

## 研究成果の刊行に関する一覧表

## 書籍

著者氏名	論文タイトル名	書籍全体の編集者名	書籍名	出版社名	出版地	出版年	ページ
Pilarita Tongol-Rivera, Shigeyuki Kano <i>et al.</i>		Shigeyuki Kano	Social Capital Development and Malaria Control in the Philippines	Free Press Co.	Tokyo	2010	

## 学術雑誌

発表者氏名	論文タイトル名	発表誌名	巻号	ページ	出版年
Yamamoto T, Sunguya BF, Shiao LW, Amiya RM, SAW YW, Jimba M.	Migration of health workers in the pacific islands: a bottleneck to health development.	Asia Pac J Public Health	24	In press	2012
Yasuoka J, Poudel KC, Ly P, Nguon C, Socheat D, Jimba M.	Scale-up of community-based malaria control can be achieved without degrading community health workers' service quality: the Village Malaria Worker project in Cambodia.	Malaria Journal	11	4	2012
Poudel KC, Fujita M, Green K, Poudel-Tandukar K, Jimba M.	Non-communicable diseases in southeast Asia.	Lancet (correspondence)	377	2004-5	2011
Yanagisawa S, Poudel KC, Jimba M.	Sibling caregiving among children orphaned by AIDS:	Health Policy	98	121-30	2010

	Synthesis of recent studies for policy implications.				
Jimba M, Cometto G, Yamamoto T, Shiao L, Huicho L, Sheikh M.	Health workforce: the critical pathway to universal health coverage.	Background paper for the global symposium on health systems research. 16 – 19 November, 2010, Montreux, Switzerland.			2010
Yasuoka J, Poudel KC, Poudel-Tandukar K, Nguon C, Ly P, Socheat D, Jimba M.	Assessing the quality of service of village malaria workers to strengthen community-based malaria control in Cambodia.	Malaria Journal	9	109	2010
Ayi I, Nonaka D, Adjovu JK, Hanafusa S, Jimba M, Bosompem KM, Mizoue T, Takeuchi T, Boakye DA, Kobayashi J.	School-based participatory health education for malaria control in Ghana: engaging children as health messengers.	Malaria Journal	9	98	2010
Nonaka D, Vongseththa K, Kobayashi J, Bounyadeth S, Kano S, Phompida S, Jimba M.	Public and private sector treatment of malaria in Lao PDR.	Acta Tropica	112	283-7	2009

学会等発表 (神馬征峰)

日付	内容	依頼者	備考
2012.03.02	Evidence-based Policy : Where should it come from and how should it be used?	JICA Laos Office	Health Policy Conference for Laos (ビエンチャン、 ラオス)
2012.2.14	Policy Implementation for School Health	Mahidol University	Global School Health Workshop (マヒドン大学、タ イ)
2012.1.24	The JAPAN-World Bank Partnership Program: Research Prospects in the Developing Countries-Human Resources for Health	World Bank	Prince Mahidol Award Conference (タイ保健省、タ イ)
2011.06.16	Global health academic approaches: Japan's perspective	環太平洋連合 (APRU) 世界機 関 (AWI)	環太平洋連合 (APRU) 世界機関 (AWI) 公衆衛生会 議(インドネシア大 学,インドネシア)
2011.05.02.	'Health and Human Security' in Action-Presentations from the ground	Japan Center for International Exchange	TICAD IV side meeting (ダカール、 セネガル)
2011.02.11.	Global Health Workforce Strengthening: Progress after Kampara and New Challenges	名桜大学	国際シンポジウム 「地域に根ざした 保健医療人作り」(名 桜大学)
2010.11.25.	Human Security: Beyond disease control and health promotion in global health	Asia Pacific Consortium for Public Health (APACPH)	Annual APACPH Conference (バリ、 インドネシア)

2010.06.18.	NCDs in Developing Countries: Universal Coverage or Universal Access?	環太平洋連合 (APRU) 世界機関 (AWI)	環太平洋連合 (APRU) 世界機関 (AWI) 公衆衛生会議(南京大学,中国)
2010.04.16.	Health workforce in Asia: beyond infectious disease control	国立ソウル大学	ソウル大学 50 周年記念シンポジウム (韓国)
2009.12.06	Arts as Assets for PHC in Asia	Asia Pacific Consortium for Public Health (APACPH)	Annual APACPH Conference (台北、台湾)
2009.12.01	Health Promotion for Overcoming Health Workforce Shortage against Chronic, Non-Communicable Diseases Threats in the Asia-Pacific Region	香港中文大学	AWI 公衆衛生ワークショッププロジェクト (香港中文大学、香港)
2009.11.24	Task Shifting for or Task Transformation: WHO Cares Management?	WHO	アジア太平洋保健人材機構・WHO 国際保健人材会議 (ハノイ、ベトナム)
2009.09.06.	Bottom up facilitation to improve water management in Vietnam	Community Development Journal (Oxford University Press)	Community Development Journal 専門家会議 (ロンドン,UK)
2009.06.25.	Challenges and opportunities for overcoming health workforce shortage against NCD threats in the Asia-Pacific region	環太平洋連合 (APRU) 世界機関 (AWI)	環太平洋連合 (APRU) 世界機関 (AWI) 公衆衛生会議(ジョンズホプキンス大学,USA)
2009.04.16.	Health workforce in Asia: beyond infectious disease control	国立ソウル大学	ソウル大学 50 周年記念シンポジウム (韓国)

学会等発表 (狩野繁之)

日付	内容	依頼者	備考
2011.10.3-6	Social capital for strengthening community-based malaria control in Palawan, the Philippines	7th European Congress on Tropical Medicine and International Health, Barcelona, Spain	
2009.7.31.	Community-based malaria control in the Philippines, and its Social Capital development.	独立行政法人国際協力機構 (JICA)	研修コース「食の安全確保のための人畜共通感染症対策」(帯広畜産大学原虫病センター)

学会等発表 (溝上哲也)

日付	内容	依頼者	備考
2011.6.	Non-communicable disease prevention Japanese experience.	APRU World Initiative-Public Health 2011	Hosted by the School of Public Health, University of Indonesia
2009.7.19	School health promotion for the prevention of lifestyle diseases in Sri Lanka	International Union for Health Promotion and Education (IUHPE)	The First Asian-Pacific Conference on Health Promotion and Education(千葉)

学会等発表 (小林潤)

日付	内容	依頼者	備考
2011.11	全国レベルにおける研修管理システムの導入を通じた保健システム強化：ミャンマーの経験	第26回国際保健医療学会・第52回熱帯医学会合同大会 東京	

2010.9.	ミャンマーにおける基礎保健スタッフのためのトレーニングの現状とトレーニングマネージメントの能力強化への取り組み	第25回国際保健医療学会 福岡	
2010.8.	Overview and progress of Sepon study	4 <sup>th</sup> Lao National Health Research Forum, Lao PDR	

**Title**

Migration of health workers in the Pacific Islands: A bottleneck to health development

**Authors**

TS Yamamoto, MD, MHSc (tamy81@gmail.com)

BF Sunguya, MD (Sunguya@gmail.com)

LW Shiao, MS (lwshiao@m.u-tokyo.ac.jp)

RM Amiya, MHSc (rachel.amiya@gmail.com)

YM Saw, MHSc (sawyumon@gmail.com)

M Jimba, MPH, PhD (mjimba@m.u-tokyo.ac.jp)

**Affiliation**

Department of Community and Global Health, Graduate School of Medicine, The University of Tokyo.

**Corresponding author:**

Masamine Jimba

Department of Community and Global Health, Graduate School of Medicine, The University of Tokyo. 7-3-1, Hongo, Bunkyo-ku, Tokyo, 113-0033, Japan

[mjimba@m.u-tokyo.ac.jp](mailto:mjimba@m.u-tokyo.ac.jp)

3,810 words (Abstract: 196 words)

## **Migration of health workers in the Pacific Islands: A bottleneck to health development**

### **Abstract**

Human resources for health (HRH) are a crucial component of a well-functioning health system. Problems in the global HRH supply and distribution are an obstacle to achieving the health-related MDGs and other health outcomes. The Pacific Island region, covering 20,000 to 30,000 islands in the South Pacific Ocean, is suffering a serious HRH crisis. Yet updated evidence and data is not available for the 22 Pacific Island countries and territories (PICTs). The objective of this study was thus to explore the current HRH situation in the Pacific Island region, focusing particularly on the issue of health workforce migration. HRH trends and gaps differ by country, with some showing increases in HRH density over the past 20 years while others have made negligible progress. Currently, three Pacific Island countries are facing critical HRH shortages, a worsening of the situation from 2006, when HRH issues were first brought to widespread global attention. In this region, skilled personnel migration is a major issue contributing to the limited availability of HRH. Political commitment from source and destination countries to strengthen HRH would be a key factor toward increasing efforts to train new health personnel and to implement effective retention strategies.

### **Keywords**

Health manpower, Pacific Islands, Migration



## **Introduction**

Profound inadequacies in available human resources for health (HRH) pose a persistent global challenge with far-reaching repercussions. Critical shortages are often coupled with skill mix imbalances and uneven geographic distribution. The resulting HRH crisis creates a serious bottleneck for achieving the health-related Millennium Development Goals (MDGs) and other health development objectives, including the emerging health systems agenda of tackling non-communicable diseases (NCDs) in low- and middle-income countries (LMIC).<sup>1</sup>

Health workforce insufficiencies also negatively affect preparedness for and response to global security threats posed by emerging and epidemic-prone diseases, including avian influenza, Acute Respiratory Syndrome (SARS), hemorrhagic fevers, as well as natural and man-made disasters.<sup>2</sup> Moreover, with the growing impact of climate change on health, the need for skilled health workers is greater than ever.<sup>3</sup>

The World Health Organization (WHO) underscored the key challenges facing the world's health workforce in its annual World Health Report (WHR) for 2006, entitled, "Working Together for Health".<sup>4</sup> Among the key HRH challenges highlighted was the adverse effect of health workers out-migration, a factor that continues to be especially significant among the low-income countries.<sup>5</sup> Loss of health workers through migration not only weakens already compromised health systems, but also represents a costly loss of scarce and

expensively-trained human capital. In Sub-Saharan Africa, for example, financial losses due to migration of doctors from only nine countries was estimated at more than \$2 billion.<sup>6</sup> Loss of significant numbers of key health workers affects core national strategies for health sector development, creating problems for health care as well as for human resource planning and development. Countries most affected by such impacts tend to be relatively poorly performing economies, notably the small Pacific Island states.<sup>7</sup>

Despite advances in bringing the health workforce to the fore in international health policy arenas and alongside individual examples of progress in tackling the problem, the health workforce crisis affects the Pacific Islands countries and territories (PICTs). Based on projections for health care professional shortages in 2015, the greatest doctor shortages will be in PICTs – Papua New Guinea (PNG) and Vanuatu, both of which have a 0.50 doctor per 1,000 population deficit.<sup>8</sup> Yet evidence for this critical region is still very limited. Since the WHR 2006, no synthesis of available HRH data has been undertaken for the 22 PICTs comprising the WHO for Western Pacific Region.

The PICTs cover 20,000 to 30,000 islands located over a vast stretch of the South Pacific Ocean. Population sizes range from 1,167 in Tokelau to 6,609,745 in PNG, with wide variations in social and economic conditions, health infrastructure, and health workforce

training throughout the region. Despite the uniqueness of each nation or territory, however, the region shares a number of distinct and broadly common characteristics: small populations dispersed over large distances, occupying small land areas and vulnerable to environmental threats and natural disasters. Moreover, they share a lack of resources and a geographical isolation that is the basis of many of the challenges they face in health workforce education, training, and development.<sup>9</sup> Like many other parts of the world, the region has recently experienced a major shift in disease burden, with NCDs overtaking communicable diseases as a critical health and development issue; rates of chronic disease in PICTs are now among the highest in the world and the leading cause of morbidity and death in the region.<sup>10,11</sup>

The well-known link between health workforce density, service delivery, and population health outcomes has been clearly demonstrated.<sup>12,13</sup> The impact is reflected in health system performance indicators, including measures of maternal and child health.<sup>14</sup> It is not then surprising that some of the highest under-five and maternal mortality rates are found in PICTs, where ratios of health workers to population are especially low (Tables 1-2). Of particular note, the migration of health workers, both regionally and internationally, imposes a significant burden on the health sectors of countries in the Pacific Island region. It is in this context that we frame the present review of the current state of HRH in the 22 PICTs.

## **Current state of HRH**

In the WHR 2006, PNG was the only country of the 22 PICTs to be listed as one of the 57 countries facing critical shortage of HRH.<sup>4</sup> Recent data from the Western Pacific country health information profiles 2011<sup>15</sup> shows changes in the health workforce density in these countries compared to the data presented in the WHR 2006 (Table 3). Among the PICTs, although the average density of doctors, nurses and midwives has increased to 4.87 per 1000 population (from 3 per 1000 population in 2006), the number of countries with critical shortages has also increased to 3. In PNG, health workforce density remains critically low at 0.52 per 1000 population; meanwhile, Samoa and Vanuatu have also acquired HRH crisis status with health workforce densities of 1.21 and 1.73 per 1000 population, respectively. The Solomon Islands are also worth mentioning here, as the territory has a health workforce density of 2.32 per 1000 population, at the borderline of the critical shortage cut-off. On the other hand, there are PICTs like Tokelau and Niue with densities as high as 13.61 and 12.67 per 1000 population, respectively.

## ***Trends in density between 1996 and 2010***

Using data from the Global Health Observatory repository<sup>16</sup> and the Western Pacific Country health information profiles 2006 – 2011<sup>15,17-21</sup>, we have observed trends in the density of doctors, nurses and midwives for the 13 PICs for which data was available. Between 1996

and 2010, the density of doctors decreased in Nauru, Micronesia and Samoa, while it remained stable in PNG. In Kiribati, Marshal Islands, Niue, Solomon Islands, Tonga and Tuvalu, the density of doctors increased. Between 2001 and 2010, densities decreased in Fiji, Palau and Vanuatu (Figure 1).

Between 1997 and 2010, density of nurses and midwives decreased in the Marshall Islands and PNG, but increased in 11 other PICTs. Increases in density varied by country, Palau showed the biggest increase in density, from 1.5 per 1000 in the 1997-2000 period to 5.8 per 1000 in the 2006-2010 period. Although there was not data available for Niue for the 1997-2000 period, between 2001 and 2010, this country showed an increase in density from 10 to 15 per 1000 population (Figure 2).

### ***Gaps in HRH***

Based on parameters defined by Scheffler and colleagues<sup>5,22</sup>, we assume that a country needs 0.55 doctors per 1000 population and 1.73 nurses and midwives per 1000 population in order to meet population health needs. Using this threshold and the most recent data available from the WHO Western Pacific Region database, we calculated the gaps in these cadres. Such analyses revealed that 7 out of 22 PICTs (Fiji, Kiribati, Northern Mariana, PNG, Samoa, Solomon Islands and Vanuatu) are facing critical shortages of doctors (Figure 3). The doctor

shortages in terms of density ranged from 0.15 per 1000 population in Kiribati to 0.50 per 1000 population in PNG.

Regarding the density of nurses and midwives, we found that 4 out of 22 PICTs (PNG, Samoa, Tuvalu, and Vanuatu) are facing critical nurse shortages (Figure 4). The nurse and midwife density shortages range from 0.1 per 1000 population in Tuvalu and Vanuatu to 1.26 per 1000 population in PNG. Among these countries, PNG, Samoa, and Vanuatu are facing crises of doctor, nurse, and midwife shortages.

## **Migration of HRH from the Pacific Islands**

### ***Migration Patterns***

The capacity of health systems to deliver services to the population critically depends on the availability of a skilled health workforce. Loss of significant numbers of health workers not only hampers progress towards the MDGs but also affects service provision, quality of care, and distribution of the health workforce. In broad terms, it contributes to the poor performance of health systems in the region. Although health workforce availability in the countries that retain a close political relationship with the United States (US) (US-Affiliated Pacific Islands) is better than in other Pacific Island countries, partially due do better salaries

and working conditions, migration of skilled health workers is considered to be the major cause of health workforce shortages in the Pacific Islands.<sup>23</sup>

Three types of migration of health workers can be observed in the Pacific Region according to Diallo's classification on migration: internal, international, and the "cross-industry" migration of workers leaving the health sector to work in the non-health sector.<sup>24</sup> The first type, internal migration, is the movement of health workers within a country, from district to district, or between rural and urban areas. In the Pacific Region, this type of migration has grown significantly as more people move from outer and isolated rural areas to more metropolitan coastal regions.<sup>23</sup> Disparities in the urban-rural distribution of health workforce have increased, as the nation's general population has concentrated in more urban areas, such as Tongatapu in Tonga, Upolu in Samoa, South Tarawa in Kiribati, and Efate in Vanuatu.<sup>23</sup>

International migration is the second type of movement, in which health workers temporarily or permanently settle abroad.<sup>24</sup> Many health workers from PICTs migrate to the US, Canada, Australia, New Zealand and the United Kingdom (UK) of Great Britain and Northern Ireland.

<sup>23</sup>Overseas recruitment of health workers from resource-poor countries including the Pacific Islands can fill the vacancies in these countries, which have a constant need for expanding their health workforce. These destination countries share similar immigration policies, in

which acquisition of permanent skilled migrants is among the major objectives.<sup>23</sup> Besides international migration to these five major destinations, international migration also heavily affects the Pacific Islands. In particular, Fiji is a major migration destination for health workers in the Pacific Islands. It has the most advanced health care system in the region, which frequently attracts temporary migrant health workers from other PICTs.<sup>23</sup> The Fiji School of Medicine (FSMed) has provided specialist training for doctors since the late 1990s, but loss of graduates to overseas migration and to the local private sector has exacerbated the shortage of health workers in Fiji nevertheless.<sup>23</sup>

The third type of migration, “cross-industry” migration, has a similar impact in health service delivery as other types of migration. Health workers leaving their positions for more attractive positions in non-health sectors contributes to the loss of skilled health workers from the health sector.<sup>24</sup> This loss can come at a high cost to island states and health systems through the long training duration, high training costs, and resulting reduction of service quality.<sup>23</sup> The remittances from the migrants may not offset the loss because they do not return to the health sector. Indeed, a study on the remittances of migrant Tongan and Samoan nurses from Australia showed that remittances are mostly used in consumption objectives.<sup>25</sup>



Migration is usually not a one-way process. Beyond the three types of migration described above, influx of health workers, such as through the return migration of health workers and immigration of expatriate health workers, has also occurred in the Pacific region. Tonga is a country which has approximately the same amount of its population living overseas and in the country.<sup>23</sup> A qualitative study on return migration to a village in Tonga suggested that overseas training with bonding to return and the commitment to contribute to their home country may prompt workers to apply their skills locally upon returning to the country.<sup>26</sup> Expatriate health workers also migrate into the Pacific Islands. Expatriate doctors in Fiji were from Myanmar, Hungary, Pakistan, the Philippines and Nigeria, whereas expatriate doctors and nurses in Palau came from more diverse countries.<sup>23</sup> Such health workers were under contracts of various durations.<sup>23</sup> However, the influx of health workers in the Pacific Islands is of rather limited magnitude compared to international health workforce migration.

### ***Reasons for migration***

Migration is a personal decision shaped by changing personal circumstances, and to the social and economic context in which decisions are made.<sup>27</sup> Understanding the reasons for migration can shed light on potential solutions as the PICTs seek to retain their health workers.

An empirical study done by Brown and Connell<sup>28</sup> has shown that income and non-income factors influenced the decision regarding present or future migration of 251 doctors and nurses from Fiji, Samoa, and Tonga. This study showed that income was the major reason for international migration among both doctors and nurses. Tongan nurses earn relatively less than do other Tongans, either abroad or at home. In Tonga, the differential between mean incomes of nurses and the national mean per capita income was greatest.<sup>28</sup> This becomes a push factor for Tongan nurses to migrate, making them more likely to do so than those from Fiji or Samoa.<sup>28</sup>

One non-income factor affecting migration from the Pacific Islands to Australia and New Zealand found in the same study is related to the residence of kin.<sup>28</sup> Both doctors and nurses are more likely to migrate overseas or return home when they have families abroad or in their home country. Other reasons for migration include dissatisfaction with evident career structures, promotion opportunities, and access to modern technology and training.<sup>28</sup> Low professional satisfaction in aspects of professional growth, working conditions, and recognition and value for professional roles are also key reasons for specialists in Fiji to leave the public sector and to migrate.<sup>29</sup>

### ***Retention issues***

Due to the serious problems stemming from loss of health workers due to migration, retention of health workers in the PICTs has become a crucial area of focus for the region. PICTs facing health workforce shortages need to identify the major cause of the shortage, and the incentives and retention strategies to encourage health workers to remain in the local health sector.<sup>30</sup>

Although financial incentives are major pulling factors from destination countries, providing financial incentives is not enough to motivate health workers.<sup>31</sup> Provision of career development represents one of a few powerful incentives for health workers to remain in the country. A qualitative study collected data from 120 specialist trainees in the Fiji School of Medicine from 1997 to 2004. Of 120 trainees, 66 of the graduates were Fijian. Among Fijian graduates, 48.5% of trainees remain in the public sector in Fiji. This study showed that local or regional postgraduate training may increase retention of doctors.<sup>32</sup>

### *The situation of migration*

New Zealand and Australia are the most important destinations for emigrated specialized health workers from the Pacific Islands.<sup>33</sup> The two countries attract inordinate numbers of health workers from the economically disadvantaged and smaller nations and thus further weaken their health systems. A strong historical tie exists among the Pacific Islands, New

Zealand, and Australia, partly due to physical proximity as well as to financial links in the form of Overseas Development Assistance (ODA) and bilateral assistance.<sup>34</sup> Such assistance is far too meager to compensate for the professional loss from especially smaller islands in which the limited specialized health workforce is the backbone of an already weakened health system.

The census-based data analyzed in 2008 showed that 652 doctors and 3,467 nurses born in the Pacific Islands were working in New Zealand and Australia in 2006.<sup>35</sup> Such numbers are higher or almost equal to the number of health workers who have remained to work in these small islands. The majority of these specialized health workers were from Fiji, a country with a doctor-to-patient ratio of 0.38, a ratio that falls well below the international standard.<sup>36</sup>

According to census data, a total of 361 doctors and 1,828 nurses in Australia and New Zealand were Fiji-born. These numbers are higher than the 339 doctors and 1,682 nurses who were working in Fiji in the same year.<sup>36</sup> The existing HRH gap in Fiji would have been narrowed if at least some of these migrants remained to work within the island.

After Fiji, PNG contributes the second highest number of emigrated skilled professional health workers in New Zealand and Australia. Census data reveals that 160 doctors and 441 PNG-born nurses were working in New Zealand and Australia in 2006.<sup>35</sup> According to the