

National Surgical, Obstetric, and Anesthesia Planning Intervention Toolkit

A Resource from the Program in Global Surgery and Social Change, Harvard Medical School

Domain: Interventions and tools for improving workforce redistribution and rural retention

Authors: Desmond Jumbam¹, Kristin Sonderman^{1,2}

¹Program in Global Surgery and Social Change, Boston, MA

²Brigham and Women's Hospital, Boston, MA

Brief Synopsis

There is a medium body of evidence around interventions to improve workforce redistribution and increase rural retention in low- and middle-income countries. In 2010, the World Health Organization (WHO) developed a list of global policy recommendations for increasing access to health workers in remote and rural areas through improved retention. The recommendations are divided into educational recommendations, regulatory recommendations, financial incentive recommendations and personal and professional support recommendations. Most of the evidence for interventions supporting health workforce redistribution and retention are based on observational studies as opposed to use of control group studies. Overall, factors influencing health workers redistribution and rural retention are multifaceted and there is evidence that comprehensive approaches (bundle of interventions) are better suited to addressing retention challenges.

Guidelines

- World Health Organization. (2010). *Increasing access to health workers in remote and rural areas through improved retention: global policy recommendations*. World Health Organization. http://www.searo.who.int/nepal/mediacentre/2010_increasing_access_to_health_workers_in_remote_and_rural_areas.pdf

Interventions

EDUCATIONAL INTERVENTIONS

1. Targeted admission policies to enroll students with a rural background

References:

1. Pagaiya, N., Kongkam, L., & Sriratana, S. (2015). Rural retention of doctors graduating from the rural medical education project to increase rural doctors in

Thailand: a cohort study. *Human Resources for Health*, 13, 10. <http://doi.org.ezp-prod1.hul.harvard.edu/10.1186/s12960-015-0001-y>

2. Pagaiya, N., Kongkam, L., & Sriratana, S. (2015). Rural retention of doctors graduating from the rural medical education project to increase rural doctors in Thailand: a cohort study. *Human Resources for Health*, 13, 10. <http://doi.org.ezp-prod1.hul.harvard.edu/10.1186/s12960-015-0001-y>
3. Techakehakij, W., & Arora, R. (2017). Rural retention of new medical graduates from the Collaborative Project to Increase Production of Rural Doctors (CPIRD): a 12-year retrospective study. *Health Policy and Planning*, 32(6), 809-815.

Web link: <https://www.ncbi-nlm-nih-gov.ezp-prod1.hul.harvard.edu/pmc/articles/PMC4355566/>

Type: National policy

Intervention description:

In some countries, attempts to increase health workforce rural retention has been done through the creation of special medical school recruitment programs. These programs target students with a rural background for entrance into medical schools as there is some evidence (mostly from developed countries) that medical graduates with a rural background are more likely to work in rural settings than their counterparts with an urban background.

Example: The Collaborative Project to Increase Production of Rural Doctors (CPIRD) was created in 1994 in Thailand and targeted students who resided or were educated in rural areas for admission into medical schools. In addition, all clinical training for eligible students were undertaken in CPIRD-affiliated medical schools located outside major cities.

Outcome: One study indicated that the retention rate at rural hospitals was 29% for CPIRD doctors compared to 18% for non-CPIRD track doctors.² The authors observed that non-CPIRD track doctors were 1.5 times more likely to leave public practice than CPIRD trained doctors. A 12-year prospective study showed that CPIRD-trained physicians had a 54.9% lower probability of public resignation.³

Organization: Thailand Ministry of Public Health (MoPH), Collaborative Project to Increase Production of Rural Doctors (CPIRD)

Cost: Not available

Considerations: The increase in surgical specialties has led to more surgical trainees seeking additional training outside of their country of origin; which provides an additional challenge in recruiting these trainees once their subspecialty training is complete. An increase in specialty positions in rural hospitals may sustain the effects of such retention programs. And additional potential challenge is resentment among doctors recruited in the normal track who are assigned rural job assignments.

2. Train students closer to rural communities and match curricula with rural health needs

References:

1. **Budhathoki, S. S., Zwanikken, P. A., Pokharel, P. K., & Scherpbier, A. J. (2017). Factors influencing medical students' motivation to practice in rural areas in low-income and middle-income countries: a systematic review. *BMJ open*, 7(2), e013501.**
2. **Budhathoki, S. S., Zwanikken, P. A., Pokharel, P. K., & Scherpbier, A. J. (2017). Factors influencing medical students' motivation to practice in rural areas in low-income and middle-income countries: a systematic review. *BMJ open*, 7(2), e013501.**
3. **Budhathoki, S. S., Zwanikken, P. A., Pokharel, P. K., & Scherpbier, A. J. (2017). Factors influencing medical students' motivation to practise in rural areas in low-income and middle-income countries: a systematic review. *BMJ open*, 7(2), e013501.**
4. **Strasser, R., & Neusy, A. J. (2010). Context counts: training health workers in and for rural and remote areas. *Bulletin of the World Health Organization*, 88(10), 777-782.**

Web link: <http://bmjopen.bmj.com/content/7/2/e013501>

Type: National policy; medical school recruitment; training policy

Intervention description: Developing policies around factors that motivate undergraduate and post-graduate students to work in rural areas to improve rural retention. Some factors that have been identified to motivate rural retention include training in rural areas with community-based curriculum, early exposure to a rural community during medical school training, and rural location of medical schools.²

Examples: A comprehensive literature review study by Budhathoki *et al.* found that in Uganda, medical training and community-based curriculum motivated and prepared students for medical practice in rural areas. The review also found that in Nepal, students perceived that training in rural areas as medical students prepared them for practice in those areas.³

Outcome: Although there are numerous studies that explore motivations of students who want to work in rural areas, the few from low and middle-income countries have reported on both the positive impact of medical training in rural areas and the role of a rural curriculum leading to rural retention.

Cost: No costing information available

Considerations: Ensure that training facilities in rural areas are adequately equipped and staffed with faculty to ensure that students are provided the same level of training and exposure as well as continued motivation for students to train rurally. Variability and quality of clinical and teaching skills of rural practitioners that sometimes is evident in rural settings, will need to be standardized prior to deployment of residents rurally.⁴

REGULATORY INTERVENTIONS

1. Compulsory rural service and incentives

References:

1. Frehywot, S., Mullan, F., Payne, P. W., & Ross, H. (2010). Compulsory service programmes for recruiting health workers in remote and rural areas: do they work? *Bulletin of the World Health Organization*, 88(5), 364–370. <http://doi.org.ezp-prod1.hul.harvard.edu/10.2471/BLT.09.071605>
2. Zimmerman, M., Shah, S., Shakya, R., Sundar Chansi, B., Shah, K., Munday, D., ... Hayes, B. (2016). A staff support programme for rural hospitals in Nepal. *Bulletin of the World Health Organization*, 94(1), 65–70. <http://doi.org/10.2471/BLT.15.153619>
3. A health "draft": compulsory health service in Puerto Rico. Ramírez de Arellano AB, *J Public Health Policy*. 1981 Mar; 2(1):70-4.

Web link: <https://www.ncbi.nlm.nih.gov.ezp-prod1.hul.harvard.edu/pmc/articles/PMC2865657/>

Type: National and medical school policies

Intervention description:

Compulsory (or mandatory, requisite, obligatory) service has been implemented in many countries worldwide often in the form of laws and policies in an effort to attract and retain healthcare workers in remote areas. These interventions are often implemented by ministries of health as regulating bodies in conjunction with medical schools and hospitals. They are also implemented with compliance measures such as withholding full registration until obligations are fulfilled, withholding degree and salary, or imposing fines.¹

Examples: In a review of compulsory service programs, Frehywot, Payne and Ross categorized compulsory services programs into 3 categories: condition of service/state employment programme; compulsory service with incentives (financial and non-financial); and compulsory service without incentives. In the *condition of service/state* category, governments have the authority to assign health employees to any part of the country based on need. This type of compulsory service has been implemented in Cuba, Myanmar, Australia and Islamic Republic of Iran. In the *compulsory service with incentives*, common incentives include educational, employment, living provisions-linked, and bundled incentives. These incentives have been implemented in a dozens of countries around the world and summarized in a table [here](#). Finally, *compulsory service without incentives* has been implemented in countries like Iraq, Malaysia, India, Mexico and Venezuela.

Outcomes: In Nepal, the government observed an increase in retention after comfortable living quarters, reliable internet service, in-service training for staff, and capacity development for management were provided along with their compulsory service scholarship program.² After implementation of compulsory service in Puerto Rico, all 78 municipalities had at least one doctor compared to 16 municipalities before implementation.³

Organization: National Ministries of Health

Cost: Not available

Considerations: Many considerations must be taken into account when choosing models for implementing compulsory service interventions. Challenges to be considered include cost, utility, sustainability of programmes, poorly equipped rural facilities, poor supervision, poor access to electricity and water, transportation limitations, and low staffing levels.

PERSONAL AND PROFESSIONAL SUPPORT INTERVENTIONS

1. Foster interaction between urban and rural health workers and facilitate knowledge transfer

References:

1. **World Health Organization. (2010). *Increasing access to health workers in remote and rural areas through improved retention: global policy recommendations*. World Health Organization.**
2. **Watanabe M, Jennett P, Watson M. The effect of information technology on the physician workforce and health care in isolated communities: the Canadian picture. *Journal of Telemedicine and Telecare*, 1999, 5(Suppl.2):11–19**
3. **Gagnon MP et al. Implementing telehealth to support medical practice in rural/remote regions: what are the conditions for success? *Implementation Science*, 2007, 1(18):1–8**

Web link:

http://www.searo.who.int/nepal/mediacentre/2010_increasing_access_to_health_workers_in_remote_and_rural_areas.pdf

Type: Facility-based

Intervention description:

Create individuals or teams of specialists who visit rural health workers to support and advise them on patient care and facilitate their professional development. Knowledge transfer can also occur in the form of tele-health in which specialists help rural health workers diagnose and treat their patients.^{2,3}

Outcome: There is little information available around the effects of urban-rural interactions or knowledge transfer on redistribution and retention of rural health workers. Much of the available evidence is anecdotal. Some observational studies suggest that these interventions can improve competencies and job satisfaction.

Organization: NGOs, Ministries of Health, Health facilities

Cost: Not found

Considerations: Very few studies have been done to assess the effects of urban-rural interactions or knowledge transfer and rural retention rates. These interventions could theoretically reduce rates of professional isolation and increase physician support leading to higher rural retention rates.

Additional Resources:

1. Lehmann, U., Dieleman, M., & Martineau, T. (2008). Staffing remote rural areas in middle- and low-income countries: A literature review of attraction and retention. *BMC Health Services Research*, 8, 19. <http://doi.org/10.1186/1472-6963-8-19>

2. Improving Human Resources for Health Means Retaining Health-Workers: Application of the WHO-Recommendations for the Retention of Health-Workers in Rural Northern-Nigeria.
3. Mbemba, G. I. C., Gagnon, M.-P., & Hamelin-Brabant, L. (2016). Factors Influencing Recruitment and Retention of Healthcare Workers in Rural and Remote Areas in Developed and Developing Countries: An Overview. *Journal of Public Health in Africa*, 7(2), 565. <http://doi.org/10.4081/jphia.2016.565>
4. Afenyadu, G. Y., Adegoke, A. A., & Findley, S. (2017). Improving Human Resources for Health means Retaining Health-Workers: Application of the WHO-Recommendations for the Retention of Health-Workers in Rural Northern-Nigeria. *Journal of Health Care for the Poor and Underserved*, 28(3), 1066-1086.