

Doctor's Brain Drain in Nepal:
Exploring the Patterns, Causes, Consequences and Solutions

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Abstract

Doctors' 'brain drain' being a common problem for many of the developing countries; Nepal is assumed to be one of the sufferers at least in health care outcomes, yet relatively less studied case. In this context, this research paper tries to explore the intensity and distribution of doctor's brain drain in Nepal, tries to find out the specific causes, highlight some of the consequences, and to suggest practical solutions in national government perspective. Descriptive and qualitative analytical methods are used to analyze available secondary data. The research findings suggest that there is a remarkable increasing trend of doctor's emigration in recent years with emigration rate of 9% out of total stock in 2004; and more than 50% among IoM graduates during 2003-04 graduation era. USA is the dominant receiving country followed by UK among 20 receiving countries. The dominant cause of such skewed emigration distribution in general seems to be the existence of professional focused selective immigration policies in USA and UK as pull factor. Contrary to the hypothesis, the health care outcomes seem to be not affected adversely despite significant emigration of doctors. Moreover, there is a stagnation in recent years in doctor's density and significant loss in educational investment (estimation is 10.85 to 18.2 million USD per year). Major suggested solutions include: to take national policy stand of doctors' production either domestic or international market oriented and to act accordingly, and to initiate bilateral negotiations with USA and UK, based on international codes of practices in hiring foreign doctors, to make the win-win scenario for both sending and receiving countries.

1. Introduction

In this globalized world people are migrating across countries in search of better opportunities. The emigration pattern, in general, subsists in developing to developed countries dimension and among professionals. Health professionals, including doctors, are in the highly moving category. The phenomenon is the medical brain drain. The term 'brain drain' in medical sector as per Whellams (2009) definition is an across the country movement of health professionals comprising doctors, nurses, and pharmacists. Nepal, being a

developing country is not an exception. In this regard, exploring different aspects of doctors' emigration in Nepal is a worth doing research. Furthermore, in the context of critical problem reported in World Health Organizations'(WHO) world health report (2006) that including Nepal, there are 57 countries which are facing a Critical Shortage of health service providers (Doctors, nurses and midwives), with quite below the standard of 23 health service providers per 10000 people; that intensifies the importance of this research. Historically, doctors' brain drain in Nepal is found to begin several years ago (WHO, 2006); however, presumably the doctors' brain drain in Nepal has intensified in recent years, specially due to 'external brain drain'.Shanakar (2010) stated that the health workers' migration from Nepal is a major problem but lacks proper documentation. Hence, doctors 'brain drain' from Nepal is an important issue to research for the international political economydiscourse. Therefore, this research tries to explore the emigration patterns, the causes of such flow, some consequences and certain practical solutions in the form of policy recommendation.

Nepal is a developing country with 26.5 million people (Central Bureau of Statistics, 2011) served by about 12000 doctors of modern medicine (Ministry of Finance, 2012). There are 0.08 health centers per 100 000 population; in 2006, there were about 2 doctors of modern medicine per 2 nurses, 0.1 pharmacists and 6.3 community health workers for every 10 000 population (Shankar, 2010). In this context, as of 2010, none of the 57 crisis countries (including Nepal) had reached the prescribed health worker density ratio, one of the reasons of this crisis is massive brain drain (Dacuycuy, 2008). Therefore, to achieve basic health care services in Nepal, the doctor's 'brain drain' should be managed somehow. In this sense, this research can be helpful for the policymakers.

1.1 Research Questions, Objectives and hypotheses

Even though the brain drain is well established field of study among scholars, Nepal's brain drain in medical doctors' sector is found to be relatively less studied. Therefore, in this paper I tried to explore the wider perspective of medical doctors' brain drain in government policy perspective with the following questions to explore: How many Doctors are migrating? Why they are migrating? What are the consequences? What could be the practical solutions? Specifically, I tried to look at either pull or push factors are dominant for the doctor's emigration and is there any role of receiving countries' immigration policy or not? In response to these questions following are my working hypotheses: There is significant prevalence of doctors brain drain in Nepal, Receiving country's immigration policy is a factor to consider for the doctors' emigration from Nepal and there are adverse effects of doctors' emigration on health outcomes, coverage and educational investment.

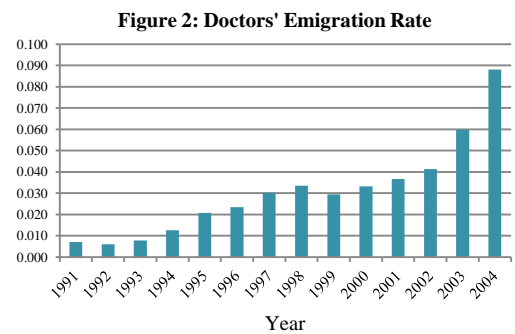
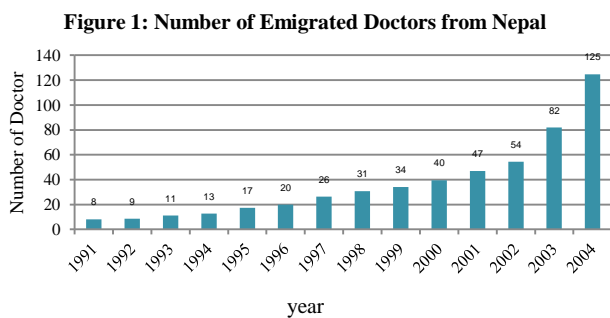
2.1 Data, Methods, Variables and Limitations

This study is mostly based on the secondary data adopted from two separate studies. The first data set is adopted from Bhargava, Docquier & Moullan (2011) study available online in www.siteresources.worldbank.org/INTINTERNATIONAL/.../MBDDDataSet.xls, the available panel data is converted to time series for this study that covers 14 years from 1991 to 2004 in national total perspective. The second data set is adopted from Zimmerman et al. (2012) study, which is available in the spreadsheet from <ftp://nsi.edu.np> (user name: iom_data@nsi.edu.np; password: admin123). This data is about practice locations of doctors graduated from the Institute of Medicine (IoM), the first medical school during 1983 to 2004, categorized in three different time ranges (1983-87, 1988-2002 & 2003-2004). Apart from these, secondary data from different sources are used to support the arguments.

The study methods include mainly descriptive and qualitative analysis. Data are plotted in bar and line charts and these trends are linked qualitatively with the particular attributes considered. Doctors' emigration is a dependent variable that can be explained by immigration policy of receiving country and various Push/Pull/enabling factors as independent variables.

2. Analysis of Brain Drain Patterns

In this section, different patterns of doctor's emigration are presented in order to perceive the intensity and distribution of the doctor's brain drain in Nepal. Since a complete and compiled data is not available, two different data sets, as mentioned in data section, are used to present the patterns. The number of emigrated doctors from 1991 to 2004 (figure 1) shows a significant increasing trend of doctors' emigration. However, the



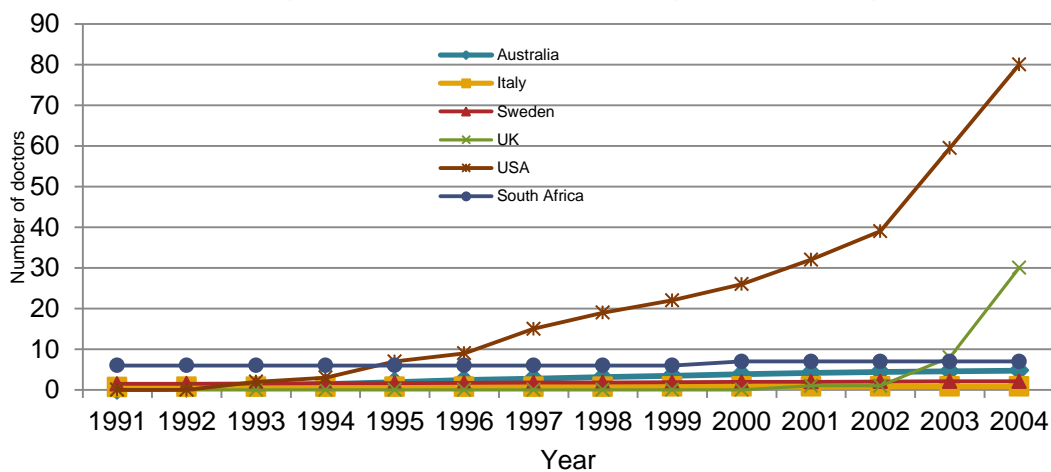
Data source: Bhargava et al. 2011

doctor's emigration rates, computed by dividing number of emigrated doctors by total number of doctors (emigrated doctors plus doctors in Nepal) in a certain year (figure 2), the rate has increased marginally until 1998 then declined feebly and ultimately increased significantly after year 2002 to reach about 9 percent out of total Nepalese doctors emigrated to different countries in 2004. The patterns seen in these two figures have indicated a prominent and consistent existence of doctor's brain drain problem in Nepal, particularly in later years.

As a sending country, Nepalese doctors are emigrated among six developed countries (figure 3). Among which, USA is preferred by most of the Nepalese emigrated doctors leaving far behind UK. For example in 2004, out of 125 total emigrated doctors 80 went to USA and 30 went to UK and remaining 15 went to other four countries. Except USA and UK other four countries have consistently attracted less than 10 doctors each year.

In relating these trends, some peculiar increasing trends can be seen for USA after 1994/1995 and for UK after 2002. These significant variations have been indicating towards some domestic or international policy/event that might have triggered the phenomenon. In this study, these trends are compared with historical policy events in both sending and receiving country's perspective seeking answer to the question: what are the reasons for such a significant increase in emigration of doctors? Are some push factors responsible for it or some pull factors were playing the role? In the subsequent section of cause analysis these factors are discussed in details.

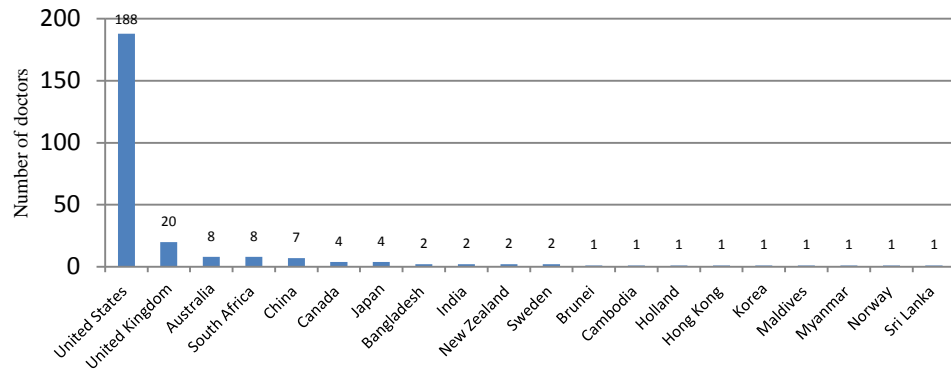
Figure 3: Number of doctors emigrated: receiving countrywise



Data source: Bhargava et al. 2011

Similar trend is seen using data of Zimmerman et al. (2012) (figure 4) study. They found that out of 710 tracked doctors, 73% went to USA, 7.8% went to UK and remaining 19.2 % were flown to other 18 countries.

Figure 4: Total Number of Emigrated IoM Graduates (1983-2004) : receiving counrty wise



Data source: Zimmerman et al., 2012

From above patterns analyses, the problem of brain drain can be established as a statement that there is significant prevalence of doctors' brain drain in Nepal, distributed in up to 20 countries. USA is the most preferred destination followed by UK. Similarly the study found that recent graduates are more and more willing to go abroad (figure 5), Specifically to USA then to UK compared to previous era's graduates. The emigration rate has reached more 53 % in 2003-04 graduation era compared to 37 % in 1988-2002 era and 14 % during 1983-87 graduation eras (Zimmerman et al., 2012).

Figure 5: Graduation Era wise practice location



Source: Zimmerman et al., 2012

From the above graphical presentations, it is now worthwhile to find the causes why such a vast majority of doctors are being emigrated from Nepal especially to USA and UK? Subsequent section deals with this question.

3. Causes Analysis: Why doctors are emigrating from Nepal?

There can be numerous reasons working together or independently causing doctors' emigration; however, most of the literatures have discussed two broad aspects of causes of emigration, the Push factors and the Pull factors (Dacuycuy, 2008) and some causes can be classified as the enabling factors. Recent study about doctors' brain drain in developing countries by Nair and Webster (2012) have stated some push factors as Low-employment opportunities, Low wages and poor working environment in home country, Lack of professional development and specialist training especially in advanced medical technologies and Political instability. Similarly, the same study have stated number of pull factors such as: High-employment opportunities due to shortage of health staff in the destination countries higher wage, Proximity and family links in destination countries. This paper assumes these

factors very relevant and equally applicable in Nepal's case as well and tries to link such factors with the previous sections emigration patterns especially the receiving country wise emigration pattern (figure 3). Moreover, some country specific factors are also considered for analysis, for example, change in the sociocultural aspect about doctors' profession, security threat for doctors as push factors. In case of Nepal, the immigration policies of USA and UK are also hypothesized to be important pull factor. Moreover, introduction of internet and expansion of airline services could have played some supporting role either.

3.1 Push Factors Analysis

When we try to fit these causes in Nepalese context, it can be seen for push factors that certainly there is low employment opportunities for doctors. In fact there are three major sectors offering employment: government, Private and Non government (NGOs) sector. Detail demand supply data is not available however there is around 1798 posts in government hospitals many of the seats are vacant. Large private sector demand and NGOs job market (currently 8335 are working in this sector) are also not sufficient for about 813 qualified doctors produced each year or the combined figure is showing that out of about 12000 registered doctors in Nepal only about 9000 are working in Nepal (Neupane, 2013) rest have no option then to go abroad.

Earning difference between Nepal and other countries specially USA and UK may be quite large and is acting as the push factor for Nepal and pull factor for USA and UK. For example, an average earning of a doctor in Nepal is 85,000 NPR (about 1000 USD) per month (www.salaryexplorer.com) while that of US based doctor an entry level doctor can earn median salary of \$224,000 per year on average ranging from \$138,000 to \$ 465,000 (<http://www.profilesdatabase.com/resources/2011-2012-physician-salary-survey>).The difference is more than 18 times compared to Nepal, which seems important motivating

factor for doctor's to emigrate to USA. However, the rapid emigration after 1994 for USA and after 2002 in UK cannot better explain by this factor because the wage difference could be similar before those years as well.

The Nepalese context other push factor: inadequate professional development opportunity is also most relevant one. In recent years, the Bachelors' Degree (MBBS) is not considered sufficient for practice in Nepal in general, however there are only limited post graduate medical colleges, indicating the possibility of emigration for higher education.

Political instability and socioeconomic conditions could also be the hidden but important factors in triggering the emigration pattern in Nepal. A decade long armed conflict extended from 1996 to 2006 was the most difficult situation for any good earning professionals in Nepal because they were asked for huge amount of money several times and also got political threats to practice fearlessly. Government was weak to maintain law and order so could not assure the security in total for high earning professionals- the doctors, reaction could be the high proportion of doctor's emigration. But, the two particular years of rapid growth could not also be linked with this phenomenon perfectly.

4.1 Pull Factors Analysis: immigration policies as a key player

The shortage of health workers in USA and UK might have created the good job market for Nepalese doctors but the immigration laws were not that favorable for Nepalese to enter USA and UK. It can be seen in figure 3, that until 1993 for USA and 2002 for UK the number of doctors emigrating were less than 10, nearly equal to other receiving countries. But after these two years, the rates were dramatically increased. What could be the reason? This study tried to link this phenomenon with the immigration policies change of respective countries and found coinciding with those turning points.

In case of USA, diversity visa (DV) lottery system was conceived after amendment of Immigration Act in 1990 and started in 1994 allowing lottery based entry system for individuals from eligible countries, Nepal has been eligible for this from the beginning (www.dvlottery.com). Therefore, it is quite obvious that the rapid expansion of doctors' emigration was a result of implementation of the change in immigration policy in USA since 1994. One can argue with this statement empirically; however for this qualitative analysis, this is the distinctive reason that could explain the rapid growth of the doctors' emigration could also have played important role which can be distinctly seen in Figure (3).

Similarly the in case of UK, as Boswell (2008) stated that in January 2002, UK launched a new Highly Skilled Migrants Program in order to attract scientists, doctors, business and finance professionals to the UK. The results is clear in figure (3) that in exactly the same year doctors migration to UK has started growing up significantly.

Apart from push and pull factors some 'enabling factors' could also have played supporting role for doctors' migration. For example, establishment of democratic system in 1990 in Nepal could have played important role to widen the professional horizon and entertaining the personal right to movement. Similarly, introduction of internet facility in 1993 in Nepal (Shakya, 2007) and rapid expansion of international airlines connection after 1990s might have supported the phenomenon either.

Therefore, it can be stated in more general term that USA and UK's selective professional focused immigration policy adoption had triggered the doctors' emigration rate in Nepal, after 1994 for USA and after 2002 in UK; combined with other push pull and enabling factors, but with domination of immigration policy effects.

4. Consequences analysis: Finding the effects of emigration

As a result of rapid emigration of doctors, this study has hypothesized number of possible consequences mainly in health outcome, doctor to people ratio and educational investment that may forgone with emigrated doctors.

Health outcome measure

The World Health Organization (WHO) (2006) had reported 23 health workers (doctors, nurses, midwives) per 10,000 is a critical number to achieve millennium development goals. Looking at the health related Millennium Development Goals' progress in Nepal (Table 1), it is not distinctly visible that such effect has existed in Nepal despite significant portion of doctors immigrating and government facing severe doctors shortage.

Table 1: Some Health related Millennium Development targets and their progress

	1990	2000	2005	2010	2015 (Target)
GOAL: 4 REDUCE CHILD MORTALITY					
Reduce by two thirds, between 1990 and 2015, the under-five mortality rate					
Under-five mortality rate	162	91	61	50	54
Infant mortality rate	108	64	48	41	34
Proportion of one-year olds immunized against measles	42	71	85	85.6	>90
MDG GOAL 5: REDUCE MATERNAL MORTALITY					
Target 5.A: Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio					
Maternal Mortality Ratio (MMR)	850	415	281	229	213
Proportion of births attended by skilled health personnel	7	11	19	28.8	60

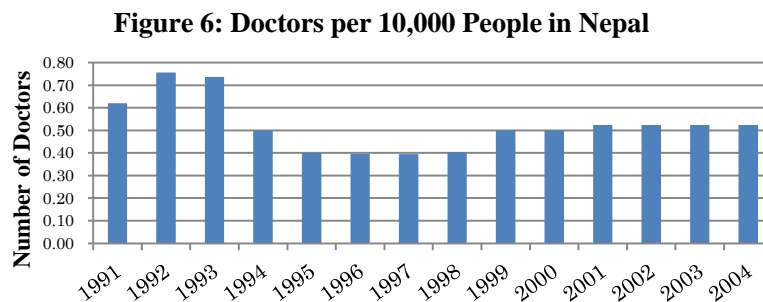
Source: MDGs Progress Report Nepal, 2010

Above table shows that there is consistent improvement in health related indicators. This progress seems to be quite interesting in the sense that despite significant existence of doctor's emigration problem, the health indicators were consistently improved. This indicates that one of the hypotheses laid in this study may not be true. However, this

phenomenon may require empirical studies to ascertain. But in general there seems to be no significant adverse effects in health related outcomes due to doctor's brain drain Nepal.

Doctor's density measure

The figure (6) shows the doctors density per 10000 people. The interesting part of this figure is stagnation of doctor to population ratio around 0.52 doctors per 10 000 population



Data source: Bhargava et al. 2011

in later years. This stagnation might be related could be related with the high ratio of doctors 'emigration in the context of fairly enough production of doctors (813 doctors on average per year) and a moderate population growth of 1.65 % per year (CBS, 2011).

Cost measure

Nepal government has been investing or channeling the significant portion of medical education from government coffer. If a doctor emigrates forever then Nepal faces multiple losses including direct investment on student loss, its social value loss and so on. Four medical colleges run under direct government subsidies producing about 500 doctors each year. In the rest of 17 private medical colleges provides 10% of admission seats for government scholarship for government quota each. This means, there are approximately 200 students graduating in 100% subsidized schemes from private medical schools resulting 700 are getting subsidized medical education. Estimating the individual total cost for undergraduate study (MBBS) is estimated to 30,00000- 50,00000NPR (Bohara, 2012) or

about 31,000- 52,000 USD (1 USD=95.59 NPR July 20, 2013 rate) during MBBS course. Assuming the 50% emigration rate out of 700 subsidized scheme graduates 350 will leave the country means the government is losing 10.85 to 18.2 million USD each year, which is a significant amount forgone by Nepal Government.

5. Conclusion

In general, in this globalized and human right focused world, emigration of doctor is his individual human right and cannot be prevented but can be minimized (Nair & Webster, 2012). Nepal was found to suffer from consistent but moderate doctor's migration about 9 % of total stock of doctors using Bhargava et al. data. However, it is found to be suffered severely from severe doctors Brian drain in recent years reaching more than 50% of grauatuates leaving the counties from Zimmerman et al.(2012) data set. Sice the later data was the more precise one got form individual tracking from the source county it should be more realistic and can beconcluded recent year's emigration rate could be much higher than 50% of the graduates.USA is the dominant receiving country followed by UK among 20 such receiving countries.

This severe emigration is the aggregate effect of 'push, pull and enabling' factors but a peculiar pattern is found in USA and UK as destination country. The doctor's emigration from Nepal is seen to be peaked corresponding to the respective point based immigration policy changes to attract many professionals including doctors. Therefore, it can be concluded that, in case of Nepal, pull factors are more dominant to accelerate the emigration rate than any other factors.

From cause analysis, it could be concluded that although there are numerous factors playing some role in emigrating Nepalese doctors, the professional focused immigration

policies implemented by developed countries seem to have a dominant pulling behavior to accelerate the doctor's emigration from Nepal. The strong evidences are USA and UK. The emigration pattern for USA after 1994, the year of Diversity Visa (DV) system implementation and for UK after 2002, the year of point based immigration policy realization, are the strong cases to support this conclusion.

On the other hand, consequences analyses could lead us to a conclusion that contrary to the hypothesis, health outcomes are generally not found to be severely affected by the doctor's emigration. This is quite surprising finding in which further empirical researches can be done. Similarly, it might be the case due to doctor's emigration, the doctor to population ratio has stagnated in 0.5 doctors per 10000 populations. Likewise, the direct educational cost forgone is significant (estimated to 10.85 to 18.2 million USD)

6. Policy Recommendations

General truth about this doctors' emigration problem is that in today's globalized, well informed and democratic world, it is not practical to argue in favor of preventing doctor's emigration totally. In fact, human rights 'right to move' could be attracted or the opportunity frontiers could be halted (Dacuycuy, 2008) apply such direct restriction measures. Nonetheless, it is generally accepted that the problem should be managed to a level at least to minimize the adverse effects in sending country's perspective. In this context, after analyzing the Nepal's brain drain problem, this study provides following policy recommendations for respective government are emphasized as an indirect and also the practical solutions to cope with this problem among numerous possibilities.

- Nepal's policy stand should be clear about producing doctors and should act accordingly. Whether Nepal intends to focus on domestic health care market or wants to attract remittances from international market. From the policy scanning, it can be generally perceived that Nepal is focusing in achieving domestic market demand, but equally the government has not been taking powerful policy measures to address the problem.
- If domestic market is the priority then in order to address the problem in long term, this study strongly supports the implementation of findings from Zimmerman et al. (2012) study. For example, the study suggested some solutions to address the emigration problem through the selective admission criteria in medical schools: particularly selecting rural school based students, students with paramedical background among other criteria seems to be very practical and politically the safest way to deal with this problem.
- During this research, it is realized that the data for doctor's emigration in Nepal is not well documented. Therefore, if the government could initiate a policy to update emigration data using Zimmerman et al. (2012) methodology of 'alumni tracking for practice location', it could be a significant achievement to further analyze the problem and finding some safest ways for the policymakers to manage the problem.
- Another measure could be to implement a national demand focused curriculum including psycho-social courses as argued by Bohara (2012). This approach will nurture individual 'social responsibility' of a doctor to the national health care sector.
- Importantly, in the context of severity of the emigration phenomenon, before the patterns be worst, together with various retention oriented long term measures; in short run, Nepal should be able to initiate bilateral negotiations, based on 'International code of practices of recruiting doctors', with USA and UK where the

highest emigration exists, at least to balance the loss or to find the way to make win-win situation for both parties.

- The government should find many attractive ways to return the emigrated doctors either temporarily or permanently. Even if government cannot compensate them comparably, the government or medical schools could acknowledge emigrant's abroad trainings by arranging visiting scholar positions, or by appointing as honorary trainers as suggested by Puri (2007), or should be able to find some innovative ways to utilize the abroad training knowledge and skills.
- Finally, it is desirable to initiate policies for doctors' retention, if not, utilization of emigrated ones in micro level and at least to make win-win negotiations at the national level.

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