RETENTION OF THE HEALTH WORKFORCE IN RURAL AND REMOTE AREAS: A SYSTEMATIC REVIEW

Web Annex B. Descriptive evidence profiles
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Starting rural, staying rural: how can we strengthen the rural workforce?

Strasser R, Hogenbirk JC, Lewenberg M, Story M, Kevat A.


Evaluation showed positive short-term outcomes suggesting benefits of this approach in preparing for pre-professional practice. It was found that participation in the programme had a significant positive association with working rurally in 2015 (OR = 2.16, 95% CI: 1.77-2.64, P < 0.01). However, no association was shown in 2017. In the multivariate analyses, both rural experience prior to the programme and the pre-placement rural intentions were independent predictors of an increased likelihood for rural employment and rural retention.

Students who had undertaken a longitudinal rural placement in primary care as students. An expectation gap during the rural placement while in medical school was associated with lower likelihood of rural practice. RCS have contributed to significant rural workforce increase and made in the rural context.

Longitudinal mixed methods sequential explanatory design with quantitative and qualitative phases. Out of a 464 response rate, 40% of respondents were non-urban and general practice was the most frequent specialty choice. Primary drivers were personal/family reasons and specialty training requirements. The longer the exposure to training in the rural context the greater the impact on interest in future rural practice and the likelihood important life decisions will also be made in the rural context.

Retrospective cohort survey. Provided additional evidence of an increase in intent to practice in a rural setting following undergraduate medical education that includes rural clinical placements. This was especially clear for urban background graduates. Suggests that internship and vocational training need to provide sufficient rural clinical experiences to ensure continued interest in rural practice.

Pre-post design using cross-sectional survey. 729/754 respondents provided information relevant to the study. “Independent predictors of LTRP with sufficient rural clinical experiences to ensure continued interest in rural practice. Gender was not associated with rural practice. RCS have contributed to significant rural workforce increase and made in the rural context.

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Education

Australia
Aboriginal and rural internship for a student placement
Explained the opportunity to reduce the "first mile" of rural and Aboriginal practice by undertaking a graduate rural and Aboriginal experience.

Educational programmes

Australia
Follow-up study to 2017 Aboriginal and rural internship programme
Explained the impact on professional practice and employment decision-making amongst a subset of the original cohort.

Australasian Medical Council (AMC) review

Australasian Medical Council (AMC) review

Australias
Rural clinical training
Doctors
The Remote Vocational Training Scheme (TVTS) trains doctors for remote communities, in remote locations. Supervisors support registrars remotely, 1 hour per week in the first 6 months, 1 hour per fortnight in the second 6 months, and 1 hour per month thereafter.

Retrospective cohort study of 1098-2005 RVTYS programme participants; self-administered questionnaires in December 2007.

Overall retention rates were 53% at 3 years, 47% in RRMA 4 or above, 50% in RRMA 5 or above, 59% in RRMA 6 or above, and 69% in RRMA 7 or above. All post graduates believe in RVTYS programs either "extremely well", "well", or "good" for clinical practice. Graduates reported valuing the support and social network provided by the scheme as well as the emphasis on the extended skills needed in "emergency and remote medicine."

Canada
K1-A2, A3, distributed rural and remote medical school with community engaged medical education for undergraduate (MG) and rural and interprofessional programmes.
Medical students and graduates
Review of experience of establishing new medical school (NOSM) in two aboriginal centers, Sault Ste. Marie and Thunder Bay, 1 000 km apart in Northern Ontario (NO). Programmes have strong emphasis on interprofessional education and integrated clinical learning in over 70 communities in a vast area (666 350 sq. km = Germany + France).

Review of experience

Canada
Participating nurses were exposed to 20% of their paid time to engage in professional development (PD), through a formal application process, and provided additional leave. Positions were filled with temporary staff through funding.

Pediatric units

Canada
Distributed medical education (DME) programmes in Southern Ontario
DME programmes since 2005 to date
To explore the factors that contributed to family doctors decisions to practice in an underserviced area following graduation from the DME programme.

DME graduates in NO. 2003-2005: semi-structured in person interviews of 95 family doctors graduated from a DME programme, set up in 2003, outside of academic centres.

Qualitative semi-structured telephone interviews after undertaking the PD activities. Cross-sectional survey to study the effect on work experience, leadership capacity, work environment, recruitment and retention.

2003-2010: 12 000 apartments for 346 places. 91% of students admitted were from NO. 91% from other rural/remote areas of Canada. 45% of students come from rural/remote communities is 50% in other Canadian medical schools. GPs comparable to other Canadian students.

Canada
K1-A2, A3, distributed rural and remote medical school with community engaged medical education for undergraduate (MG) and rural and interprofessional programmes.
Medical students and graduates
Participating in the program and reported increased knowledge, skills and professionalisation. The web programme provided learning networks, which were considered essential to sustained professional development.


Education

Australia
Medical internship in rural area
Graduate doctors (interns)
Focus group interviews of interns who had completed an internship in a rural hospital, looking at factors important in their retention.

Focus group interviews

Germany
Day "rural day" exposure
GP trainees
To determine whether the rural day was an effective intervention for GP workforce shortages in rural communities.

Internet-based questionnaires, completed by 110 (58 rural day, 52 rest) of 500 interns; outcome = intention to work in a rural area.

There was no significant difference in the intention to work in a rural area for participants before and after the rural day experience; intention also similar for non-participants.

Germany
Rural "rural day" exposure
GP trainees
To determine whether the rural day was an effective intervention for GP workforce shortages in rural communities.

Rural "rural day" exposure

Indonesia
Medical internship in rural area
Graduate doctors (interns)
Focus group interviews of interns who had completed an internship in a rural hospital, looking at factors important in their retention.

Focus group interviews

The rural medical internships were perceived negatively, characterized by financial hardship and adverse workplace culture. Most did not intend to continue working in a rural area.

Education

Sibera
Continuous professional development (CPD)-model using mobile learning and regular mentoring

Midwives
To address the competency of the midwifery workforce to address high maternal mortality in rural locations.

Two-component CPD model: face-to-face mentoring of midwives and mobile learning and skills training completed by 24 midwives in the pilot study.

The new CPD programme links maintenance of professional competence through continuous training and mentoring and highlights potential and future positive impact to improve capacity, knowledge and skills of midwives.


Education

Norway
Decentralized nursing education (DNE) model for rural practice as part of a bachelor programme in nursing

Nursing students
The study investigates how the DNE has impacted recruitment and retention of DNE students in rural health care services.


231 graduates participated. 87.5% of registered nurses (RN) were employed at community health services, with 94.8% retention rate. 52% also completed pregraduate education afterwards. Reasons for doing the DNE included family responsibility (46.9%) and possibility to study part-time (61.2%). The DNE provides sustained health care services model in rural Norway.


Education

Norway
Interventional model to professional development in rural areas. Both internship and postgraduate training take place in all the small municipalities in the county.

Primary care doctors
Establishment of a new primary care internship in the northern Norway.

Ongoing study comparing the recruitment and retention of early sign-up model regarding the recruitment and retention of doctors to a rural area compared with the regular lottery model.

The proportion of interns who signed-up early that still worked as doctors in the study area by April 2014 (98%) was twice as high as in the regular intern's (53%) and interns in the comparison area (54%). Among the 59 interns who signed-up early still working in the study area in April 2014, 33% had grown up in this area. The early sign-up model had a net contribution of additional doctors to the study area, even though the number of additional doctors recruited through this special arrangement was limited.


Education

Philippines
Establishment of medical school in underdeveloped rural area

Doctors
Study explored the impact of a medical school in a rural underdeveloped area on improvement in medical workforce and population health outcomes.

The retrospective case study measured the number of graduates practicing in the Philippines, the number of local municipalities with doctors, and changes in the provincial infant mortality rate.

66% of graduates were practicing in the local underdeveloped areas. 55% increase in municipalities with a doctor. 90% decrease in infant mortality in the region (compared with 56% reduction nationally).


Education

Thailand
Community-based learning (CBL) at rural medical education centre, amongst medical students enrolling from rural backgrounds

Graduate doctors, rural track versus CME (rural background students)
The Collaborative Project to Increase Rural Doctors (CPIRD) has been operating since 1990 in order to increase rural doctor supply. Student admission with rural background recruitment is used for a selection method. All CPIRD students study in campus like normal track students during 3 preclinical years. They have clinical rotations during their last 3 years at rural and regional hospitals which includes some community based learning.

Cohort study
Overall 17% 6th retention rate. CPIRD retained 73.1% versus normal track 58.8% p<0.001. Graduates only associated with higher retention. CPIRD doctors worked rural 63.3% compared with normal track 1.0% (p<0.001). Retention after initial 3 year commitment very common. The specific geographical location had an impact, with the North east and South having greater retention. Greater contact hours of CBL during the degree was associated with greater retention OR 1.275 (1.030-1.546) p=0.015.


Education

Thailand
Collaborative Project to Increase Rural Doctors (CPIRD) governing a rural admissions process, collaborative training between medical schools and the medical and professional return to service in their home provinces once graduated

Doctors
This study compares retention rates 2002 to 2013 in two pathways: CPIRD and non-CPIRD for medical school graduates between 2003 to 2007.

Kaplan-Meier method of survival analysis and Cox proportional hazards ratios.

The predicted median survival time in rural hospitals was 4.2 years for the CPIRD group and 3.4 years for the normal track. The normal track doctors had a significantly higher risk of leaving rural practice. No significant difference in mortality between both groups.

Overall 57.6% retention rate. CPIRD retained 72.1% versus normal track 53.8% p<0.001. Students in the CPIRD group were 6.7 times more likely to choose family medicine; 3.7 times more likely to choose obstetrics and gynaecology; and 4.1 times more likely to choose internal medicine compared with the normal track.


Education

United Kingdom
The GP-rural fellowship programme of cumulative follow from 2005-2005 – 1 year programme of rural training for new GPs, with return of service (RGS)

Non-RMED graduates.

Newly qualified GPs
The article reports on a survey of the output of the Fellowship from 2002 to 2013 to understand its influence on recruitment and retention of GPs in rural Scotland.

A survey of all previous rural fellows from 2002-2003 and 2012-2013 was completed in the first quarter of 2014.

A total of 65 GPs were able to be included in the survey with a response rate of 88.53% (59 respondents) were currently working in general practice. 46 (71%) were working in rural areas or accessible small towns in Scotland. No prior intention to work in rural practice confirmed. Further evaluation needed.


Education

United States of America
Preprofessional, preclinical years: exploring the challenges and benefits of rural residency programmes

Medical residents, rural communities
Examines particular benefits and challenges of developing residency training programmes in rural and underserved communities. In particular, lessons learned from the Health Resources and Services Administration's (HRSA) Teaching Health-Center Graduate Medical Education (THCGME) programme.

Review of the programme management and evaluation of the THCGME programme and site visits to teaching health centres (THC's).

Concluded rural-based health workforce training programs have the potential to increase the size of the health workforce, improving the ability to overcome historical challenges in the recruitment and retention of medical providers.


Education

United States of America
Rural Health Medicine Education Program (RMEP), University of Illinois

Medical students
The study reports on retention and practice outcomes of RMEP programme in comparison with non-RMEP graduates between 1997 and 2007.

Koocher P, et al. From various sources related to characteristics of RMEP and non-RMEP students was gathered. Basic information on RMEP graduates regarding practice location and specialty is tracked by RMEP programme office, and was compared with non-RMEP graduates.

55.2% (203/369) of graduates of 1997-2007 were still in practice. RMEP graduates were 3.4 times more likely than non-RMEP graduates to choose family medicine, 3.7 times more likely to choose a primary care practice specialty, 3.2 times more likely to be currently practicing in a rural location, and 3.3 times more likely to be currently practicing in a primary care shortage area. Analysis of Current RMEP graduates practice location indicates that 58% were within 50 miles of their 4th year supervising community. Among RMEP graduates practicing in Illinois, 62.3% and 72.1% were located within 50 and 90 miles respectively of their home town.


Education

United States of America
Rural academic and clinical training

Medical students
Description of new medical education programme involving student outreach, recruitment, admissions, curricula, site and faculty development, and evaluation.

Describes preliminary outcomes of recruitment of students interested in future rural practice and placement in primary care residency. Longer term outcomes such as graduates entering rural practice are still unknown.

Education United States of America

Comparison of face-to-face academic detailing vs distance learning technology to assess the satisfaction and impact of academic detailing delivered by a trained clinical pharmacist.

Improving prescription practices and medical decision-making approaches through web-based, using evidence-based medical knowledge in an effective way to improve targeted behavioral changes of clinicians, especially those residing in rural location. This study aimed to compare face-to-face vs web-based/video-conferencing outreach approaches.

Four family practice clinics participated, two undertaken face-to-face learning and two a mix of technology-enabled distance learning. Different content areas were surveyed, within different survey questions.

There was no statistical significance between in-person and distance education satisfaction.

Overall 90% of participants reported being satisfied, or very satisfied with the educational approaches utilized. Those in the distance learning group scored higher in all programme satisfaction content areas compared with those from the in-person group. In person group participants scored higher for all educational impact content questions as well as when rating the likelihood of participating in future programmes. Study limitations and sample size limit generalizability; however, overall, clinicians preferred face-to-face educational detailing approaches in these rural practice settings.

References


Education United States of America

Rural nursing residency programme

Nursing

Prospective longitudinal comparative study of job satisfaction, job stress and decision-making. Two residency programmes, one rural and the other urban. Two groups were compared over time in job stress, job satisfaction and decision-making.

At the end of the programme rural residents had significantly lower job stress level and higher job satisfaction level than urban.

<table>
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<th>Regulatory Evidence Profiles</th>
<th>Category of Evidence</th>
<th>Country</th>
<th>Intervention</th>
<th>Occupation(s)</th>
<th>Description</th>
<th>Study Design and Methods</th>
<th>Reported Results</th>
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<tr>
<td><strong>Australia</strong></td>
<td>Mandatory minimum 6-month training in a rural area for GP trainees - registrars</td>
<td>Doctors (GP registrars)</td>
<td>This study aimed to examine the experiences of GP trainees during their 6-month mandatory rural term and the influence it had on their career intentions.</td>
<td>Qualitative methodology: semi-structured, in-depth interviews with GP registrars who had completed or nearly completed their compulsory rural term. 15 registrars participated. The thematic analysis was performed on the recorded and transcribed interviews.</td>
<td>Though generally a rewarding clinical experience, negative aspects of the rural placement included the displacement of personal lives of rural relocation and the stressors involved in higher levels of clinical responsibility. These stressors under mine rather than enhance clinical confidence. Anxiety and depression were accompanied for some registrars. Intention to practice rurally was not strongly influenced by this compulsory placement.</td>
<td></td>
<td>Bayne SI, Maguire PJ, Swatman JM, Regan CM. Effects of compulsory rural vocational training for Australian general practitioners: a qualitative study. Aust Health Rev. 2011;35(2):85-90.</td>
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<td><strong>Australia</strong></td>
<td>Rural scholarships for students</td>
<td>Allied health students</td>
<td>This study involved a review of the Queensland Health Rural Scholarship Scheme, impact on rural workforce, and attitudes of scholarship recipients to rural practice and support requirements.</td>
<td>Mixed-method study: quantitative analysis of scholarship data on workforce outcomes, and qualitative study from interviews with 12 past or current scholarship holders and 11 managers of scholarship holders.</td>
<td>The study found good general support for the scholarships. The majority of scholarship recipients had completed their bonded service requirement, and most reported they would have gone into rural practice anyway. Several aspects of professional support were identified as necessary for retention.</td>
<td></td>
<td>Deevie SG, Williams G, Nielsen L. Rural allied health scholarships: do they make a difference? Rural Remote Health. 2013;13(2):2491.</td>
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<td><strong>Bangladesh</strong></td>
<td>Career development opportunities, compulsory service and medical school outside of major cities</td>
<td>Doctors</td>
<td>To analyse three policies: better access to health services in underserved communities for financial incentives (bursaries, training positions, and 80 service users were interviewed.</td>
<td>Qualitative study. Key informant interviews. Implementation of policy for recruitment, compulsory service and strategies to retain doctors were often not well enacted, contributing to ongoing failures in retaining rural doctors.</td>
<td></td>
<td>Jardiner T, Rawal LB, Ahmed Sha, Uddei A, Evans FG. Retaining doctors in rural Bangladesh: a policy analysis. Int J Health Policy Manage. 2018;7(2):107-118.</td>
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<td><strong>Brazil</strong></td>
<td>Observational study</td>
<td>Doctors</td>
<td>Observational study of the programme “Mais Médicos” launched in 2013.</td>
<td>Observational study. Primary Healthcare Doctors Scarcity Index used. It makes it possible to characterize the supply of doctors beyond the suggested criteria usually used of doctors per 100,000 population between 2003 and 2015.</td>
<td>The programme helped reduce the number of municipalities with a shortage of doctors from 1218 to 777. This impact also helped reduce inequalities between municipalities, but inequities in distribution persisted. It was also found that there was a reduction in the regular supply of doctors trained by municipalities, suggesting that numbers were being simply supplied by the supply coming from the programme. Thus, an overall situation of insecurity in care persists, reflecting the dependence of municipalities on the supply of doctors from the federal government.</td>
<td></td>
<td>Girerd SP, Straten AC, Cella JR, Wan Der Moss L, Carvalho CL, Faro Edde D. Impact of the Mais Medicos (More Doctors) Program in reducing physician shortage in Brazilian primary healthcare. Ciencia &amp; Saude Coletiva. 2016;21(9):2877-2884.</td>
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<td><strong>Brazil</strong></td>
<td>Implementation of the Mais-Doktors Program (MDP) to address shortages in regional areas</td>
<td>Doctors</td>
<td>The MDP was a politically driven programme developed to improve physical structure of the health care network, provide educational reforms in schools and residency, and increase supply in areas of need.</td>
<td>Descriptive study of the Ministry of Health database, investigating baseline demographic, regional distribution and doctor placement aspects of regions participating in the programme.</td>
<td>80% of Brazilian municipalities participated, with 52.8% in critical regions of need. 1416 doctors joined during the programme. Selection criteria further identified suitable doctors for the programme, of which 80% were medical aid workers. Reduction in shortfall of doctors for areas of need was identified. Various challenges inhibited effective implementation; however, an overall increase in access to primary health care in areas of need was seen.</td>
<td></td>
<td>Oliveira JP, Sanches MF, Santos LM. The Mais Medicos (More Doctors) Program: the placement of physicians in areas with a shortage of doctors in Brazil from 2013 to 2014. Ciencia &amp; Saude Coletiva. 2016;21(9):2719-2727.</td>
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<td><strong>Canada</strong></td>
<td>Return for service (RFS) agreements to work in underserved communities for financial incentives (bureaucracy, training positions, student loan support)</td>
<td>Doctors</td>
<td>A study to evaluate retention of doctors under the return for service agreements (RFS) programme in Newfoundland and Labrador (rural Canada).</td>
<td>Retrospective audit for a programme, evaluation sample: all doctors who held a RFS agreement 1997-2009 compared with those who didn’t.</td>
<td>The RFS programme improves retention of doctors. Part 1: Proportion of RFS doctors who completed service obligations was 71.6%; Part 2: RFS doctors were 3.2% less likely to leave province than non-RFS doctors. A chi-squared test confirmed that RFS doctors worked longer in the province than non-RFS doctors (p = 0.006).</td>
<td></td>
<td>Mathews M, Health S, Neufeld M, Tamara W. Evaluation of physician return-for-service agreements in Newfoundland and Labrador. Healthcare Policy (Politiques de santé). 2013(8)(3):42-56.</td>
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<td><strong>Canada</strong></td>
<td>Rural family physicians with generalist roles</td>
<td>Doctors</td>
<td>To explore the professional, personal and community dynamics of the retention of doctors in rural communities in Alberta that retained family doctors for 4 years or longer, and to develop a preliminary 9 element framework for doctors’ retention.</td>
<td>A qualitative, collective case study design to study rural communities (towns) in Alberta that retained family doctors for 4 years or longer. Participants included doctors, staff members, spouses and community members. Data collected from interviews, documents and observations were analysed.</td>
<td>Doctors’ decisions to stay in a particular community is influenced by the supply of doctors, occupational dynamics, scope of practice and practice set-up across all communities, while in other communities, innovation, management and support also emerged as influencers. “Why do I stay here? Because I can do the stuff that I’m trained to do. If I move to [another city], they won’t allow me to do [procedures] or look after sick patients... I would be put into family practice, not rural general practice”. The relationship between doctors and the community was perceived as mutually beneficial, with doctors working hard to care for patients and contributing to the community, while community members showed gratitude and respect through community initiatives and continuing support as patients.</td>
<td></td>
<td>Cameron FJ, Eiste DC, Worthington CA. Professional, personal and community: 9 elements of physician retention in rural communities. Canadian J Rural Med. 2012;17(2):47-55.</td>
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<td><strong>China</strong></td>
<td>Universal health coverage in 2009</td>
<td>Health officials, health workers including county senior health officials, hospital directors, senior and junior doctors, nurses, and service-users (patients)</td>
<td>Study addressing impact of achieving universal coverage – survey topics for health officials included progress, achievements, problems and challenges; health workers topics included persons, salaries, essential drugs list, changes in income and workload; service user topics included health services and costs.</td>
<td>In-person interviews were conducted from Jan to Mar 2013. 8 health officials, 86 health workers, and 80 service users were interviewed.</td>
<td>Differences in co-payment rates resulted in increased use of outpatient services and thus increases in medical costs. Introducing the essential drugs list removed incentives to over-prescribe but also resulted in income loss for health workers and loss of autonomy for doctors; issues with drug procurement resulted in experienced health workers moving away from township hospitals and patients seeking care at relatively more expensive county hospitals.</td>
<td></td>
<td>Zhou XD, Li L, Heikell T. Health system reform in rural China: voices of healthworkers and service-users. Soc Sci Med. 2014;137:134-141.</td>
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Regulatory India None observational Doctors (allopathic, ayurvedic and homeopathic), nurses and medical specialists, plus key informants Interviews and observations of health facilities and review of state policies, to understand factors in the decision of health workers to stay in or leave a rural area. Qualitative, semi-structured interviews based on WHO 2010 framework of factors affecting decisions to stay in or leave rural and remote areas; health systems and community support. Emergency, retention and sustainability of health workers in remote and rural areas. CBTBs most common motivation was to serve rural populations, while over 50% current DTTBs joined the programme due to return of service obligations. Those who joined due to return of service experienced significantly less job satisfaction. Lack of support from local government units (LGUs) was the most common factor impeding retention. CBTBs members. Review of technical and grey material. Community doctors were more likely to leave rural areas due to lack of support from LGUs. Leonardia JA, Pyhrych H, Rongola E, Nolita KG, Ruppel A. Assessment of factors influencing retention in the Philippine National Rural Physician Deployment Program. BMC Health Serv Res. 2012;12:411.

Regulatory Pakistan Evaluation of the success of the new role of community midwives providing home deliveries in a specific rural district of Pakistan Community midwives Community midwives were introduced as an intervention to ensure skilled attendance at births in rural areas where the rate of maternal death associated with birth is well below Millennium Development Goal. Births were few. 33% had a traditional birth attendant. This study explored the experiences of medical staff in delivery of maternal care to rural communities. Community midwives are struggling for survival in rural areas as maternal care providers as they are inadequately trained, lack sufficient resources to deliver services in their catchment areas and lack facilitation for integration in district health system. Former DTTBs most common motivation was to serve rural populations, while over 50% current DTTBs joined the programme due to return of service obligations. Those who joined due to return of service experienced significantly less job satisfaction. Lack of support from local government units (LGUs) was the most common factor impeding retention. CBTBs members. Review of technical and grey material. Community doctors were more likely to leave rural areas due to lack of support from LGUs. Leonardia JA, Pyhrych H, Rongola E, Nolita KG, Ruppel A. Assessment of factors influencing retention in the Philippine National Rural Physician Deployment Program. BMC Health Serv Res. 2012;12:411.

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Regulatory Review from 70 countries Three types of compulsory service [CS] (1) condition of service; (2) compulsory - with incentives; (3) compulsory no incentives Health workers To review evidence of use of compulsory (return of) service policy for the rural and remote health workforce. Literature review, scoping of programme description and evidence of outcomes. Questionnaires for key officials in individual countries. Programmes identified in 70 countries. Most programmes had limited evidence of outcomes. In Puerto Rico, pre CS 16/78 areas had no doctors but after, all had doctors. Many health professionals objected to compulsory programmes. Success or failure largely depends on health systems and community support. Friehs K, Sullain F, Payne PW, Rice H. Compulsory service programmes for recruiting health workers in remote and rural areas: do they work? Bull World Health Organ. 2010;88(6):368-370.

Regulatory South Africa Evaluation of the success of the new role of community midwives providing home deliveries in a specific rural district of Pakistan Community midwives Community midwives were introduced as an intervention to ensure skilled attendance at births in rural areas where the rate of maternal death associated with birth is well below Millennium Development Goal. Births were few. 33% had a traditional birth attendant. This study explored the experiences of medical staff in delivery of maternal care to rural communities. Community midwives are struggling for survival in rural areas as maternal care providers as they are inadequately trained, lack sufficient resources to deliver services in their catchment areas and lack facilitation for integration in district health system. Former DTTBs most common motivation was to serve rural populations, while over 50% current DTTBs joined the programme due to return of service obligations. Those who joined due to return of service experienced significantly less job satisfaction. Lack of support from local government units (LGUs) was the most common factor impeding retention. CBTBs members. Review of technical and grey material. Community doctors were more likely to leave rural areas due to lack of support from LGUs. Leonardia JA, Pyhrych H, Rongola E, Nolita KG, Ruppel A. Assessment of factors influencing retention in the Philippine National Rural Physician Deployment Program. BMC Health Serv Res. 2012;12:411.


Regulatory United States of America Observational review of administrative records for outpatient visits seen by CHAPs in 150 rural Alaska villages (approximate population 47,370) Community health aide (CHA) and community health practitioner (CHP) in rural Alaska communities Analysis of medical records of CHAPs in 150 rural Alaska villages Systematic description of the clinical practice of PCH workers in rural Alaska communities. 272 242 CHAP visits from 250 villages were recorded in RNS NPIRS between 1 October 2004 and 30 September 2006. Of these encounters, 157 172 (64%) had at least 1 recorded clinical diagnosis. CHAPs provide a broad range of primary care in remote Alaskan communities whose residents would otherwise be without consistent medical care. Alaska's CHAP programme could serve as a health care delivery model for other remote communities with health care access challenges. Golnik C, Asay E, Prisost E, Van Liere D, Bosshart C, Round-Riley J et al. Innovative primary care delivery in rural Alaska: a review of patient encounters seen by community health aides. Int J Circumpolar Health. 2012;71:18543.
<p>| Regulatory United States of America | Retention strategy: educational loan repayments (LRPs) for rural health professionals working in an area of need | 34 doctors, 29 dentists, 26 other health workers | Quantitative study. Comparative/analytic/observational. Retrospective cohort study. Surveys sent to 122 health care providers who had been enrolled in 1 of 3 LRPs up to 2007. | Survey | 3LRPs only have a limited influence on the recruitment and retention of providers in rural Colorado. 11 (41%) of rural participants who stayed in rural communities said the LRP was an important factor in staying; however, 21 (66%) of the rural participants said they were planning on practicing in a rural area regardless of whether they received loan repayment. | Renner DM, Westfall JM, Wilroy LA, Ginde AA. The influence of loan repayment on rural healthcare provider recruitment and retention in Colorado. Rural Remote Health. 2010;10(4):1605. |</p>
<table>
<thead>
<tr>
<th>Category of Financial Incentives</th>
<th>Country</th>
<th>Intervention</th>
<th>Occupation(s)</th>
<th>Description</th>
<th>Study design and methods</th>
<th>Reported results</th>
<th>Reference</th>
</tr>
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<tr>
<td>Financial incentives</td>
<td>Australia</td>
<td>Rural practice incentive payments for general practitioners</td>
<td>Doctors - GPs</td>
<td>Analysis of effect of incentive payments before and after areas became newly eligible. General Practice Rural Incentives Program (GPRP) is a government financial incentive to GPs who continue to practice in rural areas. It increases over years and peaks after 3 years.</td>
<td>NPI: locations became newly eligible after a change to the classification of rurality. There were 761 always eligible areas and 2240 newly eligible areas. The policy change substantially increased the entry of new GPs to newly eligible areas. Overall stock of rural GPs did not change - did not full either. The incentives did not seem to have any positive impact on encouraging existing GPs to relocate.</td>
<td>Yung S, Chou E, Galiwango H, Gure F, Haggai M, et al. Do rural incentives payments affect entries and exits of general practitioners? Soc Sci Med. 2018;194:197-203.</td>
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<tr>
<td>Financial incentives</td>
<td>China</td>
<td>National Health Insurance (NHI)</td>
<td>Western medicine physicians, Chinese medicine physicians, dentists</td>
<td>Adding impact of NHI on geographic redistribution of health providers. This study has employed an interrupted time series analysis with three separate observations for 32 years, including 36 months after NHI (including 2008). The three experimental groups are able to serve as their own control in the long term, “before” versus “after” trend analysis.</td>
<td>Data on geographic locations of health professionals are from health and Vital Statistics, Department of Health; population data are from the Demographic Fact Book, Ministry of the Interior. Spatial regression addressing impact of NHI on Gini coefficients for geographic distribution.</td>
<td>Well reflecting universal health coverage all citizens and proper financial incentives to providers resulted in more equal geographic distributions among Western medicine physicians, Chinese medicine physicians, dentists.</td>
<td>Tang Ch, Huang Y, Health INS. Redistributive effects of the National Health Insurance on physicians in Taiwan: a natural experiment time series study. Int J Qual Health. 2013;12(1).</td>
</tr>
<tr>
<td>Financial incentives</td>
<td>India</td>
<td>The Chhattisgarh Rural Medical Corps (CRMC) scheme</td>
<td>Health workers: doctors, staff nurses, auxiliary medical technicians, rural medical assistants</td>
<td>To highlight the process of implementation of CRMC, its outcomes in improving the availability of resources in underserved areas, and identify implementation loopholes.</td>
<td>Qualitative and quantitative research methods across 13 health facilities over three districts; data were collected and open-ended questionnaires for key informant (KI) interviews. Descriptive analysis of government documents about the CRMC scheme using a thematic analysis approach.</td>
<td>1160 health workers passed CRMC areas in 2010–2011 which increased the vacancy rate from 60% to 4% across facilities. It then increased to 50% in 2011–2012 with majority deployed in difficult areas. CRMC benefits and extra points during PG admission proved to be the main reasons for retaining medical officers in CRMC areas. Concerns were expressed regarding the irregular payment of financial incentives and the provision of incentives being based on overall performance of facilities. CRMC has positively impacted the retention and addition of resources in difficult areas. Gaps were identified in implementation conditions.</td>
<td>Njuguna J, Mwangi P, Kamau N. Incentives do they work? Indian J Public Health. 2012;56:200.</td>
</tr>
<tr>
<td>Financial incentives</td>
<td>Indonesia</td>
<td>Compulsory service, contracted staff, special assignment</td>
<td>Health workers</td>
<td>Policy report describes programmes, including compulsory service, contracted staff and special assignment for health workers over time period; correlating location of contracted staff by remote and very remote.</td>
<td>Policy report describes programmes and availability of health workers over time intervals (2006–2013).</td>
<td>Most targeted programmes used financial incentives on the main interventions; however, also included were containing professional education and eventual opportunities for civil service employment. Recruitment of health workers from rural backgrounds increased willingness to serve in remote areas.</td>
<td>Sitorus F. Health worker recruitment and deployment in remote areas of Indonesia. J Rural Remote Health. 2012;12(2).</td>
</tr>
<tr>
<td>Financial incentives</td>
<td>Israel</td>
<td>Incentive payments of NIS 200,000 (US$ 56,000) based on 2012 exchange rates (equivalent to approximately, 14 months’ salary) for residents choosing to work in a hospital in the periphery (an extension of specialty) or in a specialty in crisis</td>
<td>Doctors in residency</td>
<td>Analysis of impact of incentive programme on choice of peripheral versus central residency programme. Impact of where doctor had originated (peripheral/central) and intentions during medical school were also checked, and surveyed reasons for their choice.</td>
<td>Data file from the Scientific Council of the Israel Medical Associations, compared years prior and after the 2011 incentive agreement. A national survey conducted in 2015 of residents who began their specialization in 2013–2014, via an internet survey with telephone backup. The response rate was 74%.</td>
<td>Pre-2011–12-2015 residents worked peripherally, compared with 23% in 2013. After the 2011 incentives began, there was a large increase in the number of medical residents in Israel, in both the periphery and in the centre. There was a small increase in the periphery’s share of those residents, and that increase was concentrated predominantly of doctors who were graduates of non-Israeli medical schools. About half of all hospital residents in the periphery reported that the incentives contributed to their choice of residency location. However, about 40% of that group also reported that they had already been interested in medical school in the periphery, while 40% of that group (i.e., 30% of all the residents working in the periphery) had such plans prior to medical school. About 70% of the residents in peripheral hospitals grew up in the periphery. Incentives affected residency location decisions for a non-negligible proportion of young doctors, particularly among those who grew up in the periphery. 50% of the residents in the periphery would like to continue working there, suggesting the increased staffing and incentives improved intention to stay.</td>
<td>Asherley Y, Gordon M, Robson B. Using financial incentives to attract medical residents to the periphery: the Israeli experience. Health Policy. 2012;105(2):60-66.</td>
</tr>
<tr>
<td>Financial incentives</td>
<td>Kenya</td>
<td>Incentives among health workers in a remote Kenyan district</td>
<td>Health workers</td>
<td>Decentralization of health services impacts health worker retention in rural areas; incentives may provide opportunities for health worker retention in rural regions.</td>
<td>Descriptive analysis of human resource data and health worker surveys (semi-structured questionnaires)</td>
<td>All health workers surveyed. 80% reported a negative impact on family life, and some number received landlord/landlord assistance. Lack of amenities and resources provided for workers. A general lack of organization/communication of services, utilities and incentives was seen.</td>
<td>Njuguna E, Musangi I, Kamau A. Incentives among health workers in a remote Kenyan district: implications for improved county health system. J Rural Remote Health. 2015;10(3):201-214.</td>
</tr>
<tr>
<td>Financial incentives</td>
<td>Malaysia, India, Mexico, Pakistan, Tunisia, Ukraine, Bangladesh</td>
<td>Rural Remote Health. 2012;12(2):</td>
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<td>Financial incentives</td>
<td>Nepal, Bangladesh, India, Kyrgyz, Public Health. 2015;13(2):</td>
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CIMH = case studies of programmes that had trained >30 GPs, been sustained for at least 5 years and had a retention rate of 85% or more. Case studies provided a variety of documented approaches to remuneration including: (a) part-time volunteers, working limited hours without regular financial incentives; the female community health volunteer (FCHV) programme from Nepal; (b) volunteers that sell health merchandise; Bangladesh Rural Advancement Committee (BRAC) programme from Bangladesh; (c) doctors treated as volunteers; the Accredited Social Health Activist (ASHA) programme in India; (d) full-paid time; the CRMC (chattisgarh) (i) in the Islamic Republic of Iran; and (d) both full-time and volunteer CHWs working together; health watershed programmes (HWP) in Ethiopia. Mixed methods, case studies review | Both full-time and volunteer CHWs can become demotivated if they do not have access to adequate training, quality supervision, community acceptance or appreciation or if they are expected to work longer hours than they can realistically manage while fulfilling other their commitments. Full-time paid CHWs can further lose motivation if their allowances are not provided in a timely manner. The use of gifts and community appreciation seems to be of value to all CHWs. All of the programmes had high rotational rates and contributed, albeit in different ways, to improving health outcomes in the communities they were working. However, comparing the work of a Doctor (rural health care worker) in the Islamic Republic of Iran who has received 2 years of university-based training and is employed full-time in government service with a CHW in Nepal who receives 15 days of training and works with the community 5 hours per week does not seem useful. Despite the higher level of mastery that the Republic of Iran who has received 2 years of university-based training and is employed full-time in government service with background contributed to their choice of residency location. However, about 40% of that group also reported that they had already been interested in medical school in the periphery, while 40% of that group (i.e., 30% of all the residents working in the periphery) had such plans prior to medical school. About 70% of the residents in peripheral hospitals grew up in the periphery. Incentives affected residency location decisions for a non-negligible proportion of young doctors, particularly among those who grew up in the periphery. 50% of the residents in the periphery would like to continue working there, suggesting the increased staffing and incentives improved intention to stay. | Azhere Y, Gordon M, Robson B. Using financial incentives to attract medical residents to the periphery: the Israeli experience. Health Policy. 2012;105(2):60-66. |

**Table 1**: Financial incentives evidence profiles.
<table>
<thead>
<tr>
<th>Financial incentives</th>
<th>Pakistan</th>
<th>Introduction of new occupation category of skilled birth attendants</th>
<th>Community midwife workers (CMW)</th>
<th>Analysis of new CMW workforce effectiveness in achieving successful practice and thus leading to improved rate of skilled birth attendance and reduced maternal mortality. Institutional ethnography conducted on a random sample of CMW practices including interviews of institutional level respondents and community members to determine level of functional practice. Low rate of trained CMWs providing services. Identified factors positively influencing work as CMWs include: single marital status, older trainees, family support for CMW to work driven by family poverty (social norm is woman as dependent), good business skills and professionalism, providing care model identified as respectful.</th>
<th>Mumtaz Z, Levay AV, Bhatti A. Successful community midwives in Pakistan: an asset-based approach. PLoS ONE. 2015;10(9).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial incentives</td>
<td>United Kingdom</td>
<td>Funding to individual and team allied health professionals: physiotherapists, occupational therapists, speech and language therapists, radiographers and dieticians, and managers of multidisciplinary teams; managers of teams and recruits.</td>
<td>Reports on the thematic analysis of the influence of financial incentives used over a period of time on recruitment in hard to fill jobs, plus retention. Semi-structured interviews and survey questionnaire with thematic analysis of managers, recruits and teams. Positive outcome although 42% claimed the financial allowance had no influence, the secondary benefits did limited use of funds for what they wanted, e.g. CPD, new equipment etc. For those who did not stay, promotion was the main reason for leaving. More benefits than just recruitment, and few negative impacts.</td>
<td>Solowiej K, Upton P, Upton D. A scheme to support the recruitment and retention of allied health professionals to hard to fill posts in rural areas. Int J Ther Rehabil. 2010;17(10):545-553.</td>
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<tr>
<td>Financial incentives</td>
<td>United Republic of Tanzania</td>
<td>Pay for performance (P4P) schemes</td>
<td>Health workers and district managers</td>
<td>Interviews, focus group discussions with health workers and regional district and facility managers on work-environment characteristics, and staff attitudes towards work. 75 facilities and 101 health workers were interviewed. Only 7% were satisfied with salary/employment benefits; less than 20% of facilities had adequate resource availability; 62% had sufficient supervision; less than 40% reported satisfaction with access to utilities and appropriate facilities; and barriers due to community attitudes were identified. Issues for consideration include those of appropriate infrastructure, educated/skilled staff available, and adequate resources to implement P4P schemes.</td>
<td>Olafsdottir AE, Mayumana I, Mashasi I, Njau I, Mamdani M, Patouillard E et al. Pay for performance: an analysis of the context of implementation in a pilot project in Tanzania. BMC Health Serv Res. 2014;14:392.</td>
</tr>
<tr>
<td>Financial incentives</td>
<td>Zambia</td>
<td>A rural hardship allowance per month with occupations in rural and extremely rural districts getting more than those in peri-rural districts. Education allowances per year per child aged between 5 and 21 years. Paid renovation funds to improve accommodation, assistance for postgraduate study at expiry of contract. Registered and enrolled nurses, paramedics, dental therapists and clinical officers</td>
<td>To survey health workers to find out if they were attracted or could be retained in the Department of Health (DoH) via income and other supplementations such as those available through the scheme. Cross-sectional survey The Zambian Health Workers Retention Scheme (ZHWRS) was not successful in recruiting sufficient numbers of health workers to reverse the shortage problem, although there was an increase in health care service providers where previously there had been no service. 45% of responders have low or very low job satisfaction, 48% desire to quit working in current location - of these 33% to private, 26% outside Zambia, 18% to local NGO facilities. The Logit model showed housing allowance reduces desire to quit. Suggestions made for non-financial supports.</td>
<td>Gow J, George G, Mwamba S, Ingombe L, Mutinta G. An evaluation of the effectiveness of the Zambian Health Worker Retention Scheme (ZHWRS) for rural areas. Afr Health Sci. 2013;13(1):800-807.</td>
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</tr>
</tbody>
</table>
Support strategies evidence profiles

Category of intervention | Country | Intervention | Occupation(s) | Description | Study design and methods | Reported results | Reference
--- | --- | --- | --- | --- | --- | --- | ---
Support | Australia | Survey of hospital-based medical and nurse supervisors to discover impact of having supervisory responsibility for medical, nursing and allied health students. | Hospital-based doctors and nurses. | This study gathered qualitative data on the impact of year-long student clinical placements on senior staff with supervisory responsibility. | The study specifically included only medical and nursing clinicians with responsibility for student supervision. The data was gathered by means of individual and group-structured interviews. | Three themes were identified from the data: changes to the supervisor; change in the hospital learning culture; and student usefulness. The impact on supervisors was positive and led to improved professional satisfaction. | Connolly M, Sweet L, Campbell D. What is the impact of longitudinal rural medical student clerkships on clinical supervisors and hospitals? Aust J Rural Health. 2018;24(6):179-188.

Support | Australia | Quasi-experimental study utilising an intervention group | GPs | Behavioural intervention for rural GPs to improve stress management and increase retention | A quasi-experimental study that utilizes behavioural coaching as an intervention and comparison with a control group. Rural GPs in South Australia: intervention group (n=60), baseline group (n=203) and control group (n=312). The number of GPs staying in rural general practice was analyzed at two post-test points, 3 years apart. | Cognitive behavioural coaching reduced the stress levels of rural GPs who self-identified the need for managing stress, and it reduced their intention to leave rural general practice. Further, despite initially being more stressed compared with the general population of rural GPs, more GPs from the coaching group remained in rural general practice. | Gardiner M, Kearns H, Tiggesmann M. Effectiveness of cognitive behavioural coaching in improving the well-being and retention of rural general practitioners. Aust J Rural Health. 2013;21(3):183-189.

Support | Australia | Retention strategy: system and organizational level approaches to reduce primary/organizational level occupational stress. | 484 nurses and midwives | Quantitative study, comparative/analytic/observatio nal, cross-sectional study pre- and post-intervention design, triangulating data from surveys and interviews. Comparative design setting: two public hospitals (no odds ratio or relative risk calculated) (no control group). | For this study, a survey and archival data on staff turnover, pre-intervention survey sent to all registered nurses and midwives at two major urban referral hospitals in the Northern Territory (NT). | A system level intervention was implemented to reduce stress and turnover in two NT hospitals. Nurses in both hospitals showed significant improvement in psychological health outcomes and job satisfaction, and turnover was reduced in Hospital 2 from 83% in May 2004 to 33% in June 2010 (statistically significant) and in Hospital 1 from 46% in May 2004 to 29% in June 2010 (not significant). Using 17 indicators, and pre- and post-measures, it was concluded that the improved psychological health outcomes could be attributed to the intervention strategy implemented by the NT DoH that included strategies to improve system factors, and reduce job demands and increase job resources. The NT DoH could thus expect higher productivity, improved patient care with lower rates of turnover and absenteeism over time. | Rickard G, Lenthall S, Dollard M, Ope T, Knight S, Dumn S et al. Organisational intervention to reduce occupational stress and turnover in hospital nurses in the Northern Territory, Australia. Colloquium. 2012;19(4):211-221.


Support | Burkina Faso | Implemented a policy to recruit health workers specifically for rural areas. | Nurses, midwives and birth attendants | Government of Burkina Faso has implemented a staff retention policy - the regionalized health personnel recruitment policy. | Exploratory and qualitative study of a public policy in three remote areas in Burkina Faso. | Difficult to tell, but it was claimed that the policy had been a success after a decade of implementation. | Rouamba S, Yamengo BRR, Riddle V, Samoldi I, Baya B, Bricou A et al. An exploratory analysis of the regionalization policy for the recruitment of health workers in Burkina Faso. Hum Resour Health. 2014;12(1).

Support | Canada | Regional medical campus (RMC) | Doctors | To explore doctors’ perceptions of the factors influencing recruitment and retention, including the role of the RMC. | Qualitative cross-sectional | Recruitment factors were divided into six major themes: type of practice, spousal interest, opportunity for teaching, training in a region, workforce planning, and quality of life. Participants identified positive and negative factors associated with retention. In both cases, family and quality of work environment were mentioned. The rural medical campus was perceived as having important impacts on the quality of professional life, research, medical practice, and regional development. | Leveque M, Hatcher S, Savard D, Kamopy RV, Jean P, Larouche C. Physician perceptions of recruitment and retention factors in an area with a regional medical campus. Can Med Educ J. 2018;9(1):e74-e83.

Support | Ghana | Different types of health workers | Volunteer community health workers | This study examined the attrition rate among CHWs who participated in a cluster randomized controlled trial (RCT) on community management of fever in children under 5 in the Dangme West District of Ghana and the factors contributing to the retention of CHWs. | Mixed method approach to examine CHW attrition, correlates of attrition. Reasons for correlates of attrition were analyzed from data obtained from 520 structured interviews and 5 focus group discussions, with correlated data abstracted from the CHW database built as part of the project. | Attrition rate over 30 months of intervention was 21.2% (140/660). Results showed a statistically significant difference between attrition and all demographic characteristics except sex of the CHW. Attrition rate was lower in older age groups and was higher in females. Higher attrition rate was reported among single CHWs. Higher attrition in CHWs with post-secondary education, lowest in junior secondary school leavers. Significant positive relationship between the approval of a CHW both by the community and by the CHW’s immediate family and the probability of remaining active. CHWs working as artisans/traders were more likely to be lost to attrition. From the focus groups, the main reasons perceived by “stayers” were lack of remuneration, a possible weak sense of social responsibility and negative attitude of caregivers. | Abbay M, Barbitomehe LE, Nonognon J, Chrobah MA, Pappoe M, Bayong M et al. Factors related to retention of community health workers in a trial on community-based management of fever in children under 5 years in the Dangme West District of Ghana. Health. 2014;6(2):99-105.
<table>
<thead>
<tr>
<th>Support</th>
<th>Country</th>
<th>Study Title and Objective</th>
<th>Study Design</th>
<th>Sample Size</th>
<th>Key Findings</th>
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<tbody>
<tr>
<td>Support</td>
<td>Ghana</td>
<td>Effect of motivation and job satisfaction on retention</td>
<td>Cross-sectional survey using a structured questionnaire for the interviews.</td>
<td>256 health workers from 3 districts of the East Region in Ghana.</td>
<td>Overall, 60% of the respondents reported to have turnover intentions. Motivation (OR=0.74, 95% CI: 0.60-0.92) and job satisfaction (OR=0.74, 95% CI: 0.57-0.96) were significantly associated with turnover intention and higher levels of both reduced the risk of health workers having this intention. The dimensions of motivation and job satisfaction significantly associated with turnover intention included career development (OR=0.56, 95% CI: 0.36-0.86), workload (OR=0.58, 95% CI: 0.34-0.93), management (OR=0.51, 95% CI: 0.30-0.84), organizational commitment (OR=0.36, 95% CI: 0.19-0.66), and burnout (OR=0.59, 95% CI: 0.39-0.91). Our findings indicate that effective human resource management practices at district level influence health worker motivation and job satisfaction, thereby reducing the likelihood for turnover.</td>
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<tr>
<td>Support</td>
<td>Mali</td>
<td>Survey of staff motivation and work satisfaction after the introduction of telehealth</td>
<td>This study evaluated the effectiveness of the deployment of 100 community medicine distributors in Tororo through HBMF to treat febrile illness including malaria, diarrhea and pneumonia. Despite training, they performed poorly on their knowledge tests. They were poorly supported with variable drug supply which caused community distrust. The health workers felt disoriented by unrealistic community expectations, limited drugs and supplies, poor supervision compounded by lack of compensation, and lack of future paid opportunities.</td>
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<tr>
<td>Support</td>
<td>United Republic of Tanzania</td>
<td>Survey of health workers and managers regarding working conditions for those providing maternal care services.</td>
<td>Community medicine distributors (CMD)</td>
<td>100 CMDs; 35 had to be translated. The CMD were volunteers reasonably evenly distributed by gender and average age 40. Mean duration of work was 5 years. The CMDs had limited previous education.</td>
<td>95% CI: 0.36-0.86), workload (OR=0.58, 95% CI: 0.34-0.93), management (OR=0.51, 95% CI: 0.30-0.84), organizational commitment (OR=0.36, 95% CI: 0.19-0.66), and burnout (OR=0.59, 95% CI: 0.39-0.91). Our findings indicate that effective human resource management practices at district level influence health worker motivation and job satisfaction, thereby reducing the likelihood for turnover.</td>
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<td>Support</td>
<td>Uganda</td>
<td>Support of community medicine distributors to carry out disease treatment through home-based management of fever (HBMF) programme.</td>
<td>Community medicine distributors (CMD)</td>
<td>This study evaluated the effectiveness of the deployment of 100 community medicine distributors in Tororo through HBMF to treat febrile illness including malaria, diarrhea and pneumonia. Despite training, they performed poorly on their knowledge tests. They were poorly supported with variable drug supply which caused community distrust. The health workers felt disoriented by unrealistic community expectations, limited drugs and supplies, poor supervision compounded by lack of compensation, and lack of future paid opportunities.</td>
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<td>Support</td>
<td>Uganda</td>
<td>Objective was to identify factors associated with long-term retention of village health team members, and understand their support needs and challenges.</td>
<td>Village health teams - unpaid volunteer community health workers</td>
<td>Survey of community health workers and stakeholders to understand factors in longer-term retention.</td>
<td>VHT workers reported needing some basic supplies such as gumboots, bicycles and umbrellas. They wanted medicines to distribute as this was a culturally determined sign of legitimacy as health workers. Monetary payment would be appreciated by a significant portion, or a travel allowance at a minimum. There was significant inter-district variability.</td>
</tr>
</tbody>
</table>

For more detailed information, please refer to the following sources:
Bundled Evidence Profiles

Country | Intervention | Occupation(s) | Description | Study design and methods | Reported results | Reference
---|---|---|---|---|---|---
**Bundled**

**Australia**

- **Category of Intervention**
  - Recruitment/Retention programme
  - Rural health programs
- **Country**
  - Australia
- **Intervention**
  - Health workers
  - Doctors
  - Practitioners or teams responding to an invitation were asked to describe their role in the program and the factors that influenced their decision to participate.
- **Purpose**
  - To attract and retain health care workers.
- **Methods**
  - Multi-professional practices in underserved areas slow down the decrease in GP density occurring in those areas.
- **Findings**
  - The program increased the availability of doctors to remote and deprived areas by 29.8%.
- **Conclusion**
  - Strategies to retain health workers in rural health facilities are having some effect but more effective policies are required.

**Bangladesh**

- **Category of Intervention**
  - Recruitment/Retention programme
  - Rural health programs
- **Country**
  - Bangladesh
- **Intervention**
  - Health workers
  - Doctors
  - The program increased the availability of doctors to remote and deprived areas by 29.8%.
- **Purpose**
  - To attract and retain health care workers.
- **Methods**
  - Multi-professional practices in underserved areas slow down the decrease in GP density occurring in those areas.
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**Brazil**

- **Category of Intervention**
  - Recruitment/Retention programme
  - Rural health programs
- **Country**
  - Brazil
- **Intervention**
  - Health workers
  - Doctors
  - The Mais Medicos programme which aimed to recruit primary care doctors and provide incentives to retain them through better working conditions and increased investments in the primary care infrastructure.
- **Purpose**
  - To attract and retain health care workers.
- **Methods**
  - Multi-professional practices in underserved areas slow down the decrease in GP density occurring in those areas.
- **Findings**
  - The program increased the availability of doctors to remote and deprived areas by 29.8%.
- **Conclusion**
  - Strategies to retain health workers in rural health facilities are having some effect but more effective policies are required.

**Canada**

- **Category of Intervention**
  - Recycling of professionals
  - Recruitment/Retention programme
  - Rural health programs
- **Country**
  - Canada
- **Intervention**
  - Health workers
  - Doctors
  - The program increased the availability of doctors to remote and deprived areas by 29.8%.
- **Purpose**
  - To attract and retain health care workers.
- **Methods**
  - Multi-professional practices in underserved areas slow down the decrease in GP density occurring in those areas.
- **Findings**
  - The program increased the availability of doctors to remote and deprived areas by 29.8%.
- **Conclusion**
  - Strategies to retain health workers in rural health facilities are having some effect but more effective policies are required.

**China**

- **Category of Intervention**
  - Recycling of professionals
  - Recruitment/Retention programme
  - Rural health programs
- **Country**
  - China
- **Intervention**
  - Health workers
  - Doctors
  - The program increased the availability of doctors to remote and deprived areas by 29.8%.
- **Purpose**
  - To attract and retain health care workers.
- **Methods**
  - Multi-professional practices in underserved areas slow down the decrease in GP density occurring in those areas.
- **Findings**
  - The program increased the availability of doctors to remote and deprived areas by 29.8%.
- **Conclusion**
  - Strategies to retain health workers in rural health facilities are having some effect but more effective policies are required.

**France**

- **Category of Intervention**
  - Recruitment/Retention programme
  - Rural health programs
- **Country**
  - France
- **Intervention**
  - Health workers
  - Doctors
  - The program increased the availability of doctors to remote and deprived areas by 29.8%.
- **Purpose**
  - To attract and retain health care workers.
- **Methods**
  - Multi-professional practices in underserved areas slow down the decrease in GP density occurring in those areas.
- **Findings**
  - The program increased the availability of doctors to remote and deprived areas by 29.8%.
- **Conclusion**
  - Strategies to retain health workers in rural health facilities are having some effect but more effective policies are required.

**Malta**

- **Category of Intervention**
  - Recruitment/Retention programme
  - Rural health programs
- **Country**
  - Malta
- **Intervention**
  - Health workers
  - Doctors
  - The program increased the availability of doctors to remote and deprived areas by 29.8%.
- **Purpose**
  - To attract and retain health care workers.
- **Methods**
  - Multi-professional practices in underserved areas slow down the decrease in GP density occurring in those areas.
- **Findings**
  - The program increased the availability of doctors to remote and deprived areas by 29.8%.
- **Conclusion**
  - Strategies to retain health workers in rural health facilities are having some effect but more effective policies are required.
Multiple African countries

Partnership between university and Education and support Production of Rural Doctor (CPIRD) and increase production of rural doctors - rural and remote areas. Two compulsory service requirements in training outside capital and major cities; (particular details not provided).

Retention strategy: rural bonded support

Bundled programme consisting of compulsory service, education, and support

Multiple practice doctors, hospital staff and patients visit the clinic for training and hospital management.

Dentists - surgeons who had completed a rural surgical training programme

The Pan-African Academy of Christian Surgeons (PAACS), an NGO, rural (birth-based hospitals) joined COSECSA approval for training sites in rural locations with the goal to produce rural surgeons. African graduates of medical schools with valid medical licenses who speak English must sign a statement of faith and a 5-year service agreement in exchange for free surgical training (fees often required in African countries). COSECSA (College of Surgeons of East Central and Southern Africa) have set exams for recognized surgical qualification.

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United States of America

Medical doctors (interns)

Focus group interviews of interns who had completed an internship in a rural hospital, looking at factors important in their retention.

Multiple African countries

Doctors - surgeons who had completed a rural surgical training programme

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In return for signing a contract to work in a designated rural area for 3 consecutive years, each medical cadre earns a hardship allowance. Depending on the occupation category, they may also receive financial aid for housing rehabilitation, vehicle loan, and some facility incentives, such as provision of medical equipment and provision of solar panels.

The study design included semi-structured interviews, observations of health workers during field research in several provinces, relevant document review, use of MOH statistical data and expert opinions as well as a participant feedback survey. 68 doctors joined the scheme. “During the mid-term review 20 doctors on the scheme were interviewed. The majority of the doctors interviewed said that without the incentives they would not have come to the district where they were working. They would have tried to find more attractive postings (A or B districts), or would have left government service.” In the satisfaction analysis of health workers (through the interviews and feedback survey), education facilities for children, workload, social amenities and secondary income opportunities were all rated as “not at all satisfactory” by participants. However, overall rates showed that participants were “somewhat satisfied” with retention allowances and benefits.

An analysis of factors, through focal groups and questionnaires, that makes health workers stay in rural areas. Cross-sectional qualitative and quantitative data were collected from health workers and other stakeholders through focus group discussions and individual interview questionnaires and were supplemented by administrative data. A salary top-up for health workers in rural areas was identified as the most effective incentive; almost none of the recruitment and retention strategies were significant predictors of health workers’ job satisfaction, likelihood of leaving, or frequency of considering leaving, which were in large part explained by individual characteristics such as age, gender, and profession. These quantitative findings were consistent with the qualitative data, which indicated that existing strategies fail to address major problems identified by health workers in these districts, such as poor living and working conditions.