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Can the private education sector help overcome nursing shortages?

A synthesis of evidence and experience from Thailand, Kenya and India



Can the private education sector help overcome nursing shortages? A synthesis of evidence and experience from Thailand, Kenya and India

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Introduction

Nursing shortages are a critical health workforce challenge and are likely to be exacerbated in coming years by changing population demographics and healthcare needs. As pressures grow, shortages will intensify the unequal distribution of nurses both within and between countries.

Currently, many countries are experiencing a rapid expansion of private nurse training institutions. These institutions have the potential to contribute positively to local and national health systems by increasing the supply of nurses, possibly even in rural areas where shortages are most severe. However, little is known about private training institutions (e.g. their syllabus, the quality of training, how they are regulated), or about the job choices of their graduates.

RESYST Consortium has conducted research in Thailand, Kenya and India to compare public and private nurse training institutions, and investigate the extent to which the type of training institution influences their job choices. In March 2016, a meeting was held in Bangkok, Thailand, bringing together researchers and policymakers to share new evidence and exchange experiences on the topic.

This report synthesises the research findings that were shared during the workshop, and outlines recommendations that were jointly developed by researchers and policymakers. It builds on the country-specific research results by integrating the findings into wider discussions and existing knowledge on nursing shortages and strategies to overcome these.

The recommendations - for governments, regulatory bodies and educational institutions, are organised into two categories: a minimum package that outlines how countries can plan, regulate and monitor training institutions to ensure nursing standards in light of the expansion of the private sector, and an expanded package of recommendations to ensure that private training institutions contribute positively to national priorities.

Recommendations

Minimum package	Expanded package
<ol style="list-style-type: none">1. Maintain investment in public training institutions2. Develop clear policy objectives regarding the desired role of private training institutions3. Regulate private training institutions to ensure quality standards4. Address other causes of nursing shortages	<ol style="list-style-type: none">1. Incentivise the establishment of private institutions in rural areas2. Incentivise admission of nursing students from rural areas to private institutions3. Introduce compulsory service in under-served areas for private (and public) graduates4. Strengthen partnerships between public and private training institutions

Background: the critical challenge of nurse shortages

Nurses play a central role in providing front-line health services: without sufficient numbers, health systems will not be able to provide safe and effective care, let alone respond to emerging diseases, changing healthcare needs or health crises.

Shortages of nurses is a persistent human resources for health problem in many countries

The global shortage of qualified health workers, including nurses, has been identified as one of the biggest obstacles to health system effectiveness. All three of RESYST's study countries face nursing shortages, although they are most acute in Kenya where there were just 0.86 nurses and midwives for every 1,000 population in 2013. In India and Thailand there were 1.7 (2011) and 2.1 (2010) nurses per 1,000 population respectively, according to World Health Organization data.

There is an unequal distribution of nurses within countries

Within countries, shortages are often more pronounced in rural and remote areas where fewer nurses are willing to work owing to poor working conditions and a lack of infrastructure. In Kenya, nursing density ranges from 1.2 to 0.08 per 100,000 population across counties, with a higher density of workers in urban areas (Wakaba 2014).

Growing demand for nurses exacerbates shortages

The growing demand for nurses is caused by a complex set of societal and political factors. At the global level, more nurses are needed to provide care for aging populations and to treat and manage chronic, long-term conditions such as heart disease and diabetes. In Thailand, Kenya and India, health system reforms including a renewed focus on primary health

care and task-shifting from doctors to nurses, have also led to a rise in demand for nurses. In Thailand, the introduction of the Universal Health Coverage policy, as well as actions to promote the country as a medical hub, have further increased demand.

Renewed focus on nurse production to address shortages

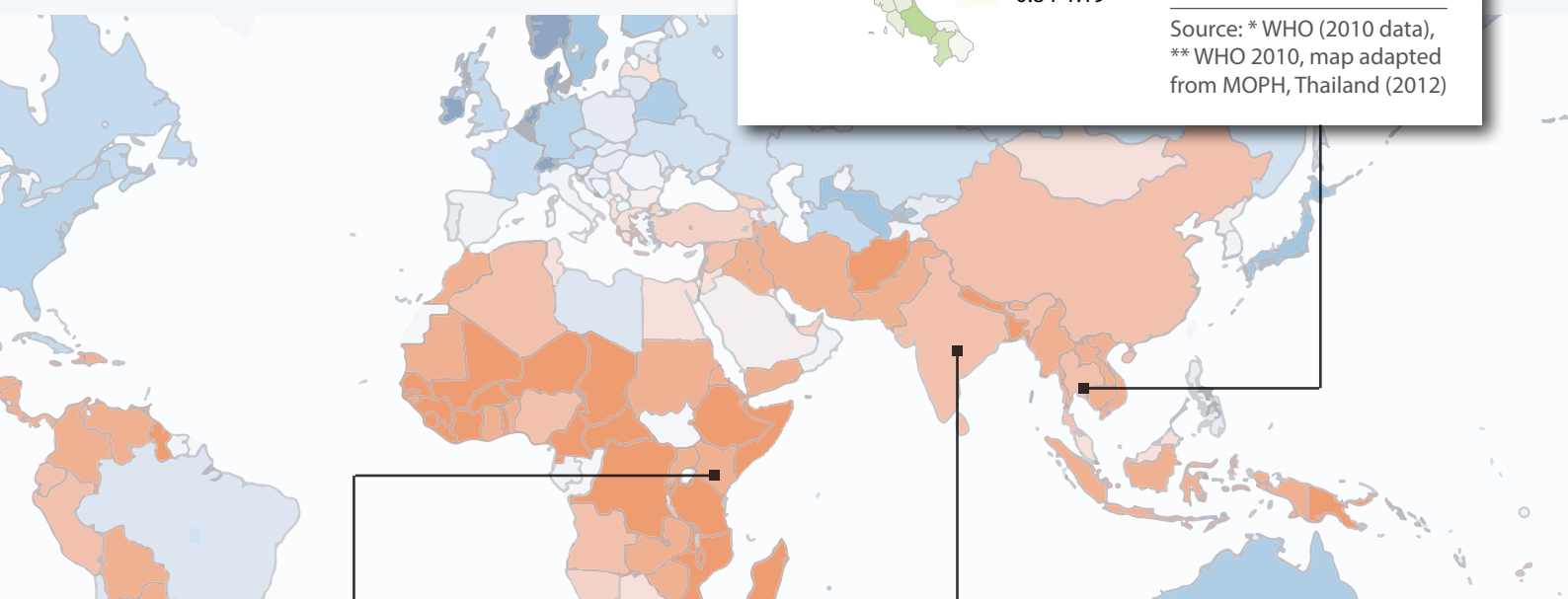
At a time when the supply of nurses is failing to keep pace with growing demand, there is growing focus on how to train more nurses, including through private nurse education institutions. In India, private institutions are now the dominant type comprising 88% of all nursing institutions. In Kenya and Thailand public training institutions still dominate, however, there has been a rapid expansion in private training institutions in recent years.

Unknown role and impact of private sector training institutions

Despite their increasingly important role, little is known about private training institutions and the impact that they might have on nurse production. Private institutions have notable differences with conventional public training institutions including in their ownership and governance, organisational goals and culture, and sources of finance. These differences may also determine nursing graduates' employment choices and their likelihood of working in public or private facilities.



Global density of nurses and midwives



Thailand

Density of nurses per 1,000 population

138,710
nurses in 2010*

2.08 nurses
per 1,000 population*

Nurses work location**

60.7	39.3
Urban %	Rural %

Legend for Thailand map:

- >2.1
- 1.8-2.1
- 1.55-1.79
- 1.22-1.54
- 0.84-1.19

Source: * WHO (2010 data), ** WHO 2010, map adapted from MOPH, Thailand (2012)

Kenya

Density of nurses per 1,000 population

37,907
nurses in 2013*

0.86 nurses
per 1,000 population*

Legend for Kenya map:

- 0.81-1.20
- 0.61-0.80
- 0.41-0.60
- 0.21-0.40
- 0.09-0.20

Source: *WHO (2013 data), map adapted from Wakaba (2014)

India

Density of nurses and midwives per 1,000 population

1.71 nurses
per 1,000 population*

Tamil Nadu

186,927
nurses in 2009**

3.39 nurses
per 1,000 population**

Legend for India map:

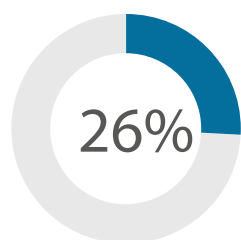
- 1.6-2.9
- 1.0-1.6
- 0.6-1.0
- 0.3-0.6

Source: *WHO (2011 data), **Hazarika (2013), map adapted from World Bank (2009)

Case study: Thailand

The nursing profession is widely respected in Thailand and there are sufficient applicants for the training programmes. However, the demand for nurses has increased markedly since the implementation of Thailand's Universal Coverage Scheme in 2002, and with the population growing older and living longer, it is likely to rise further. Shortages in nurses already exist in the country, especially in rural areas, and it is estimated that an additional 50,000 nurses are required by 2020.

Nurses are traditionally trained in public institutions, funded and regulated by one of three government departments: the Ministry of Education (MOE), which provides training in universities; the Ministry of Public Health (MOPH), whose colleges train nurses specifically to work in local public facilities; or the Ministry of Defence, which trains nurses for the military. In recent years, there has been an expansion of private nursing schools, located mainly in urban areas, which now constitute more than a quarter of all training institutions.



of all nurse training institutions are in the private sector



One of the greatest human resources for health challenges in Thailand is the recruitment and retention of nurses in rural health facilities. Given that most privately trained nurses choose to work in private urban hospitals, private training institutions do not relieve this challenge. Further, the lower quality of nursing graduates can have a negative impact on patients' care.

The government has taken steps to increase the production of nurses to work in rural areas through its MOPH training programme, which has a criteria of recruiting students from rural areas, training them locally, and offering placements in their home-province. Training institutions have close relationships with local health providers and a strong focus on community health care and rural practice - attributes that could be more actively taken-up by private institutions to widen the work experiences of nursing students.

Key findings

Poor quality of private training institutions and graduates

The quality of training in private nursing schools is not as good as MOE institutions with lower staff-student ratios and fewer highly-qualified teaching staff. Subsequently, less than one quarter of privately trained graduates pass the national nursing exam first time, a lower proportion than public sector graduates. The quality of MOPH training is also sub-standard due to resource constraints and low capacity of staff.

Publicly trained nurses are more likely to work in public health facilities

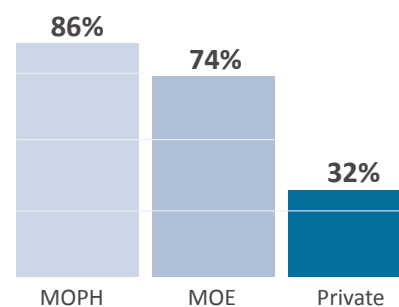
Most publicly trained nurses intend to work in public health facilities, both immediately after graduation and up to five years after (see Figure 1). Nurses trained in MOPH institutions are most likely to work in the public sector, partly because many are obliged to work for MOPH for 2-4 years as a condition of their training or scholarship.

Two-thirds of privately trained nurses intend to work in the private sector

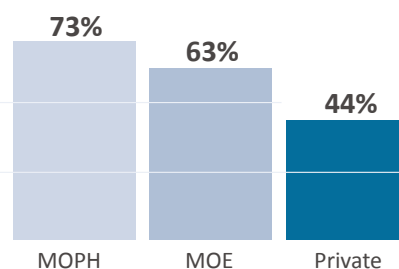
Privately trained nurses are predominantly trained to work in private hospitals providing health services to foreign patients. Private graduates are more likely to be influenced by the higher income offered in the private health sector, possibly because they had higher tuition fees during their training. Both public and privately trained nurses are, however, unlikely to migrate because they face language barriers working in other countries.

Figure 1: Nurses' intentions to work in the public sector

Immediately after graduation



5 years after graduation



Case study: Kenya

Kenya faces severe health workforce shortages, especially in primary healthcare facilities. Currently the density of nurses per 1,000 of the population is 0.86, far below the number required to provide sufficient coverage for essential interventions.

Just over half of all nursing schools in Kenya are publicly funded, with the rest constituting private and faith-based institutions. The number of private institutions (i.e. those that are owned and managed by a group or individuals for profit) has been rising, and the government has identified these institutions as an important way of increasing the production of nurses in the country.

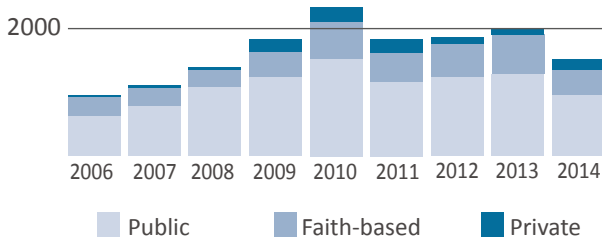


Key findings

Increases in nursing students have not yet translated into more graduates

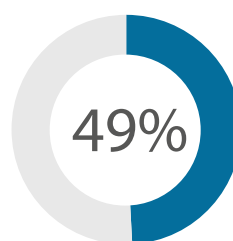
Since 2006 there has been a year-on-year increase in the total number of students enrolled on nursing courses. The number of students in private and faith-based schools has increased significantly and in 2014 they constituted 30% of all admissions. However, the total number of students who actually graduate from their nursing studies has fallen since 2010, and production is fewer than 2,000 nurses per year (see Figure 2).

Figure 2: Trend in number of students graduating from nursing schools



There is substantial wastage in public sector training institutions

Only 60% of publicly trained students who complete their training go on to pass their final exams. This is partly due to poor quality training institutions and clinical instructors, with a culture of staff who are not committed to seeing their students achieve. By comparison, 98% of students in private institutions and 85% of students in faith-based institutions passed their exams.



of all nurse training institutions are in the private or faith-based sectors

It is not known how many graduates are able to find relevant employment in the nursing profession in Kenya and recruitment data from private hospitals is not available; however, almost one in five nurses trained in the country applies to migrate for employment abroad, most of whom are between 21–40 years old (Gross 2011). There is also some evidence to suggest that job opportunities in the public healthcare system are limited by government budget constraints and insufficient funding to employ nurses, which may explain the high numbers of nurses applying to migrate (Kenya Ministry of Health 2012). The government urgently needs to increase spending on health workforce and improve its health sector planning and budgeting processes so that there are better employment opportunities for newly qualified nurses.

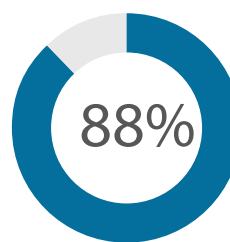
In Kenya, private training institutions offer an alternative solution to poor quality public institutions. Private institutions have more qualified staff and lower staff-student ratios, suggestive of higher quality training, yet the cost of tuition is not significantly higher.

The Ministry of Education needs to take steps to improve the quality of public training institutions. Specifically, it should increase investments in nurse clinical placement sites. Institutions should hire more faculty staff and clinical supervisors, and address issues of poor attitudes towards teaching students through continuous professional development and introducing minimum standards for teaching.

Case study: Tamil Nadu, India

The availability of nurses varies widely between states in India, ranging from 346 per 100,000 population in Kerala to just 80 in Uttarakhand. In Tamil Nadu, the density of nurses is relatively high at 339 per 100,000 population. Tamil Nadu is also responsible for producing a lot of nurses compared to other states; however, it is currently facing a decline in the number of nursing admissions due to a societal change in attitudes and perceptions towards the profession.

Private nursing colleges are the most common type of training institution in India and produce 95% of all nurses. In Tamil Nadu the number of private institutions has increased from 40 to 169 in a decade. The dominance of private training institutions presents a problem in that they are profit orientated and set up in urban areas, which have higher demand for places and better infrastructure. Fewer facilities are available in rural areas where nurse shortages are most severe. Further, many private institutions are owned by politicians, which might hinder attempts to regulate them.



of all nurse training institutions are in the private sector

Given the high volume of private nursing institutions, better links are needed with public healthcare facilities to provide opportunities for students to have on-the-job training and more exposure to public health services. However, the greatest challenge that the government faces is in recruiting nurses into the public system, which will require increased funding to employ educated nurses and better health workforce planning.

Key findings

Both public and privately trained nurses prefer to work in the public sector

Approximately two-thirds of nursing students showed a preference to work in public health facilities, irrespective of their training. This is because public sector jobs offer higher wages and more security than jobs in the private sector. Some publicly trained nursing students must complete a compulsory internship into the public sector and government hospitals following their graduation.


Low employment of nurse graduates into the public health sector

Despite acute shortages of nurses and a large number of reported vacancies, there is a low absorption of nurses into the public health sector (see Box 1). Of those who stated a preference to work in the public sector, only one third of publicly trained nurses and 3 per cent of privately trained nurses were actually working in public health facilities two years after their graduation. In Tamil Nadu, low levels of recruitment have driven nurses to explore job opportunities in other states and abroad, and many others do not end up actively working in the profession.

High levels of international migration

More than a quarter of graduates from private nursing institutions intend to work abroad, compared to 15% from public and mission schools. Male nurses and those who were educated in English are most likely to choose to work aboard.

Box 1: Medical Recruitment Board Notification on nurse vacancies in Tamil Nadu



NOTIFICATION NO: 01/2015 **DATE: 19.04.2015**

GOVERNMENT OF TAMIL NADU
MEDICAL SERVICES RECRUITMENT BOARD (MRB)
 7th Floor, DMS Buildings, 358, Anna salai, Teynampet, Chennai - 6.
 Website: www.mrb.tn.gov.in Email: mrb.tn@nic.in Twitter: twitter.com/mrb_tn

1. Applications are invited only through online mode up to 11.05.2015 for recruitment to the post of Nurses on contract, and on consolidated pay basis.

2. No. of vacancies :

Sl No.	Name of the post	Post Code	Total No. of posts*
1	Nurses	--	7243

* - Out of 7243 posts, for 6792 posts only woman candidates are eligible to apply.

The first page of a nurse recruitment board lists 7,243 posts available in Tamil Nadu state in 2015.

Cross-country findings

The country case studies illustrate how the role and impact of private training institutions varies across contexts. This section draws together some general findings across the countries.

1. In recent years there has been a rapid expansion of private training institutions

Thailand, Kenya and (Tamil Nadu) India are illustrative of a global trend towards the establishment of private training institutions, although there appears to be a variety of reasons for this. In Thailand, the growth of private training institutions has been fuelled by demand from private hospitals that cater to foreign patients. In India, many private nursing schools are set up as profit-making institutions, with some overtly training nurses to work in the private sector or abroad. In Kenya, private training institutions have developed partly in response to weaknesses in the public education system. The expansion of private training institutions has happened at a quick pace, for example the number of schools in Tamil Nadu increased four-fold in a decade, and often without regulations on their quality, curriculum or fees.

2. Private institutions are unlikely to reduce nurse shortages in under-served areas

Many countries face their most acute shortages in rural and remote areas; however, the evidence shows that most private training institutions are set up in urban areas, which have better general infrastructure and more prospective students than rural areas. In Thailand, half of all private schools are located in or near Bangkok, compared with one-third and one-fifth of MOE and MOPH training institutions respectively. Privately trained nurses are also more likely to work in urban areas in Thailand compared to publicly trained nurses.

In India and Kenya, nurse shortages are severe countrywide, not only in rural areas. While private sector institutions do produce nurses to work in these countries, a significant proportion migrate to work in richer countries. In Kenya, approximately one in five nurses applies to migrate for employment abroad, although it is not known whether the type of training institution influences this decision. In Tamil Nadu, more than a quarter of graduates from private nursing institutions intend to work abroad, compared to 15% from public and mission schools.

3. There are variations in the quality of private training institutions and in the quality of graduates produced

In Thailand, the quality of nurses produced in private institutions is lower than publicly trained nurses, as evident from a lower pass rate for national exams. There are several factors contributing to this including: less demanding entry requirements, a lower staff-student ratio and limited learning environments for students. However, this is not the case in all contexts: in Kenya, private institutions have a higher ratio of tutors to students and a higher pass rate for exams than public training schools.

4. In some countries there is poor absorption of nurses into the public health sector

In Kenya there is not enough funding in the public health sector to employ nurses that are trained in the country, leaving many unemployed. This disjuncture between production and recruitment is one reason for the high levels of migration, as nurses do not have opportunities to work in their home country. Similarly in India, only a small proportion of trained nurses go on to work in the public sector, although the problem is not due to a lack of funding for nurses as the number of vacancies in the state is high - rather, it is caused by inadequate workforce planning.

Many countries face their most acute shortages in rural and remote areas; however, the evidence shows that most private training institutions are set up in urban areas

Recommendations

These recommendations were jointly developed by researchers and policymakers at the workshop aimed at governments, regulatory bodies and educational institutions. The recommendations are organised into two categories: a minimum package that outlines how countries can plan, regulate and monitor training institutions to ensure nursing standards in light of the expansion of the private sector; and an expanded package to ensure that private training institutions contribute to national priorities and help overcome nursing shortages.

Minimum package of recommendations

The establishment of private nurse training institutions has created a number of issues with regards to the quality of training, and of graduates, that need addressing. In countries where private institutions play a significant role, the government, professional bodies and institutions must work together to actively manage the operation of private nurse training institutions and ensure nursing standards.

1. Maintain investment in public training institutions

Public sector institutions are best placed to respond to a country's health workforce requirements in terms of: aligning student intake and training programmes with changing population needs, maintaining healthcare standards, setting up training schools in rural areas, and collaborating with the public healthcare system to place trainees and graduates in under-served facilities. The Ministry of Health/Education must continue to demonstrate the value of public training institutions to the government and secure their funding.

When public training institutions are underfunded, the quality of teaching - and of nurses, can suffer. In these cases, investments are needed to:

- Improve the working conditions of staff based at both education institutions and in health facilities, which will also serve to attract and retain high quality instructors.
- Maintain and improve continuous professional development programmes that are responsive to the changing healthcare needs of the population.
- Better integrate training with public health service provision, with a focus on expanding students' experiences of community and rural health care, and on developing their non-clinical skills such as teamwork and compassion.

2. Develop clear policy objectives regarding the desired role of private training institutions

Ministries of Health (MOH) should actively work towards developing a policy that sets out the desired role of private training institutions in relation to their national human resources for health goals. In some instances, this may require the inclusion of the private sector in the national planning process for nurses; however, in others, it may involve limiting the number of private training institutions if they undermine the provision or quality of public sector training.

In order to work strategically, it is important that MOH have well-functioning systems for collecting information about nurse production rates from public and private sector

institutions, as well as knowledge of nurses' job intentions upon graduation, and how these vary across types of institutions.

3. Regulate private training institutions to ensure quality standards

Regulatory/professional bodies should put in place guidelines and rules to ensure minimum standards for the quality of both public and private training institutions. These might include:

- Minimum entry requirements in the selection of students.
- Strict accreditation of curriculum and of teaching methods, e.g. identification of core competencies that should be covered by the training programme, and a minimum amount of time that students should spend in placements.
- Regulation of staff-student ratios.
- Clear guidelines on clinical supervision and mentorship.
- A national licensing exam, which exists in many, but not all, countries.

In addition to quality standards, professional bodies should also develop regulation to protect against corruption and perverse incentives that arise from private (profit-making) ownership of education institutions, e.g. by setting limits on tuition fees.

4. Address other causes of nursing shortages

Whether through the public or private sector, increasing the production of nurses alone will not solve the problem of shortages. The research identifies several critical health workforce issues that must be addressed alongside nurse production.

- Governments must ensure that the public health system has sufficient funding and capacity to recruit nurses when they graduate. If there are no jobs available, nurses will seek employment in the private sector or abroad, regardless of their work preferences.
- MOH need accurate health workforce planning to determine current and future health workforce requirements, and align these with student intake and training programmes. This will require good communication and sharing of information between government (health and education) departments, professional associations and all types of training institutions.
- Governments must develop and implement comprehensive strategies to address the unequal distribution of nurses within countries, e.g. through incentives to recruit and retain rural health workers.

Expanded package of recommendations

With strategic actions by governments/nursing associations and appropriate regulations, the private education sector has the potential to help relieve nursing shortages by supplying a committed workforce that contributes to country health priorities, including rural recruitment. The following set of recommendations outline how this can be achieved.

1. Incentivise the establishment of private institutions in rural areas

Nursing students that are trained in rural areas are more likely to work in rural areas; thus, steps should be taken to expand the number of private training schools and increase the absorption of privately trained nurses in these areas. These include:

- Government support to establish training in rural areas, e.g. through tax exemptions or other financial incentives.
- Government or funders establish schemes for private (and public) institutions to 'adopt a village' to serve for community or rural training.
- Regulators ensure training curricula have a significant component dedicated towards public health and community nursing.
- Training institutions employ role-models or mentors with experience of working in rural areas to train and motivate.

2. Incentivise admission of nursing students from rural areas

Similar to where they are trained; nursing students that live in rural areas are more likely to work in rural areas, and private institutions should be encouraged to take on more rural students through both supportive and regulatory measures. These include:

- Introduce quotas for rural students admitted to training institutions.

- Government could provide financial incentives (scholarships, payment of tuition fees) to students from rural areas who train in private institutions.
- Support private institutions to offer hometown placements so that students can have experience working near to where they live. This would require developing effective partnerships between private training institutions and public health facilities (see recommendation #4).

3. Compulsory service or bonding in under-served areas

Governments should consider implementing compulsory service for graduates to work in under-served areas (rural/remote/public health facilities) before they can register as a nurse. Alternatively, they could provide scholarships or funding to students (from both public and private institutions) on the condition that they work in under-served areas for a set period of time after they graduate. These approaches, however, require careful planning and consideration of the needs of health workers, as well as provision of support structures and incentives that are appropriate for the working conditions.

4. Strengthen partnerships between public and private training institutions

Better partnerships are needed between all the institutions involved in nurse training to strengthen education, training programmes and planning for recruitment. Specifically, more collaboration may help:

- Public and private educational institutions to improve resource capacity and quality of teaching programmes.
- Training institutions and public health facilities to increase exposure of students to public/rural facilities.
- Training institutions and the Ministries of Health to share information about numbers of nurses being produced and levels of demand.

A regulatory body may be best placed to take on a convening role and ensure effective linkages between professional bodies, higher education and healthcare institutions.

References and resources

RESYST resources (available at <http://resyst.lshtm.ac.uk>)

- Amref Health Africa. 2016. The role of private sector training institutions in addressing nurse shortages in Kenya. RESYST policy brief
- International Health Policy Program. 2016. Public and private nursing schools in Thailand: How does type of training institution affect nurses' attitudes and job choices? RESYST policy brief
- Indian Institute of Technology, Madras. 2016. Job choices of nurses trained in private and government institutions Tamil Nadu, India. RESYST presentation
- Reynolds J, Wisaijohn T, Pudpong N, et al. 2013. A literature review: the role of the private sector in the production of nurses in India, Kenya, South Africa and Thailand. Human Resources for Health 11:14

References

- Gross J, Rogers M, Teplinskiy I, et al. 2011. The impact of out-migration on the nursing workforce in Kenya. Health Serv Res 46: 1300-1318
- Hazirika I. 2013. Health workforce in India: assessment of availability, production and distribution. WHO South-East Asia Journal of Public Health 2013 | April-June | 2(2)
- Ministry of Health, Kenya. 2012. Kenya nursing workforce report: the status of nursing in Kenya, 2012
- Ministry of Public Health, Thailand. 2012. Thailand Health Profile Report (2008-2010)
- Wakaba M, Mbindyo P, Ochieng J et al. 2014. The public sector nursing workforce in Kenya: a county-level analysis Human Resources for Health 12:6
- World Bank. 2009. India's health workforce: size, composition, and distribution. Washington, DC: World Bank.
- WHO. 2010. Human Resources for Health Country Profile Thailand. Bangkok: WHO Regional Office for South-East Asia

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