

The WHO Global Code of Practice: A Useful Guide for Recruiting Health Care Professionals? Lessons from Germany and Beyond

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ABSTRACT

More and more countries are recruiting doctors and nurses overseas, unleashing global debates on the proper regulation health worker migration. The World Health Organization (WHO) has advanced a “Global Code of Practice” on health worker recruitment. Numerous countries are internally debating adoption of the Code—formally or in practice—including the United Kingdom, Germany, the United States, Canada, and Australia. A pillar of the Code discourages active recruitment from countries with a “critical shortage” of health workers. We show that the WHO definition of “critical shortage” has little medical or statistical basis, and that the Code’s contradictions pave the way for arbitrary and counterproductive implementation. As an alternative to categorical bans on recruitment from entire countries, we propose alternative frameworks for approaching recruitment regulation. We offer examples of these global lessons from the German context.

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Like most other OECD countries, Germany is already experiencing a shortage of qualified health care personnel. This shortage is only expected to grow. Rising life expectancy and falling birth rates will nearly double the old-age dependency ratio (the proportion of those above 65 years of age and the working force) by 2060.¹ According to official data, the number of the most elderly will increase from 4.1 to 9.0 million, fuelling an additional demand in Germany of 150,000 to 180,000 skilled nurses by 2025.²

The German government has developed a strategy to better exploit the domestic labor force by increasing the participation rate of women, the elderly, and younger people. Nevertheless, it is obvious that these shortages cannot be filled by domestic means only, and that Germany will have to foster immigration to meet the increasing labor demand. This has been acknowledged in a strategy recently adopted by the Government (*Fachkräftestrategie*).

It is also reflected in the newly-reformed legal framework for migration—with repercussions for health care personnel. The introduction of the “Blue Card” in 2012 reduced barriers for the migration of foreign physicians and other high skilled personnel to Germany. The July 2013 reform of the Employment Regulations (*Beschäftigungsverordnung*) allowed the German Federal Labor Market Authority (*Bundesagentur für Arbeit*) to define jobs especially affected by workforce shortages. In these sectors, including medium-skill workers such as nurses, migration will be facilitated. According to the OECD, Germany has become one of the member states with the least legal obstacles for the immigration of high qualified employees – although working migration is in international comparison still low.

In addition, the German government has initiated pilot projects to study the design of migration schemes for the health care sector. So far, the main focus of these initiatives is to reduce the health worker shortage. But the pilot projects are also intended to have development impacts on the sending countries. The guiding idea is that properly managed migration in the health care sector can have a positive impact not only on the country of destination, but also for the migrants and their home country (“Triple Win”). Nevertheless, it is certainly true that migration can also have several negative side-effects. Migration is costly and many migrants are vulnerable due to the lack of information, money or institutional support. Furthermore, all else being equal and in the short run, emigration reduces the labor supply in countries of origin. Therefore, the emigration of health care professionals from less-developed countries with low domestic stocks of nurses and doctors has often been equated with “brain drain”—a permanent loss of high qualified personnel to industrialized countries.

To avoid such negative implications for developing countries, the World Health Organization has adopted a “Global Code of Practice on the International Recruitment of Health Personnel”. The Code is intended to serve as a normative basis for the development and implementation of well-managed migration schemes.

Shifting migration patterns

Health worker migration is neither a new phenomenon nor a new topic in global diplomacy.³ But since the 1950s the size and structure of this type of migration has profoundly changed.

The immigration of health care personnel from developing to industrial countries has accelerated since the 1970s. In the middle of the 1970s, six percent of all physicians and five percent of all nurses worldwide were employed abroad; in 2000 it was 18 percent of all physicians in OECD-countries and 11 percent of all nurses.⁴ Germany is increasingly competing for health care professionals – with countries like USA or Great Britain, where salaries are high, language barriers are low and where several possibilities for further personnel or professional development exist.

By 2010, the share of physicians from developing countries in the UK has risen to 37 percent, with almost half of these trained in India or Africa.⁵ In 2007, the OECD estimated that while their home countries struggle with serious health workforce shortages, over half the potential physician workforce of Mozambique, Angola, Sierra Leone, Tanzania, and the Caribbean countries (with exception of the Fiji) worked in OECD countries.⁶

To cope with these challenges, countries of origin initially tried to restrict emigration, for example through withholding degree certificates or travel documents or through other compulsive measures. But given the limited success of such strategies, the focus has since shifted towards bilateral or multilateral management of flows. Now the emphasis is more on development aspects and migrant's rights, and finally on the idea that migration can yield mutual benefit. There is growing discussion of the potential for a 'triple win'—with benefits for sending and receiving countries as well as for the migrants themselves.

Principles of the WHO Code

Against the background of the escalating demand of skilled health workers in middle and high income countries and a growing awareness of the risks of increasing outflows from poorer countries, the World Health Assembly asked the WHO in 2004 to develop a common code of conduct for health personnel. This process was also driven in part by the United Nations' Millennium Development Goals (MDGs) and a generally growing awareness of the importance of multilateral policies and global governance.

In May 2010, the WHO member states adopted the “Global Code of Practice on the International Recruitment of Health Personnel”,⁷ which stated that health care migration should benefit the health systems of both source and destination countries. Stating that the migration of health personnel “can make a sound contribution to the development and strengthening of health systems, if recruitment is properly managed”, the Code defined basic principles for future bilateral and international cooperation on health care migration.

The Code urges member states to address present and expected shortages in their health personnel and create a sustainable health workforce. It recommends effective human

resource planning, education and training, and developing retention strategies that will reduce their need to recruit migrant health personnel. In addition, it recommends that international recruitment of health personnel be conducted in accordance with principles of transparency, fairness, and sustainability of health systems in developing countries, and should be designed to mitigate the negative effects of health personnel migration on the health systems of developing countries and safeguard the rights of health personnel. Generally, member states adhering to the Code should promote and respect fair labor practices for all health personnel, and they should facilitate circular migration of health personnel, so that skills and knowledge can be achieved to the benefit of both source and destination countries.

In this respect, the Code encourages Member States to

- seek out partnerships with countries of origin,
- make commitments with relevant stakeholders (e. g. recruiters, healthcare facilities),
- provide technical and financial assistance,
- foster planning, training, education, and retention measures,
- incorporate the WHO Code of Practice into national law and policies,
- collect more reliable evidence on health personnel migration, and
- facilitate the exchange of information by up-to-date databases.

Contradictions and Shortcomings

Despite its balanced approach, the Code contains several contradictions that make implementation difficult.

The first and most important contradiction is embedded in Articles 3 and 5, commonly interpreted as the core of the Code: Article 3.4 affirms that the principle of freedom of movement should also be valid for health care personnel, noting that “nothing in this Code should be interpreted as limiting the freedom of health personnel, in accordance with applicable laws, to migrate to countries that wish to admit and employ them”. Notwithstanding this principle, Article 5.1 stipulates that “Member States should discourage active recruitment of health personnel from developing countries facing critical shortages of health workers.”

It is difficult to reconcile these principles in practice. Either restrictions on recruitment do not end up restricting health worker’ mobility, in which case they cannot effect health systems in migrant-origin countries, or they *do* end up restricting mobility, in which case they violate the specific exclusion of limits on mobility. Advocates of the Code argue that “active

recruitment” makes the difference—and that the degree of the involvement of the receiving government is decisive for the question if or if not a government is violating the Code. In contrast, critics argue that is extremely difficult to assess the degree of an “active recruitment” of public agencies. In addition, they mention that the role of private recruiters and of public private partnerships (PPP) is not mentioned, and that therefore the Code’s approach is—due to the lack of conceptual clarity—unrealistic, paving the way for arbitrary interpretation.

The “critical shortage”

A second important shortcoming of the Code is the definition of “critical shortages”. Governments require a definition of “critical shortage” if they are to implement the Code. The definition of “critical shortage” that underlies the Code, however, reveals that governments cannot rely only on the WHO definition of “critical shortage” when assessing the effects and ethics of a specific recruitment act. Governments always and everywhere must make their own good-faith assessment of whether or not a given act of recruitment contributes to the shortage.

The WHO defines a country to be in “critical shortage” of health workers when it meets both of two separate conditions. These are: 1) the sum of employed doctors, nurses, and midwives is equal to or less than 2.28 per 1,000 population, *and* 2) fewer than 80% of births are attended by skilled health personnel. The WHO’s flagship *World Health Report* of 2006 determined that 57 countries were in “critical shortage”.⁸ The threshold density of 2.28 health workers per thousand population arises from a simple calculation. First, it estimates the positive relationship, on average across all countries, between health worker density and the percentage of births attended by skilled health personnel. Second, it selects a minimal acceptable level of skilled birth attendance: 80% of births. Finally, it finds that the average relationship between health worker density and skilled birth attendance crosses the 80% skilled birth attendance level at a health worker density that, with 95% statistical confidence, lies between 2.02 and 2.54. The middle of that range is 2.28.⁹

This definition of a “critical shortage”, however, has several problems that limit its practical use for planning a recruitment relationship with any given country.

- **The true value of any threshold in health worker density is uncertain.** Assuming that this threshold exists, the WHO’s underlying analysis only finds that it lies somewhere within the range of 2.02 and 2.54 health workers per thousand population. In the data of the same WHO analysis, 14 countries lie within this uncertainty interval.¹⁰ This is one quarter of the number of countries deemed to be in “critical shortage”. The underlying statistics do not permit a confident statement about whether the threshold includes or excludes these countries.
- **There is no medical basis for any universal threshold of 80% coverage.** The WHO bases its health worker density threshold on a “minimum desired level” of

80% skilled birth attendance. That figure originates in a paper in the medical journal *The Lancet* which chooses that level as an arbitrary round number to summarize the data in one of its figures.¹¹ There is no change at or near 80% in that study's data that would justify the choice of that particular number. The 80% number does not arise from a medical investigation of whether it is optimal for any given country to deploy human resources for health in a different way, such as for other types of primary care or for tertiary care. For example, a country that has achieved basic coverage in birth attendance can lack personnel for other tasks, and a country that has not achieved basic coverage in birth attendance can have adequate personnel for other tasks. The choice of 80% skilled birth attendance is an arbitrary round number for one type of care, but the definition of “critical shortage” is highly sensitive to this choice. Varying the “minimum desired level” of skilled birth attendance between 70% and 90%, for example—two other equally plausible, round numbers—would alter the “shortage” classification of 31 countries.¹²

- **The true number of health workers is uncertain.** The method used to count health workers differs from country to country. The WHO uses four different types of data sources to estimate of the number of health workers in a country. Many of these sources define health workers differently and all have different margins of error.¹³ They only include people working as health workers, which can miss large numbers of workers. For example, at the same time that the WHO determined Kenya to have a “critical shortage” of nurses, Kenya had a surplus of at least five thousand nurses that could not find employment as nurses and thus were not included in health worker density estimates.¹⁴ Most of the WHO estimates are also greatly outdated. For 106 of the countries where the WHO counted health workers, estimates reflected conditions in 2002 or before—that is, eight years before the Code of Practice was adopted.¹⁵
- **There is no mechanical relationship between health worker density and skilled birth attendance.** There are ten countries that fall below the WHO health worker density threshold and nevertheless fall *above* the skilled birth attendance threshold.¹⁶ Conversely, there are eight countries that are above the health worker density threshold but *below* the skilled birth attendance threshold. In the WHO's data, Laos and Chile have almost the same health worker density (1.61 and 1.72 respectively) but vastly different skilled birth attendance (Laos 19%, Chile 100%). This makes it clear that raising skilled birth attendance is nowhere close to a simple function of raising the number of health workers within a country's borders. In other words, WHO data demonstrate that even large additions to the health workforce *per se* need not remove a country from “critical shortage”.
- **There is currently no scientific evidence that limits on recruitment have affected staffing levels or health outcomes in migrant-origin countries.** Fifteen years ago, the United Kingdom began banning National Health Service from active recruitment of health professionals from certain countries deemed to have health

worker shortages.¹⁷ Neither that policy nor related policies in other countries have ever been shown to have caused a measurable increase in health worker staffing, the level or quality of health care, or population-level health outcomes in migrant-origin countries.¹⁸

The researchers who created these statistics understand all of the above caveats. When the creators of the WHO method used it to arrive at a similar density threshold of 2.5 health workers per 1,000, they noted that the method relies on numerous debatable assumptions and noisy, often outdated data. Explaining the large deviations from a mechanical relationship between health worker density and health service delivery, they write,

“Why the deviations? Because of the confounding effects of other social factors, such as education and economics, and of the way countries mobilize and deploy workers not classified under existing international systems. So, the density of 2.5 workers per 1,000 is a suggestive guideline, not a definitive benchmark.”¹⁹

The World Health Organization agrees that these numbers are not sufficient to define a shortage:

“These estimates ... are not a substitute for specific country assessments of sufficiency, nor do they detract from the fact that the effect of increasing the number of health workers depends crucially on other determinants such as levels of income and education in the community. Furthermore, economic factors also enter the equation: shortfalls based on need can co-exist with unemployment of health workers due to local market conditions.”²⁰

That is, both the researchers who established the shortage criteria and the WHO agree that placement of a country on the “critical shortage” can and should only be interpreted as a “suggestive guideline” and is “not a substitute for specific country assessments” of the effect of a particular recruitment act in context. Countries vary enormously in how recruitment affects the size of the health workforce, how size of the health workforce affects service delivery, and how service delivery affects health outcomes. These contextual features are not captured by the “critical shortage” list, in the opinion of the list’s own creators.

Interpretation and implementation of the Code

German policies for managed migration have been designed around the WHO Code. Recently, several recruitment schemes were implemented or are prepared in the healthcare and education sector:

- *Vietnam:* The Federal Ministry for Economic Affairs and Energy (BMWi) funds a project to educate approximately 100 nurses from Vietnam in old-age care (from autumn 2013). The nurses learned German language at the Goethe Institute of Hanoi, to level A2 of the Common European Framework of Reference for Languages. They arrived in Germany in late 2013 for training in old age care for 2 years in four federal states, preparing for employment in geriatric care.

- *China:* The German employer association in the nursing sector (*Arbeitgeberverband Pflege*) is preparing, with the support of the German Federal Labor Authority, a project to employ Chinese nurses in hospitals and care facilities. The project will begin in 2014.
- *Tunisia, Egypt, Morocco:* Asklepios, with the financial support of the Federal Foreign Office, has been training 25 nurses from Tunisia since 2013. Further projects with Tunisia, Egypt and Morocco are planned within the framework of the “transformation partnerships” which encourage collaborations between Germany and countries of Northern Africa/the Middle East.
- *The Philippines, Serbia, Bosnia-Herzegovina and Tunisia:* In March 2013, the Federal Employment Agency and the Philippines concluded a bilateral agreement to facilitate the placement of Filipino nurses in Germany. GIZ (*Deutsche Gesellschaft für Internationale Zusammenarbeit*) plans to use this and other government-to-government agreements with Serbia, Bosnia-Herzegovina, the Philippines and Tunisia to recruit two thousand nurses.
- *EU countries:* In the last one and a half years, the Federal Government has reached several agreements with South European countries to (1) extend Germany’s dual vocational system and to (2) facilitate mobility to Germany to reduce youth unemployment in source countries, especially Spain.

These pilot projects pave the way for the management of future migration schemes in the nursing sector and are in line with several principles of the Global Code of Practice. However, receiving countries put the main focus on the needs of their own labor markets, and thus on the reduction of the domestic manpower shortage in the healthcare sector. Concrete measures to strengthen the capacities in countries of origin, like technical or financial aid or incentives for return and circular migration, have not been implemented so far. Nevertheless, source countries have shown keen interest in collaborative agreements because indirect development outcomes are to be expected by the emigration of nurses. These include:

- *Positive effects on labor markets:* High-populous countries like the Philippines or Vietnam participate in the pilot projects to create new employment opportunities abroad for the increasing working-age population. When unemployment rates are high or there is an oversupply of domestic nurses in source countries, pressure on labor markets will be abated by emigration.
- *Migration-induced knowledge transfer:* Source countries expect returning migrant professionals to bring knowledge and experience from industrialized countries to health systems back home, such as in the care and supervision of people with dementia and other psychogeriatric disorders. Even if migrants stay permanently abroad, they might establish business partnerships with their home countries.

- *Remittances*: Many migrant nurses send substantial amounts of money home. These flows increase consumption, investment and entrepreneurial activity and consequently strengthen the economies of migrant-origin countries.

If migration schemes are managed well, such positive development effects are likely to occur in any country of origin with high and rising working-age population. In these countries, often characterized by poor job opportunities and low wage levels, attractive migration options have the potential to increase the stock of domestic professionals. In India, for example, many nurses acquired their training in part because a nursing degree offers better possibilities to migrate to developed countries, but large numbers nevertheless remain in India. In a non-representative survey in India, 62 % of Indian nurses, nursing students and nursing teachers agreed that the opportunity to migrate influenced their decision to choose nursing education.²¹

But the development potential of mobility partnerships in the health sector has been largely ignored. Instead, the German government strictly follows the WHO 2006 definition of a “critical shortage” despite its many limitations. This is reflected in the legal framework for the migration of skilled professionals to Germany.²² In general, the migration of nurses is rated as “acceptable” by the German Federal Labor Market Authority.²³ As a consequence, nurses from Non-EU countries get admission to the German labor market when their degree from abroad is accredited by the German authorities in charge. However, there is one exception: The “direct recruitment” of nurses from countries of origin that fall below the threshold is still prohibited outright. The regulation does not allow for the “specific country assessments of sufficiency” specifically recommended by the WHO, assessments for which the shortage list “is not a substitute”. In practice, this means that there is little to no political support for bilateral partnerships in the healthcare sector with these countries; the critical threshold is treated as an all-or-nothing criterion. This criterion killed an effort to create a migration and training partnership between Germany and India in 2011. Despite the fact that the partnership was specifically designed to result in *more* nurses in India, the German government cited the presence of India on the WHO shortage list and was unwilling to consider participation.

Recommendations

The 2010 WHO Code of Practice must be considered a step forward towards a fair and balanced global approach for managing international health care migration. Nevertheless, the contradictions and shortcomings analyzed in this paper constitute serious obstacles to a full implementation of the Code.

The notion of “critical shortages”, in particular, requires revision. This would include a much more precise and comprehensive approach to identify such shortages, based on criteria reflecting more adequately the health care situation and the general economic and social conditions in the country of origin. One of the main deficits so far has been the idea of basing the decision of recruiting or non-recruiting of health care workers on fixed thresholds

of health-worker density. Such simple numeric thresholds are misleading, because they do not assess the health care situation in the country of origin properly. While the WHO agrees that the thresholds are not adequate to settle the ethics of recruitment, it is responsible for discouraging its member countries from misinterpreting and misusing the Code.

Some of the contradictions of the Code could be overcome by interpreting the competing principles in a more pragmatic way. In particular, it would be wise for receiving and sending countries to attach more importance to the often overlooked principle in Article 5.1 that “the health systems of both source and destination countries should derive benefits from the international migration of health personnel.”

This principle would be a good criterion for developing rules and regulations for mutually beneficial health care migration, and provide a guideline for designing projects and programs for a fair and development-sensitive health care migration.

Two policy options should be considered more in depth: temporary and circular migration schemes and transnational training partnerships.

Temporary and circular migration

Temporary and circular (repeated temporary) migration schemes are highly attractive for policy makers and the public, both in general and in the health sector particularly. Such arrangements hold the promise of meeting diverse policy goals: filling labor shortages to provide employers with more flexibility, and at the same time mitigating any effects on health worker stocks at the origin. In addition, it is expected that these health care migrants would send substantial remittances home, complementing official development aid.

Nevertheless, a critical question is to what degree such programs depend on a strict implementation of rules and regulations, especially obligations to return, and how policy should address migrants who decide not to return. Indeed, recent experience with circular migration schemes indicates that a substantial number of such migrants return home, but that a certain number find ways to stay permanently in the host country. If governments intend to develop such programs, they should be aware that it requires substantial political and administrative involvement as well as certain flexibility with regard to return migration. In addition, temporary and circular migration programs must be tailored to skill levels.

Transnational training partnerships

A largely unexplored way for countries to unlock the development potential of health worker migration is to form bilateral partnerships linking health worker mobility to health worker training. When public or private entities in destination countries directly support training of future migrant professionals, in the countries of origin, there are many benefits. Such arrangements could raise human capital stocks at the origin to offset losses, finance training to eliminate fiscal drain from migration of publicly-subsidized trainees, and build up world-class training institutions in origin countries.

Partnerships of this kind, if well-designed, could also benefit countries of destination: their involvement with the training process at the origin would allow them to tailor the training migrants receive, as well as save money, given that technical training is often much less expensive in countries of origin even at equivalent quality. And partnerships of this kind would benefit migrants as well, ensuring their smooth transition to, and proper preparation for, jobs at the destination.

Generally, temporary and circular migration schemes as well as innovative training partnerships would do much to implement the WHO Code's prescription that "the health systems of both source and destination countries should derive benefits from the international migration of health personnel." But innovation of this kind is prevented when the Code is misinterpreted as unconditionally banning recruitment from many developing countries, since all such initiatives would involve recruitment.

¹ Bundeszentrale für politische Bildung, Statistisches Bundesamt et al. (Hg.) (2013): Datenreport 2013. Ein Sozialbericht für die Bundesrepublik Deutschland. Bonn.
https://www.destatis.de/DE/Publikationen/Datenreport/Downloads/Datenreport2013.pdf?__blob=publicationFile

² For more information, see Merda, Braeseke et al. (2012): Chancen für die Gewinnung von Fachkräften in der Pflegewirtschaft. Schlussbericht. Studie im Auftrag des Bundesministeriums für Wirtschaft und Technologie. Berlin. <http://www.bmwi.de/BMWi/Redaktion/PDF/Publikationen/Studien/chancen-zur-gewinnung-von-fachkraeften-in-der-pflegewirtschaft,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf>

³ Senewiratne, B. (1975a): Emigration of doctors: a problem for the developing and the developed countries. Part I. British Medical Journal. p. 618-620. (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1672845/>); Senewiratne, B. (1975b): Emigration of doctors: a problem for the developing and the developed countries. Part II. British Medical Journal. p. 669-671. (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1672867/>),

⁴ Ulrich, R. (2007): OECD-Länder: Beschäftigung von Zuwanderern im Gesundheitswesen steigt. In: *Newsletter Migration und Bevölkerung* (6), p. 5; Stilwell, B.; Diallo, K.; Zurn, P.; Vujicic, M.; Adams, O.; Poz, M. D. (2004): Migration of health-care workers from developing countries: strategic approaches to its management. Hg. v. Department of Health Service Provision. World Health Organization. Genf.

⁵ Dambisya, Y. M., Kadama, P et al. (2013): Literature review on codes of practice international recruitment of health professionals in global health diplomacy. Regional Network for Equity in Health in East and Southern Africa (EQUINET). EQUINET DISCUSSION PAPER 97, <http://www.equinet africa.org/bibl/docs/Diss%2097%20GHD%20Lit%20review%20Codes%20May%202013.pdf>.

⁶ OECD, International Migration Outlook, Paris 2007, p. 162-228.
<http://www.oecd.org/migration/mig/41515701.pdf>

⁷ The following passages refer to World Health Organization (2010): WHO Global Code of Practice on the International Recruitment of Health Personnel. http://www.who.int/hrh/migration/code/WHO_global_code_of_practice_EN.pdf

⁸ WHO (2006). *World Health Report 2006*. Geneva: WHO. Table 1.3, page 13.

⁹ This calculation is performed by Niko Speybroeck, Yohannes Kinfu, Mario R. Dal Poz and David B. Evans. (2006): "Reassessing the relationship between human resources for health, intervention coverage and health outcomes." Background paper for the *World Health Report 2006*. Geneva: WHO. (http://www.who.int/hrh/documents/reassessing_relationship.pdf). They use the same method employed by the Joint Learning Initiative in Chen L, Evans T, Anand S, Boufford JI, Brown H, Chowdhury M et al. (2004):

“Human resources for health: overcoming the crisis.” *Lancet*, 364:1984–1990.

(http://www.who.int/hrh/documents/JLi_hrh_report.pdf)

¹⁰ Belize, China, Costa Rica, Egypt, El Salvador, Fiji, Jamaica, Malaysia, São Tomé and Príncipe, Sri Lanka, Suriname, Timor Leste, Vanuatu, and Zambia.

¹¹ Chen et al. *op. Cit.*

¹² This is the difference between the number of countries below 3.9 per 1,000 (the level at which average skilled birth attendance is 90%) and below 90% skilled birth attendance, and the number of countries below 1.4 health workers per 1,000 population (the level at which average skilled birth attendance is 70%) and below 70% skilled birth attendance—in Figure 1.4, page 11 of WHO 2006 *op. cit.*

¹³ These sources include, in different countries: *administrative records* such as registers of professional associations (which are available in very few countries), *health facility surveys* (which “may suffer from omission of some establishments and types of health workers, particularly those working outside of health facilities and the unemployed”), *labor force surveys* (which can “suffer from sampling error”), and *national population censuses* (which are conducted infrequently) (M.R. Dal Poz, Y. Kinfu, S. Dräger and T. Kunjumen. 2006. “Counting health workers: definitions, data, methods and global results”. Background paper for the *Global Health Report 2006*. Geneva: WHO). (http://www.geopsy.com/memoires_theses/counting_health_workers.pdf)

¹⁴ Ummuro Adano. 2008. “The health worker recruitment and deployment process in Kenya: an emergency hiring program”. *Human Resources for Health*. 6:19, doi:10.1186/1478-4491-6-19 (<http://www.human-resources-health.com/content/6/1/19>)

¹⁵ Dal Poz et al. *op. cit.* page 7.

¹⁶ Ten countries in the data of the *World Health Report 2006* have health worker densities below 2.28 but skilled birth attendance above 80%: Cape Verde, Chile, China, Colombia, Costa Rica, Iran, Solomon Islands, Sudan, Suriname, and Vietnam. (<https://extranet.who.int/iris/restricted/handle/10665/43432>)

¹⁷ Buchan, “International Recruitment of Nurses: Policy and Practice in the United Kingdom”, (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1955378/>)

¹⁸ See e.g. Jennifer S. Edge and Steven J. Hoffman, 2013, “[Empirical impact evaluation of the WHO Global Code of Practice on the International Recruitment of Health Personnel in Australia, Canada, UK and USA](#)”, *Globalization and Health*, 9:60.

¹⁹ Chen et al. *op. Cit.*

²⁰ WHO 2006 *op. cit.* pages 12–13.

²¹ In an unpublished survey by Meiko Merda, one of the authors of this paper, conducted in 2010. The sample consists of 189 members of nursing schools in India.

²² Bundesagentur für Arbeit (2013): Positivliste. URL: <http://goo.gl/flYpxu>

²³ Bundesagentur für Arbeit 2013 *op. Cit.*