SCALING-UP A STATEWIDE HEALTH WORKFORCE INFORMATION SYSTEM TO IMPROVE MATERNAL AND CHILD HEALTH SERVICES IN JHARKHAND, INDIA

Sunil Kumar, Manju Shukla, Meenakshi Jain, and David Nelson, IntraHealth International
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BACKGROUND

India faces critical human resources for health (HRH) challenges in health systems strengthening, including shortages of key cadres such as doctors, specialists, nurses, and midwives, especially in rural and underserved areas. The Government of India established HRH as an important policy initiative in its 12th five-year plan, noting that achieving universal access to quality health care is highly dependent on the quantity and quality of the health workforce. The Government's flagship Reproductive, Maternal, Neonatal and Child Health + Adolescents (RMNCH+A) Strategy, launched in 2013, also highlights the importance of skilled HRH.

The HRH challenges in the eastern state of Jharkhand typify those throughout much of India. Critical issues have included shortages of doctors, vacancies especially for key specialties, and uneven deployment, with postings not matched with skills and position. The state had a very high number of rural vacancies and no data on the training status of health workers; for example, those trained on emergency obstetric care (EmOC) or life-saving anesthesia skills (LSAS). District health facilities designated as First Referral Units (FRUs) beginning

in 2009 in an effort to increase access to obstetric surgery, specialist pediatric care, and other specialist services had a high number of vacancies, along with outdated skills and inefficient use of staff.

A major obstacle to addressing such challenges has been that information on the health workforce is limited, fragmented, and generally not in a format that can be easily accessed, reviewed, and shared. Lack of comprehensive, reliable, and up-to-date data and an absence of commonly agreed definitions and analytical tools make the task of managing the health workforce all the more difficult. The most effective best practice to bring together such data is a web-based human resources information system (HRIS). However, states in India currently use a variety of approaches that range from paper-based systems to electronic spreadsheets.

With funding from USAID, IntraHealth International supported the Government of Jharkhand, beginning in 2010, to pilot and then scale-up statewide a web-based HRIS to improve access to skilled health workers and quality services. Jharkhand's HRIS customizes iHRIS, the world's leading open source software for health workforce information systems, currently used by 24 countries. IntraHealth, through the USAID-funded Capacity Project, developed and launched iHRIS in 2007, and continues to enhance the software and partner with countries to roll out iHRIS and provide training. Using iHRIS helps countries place health workers where they are most needed and because iHRIS is free and open source, it is an affordable and customizable option for countries to meet their specific needs.

IMPLEMENTATION STRATEGIES

IntraHealth supported the Government of Jharkhand to implement its HRIS through the following strategies:

Develop local leadership: A stakeholder leadership group (SLG) was established for the HRIS and broader HRH efforts to ensure local ownership, appropriate customization of the system, and sustainability. The SLG members represent a broad group of governmental and non-governmental HRH leaders and stakeholders and their role included identifying the key HRH policy and management issues and questions and guiding the effort to strengthen the HRIS.

Link with and improve existing information systems: An assessment (requirement study) was conducted of existing health information systems, information and communication technology infrastructure (e.g., existing networks, internet connectivity, software), and relevant data currently collected by different departments and groups in both the public and private sectors. It identified the opportunities to link with and complement existing systems as well as priority gaps that needed to be addressed through an improved HRIS and the capacity building required for use of the system and data.

Customize software solutions: After the SLG agreed on key HRH issues and the needed HRIS improvements based on the assessment, it selected iHRIS-based software solutions for customization to complement existing systems and tools to the extent possible in order to lower costs and accelerate implementation. IntraHealth set out to build a system that could integrate the existing health management information system (HMIS), which did not collect much data on health workers.

Promote use of data: Once the improved HRIS started to generate data, its use was promoted, which required capacity building and support to managers and decision-makers.

Ensure sustainability: Continuous engagement of HRH leaders (including SLG members) was critical for optimal use of the HRIS as well as for ensuring future maintenance and improvements to the system.

RESULTS

Jharkhand's customized iHRIS now provides a comprehensive picture of the state's public health workforce, including each worker's current posting, employment and training history, specialization, and projected retirement date. IntraHealth assisted the Department of Health and Family Welfare (DHFW) to allocate dedicated staff with clear job responsibilities to analyze HRIS data and generate routine reports for review. The initiative has built sustainable state capacity and systems to keep HRIS data up-to-date, modify and customize iHRIS, and use HRIS reports in state- and district-level review meetings.

Health-sector leaders in Jharkhand have been especially enthusiastic about iHRIS because it has improved their ability to recruit and effectively deploy health workers, especially doctors. As one example, obstetricians and anesthesiologists are in great demand at FRUs. Jharkhand's Principal Secretary of Health reviewed iHRIS reports showing the placement of these specialists and, based on these data, redeployed an estimated 112 medical officers (physicians) to ensure more equitable availability at FRUs of health workers with skills in EmOC and LSAS. To date, there are 68 fully-functioning FRUs in Jharkhand, up from approximately 18 in 2011. These facilities are critical for saving the lives of mothers and newborns.

In another example, the DHFW recruited nearly 450 new medical officers between 2012 and 2013 (a 34% increase) and posted them in high-vacancy districts, addressing a need revealed in iHRIS reports. With medical officers covering an annual patient panel of 2,000 patients, this provided 900,000 additional Jharkhand residents with health services. iHRIS is now routinely used to assess the distribution and skills of

health workers in district hospitals and community health centers. Many medical officers and other health workers who were posted in the same districts for years have been transferred to other areas where the need is greater.

The redeployment of skilled specialists and addition of new medical officers in Jharkhand based on using iHRIS data for decision-making contributed to significant increases in the availability and utilization of maternal health services across the state. As examples, improvements in the first year included a 740% increase in women receiving three antenatal care visits (from 51,880 to 436,228), a nearly 12 times increase in facility births (from 25,557 to 303,876), and a nearly 20 times increase in Caesarean sections for women in need of them (from 369 to 7,231). The state also saw improvements in child health and family planning services and use due to a combination of strategic HRH deployments and other programs (for example, between 2013 and 2015 there was a more than four-fold increase in the number of women choosing to receive a postpartum IUD—from 3,544 to 15,098).

KEY SUCCESS FACTORS

Formally constituting an SLG was helpful in forging stronger inter-agency partnerships, problem-solving, and ensuring high level use of the data. A strong HR unit within the state public health sector has been critical to lead core HRH efforts, including managing the HRIS. Having a trained HR unit has helped to expand the HRIS and to include ongoing in-service training and performance management modules. An expanded and qualified HR unit has significantly helped to improve HR management systems, such as recruiting, deployment, and workforce support efforts.

In Jharkhand, conducting a pilot of iHRIS in one district not only provided results that catalyzed the decision to scale-up statewide, but also informed the successful customization of the software. For example, the pilot revealed the need for a standardized list of health facilities and health worker position titles, as often multiple names and category types were being used to refer to the same facility or health worker, resulting in misleading data analysis and reports. In addition, many personnel were unsure of their position titles or continued to use outdated titles because they had not received formal communication of title changes. The pilot efforts focused on customizing and testing the software, data collection, and data quality. An important next step was to develop appropriate procedures to assign responsibility and access rights for maintaining and managing the HRIS, protecting the data from damage or tampering, and ensuring privacy.

LESSONS LEARNED

Jharkhand's experience of using iHRIS has demonstrated the important role that HRIS plays in moving toward India's goal of universal health coverage and continued improvement in RMNCH+A outcomes. The efforts in Jharkhand have established a model state-level HRIS using customized open source software; built staff capacity in data collection, quality assurance and use; and demonstrated the value of the information generated.

Although excellent progress has been made, some challenges remain in strengthening the state HRIS. One of these is a reluctance to share some requested data, especially among medical officers. Strong health sector leadership commitment and an ability to explain the importance of the HRIS will help to encourage staff to share the needed information. There are also shortages of qualified staff to operate and maintain the HRIS at the required statewide scale, and additional need to expand experience and capacity in using the data in health sector decision-making for health systems strengthening.

One key lesson is that to build support and create momentum for an improved statewide HRIS, the initial modules, scale-up, and use of the system need to focus on basic, priority HR areas such as vacancies, deployment, retirement, and workforce planning. Once the HRIS is accepted and institutionalized, health sector leaders can then expand the HRIS to address more sensitive issues such as measuring performance or tracking absenteeism.

Another important lesson has been that it is not enough just to use HRIS data to improve HR deployment—also critical are related improvements and upgrades needed at facilities such as functional operation theatres, adequate supply of equipment and drugs, and availability of blood storage units. All of these factors contribute to improved health services and health outcomes.

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