The retention of health workers in rural and remote areas in Mozambique

Included:
- Description of a health system problem
- Viable options for addressing this problem
- Strategies for implementing these options

Not included: recommendations
This policy brief does not make recommendations regarding which policy option to choose

Who is this policy brief for?
Policymakers, their support staff, and other stakeholders with an interest in the problem addressed by this policy brief

Why was this policy brief prepared?
To inform deliberations about health policies and programmes by summarising the best available evidence about the problem and viable solutions

What is an evidence-based policy brief?
Evidence-based policy briefs bring together global research evidence (from systematic reviews*) and local evidence to inform deliberations about health policies and programmes

*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 this research
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The authors declare that they have no competing interests.

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Suggested citation

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www.evipnet.org/sure

The Evidence-Informed Policy Network (EVIPNet) promotes the use of health research in policymaking. Focusing on low- and middle-income countries, EVIPNet promotes partnerships at the country level between policymakers, researchers and civil society in order to facilitate policy development and implementation through the use of the best scientific evidence available.
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Key messages

The problem:

- Mozambique has a severe shortage of health care providers and there are only 1.26 health workers per 1,000 people
- Health care providers are unevenly distributed across the country. Rural staff deficits and an over-concentration of providers in urban centres concentration are typical
- The problems caused by the shortage and poor distribution of health care providers in Mozambique are compounded by low levels of staff motivation
- The Shortage of health care professionals in rural and remote areas poses a serious challenge to the provision of equitable health care delivery in Mozambique
- Data on the distribution of health care professionals at a primary care and district level, and the distribution of health care professionals in rural and urban areas are unavailable

Policy options:

Four complementary options to improve the retention of health workers in rural areas are considered in this document. These are: 1) education; 2) regulation; 3) personal and professional support; and 4) the use of financial incentives.

- **Education** – Recruitment in rural underserved areas increases the likelihood that graduates will return to practice in rural communities; health care schools which are in rural areas are more likely to produce more physicians who will work in rural areas compared to schools located in urban areas; rural schools are conducive to producing practitioners willing and able to work in rural areas
- **Regulation** – Enhancing the scope of practice in rural areas can lead to increases in job satisfaction, thus assisting with health care recruitment and retention in such locations. There is no evidence that such health workers are more likely to be retained in rural areas. Compulsory service can help to increase the retention of health care workers in rural areas.
- **Personal and professional support** – The availability of support (personal and professional) matters most to people when they choose their work location. Good infrastructure, opportunities for social interaction, schooling for the children of providers, and opportunities to advance careers may all increase job satisfaction, motivation and retention
- **Financial incentives** – The use of financial incentives may increase the motivation and retention of health workers in rural and remote areas

Implementation strategies:

It is likely that a combination of strategies will be needed to implement all four options effectively:

- The strengthening of human resource (HR) management systems (planning, recruitment and hiring practices, work conditions, and performance management)
- Capacity building for HR managers and leadership, especially at a facility level
• The engagement of stakeholders across several sectors. Rural and remote communities, professional associations and other relevant decision-makers should be included from the beginning of the implementation process in order to obtain and maintain the support of all those involved. This involvement will be critical for the success of rural retention policies (as it is for other types of health system or health workforce policies)
Executive summary

The problem

The number of health workers in Mozambique is insufficient to enable the achievement of the country’s population health goals. This problem is compounded by the uneven distribution of health care works by province and by area of residence, and by a weak and under-resourced national health system which has made it difficult to produce, recruit and retain health workers, particularly in rural and remote areas. Health worker motivation and retention is critical for health system performance and equity. However, in Mozambique, staff performance in the health sector has been affected by low levels of motivation, discontent related to salaries, poor career prospects, increases in workloads, and by difficult working environments. Human resources planning and management has been decentralised to the provincial departments, but these departments are often understaffed and characterised by generally weak organisational and administrative management. A key problem in the health care services in Mozambique, therefore, is how best to motivate and retain health workers in the country’s rural and remote areas.

The primary focus of this policy brief is the issue of “retention in rural areas” as outlined in the Mozambique National Human Resource Strategic Plan 2008-2015, but we will also consider the related issues of staff motivation and job satisfaction. The primary problem addressed in this document is the shortage of health workers in Mozambique’s rural areas but issues related to the uneven distribution of staff, worker demotivation, poor staff performance, and low levels of service quality are also considered.

Size of the problem

Mozambique has a shortage of key health workers. In 2000, the country had 2.5 doctors and 21.25 nurses per 100,000 people, a level far lower than the African average (21.7 doctors and 117 nurses per 100,000 people), and by 2004 this level had risen only to 3 doctors and 22.5 nurses per 100,000 people. Similarly low staffing levels were reported in 2010 when Mozambique was found to have an average of 63 medicine, nursing, and mother and child health workers per 100,000 people, and only 3.95 doctors per 100,000 people and 25 nurses per 100,000 people. These levels remain well below the staffing levels of 2.3 doctors, nurses and midwives per 1,000 people that WHO estimates are needed for health systems to function appropriately. Data on the distribution of health professionals at a primary care and district level, and staff distribution differences between rural and urban areas are not available.

Factors underlying the problem

Mozambique’s health system is weak and under-resourced and this makes the recruitment and retention of health workers difficult, especially in rural and remote areas. Although the number of people graduating from medical schools (both public and private) is rising,
training institutions have been unable to respond adequately to the growing demand for diverse health services.

The quality of the training provided is also of concern and has been negatively impacted by factors including an insufficient number of qualified teachers, inadequate infrastructure (such as classrooms and laboratories), scarce or inadequate training materials, poor research conditions, a lack of equipment, and inadequate and poorly-supervised training sites.

In addition, the performance of health workers has been affected by low levels of motivation, discontent related to salaries, poor career prospects, an increase in workloads, and by difficult working environments. Human resources management and planning have been decentralised to the provinces, and are often understaffed and characterised by weak organisational and administrative management.

Internal job migration in the health sector has increased in the last five years due to the attraction of better employment conditions in the growing not-for-profit private sector and in well-funded HIV programmes. External migration, however, remains far less common partially due to language and communication barriers, and has had less of an impact on health care provision in Mozambique.

Living conditions at a sub-district level can be hard. Basic amenities are often lacking, access to drinking water is limited, sanitation infrastructure is precarious, access by road may be difficult or impossible during the rainy season, and local markets can be inefficient. Despite such challenges, there is still no comprehensive package of incentives to encourage health sector works in Mozambique to accept deployment to remote and rural areas for a minimum period of time. Further, existing incentive and retention policies are either not fully implemented (health workers are often unaware of them) or government policies such as subsidies for public workers working in rural and remote appear to have failed to compensate for the effort required to be there.

Working conditions in health services in rural areas can also be precarious and challenging. Located on the periphery of the health care system, remote rural units are more likely to be affected by logistical breakdowns. High workloads, a lack of recognition of the social importance of the tasks undertaken and inadequate supervision further impact on those working in such environments.

As yet, there is no national strategy for the recruitment of local candidates at health care training institutions. However, provinces can select candidates who are attending local courses for employment opportunities within their local provincial districts.

Policy options

This policy brief reviews the following options for retaining health workers in rural areas: 1) education; 2) regulation; 3) personal and professional support; and 4) the use of financial incentives. These four intervention options are complementary and should be implemented together in order to maximise their impact.
Policy option 1:

Education

Education is central to the production of competent health workers and can be used to influence their choice of work location. To this end, candidates can be trained at relevant locations and appropriate methods and curricula can be used to encourage them to work in rural areas. Options include: a) selecting students who are more likely to work in such locations; b) training students in areas which are closer to rural communities; c) offering clinical rotations in rural areas during courses; d) continuing the professional development of rural health workers; and e) training more health workers faster in order to meet rural health needs.

- If graduates have a rural background, there is a higher chance that they will return to practice in a rural community.
- Large observational studies from high- and low-income countries show that medical schools located in rural areas (compared to schools in urban locations) are more likely to produce a higher number of physicians willing to work in rural areas.
- Exposure to work in rural communities during undergraduate courses has been shown to influence subsequent choices about practising in such areas. Education which focuses on primary care or offers a generalist perspective is conducive to producing practitioners who are more willing and able to work in rural areas.
- Providing access to continued education and professional development can improve the competence of rural health workers, make them feel part of a larger professional group, and increase their desire to remain practising in such areas.
- Training different types of health workers, such as the tecnicos de cirurgia in Mozambique, can lead to improved health outcomes.

Advantages:

- Students from rural backgrounds are given opportunities for professional development while communities, at the same time, are able to benefit from their training and support.
- Local training is likely to produce graduates whose competencies are appropriate and more relevant to local health needs.
- Rural-based training may allow health workers to establish better social and professional ‘roots’ in such locations, thus facilitating the development of deeper rural professional networks and an increased awareness of rural health issues.
- Continuing education programmes are useful for knowledge acquisition and knowledge sharing, and as ways to establish better potential networks and reduce professional isolation.

Disadvantages:

- Students from rural areas may require special assistance (such as academic bridging or upgrading programmes, or financial assistance) to compete with their urban counterparts for admission to medical schools or education programmes in other health disciplines.
- Schools in rural areas often do not perform well and faculty members are difficult to retain. The quality of trained health workers who graduates from such schools may therefore be lower as a result.
- The outcomes [and benefits] of education policies may only appear after a long lead time.
• The amount of exposure to rural work and training which is needed to encourage people to work in such areas is unknown

Acceptability:
• Professional organisations or regulatory bodies may be reluctant to train or recognise health workers who have been trained in environments with low professional standards

Policy option 2:

Regulation
Regulation is a key element of effective human resource management, particularly in settings with staff shortages. Such measures have been used alone and/or in combination with other strategies to increase the retention of health workers in rural and remote areas. The key options include: a) expanding the scope of rural health worker practice; and b) compulsory service requirements
• Enhanced practice scope in rural areas can lead to increased job satisfaction. A controlled study in Australia, for example, found that higher levels of satisfaction were reported by enrolled nurses who were permitted to prescribe compared with those who were not
• 70 countries use, or have previously used, compulsory policies for health graduates in their attempts to enforce service in rural areas. In Thailand, for instance, 49.5% of doctors in rural district hospital were new graduates [presumably completing their compulsory service in rural areas]
• Very few evaluations have been conducted of health worker retention levels during or after such compulsory service periods
• Physicians in Ecuador and South Africa have indicated that rural work experience was rewarding and helped to improve their competencies

Advantages:
• Expanding the clinical practice scope of non-physician health workers can reduce the impact of staff shortages
• Such policies can be undertaken while highly-skilled health workers are being trained. In many countries, new cadres have been specifically trained to serve in rural areas
• Regulation may improve the availability of health workers in rural areas that have absolute staff shortages, even if only for shorter periods of time

Disadvantages:
• There is a risk that if interventions related to changes in professional status and staff support are not regulated, then nurses and other types of health workers may leave rural areas
• There may be opposition from professional organisations, students and health workers
• Regulation policies may result in higher long-term staff turnovers and breaches in service continuity and quality of care

Acceptability:
• Regulation policies related to staffing and the revision of clinical practice roles require government commitment and funding before long-term policy health and welfare benefits are visible
Policy option 3:

Personal and professional support

The improvement of living and working conditions is central to retaining health workers in rural areas. Such changes can help to improve the performance and productivity of health workers and of health systems themselves. Outreach activities may also help to reduce feelings of professional isolation.

- There is no strong, direct evidence that improvements in rural health infrastructure and living conditions contribute to increased levels of health worker retention in rural areas.
- The availability of good living conditions is an important factor influencing health worker decisions to accept (or not to accept) jobs in rural areas.
- The degree to which improvements in working environments have directly resulted in improved retention rates in rural areas is unclear. Professional and personal support may also influence the choice of health personnel to work in underserved areas.
- There is no direct evidence that outreach support programmes improve the retention of health workers in rural areas.
- Evidence from observational studies shows that support programmes improve the competencies of rural workers and their levels of job satisfaction.

Advantages:

- An improvement in working conditions is likely to improve the performance and productivity of health workers, and thus the performance of health systems.
- Outreach assistance can help to reduce the isolation of rural health workers, improve competency levels, expand the networks of rural health professionals, improve referral system, and raise the quality of service provided.
- Better support is likely to improve job satisfaction and the motivation and performance of health workers.

Disadvantages:

- Support may require significant financial investment upfront, and policy makers may therefore be deterred from implementing related interventions.
- Small-scale pilot projects may attract health workers from areas with similar shortages and this may further exacerbate resource imbalances. A coordinated approach is therefore needed.
- The provision of specialist outreach services addresses only a small proportion of the health problems experienced in rural areas.
- Changes may be opposed by professional bodies or cause tensions between specialists and generalists.

Acceptability:

- Support may be viewed as acceptable if it forms part of coordinated government rural development plans for institutional improvement and the provision of better services. All stakeholders must contribute to the plan to ensure optimal design and implementation.
**Policy option 4:**

**Financial incentives**

Financial incentives can help to improve short-term recruitment, but their long-term effects on retention are less clear. Such incentives depend on the availability a surplus of health workers in urban areas and are more effective when combined with other interventions. Adequate salaries and allowances are key ways to motivate health professionals and widely used as incentives for recruiting and retaining health workers in rural areas.

- Studies have shown that salaries and allowances are central factors influencing decision made by health personnel to work in (or leave) rural areas
- Financial incentives can increase the attractiveness of working in rural areas
- Financial incentives given in return for working in rural health practices were linked to impressive retention rates in 18 of the 43 studies included in a systematic review

**Advantages:**

- Financial incentives can solve acute staffing and skill shortages in the short-term

**Disadvantages:**

- They may cause potential discord between professions (cadres) if incentives are not available to all health professions

**Acceptability:**

- Funds need to be made available as part of a stable and consistent financial programme. These will be seen as more acceptable if they form part of a longer-term phase or plan, particularly as the retention of health workers cannot be solved by short-term measures. Sustaining such efforts allows benefits to be realised within local economies, for local resources to be used more effectively, and for local economies to contribute more substantially to the national economy.

**Implementation considerations**

Human resource management within the health sector is weak in many countries. Important decisions are often made at a central level and there is often a mismatch between the activities that are planned and the actual human resources available to implement them. Such discrepancies can be major barriers for the implementation of successful human resources for health (HRH) interventions, particularly towards the periphery of the health care system, and may negatively impact on motivation and retention levels.

Assessing options and championing appropriate interventions to improve the retention of health workers in rural areas requires human resource management expertise at both a central and local level. Individuals with strong management and leadership skills are needed, especially at a facility level, to implement chosen policies and to promote decentralisation. Capable and dedicated workers are also important.

The engagement of stakeholders across several sectors is critical if rural retention policies are to succeed (just as it is for any type of health system or health workforce policy). Coordinated efforts are needed to identify and select the most appropriate strategies, and extensive
consultation is required. Rural and remote communities, professional associations and other relevant decision makers should be included in the design, development, implementation, monitoring, and evaluation of such strategies in order to obtain and maintain the support of those involved.

Monitoring and evaluation should be explicitly considered during the design phase and integrated into the implementation plan. This will help to identify and evaluate the challenges during implementation, assess the degree to which the objectives and goals have been achieved, and identify if redesigns, modifications or new interventions are needed. In addition, continuous investment in national information systems (with a particular emphasis on district capacity information production) is important to ensure that timely and accurate data are available to inform policy-making processes.
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Preface

The purpose of this report

This report summarises the best available evidence regarding the design and implementation of policies for retaining health workers in rural and remote areas, and its purpose is to inform deliberations among policymakers and stakeholders.

The report was prepared as a background document for discussion at meetings attended by those engaged in developing retention policies in Mozambique and by people with an interest in such policies (stakeholders). In addition, the report is intended to inform other stakeholders and to engage them in deliberations about retention policies. It is not intended to prescribe or proscribe specific options or implementation strategies. Rather, its purpose is to allow stakeholders to consider systematically and transparently the available evidence about the likely impacts of different options for the retention of health workers in rural and remote areas in Mozambique.

How this report is structured

The Executive Summary of this report provides key messages and summarises each section of the full report. Although this means that there is some replication of information, the summary reflects the recognition that not everyone will have enough time to read the report in full.

How this report was prepared

This policy brief brings together global research evidence (from systematic reviews) and local evidence to inform deliberations about the retention of health workers in rural and remote areas in Mozambique. We searched for relevant evidence describing the problem, the impacts of options to address the problem, barriers to implementing the options, and implementation strategies to address these barriers. We searched particularly for relevant systematic reviews of the effects of policy options and implementation strategies. Information from other relevant studies and documents was used to supplement the information extracted from the included systematic reviews (The methods used to prepare this report are described in more detail in Appendix 1.)

Limitations of this report

This policy brief is based largely on systematic reviews. However, when up-to-date systematic reviews of the options were not found, we have attempted to fill knowledge gaps by referring to other documents, focused searches, personal contact with experts, and external reviews of the report.

Summarising evidence requires judgements about what evidence to include, the quality of the evidence, how to interpret it, and how to report it. While we have attempted to make these processes transparent, this report inevitably includes judgements made by review authors as well as by us.
Why we have focused on systematic reviews

Systematic reviews of research evidence constitute a more appropriate source of evidence for decision-making than relying on the most recent or most publicised research study. We define systematic reviews as reviews of the research literature that have an explicit question, an explicit description of the search strategy, an explicit statement about what types of research studies were included and excluded, a critical examination of the quality of the studies included in the review, and a critical and transparent process for interpreting the findings of the studies that were included in the review.

Systematic reviews have several advantages. Firstly, they reduce the risk of bias in selecting and interpreting the results of studies. Secondly, they reduce the risk of being misled by the play of chance in identifying studies for inclusion, and the risk of focusing on a limited subset of relevant evidence. Thirdly, systematic reviews provide a critical appraisal of the available research and place individual studies or subgroups of studies in the context of all of the relevant evidence. Finally, they allow others to appraise critically the judgements made in selecting studies and the collection, analysis and interpretation of the results.

While practical experience and anecdotal evidence can also help to inform decisions, it is important to bear in mind the limitations of descriptions of successes (or failures) in single instances. They may be useful for helping to understand a problem, but they do not provide reliable evidence of the most probable impacts of policy options.

Uncertainty does not imply indecisiveness or inaction

Many of the systematic reviews included in this report concluded that “insufficient evidence” was available. Policymakers must still make decisions regardless of uncertainty about the potential impacts of policy decisions, and the absence of evidence does not mean that decisions and actions cannot or should not be taken. This suggests that there is a need for carefully planned monitoring and evaluation when policies are implemented.

“Both politically, in terms of being accountable to those who fund the system, and also ethically, in terms of making sure that you make the best use possible of available resources, evaluation is absolutely critical.”

(Julio Frenk 2005, former Minister of Health, Mexico)

References

The problem

Background

The retention of health workers in rural areas has been a long-standing problem for the National Health Service in Mozambique. Successive annual meetings have documented the difficulties provincial health authorities face in providing accessible, comprehensive, high-quality primary healthcare at a sub-district level, and health authorities at a provincial level have also expressed concern about their inability to address the problem of poor retention. At all levels of the health service there is agreement that the Ministry of Health (MoH) should design and implement a set of retention strategies for rural areas, and that the design of these strategies should be based on existing evidence and local, Mozambican experience. This approach is in keeping with the third strategic objective of the National Plan for Health Human Resources Development (NPHHRD) – namely to improve the distribution, motivation and retention of human resources for health.¹

Mother and child health training for nurses is widely available and has been successfully conducted among all health cadres. However, these health services are also the most complained about. Concern remains that the supply of skilled staff does not match demand, and health authorities have continued to voice their concerns about the uneven distribution of personnel. Several workshops with high-level decision makers and stakeholders (including one during the development of this policy brief) have reinforced the perceived importance of improving rural retention in Mozambique.²

Sustaining an adequate, appropriately-qualified health workforce is vital to ensuring the provision of accessible, comprehensive, high-quality Primary Health Care (PHC).³ Globally, however, there is an undersupply in the health care workforce, and recruitment difficulties, and high levels of staff turnover are particularly problematic in rural, remote, and under-served areas in which the health needs of people are often greatest yet access to health services is poorest.⁴,⁵ To address the problems of workforce shortages and the geographical maldistribution of personnel, a variety of direct financial and non-financial incentive strategies have been implemented both in developed and developing countries.

The functioning of the Mozambican Health System is severely constrained by shortages of health personnel in all categories and by shortages of qualified personnel in particular. Relative to other countries in the region, staffing in the health sector is poor (see Table 1), and the nation’s human resource levels fall well short of the 2.3 health workers (per 1,000 population) estimated in the 2006 World Health Report to be the minimum staffing level a country needs in order to meet its basic health needs. Mozambique’s health staff indicators are also among the worst in the region.
Table 1: Human health resources per population

<table>
<thead>
<tr>
<th>Country</th>
<th>Type of cadre</th>
<th>Health worker indicators</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Doctors/1,000</td>
<td>Nurses/1,000</td>
</tr>
<tr>
<td></td>
<td>inhabitants</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td>Midwives/1,000</td>
<td>Pharmacy personnel/1,000</td>
</tr>
<tr>
<td></td>
<td>inhabitants²</td>
<td>1,000</td>
</tr>
<tr>
<td>Mozambique</td>
<td>0.03</td>
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<tr>
<td>Malawi</td>
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<td>Zambia</td>
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<td>Botswana</td>
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</tr>
<tr>
<td>South Africa</td>
<td>0.77</td>
<td>4.08</td>
</tr>
</tbody>
</table>

Sources: ¹ OMS, World Health Report, 2006; ² UNFPA The State of the World Midwifery 2011; ³ WHO Global Health Atlas

Framing the problem

The focus of this policy brief is the “retention of human resources for health in rural areas” as stated in Mozambique’s National Human Resource Strategic Plan 2008-2015. Retention is the key issue examined within this brief, but attention is also given to motivation and job satisfaction. This is because these issues also impact upon staff retention and the proposed strategies will, in turn, have an impact on these issues. The primary problem that retention strategies address is the shortage of health workers in rural areas. Other related problems include the maldistribution of personnel, staff demotivation, poor performance, and poor service quality.

Size of the problem

Mozambique has an overall shortage of health workers in key categories. In 2000, the country had 2.5 doctors and 21.25 nurses per 100,000 people, a level far lower than the African average (21.7 doctors and 117 nurses). Similarly, in 2004 the country was recorded as having approximately 700 medical doctors, including expatriates from non-governmental organisations, and just 0.03 doctors and 0.21 nurses per 1,000 people. These levels are well below the minimum estimated staffing levels of 2.3 doctors, nurses and midwives per 1,000 people needed for health systems to function. Data on the distribution of personnel at a primary care and district level, and between rural and urban areas, are not available. However, Mozambique continues to face a critical shortage of health workers, with only 1.26 health workers per 1,000 people.

Table 2 lists the human resources for health per population in Mozambique in the years 2000 and 2008 and includes estimates for 2015 (based on the assumption that the premises of the strategic plan will be fulfilled during implementation).

Table 2: Human resources for health per population in Mozambique

<table>
<thead>
<tr>
<th>Health worker indicators</th>
<th>Year</th>
<th>2000</th>
<th>2008</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total human resources per 100,000 people</td>
<td>92.25</td>
<td>138.68</td>
<td>186.21</td>
<td></td>
</tr>
<tr>
<td>Total doctors per 100,000 people</td>
<td>2.52</td>
<td>4.49</td>
<td>6.13</td>
<td></td>
</tr>
<tr>
<td>Nursing personnel per 100,000 people</td>
<td>21.25</td>
<td>23.36</td>
<td>38.56</td>
<td></td>
</tr>
<tr>
<td>Nursing personnel SMI per 100,000 people</td>
<td>5.35</td>
<td>11.41</td>
<td>20.74</td>
<td></td>
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</table>
Human resource shortages have been further compounded by the imbalanced distribution of personnel across different regions, as well as between urban and rural areas, and this has undermined access to primary healthcare services, especially for the poor. The performance of health workers has been further affected by low levels of motivation, discontent related to salaries, poor career prospects, workload increases, and by difficult working environments. Human resources and planning departments have been decentralised to the provinces, but these are often understaffed and characterised by weak organisational and administrative management.

From a policy perspective, health workers are viewed as the most valuable resource for the improvement of health service accessibility (especially for the poorest rural populations), consolidating primary healthcare, strengthening the continuity of care through well-coordinated referral systems, and improving the operation, quality and performance of the services provided at all levels. The shortage of health workers is therefore seen as the main barrier to sustaining and expanding these and other positive health outcomes in Mozambique.

**Factors underlying the problem**

- A weak and under-resourced health system makes it difficult to train, recruit and retain health workers, especially in rural and remote areas

- There is no recruitment strategy for local (i.e. rural) candidates in health worker training institutions despite the fact that fewer candidates come from rural areas. The selection processes do not address equity concerns or recognise the motivation of rural candidates.

- Living conditions at a sub-district level can be hard. Basic amenities are often lacking, access to drinking water is limited, sanitation infrastructure is precarious, access by road may be difficult or impossible during the rainy season, and local markets are inefficient

- There are insufficient incentives to encourage health workers in Mozambique to accept deployment to remote and rural areas for minimum time periods, despite available legal support for compensation. Further, rural work experience is not adequately valued in the work context or recognised by civil servants

- The Family Act states that families shall not be separated on account of their work in the public service. The deployment of health workers with appropriate skills is therefore not always possible

- Working conditions in health service environments in rural areas can be challenging due to high workloads, a lack of recognition of the social importance of the tasks undertaken, and inadequate supervision
- Complex career advancement processes and a lack of access to the training required for better-paid health positions can lead to knowledge gaps within the system or to individuals looking for further training non health-related areas.

- Existing incentive policies related to staff motivation and retention have not been fully implemented and health workers are often unaware of them.

- There are insufficient opportunities to receive ongoing training. There are also insufficient funds to pay due subsidies, a lack of material and moral incentives, and inadequate professional status and recognition associated with work in rural areas.
Policy options

During a workshop organised in 2010, participants discussed different alternatives for improving the retention of health workers in rural areas, and some of these are now being implemented. The topics included: financial incentives, regulations, student recruitment from rural areas, and ways to improve working and living conditions in rural areas.

The policy brief team grouped the suggestions that were discussed into four strategy categories, namely: education, regulation, financial incentives, and management and social systems support. These categories were based on those developed by the World Health Organization expert group on “increasing access to health workers in remote and rural areas through improved retention”.

Summary

Policy option 1: Education
- Graduates from rural backgrounds are more likely to return to practice in rural communities
- Large observational studies from high- and low-low income countries indicate that medical schools in rural areas compared to schools in urban areas are more likely to produce more physicians who will work in rural areas
- Exposure to rural-based practice during undergraduate studies influences subsequent choices to practice in such areas. Education with a primary-care focus or generalist perspective is conducive to producing practitioners who are willing and able to work in rural areas
- Access to continuing education and professional development can improve the competencies of rural health workers, make them feel more like they are a part of a professional group, and increase their desire to remain and practice in such areas

Policy option 2: Regulation
- Enhancing the scope of practice can lead to an increase in job satisfaction. A control study in Australia found that enrolled nurses who were allowed to prescribe reported higher level of satisfaction than non-medication endorsed nurses
- The availability of different types of health workers in rural areas can lead to improved health outcomes

Policy option 3: Personnel and professional support
- There is no evidence that the improvement of rural living conditions contributes to an increase in the retention of health workers in rural areas
- The availability of better accommodation was listed as one of the three most important factors influencing the decision of health workers to remain in rural areas
- To degree to which improvements in working environments lead directly to improved retention in rural areas is unclear. Professional and personal support may also influence the choice of health personnel to work in underserved areas
- There is no direct evidence that outreach support programmes improve the retention of health workers in rural areas
• Evidence from observational studies shows that support programmes improve the competencies of rural workers and their job satisfaction

**Policy option 4: Financial incentives**

• Financial incentives in the public sector may increase health worker settlement in rural areas

Four complementary options were considered for improving the motivation and retention of health workers in rural areas, namely: 1) education; 2) regulation; 3) personnel and professional support; and 4) the use of financial incentives.

**Policy option 1:**

**Education**

Education is central to the production of competent health workers and can directly influence their choice of work location. To this end, candidates can be trained at relevant locations and appropriate methods and curricula can be used to encourage them to work in rural areas. Options include: a) selecting students who are more likely to work in such locations; b) training students in areas which are closer to rural communities; c) offering clinical rotations in rural areas as part of student training courses; d) continuing the professional development of rural health workers; and e) training more health workers faster in order to meet rural health needs.

**Current situation in Mozambique**

The training of health professionals is a responsibility shared between the Ministry of Education and the Ministry of Health (MoH) in Mozambique. The MoH is responsible for institutions offering intermediate and basic training, namely the Institutes for Health Sciences (IHS) and the Training Centres in Health (TC). The training of postgraduate and mid-level technicians is organised at a central state level, while the training of basic, elementary, and community health workers (known in Mozambique as *Agentes Polivalentes Elementares* or APEs) is a provincial-level responsibility. The potential of this training infrastructure network is not used to its full capacity for a number of reasons. These include financial constraints, a lack of human resources, and other pedagogic considerations, for example most of the teachers are not trained in pedagogy and psychology and are not full time. Nevertheless, the output of the network has contributed positively to an increase in the number of health workers nationally.

The current capacity of the training network is sufficient to meet the training needs identified in the nation’s ‘Human Resources Development Plan’. But the functioning of the training network is highly financially dependent on international aid and the management of the institutions remains highly centralised. Some have recommended that these institutions be given greater administrative and financial autonomy while, at the same time, allowing the MoH to maintain its regulatory power over the content and quality of the training provided (no authors listed, undated).

The NPHHRD predicts that the number of health workers in training will increase, particularly at the institutions for which the MoH is responsible. This means that there is an
even greater need for improved coordination between the MoH and its partners over matters related to funding management – possibly more than anticipated by those who coordinate the Provincial Common Fund, or national ‘basket of funds’). The implementation of better-coordinated strategies may be achieved in two key ways. Firstly, equity concerns pursued already by the Training Department at a central level should be extended to training THE Ninstitutions in every province. Isolated initiatives have been put in place by Provincial Health Directorates organising trainings known as local courses, where the participants are selected from districts of the organising province. There is no guarantee that the students were from rural areas though they were residing in the district at the time of recruitment.

Clinical rotations in rural areas are already in place in physician and non-physician health worker training programmes. Physicians, for example, are sent to districts for four months during their integrated internships. Similarly, the accelerated training of health workers in rural areas is already being undertaken in order to respond to local health needs. To date, however, none of these schemes have been rigorously evaluated in terms of their performance or whether they have led to improved health care worker retention in rural areas.

**Impacts of education**

**Students from rural background**

Evidence from high-, middle-, and low-income countries suggests that students with a rural background are more likely to return as graduates to practice in rural communities (Table 3). A rural origin, according to a Cochrane systematic review, “appears to be the single factor most strongly associated with rural practice”.9 Similarly, several longitudinal studies tracking the practice locations of physicians in the United States of America (USA) have observed that students with rural backgrounds continue to practice in rural areas for an average of 11-16 years after graduation.10 Students from rural areas in South Africa have also been found to be three times more likely to practice in a rural location compared with their urban counterparts.11

**Table 3: The use of targeted admission policies to enrol students from rural backgrounds in education programmes for various health disciplines, in order to increase the likelihood of graduates working in rural areas**

<table>
<thead>
<tr>
<th>Impact</th>
<th>Number of studies</th>
<th>Quality of the evidence (GRADE)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Laven) Rural background associated with rural practice in 10 out of 12 studies. Odds Ratio (OR) values ranged between 1.68 and 3.9 but in most cases were between 2 and 2.512</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(de Vries) 38.4% of graduates of rural origin were currently practising in rural areas compared with 12.4% of those of urban origin (OR=3.09)13</td>
<td>15</td>
<td>★★★★ Moderate</td>
</tr>
<tr>
<td>(Rabinowitz) Reported on the long-term retention rate and persistent effects of the Physician Shortage Area Programme in the United States of America. After 11-16 years, 68% of the Programme graduates were still running family practices in the same rural area compared with 46% of their non-PSAP graduates peers14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Woloschuk) In Canada a follow-up to a previous prospective study to determine whether rural background students entered rural family practice at a greater rate than their urban background peers found that: 32% of the 22 students who came from a rural background were practising in a rural community, compared with 13% of the 56</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Train students closer to rural communities

Six large observational studies from high- and low-income countries have shown that medical schools located in rural areas are more likely to produce physicians who will choose to work in rural areas than those schools which are located in urban areas (Table 4). A recent review found that medical schools in the USA that are located in rural states, public ownership and offering training in generalist specialities tend to produce more rural physicians.16 A study set in the Democratic Republic of the Congo showed that a rural training school location was strongly associated with subsequent employment in rural areas, while a study set in China reported that rural medical schools produce more rural physicians than medical schools which are located in metropolitan centres.18

Table 4: Graduates from health professional schools, campuses, and family medicine residency programmes located outside major cities are more likely to work in rural areas

<table>
<thead>
<tr>
<th>Impact</th>
<th>Number of studies</th>
<th>Quality of the evidence (GRADE)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Longombe) The location of a school in a rural area is strongly associated with subsequent graduate employment in rural areas. The strength of association was RR=3.5 (2.4-5.1)</td>
<td>1</td>
<td>☂️ ☂️ ☂️ ☂️ Low</td>
</tr>
<tr>
<td>(Wang) All 10 medical schools produced rural physicians; one rural school reported that 88 of its 256 graduates (34.4%) entered rural practice. Ten of the 12 metropolitan medical schools did not produce any rural physicians, whereas the remaining two metropolitan schools registered a total of 73 (7.6%) graduates who selected rural practice locations</td>
<td>1</td>
<td>☂️ ☂️ ☂️ ☂️ Low</td>
</tr>
<tr>
<td>(Pacheco) The University of New Mexico (UNM) has recruiting preferences for rural background applicants, 15 family medicine resident positions in rural and frontier communities, rural medicine sites and state-subsidized locum programme to provide practice-relief to rural practitioners. Graduates from rural family medicine residencies were significantly more likely to remain in New Mexico and to practice in rural areas (65.1%) than graduates from the urban programme (25.8%; p&lt;0.001)</td>
<td>1</td>
<td>☂️ ☂️ ☂️ ☂️ Very low</td>
</tr>
</tbody>
</table>

Clinical rotations in rural areas during the training

Evidence on the impact of rural clinical rotations on improved rural retention is mixed but suggests that an exposure to rural communities during undergraduate training can influence subsequent choices to practice in such areas, even amongst students with urban backgrounds.19-22 The following studies (see Table 5) sampled medical, pharmacy and nursing students, and reported improved competencies related to rural health issues among those students who completed a rural placement during the course of their studies.

Table 5: Exposing undergraduate students from various health disciplines to rural community experiences and rural clinical rotations can have a positive influence on attracting and recruiting health workers to rural areas

<table>
<thead>
<tr>
<th>Impact</th>
<th>Number of studies</th>
<th>Quality of the evidence (GRADE)*</th>
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</thead>
<tbody>
<tr>
<td>(Smuncy) [Supportive : 84% of graduates who attended a Rural Medical Education</td>
<td>1</td>
<td>☂️ ☂️ ☂️ ☂️</td>
</tr>
</tbody>
</table>
programme (RMED) – a 36-week long clinical experience course for medical students which was set in rural communities – reported that the RMED course was important in helping them choose their work location, RR=3.5 (2.3-5.3)

Administrators thought that student participation in the RMED programme was useful in keeping medical students useful for the training of the medical students

The RMED students scored significantly higher exam results (212.3) than the non-RMED graduates (199.1)

Continuous professional development for rural health workers

There is limited direct evidence on the effect of continuing education programmes on rural retention (Table 6). However, evidence suggests that if such programmes are delivered in rural areas and they are focused on the expressed needs of rural health workers, then they are likely to improve the competence of rural health workers, make them feel like they are part of a professional group, and increase their desire to remain in rural practice locations\textsuperscript{23-24}

Table 6: Designing continuing education and professional development (CPD/CPE) programmes to meet the needs of rural workers

<table>
<thead>
<tr>
<th>Impact</th>
<th>Number of studies</th>
<th>Quality of the evidence (GRADE)*</th>
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</thead>
<tbody>
<tr>
<td>(Humphreys): This study is a systematic review focusing specifically on the relationship between CPD/CPE and workforce retention for primary health care workers in small rural and remote communities in Australia. The study was conducted by Australian Primary Health Care Research Institute. Six studies of mental health workers examined the importance of CPD/CPE programmes on rural retention. One found no significant association between perceptions of supervision or of continuing education and levels of anticipated job retention, although these were found to be predictors of job satisfaction One study reported that a nurse leadership programme was successful in improving anticipated job retention. Travel difficulties, however, resulted in a high drop-out rate among nurses from rural areas. Another study of a new graduate nurse orientation programme noted that the CPD/CPE programmes were successful in increasing retention.</td>
<td>6</td>
<td>☒ ☒ ☒ ☐ ☐ Very low</td>
</tr>
</tbody>
</table>

CPD = Continuing Professional Development; CPE = Continuing Professional Education
**Train more health workers faster to meet rural health needs**

Different cadres of health workers are used in many countries to meet the different health needs of populations in remote and rural areas (Table 7). A recent survey of sub-Saharan African countries, for instance, observed that non-physician clinicians were involved in tasks to be executed by clinicians in 25 of the 37 countries investigated. The survey concluded: “Low training costs, reduced training duration, and success in rural placements suggest that non-physician clinicians could have substantial roles in the scale-up of health workforces”.

Mozambique began to provide surgical skill education and training for assistant medical officers (known as técnicos de cirurgia) in 1987. Twenty years later, a study reported that 88% of the técnicos who had graduated in 1987, 1988 and 1996 were still working in district hospitals compared to only 7% of medical officers who had originally been assigned to district hospitals following graduation. Given that the técnicos performed 92% of all major obstetrical surgical interventions in rural hospitals, the authors contended that the provision of emergency obstetric care in these areas would be have been impossible without them.

Evidence suggests that the use of different types of health workers can lead to improved health outcomes and many countries rely heavily on clinical officers, health assistants and other types of health workers to provide healthcare in remote and rural areas.

**Table 7: The introduction of different types of health workers with appropriate training together with revised regulations for rural practice can increase the number of health workers practising in rural and remotest areas**

<table>
<thead>
<tr>
<th>Impact</th>
<th>Number of studies</th>
<th>Quality of the evidence (GRADE)*</th>
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</thead>
<tbody>
<tr>
<td>(Keni) This study observed that eight new health centres had been created as a result of the contribution of 14 graduate health assistants</td>
<td>1</td>
<td>⊕⊕⊕⊕ Very low</td>
</tr>
<tr>
<td>(Pereira) 88% of the sampled graduates of the course for assistant medical officers (known as técnicos de cirurgia) in Mozambique were still working in district hospitals seven years after qualifying. In contrast, the percentage of medical officers working at districts hospitals two years after graduation was only 0.22% and 0.0% for the classes of 1987, 1988 and 1989 respectively.</td>
<td>1</td>
<td>⊕⊕⊕⊕ Very low</td>
</tr>
<tr>
<td>Supporting evidence: In Mozambique, técnicos de cirurgia performed 92% of all major obstetric surgical interventions in rural hospitals. Without them, the provision of emergency obstetric care in these rural areas would have been impossible.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Lewin) Three studies (Barnes 1999, Johnson 1993, Krieger 200) provided strong evidence that lay health worker promotion strategies, expanding is roles, can increase the uptake of immunisation in both adults and children (RR=1.30)</td>
<td>3</td>
<td>⊕⊕⊕ Moderate</td>
</tr>
</tbody>
</table>

**Equity, costs, monitoring and evaluation**

The existing network of training institutions and field practice facilities in the provinces of Mozambique could be used to train more health workers. Although this existing school
network is improving, quality of education remains a concern. A more efficient use of the available infrastructure could still potentially reduce inequities in service delivery.

Financial resources, human resources, infrastructure and equipment are needed to implement most of the options described above. It should be remembered that the capital costs for such tasks are high initially and may yield benefits only in the long-term. Additional resources will therefore be needed to support retention strategies for teachers, improve Internet usage, and establish better communication.

Given the limited evidence available, resource usage and activities should be monitored.

**Policy option 2:**

**Regulation**

Regulation is a key element of effective human resources management, particularly in settings with staff shortages. Such measures have been used alone and/or in combination with other strategies to increase the retention of health workers in rural and remote areas in different setting in the world. The key options include: a) expanding the scope of rural health worker practice and b) compulsory service requirements

A broad definition of regulatory measures encompasses government control exercised through legislative, administrative, legal or policy tools. Regulatory measures include laws and statutes, state regulations, policies and guidelines developed by ministries, as well as basic programme guidance.

**Current situation in Mozambique**

A minimum service period of two years in rural areas is compulsory in Mozambique for all health professionals and is a requirement for those specialising in fields related to public health services. The impact of this compulsory service is easily identified by process measures tracking the presence or augmentation of health services. This year, for example, this national service programme has enabled Mozambique to have at least one physician in every one of the 128 districts for the first time—a public health achievement for the country as a whole and for the compulsory service programme in particular. Despite its local performance benefits, the programme has not been rigorously evaluated in terms of its effects on longer periods of service retention. However, the impact of the técnicos de cirurgia has been evaluated and the results of this research are described in further detail below.

**Impacts of regulation**

**Revise regulation to permit task shifting**

Health workers serving in rural and remote communities may have to provide services beyond the remit of their formal training due to the absence of more qualified health workers. In some instances this *de facto* enhancement of their practice scope is recognised via regulations or decrees allowing specified categories of health workers to perform tasks beyond their scope of training, on the assumption that doing so will increase access to health services for remote and rural populations.
Evidence suggests that such changes of scope impact on the availability of health workers able to perform these health tasks. Further, the enhanced scope of practice is also associated with increased job satisfaction. A controlled study in Australia, for example, found higher levels of job satisfaction among enrolled nurses who were allowed to prescribe compared to those who were not endorsed to do so. There is also compelling evidence to suggest that quality of care is not diminished when delivered by health workers through the enhanced scope of practice. One systematic review identified six randomised controlled trials that showed that “quality of care was in some ways better for nurse practitioner consultations” when compared with physicians (although this study was based in non-rural settings). Patients have also reported higher levels of satisfaction with nurse practitioners.

**Compulsory service**
Compulsory health service is the mandatory deployment of workers to remote or rural locations for a specified period of time to ensure the availability of health services in these areas. Such service can be imposed by governments (for example, for state or government-administered employment), be linked to other policies such as practice licensing preconditions, or be a prerequisite for specialisation or career advancement.

A comprehensive review of compulsory service schemes undertaken during the development of WHO’s global policy recommendations found that approximately 70 countries are using (or have used) compulsory service, with the period ranging between a minimum of one year to a maximum of nine years. Together, these schemes have included most types of health workers.

Despite their popularity, very few schemes have been evaluated in relation to how they affect the retention of health workers during or after the obligated service period. Studies in Ecuador and South Africa reveal that although physicians have raised serious complaints about the management of the schemes, they have recognised that the experiences provided have helped to improve their competencies and have been rewarding overall. In some countries, remote and rural areas often rely on the compulsory service obligations of graduates, and in Thailand 49.5% of doctors in rural district hospitals were found to be new graduates. 1477 graduates from Jichi Medical University (JMU) were reviewed and surveyed in 2000, 2004 and 2006. On average, 69.8% of JMU graduates remained in their home prefectures for the last six years after their compulsory service. The rates varied from 45.5% to 93.3% (Table 8).

**Table 8: Compulsory service requirements in rural and remotes areas should be accompanied by appropriate support and incentives in order to increase recruitment and subsequent health professional retention**

<table>
<thead>
<tr>
<th>Impact</th>
<th>Number of studies</th>
<th>Quality of the evidence (GRADE)*</th>
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<tbody>
<tr>
<td>(Matsumoto) An average of 69.8% of Jichi Medical University graduates remained in their home prefectures for at least six years after their nine-year contractual obligation</td>
<td>1</td>
<td>Moderate</td>
</tr>
<tr>
<td>Studies in Ecuador and South Africa shows that most doctors indicated that the scheme improved competencies related to independent decision making, the learning</td>
<td>1</td>
<td>Very low</td>
</tr>
</tbody>
</table>
Equity, costs, monitoring and evaluation

Health workers who are allowed to extend their scope of work can potentially deliver vital health services, and help to improve health equity in areas in which there is an absolute shortage of health workers. Similarly positive effects can be achieved through compulsory service that lasts for shorter periods of time.

Enhancing the scope of practice can be less costly than compulsory service schemes which may require extensive resources, administration and coordination. However, while practice enhancement for nurses or other mid-level cadres may take less time to achieve, the cost of additional supervision will also be an important consideration.

Evaluations of compulsory schemes are required in order to understand how they impact on the retention of health workers in remote and rural areas after the completion of obligatory service periods.

Policy option 3:

Personal and professional support

Improving rural infrastructure can help to improve health worker retention, while improvements to working conditions are likely to improve health worker performance and productivity, and hence the [overall?] performance of health systems. Outreach activities may also help to reduce feelings of professional isolation.

Rural and remote areas are often isolated both geographically and professionally, and the decision by students, young graduates and health workers to work in these areas is strongly influenced by the need for, and availability of, support. This may include perceived personal support, or be related to issues such as the availability of good infrastructure, opportunities for social interaction, schools for their children, or opportunities for spouse employment. Opportunities for professional advance careers and peer networking, consulting and communication are also important.

Current situation in Mozambique

Despite the high status of health care workers among communities in Mozambique, the salaries of health care workers have fallen in real terms due to economic liberalisation. The opening of the economy has led to better living conditions in more urbanised areas and a wider range of goods and services: living in remote communities is therefore often associated with losing out on the opportunities and benefits of city life.

The Ministry of Health and its partners have faced many challenges during the reconstruction of the Mozambican health system. The deployment of personnel and training was often delayed due to a lack of housing and infrastructural improvements, and aid and investment failed to promote equitable economic growth across all of the regions in the country. Progress in already-underserved areas has been slower than expected and special
(time-limited) projects (installation or deployment kits for new workers and housing) have been used as part of efforts to fill these gaps.

To counter such problems, a formal scheme of non-financial incentives have been developed to assist with the decentralisation of human resources management (HRM)\(^\text{37-39}\). Health workers in rural areas, for example, have received a 50% bonus when calculating their years of service, thereby progressing faster along the career ladder. For example, a medical doctor who worked for four in rural area his or her years of service are counted as 6. Other incentives have included free housing or subsidised food (at some facilities outside Maputo)\(^\text{40}\), free or subsidised health care, and medicines not uniformly applied.

In addition, attempts have been made to improve working environments using, for example, a Management and Organisational Sustainability Tool to evaluate the Health Sector Support (HSS) Programme. This tool was developed through a partnership between Management Sciences for Health (MSH) and Ministry of Health. The results of this tool showed that there had been improved communication between managers and subordinates, improved levels of self-confidence and initiative among lower cadres of staff, and general improvements in working environments across all geographic regions in the health sector.\(^\text{41}\)

These initiatives and others have formed part of subsequent human resources development plans (1992-2002 and 2001-2010) in Mozambique which have aimed to introduce management tools, information systems and equity indicators in order to identify trends in staff distribution and losses due to attrition and HIV/AIDS.\(^\text{42}\) [among other issues?]

Despite their relative autonomy, provincial and district health authorities have faced significant challenges due to the budgetary impacts of health service implementation and expansion. New posts may be put on hold or paid for using donor aid money, because the allocated budget still put limits on their absorption.

**Impacts of personal and professional support**

*Pay attention to living conditions*

No direct evidence is available on the effect of improvements to rural health infrastructure and living conditions on health worker retention in rural areas. This is mainly due to the lack of large-scale improvement programmes.\(^\text{43}\) However, there is ample indirect study evidence suggesting that the availability of good living conditions is an important factor influencing decisions to work in remote or rural areas. A study set in South African reported that doctors had listed the availability of better accommodation as one of the three most important factors that would determine their decision to remain working in rural areas.\(^\text{44}\) Conversely, a study set in Bangladesh revealed that location remoteness and difficult access to health centres were major reasons for health worker absenteeism. Those working in villages or towns with good roads and electricity were far less likely to be absent.\(^\text{45}\)

*Improving workplace environment*

There is no direct evidence available on the effect of improvements to working environment on health worker retention in rural areas. However, according to a Cochrane systematic review, “questionnaire-based surveys suggest that professional and personal support may also influence health professionals’ choice to work in underserved areas. Professional
development, ongoing training and style of health service management were important factors influencing retention of health professionals in underserved areas”.\textsuperscript{46}

Survey evidence shows that health professionals are disinclined to apply for – or accept – assignments in practice facilities which are in a state of disrepair or lack basic supplies such as running water, gloves, basic drugs, and rudimentary equipment. This is because dysfunctional work environments severely limit their ability to deliver health services.\textsuperscript{47-48}

Supportive supervision has also been found to be a key element contributing to improved job satisfaction, higher levels of performance, and subsequent retention in rural practice areas.\textsuperscript{49-50}

\textbf{Facilitate knowledge exchange}

Evidence suggests that rural professional associations have helped to increase the retention of health workers in rural areas. Studies set in Mali, for example, indicate that young doctors who have received supported from local professional association, remain in rural areas for an average of four years, while those who have not, stay for shorter periods of time \textsuperscript{51} (Table 9). In Thailand, the “Rural Doctors Society and Foundation” is also reported to have had positive effects on the profile and impact of rural physicians.\textsuperscript{52}

\textbf{Table 9: Supporting the development of professional networks, rural health professionals associations, and rural health journals in order to improve the morale and status of rural providers, and reduce feelings of professional isolation}

<table>
<thead>
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<th>Impact</th>
<th>Number of studies</th>
<th>Quality of the evidence (GRADE)*</th>
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<tbody>
<tr>
<td>In an evaluation of a support project in Mali, professionals supported by the AMC/Sante Sud and the Malian government stayed in rural areas for an average of four years, compared to those who were not supported in their work negotiations and who did not receive a relocation package, who stayed less than 2 years.</td>
<td>1</td>
<td>Moderate</td>
</tr>
<tr>
<td>The number of GPs waiting to leave rural practice in the short- to medium-term was reduced from 30% to 25%. Many of those who had chosen to remain stated that their decision was due to improved networking and an increase in the contact they were able to have with other GPs following the [implementation of the?] Dr Doc programme. the “Dr Doc” programme was launched in South Australia in 2006 has set up various support mechanisms such as telephone consultations, crisis support, links to urban general practitioners (GPs) who provide health care for rural GPs and their families, as well as country practice retreats to allow rural GPs some rest and relaxation. This has reportedly reduced the number of rural physicians who want to leave their practice</td>
<td>1</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

\textit{AMC} = Association des Médecins de Campagne; \textit{GP} = General Practitioners

\textbf{Raise the profile of rural health workers}

Evidence from a systematic review on the motivation and retention of health workers in developing countries showed that professional recognition and/or appreciation (either from managers, colleagues, or the community) was a theme found in 70\% of the included studies (Table 10). In six studies, employer and community recognition were cited as the most important motivating factors for health workers.\textsuperscript{53}
Table 10: The adoption of public recognition measures such as rural health days, awards and professional titles

<table>
<thead>
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<th>Impact</th>
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<tr>
<td>(Mischa Wills-Shattuck): Four literature databases were searched together with Google Scholar and ‘Human Resources for Health’ on-line journal. Grey literature studies and informational papers were also captured. The inclusion criteria were: 1) article stated clear reasons for implementing specific motivations to improve health worker motivation and/or reduce medical migration, 2) the intervention recommended can be linked to motivation and 3) the study was conducted in a developing country and 4) the study used primary data. Twenty articles met the inclusion criteria. They consisted of a mixture of qualitative and quantitative studies. Seven major motivational themes were identified: financial rewards, career development, continuing education, hospital infrastructure, resource availability, hospital management and recognition/appreciation. The importance of recognition and/or appreciation from managers, colleagues or the community was a theme found in 70% of the included studies. In six studies, employer and community recognition were cited by health workers as being the most important motivating factors.</td>
<td>14</td>
<td>Very low</td>
</tr>
</tbody>
</table>

**Equity, costs, monitoring and evaluation**

The improvement of working conditions is likely to improve health worker performance and productivity, and may contribute to higher levels of retention in rural areas. If such strategies are not implemented equitably across the country however, they may result in health care inequalities as health personnel shift to areas with better opportunities and working conditions.

Equipping and refurbishing health facilities may be resource-intensive and costly, but may help to sustain the benefits of doing so. Likewise, although changes in management style and the implementation of supportive supervision may also require significant investments (for example in management training courses and in effective supervision processes), long-term benefits are likely. Outreach support activities, particularly telehealth programmes (a supportive program that allow health workers posted in rural and remote areas to seek advice through telemedicine), will require significant financial resources. Finally, holistic strategies such as those designed to minimize the risk of workplace violence, despite their complexity and cost, are also likely to contribute to improvements in long-term job satisfaction.

Given the lack of available evidence, further rigorous evaluation is warranted before interventions of this nature are scaled up. The monitoring of resource usage will be needed as well as assessments of the impact of these interventions on equity and service delivery.

**Policy option 4:**

**Financial incentives**

The World Health Organization (WHO) has defined incentives as “all rewards and punishments that providers face as a consequence of the organizations in which they work
the institution under which they operate and the specific interventions they provide.”

Buchan, Thompson and O’May though have defined incentives more specifically in terms of their objective(s) and as “one particular form of payment that is intended to achieve some specific change in behaviour.” Incentives serve as a form of motivation for health workers to perform better – and stay in their job – as a result of better job satisfaction. Enhanced motivation, according to this logic, leads to improved performance, while increased job satisfaction leads to reduced staff turnover (and higher levels of retention).

Incentives are used to attract and retain health professionals to areas of greatest need, such as rural or remote areas with poor infrastructure and poor populations. As many services in such areas are provided by the state, it can be argued that incentives in the public sector are therefore particularly important to health service provisions for such populations. Incentives can be used to overcome inequities in the supply of – and access to – health services, and can take the form of rural allowances (South Africa), retention schemes for rural doctors (Zambia) and mountain allowances (Lesotho – paid to people who are living in remote mountainous areas).

Financial incentives in this policy brief are defined as additional benefits paid or provided to health workers to entice them to work in remote or rural areas. These include monetary bonuses, benefits in kind (for example, a free house or vehicle), and any form of benefit that helps to reduce the opportunity costs associated with working in rural locations.

**Current situation in Mozambique**

The Mozambican government has recognised that serving in remote areas is often difficult due to the hardships caused by poor infrastructure, low levels of access to basic amenities, and high workloads. Health workers in these locations may have to work alone and without adequate upstream health system contact or support.

Measures have therefore been set in place to attract civil servants to such jobs. For many years, incentive measures benefited only those with university degrees including physicians. But specific measures have been put in place to attract health sector specialists to areas outside Maputo. Civil servants serving at the district level and beyond are, according to recent legislation, entitled to be rewarded for undertaking service in isolated locations. Four levels of financial incentive have been defined, with the highest applied to those serving in the most isolated areas. It also stipulated that time in service at the remote places were magnified by a coefficient higher than one and progressive towards the most isolated placements. Workers in rural areas they get 150% per year in the time of service.

The health sector has no specific financial incentive policies in place for the retention of health workers in rural and remote areas. Currently, salary top-ups are paid to specialists who work outside Maputo and these are paid using ‘off-budget’ funds.

**Impacts of financial incentives**

All the studies identified which related to the use of financial incentives were found to have important limitations (Table 11). Adequate salaries and allowances were found to be essential to the motivation of health professionals. Several studies noted that salaries and allowances
were key factors influencing the decision by health workers to stay in (or leave) rural workplaces.59-64

Table 11: The use of financial incentives for the improvement of staff motivation and retention

<table>
<thead>
<tr>
<th>Impact</th>
<th>Number of studies</th>
<th>Quality of the evidence (GRADE)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Gibbon) A Rural Retention Program (RRP) was implemented since 1999 to provide incentives to long-term serving doctors in rural and remote areas experiencing difficulties in retaining general practitioners. There has been a steady increase in the number of RRP recipients and total amount paid under the RRP has increased 70% between 1999 and 2005. An incentive plan, known as Central Payment System (CPS) has consistently achieved higher retention rates, from 86% one year after the initial payment to 65% after five years. Retention rates for the Flexible Payment System (FSP) incentive plan declined from 66% one year after the initial payment to 31% five years later. The overall retention rate for the RRP at five years after initial payment was 63%.</td>
<td>1</td>
<td>1 Very low</td>
</tr>
<tr>
<td>(Ministre de la Sante Publique). A financial package for doctors, pharmacists and dentists for accepting to work outside was implemented between 2005 and 2008. In a survey conducted in Niamey with physicians, pharmacists and dentists showed that the number of physicians practising outside the city of Niamey, Niger, rose from 93 in 2005 to 134 in 2008 (an increase of 44%). The same positive trend was seen among pharmacists and dentists – a rise of 46% and 42% respective – who practised in areas outside Niamey.</td>
<td>1</td>
<td>1 Low</td>
</tr>
</tbody>
</table>

Several studies have evaluated the impact of financial incentives on the motivation and retention of health workers. Financial incentives are widely used to recruit and retain health workers in remote and rural positions and can be implemented relatively quickly. But well-designed and comprehensive evaluations of their effectiveness are rare, and available evidence suggests that their success has been variable. In Australia, for example, financial incentives were established for long-serving physicians in remote and rural areas, with payment sizes dependent on location and length of service.65 One such incentive plan succeeded in achieving a 65% retention rate of physicians after five years of service. In Niger, financial incentives were responsible for increasing the percentage of physicians, pharmacists and dentists working outside the capital city, Niamey. But two years after the scheme was implemented, the proportion of health workers choosing to go to these areas was found not to have changed significantly (42% at the start of the programme and rising only to 46% after two years).66

Other studies have reported that financial incentives have had positive effects in making rural areas more attractive to health care workers. A survey in South Africa found that 28% to 35% of rural health workers who received an allowance for working in rural areas believed that these payments had affected their career plans for the next year and they had decided to stay.67 Similarly positive findings were noted in the mid-term review of the Zambian Health Workers Retention Scheme which found that within two years of implementation, the scheme had been able to attract and retain more than 50 doctors in rural areas, some to areas
in which there had previously hadn’t been any. The difference between the results of these incentive payment schemes demonstrates the importance of considering the wider labour market in situational analyses.

**Tie education subsidies to mandatory placements**

A systematic review analysed the effectiveness of financial incentives given in return for practising in rural areas. Impressive retention rates were reported in 18 studies and the proportion of participants who remained in the underserved areas following the completion of their obligatory service period ranged from 12% to 90% (Table 12).

**Table 12: Providing scholarships, bursaries or other education subsidies with enforceable agreements for a return to service in rural or remote areas increases the recruitment of health workers in these areas**

<table>
<thead>
<tr>
<th>Impact</th>
<th>Number of studies</th>
<th>Quality of the evidence (GRADE)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Barnghausen) 18 studies assessed health worker retention in underserved areas: 12-90% of the physicians were found to have remained in the underserved areas following the completion of their obligatory service period</td>
<td>12</td>
<td>+ + + + Low</td>
</tr>
<tr>
<td>Seven studies assessed rural retention in the same underserved area(s): six reported that participants were less likely than non-participants to remain in the same area, and one study did not find a significant difference in retention rates</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>13 studies assessed the provision of care or worker retention in underserved areas. In 11 studies, participants were more likely to continue practising in these underserved area, but two studies found this not to be so</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Equity, costs, monitoring and evaluation**

Governments may find that offering of financial incentives will raise equity issues about how and what other non-health workers (such as teachers) are paid and rewarded. Those who are “better qualified” than people from underserved areas may feel that it is unfair that such people who they may perceive to be “less qualified” are admitted to particular schools, offered financial rewards, or are favoured for particular positions. While options are needed to reduce inequities in access to health care, equity considerations may limit their acceptability and feasibility. Governments may also encounter opposition to raising health worker salaries.

Incentives require significant amounts of money and resources are needed to fund programme administration, scholarships and bursaries. High costs are also incurred during supervision, particularly as many of the health care workers are young and inexperienced graduates. High costs will therefore remain a key barrier to policy implementation and the cost-effectiveness of incentive programmes remains uncertain. Robust monitoring and rigorous evaluation are needed prior to full implementation.
Implementation considerations

The following issues are central to the enablement of the policies considered above:

- The policy environment in Mozambique is favourable for the achievement of rural development through the provision of highly-qualified human resources
- Staff retention is central to achieving good performance in the public sector
- Mozambique has an existing, supportive legal framework and relevant governance experience
- Changes in healthcare can be controversial and evoke strong responses. But positive effects on the rural population landscape are possible only if policies are consistently implemented with success. Benefits may only be apparent in the long term.

At the same time, strategies are needed to effectively address potential barriers to the implementation of the four policy options. Relevant considerations include:

- Strategies are often insufficiently comprehensive to address the multi-faceted and complex issues affecting rural retention
- The implementation of any Human Resources for Health (HRH) retention policy package is challenging and coordination efforts require a wide range of governmental actors and external actors
- The general lack of action on key retention strategies (such as increasing production, improving management and improving rural infrastructure) is partly a result of the difficulties of coordinating efforts across government. Health Ministries may often be weaker players within government and health officials may fail to develop arguments that are sufficiently persuasive to gain support for HRH policy initiatives from powerful government actors (such as treasury or public service officials). Mindset gaps between government departments are important implementation barriers in themselves
- The retention of health workers in rural areas is a complex issue requiring holistic interventions in the public sector and improvements in development
- Evidence is limited and there are few comparative studies measuring the impacts of the options. Rigorous evaluations of all four options should be considered prior to scaling up, if this is feasible
- Relations with community and workers networks are important and may strongly contribute to the improvement of work motivation to work and thus to overall levels of health. Health workers who are co-opted to local communities may be granted privileges to improve their living conditions, and local retention incentives may be facilitated by district and provincial authorities.
- The issue of coordinated rural planning and development is crucial to the success of policies related to health worker motivation and retention.

The rigorous monitoring and evaluation of the impacts of retention strategies is warranted in light of important uncertainties regarding all four of the policy options and related implementation strategies discussed in this policy brief.

Table 13 summarises the main implementation barriers.

**Table 13: Key barriers to the retention of health workers in rural and remote areas and to relevant implementation strategies**
<table>
<thead>
<tr>
<th><strong>Barrier</strong></th>
<th>Factors that affect retention are multi-faceted and complex but the strategies to improve retention are usually not sufficiently comprehensive.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Strategies for addressing barrier</strong></th>
<th><strong>Evidence</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Offer ‘bundles’ of incentives to encourage students from rural backgrounds and health professional schools in Mozambique to move to areas outside major cities and financial centres</td>
<td>Evidence indicates that ‘bundles’ of retention incentives are most likely to be effective.71-73 “Retention strategies need to be multifaceted”.74 “As causes for retention are likely to be rooted in both personal and work related factors, strategies must address these multiple causes simultaneously. Interventions can take place at the macro or health-system level, such as HR policy and planning, rural recruitment and training and bonding. They can also take place at micro or facility level, aimed at improving job satisfaction by addressing working conditions, providing incentives and offering professional development. Interventions can also aim to improve the living conditions of individual workers, or address the needs of specific groups.”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Barrier</strong></th>
<th>Low literacy rates and low levels of secondary education in rural areas, particularly in the central and northern regions of the country</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Strategies for addressing barrier</strong></th>
<th><strong>Evidence</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Set specific quotas to admit students from rural backgrounds to practice locations in central and northern regions</td>
<td>No direct evidence was identified, but experience in China and Vietnam suggests that the use of specific quotas can increase the enrolment of students from rural backgrounds</td>
</tr>
</tbody>
</table>
### Barrier

| Poor infrastructure in rural areas |

### Strategies for addressing barrier | Evidence

- Improve existing infrastructure
  - Good infrastructure is critical for making rural workplaces attractive to potential new recruits and for improving the retention of existing workers. Infrastructural work support includes the provision of access to IT equipment and vehicles, better physical infrastructure, and strategies to help both practitioners and their families. Hays et al. identified a range of relevant strategies, including: improving housing quality, offering subsidies to support two doctors in one doctor communities, offering locums long leave after 5 years of service, providing educational subsidies for the children of practitioners to attend boarding schools, and offering educational and administrative support to meet [local?] health service requirements.  

| The lack of human and financial resources |

### Strategies for addressing barrier | Evidence

- Improve management and mobilisation capacity
  - All the policy options identified require resources for which there are many competing needs. A monetary evaluation of all the resources needed to implement interventions should be undertaken prior to implementation and scale up. Aligning sources of funding for retention with national health budgets for sustainability is also important in the long run.
Next steps

The following important issues should be considered when deciding on policies to improve the retention of health workers in rural areas:

- Currently, the policy options are not well described and insufficient information is available regarding the costs of these policies. There is only low-quality evidence about the impacts they are likely to have.

- Detailed proposals are therefore required for each option: these should include costing studies as well as detailed evaluation plans before the options are implemented, embedded, or scaled up.

- A situation analysis is required: this will include a survey of factors influencing the decision of health workers to location to rural areas as a way of identifying and selecting the most appropriate form of intervention.
Appendices

Appendix 1. How this policy brief was prepared

The problems this policy brief has addressed were clarified iteratively through discussions among the authors, through reviews of relevant documents and research, and during discussions with the Human Resources Directorate [Direcção De Recursos Humanos] MoH and SWAp Human Resources Group. Relevant research describing the size and causes of the problem was identified by reviewing government documents (mostly meeting reports) and routinely collected data, through discussions with key informants, and by using the reference lists of the retrieved documents.

Strategies used to identify potential options to address the problem of rural health worker retention included a consideration of the interventions described in the systematic reviews and other relevant documents, local experience and law, statutes and regulations, consultations with key informants, and brainstorming.

Key findings were extracted from each review: the quality of evidence was assessed and important information regarding the interventions was summarised. This included information regarding their advantages and disadvantages, their acceptability and considerations equity, monitoring and evaluation, and cost. The quality of the evidence was assessed using the GRADE approach, and key findings were expressed using consistent terminology in order to reflect the quality of evidence. Cochrane plain language was used when writing the summaries.

In addition, the authors of this report brainstormed the detailed checklist of potential policy implementation barriers. Additional related evidence was identified through PubMed, by speaking to key informants, by reviewing reference lists for further relevant documentation, and the retrieval of studies as needed. Implementation strategies which addressed these barriers were then identified through further brainstorming and document reviews.
# Glossary, acronyms and abbreviations

- **AIDS**  
  Acquired Immunodeficiency Syndrome
- **GRADE**  
  Grading of Recommendations, Assessment, Development and Evaluation
- **HIV**  
  Immunodeficiency Virus
- **HR**  
  Human Resources
- **HRH**  
  Human Resources for Health
- **M&E**  
  Monitoring and Evaluation
- **MDG**  
  Millennium Development Goals
- **MoH**  
  Ministry of Health
- **MSH**  
  Management Sciences for Health
- **NPHHRD**  
  National Plan for Health Human Resources Development
- **SWAp**  
  Sector Wide Approach
References


2 Instituto Nacional de Saude 2010. Human resources Stakeholders Meeting on Retention. Maputo, Mozambique


8 WHO. 2010. Increasing access to health workers in remote and rural areas through improved retention: global policy recommendations. Geneve. Switzerland.

9 Grobler L, Marais BJ, Mabunda SA, Marindi PN, Reuter H, Volmink J. Interventions for increasing the proportion of health professionals practicing in rural and other underserved areas. Cochrane Database of Systematic Reviews 2009, Issue 1. Art. No.: CD005314. DOI: 10.1002/14651858.CD005314.pub2

10 Woloschuk W, Tarrant M. Do students from rural backgrounds engage in rural family practice more than their urban-raised peers? Medical Education, 2004, 38:259-261


14 Rabinowitz HK et al. Long-term retention of graduates from a program to increase the supply of rural family physicians. Academic Medicine, 2005, 80:728–732.


Wilks CM, Oakley Browne M, Jenner BL. Attracting psychiatrists to a rural area - 10 years on. Rural and remote health 2008; 8(1): 824-824

