



A Report for the World Health Organization:

Development of a checklist for implementing rural pathways to train and support health workers in low and middle income countries



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Adopting the rural pathways approach

This document presents an evidence–informed Checklist for implementing rural pathways to train and support the rural health workforce in low and middle income countries (LMIC). Rural areas are the most underserviced around the world. Governments, NGOs, health services and communities have attempted to address health workforce supply by using single solutions. In contrast rural workforce interventions are now recognised to require multi–dimensional approaches. This Checklist consolidates the parts needed for a more holistic and coordinated system of teaching, training and supporting the rural workforce in LMIC.

A Checklist for implementing rural pathways

This Checklist has been developed by the Wonca Working Party on Rural Practice in collaboration with Monash University based on a review of LMIC literature and policies. Many global stakeholders provided input during a global consultation process to shape and fashion the document. It is a Checklist for developing all types of skilled and qualified rural health workers, so as to build strong primary care teams working at broad scope to address the needs of rural communities.

It includes eight inter–dependent action areas, each of which is important. For each of these, a series of reflective questions and a summary of evidence is provided. We found a wide range of literature and strong exemplars about rural training approaches in LMIC which which provide a culturally and contextually rich perspective of the implementation context. Evidence confirms that the more actions from the Checklist which are implemented, the greater the effect of the rural pathway for achieving the rural workforce that is needed.

As a resource, the eight action areas of the Checklist will allow governments, educators, health services, researchers and community stakeholders to reflect on their current rural pathway activity and plan for more. The Checklist provides a framework for discussion and priority setting at country, district or community levels that will facilitate more comprehensive approaches to be achieved. At the centre of both priority setting and action, is the community. Developing rural workers in rural communities, for rural communities, on rural pathways, builds the health, social and economic outcomes of these communities.

Monitoring and evaluation is essential to ensure we build a training system which incorporates continuous quality improvement processes.

Rural pathways – putting stepping stones in place and then building

Consultation identified that rural pathways are enabled by clear agreement about pathway goals, community engagement, sustained partnerships and co-investment. Some aspects of rural pathways do not need funding, but can be achieved immediately through leadership and commitment. For other aspects, funding arrangements need to be discussed. One of the greatest investments is in funding dedicated leaders who are able to span all the sectors involved and support coordinated, sustained effort for rural pathways implementation. National and rural health policies are essential to build momentum and enable rural pathway action.

Rural pathways do not need to be of perfect tarmac before they can be traversed. Rural pathways can be constructed as a series of tracks with stepping stones and key bridges which can be built up by putting in constructively aligned components over time. Once started, it is possible to add a few gates, optional routes, destinations and further experiences. But as a starting point, even rudimentary pathways established around common goals and fostered by partnerships and co-investment, have every chance of succeeding. In the medium-term developing more comprehensive rural pathways will help to address the social, economic and health outcomes, for enormous gains in LMIC.



	Community needs, rural policies and partners
Questions	 What do our rural communities need? Is the community involved in defining priorities & solutions? Which of the needs can be addressed now, to build on later? What rural health policies/plans exist to support action? Are they implemented? Are they appropriately decentralised for local action? Are new policies needed? What global, national or local partnerships could help? Are there partners who can assist? How can partnership be sustained?
Evidence ^a	First and foremost, working with rural communities is essential to define priorities and involve them in solutions. A scan of the national policies and plans for rural health provides insights into directions for governments and potential synergies between policies and the local priorities. Priorities for rural pathways may need to be sorted into an order, particularly in the face of competing demands for resources and in some cases, extensive unmet need. Government and other partners, along with decentralised finance and management is important for enabling solutions to be appropriately tailored and for ensuring appropriate technical and financial support is available.
$\begin{matrix} \nabla & O \\ \leftarrow & \bigcirc \\ \swarrow & \lor \\ \swarrow & \lor \end{matrix}$	Existing workers and their scope
Questions	 What rural healthcare teams, working within what scope, are needed? Do we already have workers with the skills for this scope of work? How have they been trained and where? What are their skills and qualifications/training for the demands of the role? Are they motivated to work at the required scope? Are they easily recruited/retained? Are there short-term recruitment options whilst longer-term workforce is developed?
Evidence ^a	The current skill levels of rural workers may not be sufficient to meet rural and remote community needs. A scan of existing rural and remote health workers and their skills, practices and motivations can inform a clear rural pathways strategy. Rural and remote healthcare teams with a wider range of skills, supported by their employers, can improve comprehensive local care and potentially help to improve health worker satisfaction and retention. However, rural communities also need to balance short-term recruitment needs with long-term workforce building processes.

	Selection of health workers
Questions	 How can we select workers for this role from the community? Are there people in the rural community that could fill roles with some education and training? What process and criteria will effectively select them from the community for the community? What entry-level standard is appropriate for coping with the training? What financial and social support would make it easier for them to access education and training? What are the cost-benefits of training these people and how can the costs of training be shared?
Evidence ^a	An extensive range of community selection options are demonstrated involving selecting people with a connection to "place", a commitment to serve others, and who are motivated to learn and invested in improving access to community health services. Universities and training courses with a social accountability for developing health workers with a desire to serve others, trained and ready to work where they are most needed tend to have more tailored selection processes which improve overall outcomes. Selection of rural background people of different race and language groups relative to the country and rural context is important, along with financial and social support for these groups to fully participate in training courses. Cost-benefits of developing new workers are important considerations and should be evaluated.
-@	Education and training
Questions	 How can we effectively educate and train people in rural areas and for the breadth of skills needed by rural communities? What bridging courses are required? What rural curriculum is relevant? Who will develop and validate this? How can theoretical and practical components of training be delivered in rural areas? How much real-time face to face and virtual supervision will help people to learn practical skills safely? How can practical learning be structured to develop the scope and complexity of skills required? How much would it cost to train/employ/support trainees and how can this be funded? What further training and career options could be developed to enable qualified workers to keep progressing after the training? How can the local government, community and champions support the training?
Evidence ^a	Optimal education and training for rural practice occurs through exposure to rural and remote practice, teams and health systems. Learning the range of skills needed is effective through distributed training systems using locally–available qualified teachers and supervisors, in the place where people are going to practice and involving of the people that the workers are going to help after they finish training. This often occurs within university and other training organisations with a social accountability for developing health workers from rural areas, who have a desire to serve others. Beyond any one course, there should be options for doing more advanced training for career progression. Training needs to cover the breadth of skills needed for the role. Sustainable funding and technical support for decentralised training is important.

	Working conditions for recruitment and retention
Questions	 How can we ensure practice conditions in the community promote health worker satisfaction, recruitment and retention? Are we recruiting people who completed training in the community to work in the community? Do the rosters make the workload sustainable? Are we creating jobs with satisfactory employment terms and variety, volume and scope of work? Is remuneration appropriately rewarding employees? Is there an orientation to the workplace? Is there orientation to the community? Are senior workers and supervisors available onsite/virtual? Is there training for health service managers? What support is there for housing and meals? Do health workers have transport for their work? Are there baseline stocks of medical supplies, equipment and drugs? Are the health service buildings and clinical infrastructure of reasonable standard? Is there subsidies for work away from home? Do workers have access to technology support and internet? Is there rural health team cohesion?
Evidence ^a	Education and training is only likely to be effective in recruiting and retaining health workers if the practice conditions are right, there is a supportive learning culture in the health service, there are sufficient supplies and clinical infrastructure, good remuneration, and sustainable workload. Health worker motivation and engagement is better if employers regularly check in with them about their goals and any factors impacting their performance. Structured orientation and community-based projects for new staff can improve transition to rural work as a new worker and interest in continuing in the role.
	Accreditation and Recognition
Questions	 How can trained rural workers be accredited and recognised for transferability of the qualification? What qualification can they be given? How can the community value graduates of the training? Is there a professional title for graduates? Are the graduates recognised at country level for what they do? Can the graduates be paid appropriately for using the skills they have developed? Do they have options for progressing their career path?
Evidence ^a	Accreditation and formal professional recognition of the worker is important for recognising their training and scope of work. It helps reinforce the value of their personal commitment in doing more training and supports their retention in the role and use of all their skills. It also helps the community to identify qualified health workers.

	Professional support and up-skilling
Questions	 How can rural workers be professionally supported? What senior clinician support and supervision is available? Are the information systems available to the health workers optimal for the job? What systems (outreach, telehealth and onsite) are there for getting feedback on challenging cases? What refresher courses and simulations could be available for low volume but important skills? How can the health workers access peer support – professional meetings and practice discussions? What professional networking is possible? Are there opportunities to participate in local research projects?
Evidence ^a	It is important to provide professional supervision and networking opportunities to reduce health worker isolation and reinforce skills development. Online communities of practice and peer exchange systems can be useful but they need to be tailored to the health workers' needs, organised and evaluated. If senior staff are not onsite, then at least monthly virtual or face to face meetings and case reviews by senior staff should be facilitated.
RRR	Monitoring and evaluation
Questions	 Are the activities and outputs of the programme being implemented as planned? What are the intended outcomes of rural pathways and how can we collect data to measure this effect? Do we have workforce registries and health data or how can these be built and managed? Are partnerships set up for strong evaluation? What do we want to measure? Is community need being monitored? Are selection and training effective for pathways goals? Are there more rural students/local workers and supervisors?
	 Is professional development effective? Is there more infrastructure? Is workforce retention better? Are health services of higher quality? (earlier intervention, continuity and prevention measures) Have there been changes in service volume and complexity? What are the social, economic and health outcomes in the community?

^a Evidence is based on a scoping review of 127 articles identified in relation to the rural training pathways for the health workforce in low and middle income countries 1998–2018, a global consultation and review of global human resource for health policies.

Applying the Checklist to implement a rural pathways approach

Who is involved and how?

Rural pathways to train and support the rural health workforce involve an integrated system of measures and stakeholders. To produce effective outcomes, all the elements need to be synergistic and coordinated. Without key elements they can be dysfunctional or destructive.

At the centre, as the main key to driving the system, is the rural community or the region. Communities who are engaged in selecting, developing, supporting and monitoring their own rural health workforces are essential for rural pathways to be appropriately tailored, sustainable and effective. The diagram depicts the community as the cogwheel about which any other action for implementing rural pathways revolves.

All of the other elements of the checklist actions, represented in the other wheels are required to support the process and also articulate with the community. They are fundamental to the progress of the pathway. The actions in the areas of selection, education and training, professional development and upskilling, worker support and meaningful qualifications and recognition are intrinsically linked with the need for monitoring, evaluation and quality improvement.

For these actions to occur, an integrated and sustainable layer of partnership between stakeholders, committed to the workforce needs of rural communities needs to occur. This layer wraps around and invests in rural training pathways as a seamless belt around the whole system. The tread of this layer is broad enough to buffer the wheels, including the community, from external forces. It holds the actions and the community together and harnesses the power of the community. With all of these components interplaying, synergy and synchrony is possible and sustained progress in rural health workforce training pathways occurs.



Applying the Checklist to implement a rural pathways approach

Central and South America

Africa

Eastern Mediterranean

South Ea

Where can we find exemplars in our region?

The Checklist for implementing rural pathways outlines the component actions for integrated rural pathways to train and support of the rural health workforce in LMIC.

Implementation of the Checklist actions can be informed by examples. The following exemplars have been drawn from a range of disciplines, LMIC countries and WHO regions. Together they span the globe and provide some insights into effective approaches that could be adopted. Many may also support the development of new and effective collaborations.



South East Asia

EXEMPLARS ^a	IMPLEMENTATION
The Collaborative Project to Increase Production of Rural Doctors (CPIRD)	The Collaborative Project to Increase Production of Rural Doctors (CPIRD) was initiated in 1994 in Thailand as a policy targeting rural selection into medical school and rural training tracks with rural return of service as an innovative example of educational policy in a LMIC. Since 2005, the CPIRD has initiated 4 different tracks (regular CPIRD) to select rural high school students, one district-one doctor programme (ODOD) (for remote high school students), a regular post-graduate programme (for people with medical-related bachelor degree) and a post-graduate programme for civil servants with medical-related bachelor degrees. It has been comprehensively evaluated using control groups to show positive academic, rural recruitment and retention results.
Fellowship in Secondary Hospital Medicine (FSHM) by Christian Medical College (CMC) Vellore	In India a Fellowship in Secondary Hospital Medicine (FSHM) is a year-long blended on-site and distance learning programme implemented in 2007 by Christian Medical College (VMC) Vellore. It provides education and professional support for junior doctors doing required rural service terms in rural hospitals. It consists of 15 paper-based distance learning modules to support skills for work in rural hospitals, professional networking, and project work focused on improving rural services with promising results for participants.
National Rural Health Mission in India develops Social Health Activists	The National Rural Health Mission (NRHM) started in India in 2005, focused on 18 deprived rural states to increase access to institutional antenatal care. Decentralised funding and planning assisted states to define their health priorities. Training was expanded for developing accredited Social Health Activists (ASHA) in partnership with the non-government sector. These were female workers drawn from the same community they intend to work in. Evaluation showed an impact on health and social inequalities in high focus NRHM states, with increased uptake of maternal healthcare, and decline in socioeconomic inequity.
Christian Medical College (CMC) Vellore provides decentralised general practice training	To improve the skills and confidence of rural doctors to manage the wide range of conditions they see in the community, the CMC Vellore launched an initiative to "refer less resolve more". It offers a "two year family medicine diploma course" for rural doctors by distance mode. It is an innovatively–written programme consisting of problem–based self–learning modules, video–lectures, video–conferencing, and face–to–face contact programmes. Ten secondary level hospitals across the country, under the supervision of national and international family medicine faculty, form the pillars of this programme. Between 2006 and 2011, 942 general practitioners were enrolled.
A government of Nepal and Nick Simons Institute (NGO) partnership for training family physicians	In 2006 the government of Nepal and Nick Simons institute (NGO) progressively implemented a programme to develop family physicians for remote Nepalese hospitals. Firstly, 1–2 qualified family practice doctors were recruited per programme and hospital. Students were competitively selected and given scholarship support and bundled incentives for participating in the three year post–graduate programme with a binding contract to work in the remote hospital for three years. In–service training was provided for all staff for an effective hospital team. All seven programme hospitals became providers of emergency obstetric care and doctors did 10–50 caesarian sections per year and lessons learnt were the need for continued refinement of the pathway for addressing emerging issues.
Family Medicine Programme (FMP) in Timor-Leste	In the year 2000, there were approximately thirty Timorese doctors in Timor-Leste. Today there are almost 1000. The majority of those doctors have been trained either at the Escuela Latinamerica de Medicina (ELAM) in Cuba, or via an ELAM–supported programme at the Universidade Nacional Timor Lorosa'e (UNTL). Under the Gusmao government's 'Doctors for the Districts' policy, new graduates were being sent out to live and work in rural communities across Timor–Leste, until it was realised that these young doctors lacked the knowledge and skills necessary to provide safe, quality primary care in these contexts. Thus, in 2014, the inaugural Family Medicine Programme (FMP) was established. This initiative involved a collaboration between the Ministry of Health (MoH), UNTL and the Royal Australasian College of Surgeons (RACS), who subsequently requested technical support from Rocketship Pacific Ltd (Rocketship) – an international health charity dedicated to strengthening primary healthcare systems in Pacific island countries. Rocketship supported the design and delivery of the Family Medicine Programme. Using the Primary Curriculum of the Australian College of Rural and Remote Medicine (ACRRM) as its basis, the FMP is in its fourth year in 2018.



Africa

EXEMPLARS [®]	IMPLEMENTATION
Walter Sisulu University Faculty of Health Sciences (WSUFHS)	The Walter Sisulu University Faculty of Health Sciences (WSUFHS), formerly the University of Transkei Medical School, was founded in 1985, with a traditional curriculum. It was re-engineered in1992 to focus on community-based, socially accountable medicine in order to train physicians capable of providing quality health care in rural South African communities, particularly in the Transkei region. Instead of academic record, students are selected with 60% pass in mathematics and physical science and by demonstrating good thinking, communication and interpersonal skills and motivations. It has enrolled: 430 (83%) black Africans; 68 (14%) Asian descendants; 8 (2%) mixed race; and 5 (1%) whites with good retention of African students (<10% drop out).
Clinical Associates training in South Africa	South Africa introduced a new cadre of Mid–Level health worker in 2008, the Clinical Associate, to address the skills gap in district hospitals and three institutions started training these professionals selected as young people from socially disadvantaged communities. Between 2008 and 2017, 937 Clinical Associates graduated and of these, 80% serve in rural public health services. The cost of training a Clinical Associate was noted to be less than half that of training a medical practitioner and 2.4 clinical associates can be employed for the cost of one physician. The clinical associates provide essential capacity for health services, especially to those with the highest need – the rural and urban poor.
University of Nairobi decentralised medical education	University of Nairobi increased the number of medical students three–fold to produce more doctors for the population's needs supported through a Medical Education Partnership Initiative (MEPI) programme (a collaboration with the University of Washington, University of Maryland). It started training medical students in decentralised hospitals in 2011. Training was for 4th year students of 5 year course, including training and supporting preceptors. The training was 7-weeks long, done in small groups (3 per consultant) and included interactive learning as a group, through online webcast weekly. The rural experience is only short but students enjoyed this.
A partnership in Tanzania for training Community Health Workers	In Tanzania, a Connect project partnership between Ifakara Health Institute (IHI), Tanzanian Ministry of Health and Social Welfare (MoHSW), Tanzanian Training Centre for international Health (TTCIH) and Columbia University's Mailman School of Public Health (CU–MSPH) was launched in 2011. The project provides funds to Kilombero, Ulanga and Rufiji districts for human resources and supplies. Community Health Workers are selected from their communities with minimum skills for 9 months training and then redeployed home under supervision of trainers and a local clinical officer. Workers were given equipment (bicycle, mobile phone, and clinical infrastructure) and the community are required to employ the health workers including salaries and social security benefits. By August 2012, 113 community health workers were trained in 50 intervention villages at a cost of US\$ 2,489.30 per health worker training including 40% for meals and 20% for accommodation and 8% for training and 10% for tuition fees.
A framework for decentralised health worker training in South Africa	In South Africa a collaborative co-design project, the Stellenbosch University Collaborative Capacity Enhancement through Engagement with Districts (SUCCEED) worked with representatives of academic institutions, government and health services as well as with a range of health professionals to develop a framework for effective decentralised training for healthcare professionals. The vision for collaborative, distributed training across all service platforms, and particularly in rural areas, was captured in a consensus statement adopted by the South African Association of Health Educationalists (SAAHE) in 2017, which has been endorsed by many bodies across the country. The Framework is being used by a number of institutions to guide implementation of rural training.
Scaling up mid-level worker and medical training in Ethiopia	In 2003, the Democratic Republic of Ethiopia invested in the selection, training and recognition of primary health workers through the Health Extension Programme. By 2010, a total of about 34,000 HEWs were trained and deployed throughout the country and concurrently around 15,000 health posts were constructed in the country. Additional aims of a broader human resource strategy were to increase eligibility and uptake of training as mid–level workers for health centres and district hospitals and develop more medical doctors by 2015. Between 2003 and 2009, the number of universities and health science colleges grew from five to 23. The original five medical schools were asked to increase their annual enrolment by up to four times. A range of Medical Education Partnership Initiatives (MEPI) between Ethiopian Medical Schools and US Partners helped to ensure quality medical education and retention of doctors in rural areas throughout this period of rapid growth.



Eastern Mediterranean

EXEMPLARS^a

National Community Health Worker Training in Iran National CHW training existed since 1979 in Iran and has been regularly reviewed. Workers are selected from their own community and employed in Village Health Houses in rural areas. The 2-year training is provided in 224 specialised centres. Then in-service training is provided at regular intervals by GPs and allied health workers in rural sites and village Health Houses. Nationally, 31,000 Community Health Workers (CHW) staff primary care units in these rural areas but the scope of practice required to address rural community need requires regular up-skilling.

IMPLEMENTATION



Central and South America

EXEMPLARS ^a	IMPLEMENTATION
Mais Medicos programme in Brazil	The Mais Medicos programme was a national policy implemented in Brazilian law in 2013. It had some innovative components such as increasing medical school enrolment, a new curriculum for medical schools and compulsory rural service, along with investment in health care infrastructure and improving Basic Health Care Units. By 2014, the MM provided an additional 14,462 physicians to highly vulnerable, remote areas in 3,785 municipalities (68% of the total) and 34 Special Indigenous Sanitary Districts and more than 50% physicians earned over 10 minimum monthly wages. But many enrolled in the programme were Cuban doctors and physicians refused to commit exclusively to one location and fail to comply with the stipulated working hours since they work under different contracts in several municipalities.
Companeros en Salud (CES) – an education support package for junior doctors in rural service terms	To provide a transformative learning experience for junior doctors doing their mandatory year of rural service, the Companeros en Salud (CES) aims to support them to deliver primary care, expose them to global health issues and engage them in socially accountable medicine. It also targets career development through supportive on site mentorship (from different USA based volunteer specialists and Mexican doctors) and supervision (from experienced clinicians), as well as monthly interactive seminars. The program has had good results for building medical knowledge, skills and orientation to serving the poor but some participants have had concerns about passing a residency entrance exam.



Western Pacific

EXEMPLARS [®]	IMPLEMENTATION
University of Philippines Manila– School of Health Sciences (SHS–Palo)	The University of Philippines Manila–School of Health Sciences (SHS–Palo) in Leyte was established in Eastern Visayas in 1976 with a social accountability mission to serve the region's poorest people, with isolated communities having the worst health outcomes. It selects students from lower socio–economic students from rural and remote communities, with scholarships for those nominated by rural communities who need health workers with social contracts to serve those communities at graduation. The students are selected based on "commitment to serve" not academic record. The curriculum is based on community needs. The school has options for graduates to move from community health work to a certificate in Community Health Work (Midwifery) to a Bachelor of Nursing (BSN) and on to a Doctor of Medicine.
Ateneo de Zamboanga University (AZDU) School of Medicine	Another regional medical programme emerged in the Philippines, established by the Ateneo de Zamboanga University (AZDU) School of Medicine. The AZDU programme was developed by local community leaders to serve the Western Mindanao region and to minimise students from the region having to leave home to study medicine in the city. It also had a strong focus on socially accountable medicine. The School has had a major positive impact on staffing public health services in the region.
Master of Medicine (Rural) programme in Papua New Guinea	A pioneering collaboration between the University of Papua New Guinea and the PNG Society of Rural and Remote Health led to the establishment of a Master of Medicine (MMed) Rural programme that has been running successfully for several years. This programme was developed in recognition of the need to provide a specially– selected cohort of postgraduate doctors with the knowledge and skills required to provide high–quality care in district hospitals across the mountains, tropical forests and remote islands of PNG. In addition to intensive training in the medical and procedural sub–specialties, MMed (Rural) graduates also work through health management disciplines such as finance and human resource management, as well as laboratory techniques, supply chain management and basic electrician training – all in a day's work for rural hospital doctors in PNG.
Family Medicine training in Fiji and Tonga	A new collaboration between Fiji National University (FNU), the Ministries of Health in Fiji and Tonga and Rocketship Pacific Ltd (Rocketship) – an international health charity dedicated to strengthening primary healthcare systems in Pacific island countries – is preparing to launch the South Pacific region's first–ever postgraduate family medicine training programme. Two cohorts will commence training towards their Diploma in 2019 – one in Fiji, the other in Tonga. The Tongan trainees will be supported by a team of experienced rural generalist medical educators recruited and deployed by Rocketship. This innovative model of training will allow the Tongan doctors to train towards their Diploma while living and working in their home hospitals and communities. The model is based on the great success of the Remote Vocational Training Scheme (RVTS) in Australia. It is hoped that new FNU programme will be expanded in subsequent years, to include other Pacific island countries, and be extended to Masters level.