

# Human Resources for Health

Workforce Analytics for Design and Planning

## REPORT SUMMARY



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Health workers are at the heart of any health system. A year into the COVID-19 pandemic, the importance of the health workforce has never been more apparent. However, many countries do not have accurate counts of the workforce and their distribution by region, cadre, and sector. This data gap has hampered efficient pandemic response.

Despite advances made over the last twenty years, gaps in how countries manage their health workforce remain. Human resource information systems (HRIS) are critical for evidence-based human resources for health (HRH) policy and practices, but there is limited documentation about the capabilities of existing systems in different countries for the collection, analysis, and use of HRH data for planning and management. There is a need to understand these gaps and their underlying causes in further detail. The Bill and Melinda Gates Foundation engaged Vital Wave, IntraHealth International, and Cooper/Smith to identify concrete opportunities for low- and middle-income countries (LMIC) to better design, plan, and manage their health workforce.

## BACKGROUND: TIMELINESS OF THIS WORK

This assessment involved looking at the HRH information ecosystem across 20 countries, with “deep-dives” in three countries. All twenty countries examined, including well-resourced contexts such as Oman, face health worker shortages. The WHO estimates a projected shortfall of 18 million health workers by 2030. Given this, it is important to examine how countries are strategically planning and managing their health workforce and the role of HRIS in this. While these issues have been present for many years, the onset of the COVID-19 pandemic gives extra salience and urgency to health workforce management. The pandemic illustrates the importance of knowing where health workers are so they can be deployed for COVID care and vaccinations, and so that appropriate Personal protective equipment(PPE) kits can be procured and distributed, all the while not disrupting mainstream health service delivery. The importance of the health workforce has been given visibility by the WHO, who have declared 2021 as the International Year of the Health Worker.

## ASSESSMENT APPROACH

The initial focus of the assessment was a scoping across twenty countries globally to identify what is in place as well as the contextual factors that shape the health workforce information ecosystem environment. Subsequently, this information was used to select three countries that represented a variety of country scenarios for more in-depth research “deep dives.” The selected countries were Burkina Faso, Mozambique, and Uganda. The deep dive research focused on how the health workforce information ecosystems were working. In each of the deep dive countries, the research and analysis methodology prioritized a systems-wide (macro) perspective alongside the perspectives of the different actors within the system (micro or individual perspective). To get a systems perspective, the assessment team mapped the administrative processes and data flows for three use cases: recruitment and deployment, salary payments, and performance management. The assessment team then mapped how information flowed across different levels of the health system to identify bottlenecks. While the methodology was focused on identifying bottlenecks through comparing different systems in different countries, many promising “bright spots” were revealed. These are as *important as the challenges*, providing an opportunity to build upon and replicate local successes.

## KEY ASSESSMENT FINDINGS

**Private sector and community health workers (CHW) data are frequently unavailable to governments, impeding decision making and planning.**

Data on the CHWs and the private sector workforce are generally unavailable to governments. In both Mozambique and Burkina Faso, there are policies in place to allow for the Ministry of Health (MoH) to have oversight of the private sector, but they are not enacted at this time. In both countries, the private sector is nascent but growing. The data that are available are from labor force and facility surveys, but they are not up to date. A lack of data about CHWs and the private sector workforce means that Ministry of Health deployment decisions do not take these health workers into account. This may lead to suboptimal use of limited resources and impede referral planning.

Professional councils should be a strong source for health workforce data, but they are often under-resourced and lack the authority or capacity to enforce regular licensure, thus hindering their utility.

## **HRH management requires high levels of actor coordination as data are found across multiple sources.**

HRH data sources come from multiple programs, ministries, departments, and levels of the health system. In Oman; Mozambique; and Andhra Pradesh, India (with its education management information system), efforts to convene all stakeholders in system design and development were extensive. A cross-sectoral HRH unit, observatory, or taskforce could also address this need and provide oversight over time.

In Burkina Faso, a new, dedicated functional committee oversees donor and partner inputs into HRH to veto projects and ensures alignment with Ministry's goals (part of a broader network of oversight committees). There is a need to ensure that such oversight committees have membership with strong data and digital competencies, so they can oversee the HRIS ecosystem.

## **HRIS system design and implementation do not meet current user needs for routine HRH management.**

There are several ways in which HRIS do not meet user needs. Systems are often not designed to meet the needs of subnational level actors, even though this is where many decisions are made and where problems can be identified and solved. This impacts system utility and engagement. Even at the national level, some users' needs are not met. In Mozambique, decision makers at the national level need reports about career progression (who is nearing retirement, who is due for pay increases), which are currently compiled manually. In Uganda and Burkina Faso, stakeholders report that they have a hard time accessing HRIS data, undermining system engagement and use.

## **A unique identifier (UID) is key to data quality and interoperability.**

A UID is key to data quality and is a foundational element for interoperability. Mozambique has a routine biometric "proof-of-life" process to counter fraud, which is managed by the Ministry of Public Administration, involving an annual in-person visit during the birth month to confirm that the employee entry matches a real human. All three countries have unique IDs of some form in place, including employee ID, tax ID, national ID, or council registration.

## **Performance management has not been prioritized and is not aligned with health system goals and objectives.**

Individual performance management systems are primarily paper based with no ties to performance outputs and

service delivery data, making data difficult to review, use, and aggregate. In all three countries, performance appraisals are primarily based on subjective opinions of the supervisor. This means that they are not useful sources of data, nor does the process incentivize good work. In all three countries, there are anticipated system developments in this area.

There is an opportunity to align performance management processes with larger health systems goals and objectives and broader planning processes. Uganda has made some progress toward this with the performance appraisal process, including a goal setting and planning process. In many country contexts, individual performance processes may be occurring parallel to facility or team-based review approaches, which are more strategic in approach, presenting an opportunity for alignment.

## **Interoperability with payroll is a high-value goal but hard to achieve. Interoperability with other information systems is easier and provides efficiencies.**

Multiple data systems and lack of interoperability result in systems fatigue by system users. To ensure data quality and integrity, interoperability between the health worker registry and payroll can have many data quality, cost saving, and efficiency benefits (e.g., eliminating ghost workers). In Uganda, interoperability between payroll and the health worker registry has long been called for, but concerns about compromising data integrity of payroll have been a major barrier. A new human capital management system that will integrate these data sources, including performance data, is currently under development.

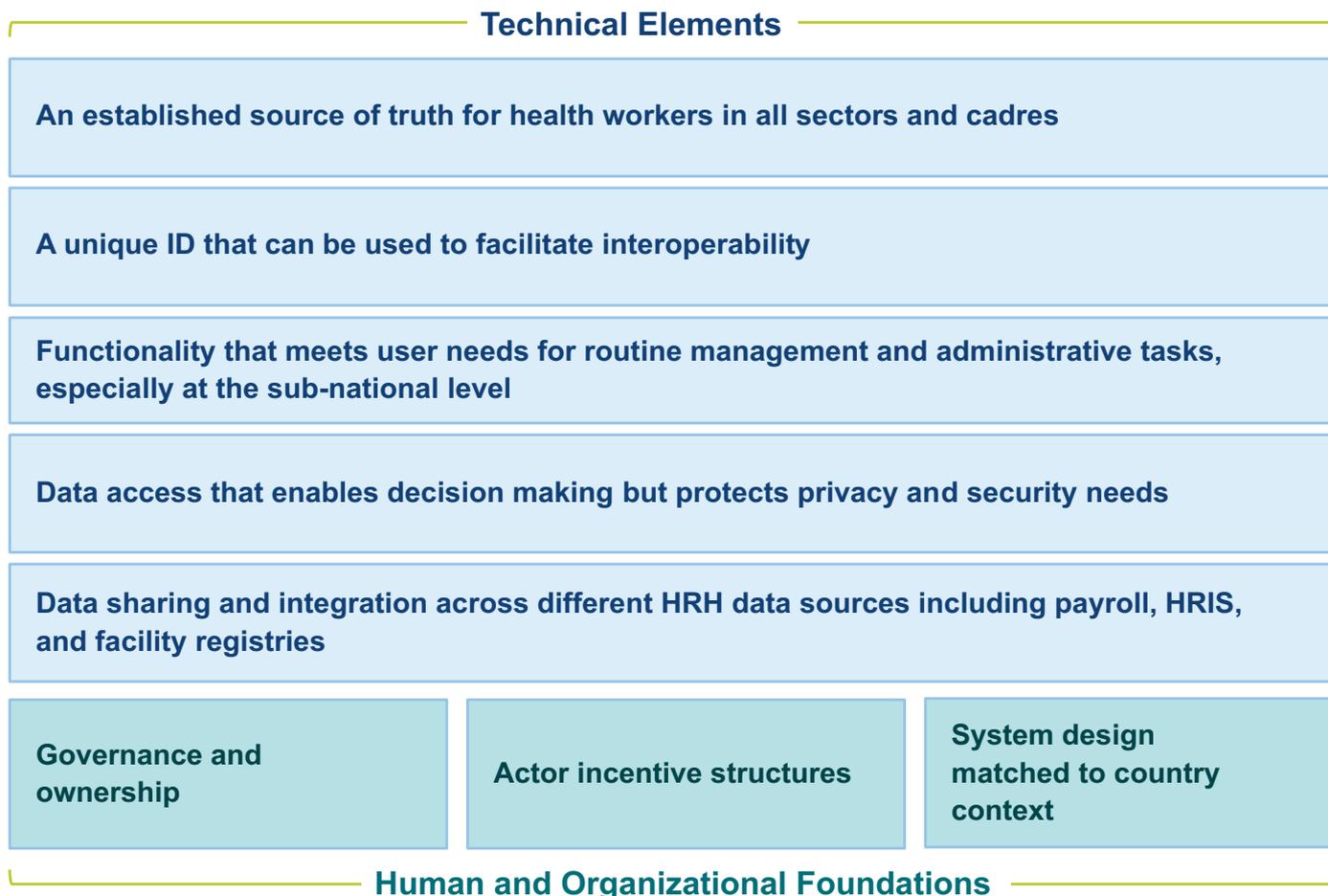
## **Across the public sector, health is perceived to be a leader in HRIS.**

In Uganda, the education sector has replicated the HRIS success of the Ministry of Health by tracking attendance and digitizing workforce management systems. In Mozambique, the MoH provides a high level of leadership around HRIS system development. Overall, there is a low level of awareness around the HRIS work of other sectors, including the private sector. However, there are lessons to be learned here. An integrated EMIS in Andhra Pradesh, India has a number of features that are interesting for the health sector, including interoperability of nine different system components, mobile-based system access for teachers and headmasters for routine administrative tasks, success in attendance tracking, performance-based staff transfers, and generation of huge costs savings through identifying schools with low enrolments and merging them with other nearby schools.

# ELEMENTS OF SUCCESSFUL HRIS

Analysis of data from both the multi-country review across 20 countries and the three deep dive countries provided a set of critical success factors that describe “what good looks like” in an HR information ecosystem. These are illustrated in Figure A below and include important technical elements that must be supported by good human and organizational foundations, specifically strong governance and ownership, the right incentive structures, and systems designed to match country contexts.

Figure A. Elements and Foundations of a Successful HRIS



The assessment mapped several different pathways towards achieving this state, and the diversity of experiences are captured in the findings. Associated pathways forward described in this report aim towards achieving this combination of key elements.

# CAUSAL ISSUES AND PATHWAYS FORWARD

When looking to strengthen existing systems, it is insufficient to only examine and address the visible challenges that emerge. In order to identify more enduring solutions, it is important to examine the underlying factors that cause the challenges to exist in the first place. The assessment identified four causal issue areas and articulates suggested strategic approaches and interventions for each.

It is important to note that this assessment describes interventions in a complex ecosystem with many components and drivers. It is not intended for any of these solution approaches to be a stand-alone solution for the causal issues described; in all cases there is a requirement to also strengthen the broader ecosystem and to understand the interdependencies of the different system components.

## Causal Issue: Insufficient Governance Structures (Public)

This assessment found an overall lack of governance mechanisms or structures such as taskforces, meeting platforms, committees, or functional administrative and technical units to oversee the public sector health workforce and support cross-sectoral coordination. Addressing this requires a focus on strengthening country governance structures and shifting focus from data collection to use for routine administrative and management functions (rather than reporting). Suggested interventions to realize this include:

- **Conduct a system audit covering indicators and processes and work toward a system development plan:** Many human resources (HR) administrative processes are not optimized for efficiency, increasing the burden on already-stretched health workers, and distracting them from core tasks. In addition, there are many system actors whose needs are simply not met by the system, representing a missed opportunity for increasing system utility. This intervention approach involves conducting audits to assess systems functionality and identify strengths, choke points, and unmet needs. The spirit behind this approach is to identify existing assets to build on in order to foster local ownership. It would lead to a system development plan that outlines a process to rationalize and optimize the system with streamlined workflows that capture relevant and usable data through routine administrative functions. It would also outline legislative requirements to define the role of data and who has access to it. The goal would be to create a system that meets a larger number of actor needs, at multiple system levels, to foster greater ownership. This would also include a process to institutionalize data standards and create a pathway toward an enterprise architecture.

- **Support the setup of robust governance structures to ensure alignment in HRH investments across vertical programs and donor programs:** In many country contexts covered by this assessment, the appropriate governance and oversight mechanisms for HRIS were absent. This can lead to misaligned investments that are not sustainable over time. This intervention approach would put in place a steering committee or unit that would ensure alignment of donor and vertical program efforts.
- **Support better tracking and management of CHWs:** In many country contexts, the role of the Ministry of Health in overseeing the community health workforce is not well defined. They are seen as a volunteer cadre that work locally and that are beyond the scope of the Ministry's HRH management and planning processes. Opportunities exist to better define the role of the CHWs, enumerate those working in the public sector in the HRIS registry, and encourage data sharing with other CHW programs.

## Causal Issue: Insufficient Governance Structures (Private)

Oversight for the private sector is a gap across many countries. A lack of mandates, regulation, data sharing agreements, policy enforcement, and oversight mechanisms are at the heart of this. Governments also do not always see the value in making oversight a priority. Tackling this requires the creation of a common, cross-sector vision and plan for private sector health workforce tracking and regulatory oversight. Potential interventions to address this include:

- **Demonstrate the value of enumerating the private sector health workforce and define the highest value data types:** The assessment found that many stakeholders were not convinced about the need to enumerate and oversee the private sector health workforce, with a sense that it was beyond the management interest of the Ministry of Health. Frequently, this sense co-existed with a policy framework for private sector service delivery oversight – although not necessarily focused on the health workforce, specifically. To contribute to a common vision, this intervention approach would document use cases to illustrate the benefits of data sharing on specific data types.
- **Define data standards and design data sharing frameworks that provide incentives and protection for the private sector to report data (e.g., grants or tax breaks to help offset reporting costs):** The assessment documented anecdotes about the private sector being averse to sharing data because they did not want to provide information that could be used against them (through taxation, cutting off their labor supply by preventing dual practice, onerous regulation, etc.). This intervention approach supports data reporting and sharing by developing model

data sharing frameworks and memoranda of understanding (MOU) with built-in incentives for private sector health worker data reporting. This framework would position HRH data reporting as an attractive proposition and ease the burden to the extent possible.

- **Identify regulatory bodies most appropriate to conduct health worker oversight and build capabilities:** In most country contexts, professional councils play an active governance role in regulating the health workforce's scope, minimum entry to practice standards, and in some cases reaccreditation standards. Councils with this level of capacity and perceived legitimacy were not observed across all country contexts. Nevertheless, a health workers' regulatory function is required. In each country context, starting with the governance infrastructure that is in place, the appropriate regulatory mechanism can be established. This requires a supporting legislative framework and dedicated resource allocation.

### Casual Issue: Misaligned System and Capabilities

Overall, this assessment finds that systems are not sufficiently fit for purpose or adapted to the local context including level of connectivity, the availability of electricity, and the skills and workload of the different health workers. Designing and supporting interventions that are tailored to country contexts and build on existing assets is critical for sustainable and effective HRIS implementation. Recommended interventions include:

- **Develop an interoperability playbook that describes a pathway to an enterprise architecture:** The assessment captured efforts to create HRIS system interoperability that had failed or stalled. It was clear that stakeholders underestimated the magnitude and cost of the tasks, specifically the required level of negotiation between relevant parties to create data standards and data sharing agreements. The intervention approach here is to create an interoperability playbook that can describe the human, organizational, financial, and technical elements required, in sequence and over time. This could also include a total cost of ownership (TCO) exercise.
- **Invest in system design for low-resource environments and infrastructural limitations, such as the support of an HRIS-lite tool for data capture and use:** The assessment found that systems were often designed with little regard for the broader systems context and local use cases, for example, low data literacy, low computer literacy, or the absence of regular connectivity or power supply. This intervention approach describes digital design appropriate to contexts with infrastructural and capacity constraints, using existing tools such as smartphones for scanning and biometric identification functions.
- **Include a module on information technology (IT) and data skills for HRH in the UNICEF curriculum being developed for**

**management and leadership skills for subnational actors:** In many contexts, health workers do not enter service with IT and data skills, putting them at a disadvantage to engage confidently with an HRIS. Ensuring that HRIS meet the needs of decision makers at the subnational level is key to maintaining system relevance overtime, but there is a complementary need to ensure that subnational actors have the data and IT skills required for system engagement and data demand. This intervention approach will include an HRIS module focusing on the skills required to use data to make strategic decisions.

- **Support registries and strive for interoperability between key HRH data sources:** Having one source of truth for health workers is critical to effective HRH management. Opportunities exist to support countries to develop one accurate, up to date, list of health workers, and implementing data sharing between key HRH data sources (e.g., HRIS, facility registries, payroll, and HMIS). The entry point for this will vary by country, according to the policy context. Data sources could include health professional council registries, the payroll, the Public Service Commission data base, the Ministry of Civil Service database, or provider network registries (such as faith-based organizations).

### Causal Issue: Misaligned Motivations

Systems are not designed in alignment with the actor motivations and may lack the incentives needed to realize desired behavior when it comes to ensuring data quality, use, and reporting. Disincentives for private sector institutions and workers to report data, low motivation for sub-national levels to maintain up-to-date data, financial incentives to maintain ghostworkers, and the reality of health workers preferences' regarding deployment location and attendance tracking are some examples of this. Addressing this misalignment requires building the right incentivize structures for data use and reporting into the system. Recommended interventions to realize this include:

- **Incentivize for data reporting at the facility level:** Data reporting at the subnational and facility-level is often not timely. This approach creates incentives and sanctions for facilities to encourage high quality, timely data reporting. Actions could include allowing facilities to fill vacancies, provide training opportunities, and receive budget for equipment and supplies only once data are entered and reported.
- **Showcase HRH data:** The assessment found low priority given to data entry, aggregation, analysis, and use at the subnational level, and there is little motivation or engagement around these functions. Showcasing the use of data in routine meetings, where it is reviewed, feedback is provided, and decisions made, makes data-related tasks feel more tangible and increases motivation for engagement.

- **Track attendance, use data:** Health worker attendance is often tracked through paper-based registers, where it is difficult to aggregate and review. This makes it hard to use for performance reviews and for paying health workers for hours worked. This intervention approach suggests strengthening systems for health worker identification, tracking, and accountability by scaling up biometric attendance systems.

## CONCLUSION

Getting HRIS right provides the Ministry of Health with an important tool for the improved design, planning, and management of the health workforce and helps give health workers the visibility and support required to do their work to the best of their abilities. Digital solutions are a necessary component in the suite of recommendations, but insufficient in and of themselves – governance oversight and ownership are critical to success. The recommendations provided in this report represent a step away from “silver bullet” novel solutions and towards the hard work of making systems work, to ensure health for all. This includes ensuring a level of robustness for the system to support pandemic response and equity in access to care.

This assessment has addressed an important gap in terms of understanding what good looks like in terms of HRIS functionality in LMIC contexts. While many countries lack an accurate sense of the composition, location, and performance of their health workforce, there are also various pathways to success described here. The recommendations build upon existing efforts at the global and country levels to strengthen HRIS, and to guide further investments towards stronger health systems.