	25	12	37
Niue	14	33	47
Vanuatu	15	15	30
Tokelau	8	18	26
Kiribati	12	6	18
Nauru	9	3	12
Tuvalu	4	3	7
American Samoa	0	3	3
French Polynesia	3	0	3
Marshall Islands	0	0	0
Federated States of Micronesia	0	0	0
Palau	0	0	0
Guam	0	0	0
Northern Mariana Islands	0	0	0
Wallis and Futuna	0	0	0

© 2008 The Authors. Journal Compilation © 2008 Public Health Association of Australia

17536405, 2008, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/j.1753-6405.2008.00300.x by Fiji HINARI REGIONAL, Wiley Online Library on [12/06/2023]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

is self-reported. Individual respondents defined themselves based on whatever occupation was most appropriate in response to the question of their current occupation. So if an individual trained as a nurse but no longer works as a nurse, they will not be counted.

It is also acknowledged that there are Pacific Islands born health professionals who have emigrated to countries other than Australia and New Zealand – France, the US, Canada being most frequently noted with the numbers going to the United Arab Emirates increasing. Despite this, most agree that Australia and New Zealand are the most common destinations for Pacific Islands born health professionals.[5] Given the difficulties with securing information on health worker migration, the consistency of methodology, the rigour of the census when compared to sampling, and the comprehensive perspective of the region that this study provides makes it a unique contribution to the understanding of the magnitude of the issue.

Results

The analysis of the census data reveals that 652 Pacific-born doctors and 3,467 Pacific Islands-born nurses and midwives are working in Australia and New Zealand in 2006 (Tables 1 and 2). Of the Pacific Island countries, there are more Fijian-born doctors and nurses/midwives in Australia and New Zealand than that of any other Pacific country. Samoa, PNG and Tonga are the next most common. While Fijian-, Samoan- and Tongan-born health workers are to be found in both Australia and New Zealand, there are many more PNG born health workers in Australia than in New Zealand.

The large numbers of Pacific Island-born health workers in Australia and New Zealand contribute significantly to the wide discrepancy in the number of health workers per population. Australia has considerably more than double the number of nurses and doctors per 1000 population than all of the 14 Pacific Islands for which WHO data is available bar Palau and Niue and, in the case of PNG, Australia has more than 57 times the number of doctors and almost 19 times the number of nurses (Tables 3 and 4).[17]

Table 3: Doctors per 1,000 population in Pacific countries.[17]

	Doctors per 1,000 population	Year
Australia	2.7	2006
New Zealand	2.3	2006
Niue	2.0	2004
Palau	1.6	2000
Cook Islands	1.2	2004
Tuvalu	0.9	2003
Nauru	0.8	2004
Micronesia	0.6	2003
Fiji	0.5	2003
Marshall Islands	0.5	2000
Samoa	0.3	2003
Tonga	0.3	2002
Kiribati	0.2	2004
Solomon Islands	0.1	2003
Vanuatu	0.1	2004
Papua New Guinea	0.1	2000

A number of the health workers working in the Pacific now are not Pacific Islands-born. A WHO study noted that there are a significant number of expatriate doctors working in Fiji and other parts of the Pacific who are largely from other developing countries.[4] Additionally, there is some migration of developed country health workers to Pacific Island countries though the quantification of this movement is not known. These doctors and nurses would be counted as domestic workforce in the data below even though they are expatriates.

The data for the Pacific Island countries comes from the most recent WHO Statistics report and while in some cases the most recent data available is from 2000 or 2002, generally the data is up to date to 2003 or 2004. This certainly affects the direct comparability of the data but highlights the need for updated health worker counts in Pacific Island countries. Figures may have increased – due to increased training – or decreased – due to instability and higher rates of migration – but either way, the disparity between health worker levels in Australia and New Zealand and in Pacific Island countries would still be very considerable.

Conclusions

Figures 1 and 2 demonstrate the high levels of health worker migration in the Pacific. There are almost as many Fijian-born doctors working in Australia and New Zealand as there are doctors in Fiji. Similarly, there are more nurses and midwives who were born in Samoa, Tonga, Fiji and Niue working in Australia and New Zealand than there are nurses and midwives in the domestic workforce. Palau and the Marshall Islands are among the countries with the lowest levels of health worker migration to Australia and New Zealand. This data confirms the high levels of doctor and nurse migration and the significant magnitude of the brain drain from the Pacific. It highlights Australia and New Zealand's role in Pacific health worker shortages.

To revisit the methodological question of birthplace versus country of qualification, while Australia's health workforce includes 2,309

Table 4: Nurses and midwives per 1,000 population in Pacific countries.[17]

	Nurses and midwives per 1,000 population	Year
Niue	11.0	2004
Australia	10.0	2006
New Zealand	8.9	2006
Palau	6.1	2004
Nauru	4.9	2004
Cook Islands	4.7	2004
Tuvalu	4.6	2003
Tonga	3.4	2002
Kiribati	3.0	2004
Marshall Islands	3.0	2000
Micronesia	2.3	2003
Fiji	2.0	2003
Vanuatu	1.7	2004
Samoa	1.7	2003
Solomon Islands	1.4	2003
Papua New Guinea	0.5	2000

© 2008 The Authors. Journal Compilation © 2008 Public Health Association of Australia

17536405, 2008, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/j.1753-6405.2008.00300.x by Fiji HINARI REGIONAL, Wiley Online Library on [12/06/2023]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

nurses born in Pacific Island countries, data from the Australian Institute of Health and Welfare from 2005 asserts that only 339 of registered nurses in Australia received their qualification in what they classify as Oceania.[18] While it may be true that less than one-tenth of 1% of Australia's nurses received their nursing qualification in the Pacific Islands, this hides the fact that up to seven times that number of nurses are Pacific Islanders.

While it is certainly likely that a number of the doctors and nurses born in the Pacific are ethnically from Australia and New Zealand, the reality is that Australia and New Zealand are reliant on health workers from developing countries for its health workforce. The 2006 census shows that 22.7% of Australian doctors and 24.6% of New Zealand doctors were born in developing countries. Australia has more developing country-born doctors per 1,000 population than PNG, Tonga, Fiji and the Solomon Islands have overall. The presence of these health workers in Australia and New Zealand has a positive impact on the availability of health workers in those countries and, conversely, a negative impact in the Pacific.

Implications

A number of possible solutions to the human resources for health crisis have been posited. One of the most prominently expressed proposed responses is for rich countries to end the active recruitment of health workers from developing countries. A recent article noted that Australia's Allied Health established an office in South Africa to facilitate recruitment and asserted that, with the right to health enshrined in a number of international covenants and declarations, that actions taken to reduce that right in populations in developing countries should be seen as an international crime.[12] Australia and New Zealand legislators could ensure that active recruitment of health workers from Pacific Island countries be ended until human resource shortages are addressed.

The policy question becomes much more difficult in the absence of active recruitment. Lincoln Chen has urged rich countries to stop allowing health professionals from developing countries to migrate to rich countries calling for "medical exceptionalism" on "moral and ethical grounds."[19] Mary Robinson, a leading human rights advocate, has acknowledged the complexity of this issue stating:

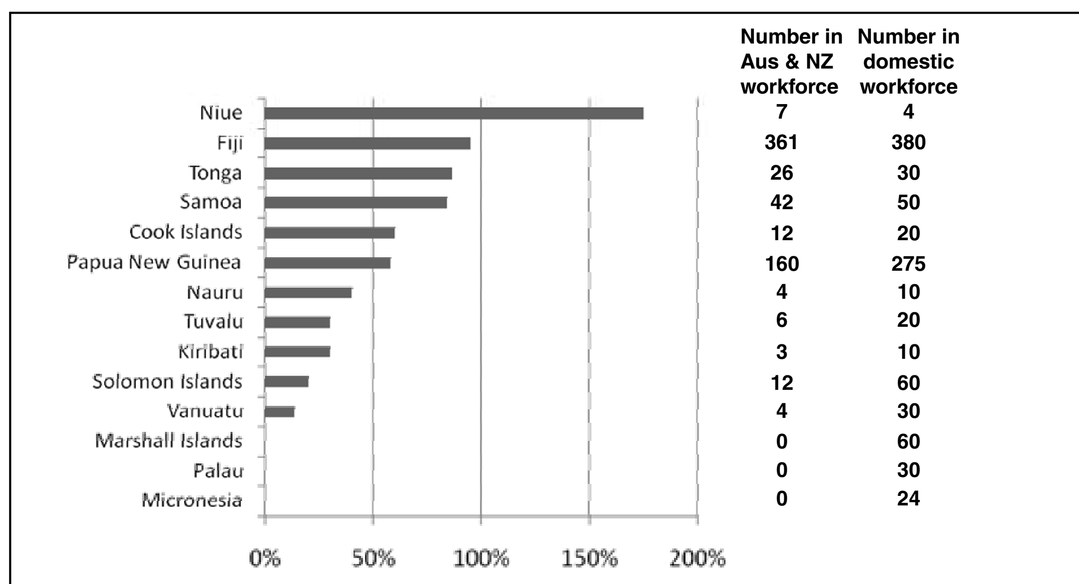

Figure 1: Number of Pacific Islands-born doctors in Australia and New Zealand as a percentage of the number of doctors in the domestic workforce.[17]

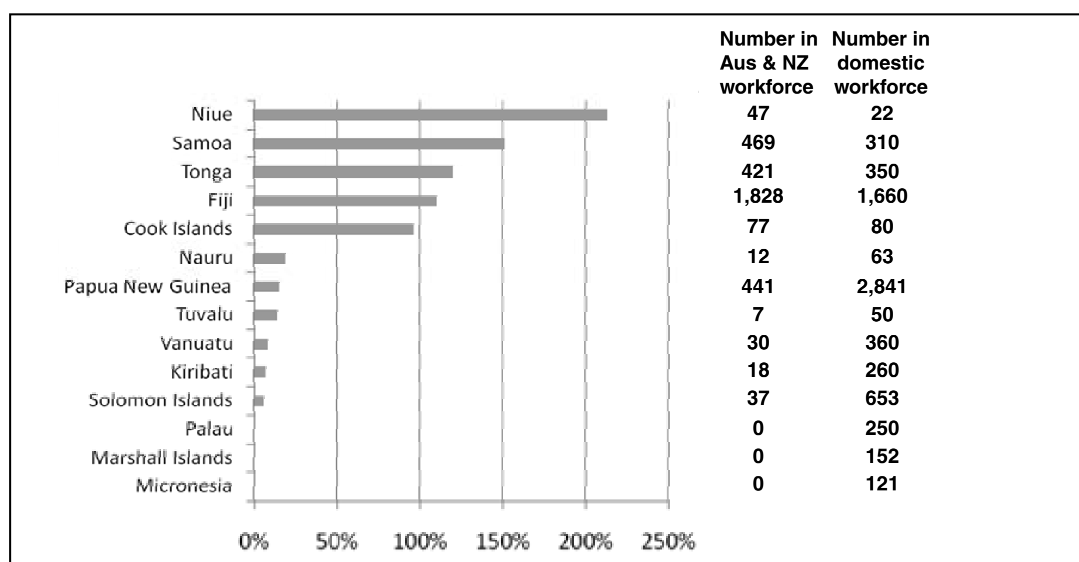

Figure 2: Number of Pacific Islands-born nurses and midwives in Australia and New Zealand as a percentage of the number of nurses and midwifes in the domestic workforce.[17]

© 2008 The Authors. Journal Compilation © 2008 Public Health Association of Australia

17536405, 2008, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/j.1753-6405.2008.00300.x by Fiji HINARI REGIONAL, Wiley Online Library on [12/06/2023]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

"Health workers have a clear human right to emigrate in search of a better life. Yet people in source countries hard hit by an exodus of health workers also have the right to health in their own countries."[20]

In general, Australia and New Zealand have been shielded from this debate due to their limited contribution to the brain drain in Africa – which garners the most headlines due to the most egregious health worker shortages. But given parts of the Pacific's Africa-like shortages of health workers and the region's slow progress in meeting the Millennium Development Goals,[21] Australia and New Zealand have an obligation to actively address their significant contribution to human resource shortages in the Pacific and the poor health outcomes that result.

What could Australia and New Zealand do to address or at least mitigate these impacts? A first step would be enacting legislation to end the active recruitment of health workers from less-developed countries. But given the additional reasons for Pacific health worker migration such as insufficient levels of remuneration, Australia and New Zealand could support Pacific Island governments to provide higher salaries through an aid program similar to the British Department for International Development's Emergency Human Resources Programme in Malawi.[22] Australia's Department of Health and Ageing has a 'relocation incentive grant' that is used to entice doctors to work domestically in under-served areas by providing significant grants. The extension of such a system to Pacific Island countries could improve retention of much needed health workers.

Another policy option would be for Australia and New Zealand to devote increased aid funds to medical and public health educational institutions in the Pacific. When tertiary education is undertaken outside of the home country, as is often the case in the Pacific Islands, emigration is much more likely. At the same time, greater efforts are needed by developed countries to create a domestic nurse workforce that does not require such high levels of migration from less developed nations.[23] Norway has adopted such a policy and is pursuing a policy of self-sufficiency for its own health worker needs.[20] Australia and New Zealand could provide compensation to Pacific Island countries for each Pacific health worker who migrates away. These funds would be equal to the training costs of those individuals and would allow Pacific Island countries to train additional health workers thus increasing the likelihood of retaining sufficient numbers.

Other solutions include the bonding of health workers attending courses leading to internationally recognised qualifications as is done in Kiribati, Niue, Samoa and Tonga.[3] Mozambique and Tanzania have had successful pilots of 'task shifting' whereby some of the most needed roles normally reserved for doctors (such as caesarean sections) are performed by lower level cadres who migrate less often.[24] Tonga has developed a new category of Health Officers, who are trained in Tonga for two years and who then run rural health centres.[4]

Unfortunately, the evidence about the effects of these and other health workforce policies is very inadequate.[25] But with the Australian promises of increased development assistance for the Pacific, there is an opportunity to implement some of these critical interventions to shore up health services in under-served Pacific Islands – thus providing a platform to evaluate the impacts of these policy options.

The migration of Pacific Island health workers to Australia and New Zealand will only increase given widening economic disparities and ever growing health worker needs. Australia and New Zealand need to work with the Pacific Island countries to proactively develop comprehensive health worker strategies to address shortages. Good data and strong evidence is needed as a foundation for this critical effort.

References

1. Chen L, Evans T, Anand S, Boufford JI, Brown H, Chowdhury M, et al. Human resources for health: overcoming the crisis. *Lancet*. 2004;364(9449):1984-90.
2. World Health Organization. The World Health Report 2006: Working Together for Health. Geneva (CHE): WHO; 2006.
3. Ministers of Health for the Pacific Island Countries. *Migration of Health Personnel*. Apia (WSM): World Health Organization Regional Office for the Western Pacific; 2005.
4. World Health Organization Regional Office for the Western Pacific. *The Migration of Skilled Health Personnel in the Pacific Region*. Manila (PHL): WHO; 2004.
5. Brown RPC, Connell J. The migration of doctors and nurses from South Pacific Island Nations. *Soc Sci Med.* 2004;58:2193-210.
6. Connell J. *The Global Health Care Chain: From the Pacific to the World*. New York (NY): Routledge; 2008.
7. Pick W. Lack of evidence hampers human-resources policy making. *Lancet.* 2008;371:629.
8. Meeting of Ministers of Health for the Pacific Island Countries. *Human Resources for Health: The Pacific Code of Practice for Recruitment of Health Workers in the Pacific Region and the Regional Strategy on Human Resources for Health 2006-2015*. Port Vila (VUT): World Health Organization Regional Office for the Western Pacific; 2007.
9. Buchan J, Parkin T, Sochalski J. *International Nurse Mobility: Trends and Policy Implications*. Geneva (CHE): World Health Organization; 2003.
10. Australian Medical Workforce Advisory Committee. *Annual Report 2001–2002*. Sydney (AUST): AMWAC; 2002.
11. Mills E, Schabas W, Volmink J, Walker R, Ford N, Katabira E, et al. Should active recruitment of health workers from sub-Saharan Africa be viewed as a crime? *Lancet*. 2008;371:685-8.
12. Scott ML, Whelan A, Dewdney J, Zwi AB. "Brain drain" or ethical recruitment? Solving health workforce shortages with professionals from developing countries. *MJA.* 2004;180(4):174-6.
13. Clemens MA, Pettersson G. New data on African health professionals abroad. *Human Resources for Health.* 2008:6:1.
14. Australian Bureau of Statistics. *2006 Census of Population and Housing*. Canberra (AUST): ABS; 2008.
15. New Zealand Statistics. *2006 Census of Population and Dwelling Statistics*. Wellington (NZ): New Zealand Government; 2008.
16. Foundation for Advancement of International Medical Education and Research [homepage on the Internet]. Philadelphia (PA): FAIMER; c2008 [cited 2008 Feb 19]. *International Medical Education Directory*. Available from: http://imed.ecfmg.org/search.asp
17. World Health Organization. *World Health Statistics 2008*. Geneva (CHE): WHO; 2008.
18. National Health Labour Force Series. *Nursing and Midwifery Labour Force 2005*. Canberra (AUST): Australian Institute of Health and Welfare; 2008.
19. Alkire S, Chen L. 'Medical exceptionalism' in international migration: should doctors and nurses be treated differently? Joint Learning Initiative Working Paper 7-3. *Proceedings of the Workshop Global Migration Regimes*; October 2004; Stockholm Sweden.
20. Robinson M, Clark P. Forging solutions to health worker migration. *Lancet*. 2008;371:691-3.
21. United Nations. *The Millennium Development Goals Report 2007*. New York (NY): UN; 2007.
22. Palmer D. Tackling Malawi's Human Resources Crisis. *Reprod Health Matters*. 2006;14(27):27–39.
23. Aiken L, Buchan J, Sochalski J, Nichols B, Powell M. Trends in International Nurse Migration. *Health Aff (Millwood)*. 2004;23(3):69-77.
24. Pereira C, Cumbi A, Malalane R, Vaz F, McCord C, Bacci A, et al. Meeting the need for emergency obstetric care in Mozambique: work performance and histories of medical doctors and assistant medical officers trained for surgery. *BJOG*. 2007;114:1530–3.
25. Chopra M, Munro S, Lavis J, Vist G, Bennett S. Effects of policy options for human resources for health: an analysis of systematic reviews. *Lancet*. 2008;371: 668–74.

© 2008 The Authors. Journal Compilation © 2008 Public Health Association of Australia

17536405, 2008, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/j.1753-6405.2008.00300.x by Fiji HINARI REGIONAL, Wiley Online Library on [12/06/2023]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License