Interventions for controlling emigration of health professionals from low and middle-income countries

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Interventions for controlling emigration of health professionals from low and middle-income countries

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ABSTRACT

This is the protocol for a review and there is no abstract. The objectives are as follows:

To assess the effects of policy interventions to control emigration of health professionals from low- and middle-income countries.
BACKGROUND

International migration has been a growing phenomenon in recent decades (Global Forum 2007). In 2005, 191 million people, representing 3% of world population, lived outside their country of birth (United Nations 2006) and of these the number of migrant workers has been estimated to be over 45% (Handbook 2006).

The 1999 United Nations International Convention on the Protection of the Rights of All Migrants Workers and the Members of their Families defined an international migrant worker as "a person who is to engage, is engaged or has been engaged in remunerated activities in a state of which he or she is not a national" (Bach 2003).

In the context of this global phenomenon, it is possible to distinguish two types of worker migration: temporary and permanent. In the first case, workers transfer for a limited time from their countries to another country and go back after a period of time. There is no agreement about time-definition of temporary migration, which can range from nine months to 10 years, depending on the country conditions (WHO 2006). This type of migration can produce problems and benefits for both the source and recipient countries. It can generate opportunities to improve professional level or income when the source country is a low or middle-income country (LMIC) and provide workforce in the destination country.

In the case of permanent migration, workers emigrate from their countries but for different reasons remain where they have transferred. Permanent migration can produce positive effects for the source country through migrant investments, remittances, networking and knowledge transfer. This type of migration can also have negative consequences, especially when there is large-scale emigration from a low or middle-income country, which contributes to a shortage of health professionals (Bach 2003). In this review we will focus particularly on policies that aim to reduce the permanent emigration of health professionals from low or middle-income countries and its undesirable effects.

According to The World Health Report 2006 (WHO 2006) there is no general consensus on how to classify health workers (the World Health Organization is now working on a standard classification). In this review we will define 'health professionals' as those professionals directly in charge of the provision of health services, such as physicians, nurses or midwives. Other professionals in support and management roles in the health system and other non-professional health providers (e.g. associate nurses or community health workers) will not be considered in this review (Del Poz 2006).

Magnitude and impact of the problem

The World Health Report 2006 identified migration of health professionals as a relevant concern in the health care systems of low or middle-income countries and high-income countries (HCs). However, it is known that there are considerable difficulties in getting complete and reliable statistics for health professional migration, so the real situation is not known (Diallo 2004). Moreover, available information is generally limited to registered doctors and nurses. Data about migration of other health professionals, such as dentists, pharmacists and others are virtually non-existent (Stilwell 2003).

As an example of the magnitude of the problem, data reported in the World Health Report 2006 for country members of the Organization for Economic Co-operation and Development (OECD) indicate that doctors and nurses trained abroad represent an important percentage of total professionals registered, especially in English-speaking countries. From the perspective of donor countries, available information indicates that doctors trained in Sub-Saharan Africa and working in OECD countries represent around a quarter of the current workforce in those countries, ranging from 3% in Cameroon to 37% in South Africa.

The emigration of health professionals from many low or middle-income countries has contributed to shortages of human resources in their health systems, exacerbating inequalities in health. Regions particularly affected include Sub-Saharan Africa and South Asia (Diallo 2004). When a large number of health professionals remain abroad, the source country that has financed their education loses a return on their investment, in effect providing a 'perverse subsidy' to the high-income country where the professionals remain. On the other hand, in high-income countries recruitment of these professionals could be an effective strategy to help with their own problems with shortages of health personnel. Additionally, there is also an (unfair) financial advantage to high-income countries when recruiting from overseas as they do not need to pay the full education costs of the personnel recruited. Furthermore, such staff may be more willing to work (at a lower salary rate) in remote or unattractive locations (Martineau 2004). In a recently published study about the origin of migrant primary care physicians in the US, Starfield et al established that "countries whose medical school graduates added a relatively greater percentage of the primary care physicians than the overall percentage of primary care physicians in the United States (31%) were poor countries with relatively extreme physician shortages, high infant mortality rates, lower life expectancies, and lower immunization rates than countries contributing relatively more specialists to the US physician workforce" (Starfield 2007).

In the case of nurses, there is evidence that there is an important flow of these professionals from lower-middle and low-income countries to upper-income destinations such as the United Kingdom, the United States and Ireland (Buchan 2003; Buchan 2004). In this case, the shortfall in these professionals in these high-income countries acts as the main driver for international recruitment of nurses, mainly from the Philippines, India and Sub-Saharan Africa. The case of the Philippines is remarkable. It is estimated that close to 15,000 nurses migrate overseas each year to
30 different countries, resulting in an estimated 30,000 unfilled nursing positions in the country (WHO 2006).

Causes of the phenomenon
Although the decision to migrate is ultimately a personal choice, it is influenced by the migrant’s economic and social context in the country of origin and conditions offered in the possible recipient country.

Conditions in the country of origin (WHO 2006)
- Limited opportunities for professional development, training and promotion in the origin country, in contrast to perceived opportunities abroad.
- Poor remuneration and employment opportunities, such as differentials in salary levels between source and destination countries and better prospects of securing a job abroad.
- Budgetary constraints in health budget resulting in limited recruitment and unemployment.
- Oversupply of health professionals.
- Poor working environment with lack of equipment, supplies and drugs to diagnose and treat patients.
- Political instability, ethnic and religious tensions resulting in civil war human rights abuse, economic collapse and extreme poverty.
- Excess workload for the few available health workers as a result of a high disease burden compounded by the HIV/AIDS pandemic.
- The intention to contribute to family wealth through sending a portion of their wages back to their families (Stilwell 2004).

Conditions in the recipient country (Dovlo 2003)
- Increased demand for health professionals due to demographic conditions, such as an ageing population requiring more care and economic changes that make health professions less attractive for local entrants.
- Increased demand for health professionals in under-served areas, less attractive for local entrants.
- Better remuneration enabling a higher standard of living and the ability to support their extended families in their country of origin.
- Better working conditions.
- Better prospects for career and skills development.
- Better security as a result of economic and political stability in recipient country.
- Existence of social networks, which offer support to new migrants and, often, connections to employment.
- Aggressive international recruitment strategies in source countries, such as the UK and Canada (Bach 2003).

These conditions are intertwined in a complex and variable way from case to case, but always result in an imbalance favouring conditions in the recipient country.

Strategies to manage health professional migration
The complex combination of factors that drives the migration flow of health professionals generates the complexity of strategies to manage it. Actions to decrease imbalances between health systems of low-, middle- and high-income countries have been described at three levels: in source countries, in recipient countries and at the international level.

In source countries, it has been suggested that initiatives that contribute to the improvement of the working conditions of health professionals, such as increasing salaries, offering further training, or providing housing and transport in rural areas, could be effective for their retention (Martineau 2004). Additionally, the use of interventions for the education and training of health professionals, which adjust training to the needs and demands of the local health system, could help to decrease emigration (WHO 2006). In recipient countries, strategies for improving staff retention will decrease shortages of health professionals, resulting in fewer opportunities for migrants and, in consequence, decrease incentives to migrate (Stilwell 2004). Regulation of visas and work permits to admit foreign health professionals can also help (Martineau 2004). Interventions at the international level have been reviewed by Willets and Martineau (Willets 2004). They have analysed international codes which regulate the unethical recruitment of health professionals, i.e. international agreements that allow the protection of source countries from aggressive recruitment of their health professionals by high-income countries. The authors found at least 15 different codes and instruments, but only 12 had statements related to the protection of low or middle-income country health systems. None of the instruments analysed clearly contributed to achieving the defined objective.

We are not aware of any previous systematic reviews of the existing evidence in this complex policy area. Therefore, this review aims to evaluate the effects of different strategies to deal with health professional emigration from low or middle-income countries.

O B J E C T I V E S
To assess the effects of policy interventions to control emigration of health professionals from low- and middle-income countries.

M E T H O D S

Interventions for controlling emigration of health professionals from low and middle-income countries (Protocol)

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Criteria for considering studies for this review

Types of studies
1. Randomised controlled trials (RCTs).
2. Controlled clinical trials (CCTs).
3. Controlled before-after studies (CBAs), provided that:
   - pre- and post-intervention periods for the study and control groups are the same;
   - the choice of control site is appropriate (comparable with respect to main characteristics); and
   - they have at least two clusters in each comparison group.
4. Interrupted time series analyses (ITS) studies provided that:
   - the point in time when the intervention occurred is clearly defined and there are at least three data points before and three after the intervention.

Types of participants
Any group of health professional nationals of a low or middle-income country whose graduate training was in a low or middle-income country. Health professionals are those professionals directly in charge of the provision of health services, such as physicians, dentists, nurses or midwives. For low or middle-income countries we will use the World Bank definition (Global Forum 2007).
We will exclude all other health personnel without health professional training, such as lay health workers, managers or policy makers. Likewise, we will exclude those health professionals from low or middle-income countries whose graduate training was in a high-income country.

Types of interventions
Any intervention in the source, the recipient country or both that could have an impact on the outcomes relevant to this review. Examples of interventions proposed in the literature (Bach 2003; Buchan 2004; Del Poz 2006; Diallo 2004; Dovlo 2003; Stilwell 2004) include the following.

Source country
- Strategies to improve work conditions and career prospects of health professionals (financial and non-financial).
- Interventions for the education and training of health professionals, which adjust training to the needs and demands of the local health system (e.g. teaching methods, use of local language training, community-based curricula, etc).
- Use of compulsory service schemes for health professionals.
- Strategies to facilitate and support the return of health professionals working abroad.

Recipient country
- Strategies to improve staff retention (native health professionals): financial and non-financial incentives.
- National migration regulation (e.g. visas, ethical guidelines for recruitment of foreign health professionals).
- National (or regional) regulation of professional licensing.
- Strategies to facilitate and support the return of foreign health professionals to their origin country.

International agreements
- Bilateral or multilateral agreements that regulate the flow of health professionals from LIMCs to high-income countries.

Types of outcome measures
We will consider studies for inclusion if they measure at least one of the following outcomes.

Primary outcomes
Proportion of health professionals that emigrate from a low or middle-income country (source country) or any measurement of change in the number of professionals that emigrate from a low or middle-income country.

Secondary outcomes
- Intention to emigrate abroad in health professionals of low or middle-income countries.
- Any measurement of the number of emigrant (low or middle-income country) health professionals with professional licensing in recipient countries (high-income country).

Search methods for identification of studies

Electronic searches
We will conduct sensitive electronic searches of the following biomedical, social science, or educational databases:

- Cochrane EPOC Group Specialised Register;
- Cochrane Central Register of Controlled Trials Register (CENTRAL);
- MEDLINE;
- EMBASE;
- CINAHL;
- LILACS;
- ERIC;
- Science and Social Science Citation Index;
- SocINDEX;
Sociological abstracts;
WHOLIS;
NLM Gateway (meeting abstracts, HSRProj); and
EconLit.

We will base electronic search strategies on a combination of the EPOC search strategy related to the study design (using the EPOC definitions - RCT, CCT, CBA, ITS) with terms related to health professionals and migration, expressed as controlled vocabulary terms (i.e. MeSH) and free text terms.

The detailed MEDLINE search strategy is shown in Appendix 1. We will translate this search strategy for the other databases using the appropriate controlled vocabulary whenever possible. We will not apply language restrictions.

We will scan reference lists of included papers for potentially eligible articles. We will use the related articles feature of PubMed and Web of Science (Science Citation Index and Social Science Citation Index) to track citations of included studies and other relevant articles.

In order to find additional literature we will run a Google Scholar search for key terms and authors. We will explore relevant papers or websites.

Searching other resources

We will make additional efforts to identify unpublished studies by approaching experts in the field to request information about studies that may have been missed by our search. We will also contact authors of research reports identified by the above methods.

Ongoing studies

We will describe ongoing studies identified, where available, by detailing the primary author, research question(s), methods and outcome measures together with an estimate of the reporting date.

Data collection and analysis

Selection of studies

Two authors will screen each reference obtained from the search. We will retrieve full copies of all potentially relevant articles selected by either of the authors. The two authors will then independently determine if studies meet the inclusion criteria. We will list studies that initially appear to meet the inclusion criteria but are later excluded in the table ‘Characteristics of excluded studies’ with reasons for their exclusion. We will settle disagreements between the two authors through discussion with a third author. Potentially relevant studies in languages other than English, Spanish, Portuguese and Italian will be translated by collaborators within the group in order to be considered for inclusion.

Data extraction and management

Two independent authors will extract data from included studies using a data abstraction form adapted from those used by the Cochrane EPOC group. Information extracted will include: study design, type of intervention (e.g. in the source and/or recipient country or international agreement), setting (countries identified and categorised according to the World Bank income classification) and duration of the intervention, participants, and primary and secondary outcomes (according to authors’ definition).

Assessment of risk of bias in included studies

Two independent authors will assess the quality of all eligible studies using the criteria of the EPOC group (EPOC data collection checklist) for RCTs, CCTs, CBAs or ITSs, according to study methodology. We will resolve any discrepancies in quality ratings by discussion and involvement of an arbitrator where necessary.

Data synthesis

Reporting

For each study, we will report data in natural units. Where baseline results are available, we will report pre-intervention and post-intervention means or proportions for both study and control groups and will calculate the unadjusted and adjusted (for any baseline imbalance) absolute change from baseline with 95% confidence limits.

Primary analyses will be based upon consideration of the primary outcome: the proportion of health professionals of a low or middle-income country that emigrate.

We will present the results for all comparisons using a standard method of presentation, where possible. For comparisons of RCTs, CCTs, and CBAs we will report (separately for each study design):

- median effect size across included studies;
- inter-quartile ranges of effect sizes across included studies;
- range of effect sizes across included studies.

When a summary measure of effect could be computed we will use a random-effects model, anticipating important heterogeneity across studies.

Subgroup analysis and investigation of heterogeneity

If possible and relevant, we will prepare tables and box plots comparing the effect sizes of included studies grouped according to potential effect modifiers. Main factors to consider will be the targeted professionals, type of intervention, conditions in the source and the recipient country and study quality. If a sufficient number of studies are available (a minimum of 10), we will use funnel plots to assess publication bias.
ACKNOWLEDGEMENTS

We would like to thank the Alliance for Health Policy and Systems Research (WHO) for providing funds to support this review.

REFERENCES

Additional references

Bach 2003

Buchan 2003

Buchan 2004

Del Poz 2006

Diallo 2004

Dovlo 2003

Global Forum 2007

Handbook 2006

Martineau 2004

Starfield 2007

Stilwell 2003

Stilwell 2004

United Nations 2006

WHO 2006

Willetts 2004

* Indicates the major publication for the study
APPENDICES

Appendix 1. MEDLINE search strategy

Database: MEDLINE (from 1950)
Host: Pubmed
1. brain drain [All Fields]
2. immigr* [All Fields]
3. emigra* [All Fields]
4. migrat* [All Fields]
5. migrant* [All Fields]
6. diaspora [All Fields]
7. (Border* AND Crossing)[All Fields]
8. “Emigration and Immigration”[Mesh]
10. “Foreign Professional Personnel”[Mesh]
11. #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10
12. (health OR medical) AND (profession* OR personnel OR staff OR worker OR manpower OR workforce)
13. “Health Personnel”[Mesh]
14. “Health Manpower”[Mesh]
15. nurse* [All Fields]
16. physician* [Title/Abstract]
17. doctor* [Title/Abstract]
18. dentist* [Title/Abstract]
19. midwife* [Title/Abstract] OR midwiv [Title/Abstract]
20. pharmacist [Title/Abstract]
21. #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20
22. randomised controlled trial[pt]
23. random* [All Fields]
24. intervention* [All Fields]
25. control* [All Fields]
26. effect* [All Fields]
27. evaluat* [All Fields]
28. #22 OR #23 OR #24 OR #25 OR #26 OR #27
29. #11 OR #21 OR #28

HISTORY

Protocol first published: Issue 1, 2009

CONTRIBUTIONS OF AUTHORS

Blanca Penaloza (BP) led the writing of the protocol with contributions from Gabriel Rada (GR) and Tomas Pantoja (TP). Gabriel Bastias (GB) and Cristian Herrera (CH) reviewed the draft version.
DECLARATIONS OF INTEREST

None known.

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Internal sources

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External sources

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