

## MID-LEVEL HEALTH PROVIDERS: A PROMISING RESOURCE

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### ABSTRACT

Mid-level health providers (MLP) are health workers trained at a higher education institution for at least a total of 2-3 years, and authorized and regulated to work autonomously to diagnose, manage and treat illness, disease and impairments, as well as engage in preventive and promotive care. Their role has been progressively expanding and receiving attention, in particular in low- and middle-income countries, as a strategy to overcome health workforce challenges and improve access to essential health services and achieve the health related targets of the Millennium Development Goals. Evidence, although limited and imperfect, shows that, where MLP are adequately trained, supported and integrated coherently in the health system, they have the potential to improve distribution of health workers and enhance equitable access to health services, while retaining quality standards comparable to, if not exceeding, those of services provided by physicians. Significant challenges however exist in terms of the marginalization and more limited management support of MLP in health systems. The expansion of MLP should have priority among the policy options considered by countries facing shortage and maldistribution challenges. Improved education, supervision, management and regulation practices and integration in the health system have the potential to maximize the benefits from the use of these cadres.

**Key words:** *Allied health personnel; Developing countries; Rural zones; Health personnel management; Public health (source: MeSH NLM).*

### INTRODUCTION

Many countries provide healthcare through cadres that, though not trained as physicians, perform many diagnostic and clinical functions. These are variously referred to as “substitute health workers”, “auxiliaries”, “non-physician clinicians”, or “mid-level health providers”. There isn’t an official definition of mid level providers that represents a direct match with any of the professional categories, such as paramedical practitioners, recognized in the International Standard Classification of Occupations.<sup>(1)</sup> The use of these terms is fairly broad, ranging from internationally recognized groups, including nurses and midwives to whom specific diagnostic and clinical skills have been delegated (nurse practitioners), through to those cadres that have been developed to meet a specific need in a country – e.g. surgical technicians in Mozambique, clinical officers in East African countries. In many African countries most mid-level providers have been modeled on professional cadres, such as medical

doctors, pharmacists, registered nurses, environmental health officers etc. Asian countries have, over the years, developed local MLP categories, from birth attendants to health assistants, who are not modeled on traditional health professions, but respond to specific needs.

In many countries mid-level health providers (hereinafter MLP) already function at the forefront of health care provision in health facilities, but in the absence of an encompassing definition and agreed standards, it is difficult for these providers to organize globally, advocate for their profession, or even just be appropriately counted and included in routine national surveys – a critical step towards recognition, professional visibility and adequate monitoring of the health workforce. Many attempts at defining MLP have ended up using “negative” definitions, i.e. defining what they are not<sup>(2)</sup>, or emphasizing that they work under the supervision of professionals,<sup>(3)</sup> which is not an accurate reflection of reality. For the purpose of this paper the following working definition of MLP will be

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used:

A health provider:

- a. Who is trained, authorized and regulated to work autonomously AND
- b. Who receives pre-service training at higher education institution for at least a total of 2-3 years AND
- c. Whose scope of practice includes (but is not restricted to) being able to diagnose, manage and treat illness, disease and impairments (including perform surgery, where appropriately trained), as well as engage in preventive and promotive care.

There is a growing momentum to strengthen and/ or initiate the use of MLP to increase access to care. This is evident in local human resource strategy documents through to global documents such as the Kampala Declaration and Agenda for Global Action<sup>(4)</sup> and the Addis Ababa Call to Action on Human Resource for Maternal and Newborn Survival.<sup>(5)</sup>

Today MLP are used in high- and low-income countries either to assist professionals or to render care independently, particularly in rural health facilities, making up for the scarcity of health professionals. However, MLP have been used for many years in a number of countries in Africa and Asia. In the colonial and immediate post-colonial periods they were often regarded as a stop-gap measure, and consequently neither properly integrated into health systems, nor adequately planned for and managed.

Their association with colonial health policies and with hierarchical government arrangements has sometimes conferred a negative image on these cadres. However, longstanding and mostly positive experience with MLP, particularly in Africa, and a growing awareness of the human resource crisis - exacerbated by the advent of HIV/AIDS which has imposed a larger workload on health workers<sup>(6)</sup> - have led to a recognition that MLP can indeed play a crucial role within health systems.

## TAKING STOCK OF CURRENT EXPERIENCE WITH MID-LEVEL PROVIDERS

Findings from reviews suggest that for over a hundred years different categories of MLP have been utilised successfully to provide health care, particularly to underserved communities, and that their use has been widening in both high- and low-income countries.<sup>(7,8)</sup> While the bulk of documented experiences that were included in reviews originate from Africa and Asia, there are also some similar examples of the positive contribution or

positive potential of MLP in Latin America, for instance in the provision of mental health<sup>(9)</sup> and reproductive health<sup>(10)</sup> services.

Many studies on MLP show that they improve access to and coverage of health services, and that often well trained and motivated mid-level workers provide better quality and more accessible services than better qualified but less motivated professionals.<sup>(11, 12)</sup>

Although the scope of these cadres can be considered similar, there are wide variations among the countries, regarding their roles, competences, and the framework within which they work.

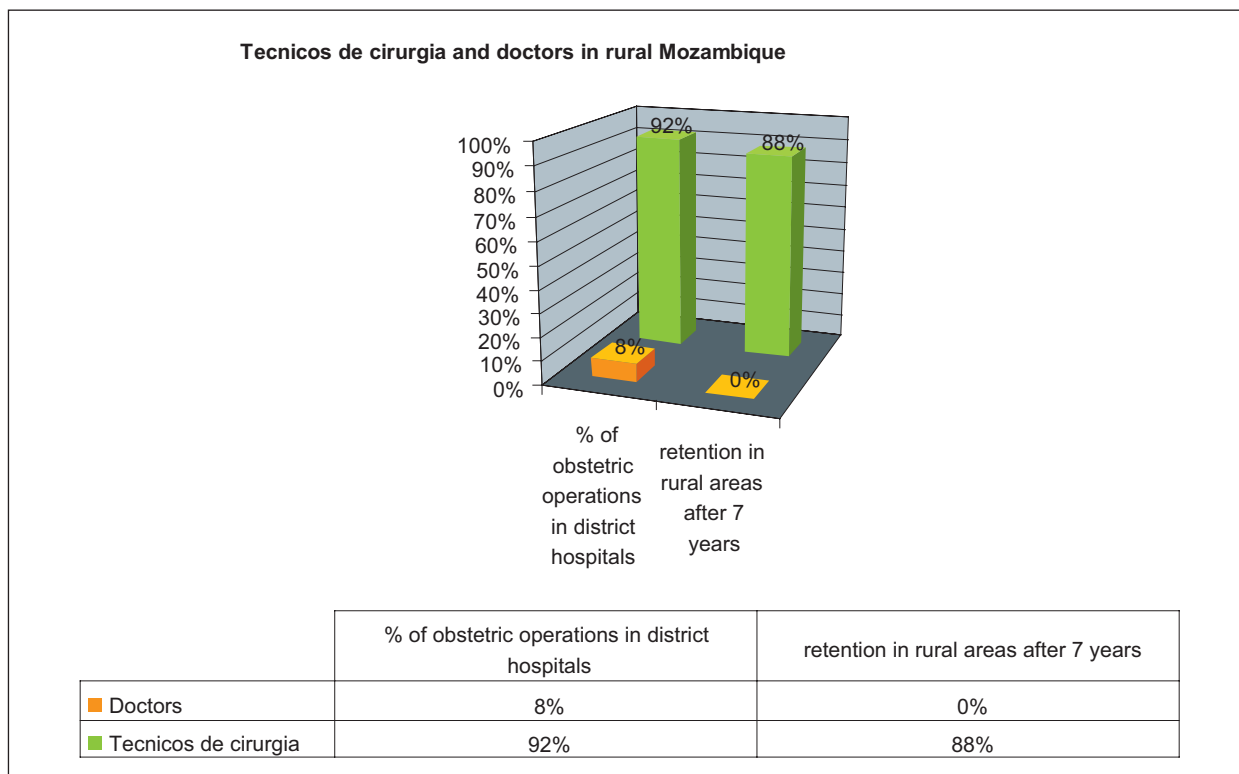
Systematic evidence on cost-effectiveness is lacking, as most studies are descriptive and fail to rigorously link health outcomes to these cadres. But there are documented cases of comparable results provided by MLP as compared to medical specialists, at one tenth of the cost.<sup>(13)</sup> The shorter duration of the training, as well as the lower salaries, make the production and deployment of MLP cheaper than doctors. In addition lower consultation fees and shorter travelling distances have the potential to make MLP-provided care more cost-effective also from the patients' perspective.

Studies on perceptions of mid-level providers are also very limited. The introduction of MLP has often been met with resistance from powerful lobbies and professional associations, typically in relation to the potential of delivery of lower standards of care, the fear of cost inflation due to excessive prescription of diagnostic and curative measures, and the risk of replacement or usurpation of traditional cadres. In the rare instances where perceptions on the role of MLP have been investigated, however, there was widespread understanding of and appreciation for the vital role played by these cadres.<sup>(14)</sup>

## IMPROVING ACCESS

Inequalities within countries in relation to the availability of health workforce are acute, a problem often as important as absolute shortage at national level;<sup>(15)</sup> the maldistribution is particularly acute for countries affected by a heavy burden of maternal and child deaths.<sup>(16)</sup>

It has been suggested that MLP may represent a solution to providing services where more qualified staff are difficult to recruit and retain. Dovlo compiled some data in 2004 for 7 African countries, showing that MLP in many cases outnumbered doctors, even though data on geographical distribution were not available.<sup>(17)</sup>



**Figure 1.** Obstetric surgery workload and retention of MLP and doctors in rural areas in Mozambique.

Some limited evidence however exists to support the notion that MLP may help in reducing geographical maldistribution: Pereira et al. compared retention in rural areas of Mozambique of doctors versus técnicos de cirurgia (TC) , finding that retention of TCs approached 88%, while no doctors who were originally assigned to district hospitals after graduation were still working there 7 years later (Figure 1) <sup>(18)</sup>.

Various policy options have been proposed to ensure that MLP serve primarily in rural areas, and have been shown to have some positive effects on the equitable deployment of health workers, including preferential selection of trainees from rural areas<sup>(19)</sup> and bonding schemes.<sup>(20)</sup> It needs to be emphasized, however that MLPs, like other health workers, require adequate pay, supportive management, adequate working conditions and career opportunities to render quality services and to be retained in rural and remote areas.<sup>(21)</sup>

**PRESERVING QUALITY**

A very common objection to the use of MLP is that, because of their shorter training and lower qualifications, they might provide lower quality of care than traditional health care providers. Some caution explicitly against

the establishment of two-tier health care systems, with services in urban areas provided by physicians, and lower quality care provided by MLP in rural and disadvantaged areas, a situation prone to the risk that the urban-based medical elite could capture a larger proportion of public funds, thereby sharpening inequities.

That services provided should be of good quality is a basic tenet of the compact of trust between users and providers of health services.<sup>(22)</sup> It is therefore imperative that the quality of care offered by MLP be rigorously assessed and ensured.

According to Lehmann's literature review, the evidence on quality of care delivered by MLP, either measured by specific quality benchmarks or in comparison to their professional equivalents, comes exclusively from a few African countries. In Kenya in the mid-1970s approximately three-fourths of the care dispensed by clinical officers in the outpatient department was of acceptable quality, but standards of care were negatively affected by weaknesses in the referral system and lack of a suitable record system.<sup>(23)</sup>

MLP in Malawi and Mozambique have been particularly successful at providing emergency obstetric care. They perform the majority of major obstetric operations and

their postoperative outcomes (general well-being, stillbirths, neonatal mortality) are similar to those of doctors.<sup>(24-27)</sup> MLP are also increasingly being used to render HIV care in primary care facilities in Zambia with very good outcomes.<sup>(28)</sup>

However, there also is evidence of poor quality of services rendered by MLPs: a cost-effectiveness study of Caesarean sections in Burkina Faso revealed that clinical officers were associated with a higher maternal and newborn case fatality rate as compared to general practitioners and obstetricians, pointing to the need for improved training and strengthened supervision.<sup>(29)</sup> Similarly, a study from Uganda found that performance problems were often linked to inadequate training and/or support and supervision, as well as lack of guidelines.<sup>(30)</sup>

The issue of quality of care of MLP is therefore inextricably linked to that of their education, regulation, and management.

## EDUCATION OF MLP

Practices on entry requirements, duration of training and curricula for MLP vary considerably, reflecting wide diversity in their roles within health systems.

Typically training programmes for MLP can be categorized according to whether they 1) aim at recruiting (and upgrading the skills of) registered nurses or 2) recruit school-leavers with no prior health training. The duration of training is shorter (typically 1 year, with a 3-6 months internship) for the courses admitting nurses, and normally of around 3 years of pre-service training with 1 year of internship for the training programmes admitting school leavers.

In the case of programmes admitting school-leavers, students are typically recruited from rural areas or disadvantaged locations. Often these candidates do not meet the entry requirements or don't possess the financial means to enrol in medicine or other traditional health professions.

Similarly to the variations in the scope of practice, also the contents of training vary significantly across countries: some MLP focus on a single clinical area (for instance eye care, orthopaedic skills, anaesthesia, etc), whereas others have a broader but specific skills set (such as Pakistan's lady health visitors, who focus on maternal and child health); most MLP programmes (for clinical officers, medical assistants, nurse clinicians etc) provide a more comprehensive set of competences.

Most training programmes include diagnostic and curative skills and combine traditional classroom teaching with variable amounts of practical training. Training programmes for MLP usually follow the structure of curricula for traditional cadres, but are typically simplified and taught at dedicated training institutions. Practical training for MLP typically relies less on hospitals and medical technology than training for traditional cadres, and usually focuses on challenges relative to the local context.

In the desire to achieve a rapid scale-up, there is a danger of quality dropping because of relaxed academic qualifications, a factor often cited by professional associations as their main reason for opposition to relaxed entry requirements.

Some of the examples of flexible or affirmative action strategies that can be used to help increase the numbers of MLP ready to be trained and potentially deployed to serve in the most needy areas include; a) allowing experienced in-service personnel with experience of rural practice to upgrade their qualifications (Zambia), b) developing career ladders for MLP that include teaching roles, c) allowing lower entry grades from disadvantaged areas but holding all to the same standard of training and competence requirement (Malaysia), d) relaxing entry requirements according to need in an area of the country (Tunisia), or e) establish remedial classes for candidates from disadvantaged areas (USA). These non-mutually-exclusive policy options should be evaluated empirically, and tailored to the local context.

An equally important concern relative to education and quality of care is that, despite the absence of systematic information, capacity for training MLP is widely believed to be inadequate in terms of facilities, faculty, and clinical practice opportunities across many countries.

## REGULATION AND MANAGEMENT

Closely linked to the issue of education of MLP are the accreditation and regulation aspects. In resource-poor environments these issues are sometimes neglected, and this is particularly evident in the case of non traditional cadres, such as community health workers and MLP.

Sometimes training programmes emerge to formalize the education and certification requirements of a cadre that has emerged informally: in Brazil, for example, an informal cadre of "nurse-agents" was progressively professionalized through a programme supported and

co-funded by the Government, the Pan-American Health Organization and the Inter-American Development Bank. The training and professionalization of hundreds of thousands of informal health workers, carried out through 35 training institutions in all 27 states, contributed to the reconfiguration of health teams into family health teams in the *Programa de Saúde da Família (Family Health Programme)*, an essential element of Brazil's Unified Health System.

Not all countries however have followed such an approach: according to the review conducted by Dovlo in 2004, regulation and accreditation systems for MLP in Africa were at that time patchy, and in some cases completely absent.

MLP should have their scope of practice defined by appropriate legislation and regulation in a way that suits the specific country environment and the role envisaged in the health system. Many general principles on regulation and accreditation apply equally to MLP, but their relevance is magnified by the absence (typically) of professional bodies that can mitigate the absence or patchy application of regulation, and the less defined nature of the MLP roles. Therefore, very relevant, if not specific, to MLP is that the quality regulation approach must include mechanisms to ensure that the desired competences are sustained over the career span, ensuring for instance that licensing and certification are time-limited, and clear requirements and processes for renewal are established.

But adequate training and accreditation alone are not sufficient in sustaining quality standards: MLP, like all health workers, need to be properly managed, motivated, supervised and supported. But precisely because in many countries MLP exist on the margins of the health sector and they are typically outside the normal staffing establishment, their deployment poses a management challenge to health providers.<sup>(31)</sup>

While some management challenges apply generally to all or most of health worker cadres in low- and middle-income countries (e.g. poor remuneration and support and supervision systems),<sup>(32)</sup> others are particularly acute for MLP.

For example, there is a tension between offering MLP career opportunities while at the same time retaining them in hard-to-fill posts. Often there are limited overall staffing numbers in remote facilities and the staffing pyramids are characterised by hierarchies among cadres rather than within cadres, with professional rivalries constraining the ability to advance of members of each specific cadre.

Similarly a hierarchical reading of the concept of "team approach" to care entails that MLP should be supervised by "higher level" cadres. But, rather than emphasising the hierarchy across cadres and expecting that mid-level cadres will be supervised by doctors, who are in any case in short supply at district as well as at individual facility level, career advancement and supervision goals could be perhaps jointly and more appropriately met by promoting more experienced MLP to supervisory roles at both peripheral and central level.

Also with regards to prevailing management practices of MLP the evidence is scanty. The root of the problem is in many cases the absence of a framework of distinctive competences, which negatively impacts on an effective selection process, performance management, professional development and career progression opportunities. The development of competence frameworks for MLP must strike the right balance, allowing an effective management, but avoiding an over-specification that would make these health workers less flexible in responding to local needs.

## CONCLUSIONS

Patchy evidence suggests that MLP have the potential to make a significant contribution to achieving the health Millennium Development Goals by making access to healthcare more equitable and affordable. If MLP programmes are to become rooted and sustained in health systems in low- and middle-income countries, their legitimacy, management, governance, and evidence of impact need to be addressed.

The absence of systematic evidence on the impact of MLP warrants the generation of such knowledge: of particular importance would be robust quantitative studies of effectiveness, demonstrating the capacity of MLP in improving access to care, preserving quality, and containing costs, thus allowing a more evidence-informed discourse on optimal categories, structures and models of health service delivery making use of MLP. The development of such evidence would form a better basis for policy consultations and pro-active stakeholder engagement to overcome skepticism and professional gate-keeping. The dearth of evidence is particularly acute with regards to Latin America, pointing to the need to better document experiences with MLP in this region.

A second crucial issue is that these cadres should have an "international" recognition in such a way that they can be perceived as normal and integral part of health

systems, rather than “substitute health workers” for (poor) health sectors. This requires a paradigm shift on concepts such as:

- a move from mid-level workers, or doctor substitutes, to health workers who have their own role in the respective health systems, and not substitute or temporary cadres;
- supporting the definition of minimum global standards;
- going beyond the doctor, nurse and midwives to population ratios, and collecting vital statistics on other professional cadres as well.

As with issues of standardization, a tension exists between such regulation and the desirability to retain the local “fit” of these cadres; this tension is not easily resolvable and should be addressed in country contexts. It may not be feasible to develop an internationally standardized detailed model of MLP due to the differences in health system contexts, but some international consensus on minimum requirements for these cadres, perhaps in terms of duration of training and a core set of minimum competences, could be useful.

Flexibility and innovation are needed in entry requirements and training strategies if the acute shortage of health workers is to be addressed through MLP. Building new training institution facilities or training dedicated faculty takes time and resources that most of the countries with urgent need can ill afford. Opportunities to use innovative and flexible strategies to increase numbers of certified MLP exist, including using existing practicing professionals to train MLP, increasing clinical practice opportunities, making a more flexible and intensive use of the scarce training facilities.

Finally, there is a clear need for establishing procedures and systems that can integrate core management functions, such as accreditation, regulation, professional development and career progression for MLP, in the planning and management of the health system.

Regulatory and professional bodies, where not in place, should be established to govern and speak on behalf of MLP, including on issues of remuneration, scopes of practice and the relationship with other professions.

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## Author Contributions

All authors contributed equally and are listed in alphabetical order.

## Conflicts of Interest

None to declare

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## METHODOLOGICAL NOTE

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