



[Month and year] – SUPPORT Summary of a systematic review

Which interventions increase the recruitment and retention of health workers practising in under-served and rural areas?

Shortages of health workers in many geographic regions (especially in under-served and rural areas) challenge equitable healthcare delivery and pose an important obstacle to the achievement of the Millennium Development Goals.

Key messages

- There is limited empirical evidence supporting the value of interventions to improve the recruitment or retention of health workers in under-served areas
- Health professionals from rural backgrounds may be more likely to practise in rural areas
- Exposure to clinical rotations in rural settings may influence the subsequent intention of medical students to work in under-served areas
- Financial incentive programmes may increase the supply of health workers in under-served areas



Who is this summary for?

People making decisions concerning the recruitment and retention of health workers practising under-served areas.

! This summary includes:

- Key findings from research based on a systematic review
- Considerations about the relevance of this research for low- and middle-income countries

X Not included:

- Recommendations
- Additional evidence not included in the systematic review
- Detailed descriptions of interventions or their implementation

This summary is based on the following systematic review:

Grobler LA, Marais BJ, Mabunda S, Marindi P, Reuter H, Volmink J Interventions for increasing the proportion of health professionals practising in under-served communities. Cochrane Database of Systematic Reviews 2009, Issue 1.

Till Bärnighausen and David E Bloom. Financial incentives for return of service in underserved areas: A systematic review. *BMC Health Services Research* 2009, 9:86

What is a systematic review?

A summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise the relevant research, and to collect and analyse data from the included studies.

SUPPORT – an international collaboration funded by the EU 6th Framework Programme to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries. www.support-collaboration.org

Glossary of terms used in this report: www.support-collaboration.org/summaries/explanations.htm

Background references on this topic: See back page.

Background

There is an imbalance in the distribution of health workers between under-served and well-served areas in most parts of the world, with most practising in urban rather than rural areas. Fewer healthcare professionals work in under-served rural and urban communities. The reasons for this include: the more demanding working conditions, the use of substandard medical equipment and facilities, inadequate financial remuneration, inadequate opportunities for personal and professional growth, safety concerns, a lack of job opportunities for spouses, and the limited educational opportunities available to children. Addressing the maldistribution of health workers is critical in order to ensure that greater equity (health for all) is achieved and that the Millenium Development Goals are fulfilled/met.

This summary addresses the effects of different interventions to increase the number of health workers practising in rural and other under-served areas in low- and middle-income countries. It summarises a broad review of interventions designed to increase the proportion of health professionals practising in under-served communities. It also summarises a more focused review of the financial incentives used to promote the return of health workers to under-served areas.

How this summary was prepared

After searching widely for systematic reviews that can help inform decisions about health systems, we have selected ones that provide information that is relevant to low- and middle-income countries. The methods used to assess the quality of the review and to make judgements about its relevance are described here:

www.support-collaboration.org/summaries/methods.htm

Knowing what's not known is important

A good quality review might not find any studies from low- and middle-income countries or might not find any well-designed studies. Although that is disappointing, it is important to know what is not known as well as what is known.

About the first systematic review underlying this summary

Review objective: To assess the effectiveness of interventions to increase the proportion of healthcare professionals working in rural and other under-served communities

	What the review authors searched for	What the review authors found
Interventions	Any intervention to increase the recruitment or retention of health workers in under-served areas. RCTs, controlled trials, controlled before-and-after studies and interrupted time series were included	No studies met the inclusion criteria of the review
Participants	All qualified healthcare professionals of any cadre or specialty	
Settings	Not specified	
Outcomes	Recruitment of health workers: the proportion of health workers who initially choose to work in rural or urban under-served communities as a result of being exposed to the intervention. Retention: the proportion of healthcare professionals who continue to work in rural or urban underserved communities as a consequence of the intervention	Most studies were descriptive questionnaire-driven surveys, and few were prospective intervention studies. Most studies reported multiple effect measures and many did not specify a primary outcome

Date of most recent search: July 2007

Limitations: This is a good quality systematic review with only minor limitations

Grobler LA, Marais BJ, Mabunda S, Marindi P, Reuter H, Volmink J Interventions for increasing the proportion of health professionals practising in underserved communities. Cochrane Database of Systematic Reviews 2009, Issue 1.

About the second systematic review underlying this summary

Review objective: To assess the effectiveness of financial incentives for the return of health workers to under-served areas.

	What the review authors searched for	What the review authors found
Interventions	Any study evaluating the effects of financial incentives for the return of health workers to under-served areas	43 observational studies met the inclusion criteria of the review
Participants	All qualified healthcare professionals of any cadre or specialty	
Settings	High- and middle-income countries	43 studies conducted in the United States of America (USA) (34), Japan (5), Canada (2), New Zealand (1) and South Africa (1)
Outcomes	Recruitment of health workers Retention of health workers Participant satisfaction Family satisfaction	Results: Recruitment (14 studies), retention (17 studies), participants satisfaction (9 studies) Effects: Retention (7 studies), participant satisfaction (2 studies)
Date of most recent search:	February 2009	
Limitations:	This is a good quality systematic review with only minor limitations	

Till Bärnighausen and David E Bloom. Financial incentives for return of service in underserved areas: A systematic review. *BMC Health Services Research* 2009, **9**:86.

Summary of findings

1) Interventions to increase the proportion of health professionals practising in under-served communities

No studies met the inclusion criteria of the review. 90 studies were identified that did not meet the study design criteria of the review but were relevant to the review question. The main findings from these are summarised in the table below. This table, with minor modifications, is from the original report and is used with the permission of the review authors.

About the quality of evidence (GRADE)

⊕⊕⊕⊕

High: Further research is very unlikely to change our confidence in the estimate of effect.

⊕⊕⊕○

Moderate: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.

⊕⊕○○

Low: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.

⊕○○○

Very low: We are very uncertain about the estimate.

For more information, see last page

Intervention	Main findings	Comments
STUDENT SELECTION		
Geographic origin	Students of rural origin are more likely to practise in a rural setting	This single factor most strongly associated with rural practice. Background of spouse seems equally important
Ethnicity	Students from 'under-served' populations are more likely to practise in these same communities	Documented in only one study that evaluated mostly under-served inner-city populations, no association with rural practice <i>per se</i>
Gender	Men are more likely to practise in rural medicine than women	May change if more accommodating conditions are created for women. Important to have female rural doctors in culturally sensitive settings
Career intent	Students whose intent at study entry is to practise rural medicine are more likely to do so	Independent predictor of rural practice in the PSAP*, but 60% of rural doctors in the USA reported no such career intent initially
Service orientation	Students who report involvement in volunteer activities are more likely to practise rural medicine	Observation at the University of North Carolina (USA) that such students are more likely to become generalists, but no evidence of [a commitment to?] rural practice
Undergraduate		
Curriculum content	Emphasising the importance of rural health issues may influence medical students to consider practising in rural areas	No evidence that the content of the undergraduate curriculum influences the decision to enter rural practice
Rural exposure	Clinical rotations in a rural setting may influence medical students to consider rural practice	Actual clinical exposure (immersion) seems most important, although the perceived impact of rural rotations may be biased by self-selection
Postgraduate		
Generalist fellowships	The availability of generalist fellowships encourages more doctors to enter into rural practice	Rural health specialists and family physicians are more likely to enter rural practice, but there is no evidence that the creation/availability of these specialities actually reduces the rural-urban maldistribution
	Undergraduate students from medical schools that offer generalist fellowships are more likely to become rural doctors	Many potential confounders, impossible to assess the strength of the evidence in the absence of multivariate analysis
Location	Students from medical schools located in rural areas are more likely to practise in a rural setting	Rural placement may be a surrogate of various other factors. However, there is fairly strong evidence that rural medical schools do produce more rural doctors

Intervention	Main findings	Comments
<i>Registration requirement</i>	Requiring recently qualified doctors to perform 'community service' in a rural area reduces maldistribution	Forced 'community service' addresses short-term recruitment, but there is concern that it may alienate people from the profession and from long-term rural practice
<i>Pre-requisite for specialisation</i>	Requiring doctors to spend a minimum number of years in a rural area in order to specialise reduces maldistribution	Applied in many developing countries, but criticised in Indonesia for attracting the 'wrong type' of doctor to rural areas and for reducing the return on investment placed in specialised training
<i>International recruitment</i>	Recruiting foreign doctors, and limiting them to rural practice reduces maldistribution	Foreign recruitment is widely practised. It offers a short-term solution for those countries importing doctors. However, it often results in a shortage of health professionals in the exporting country which may worsen global distribution imbalances.
FINANCIAL INCENTIVES		
<i>Bursaries/scholarships</i>	Providing scholarships with enforceable rural service agreements encourages rural practice	Variable experience in different countries. The WHO concluded in a report that these policies have little influence on the geographic distribution of health professionals
<i>Financial compensation</i>	Providing direct financial incentives encourages rural practice	In Canada, allowing higher fees in rural areas had a positive influence on general practitioner distribution. Reports from most developing countries are not positive
SUPPORT		
<i>Continuous Professional development</i>	Providing sufficient opportunities for professional support encourages rural practice	Only questionnaire-based surveys No quantitative results from an actual intervention
<i>Specialist outreach support</i>	Providing specialist outreach and support encourages rural practice	
<i>Personal issues</i>	Providing sufficient personal support encourages rural practice	Only questionnaire-based surveys No quantitative results from an actual intervention
<i>Time-off</i>	Providing back-up to allow free time during holidays and weekends encourages rural practice	

2) Financial incentives for return to service in under-served areas

43 observational studies investigated financial incentive programmes for return to service in under-served areas. The studies were conducted in the USA (34), Japan (5), Canada (2), New Zealand (1) and South Africa (1).

→ The evidence suggests that financial incentive programmes may lead to increases in the number of health workers practising in under-served areas

→ This evidence is of “low quality” according to the GRADE classification of the quality of evidence from primary studies. This is because all the studies included in the systematic review were observational. Randomised controlled trials could substantially improve the quality of the evidence

However, these findings are mostly from high-income countries and are not consistent with the findings of the first systematic review summarised in this study .

Reports from most low- and middle-income countries are not positive

Financial incentives			
Patients or population: Health workers Settings: High- and middle-income countries Intervention: Financial incentives Comparison: Not specified			
Outcomes	Impact	Number of participants (studies)	Quality of the evidence (GRADE)
Recruitment	Recruitment proportion varied between 33% and 100% across programme participants who remained in under-served areas	(14 studies)	⊕⊕○○ Low
Retention	The proportion of programme participants who remained in under-served areas after completing their obligation ranged between 12% and 90%	(24 studies)	⊕⊕○○ Low
Participant satisfaction	There were too few studies so strong generalised inferences could not be drawn	(9 studies)	⊕⊕○○ Low
Family satisfaction	There were too few studies so strong generalised inferences could not be drawn	(3 studies)	⊕⊕○○ Low
p: p-value GRADE: GRADE Working Group grades of evidence (see above and last page)			

Relevance of the review for low- and middle-income countries

→ Findings

▷ Interpretation*

APPLICABILITY

→ No RCTs were identified. The observational or questionnaire-based studies discussed in the reviews were carried out in various settings, including high-, middle- and low-income countries. The results suggest that some interventions could have positive effects on the recruitment and retention of health workers in under-served areas. However, these findings require further rigorous evaluation

▷ *Economic and cultural differences, differences between health system structures, and differences in state and educational institutional capacity to regulate and manage various types of interventions may limit the applicability of findings to low- and middle-income countries*

EQUITY

→ The studies included did not explicitly provide data regarding the differential effects of the interventions on disadvantaged populations. However, all the studies were concerned with improving the availability of health workers in disadvantaged populations

▷ *Increasing the number of health workers is probably a necessary but insufficient condition for reducing inequity. High-income countries often have health inequities despite having sufficient health workers*

ECONOMIC CONSIDERATIONS

→ The studies discussed in the review did not provide sufficient data to determine the cost of the different interventions

▷ *Research is needed to identify the most cost-effective strategies*

MONITORING & EVALUATION

→ The main finding of this review is that there is currently no rigorous scientific evidence to support any of the numerous interventions implemented to address health professional shortages in under-served communities

▷ *Consideration should be given to undertaking rigorous evaluations of any interventions used in view of uncertainties about their applicability and efficiency*

*Judgements made by the authors of this summary, not necessarily those of the review authors, based on the findings of the review and consultation with researchers and policymakers in low- and middle-income countries. For additional details about how these judgements were made see:

<http://www.support-collaboration.org/summaries/methods.htm>

Additional information

Related literature

Lehmann U, Dieleman M, Martineau T. Staffing remote rural areas in middle- and low-income countries: A literature review of attraction and retention. *BMC Health Services Research* 2008, 8:19.

Willis-Shattuck M, Bidwell P, Thomas S, Wyness L, Blaauw D and Ditlopo P. Motivation and retention of health workers in developing countries: a systematic review. *BMC Health Services Research* 2008, 8:247.

Wilson NW, Couper ID, De Vries E, Reid S, Fish T, Marais BJ. A critical review of interventions to redress the inequitable distribution of healthcare professionals to rural and remote areas. *Rural and Remote Health* 9: 1060. (Online), 2009.

World Health Organization. Increasing access to health workers in remote and rural areas through improved retention: Global policy recommendations. Geneva: World Health Organization, 2010. <http://www.who.int/hrh/retention/guidelines/en/index.html>

Bärnighausen T, Bloom DE (2009). Designing financial-incentive programs for return of service in under-served areas: seven management functions. *Human Resources for Health*, 7(1): 52.

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Conflict of interest

None. For details, see: www.support-collaboration.org/summaries/coi.htm

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Keywords

All Summaries: evidence-informed health policy, evidence-based, systematic review, health systems research, health care, low- and middle-income countries, developing countries, primary health care, recruitment, retention, health professionals, health workers, underserved areas, rural areas, remote areas.

About quality of evidence (GRADE)

The quality of the evidence is a judgement about the extent to which we can be confident that the estimates of effect are correct. These judgements are made using the GRADE system, and are provided for each outcome. The judgements are based on the type of study design (randomised trials versus observational studies), the risk of bias, the consistency of the results across studies, and the precision of the overall estimate across studies. For each outcome, the quality of the evidence is rated as high, moderate, low or very low using the definitions on page 3.

For more information about GRADE:

www.support-collaboration.org/summaries/grade.htm

SUPPORT collaborators:

The Alliance for Health Policy and Systems Research (HPSR) is an international collaboration aiming to promote the generation and use of health policy and systems research as a means to improve the health systems of developing countries. www.who.int/alliance-hpsr

The Cochrane Effective Practice and Organisation of Care Group (EPOC) is a Collaborative Review Group of the Cochrane Collaboration: an international organisation that aims to help people make well informed decisions about health care by preparing, maintaining and ensuring the accessibility of systematic reviews of the effects of health care interventions. www.epocoslo.cochrane.org

The Evidence-Informed Policy Network (EVIPNet) is an initiative to promote the use of health research in policymaking. Focusing on low- and middle-income countries, EVIP-Net promotes partnerships at the country level between policy-makers, researchers and civil society in order to facilitate both policy development and policy implementation through the use of the best scientific evidence available. www.evipnet.org

For more information:

www.support-collaboration.org

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