DETERMINANTS OF HEALTH WORKER PERFORMANCE: A REVIEW OF THE EVIDENCE
DETERMINANTS OF HEALTH WORKER PERFORMANCE: A REVIEW OF THE EVIDENCE

A verified reproducibility package for this paper is available at http://reproducibility.worldbank.org. Click here for direct access.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgments</td>
<td>vi</td>
</tr>
<tr>
<td>Abbreviations</td>
<td>vii</td>
</tr>
<tr>
<td>Executive Summary</td>
<td>1</td>
</tr>
<tr>
<td><strong>1. Introduction</strong></td>
<td>4</td>
</tr>
<tr>
<td>Conceptual Framework</td>
<td>5</td>
</tr>
<tr>
<td>Structure of the Report</td>
<td>6</td>
</tr>
<tr>
<td><strong>2. Drivers of Worker Performance in Health Facilities</strong></td>
<td>7</td>
</tr>
<tr>
<td>Staffing</td>
<td>8</td>
</tr>
<tr>
<td>Merit-Based Recruitment</td>
<td>12</td>
</tr>
<tr>
<td>Performance Management</td>
<td>14</td>
</tr>
<tr>
<td>Work Environment: Group Problem Solving</td>
<td>15</td>
</tr>
<tr>
<td>Financial Incentives</td>
<td>17</td>
</tr>
<tr>
<td>Performance-Based Financing</td>
<td></td>
</tr>
<tr>
<td>Nonfinancial Incentives</td>
<td>22</td>
</tr>
<tr>
<td>Training</td>
<td>23</td>
</tr>
<tr>
<td>Health Worker Motivation</td>
<td>25</td>
</tr>
<tr>
<td>Mental Health and Resilience</td>
<td>28</td>
</tr>
</tbody>
</table>
3. Drivers of Worker Performance in the Health Administration

Facility Funding
Supportive Supervision
Data-Informed Management

4. Conclusion

Appendix: Detailed Survey Methodology

References

**Figures**

<table>
<thead>
<tr>
<th>Figure</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Conceptual framework</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Perceptions on staffing challenges</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>Participation in a recruitment competition (percentage of respondents that said &quot;Yes&quot;), overall and by occupation</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>Salary increases over the past 2 years by performance-based financing participation</td>
<td>20</td>
</tr>
<tr>
<td>5A</td>
<td>Comparison of wages between men and women in top-earning occupations</td>
<td>21</td>
</tr>
<tr>
<td>5B</td>
<td>Comparison of wages between men and women in lower-paid occupations</td>
<td>21</td>
</tr>
<tr>
<td>6</td>
<td>Gender differences in on-the-job training, Mali</td>
<td>25</td>
</tr>
<tr>
<td>7</td>
<td>Facility staff’s views on turnover</td>
<td>27</td>
</tr>
<tr>
<td>8</td>
<td>Experiences with receiving facility funding</td>
<td>30</td>
</tr>
<tr>
<td>9</td>
<td>Average interval between supervisory visits</td>
<td>33</td>
</tr>
<tr>
<td>10</td>
<td>Share of respondents agreeing with &quot;Data often captures too many indicators,...&quot;</td>
<td>34</td>
</tr>
<tr>
<td>11</td>
<td>Percentage of respondents who did not have training on digital skills and data for budgetary decisions</td>
<td>36</td>
</tr>
</tbody>
</table>

**Boxes**

<table>
<thead>
<tr>
<th>Box</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Guidance to develop rural pathways for health workers in LICs and LMICs</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>Examples of group problem solving interventions</td>
<td>16</td>
</tr>
</tbody>
</table>
Acknowledgements

This report was prepared by a team led by Zahid Hasnain (Lead Governance Specialist), with team members Ayesha Khurshid (ET Consultant), Turkan Mukhtarova (Consultant), Anju Malhotra (Senior Monitoring and Evaluation Specialist), Jessica Brown (Consultant), Indira Prihartono (Consultant), Yaxin Hu (Consultant), Julia Lohmann (Consultant), and Jennifer Ljungqvist (Consultant). The team would like to thank Debasmita Padhi (ET Consultant) and Zara Raheem (Intern) for their support on the survey analysis, and Flavia Sacco (ET Consultant) for her support on the labor force survey analysis.

The team would also like to thank Patrick Eozenou (Senior Health Economist), Richard Sutherland (Senior Governance Specialist), Donna Andrews (Lead Governance Specialist), Halsey Rogers (Lead Economist), Laurence Lannes (Senior Health Economist), Maud Juquois (Senior Health Economist), Charlotte Pram Nielsen (Senior Health Specialist), Ibrahim El Ghandour (Public Sector Specialist), Zubair Khurshid Bhatti (Lead Public Sector Specialist), Adenike Oyeyiola (Advisor), Roby Senderowitsch (Practice Manager), Omowunmi Ladipo (Practice Manager), and Arturo Herrera Gutierrez (Global Director) for their support and overall guidance, as well as the Global Financing Facility for providing the funding for the report.
## Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHW</td>
<td>Community Health Worker</td>
</tr>
<tr>
<td>CoP</td>
<td>Community of Practice</td>
</tr>
<tr>
<td>DHMTs</td>
<td>District Health Management Teams</td>
</tr>
<tr>
<td>HRH</td>
<td>Human Resources for Health</td>
</tr>
<tr>
<td>HRM</td>
<td>Human Resource Management</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>LIC</td>
<td>Low Income Countries</td>
</tr>
<tr>
<td>LMIC</td>
<td>Lower-Middle Income Countries</td>
</tr>
<tr>
<td>PBF</td>
<td>Performance-Based Financing</td>
</tr>
<tr>
<td>P4P</td>
<td>Pay-for-Performance</td>
</tr>
<tr>
<td>PPP</td>
<td>Purchasing Power Parity</td>
</tr>
<tr>
<td>SDG</td>
<td>Sustainable Development Goal</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

The health workforce—clinical, administrative, and support staff—is central to the effective delivery of quality public health services. This report aims to (1) synthesize a large body of literature on the key drivers of health workforce productivity, focusing on low-income and lower-middle income country contexts (LICs and LMICs); and (2) elaborate on some of these drivers with descriptive statistics from Mali and Madagascar based on primary data derived from surveys of health workers conducted by the World Bank.

The report is organized around a conceptual framework that focuses on the drivers of health worker performance in the health administration and in health facilities. The administration-level drivers focus on core stewardship functions—facility funding, supervision, and data-informed management. Administration staff includes positions from the Ministry of Health, as well as regional and local level public servants working in the health sector. In health facilities, the report analyzes management and work environment aspects that impact staff ability and motivation to deliver services, including recruitment, performance management, teamwork, access to training, and intrinsic motivation. Health facility staff includes doctors, nurses, community health workers (CHWs), midwives, and facility managers, among others.

The existing literature, complemented by the descriptive statistics from Madagascar and Mali, offers varying levels of evidence regarding the influence of different factors on the performance of health facility staff. Among these factors, the most compelling evidence is found in the following areas:
“Rural pathways” or purposefully designed rural career paths for health workers—recruiting them from underserved areas, training them locally, and ensuring a career development path—are the most effective strategy for addressing skill shortages in remote areas. The evidence, however, is largely from high-income countries that have a sufficient supply of such workers in remote locations.

Sound personnel management, including goal setting, performance evaluations, and regular conversations with staff, can improve health worker performance. The weakest aspect of personnel management is performance evaluations. In both Mali and Madagascar, for example, these evaluations are often perfunctory exercises, particularly for female staff. They are not routinely conducted, they inadequately distinguish good from poor performers, and they lack the necessary informal dialogue between managers and staff that should complement the formal annual performance evaluation process.

Teamwork, specifically group problem solving which entails issue identification and resolution by peer groups in primary and secondary care facilities, can be highly effective, increasing engagement and motivation of health workers and improving outcomes.

Financial incentives, particularly in the context of performance-based financing (PBF), have been extensively evaluated for impacts on clinical outputs and outcomes, but less so for effects on health worker motivation. The limited evidence is mixed: health worker motivation levels are improving because of the introduction of a performance-oriented culture in health facilities but there are challenges related to small individual incentives (as was the case in Mali), payment delays, and concerns about fairness in the distribution of staff bonuses (for instance, women in Mali receive smaller bonuses than men).

Nonfinancial incentives, such as staff recognition schemes and enhanced staff monitoring usually with digital tools, can be effective in reducing shirking and improving motivation. For CHWs, there is good evidence that recognition schemes like public awards can improve motivation. Digitally enabled monitoring can address problems of staff absenteeism, however the institutional context of technology intervention is critical for impact.

Staff training, despite the general skepticism often surrounding it, can be effective for both service providers and managers, particularly if designed in a participatory manner, coupled with group problem solving, and delivered in a combination of classroom-style instruction and on-the-job applications. The Mali and Madagascar surveys did reveal that women health workers received less training than men, due to greater time constraints and lack of opportunities provided by the authorities.

The literature and survey results also point to several key findings for health administration:

Stable and predictable facility funding is central to the PBF theory of change, and in general for effective service delivery. In both Mali and Madagascar, the survey revealed delays in facilities receiving funds and significant political influence on the use of these resources, particularly on the use of these funds for facility construction and renovation.

Supportive supervision is most impactful if embedded within a larger quality improvement framework and coupled with training, mentorship, and community feedback. Monthly supervision is more effective than quarterly supervision, but the quality of supervision is more important than sheer
DETERMINANTS OF HEALTH WORKER PERFORMANCE: A REVIEW OF THE EVIDENCE

Prosperity Insight

frequency. Given the dual role of technical and emotional support, a certain level of continuity and frequency in the supervisory relationship is important to building mutual understanding of contexts, interests, and priorities, as well as mutual trust. Unfortunately, this continuity and frequency is challenging in many low-income and lower-middle income settings, as evidenced by the Mali and Madagascar surveys, which revealed infrequent supervision visits due to lack of sufficient resources and the poor attitudes of administrators.

The spread of digital technology, such as Health Management Information Systems and mobile systems (mHealth), can greatly improve the efficiency and transparency of health systems, but these outcomes are conditional upon strong management effectively using the technology, particularly the data generated from digital systems. Management quality is highly variable in LICs and LMICs, as evidenced in Mali and Madagascar study results, which revealed data overload and the inability of administrators to compile and analyze information for management. These findings underscore the importance of management training, particularly experiential, work-based learning that has been found to be more effective compared with classroom instruction.

The report concludes by briefly discussing the gaps in knowledge and the agenda for future research. It points out that the academic literature on the drivers of health worker performance has concentrated on healthcare clinical professionals and increasingly, CHWs and not on managerial, administrative, and other nonmedical staff. There is limited research on health sector leadership and stewardship, despite the general acknowledgment of the criticality of senior and midlevel bureaucrats to the effective functioning of the health system. There is data overload and the inability of administrators to compile and analyze information for management, which has been found to be more effective compared with classroom instruction. The report concludes by briefly discussing the gaps in knowledge and the agenda for future research. It points out that the academic literature on the drivers of health worker performance has concentrated on healthcare clinical professionals and increasingly, CHWs and not on managerial, administrative, and other nonmedical staff. There is limited research on health sector leadership and stewardship, despite the general acknowledgment of the criticality of senior and midlevel bureaucrats to the effective functioning of the health system.
The health workforce—clinical, administrative, and support staff—are central to the effective delivery of quality public health services. Since the 1990s, researchers and policy makers globally have highlighted the need for more effective human resources for health as a priority reform in LICs (WHO 2022, 2019a, 2016a). Sustainable Development Goal (SDG) 3, target 3.c recognizes the importance of “recruitment, development, training and retention of the health workforce in developing countries” in ensuring a healthier population (UN 2024). Accordingly, many interventions have sought to address local and global healthcare workforce shortages, retention, migration, and skill imbalance issues, in addition to poor work environments and human resource planning (Joint Learning Initiative 2004).

The objective of this report is to review a large body of academic and policy literature on the
key drivers of performance of health workers, and to provide some selective evidence on these drivers from ongoing World Bank engagements based on primary data collection in two countries (Madagascar and Mali).

The performance of health workers, as measured by their presence in health facilities and their knowledge and ability to correctly diagnose and treat common ailments, is poor in LICs and LMICs. Data from the Service Delivery Indicator surveys from 13 countries in Sub-Saharan Africa reveal that 43 percent of providers were absent from their facility during an unannounced visit, due to both ostensibly authorized (e.g., leave, training, or travel) and unauthorized reasons, which is similar to rates observed in Bangladesh, Ecuador, India, and Indonesia (World Bank 2021). The quality of care health workers provide when they are present is also low, as measured by clinical vignettes of childhood diarrhea with dehydration, childhood pneumonia, adult tuberculosis, adult diabetes mellitus, and childhood malaria with anemia. Across the 13 countries, the accuracy of diagnoses ranged from 40 to 70 percent, being higher for doctors than nurses, and varying across the ailments (for example, only 22 percent correct diagnosis and treatment exists for malaria).

Improving the performance of health workers is particularly important in LICs and LMICs given the need to hire more health workers to address staff shortages and to ensure adequate use of limited fiscal resources given the high share of staff costs in health expenditures. A global shortfall of 18 million healthcare workers by 2030 is expected, and Africa has only 3 percent of the world’s healthcare workers, even though it carries 24 percent of the world’s disease burden (WHO 2022). At the same time, financially, the health workforce constitutes a substantial part of the health sector budget, with spending on health workers’ payroll averaging 34 percent of total government expenditure on health in 136 countries (Hernandez-Peña and others 2013).1

This report uses the WHO definition of the health workforce, or “human resources for health (HRH),” as the persons involved in promoting, protecting, and improving population health, which includes “health service providers” and “health management and support workers” (WHO 2006). Much of the literature on HRH capacity and performance focuses on patient-facing healthcare workers. However, in line with the WHO view of HRH, this paper uses “health workers” to signify all who work in the public health system, from the Minister of Health to the cleaner at a health facility. Importantly, the paper attempts to highlight the role of management and administrative workers who are often overlooked in much of the literature.

Conceptual Framework

Drawing on the literature, this report uses the conceptual framework of a production function of health service delivery whereby “inputs,” or human and budgetary resources, are converted into “outputs,” or health services delivered to citizens (figure 1). The focus of the report are the human resources for health drivers through the service delivery chain—from the health administration down to the facilities—that influence this conversion process. While the functions, roles, and responsibilities differ between the administration and the facilities, there are a set of drivers that shape the actions and behaviors of the personnel working in these different organizations.

---

1. Based on data available at the beginning of the 2010s.
DETERMINANTS OF HEALTH WORKER PERFORMANCE: A REVIEW OF THE EVIDENCE

Prosperity Insight

Figure 1: Conceptual framework

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Key HRH drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel</td>
<td>Administration</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Facility funding</td>
</tr>
<tr>
<td>Goods</td>
<td>Supportive supervision</td>
</tr>
<tr>
<td></td>
<td>Data-informed management</td>
</tr>
</tbody>
</table>

Strategies, policies, and legislation

Facilities

Staffing and recruitment
Performance management
Group problem solving
Incentives
Training
Attitudes and behaviors

Outputs

Health services delivered to citizens

Political, socioeconomic, geographic, and gender inequity


Note: HRH = Human Resources for Health.

Structure of the Report

The report is structured as follows. Chapter 2 follows the conceptual framework and reviews the literature on the main drivers of performance of health workers in facilities—staffing and recruitment, performance management, group problem solving, financial and nonfinancial incentives, training, and attitudes and behaviors. Chapter 3 does the same for administrative-level staff focusing on key stewardship functions of facility funding, supervision, and data-informed management. In both chapters, the literature review is supplemented with evidence from public employee surveys in Mali and Madagascar regarding human resource management practices in health facilities and the administration, respectively (see detailed survey methodology in Appendix). The last chapter provides some suggestions for the operational uses of this report.
This chapter reviews the literature on the main drivers of performance of health service delivery staff in health facilities, complemented by results from surveys carried out in Mali and Madagascar. Examining the key dimensions outlined in the conceptual framework, the review assesses evidence on strategies to enhance staffing in rural areas, and explores topics such as merit-based recruitment, management quality, aspects of the work environment related to teamwork and collaboration, financial incentives, nonfinancial incentives, and training.
Staffing

Shortages of personnel, inadequate infrastructure, and a dearth of essential supplies are commonly cited as key reasons for health worker demotivation. Challenges such as pandemics, consequences of climate change, and armed conflict have the potential of further exacerbating the above by not only aggravating sub-optimal working conditions, but further adding elements of personal unsafety and the challenges associated with crisis-induced morbidity, mortality, and displacement to the mix (Qirbi and Ismail 2017; Harrell, Selvaraj, and Edgar 2020).

In Mali and Madagascar, for example, 62 percent and 15 percent, respectively, of healthcare respondents from an HRH survey stated that their facility was short-staffed (figure 2). Midwives and nurses were viewed as the cadres with the greatest shortages; and the remoteness of work locations is one of the primary reasons for these shortages among nurses and midwives. In both Mali and Madagascar, the midwifery and nursing workforce is mostly composed of women (of the nurses and midwives surveyed in Mali, 78 percent are women, and in Madagascar, 69 percent are women). The remoteness of work locations for these largely female workforces can pose a particular challenge for women, who also suffer from more time poverty (UN Women 2023). The majority of respondents in both countries also stated that staffing shortages had become worse in the past two years. This consensus suggests an emerging crisis, the effects of which have not yet been felt by many, but the growing trends have been visible. Although majority of the population in Madagascar today are not directly impacted, the broad sentiment that shortages and motivation issues are worsening indicates more staff may encounter challenges if the underlying systemic problems are left unaddressed.

Figure 2: Perceptions on staffing challenges


2. See Bhatnagar and George (2016); Henderson and Tulloch (2008); Luboga and others (2011); Shen and others (2017); Mbindyo, Blaauw, and English (2013); Tekle and others 2022; and Bonenberger and others (2016).
Countries in Africa, already struggling with health personnel shortages, face an exacerbation of this crisis due to health workforce migration. Estimates suggest that African countries could lose up to 70 percent of their health workforce to high-income countries, significantly impacting shortages. Particularly in Sub-Saharan nations, the migration of health workers poses a serious threat to the availability and quality of healthcare, putting communities at risk as qualified personnel emigrate. Beyond the immediate effects, the loss of manpower also translates into a forfeiture of financial investments made by LICs and LMICs in training and education of health workers. Various push and pull factors contribute to health workers’ decisions to migrate, including better remuneration, professional advancement, political stability, and improved quality of life. Addressing this complex issue requires a comprehensive understanding of the factors influencing migration patterns and the development of strategic interventions to retain essential healthcare workers (Toyin-Thomas and others 2023; Aluttis, Bishaw, and Frank 2014; Mills and others 2011; Clemens and Pettersson 2008).

While many of these resource limitations are a fixed structural constraint given the level of economic development and instability in LICs and LMICs, attracting and retaining healthcare personnel in rural areas is a policy intervention that can improve the distribution of HRH within available resources. The literature identifies four groups of strategies to attract health workers to work in rural areas: regulatory strategies, educational strategies, incentive schemes, and what has been coined as “rural pathways” or “rural pipelines” (Grobler, Marais, and Mabunda 2015; Witter and others 2020; O’Sullivan and others 2021; WHO 2010, 2020).

Regulatory strategies pertain primarily to attempts to coerce health workers into certain aspects of performance for which little levels of intrinsic motivation may exist, such as compulsory periods of rural service as a mandatory element of joining
public service. A 2010 review of the effectiveness of a compulsory service showed the frequency of use of such schemes; however, the review also showed some evidence that the effectiveness of a compulsory service is largely lacking, particularly on aspects of performance beyond mere acceptance of rural postings. A main issue is often poor implementation of compulsory service schemes, which, despite their noble intentions, tend to be extremely unpopular with health personnel. Key contextual factors for successful implementation emerging from the available literature include transparent systems and regulations, support in the larger health system, as well as coupling compulsory service with good supervisory structures and financial incentive schemes (Frehywot and others 2010; Khalil and Alameddine 2020).

Educational strategies include placing professional training institutions in rural areas as well as mandatory placements in rural areas during professional training. Both strategies are grounded in the idea that making rural areas an integral part of professional education would attract students from the rural areas—who will then be more likely to work in rural areas, as discussed in “the rural pathway” strategy below—as well as permit a gradual familiarization of students from urban areas with the realities, advantages, and disadvantages of living and working in the rural areas so as to attract them to rural service and to build realistic expectations to foster retention (WHO 2020). Available studies indicate that educational strategies can be quite effective, and have a dose effect in the sense that the longer the exposure to living and working in rural areas, the higher the likelihood of accepting and retaining rural roles (WHO 2020).

Incentive schemes for rural retention include strategies such as scholarships and loan programs linked to obligatory rural service, higher salaries and rural allowances, and various interventions to make working and living conditions in rural areas as amenable as possible. As such, they tackle various external drivers of motivation. Evidence on the use of financial incentives and performance-based financing to enhance staff retention is reviewed below in the sections on incentives. Like mandatory service, evidence is lacking regarding benefits conditional on compulsory service, particularly regarding actual job performance, beyond mere acceptance of rural postings.

Finally, the concept of the “rural pathway” or “rural pipeline”—used and evaluated particularly in Australia and other high-income countries with extremely remote areas—is grounded in research showing that health workers originally from the rural areas are more likely to accept and stay in rural posts. “Rural pathway” describes purposely designed rural career paths, starting with selecting future health workers from underserved areas; training them locally (ideally by locally available teachers who will later continue to act as mentors and support persons); and ensuring adequate working conditions, targeted support, networking opportunities, and most importantly career development paths (Durey, Haigh, and Katzenellenbogen 2015). As such, rural pathways have the potential to tackle the full range of external and internal motivational drivers. In addition, some evidence suggests that “rural pathways” when complemented by female-tailored policies (supportive teams, capped hours, and female support and mentorship) may have the potential to expand and retain the female health workforce in remote and rural areas (O’Sullivan, McGrail, and May 2021).

Although elements of rural pathways are in use in several LICs and LMICs, a recent WHO-funded review did not identify any comprehensive schemes (O’Sullivan and others 2020). For instance, a mix of rural pathway elements with regulation has been employed in Burkina Faso, where the government decided to recruit certain health worker cadres regionally rather than at central level in response to severe shortage outside the two major cities, with
the stipulation that they can only hold posts in the region for which they had been recruited (Kouanda and others 2014). The policy has not been formally evaluated for its impact, but Kouanda and others (2014) describe key implementation challenges ranging from participation of key stakeholders in decision-making and design and lack of buy-in by key stakeholders down to a number of implementation issues leading to the gradual maceration of the policy.

In response to this situation and in recognition of the potential of rural pathways, O’Sullivan and others (2020) developed an evidence-based checklist to guide the development of comprehensive rural pathway schemes for health workers in LICs and LMICs, with funding from WHO. Key elements are summarized in box 1.

**BOX 1:** Guidance to develop rural pathways for health workers in LICs and LMICs

**Methods:** Desktop review of existing LIC and LMIC rural health workforce policies, scoping review of evidence on LIC and LMIC rural pathways, and consultation with an Expert Reference Group.

**Checklist:** The resulting checklist describes reflective questions for policy makers in eight action categories.

1. What do our rural communities need? What rural health policies/plans exist to support action? What global, national, or local partnerships could help?
2. What rural healthcare teams, working within what scope, are needed? Do we already have workers with the skills for this scope of work?
3. How can we select workers for this role from the community?
4. How can we effectively educate and train people in rural areas and for the breadth of skills needed by rural communities?
5. How can we ensure practice conditions in the community promote health worker satisfaction, recruitment, and retention?
6. How can trained rural workers be accredited and recognized for transferability of the qualification?
7. How can rural workers be professionally supported?
8. Are the activities and outputs of the program being implemented as planned? What are the intended outcomes of rural pathways and how can we collect data to measure this effect?

Each overarching question is followed by specific sub-questions, and substantiated by reference to literature. The checklist further contains guidance on the process of going about developing a rural pathway, including who should be involved and how.
Merit-Based Recruitment

Merit-based recruitment of competent and driven staff is the cornerstone of government effectiveness. While all human resource management (HRM) practices need to function well for a high-performing management system, the starting point is attracting and selecting the right people. If the human resource “inputs” are not fit for advertised positions in the first place, or do not possess the general competencies required to work effectively and are not motivated to serve the public, it will be significantly more challenging to use other aspects of HRM practices (such as performance management, compensation, and training) to compensate for this shortfall and have such staff deliver high-quality public goods and services. Research has shown that merit-based recruitment is a strong predictor of high public-sector performance. Hiring based on the quality of the candidate, rather than on personal or political connections, forms a basic pillar in a performance-oriented bureaucracy model (Meyer-Sahling and others 2021). Meritocracy correlates with economic growth and lower levels of corruption and nepotism (Fukuyama 2013), which in turn is associated with greater motivation and higher performance of civil servants (Meyer-Sahling and others 2018).

Vacancies for public sector health jobs in LICs and LMICs attract many candidates, hence effectively screening these candidates for both ability and public service motivation is important. While the LIC and LMIC focused health literature has not given sufficient attention to this topic, there is a small body of literature regarding other service delivery personnel and the importance of hiring based on competencies rather than political affiliation that is relevant for HRH. Much of this literature is on Latin America where, over the past couple of decades, several countries implemented teacher-hiring reforms that selected new teachers based primarily on candidates’ scores on standardized exams. Evaluations of these reforms in Colombia, Ecuador, and Mexico found that teachers hired through examinations had higher technical ability (as measured by grades in university) than those hired through discretionary mechanisms (such as selection by trade unions), though the effects on student learning outcomes were mixed (Araujo and others 2020; Busso and others 2023).

Survey results show that merit-based recruitment is quite limited for health workers in Mali and Madagascar (figure 3). The HRH surveys measured merit by asking respondents whether they had been hired through a public recruitment competition and, if so, what type of assessment criteria—written test and interview—they underwent. The survey revealed that most surveyed staff were brought on board without undergoing a competitive selection process in either Madagascar (almost 80 percent) or Mali (almost 70 percent). There are also differences in the competitiveness of recruitment across the health professions with a gendered dimension. In Mali, while 72 percent of doctors surveyed went through a public competition, most nurses and midwives did not (68 and 61 percent, respectively). While the lack of participation in a public selection process is consistent across occupations, the lower participation of nurses and midwives may have important implications on the ability and motivation of these mostly female staff, which is important given that in most facilities these are the only medical personnel providing basic health services.
Another critical implication to consider is that, for countries like Madagascar and Mali, the overall scarcity in finding technically qualified applicants for competitive selection of predominantly female occupations such as nurses and midwives is likely linked to the low education levels of women in general. According to World Bank data, only 25 percent of girls in Mali and 35 percent of girls in Madagascar complete lower secondary school, with even fewer completing technical degrees or tertiary education. This challenge in identifying a pipeline of educated girls and women in the public health workforce further emphasizes the need for implementing rural pathways for health workers, with focus on increasing the number of qualified female candidates for these jobs, especially in underserved areas.

Performance Management

Management quality plays a key role in the performance of personnel and service delivery. Personnel management, particularly robust performance evaluations, regular conversations between managers and staff, and coaching and mentoring are important influencers of worker performance. Case studies on health in Sub-Saharan African countries indicate that organizational culture—wherein flexibility, problem solving, participation, teamwork, and shared professional norms are valued and upon which the entity holds a strong sense of mission—is a more important determinant of performance than an entity’s remuneration or control structures (Grindle and Hilderbrand 1995). Other studies from South Africa, Taiwan, and China linked transformational leadership and award systems that challenge employees with interesting work and make them feel valued and a sense of belonging, to higher job satisfaction (Castro and Martins 2010; Tsai 2014; York, Colasanti, and Josephson 1988). The impact of any performance incentive scheme, such as individual rewards under performance-based financing (PBF) programs, is conditional on the robustness of the performance evaluation system.

Across various public sectors globally, there exists a significant variation in the effectiveness of performance evaluations. In Romania, a World Bank survey of the administrative staff across several ministries revealed that a striking 95 percent of public servants received the highest attainable evaluation rating, highlighting a potential lack of differentiation in evaluating performance. Performance appraisals are meant to have formal implications for staff promotions, accountability, and pay, yet the inflated ratings may diminish their impact on administrative decisions. The situation is comparable in Croatia (through a similar survey), where 93 percent of civil servants received the top two ratings, and a sizable proportion reported that their evaluation results were neither discussed nor utilized in a meaningful manner. This lack of acknowledgment can lead to disillusionment and a decreased sense of purpose in their roles, leading to a poorly motivated public service that both the Romanian and Croatian public services were found to have.

In Mali, the survey found that some key elements of performance management were present in the health facilities, though the evidence suggests that these are largely pro forma exercises. Most facility staff (74 percent) have monthly performance evaluations; however, fewer staff (55 percent), report having regular informal conversations with their manager. Similarly, in Madagascar, 84 percent of facility staff report having received direct supervision from their managers, but only 60 percent had a chance to discuss their performance with the manager in a formal or informal capacity. These discrepancies suggest a notable gap between the prescribed standards and the practical implementation of performance management. Regular conversations between managers and staff not only offer invaluable insights into individual performance but also play a crucial role in nurturing staff engagement, motivation, and professional development.

The academic literature does not explore gender differences in performance management, but the survey results from Mali and Madagascar are striking and suggestive of discrimination. Men are more likely than women to have their performance regularly evaluated. In Mali, 41 percent of male doctors or medical officers receive monthly performance evaluations, compared with 21 percent of female doctors or medical officers, and a similar discrepancy was observed among male and female CHWs. Similarly in Madagascar, 29 percent of male doctors receive
monthly performance evaluations as compared with only 7 percent of female doctors. These gender differences in formal evaluations may contribute to gender differences in career progression. For example, in Mali, men reported being slightly more likely to be promoted (39 percent) compared to women (36 percent), and when they are, they are likely to be promoted more than once or twice. No woman was promoted more than twice in five years, which was especially true for head of service or more senior positions.

Work Environment: Group Problem Solving

Group problem solving is an important aspect of teamwork emphasized in the literature that impacts individual knowledge and attitudes, and service delivery. Group problem solving encompasses a range of interventions that are characterized by problems being identified and solutions being developed in collaborative (peer) groups, rather than in a top-down fashion by superiors, although groups can be composed of individuals at various levels of the hierarchy. Providing a platform for peer knowledge sharing, building skills, and capitalizing on group dynamics and creativity to develop context-tailored and acceptable solutions have the potential to address bottlenecks such as for instance issues around health worker skill levels or inefficiencies in resource use. They may also impact various motivational drivers, such as through improvement of the working conditions or through enhancing interpersonal relationships in work teams (social incentives). Finally, they may act on internal drivers of motivation, for instance, by strengthening health workers’ perceived agency, self-efficacy, and sense of belonging and commitment. Box 2 provides three examples to illustrate how group problem solving might look in practice.

In 12 studies from LICs and LMICs, group problem solving strategies showed almost exclusively positive effects, with improvements ranging from large to small (Rowe and others 2018), mirroring what has been found in high-income settings (Hill and others 2020). Effects also appeared to strengthen over time (Arsenault and others 2022). The literature, however, does not distill key elements and contexts of successful interventions, or key success factors in relation to intervention design (e.g. specific model, intensity) or context, except suggesting that group problem solving may be more effective in primary than in secondary care settings (Hill and others 2020).

This lack of best practices emerging from the available evidence may relate to the fundamental idea behind group problem solving—bottom-up, participatory, and context-specific problem solving—which in a way contradicts the notion of the very existence of generalizable best practices. However, it is plausible to assume that group problem solving is more successful in organizations with a preexisting performance culture that values change, initiative, and participation, and that provides sufficient resources to effect change. However, creating such elements might be the result rather than the precondition of group problem solving.
BOX 2: Examples of group problem solving interventions

**Group problem solving to improve Integrated Management of Childhood Illness in Kenya**

An intervention was conducted to provide training in group problem solving to district health management teams (DHMTs) and to encourage them to establish and train problem-solving teams in primary care facilities (Tavrow, Malianga, and Kariuki 2004). Teams, composed of existing facility staff, were meant to identify facility-specific barriers to Integrated Management of Childhood Illness (IMCI) adherence, and seek and lead the implementation of facility-level solutions to address them, with regular coaching and support by the DHMT as part of their routine supportive supervision activities.

About one and a half years into the intervention, all intervention facilities had implemented solutions to an identified problem. Most teams tried to address frequent lack of IMCI drugs and demoralizing health workers, and work with health center management committees to improve drug availability. Intervention facilities performed significantly better in critical IMCI case management tasks compared to control facilities.

**Community Health Workers Community of Practice to improve tuberculosis contact investigation in Uganda**

Hennein and others (2022) report experiences from a pilot Community of Practice (CoP), intended to inform the development of a wider intervention and impact evaluation. They organized the first-ever CoP among the CHWs of two tuberculosis clinics as a forum to learn from each other and identify their own areas for improvement—gaining its ground from the normal, informal communications among the CHWs. CoP members were encouraged to meet on a weekly basis, under rotating leadership, to provide an opportunity for regular exchange of views, sharing of experiences and stories of successes and challenges, developing common goals, and engaging more broadly. These aims reflect the three core elements of CoPs: (1) a subject of shared interest (domain); (2) social interactions and relationships (community); and (3) shared frameworks, ideas, tools, and stories (practice). To catalyze discussions, the research team fed performance data into the CoP meetings (Wenger, McDermott, and Snyder 2002).

Five months into CoP initiation, CoP members had instituted three activities in addition to the two proposed by the research team (feedback report review, weekly meetings): (1) real-time communication through WhatsApp and phone; (2) didactic education sessions on specific topics identified by CoP members, organized by the research team and delivered by invited experts; and (3) clinic-wide staff meetings to provide updates on contact investigation to those eventually in charge of managing identified tuberculosis cases.

Participating CHWs reported feeling a motivating and inspiring shared sense of ownership of the CoP. They described how the CoP not only allowed them to exchange experiences and knowledge, thereby building their technical capacity and improving their self-efficacy, but to also benefit from social support, contributing to strengthened social and professional identities.

**Plan-Do-Study-Act cycles to reduce maternal, perinatal, and neonatal mortality in Malawi**

The results of a cluster randomized trial of a multi-component quality improvement initiative including both community- and facility-level quality improvement activities reported interesting results (Colbourn and others 2013). At facility level, the intervention consisted of breakthrough series collaboratives and coaching staff in
quality improvement methods. Breakthrough series collaboratives differ from other problem-solving groups in that they are structured, and are short-term rather than continuous learning activities, bringing together heterogeneous staff from multiple sites and of multiple professional backgrounds. The collaboratives focused on key interventions to reduce maternal and neonatal mortality, such as the post-partum hemorrhage prevention protocol. Four collaborative learning cycles were followed by small tests of proposed change in the framework of Plan-Do-Study-Act cycles.

While no impact on maternal mortality could be established (given the insufficient observation data due to the rareness of the event), the impact evaluation found positive effects on neonatal mortality particularly for the combined community and facility-based intervention package.

Financial Incentives

Financial and “quasi-monetary” incentives have long been a fundamental part of many health worker remuneration packages in LICs and LMICs, with health workers often able to receive a broad range of salary top-ups and benefits (e.g., housing, subsidized education) on top of their base salaries based on a range of factors.

Traditionally, such incentives and benefits have rarely been tied to day-to-day performance, but rather to performance in a broader sense, such as for instance accepting to work in rural or otherwise unattractive areas and posts, or to assume additional work responsibilities, often in the context of time-limited, donor-funded projects. This is also related to the fact that in many LICs and LMICs, health workers are civil servants and as such, in contractual arrangements that extend to other sectors such as education, decisions on incentives and benefits need to be taken in careful consideration of other sectors to avoid dissatisfaction of civil servants outside of the health sector.

Available evidence suggests limited effectiveness of incentives and benefits in retaining staff in rural posts (Willis-Shattuck and others 2008; Henderson and Tulloch 2008), but high effectiveness in the implementation of vertical, donor-funded programs (Martínez and Martineau 2002). Reasons are manifold and context-dependent, but usually related to inadequate amounts in relation to other parts of complex remuneration packages as well as in relation to the costs, financially and otherwise, of assuming particular roles (Bertone and Witter 2015). An important consideration also relates to temporality of effects. While improvements to the working conditions, including remuneration, might be highly effective in the short term, individuals tend to get used to changed realities quickly, adjusting their internal benchmarks and expectations.

Performance-Based Financing

In the early 2000s, there was a surge in using financial incentives in healthcare, especially in Sub-Saharan Africa, with the introduction of performance-based financing (PBF). Unlike traditional bonuses linked to specific roles, PBF ties incentives directly to daily performance in delivering healthcare. The idea behind PBF is to boost the use and quality of healthcare services.
It does this by encouraging healthcare providers to match their services with what the community needs and what the health system requires. Providers do this by signing contracts that outline specific performance goals. Meeting these goals results in financial rewards. At the same time, PBF gives healthcare facilities more independence in management and strengthens supervisory systems (Renmans and others 2017; Fritsche and others 2014).

PBF functioning is usually explained with agency theory (Savedoff 2010). Specifically, it is assumed that healthcare providers’ (agents) interests are not always aligned with those of the population (a principle upheld by the Ministry of Health in general). From a health financing perspective, reasons lie in inadequate separation of core health financing functions, particularly purchasing and service provision, as both fall under the Ministry of Health in many low-income and lower-middle income public healthcare systems. With budget allocation and salaried staff as main purchasing arrangements, few levers for alignment of interests exist. PBF acts as such a lever by using performance contracts and financial rewards to communicate expectations and financially reward compliance.

On the one hand, the wish to generate additional income is expected to motivate health facilities and health workers to provide care of high quality to all individuals in need. On the other hand, revenue generated through PBF, coupled with enhanced managerial autonomy, is expected to allow health facilities to improve their infrastructure, equipment, and resource situation to enable improvements in service delivery. Like the group problem solving interventions above, PBF is grounded in the fundamental assumption that local structures are in the best position to identify and solve their specific problems. In fact, in practice, performance improvement in PBF facilities often essentially takes a group problem solving approach, even if not explicitly labeled as such. However, unlike group problem solving, which prescribes a bottom-up or at least a participatory approach to identifying and solving local challenges, PBF subscribes to a more all-encompassing and value-free idea of entrepreneurship, where for instance purely top-down approaches are perfectly acceptable so long as they lead to better healthcare provision.

PBF has been extensively evaluated. As noted above, impact evaluations focus exclusively on frontline care provider performance (often only primary care) and population impact, whereas impact on performance of the administrative hierarchy is unclear. A recent Cochrane review, including 59 evaluations of PBF and other Pay-for-Performance (P4P) schemes in 25 countries (primarily in Sub-Saharan Africa and Asia), concluded mixed effects and high heterogeneity due to differences in intervention design and contextual factors (Diaconu and others 2021). The authors highlight that although the body of evidence is continually growing, the strength of evidence is still often weak. Another review of a set of impact evaluations concluded that PBF can result in gains to service utilization, but only has limited impacts on quality (Walque and others 2022; Walque and Kandpal 2022). The authors further compared PBF to direct facility financing (operating budgets and provider autonomy, but not performance pay) and demand-side financial support (e.g., conditional cash transfers, vouchers), showing that the performance-based payment modalities add little value over and above flexible payment systems and provider autonomy. In explanation, they found that shortfalls in quality of care are only to a small part attributable to individual health worker effort, whereas to a considerable extent to structural limitations. In conclusion, they advocate for the elements of direct facility financing, autonomy, transparency, and community engagement, and recommend moving away from performance-conditional payment mechanisms, at least in under-resourced, centralized health systems.
In terms of intermediate outcomes or presumed mechanisms of change, PBF and/or P4P seems to be effective in increasing availability of inputs in frontline care provision (human resources, infrastructure, equipment, medicines, and other supplies), although there is little indication of effects on provider absenteeism (Diaconu and others 2021). Results are also encouraging for facility managerial autonomy (low certainty evidence). For other assumed mechanisms of change or intermediate outcomes such as health facility management quality and governance as well as provider motivation and satisfaction, there is little indication of effects. Qualitative and mixed methods research on how PBF affects health worker motivation suggests that PBF does not simply leave health workers unaffected in their willingness to do well (Lohmann, Muula, and others 2018; Lohmann, Wilhelm, and others 2018; Bhatnagar and George 2016). Rather, health workers often report significant improvements in their work environment, positively contributing to their perceived ability to do well, which they perceive as highly motivating. Many feel motivated by altered social dynamics through a renewed performance focus and transparency of work performance, as well as recognition for effort signaled by the performance rewards. Yet, they equally report significant challenges, many of which are related to monetary aspects, such as delays in payment of PBF rewards and issues of fairness in individual staff bonuses, acting as major demotivators effectively cancelling out the positive motivational effects of other aspects of PBF.

A realist evaluation accompanying the Cochrane review unpacks the design modalities and conditions under which PBF seems to have worked comparatively better (Singh and others 2021). It highlights the following “good practice” design features: (1) incentive amounts that result in 10 percent or more increase in overall salary of incentivized individuals; (2) incentivization that occurs at all levels of the health system hierarchy; (3) a fair and transparent system of distributing incentives, particularly among individual health workers at health facility level; (4) use of a wide range of indicators; and (5) involvement of communities and drawing on existing structures in results verification. The review further suggests that PBF works best in health facilities that are sufficiently staffed and skilled to deliver the incentivized services; in contexts with already decentralized financial systems, where health facilities have autonomy over funds; and in systems with efficient banking systems allowing timely transfer of funds.

The individual incentive impact of PBF is dependent on the quality of performance management, which is often weak in LICs and LMICs, and the size of the incentive. The Mali and Madagascar surveys revealed, as noted above, that while monthly performance evaluations were taking place, informal conversations with managers were less frequent. The Mali HRH survey also found limited use of financial incentives tied to performance for facility staff. Sixty percent of facility staff did not receive any salary increases in the past year, with 55 percent of staff in the PBF treatment facilities receiving no salary increases (figure 4). Treatment facilities did provide more performance-based bonuses (18 percent) compared to control groups (5 percent), while unconditional salary increases were the most generic form of financial incentive in both treatment and control facilities (24 percent and 28 percent, respectively). When asked about the size of the most recent monetary bonus, 36 percent of respondents from treatment facilities, and 56 percent from control facilities, stated that it was less than 5 percent of their salaries. Among those who did receive a salary bonus, men tended to receive larger bonus amounts compared to women. A smaller percentage of men compared with women received very small bonuses of less than 5 percent (35 percent male versus 41 percent female). On the other hand, men were more likely to receive bonuses larger than 11 percent (16 percent male versus 13 percent female).
More broadly, gender-based wage discrepancies were observed within each occupation category. In Mali, survey results show that men outearned women in professions at both the higher and lower income levels. For example, 74 percent of men doctors earned the top salary of more than CFA 175,000, compared with 67 percent of female doctors (figure 5A). Women doctors were also more than five times more likely to earn a much lower wage: between CFA 5,000 and CFA 7,500, compared to their male counterparts. Wages were more even in the more feminized but highly skilled profession of nursing. Female nurses were more likely to earn the highest wages compared to men. However, they were slightly less likely to earn one of the top two wages compared to male nurses, with 71 percent of female nurses earning one of the top two wages compared with 72 percent of male nurses.

Gender wage gaps like those of doctors were also apparent for the lower skilled, less well-paid health professions where men were less likely to be at the lowest pay scale than women (figure 5B). For example, female pharmacists are twice as likely to earn less than CFA 50,000 compared to male pharmacists and only one-third as likely to earn CFA 75,000 or more. For community health workers, 78 percent of women compared with 55 percent of men earned the lowest wage.
**Figure 5A:** Comparison of wages between men and women in top-earning occupations


Note: SEN = State Enrolled Nurse, SRN = State Registered Nurse.

**Figure 5B:** Comparison of wages between men and women in lower-paid occupations

Among top earning occupations, doctors were more likely to earn the highest wage, while wages were more equal between male and female nurses. Among lower-paid occupations, women were more likely than men to earn one of the two lowest wage categories and the least likely to earn higher wages compared to men.

Nonfinancial Incentives

Given the challenging work conditions and financial concerns, research emphasizes the vital role of nonfinancial incentives or social motivators. These incentives, both positive (like social recognition) and negative (like stricter monitoring through digital technology), are crucial. Positive relationships with colleagues, managers, patients, and the community, along with a sense of belonging and commitment to the organization, enhance health workers’ motivation. These factors boost their social standing and self-worth, while their absence acts as demotivators (Mathauer and Imhoff 2006; Mbindyo and others 2009; Pandya and others 2022; Sirili and others 2018; Chimwaza and others 2014; Thi Hoai Thu, Wilson, and McDonald 2015).

There are limited evaluations of nonfinancial recognition and rewards, especially for healthcare professionals. One of the exceptions is a study in India, which reveals that team-based goals, appreciation tokens, performance transparency, and recognition certifications notably improved the performance of maternal health service teams (Carmichael and others 2019). Another study in Zambia found that rewarding public health extension workers with public recognition for selling contraceptives, with each sale rewarded with stars, was more effective than financial incentives (Ashraf, Bandiera, and Jack 2014). Further, studies on the motivational mechanisms of PBF highlight the powerful motivational potential of measuring and making performance transparent to peers and the public, independent of the financial incentives that follow (Lohmann, Wilhelm, and others 2018; Bhatnagar and George 2016; Kalk, Paul, and Grabosch 2010).

For a CHW, a comparatively solid evidence base speaks in favor of recognition schemes, standalone or in combination with financial incentive components (Gadsden and others 2021; Naimoli and others 2015; Bhaumik and others 2020). Specific interventions include for instance public awards for exceptional performance, letters of thanks from government officials, or certificates for completing certain duties, as well as measures to recognize and provide visibility to CHWs as a health worker cadre.

Absenteeism is a major problem in many low-income and lower-middle income healthcare systems, especially in rural areas. Reasons vary from valid causes like planned leave or illness to questionable ones such as dual practice or personal matters. Validity depends on local norms and cultural context (Belita, Mbindyo, and English 2013). Addressing absenteeism involves various culture-dependent strategies, from spot checks to broader efforts targeting organizational culture.

Digital monitoring of healthcare workers can curb absenteeism, but there are both benefits and drawbacks to this technology. In India, it improved attendance and skilled birth deliveries, yet it also led to staff resentment and attempts to bypass the system. Additionally, many local governments didn’t take action against absent workers due to bureaucratic rules or political factors (Dhaliwal
DETERMINANTS OF HEALTH WORKER PERFORMANCE: A REVIEW OF THE EVIDENCE

Prosperity Insight

and Hanna 2014). In rural clinics in Pakistan, smartphone monitoring of health supervisors doubled facility inspections and decreased worker absenteeism, although the impact on absenteeism depended on local politics (Callen and others 2018). Similar studies on other service providers, notably teachers, also underline the importance of local context, regulations, management quality, and incentives to enable digital monitoring to create an impact.

Based on evidence from high-income countries, however, it is likely that “soft strategies” including organizational change interventions aimed at attendance culture, improvements in the working conditions, health and wellness programs, and possibly incentive schemes are likely better suited and more effective in LIC and LMIC health systems, particularly at primary level in rural areas, than regulatory mechanisms aiming at enforcing presence (Kisakye and others 2016).

Training

Surveys of private and public sector staff in Africa, Asia, and Europe found that training can strengthen workers’ skills, engagement, and performance, and can increase morale and motivation (Ameeq-ul-Ameeq and Hanif 2013; Amos and Natamba 2015; Manzoor and others 2019). A systematic review of health system strengthening interventions highlighted how on-the-job training can motivate workers and even reduce attrition rates (Ayanore and others 2019). Another recent systematic review of strategies to enhance health worker performance in LICs and LMICs specifically found that in-service training is consistently effective, particularly when coupled with supervision or group problem solving, and when targeting healthcare professionals, but less so for community and other lay health workers (Rowe and others 2018, 2021). Yet, some scholars criticize the available evidence of training’s impact on performance as being largely from higher-income countries and the private sector, of low quality, and as non-experimental or at times indicating only limited or no effectiveness (Ayeleke and others 2016; Dieleman and Harnmeijer 2006; Grindle and Hilderbrand 1995).

An array of training tools have been explored, including the common use of workshops, internet-based or self-directed learning, communities of practice, and technical assistance (Decorby-Watson and others 2018). Overall, numerous authors argue for a combination of classroom and on-the-job training that is informed by participants’ needs, with an emphasis on reflective learning-by-doing and team-based learning (Choonara and others 2017; Türk and Saue 2019). Classroom-based training may increase workers’ technical knowledge, but mentorship, coaching, sponsorship, and intergenerational cooperation could ensure such skills translate into changed work behavior and ultimately into better performance (Chanyalew, Yitayal, and Atnafu 2022). Effective leaders with the requisite management skills are essential to helping that process move forward. Some argue that a person’s learning transfer process is affected by their and the trainers’ abilities, the training design, and the work environment (Sørensen 2017). Ultimately, in order to maximize the impact of any new training initiative, capacity-building programs should consider who are best placed to teach and spread the much-needed knowledge and how to do so. For example, practical, problem-driven, and action-based learning programs tailored to participants’ ability and the local context can improve bureaucrats’ understanding and adoption of management reforms (Brinkerhoff and Brinkerhoff 2015; Choonara and others 2017; Türk and Saue 2019).
Healthcare professions worldwide are closely regulated, ensuring professionals meet certain standards. This regulation involves accrediting training institutions and licensing individual health workers through professional organizations or government bodies. While there is less evidence on the effectiveness of accreditation and licensing in related areas, these practices provide essential safeguards in healthcare (Aftab and others 2021; Saks 2021; Antwi and others 2021; Braithwaite and others 2012). Upholding or renewing licenses is often an administrative act in many health systems in practice, and enforcement is not always thorough on shortfalls, for instance, in Ethiopia (Alemneh and others 2022). Accreditation and licensing can improve performance by maintaining education standards, continuous training, and ethical conduct. They address capacity issues and various external (like social incentives and pressure) and internal (such as self-confidence and professional identity) motivational factors. Although specific evidence in LICs and LMICs is limited, case studies suggest their positive impact (Touré and others 2021).

The World Bank HRH surveys revealed that training, when available, is often not well designed. In Mali, 83 percent of health workers cited receiving training in the last two years, either provided by the health administration or by an external party. Those who had not undergone training cited limited opportunities provided by their facility (23 percent), not being selected for training (21 percent), or finding the training irrelevant (11 percent). However, only 62 percent agreed that their training needs were adequately addressed.

In Madagascar, the survey highlighted a notable disparity in the availability of ongoing professional development opportunities among facility staff. Forty-three percent of respondents reported not receiving any training in the past two years and expressed concerns that their training needs were not adequately assessed. Further, more than half of those who reported not receiving any training pointed to the absence of training opportunities being offered as the primary cause.

Women also faced greater obstacles in receiving training (figure 6). In Mali, a higher percentage of female employees (21 percent) did not have access to training compared to their male counterparts (12 percent). When probing the reasons behind this discrepancy, a larger proportion of women pointed to constraints such as time limitations, a limited array of training options, and insufficient opportunities provided by their institutions. Similarly in Madagascar, a greater proportion of women (46 percent) reported a lack of training compared with men (37 percent). Significantly, more than half of those who missed training in the past year attributed their situation to the absence of training opportunities. There are also important gender differences in the type of training received. Female health workers in Mali were only half as likely to receive at least some training from external sources compared to male workers (33 percent versus 60 percent). They were also less likely than men to receive training in high value areas such as health financing, a bias with important implications given its potential relationships to facility funding decisions.
Health Worker Motivation

A large body of literature has explored various aspects of health worker motivation—whether it is a personality trait, largely stable over time, or situational and fluctuating; and whether it is “intrinsic” or “extrinsic.” Not surprisingly, the literature concludes that motivation can be both a trait and situational (Wasserman and Wasserman 2020). Understanding motivation as a trait is useful when thinking about habitual tasks—it reflects a person’s overall willingness to perform when conditions are good. On the other hand, looking at motivation as a state is helpful for specific goals, like aiming for a particular outcome. Depending on the job and workplace, this difference is essential for hiring and choosing the right people.

Extrinsic motivation is derived from an external stimulus or “driver,” such as financial or nonfinancial incentives. In contrast, intrinsic motivation is motivation “originating from within” without such an external stimulus. Research has shown that although motivation of any type can be effective in driving performance, intrinsic motivation tends to have favorable properties over extrinsic motivation in that it is more stable over time and generalizes better across settings, situations, and behavior (Van den Broeck and others 2021). Intrinsic types of motivation further better predict quality of work, as opposed to quantity (Cerasoli, Nicklin, and Ford 2014). Finally, intrinsic motivation relates not only more favorably to performance, but also to other desirable outcomes such as organizational commitment or wellbeing, whereas the opposite tends to be true for extrinsic motivation (Gagné and Deci 2005; Van den Broeck and others 2021; Miquelon and Vallerand 2008). Recent empirical studies confirm the importance of intrinsic motivation and mission orientation for health.
worker performance. In Pakistan, doctors that score higher on an index measuring public service motivation were less likely to be absent from work or to fabricate health reports (Callen and others 2018).

The World Bank HRH survey revealed high levels of intrinsic motivation, despite the limitations of resources and infrastructure, among facility staff in Mali and Madagascar. In Mali, for example, most staff stated that they were more motivated now than when they joined public service, primarily due to the challenging nature of their work and the opportunity to serve citizens. In both Mali and Madagascar, however, a considerable proportion of staff facility staff were considering leaving their jobs due to low extrinsic motivation. When asked about their likelihood of remaining in the same facility over the next two years, 43 percent of facility staff in Mali and 73 percent in Madagascar expressed their intention to continue working in their current facility (figure 7). However, a substantial proportion (46 percent in Mali) remained undecided about their plans, and a small percentage indicated the possibility of leaving within the next two years in both countries. The reasons given were low salaries, limited career prospects, and the challenges associated with remote work locations.

Earnings within the public sector play a critical role in attracting and retaining skilled workers, yet the link between income and higher staff motivation is complex. Additional income may motivate performance, serving as a sign of valuation and recognition of effort and achievement. In case of perceived inadequacy or unfairness, they may signal lack of valuation and recognition. While it is acknowledged that health workers might perceive their wages as low, it is important to note that overall wages in LICs and LMICs are generally low. In comparison to the private sector and formal wage employees, the public sector, on average, offers higher wages to health workers. Nevertheless, the expectations and perceptions of wages also matter, and the surveys’ findings indicate that a significant majority, 73 percent of facility staff in Mali and 61 percent in Madagascar, believe they would receive higher salaries if employed in the private sector than their current positions in the public sector. This mismatch between actual wage premia and perceived wage premia may reflect differences in wage structure, as wage growth in the public sector is usually more compressed and workers may be basing their expectations in comparison to the higher end of the private sector wage distribution.
Figure 7: Facility staff’s views on turnover

a. Staff’s future plans

<table>
<thead>
<tr>
<th></th>
<th>Madagascar</th>
<th>Mali</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will likely keep working here</td>
<td>10%</td>
<td>43%</td>
</tr>
<tr>
<td>Haven’t decided</td>
<td>16%</td>
<td>46%</td>
</tr>
<tr>
<td>I would like to leave my facility in the next two years</td>
<td>11%</td>
<td>10%</td>
</tr>
</tbody>
</table>

b. Reasons for staff turnover

<table>
<thead>
<tr>
<th></th>
<th>Madagascar</th>
<th>Mali</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of recognition</td>
<td>10%</td>
<td>27%</td>
</tr>
<tr>
<td>Low salaries</td>
<td>14%</td>
<td>7%</td>
</tr>
<tr>
<td>Poor career opportunities</td>
<td>6%</td>
<td>9%</td>
</tr>
<tr>
<td>Remote location</td>
<td>9%</td>
<td>52%</td>
</tr>
</tbody>
</table>

Mental Health and Resilience

As the above description of external drivers illustrates, health workers work under immense pressure and often demanding work environments. They deal with morbidity and mortality daily, suffer from high rates of workplace violence (Liu and others 2019; Njaka and others 2020), and work on the frontlines of managing the consequences of humanitarian crises and natural disasters. High levels of burnout and other mental health issues among health workers worldwide are therefore not surprising (Aiken and others 2012; Lohmann, John, and Dzay 2022). There is little research on the performance-related consequences of poor psychological wellbeing among health workers in LICs and LMICs, but the few available studies from high-income country contexts demonstrate the adverse consequences of poor mental health on quality of care and patient safety.4

In the wake of the COVID-19 pandemic, there is new interest in interventions to improve health worker resilience to adversity and to foster mental health. Available interventions include self-care interventions (e.g., exercise, sleep, hygiene, personal relationship focused interventions, mindfulness and self-awareness training, stress management and relaxation training), interventions aimed at improving working conditions and organizational justice, interventions to foster coping skills (grounded for instance in cognitive behavioral therapy or problem-solving therapy), and to a limited extent disaster preparedness interventions (Kunzler and others 2020; Heath, Sommerfield, and von Ungern-Sternberg 2020; Melnyk and others 2020).

Evidence on intervention effectiveness is generally limited and almost exclusively from high-income settings (Cleary and others 2018; Kunzler and others 2020; Venegas and others 2019; Melnyk and others 2020; Heath, Sommerfield, and von Ungern-Sternberg 2020; Rogers 2016). A recent Cochrane review concluded that for interventions labeled as psychological interventions to foster resilience, there is some evidence of higher levels of resilience and lower levels of depression and stress, but evidence has low certainty to date, with usually short follow-up time frames (Kunzler and others 2020). The available evidence does not allow judgments on the relative importance of intervention frequency—investigated interventions ranged from one-hour sessions to multi-month programs—and mode of delivery, such as face-to-face, online, or hybrid. In low-income settings, there is a study from Sierra Leone evaluating a multi-week counseling and psychosocial training prior to the Ebola pandemic aimed at helping health workers improve their coping skills by addressing workplace stressors, introducing support services, and improving interpersonal relationships (Vesel and others 2015). Evaluation results indicate positive effects on coping skills and stress levels, albeit with a rather low-certainty study design.

4. See Grover and others (2018); Kim and others (2018); Ojedokun, Idemudia, and Kute (2013); Panthee, Shimazu, and Kawakami (2014); Negueu and others (2019); and Sharma and Dhar (2016). See also Aiken and others (2012); Davey and others (2009); Hall and others (2016); and Wilkinson and others (2017).
This chapter presents evidence on the main HRH drivers of personnel working in the central and local health administration based on a review of the literature and the surveys carried out in Mali and Madagascar. It focuses on how these drivers influence the core stewardship functions like facility funding, supportive supervision, and data informed management.
Facility Funding

The sustainable and equitable financing of high-quality health systems remains a central challenge toward achieving universal health coverage (UHC). Hospitals and health systems are under constant pressure to cut costs while maintaining and improving a high-quality and robust organization. The COVID-19 pandemic has exacerbated the financial challenges that facilities are facing. Adequacy of funding is essential for the success of PBF as the approach relies heavily on consistent funding for health facilities, which is transferred directly to their accounts, and on facility autonomy in using the funds and in involving community leaders in managing the facility (Witter, Bertone, and Diaconu 2021).

In both Mali and Madagascar, a substantial share of facility managers reported substantial delays in the receipt of their allocated facility funds (figure 8). In Madagascar, among those facilities experiencing delays (68 percent of all facilities), 78 percent experience delays lasting longer than six months. Notably, delays in facility payments were more prevalent in facilities managed by women (71 percent) compared to those managed by men (65 percent). In Mali, less than half of all facilities cited not receiving facility funds on time, where delays are lasting more than six months for half of all facilities. In addition, men were more likely to report being involved in facility fund decision-making in PBF facilities in Mali, with 78 percent of men reporting involvement with financial decision-making compared with 65 percent of women.

Figure 8: Experiences with receiving facility funding

In both countries, staff also reported significant political influence in the use of facility funds. The survey asked facility staff about their views on whether decisions regarding budget administration and facility construction and renovation were subject to political pressure. Almost half of all facility staff in Madagascar (48 percent) and in Mali (51 percent) reported that decisions on facility construction and renovation were subject to political pressure. These findings may imply possible misallocation of resources, delayed or inadequate infrastructure improvements, and compromised patient care. Ensuring transparency in financial processes can help mitigate concerns about political pressure.

Supportive Supervision

Supportive supervision has long constituted a key pillar in healthcare management, although its implementation remains often poor in LICs and LMICs (Avortri, Nabukalu, and Nabyonga-Orem 2019; Vasan and others 2017). Supportive supervision involves observing and evaluating practices, providing feedback and guidance, and addressing problems collaboratively. Unlike top-down approaches, it emphasizes constructive interaction between supervisors and workers. It offers not just technical guidance but also emotional support, recognition of effort, and motivation. This is crucial for frontline healthcare providers who often work in isolation, fostering a sense of belonging and commitment (Rabbani and others 2016; Kok and others 2018; Madede and others 2017). Effective supportive supervision directly improves healthcare workers’ skills and addresses obstacles to their performance. It also enhances their motivation by improving working conditions, providing social incentives, and boosting self-confidence.

In LICs, especially in primary care, supportive supervision is commonly a mix of group and individual sessions. Supervisors, often district health management teams, visit facilities to oversee various issues, using structured checklists. Supportive supervision can also involve experts from higher levels of the health ministry or even local government officials, depending on the health system’s organization.

Evidence on the impact of supportive supervision is limited. On average and across a broad range of settings and performance measures, interventions to strengthen supervision showed moderate effects if standalone, but with substantial variation by setting and intervention design (Rowe and others 2018; Arsenault and others 2022). It is crucial to recognize that many studied interventions were funded externally, raising doubts about their integration into routine healthcare practices. Additionally, most interventions had short-term follow-ups, leaving long-term effects uncertain. While the evidence is limited for definitive conclusions, certain factors have been identified as key to the success of supervision-related interventions (Deussom and others 2022; Hill and others 2014; Avortri, Nabukalu, and Nabyonga-Orem 2019; Ballard and Montgomery 2017; Vasan and others 2017; Dieleman, Gerretsen, and van der Wilt 2009).

First, interventions work better when they are part of a broader quality improvement plan or combined with training or mentorship. Many low-income settings lack structured supervisory systems and clear guidelines for performance, especially beyond facility-level metrics and core clinical processes. This lack of clarity can demotivate both supervisors and those being supervised (Nyamhanga, Frumence, and Hurtig 2021; Bradley and others 2013).
Second, supervision by both direct line managers and external assessors has been proven as effective. Success factors include technical expertise, teaching skills, emotional support, and the quality of relationship between supervisors and workers. Peer supervision, although tested, is less favored due to potential tensions and increased workload. Community-based approaches, especially for community health workers, have mixed results. While self-assessments have limited standalone impact, they show value when integrated into larger supervision or quality improvement programs.

Third, monthly supervision is found to be more effective than quarterly sessions, emphasizing the quality of supervision over mere frequency. Continuity and regularity in the supervisory relationship are crucial for mutual understanding and trust. However, maintaining this consistency is challenging in many low-income settings due to resource shortages and frequent staff turnover, both of which hinder high-quality supervision (Nyamhanga, Frumence, and Hurtig 2021; Bradley and others 2013). Mobile phones are often used to remedy these challenges and have been proven as effective means of enhancing communication and exchange when in-person visits are not possible (Deussom and others 2022; Feroz, Jabeen, and Saleem 2020).

Fourth, timely and positive feedback is crucial for effective supervision, while the method and location of feedback delivery are less significant, offering flexibility in adapting to different contexts.

Fifth, the use of data, particularly from health information systems, to support supervision is inconclusive due to the lack of tangible performance indicators. New studies reveal that mHealth and other technology applications show promise, but the evidence to draw strong conclusions is limited. For example, one study explored the potential for an mHealth app to generate health worker performance metrics for supportive supervision (Savai and others 2022). The app, originally for patient data, was upgraded to track detailed health worker metrics like patient numbers and working hours. Although the study did not assess its impact on performance, it highlighted the app’s potential to provide crucial performance data previously unavailable for supportive supervision.

In Madagascar, staff working in the health administration at the central, regional, and district levels reported that supervision is linked to facility performance, yet more than 40 percent of all administrative staff reported that regular facility supervisory visits are not being conducted (figure 9). While the presence of supervision is encouraging, the lack of frequent visits suggests that there is room for improvement, particularly given the benefit of regular supervision.
While there appear to be facility supervisions in both countries, survey findings reveal various challenges to effective supervision. In Madagascar, 81 percent of respondents cited a lack of financial resources as a major hurdle to adequate supervision in healthcare facilities, followed by time constraints (34 percent). Similarly, in Mali, financial resources and supervisors' attitudes were identified as key obstacles to better supervision in healthcare facilities (30 and 29 percent, respectively). Conversely, 65 percent of respondents in Mali and 30 percent in Madagascar recognized the importance of understanding the local context for effective supervision. These findings underscore the crucial role of contextual knowledge in tailoring supervisory approaches to the specific needs and challenges of healthcare facilities and their communities. A deep understanding of local dynamics, cultural norms, and healthcare practices enables supervisors to make well-informed decisions and offer relevant guidance.

**Data-Informed Management**

Digital technologies such as mobile technologies (mHealth) and Health Management Information Systems (HMIS) can greatly increase public administrative capacity. They have the potential to both track and showcase administrative processes and service delivery, increasing efficiency, transparency, and accountability in the process; provide data for evidence-based decision-making; or raise awareness around public health initiative (World Bank 2023; Beschel and others 2018; Brinkerhoff and Bossert 2008; Curristine, Lonti, and Joumard 2007; Fryatt, Bennett, and Soucat 2017; Holeman, Cookson, and Pagliari 2016; Yip and Hafez 2015). Kenya, Uganda, Ethiopia, and Guinea have successfully used digital technologies to set up remote sensing, responsive, early warning disease surveillance systems and have managed medical records more efficiently for patients, which ultimately strengthened their health systems. However, the utilization of empirical data to inform
healthcare management and decisions is quite variable elsewhere, with some countries utilizing less than 5 percent of health data to strengthen health systems, improve health financing and public health, and increase reach for underserved populations (Ayanore and others 2019).

Implementing these technological solutions depends on the infrastructure available and the capacity and incentives of staff, particularly administrators, to utilize technology for its intended purpose. The LIC and LMIC literature on management capacity in the health system is relatively limited, but available studies have found highly variable management capacity both in health facilities and the administration, as well as variation in health worker or institutional performance as a function of managers’ capacity. Studies from Ghana and Ethiopia linking self-reported management capacity to facility or district performance have found out that units with higher management capacity perform better on some, though not all, performance indicators (Heerdegen and others 2020; Macarayan and others 2019; Fetene and others 2019). The study in Ghana also found a positive relationship between managers’ leadership and management ability and both their own and subordinate performance (Avoka and Seidu 2017).

In both Mali and Madagascar, the survey findings underscore the challenges in effectively utilizing collected data within the healthcare system. Seventy-one percent of respondents in Madagascar and 55 percent of respondents in Mali report that the data often capture a substantial number of indicators, which present challenges when compiling, interpreting, and effectively utilizing the information (figure 10). While the intention behind capturing a comprehensive set of indicators is to ensure a quality assessment of facility performance, it can inadvertently lead to information overload and hinder the ability to derive actionable insights.

Training programs may then focus on administrators’ technical knowledge and understanding of certain work functions or address workers’ behavior, including their self-efficacy and application of that knowledge (Decorby-Watson and others 2018). For instance, some quantitative and experimental studies concluded that training programs on leadership or management combined with performance-related pay schemes or courses teaching emotional intelligence, conflict management or empowerment in particular, have improved job performance (Olu and Adesubomi 2014; Seidle, Fernandez, and Perry 2016), as reviewed in more detail in chapter 2. In Ethiopia, the combination of training on data analysis, data presentation, and data use in decision-making; mentorship programs to spread these lessons; and post-training action plans has helped increase the effective

**Figure 10:** Share of respondents agreeing with “Data often captures too many indicators, creating challenges when compiling, interpreting, and effectively utilizing the findings.”

![Figure 10](image-url)

use of health information systems (Chanyalew, Yitayal, and Atnafu 2022).

Given the importance of management quality and leadership in low-income and lower-middle income health systems discussed above, leadership capacity development interventions for managers are increasingly popular in recent years in LICs and LMICs (MacKechnie and others 2022). Whereas traditional medical leadership roles were grounded in clinical or academic achievement, leading to “old-school” supervisory models focused primarily on tasks, the importance of leaders’ ability to mentor, motivate, and collaborate are increasingly recognized as key to implementing supportive supervision.

Leadership programs assessed in the literature range from short-term (one day to several weeks) to multimonth or rarely even multiyear programs, and are usually hosted face-to-face in academic institutions, targeting “active” leaders at all levels of the hierarchy, students, and other prospective leaders, or both (MacKechnie and others 2022). Themes covered varied across interventions, but common to most were communication, organizational structure and leadership, and personal development. Similarly, a variety of learning methods were used including, in order of frequency, workshops and lectures, problem-based learning activities, groupwork, experiential learning and fieldwork, case-based discussions, didactics, coaching sessions, seminars, and journaling.

By and large, evaluated leadership programs seem effective in developing personal leadership skills and are impactful from an organizational perspective, as evidenced for instance by resulting policy or workplace culture changes (MacKechnie and others 2022). To date, only few studies have robustly assessed the impact of leadership capacity development interventions on leader and/or subordinate performance, but those available show promising results. For instance, a study found that a leadership training for District Health Management Teams (DHMTs) in Ethiopia, employing team-based and experiential learning strategies and leading to the formation of leadership teams, resulted in significantly higher district performance on various dimensions including quality of care (Desta and others 2020).

Summarizing the evidence on a subset of leadership interventions, namely those directed in improving leadership in concrete, frontline patient care rather than broader organizational leadership, Mianda and Voce (2018) conclude that experiential, work-based learning is most effective. Edmonstone (2018) offers an explanation by discussing the context-dependency of appropriate and effective leadership from a theoretical and historical perspective. He argues that given the non-universality of good leadership, the context dependency of good leadership practice and action, or experiential learning approaches, where best practices are developed and evaluated by the learners rather than presented by an outside entity, are likely the most effective capacity development tool.

In both Mali and Madagascar, several administrators highlighted a critical deficiency in essential training for data analysis, further compounding the issue (figure 11). Notably, in Madagascar, as well as in Mali, a substantial proportion of public administration staff (76 percent and 39 percent, respectively) reported a lack of training in digital skills, signaling a significant gap in their capacity to effectively utilize digital tools and platforms. Furthermore, an equally concerning situation is that in Madagascar (73 percent) and in Mali (56 percent), a significant majority lacks training in data analysis for budget decisions, a skill essential for making well-informed budgetary decisions. This was even more prevalent for women than men. In Mali, 73 percent of female administrators surveyed reported not having received training on budgetary decisions, compared with 51 percent of men. The absence of comprehensive training in these critical
areas hampers the ability of staff to effectively analyze, interpret, and leverage the collected data for informed decision-making and optimal resource allocation. While implementing data collection systems that are user-friendly and intuitive can encourage more widespread utilization, there is a significant need for training on the analysis and utilization of the collected data. This, in turn, can foster a more informed and proactive approach to healthcare management, enabling administrators to make better-informed decisions.

Figure 11: Percentage of respondents who did not have training on digital skills and data for budgetary decisions

4

CONCLUSION

Despite the large academic literature on HRH reviewed in this report, significant knowledge gaps remain, particularly in LICs and LMICs. Global, comparable data on the health workforce is limited, as labor force and household surveys, which are the source of the data presented in this report, are not designed to enable granular, disaggregated data on employment and wages by the diverse types of health workers. There needs to be more emphasis on administrative data sources and sharing of a set of key comparable indicators to generate in order to fill the data gaps and enable annual monitoring of the workforce. The academic literature on the drivers of health worker performance has concentrated on healthcare clinical professionals and, increasingly, CHWs and not on managerial, administrative, and other nonmedical staff. There is limited research on health sector leadership and
stewardship, despite the general acknowledgment of the criticality of senior and midlevel bureaucrats to the effective functioning of the health system.

The report has shown that surveys of HRH can provide new data on staff experiences with key HRM drivers of health worker performance, and on the reasons for gender segregation in the health sector, and these data can be used to inform ongoing and planned World Bank operations in LICs and LMICs. The report has identified several avenues for further research that can be analyzed using newly found data, such as the various aspects of management quality that matter most for worker performance, and how to improve motivation using teamwork and nonfinancial rewards that may be more feasible in the fiscally constrained contexts of LICs and LMICs.

The report also underscores that HRH needs to be prioritized in World Bank operations, and suggests several reforms. These include strengthening merit-based recruitment, improving leadership and management, strengthening interventions to increase motivation, and enhancing the representation of women in leadership positions in the health workforce. Project activities to support merit-based recruitment could involve technical assistance for developing a competency framework for administrative positions, as well as support to establishing assessment centers and designing criteria and modalities for screening candidates for both clinical and administrative positions. Findings also suggest, where feasible, investing in rural pathways to ameliorate the shortage of health workers. The report highlights the importance of leadership and management, and combining traditional classroom instruction with group problem solving of real-world problems, which can be incorporated into World Bank operations.
APPENDIX: DETAILED SURVEY METHODOLOGY

Mali Survey
The target population for the survey included all respondents in the service delivery chain of all ten districts in the region of Koulikoro, three districts in the region of Mopti (Bandiagara, Bankass, Mopti), and three districts in the region of Segou (Baraouéli, Bla, Ségou) and the Ministry of Health staff. Target regions were selected based on existing World Bank operations. Respondents at the administrative level (central, regional, and commune) and facility level were surveyed face-to-face using questionnaires for facility staff, administrators, and public officials.

The survey firm reached 397 health centers (381 Centres de Sante Communautaires (CSCOMs) and 16 Centre de Santé de Références (CSREFs)) out of 415. Some of the CSCOMs could not be accessed because of the security situation in that locality. To ensure a diverse representation of key HRH cadres at the facility level, the survey employed a sampling strategy that specifically targeted the core health staff in each facility. The aim was to include a facility manager, a doctor, a nurse, a midwife, and a community health worker (CHW) as these five cadres are integral to the functioning of health facilities. By capturing insights from facility managers, doctors, nurses, midwives, and CHWs, the study seeks to provide evidence that encompasses the experiences and viewpoints of the core health facility staff.

The survey had a high response rate of 79 percent with more than 2,300 interviews completed. At the facility level, 2,015 respondents participated in the survey, comprising 386 facility managers and 1,629 facility staff, with an overall response rate of 81 percent. At the administrative level, the team surveyed 311 civil servants at the central, regional, and district levels, with a response rate of 72 percent. The lower response rates at the district level can be attributed to the fact that most districts had only one staff member, while the target for each district was two interviews.
Madagascar Survey

The survey included facility staff and public administration employees from ten regions and the capital: Analanjirofo, Androy, Anosy, Atsimo Andrefana, Atsimo Atsinanana, Ihorombe, Menabe, Sava, Sofia, and Vatovavy Fitovinany. Target regions were selected based on existing World Bank operations. A total of 2,126 individuals working in the health sector (in public administration and at the facility levels) participated in the survey. The survey employed a combination of face-to-face and telephone methods to conduct the interviews.

The administrative level survey conducted 620 interviews. Out of these, 369 individuals worked at the central level within various directorates in the Ministry of Public Health in Antananarivo, while 137 were from regional offices and 114 were from district health administrations.

At the facility level, the team interviewed 1,698 facility staff. Telephone interviews were conducted with staff members in health centers located outside the district capital communes. Among the interviewees, 389 were facility managers, and 1,117 were facility staff.

In Madagascar, the team also combined the survey with focus group discussions among a diverse group of employees from various levels and departments within the Ministry of Health. The participants were selected through purposive sampling, with a focus on ensuring diversity in terms of gender, age, and work experience. The focus group discussions were conducted in Malagasy among three groups. The first two groups were women only, while the last one was a mixed gender group.
References


Savedoff, W. D. 2010. “Basic Economics of Results-Based Financing in Health.” 
RBM082-RBF-Economics.pdf.


