Brain Drain into *Brain Gain*?
A Review of Policies to address the Shortage of
Human Resources for Health Indonesia

by

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Abstract

This capstone is a review of national policies and practices in Indonesia to address human resources for health shortages since 2010. A comprehensive search of peer-reviewed and grey literature yielded 65 relevant studies/documents. These were evaluated to assess how well or poorly they align with the WHO Global of Practice on the International Recruitment of Health Personnel using an analytical framework developed specifically for the Code. The findings suggest that Indonesia's policies have been adapted, to address the mobility of health workers, and mechanisms now exist to scale up the production of health workers. However, this review identifies key challenges remaining concerning equitable access, quality of healthcare, and regulation. Recommendations to policy-makers include the need for firmer negotiation of international agreements, stronger rural retention programs, modification of medical education curriculum and admissions criteria, and work with other stakeholders to ensure policy space for health priorities.

Keywords: human resources for health; brain drain; health worker migration; WHO Global Code of Practice on the International Recruitment of Health Personnel

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List of Acronyms

AAAH	Asia-Pacific Action Alliance
BAPPENAS	State Ministry of National Development Planning
BC	British Columbia
BDEHRH	Board for Development and Empowerment of Human Resources for Health
CCF	Country Coordination and Facilitation
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CNA	Canadian Nurses Association
CSO	Civil Society Organization
EBM	Evidence Based Medicine
GHWA	Global Health Workforce Alliance
GoI	Government of Indonesia
HRH	Human Resources for Health
ICN	International Council of Nurses
IJEPA	Indonesia Japan Economic Partnership Agreement
ILO	International Labour Organization
IMG	International Medical Graduate
INNA	Indonesian National Nurses Association
KTKI	Indonesian Health Workers Council
LMIC	Low- and Middle- Income Country
MDG	Millennium Development Goal
MoE	Ministry of Education
MoH	Ministry of Health
MOU	Memorandum of Understanding
MPH	Master of Public Health
NCD	Non Communicable Disease
NGO	Non-Governmental Organization
NRI	National Reporting Instrument
PTT	Pegawai Tidak Tetap
SEA	South-East Asia
SEAR	South-East Asia Region

SFU   Simon Fraser University
UHC   Universal Health Coverage
UN   United Nations
UNHCR   United Nations High Commission for Refugees
WHA   World Health Assembly
WHO   World Health Organization

Introduction

The 2006 World Health Report estimated a global shortage of more than four million skilled health professionals (e.g., midwives, nurses, and physicians) worldwide, and identified 57 countries facing critical shortages in human resources for health (HRH). Shortages are defined as a density of skilled health professionals of less than 22.8 per 10,000 population[1] and less than 80% coverage rate for deliveries by skilled birth attendants (WHO, 2006). Although HRH shortages affect high-, middle-, and low- income countries, most of the "crisis countries" were in the WHO regions of Africa (57%) and South-East Asia (13%) (Campbell et al., 2013). Within the South-East Asia Region (SEAR), four of the most populous countries, namely Bangladesh, India, Indonesia, and Myanmar, faced critical shortages (Campbell et al., 2013). In 2013, there was an estimated global deficit of 7.2 million skilled health professionals,[2] with nearly half the deficit in SEAR, where 27% of the world's population lives (Campbell et al., 2013). By 2035, the HRH shortage is predicted to worsen to an estimated global deficit of 12.9 million skilled health professionals, with the highest absolute deficit (39% of the global total) in SEAR (Campbell et al., 2013).

Health workers are a crucial component of a strong health system. Current shortages in "crisis countries" leave billions of people with limited or no access to health care. The result is "long waiting times at health centres, absence of specialist services, long distances to travel for care, and financial burden on patients and their families" (Lanktree, 2014). The heaviest burden

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[1] The minimum threshold is 22.8 skilled health professionals per 10,000. The International Labour Organization (ILO) modelled a threshold of 34.5 skilled health professionals per 10,000 population based on workforce requirements to address access deficits in population coverage of an expanded health benefits package. The WHO and USAID modelled a threshold of 59.4 skilled health professionals per 10,000 population based on workforce requirements to reduce global maternal deaths to 50 per 100,000 live births by 2035.

[2] The Global Health Workforce Alliance (GHWA) estimates are measured against a minimum threshold of 34.5 skilled health professionals per 10,000 people. This target is modelled "in the context of the Millennium Development Goals, universal health coverage, and the post-2015 agenda" (Campbell et al., 2013).

is borne by rural communities. For example, in India almost 75% of health resources are located in urban areas. Rural areas face twice the number of deaths per year, due to largely preventable contagious and water-borne diseases, and immunization rates are lower for rural children (Salafsky, Glasser, & Ha, 2005). Ultimately, this prohibits the realization of universal health coverage (Siyam et al., 2013), one of the seventeen Sustainable Development Goals of the post-2015 United Nations development agenda (WHO, 2016b).

Some patterns of labour movement in the health sector contribute to the global HRH shortage and resultant inequities in health worker distribution. Within countries, health workers tend to prefer urban over rural areas, the private sector over public sector, and medical specialities over general practice (Nair & Webster, 2013). Between countries, health workers in lower-income countries tend to migrate permanently to higher-income countries. There are various push and pull factors that explain these preferences. Push factors include a lower living standard, low social recognition/career path, poor facilities/logistics, lower income, and low opportunity for training (Nair & Webster, 2013; Wibulpolprasert & Pengpaibon, 2003). Pull factors include demand in rich countries, demand in urban private hospitals, better living and working standards, specialization training, better income, higher social recognition, and job satisfaction/career (Nair & Webster, 2013; Wibulpolprasert & Pengpaibon, 2003). These factors result in widespread differences in access to skilled health professionals within countries, across countries, and across socio-demographic groups.

Since the 2006 World Health Report, a number of policies and agreements have been developed at the regional, national, and international level to address the global HRH shortage. In May 2010, the World Health Assembly comprising 193 Member States adopted the WHO Global Code of Practice on the International Recruitment of Health Personnel (hereafter referred to as the "WHO Code" or "the Code"). The Code is based on the fundamental principles that everyone has the right to the highest attainable standard of health, and that individuals have the right to migrate in search of employment within and across countries. Nevertheless, the code is intended to be an instrument for countries "to promote a more ethical recruitment of health personnel, encouraging countries to achieve greater 'self-sufficiency' in the training of health workers" (WHO, 2015b). The Code comprises ten articles: (1) Objectives, (2) Nature and scope, (3) Guiding principles, (4) Responsibilities, rights and recruitment practices, (5) Health workforce development and health systems sustainability, (6) Data gathering and research, (7)

Information exchange, (8) Implementation of the Code, (9) Monitoring and institutional arrangements, and (10) Partnerships, technical collaboration and financial support. This instrument marks the second time[3] that "WHO Member States have used the constitutional authority of the Organization to develop a code" (WHO, 2016a). A code of practice is not legally binding; instead, it establishes voluntary principles and relies on the 'general good-faith obligation' of Member States to implement its recommendations (WHO, 2011).

Among SEAR crisis countries, the density of skilled health professionals improved in Indonesia, from 14.2 per 10,000 population in 2009 to 21.1 per 10,000 population in 2010[4] and 32.2 per 10,000 population in 2015 (Tangcharoensathien & Travis, 2015). As Indonesia is a sizable archipelagic nation with difficult geography such as remote islands, mountainous regions, and forests, even distribution of health workers is a challenge (Appendix A provides a map of Indonesia with population density by province). Poor distribution of health professionals between urban and rural areas persists, and the vast majority of public health workers engage in dual practice (WHO SEAR, 2011). In fact, the WHO stated that in SEAR countries, "internal migration of health workers from the public to private sector is more relevant than international migration" (WHO SEAR, 2016). Nonetheless, many Indonesian nurses continue to migrate to Japan and various Middle Eastern countries with whom formal governmental agreements are in place specifically to facilitate nurse migration (Connell, 2010; Tangcharoensathien & Travis, 2015). For example, between 2008 and 2012, more than 3,000 Indonesian nurses were posted to high-income country settings (Ferry Efendi, Mackey, Huang, & Chen, 2015). Other estimates of Indonesian nurse migration overseas are 2,829 to 2009, and 9,705 between 1989 and 2010 (Elison, 2014). Since the drafting phase of the WHO Code in 2009, Indonesia has supported the spirit of the WHO Code (WHO SEAR, 2009). However, the country is also striving to become one of the world's main source countries for health personnel given its large population and potential for foreign earnings (WHO SEAR, 2009). It is thus actively engaging in the export of health care workers to other countries despite domestic shortages (Mackey & Liang, 2013).

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[3] In May 1980, the World Health Assembly adopted its first code of practice, namely the International Code of Marketing of Breast-Milk Substitutes (World Health Organization, 1981).
[4] A 2013 report by Campbell et al. calculated a lower density of 16.1 per 10,000 population. Based on this baseline number for 2010, they calculated that a 78% increase in the health workforce (or 4% constant annual rate of change in workforce between 2013 and 2035) would be needed to reach the threshold of 22.8 by 2035 taking into account population growth to 303,382,000.

Purpose

This capstone evaluates if and how national HRH policies in Indonesia are compliant with the WHO Code. What commitments and joint efforts, if any, have there been at the national level? Do they support health equity, specifically the distribution of health workers? Do they address (1) international movement of health workers educated and trained in LMICs to HICs; (2) inequitable distribution of health workers between rural and urban areas; or (3) movement of health workers from the public to private sector? Is there evidence that brain drain has been reduced (i.e. migratory stocks and flows of foreign workers)? Although the Code is not legally binding, this capstone will explore whether legally binding agreements reflect the Code's core principles by analysing how well or poorly national policies align with the Code. The rationale behind focusing on national policies is that member states, who agreed to the Code at the international level, are responsible for implementing the Code in their country.

After assessing compliance with the Code to date, this capstone identifies the continuing challenges that Indonesia faces in its efforts to implement the Code and better manage HRH. An analysis of political, economic, social, and legal factors that contextualise Indonesian efforts regarding the Code will be conducted. The report puts forth recommendations on strengthening implementation of the Code in Indonesia and other crisis countries. Finally, limitations within the capstone are discussed followed by a critical reflection of the capstone process.

Methods

Analytical Framework and Data Analysis

This capstone draws on the framework developed by Thomas Schwarz (2015) to measure effectiveness of the WHO Code as an instrument for promoting and achieving change. This framework is designed specifically for reviewing evidence such as literature and national reports. The framework is comprised of three sections with leading questions and answers suggested for each section: (1) problem solving effectiveness; (2) legal effectiveness or compliance; and (3) behavioural effectiveness (Schwarz, 2015). For this capstone, the second section of the Schwarz framework, evaluating legal effectiveness or compliance, is used to assess (a) Code implementation and monitoring, and (b) an improved legal and institutional framework for the international recruitment of health personnel. The purpose of the analysis is to capture the extent that state behaviour conforms to the specific rule requirements of the Code.

Data collection

A systematic search of the literature was conducted to identify secondary sources needed to analyze the relevant public policies. The SFU Health Sciences liaison librarian, Shane Plante, was consulted regarding search strategies (e.g., search terms, inclusion/exclusion criteria) and search locations. Following the initial search, an iterative process was used to produce a final set of search terms (see Appendix B for the final Boolean search term string). Data sources used to develop this capstone include electronic databases, topic-specific academic journals, grey literature, and reference lists from included articles and reports. Listed below are the sources within each of these categories:

- Electronic databases: CINAHL Complete, EBM Reviews, Global Health, Medline with Full Text, Global Health, Web of Science, and Google Scholar

- Topic-specific academic journals: *Asian Pacific Journal of Health Sciences*, *BMJ*, *Bulletin of the World Health Organization*, *Global Public Health*, *Globalization and Health*, *Health Policy and Planning*, *Human Resources for Health*, *International Journal of Health Policy and Management*, *Journal of Indonesian Health Policy and Administration, The Lancet*, *Social Science and Medicine*, and *WHO South-East Asia Journal of Public Health*

- Grey literature: Digital Dissertations, Grey Literature Report, and OpenGrey

    o published data from institutional websites i.e., WHO, GHWA, OECD, and ASEAN

    o websites of medical councils, medical associations, medical networks, medical schools, research groups, think tanks, and Ministry of Health

- Reference lists of articles and reports from the aforementioned sources.

To select the relevant studies, inclusion and exclusion criteria were developed iteratively during the research process and the pre-research stage. Exclusion criteria included publication dates before 2010 (prior to the adoption of the Code), non-English language publications, and lack of relevance to the research question. Publications before 2010 would not have addressed changes to national policies after the Code was adopted, and the aim was to look at current policies and practices. After a comprehensive search, duplicates were identified then removed. The titles, abstracts, table of contents, headings, and executive summaries of studies were then screened for relevance to the research question. After this screening, each study was read in full and categorized based on the item in the framework that it addressed. In addition, studies that described the challenges Indonesia faces in implementing the Code were categorized according to themes.

Findings are summarized and reported in two ways in the next section. First, a descriptive summary of the findings in the data analysis instrument is provided. Second, a thematic summary of the challenges that Indonesia continues to face to manage HRH and to implement the Code is provided.

Results

The literature search yielded 540 results including peer-reviewed articles, reports, newspaper and magazine articles, and webpages (see Appendix C). 124 duplicate results were removed. The remaining 416 results were screened for relevance to the research questions. A combination of the following were screened depending on the type of literature: title, abstract, executive summary, and table of contents. This screening narrowed down the results to 65, which were read in their entirety, and used to address the research questions.

The findings were informed by the framework developed by Schwarz, which was adapted, to analyze how well a Member State is complying with the WHO Code (see Table 1). This capstone focused on analyzing legal effectiveness or compliance by subdividing evidence into two sections. The first section is **code implementation and monitoring** comprising nine criteria and the second section is **improvements in the legal and institutional framework** comprising two criteria (see Table 1). The review found evidence of compliance for seven of eleven criteria, six in the first section and one in the second section.

Table 1 Analytical Framework with Summary of Literature and National Reports

Legal effectiveness or compliance	Reference: WHO Code Article No.	Leading questions and answers: To what extent does state behaviour conform to the specific rule requirements of the Code?	List evidence: Literature, national reports
1. Code implementation and monitoring			
Member States progressively establish and maintain an updated database of laws and regulations related to health personnel recruitment and migration and, as	7.2 (a)	No literature found through search. This finding confirmed by another recent study: "there is limited information and publicly available data on the international migration phenomenon of Indonesian nurses including the implementations of the ICN's and WHO's recommendations"	(Elison, 2014, p. 11)

appropriate, information about their implementation			
Member States provide data collected to the WHO Secretariat every three years.	7.2 (c)	1. A report was received from Indonesia using the WHO Code's National Reporting Instrument (NRI) in the first round of reporting (2011-2012). 2. "The second round of national reporting (2015-2016) is now underway and six SEAR Member States [including Indonesia] are reporting. An inter-country workshop [within WHO SEAR] was held in July 2015 to support national reporting." Indonesia was a participant.	1. (Siyam & Dal Poz, 2014; WHO Director-General, 2015) 2. (WHO SEAR, 2015)
Member States designate a national authority responsible for the exchange of information regarding health personnel migration and the implementation of the Code.	7.3	1. Indonesia established the Board for Development and Empowerment Human Resources for Health (BDEHRH) Ministry of Health of Indonesia as national authority. 2. "Indonesia has made a substantial move in the implementation of the Global Code of Practice for recruitment of health Personnel for the Center for Planning and management of HRH [within the MoH] has been appointed as the focal point and developing guidelines for Indonesian health workforce working abroad and for foreign workers to Indonesia."	1. (Elison, 2014) 2. (Ferry Efendi & Chen, 2014)
Member States publicize the Code.	8.1	1. The MoH has translated the Code into the national language (*Bahasa Indonesia)* and disseminated information regarding the Code to relevant stakeholders.	1. (Ferry Efendi & Chen, 2014)
Member States consult with all stakeholders in decision-making processes and involve them in other activities related to the international recruitment of health personnel.	8.3	1. "Indonesia has launched the Country Coordination and Facilitation (CCF) process, establishing 3 level structures: an Oversight Body, an Executive Board, and an HRH Production Working Group, as well as a Secretariat to implement the collaboration efforts." 2. The CCF committee's top work priority is to develop the budgeted HRH plan for 2011-2025 with close involvement of various stakeholders. This contributes to the continuing development of workforce and human resource strategies that support the strategic objectives and priorities set up by the government. The committee consists of professional organizations, hospital associations, multiple Ministries, education associations, and the Indonesian Medical Council. 3. Indonesia has "demonstrated significant benefits in using the Code to promote multi-sectoral dialogue on health system sustainability".	1. CCF Case Study Indonesia, GHWA, 2010 2. (WHO SEAR, 2011) 3. (Kurniati, Rosskam, Afzal, Suryowinoto, & Mukti, 2015; WHO Director-General, 2015, p. 4; WHO Secretariat, 2015)
Member States, working with relevant stakeholders, maintain a record, updated at regular	8.5	No evidence found through search of a record of authorized recruiters in Indonesia.	None found.

intervals, of all recruiters authorized by competent authorities to operate within their jurisdiction.			
Member States encourage and promote good practices among recruitment agencies by only using those agencies that comply with the guiding principles of the Code.	8.6	No evidence of specific recruitment agencies that the Indonesia government works with. The Ministry of Health has stated its position on recruitment as follows. "Recruitment involving numerous personnel should be done under government to government bilateral agreements/collaboration"	(WHO SEAR, 2009, p. 14)
Member States observe and assess the magnitude of active international recruitment of health personnel from countries facing critical shortage of health personnel, and assess the scope and impact of circular migration.	8.7	1. No formal steps taken by Indonesian government to attract and nurture Indonesians abroad to work in Indonesia; government rests on the voluntary return of its diaspora. 2. A barrier to circular migration are the "restrictions originating from the time of Soeharto (e.g. absence of student visas for foreigners and difficulties in appointing foreign academic staff within Indonesian university system" 3. "Dr. Sommanustweechai from Thailand recognized that implementation of the Code by source countries [such as Indonesia] was far from satisfactory. She called for great investment in health personnel information systems, particularly in LMICs, and recommended further consultations on how to promote and implement the Code." 4. Evidence that Indonesia observes and assesses migration of health personnel in the region "Factors that reduce the production levels of health workers in other countries are not a large problem in Indonesia. Unlike the Philippines, there is not a large outward migration of health workers to OECD countries, possibly because of language barriers. For example, BPPSDM data for 2012 shows that only Indonesian 14 doctors, 16 midwives, and 1356 nurses migrated overseas in 2011 (although other studies suggest there could be an outflow of Indonesian nurses to the Middle East)."	1. (Kotarumalos, 2015) 2. (Irandoust, 2014) 3. (WHO, 2015a, p. 113) 4. (Meliala & Anderson, 2014, p. 19)
Member States periodically report the measures taken, results achieved, difficulties encountered and	9.1	1. A health sector review of HRH conducted and published by the State Ministry of National Development Planning (BAPPENAS) in July 2014 which includes achievements to date, remaining challenges, and new and emerging challenges. 2. The specific content of the National Reporting Instrument	1. (Meliala & Anderson, 2014) 2. (WHO, 2015a, p. 113)

lessons learnt.		report to the WHO not made publically available. In fact recently a representative from Medicus Mundi International "urged Member States to make their national reporting data publically available and called on the WHO regional and country offices to do more to promote implementation of the Code."	
2. Improved legal and institutional framework required for the international recruitment of health personnel
Member States incorporate the Code into applicable laws and policies.	Article 1 (2) Article 8.2	1. Minister of Health regulation no. 75/2014 set a standard minimum health personnel required for health centers. 2. State Ministry for State Apparatus Reform promised to promote 49,443 doctors, dentists, midwives, and other HCPs to become government employees in 2016. 3. "In 2012… the MoH issued the ministerial decree number 47 addressing the management of the Indonesian nurse migration… [the decree] contained a national migration policy, the technical guidelines on sending Indonesian nurses to work abroad, and the requirements to ensure qualification standards for nursing professionals" 4. Indonesia has launched a major initiative to address health workforce distribution in rural/remote areas. 5. Ministry of Health Decree No. 156 of 2010 legislated incentives for service in remote or very remote regions through the Special Assignment Program for Strategic Health Workers. 6. To address poor distribution of doctors, there is regulation that limits specialists to practice in a maximum of three locations. However, implementation is poor. 7. Retention: MoH has implemented a program that allows health workers on central and local contracts who meet a minimum set of criteria the opportunity to convert to permanent civil service status. Another MoH program for new graduates requires 6 months of mandatory service in a remote area which increases the numbers of health workers in remote areas, facilitates easier access to specialist education and includes a lucrative payment schedule.	1. (MoH RoI, 2015) 2. (MoH RoI, 2015) 3. (Ferry Efendi et al., 2015) 4. (WHO SEAR, 2015) 5. (F. Efendi, 2012) 6. (Meliala, Hort, & Trisnantoro, 2013) 7. (GHWA, n.d.)
Bilateral and/or regional and/or multilateral arrangements are formulated and eventually implemented. Member States use	Article 1 (3) Article 5.2	Indonesia entered into the following arrangements before it adopted the WHO Code so it's not directly relevant to this criteria. However, in the past six years, revisions have not been made to better align them with the Code. 1. Bilateral: Indonesia Japan Economic Partnership Agreement (IJEPA) for migration of nurses signed in 2008 - needs revisions as nurses are paid less than Japanese	1. (Irandoust, 2014) 2. (WHO SEAR, 2011) 3. (WHO, 2013) 4. (Liberman,

the Code as a guide when entering into such arrangements to promote, including the provision of effective and appropriate technical assistance, support for health personnel retention, social and professional recognition of health personnel, support for training in source countries that is appropriate for the disease profile of such countries, twinning of health facilities, support for capacity building in the development of appropriate regulatory frameworks, access to specialized training, technology and skills transfers, and the support of return migration, whether temporary or permanent.	nurses, there is brain waste because nurses' scope of practice is reduced in Japan and they had difficulty finding jobs upon return to Indonesia, and the GoI does not adequately facilitation utilization of nurses' capital (knowledge and skill) for domestic health needs e.g. vacant posts in rural and remote areas. Recently, they have discussed a collaboration on enhancement of nursing competency through in-service training. 2. Regional ASEAN agreement on nursing services signed in 2006 – needs revisions 3. Memorandum of Understanding with East Timor for the migration of midwives is a technical arrangement that aligns with the spirit of the WHO Code. 4. Partnership for technical assistance in nursing with Canada. The Indonesian National Nurses Association (INNA) has a partnership project with the Canadian Nurses Association. The aim is to build the organizational management, administrative and governance capacity (e.g. nursing legislation).	2011)
Note. This table is adapted from Schwarz's (2015) proposed analytical framework for the review of literature and national reports. The framework was developed for the purpose of measuring the effectiveness of the WHO Global Code of Practice as an instrument for promoting and achieving change. The sections on 'problem solving effectiveness' and 'behavioural effectiveness' have been excluded as they are outside the scope of this capstone.		

In summary, the first section of Table 1 shows evidence that Indonesia is compliant with the following six criteria.

1. Indonesia provided data collected through the National Reporting Instrument for the WHO Code in the first (2011-2012) and second (2015-2016) round of reporting;
2. Indonesia appointed the Board for Development and Empowerment of Human Resources for Health (BDEHRH), Ministry of Health as the designated national authority responsible for exchanging information regarding health personnel migration and Code implementation;
3. Indonesia took steps to publicize the Code by translating it into *Bahasa Indonesia* and disseminating it to relevant stakeholders;

4. Indonesia consulted with stakeholders in decision-making processes exemplified through the Country Coordination and Facilitation process involving professional organizations, hospital associations, multiple Ministries, education associations, and the Indonesian Medical Council;
5. The State Ministry of National Development Planning (BAPPENAS) reported the measures taken, results achieved, difficulties encountered, and lessons learnt through a health sector review of HRH in 2014; and
6. Indonesia observed and assessed the magnitude of active international recruitment from countries facing critical shortages through participation in regional discussions and meetings on HRH shortages and migration in multiple forums such as ASEAN, WHO SEAR, and AAAH.

However, the review found no available evidence of compliance with the following three criteria:

7. Indonesia maintained an updated database of laws and regulations related to health personnel recruitment and migration;
8. Indonesia maintained an updated record of all recruiters authorized by competent authorities to operate within their jurisdiction; and
9. Indonesia only uses those recruitment agencies that comply with the Code.

The second section of Table 1 shows evidence that some of Indonesia's laws and policies are compliant with the principles of the Code. These include regulations and state initiatives to address health workforce distribution through rural incentives, and limits on the number of urban practices. A 2012 ministerial decree addressed nurse migration through a national policy and technical guidelines on international migration that ensure qualification standards.   However, the review found no available evidence for the second criterion i.e., alignment to the Code for bilateral/regional arrangements. The agreements found were developed prior to adoption of the WHO Code, and meaningful steps to re-negotiate them have been limited. Key bilateral agreements include the Indonesia Japan Economic Partnership Agreement on nursing, Memorandum of Understanding (MOU) with East Timor on midwives, and a partnership between the Indonesian National Nurses Association and the Canadian Nurses Association for technical assistance in nursing; multilateral agreements include regional ASEAN agreement on nursing services.

Available evidence on patterns of HRH training and deployment suggests some but not all HRH issues are being addressed. Overall, a 2013 report found that Indonesia's existing health workforce policy and human resource management is successfully addressing the international mobility of health workers and, where relevant, the WHO Code of Practice on the International Recruitment of Health Personnel (Campbell et al., 2013). The following section

examines the internal distributional imbalances identified earlier, namely rural/urban and public/private.

In terms of the rural/urban HRH imbalance, there is an increased interest in rural and remote postings among health workers which could be attributed to the following policy changes. In 2011, the Pegawai Tidak Tetap[5] (PTT) or 'contracted staff' program changed by shortening the contract period to one year; in 2013, the PTT evolved to a fixed contract period of up to two years (Pambudi, Anderson, Marzoeki, & Meliala, 2014). Simultaneously, a new policy offered new graduates six-month contracts for placements in remote areas including a monthly bonus amounting to as much as two-and-a-half times the base [salary] for very remote postings (Pambudi et al., 2014). Another benefit of having served in a remote posting that it is viewed positively by civil service recruiters. These new policies suggest that the Indonesian government has begun to address the poor distribution of HRH between rural and urban areas.

The Ministry of Health has also developed an HRH plan, with a budgeted strategy, to improve the quality and distribution of education institutions with the aim of increased HRH production (Campbell et al., 2013). Improvements include favourable acceptability indicators "with women physicians comprising more than half the workforce and the ratio of nurses to physicians above the OECD average" (Campbell et al., 2013, p. 61). There was also a noticeable increase in the ratio of total health workers to the overall population (Meliala & Anderson, 2014). Although most of this workforce increase has occurred in the private sector, the benefit to the public sector comes from reduced pressure on the government's budget (Meliala & Anderson, 2014), albeit with implications for equitable access. In addition, policy changes in the education sector have complemented workforce policies. For example, the number of medical schools has expanded, resulting in a growing number of medical graduates entering the labour market (Pambudi et al., 2014). Around 60 per cent of graduating physicians are female, an important characteristic compared to international experience (Meliala & Anderson, 2014, p. 9).

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[5] As of 2007, under the PTT policy, doctors, dentists, and midwives can choose to work as temporary staff on a contract basis for a minimum of 6 months and up to 3 years, depending on the location criteria (F. Efendi, 2012); a medical specialist serving in very remote area earns ~USD1150 monthly (F. Efendi, 2012).

Although the need to improve the urban/rural distribution of HRH and to scale up the availability of skilled health professionals is recognized in current policy mechanisms, key challenges remain in guaranteeing equitable access, quality healthcare, and regulation. These challenges are categorized below.

Political and Economic Challenges

First, the poor geographical distribution of health workers is a continuing problem. For example, the distribution of physicians measured by density per 10,000 population is unequal across Indonesia with a sub-national low of 1.0 and sub-national high of 5.4 (Campbell et al., 2013). Only 3 out of 33 (9%) of provinces in Indonesia have the WHO recommended ratio of 1 physician per 1,000 population (Meliala & Anderson, 2014). This has implications for equitable access to care.

Second, "the rapid expansion in student numbers under the extension program has put incredible strain on the human and physical resources of medical schools and teaching hospitals" (Nur Afrainin Syah, 2010). The extension program is a government program to increase the number of places in public medical schools. It is offered to students based on parents' willingness to pay which has resulted in the student population increasing eight to ten times faster than instructors (Nur Afrainin Syah, 2010). This jeopardizes the quality of new graduates as they do not get enough supervision nor sufficient experience to deal with patients during their studies." (Nur Afrainin Syah, 2010). This could lead to poor quality healthcare in rural areas because new graduates are likely to get placements there. Furthermore, Indonesia's dual practice system allows health workers to work in both public and private sectors. As mentioned earlier, this benefits the public sector by relieving pressure on the government budget. However, it contributes to a clustering of health workers in urban areas as there is more demand for private services compared to rural areas particularly for specialists (Meliala & Anderson, 2014).

Third, decentralization has led to a "breakdown of the health personnel information system" with a lack of data being shared from districts to province and ultimately to the Ministry of Health. This has implications for regulating the flow of health personnel within Indonesia and abroad and in implementing national programs on a district level. In fact, this lack of

communication "had consequences on the regular payment of financial incentives and the supervision of rural health workers" (WHO, 2010, p. 14)".

Another challenge is the proliferation of trade-driven labour migration agreements. For example, the ASEAN Economic Community is a regional free trade agreement which has implications for labour mobility and recognition of professional qualifications of health workers (Meliala & Anderson, 2014). The risk to Indonesia is that with increased medical tourism, access to essential services for the poor will be limited (Meliala & Anderson, 2014). Furthermore, it is argued that the Indonesia Japan Economic Partnership Agreement[6] (IJEPA), a bilateral agreement signed in 2008 for nurse migration, was primarily driven by economic interests rather than health priorities. Essentially, the IJEPA is a trade agreement rather than a labour policy. Indeed, Japan's acceptance of migrant health care workers was a response to the labour-exporting countries such as Indonesia, the Philippines, and Vietnam exerting pressure for open borders in the region and Japan's desire to conclude economic and trade treaties (Ford & Kawashima, 2013; Siampukdee, 2011). Loopholes such as the training and professional licensing system allow Japan to exploit Indonesia's cheap labour (Siampukdee, 2011). Indonesia's health sector needs to collaborate with other sectors like trade and foreign affairs to ensure there is policy space for health during international negotiations.

Legal and Social Challenges

Regulatory mechanisms need strengthening as only partial regulations are in place for dentists, pharmacists, and physicians and none for nurses and midwives (Campbell et al., 2013). For example, physician and dentist medical councils are autonomous and independent from the government and have the exclusive authority to issue profession certificates by law but they are mandated to join an organization called the Indonesian Health Workers Council (KTKI). KTKI is supposed to facilitate coordination between medical workers and the MoH but medical workers claim that this mandate negatively impacts the independence of physicians and other health professions (Fasabeni, 2015). Thus, they recently filed a judicial review to dissolve the KTKI (Fasabeni, 2015). Emerging social challenges are the growth in population and changes in

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[6] The IJEPA is an economic partnership signed in 2008 which provides for Indonesian nurses to go to Japan to obtain qualifications and professional or language training for up to four years. However, they must pass the national Japanese nursing exam (Dhillon, Clark, & Kapp, 2010).

disease burdens due to the demographic, epidemiological, and nutritional transition that the country is undergoing (Meliala & Anderson, 2014). Furthermore, uneven social development in the country has implications for equitable access. In addition, health workers need to understand the culture and context of remote communities to provide health care that is appropriate to their audience. For example, the customs of Indonesians living in mountainous regions, coastal regions, and urban areas varies. Also, health literacy levels and availability of sanitation facilities and water access are starkly different from urban areas.

Discussion

The findings suggest that there is evidence of compliance in Indonesia on 7 out of 11 criteria, resulting in changes in the distribution of HRH in terms of urban/rural and total HRH. However, an increase in total HRH has been through a rise in private sector personnel with many graduating from private non-accredited medical training institutions. This does not necessarily translate into improved health outcomes as it has implications for equitable access to care, regulation, and quality of care. It is a challenge for poor Indonesians and those living in rural areas with limited or no access to private clinics to access care from the private sector. The national insurance programme (JKN) initiated in 2014 does not provide coverage for many private clinics. There is poor regulation of the curriculum at private medical and nursing schools which compromises quality of care of new graduates. This is a challenge that the Philippines faces as well (Kanchanachitra et al., 2011).

There are indications that the increase in total HRH is motivated by the goal of exporting HRH. This finding skews the figures that show that Indonesia is no longer a crisis country (i.e., adequate HRH density) if new graduates are not trained to serve the health needs of Indonesians and if the public sector has no capacity to absorb them. Thus, on paper it may seem that Indonesia has adequate numbers of HRH but in practice, there could be issues for the public to get access to quality care. There are economic benefits of international migration such as remittances from overseas workers but these do not always directly benefit population health but the downside is a depletion of domestic supply. Current agreements such as the IJEPA reflects economic priorities rather than health priorities. The international trade in health services in South-East Asia is expected to increase so it is important for policy makers at the national and international level need to refer to the WHO Code when they enter or re-negotiate bilateral, regional, and multilateral agreements.

Another point to emerge from this capstone is the lack of a database of recruiters or authorized recruiters. Although official documents claim that most of the mass migration of

health workers occurs through government to government arrangements, there is evidence of health recruitment agencies operating in Indonesia through a Google search. Given the high production of HRH and relatively low levels of employment opportunities in the health sector Indonesia, it is possible that many nurses and midwives are employed in the non-health sector creating brain waste. There are a plethora of migration agencies for low-skilled workers (i.e., housemaids, hospitality industry, construction workers). Perhaps a database of government-authorized recruiters would be beneficial beyond the health sector. Data on the education and training background of migrating Indonesia might be helpful to the HRH planners.

There could be a number of reasons that explain why Indonesia is compliant with the Code in some areas and not others. Some of the criteria that Indonesia is compliant with are easy to reach and easy to obtain with little effort. These include the completion of a national reporting instrument, designating a national authority, and disseminating information about the Code. However, those criteria that involve multiple processes, a large scale of change, a high degree of political sensitivity, multiple stakeholders, or a substantial length of time before changes become apparent may be left unaddressed (Public Health Action Support Team, 2011). One reason some criteria may repeatedly be left unaddressed is that they conflict with economic or political interests. For example, Indonesia's lack of alignment to the WHO Code in bilateral agreements such as the IJEPA is that they are first and foremost an economic partnership. In the current Schwarz framework, criteria are not weighted; future iterations of the framework could include a mechanism for weighing the latter type of criteria heavier than the former.

Future studies on the HRH problems in Indonesia could consider a number of factors. Obtaining access to the National Reporting Instrument that Member States submit to the WHO would be a valuable source. Interviews with representatives from a Member State's designated national authority could inform how the information for the report is gathered. Interviews with the diaspora, specifically health workers that have migrated to HICs for employment, to assess their needs for returning home to work. Key informant interviews with representatives from recruitment agencies operating in Indonesia to gather their perspective on the WHO Code and their practices would also be informative. Furthermore, partnering with local research institutions to conduct joint research might be helpful considering many government documents are in the local language.

Recommendations

This section puts forth recommendations of policy options and strategies to improve compliance with the WHO Code for Indonesia and other countries facing an HRH crisis. These recommendations are based on the results of the comprehensive search and previous research conducted in British Columbia (BC), Canada. Previous research includes a needs assessment of rural emergency medicine in BC (Bluman et al., 2015) and the BC Rural Education Action Plan (Whiteside, 2009).

- International migration agreements

  o Promote circular migration also known as "brain circulation" (Ferry Efendi et al., 2015). To gain benefits from the exodus of Indonesia's highly skilled migrants, adopt "friendly regulatory and legislative provisions, taking the form of a 'return option' as well as a 'diaspora option'"(Kotarumalos, 2015). For example, Malaysia offers a 15 percent flat tax rate for five years and tax exemptions; South Korea offers tax-free status to certain skilled workers. Even the WHO and ICN recommend that a country should establish a mechanism that supports nurses to return home (Elison, 2014). This could include helping them readjust to the home country and providing resources to apply new skills and experience.

  o Consider re-negotiating bilateral agreements such as the IJEPA using Dhillon et al.'s (2010) Model Bilateral Agreement I which is based on the provisions in the WHO Code and existing best practices. Another helpful tool is a checklist developed by Koivusalo (2014) for screening on health-relevant provisions in trade agreements as they relate to services and investment.

  o Conduct Health Impact Assessments on the domestic health workforce of national policies and trade agreements that were signed before the adoption of the WHO Code (Ferry Efendi et al., 2015).

- Rural-urban distribution of health workers

  o In order to design and develop appropriate retention strategies, establish a system of compulsory exit interviewing within the health system. This helps to inform and alleviate migration and mobility data challenges by collecting data on the reasons departing health workers resign, retire, or relocate and their intended destinations (Doyle & Roberts, 2012).

  o Deploy whole teams of specialists that work together to rural and remote areas rather than a single specialist (Meliala & Anderson, 2014).

  o To make rural incentive programs sustainable, consider developing a comprehensive incentive package that integrates non-financial interventions to financial

interventions. This could include continuing professional education (F. Efendi, 2012), employment opportunities for a spouse, and security of employment as a civil servant (government employee) upon contract completion. For Indonesians, civil servant status has associated benefits making it "the most significant strategy to entice nurses to serve in rural and remote areas" (Ferry Efendi, Purwaningsih, Kurniati, & Bushy, 2014, p. 39).

- Quality of health care

  o Medical and nursing schools need to make sure their curriculum is updated and aligned to changing needs of Indonesia (i.e., greater emphasis on primary care rather than specialist services). This aligns with meeting Indonesia's goal universal health coverage for a population of 250 million by 2019 (Sciortino & Tjong, 2015).

  o Adopt an inter-professional approach to education (Andarini & Seskoati, 2013). Having physicians learning in teams with nurses and midwives could lead to better health outcomes when they have to work with interprofessional teams in rural practice.

  o Health education institutions should offer admission to those applicants who come from a rural background (F. Efendi, 2012).

- Collaboration and communication

  o The Ministry of Health should collaborate with other ministries (e.g. trade, finance, foreign affairs, and labour) so that there is policy space for health priorities such as universal health care and economic stimulation for the domestic health sector so they can absorb the domestic supply of health workers rather than exporting health workers.

  o Information sharing between the MoE ('producers' of health workers); the MoH ('users' and employers of health workers) and the private sector (both producers and users of health workers) could be strengthened and made more regular in order to reduce duplication and fragment of efforts (Meliala & Anderson, 2014).

  o Civil society organizations (CSOs) in Indonesia could play a greater role in advocacy for implementation and accountability on the commitments the national government made in the Code (U Limpopo, ECSA, ACHEST, & TARSC, 2014). Allowing the public to view reports submitted to the WHO (e.g. NRI for the Code) is one way the MoH could demonstrate transparency.

  o The MoH could work with organizations like the GHWA requesting technical support for an adequate policy framework to facilitate implementation of the Code. GHWA has already worked with source countries, destination countries and that are both a source and destination country to strengthen the evidence base specific to the country's context (WHO, 2016c). This could aid in developing a roster of authorized recruitment agencies.

Limitations

The findings do not show that changes in Indonesia took place as a direct result of the WHO Code. This paper can only show how well or poorly Indonesia is complying with the Code. Furthermore, the use of Schwarz' framework (2015) is a limitation because no study was found that had applied this instrument to analyze implementation of the WHO Code. It is a newly developed framework and so no resources were found regarding the protocol for reporting results and discussion points. Existing policy analysis frameworks include one developed by Walt and Gilson (1994) specifically for health and another developed by the National Collaborating Centre for Healthy Public Policy (2012). However, a decision was made to apply an instrument tailor-made for the WHO Code. It is possible that the WHO Expert Advisory Group may use Schwarz' analytical framework in the next round of evaluation.

Excluding non-English articles is another limitation since this capstone is about Indonesian national policies and the official language is Bahasa Indonesian. However, country reports to the WHO are in English and the initial search yielded 540 results which included studies published in Indonesia. The national reporting instrument submitted to the WHO in the first and second round of reporting was not publicly available – this would have been a valuable source of data to analyze the extent to which Indonesia conformed to the specific rule requirements of the WHO Code. Furthermore, the number of databases, journals, and grey literature that could be reviewed by a single novice researcher was another limitation.

Critical Reflection

I would like to start my reflection by thinking about how I became interested in global HRH shortages, poor distribution of health workers within and between countries, and the impact of permanent migration. Prior to starting my MPH, I worked on a project in British Columbia where I assisted with developing and implementing courses to orient international medical graduates (IMGs) to Canadian culture and also to prepare them for BC's licensing examinations. These IMGs brought with them a wealth of experience as they were practicing physicians in their home countries. Being an immigrant to Canada myself, I understood the economic, social, environmental, and political advantages of moving to Canada. During this period, I travelled for leisure to low- and middle-income countries in Southeast Asia and

southern Africa. I was confronted with the fact that most of these countries did not have universal health care and there was a general lack of faith in the health system from the middle and lower classes. I heard stories about the high cost and long waits associated with accessing quality health care. Health literacy was very low especially in rural areas. If people were sick, they often did not have the correct term to explain what was wrong with them. This left me feeling that a gross injustice was being inflicted on these populations but I also empathized with those health workers who migrated seeking a better life.

During my practicum at the United Nations High Commission for Refugees (UNHCR) in Malaysia, I was confronted with the same injustice. My work involved helping refugees navigate the public health system and I assisted with the UNHCR Health Unit's Health Access and Utilization survey among urban refugees in Malaysia. On the one hand, I was frustrated with the multiple barriers that refugees faced in accessing health care. This is partly due to Malaysian policies that do not legally recognize the status of refugees but also because there is a shortage of manpower in the public health system. Even NGO clinics funded by the UN, said their biggest challenge was to find the manpower for the clinics. On the other hand, I empathized with a fellow intern at the UNHCR who was new medical graduate. Due to a national policy, it was compulsory for her to complete two years in a rural placement before she could be licensed to practice privately. She found this to be a big sacrifice after having been in post-secondary school for six years. In a culture that places importance on starting a family, she explained that the current education structure and policies results in very few women choosing to pursue a career in medicine. This is a complex public health issue that requires solutions that are contextualized to each country's context; there are strong proponents for policies that prioritize and individual's right to free movement versus population health.

The capstone writing process has been a challenging yet rewarding experience. Given that much of the larger assignments completed during the MPH coursework were group projects, it was an adjustment to complete a capstone on my own in its entirety.   In my professional experience as a Research Assistant, all of the reports and publications written were required a group effort. One of the benefits of being a sole writer is that I have more control over the ideas, research process, and writing but I noticed I was more critical of the choices and decisions I had to make throughout the research process than I would have been had it been a group assignment. My senior supervisor was very helpful in terms of helping me narrow down

the scope of my research idea so that it was feasible to complete within a capstone paper. However, this type of collaboration was different from collaborating with fellow MPH students on a group assignment where each member becomes a content expert in their area of focus. Overall, I would prefer to collaborate with a team when doing research as I find it more exciting, it allows for a wider scope of research, and the opportunity to delve deeper into a topic.

There are some things I would have done differently if there was more time and resources. First, I would have requested access to read Indonesia's national reporting instrument that was submitted to the WHO Secretariat in the first and second round of reporting in 2012 and 2016 respectively. Second, I would have conducted a key informant interview with a representative from the Center for Planning and Management of HRH in Indonesia which is the designated national reporting authority for the WHO Code. Third, I would have conducted key informant interviews with health workers who had migrated to Japan, the Middle East, or other countries. This would have given me more nuanced and deeper understandings of the extent of compliance with the Code and the factors facilitating or hindering compliance.

Conclusion

This capstone has assessed compliance in Indonesia's national policies and practices, in terms of the migration of health workers, after the adoption of the WHO Code in 2010. The analytical framework describes the steps Indonesia has taken to (1) implement the Code, (2) monitor implementation, and (3) improve its legal and institutional framework. Although Indonesia's current policies are aligned with the WHO Code to some extent, it continues to face several key challenges. Indonesia has taken the first step of adopting the WHO Code and to some extent its existing policies align with the Code. However, the findings from this review suggest there are gaps such as the lack of databases of (1) laws and regulations on HRH recruitment and migration and (2) HRH recruiters with a list of authorized recruiters. There is also a lack of alignment in bilateral and regional agreement although these were signed before the Code was adopted. Improvements in education and training of the health workforce are necessary so that Indonesia can produce competent health workers that can serve the health needs of Indonesians. In doing so, adopting and implementing policies that adhere to the WHO Code is increasingly important to health systems strengthening, and thus to reaching the goal of universal health coverage in Indonesia, South-East Asia, and worldwide.

The future for Indonesia includes an epidemiological transition, climate change, and a commercialization of health and social care labour in the region. All of these factors have important implications for the health sector such as higher demand for services, higher rates of NCDs and mental health issues, disaster-related infections such as diarrhea, respiratory and water-related infections, and international competition for labour supply. Ultimately, a well-functioning domestic health workforce that is well-trained, competent, motivated, and adequate in numbers in both urban and rural Indonesia is vital for the well-being of Indonesians and more broadly for a stable economy.

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Appendix A.

Map of Indonesia (population density)

Image 1: Map of Indonesia with population density, 30 provinces, and neighbouring countries (Worldofmaps.net, n.d.). Four missing provinces include North Kalimantan, Riau Islands, West Papua, and West Sulawesi. Utara = north; Barat = West; Selatan = South; Tengah = Central; Timor = East.

Appendix B.

Search strategy

Below are details of the literature search terms used in the search strategy to identify current research on Indonesia's policies on HRH.

Dates: Publication date from January 2010 to December 2016

Filter: English language only

The following search terms and keywords were identified and used in various combinations with Boolean operators (and, or, not):

Boolean: (human resources OR HRH or health workforce OR health care workforce OR healthcare workforce OR medical workforce OR health human resources OR human resources for health OR care providers OR health manpower OR health personnel OR health care personnel OR healthcare personnel OR medical personnel OR health care worker OR healthcare worker OR medical worker OR nurse* OR doctor*) AND indonesia* AND (policy OR policies OR program OR regulation OR planning) AND (brain drain OR migration OR emigration OR immigration OR deployment OR training OR education OR incentive* OR recruit* OR retention OR attrition OR shortage* OR capacity OR demand OR need OR supply OR employment OR distribut* OR maldistribut* OR mobility)

Appendix C.

Data Collection Process

540 Comprehensive search of databases, key journals, grey literature, key websites, and references.

124 Duplicates excluded

416 Titles, abstracts, table of contents, headings, and executive summaries screened for relevance to research question

65 articles/reports screened in entirety for relevance to research question and used in data analysis