WHO

OpenSRP meets the workflow and information needs of health providers, decision-makers, and the populations they serve.

OPEN**SRP:** Open Smart Register Platform

IMPLEMENTATION DATE: 2013 to Present

Connecting frontline health workers to national health systems

Frontline health workers (FHWs) form the backbone of the health system in low- and middle-income countries (LMICs). They are the first contact for primary health care for millions of underserved people, yet are often burdened by archaic paper systems. Paper registers present strategic challenges for tabulation and access to real-time data for decision-making, monitoring FHW performance at district or national level, and providing a reasonable level of accountability for authentic and complete individual data records. Paper-based data also do not facilitate continuity of care between visits or across providers. Consequently, clients who have missed services or appointments are not identified in a timely fashion, leading to a missed window of opportunity for intervention. Lastly, governments struggle to supervise this large workforce, ensure data quality and timeliness of reporting, and facilitate appropriate and equitable care under low-resource conditions.

About OpenSRP

Open Smart Register Platform (OpenSRP) offers a government-owned and -operated enterprise-grade solution to improve primary health care service delivery, strengthen accountability, and generate real-time data for improved monitoring and evaluation. OpenSRP was purposefully designed with end-users to complement other robust and widely-deployed information technology solutions, including DHIS2 and OpenMRS. OpenSRP is now being maintained and enhanced in functionality by a governance mechanism and multi-vendor community of software developers committed to open-source software.

Health providers interact with the OpenSRP application using mobile handsets while providing health services to their clients. All data entry is done using the platform, which can run on any Android device. The platform integrates previously discrete, proven innovations, including: a client registry for enumeration and continuity of care; birth and death registration; electronic forms with embedded logic and decision-support, including checklists and algorithms for risk assessment; work-planning, scheduling and service reminder tools; multimedia and interactive voice response (IVR) content for client counseling and reminders; and automated reporting into subdistrict and national reporting systems. This mix of

mobile technology, information system, and support materials is designed to facilitate and support various aspects of FHWs' work, and enable a flow of communication between community members, health workers, and health facilities. The system also aims to facilitate more effective workflows for skilled health workers focused on RMNCH, ensuring that they have more time to deliver needed services to their clients. OpenSRP focuses on family planning, maternal and child health, nutrition and early childhood, with plans to include additional health domains, including tuberculosis.

Evaluation and Results

Although OpenSRP is currently being piloted across four sites, the platform builds on previous work and best practices, including findings from the United Nations International Working Group mHealth Catalytic grant mechanism-funded project Zindagi Mehfooz, that used financial incentives to drive vaccination coverage and is led by Interactive Research and Development (IRD) Pakistan. The strategies from the program, now incorporated into OpenSRP, observed a 20 percent increase for pentavalent vaccine coverage in the Pakistan deployment. Furthermore, OpenSRP also includes strategies reflected in the mCare deployment in Bangladesh, which demonstrated near tripling of antenatal care coverage.

In each of the new project sites, OpenSRP implementers are currently researching site-specific adaptation requirements, implementation components per cadre of health worker, fidelity of use among health workers, and the time-motion effect on the performance of health workers delivering RMNCH interventions. Furthermore, the multi-site study is focused on development of systematic and replicable methods that can be used by other countries for adaptation of the OpenSRP platform into other health topics, cadres, and context. Lastly, the findings of this study will be used to inform a second phase of research, also to be coordinated by World Health Organization's Department of Reproductive Health and Research (WHO-RHR/HRP), which aims to measure coverage, quality of implementation, cost-effectiveness of health system gains, and resulting impact of OpenSRP across different cadres focused on delivering RMNCH interventions.

Lessons Learned

- **Conduct thorough formative research.** A critical part of the OpenSRP development has been an emphasis on thorough formative research with the primary end-users and the network of secondary users that will be interacting with the platform.
- **Establish technical steering committees to guide national scale-up.** In-country stakeholder engagement is crucial in ensuring other key players, including the Ministry of Health, are involved in further adapting or prioritizing necessary changes to the systems preceding scale-up.
- **Balance preservice training with continuous field support and shadowing.** Allow for sufficient in-service learning that is directly linked to the routine workflow of the health worker

Conclusion

The deployment of OpenSRP is currently being led by the Technologies for Health Registries, Information, and Vital Events (THRIVE) consortium. Its mission is to develop, test, and mainstream an enterprise solution for FHWs in low-resource settings focused on universal health coverage of essential interventions. The OpenSRP deployment fits into a broader multisite research study coordinated by WHO- RHR/HRP in order to facilitate common objectives, methods, and indicators, as well as joint learning and metaanalysis with investigators in each deployment. Additionally, in-country working groups/steering committees, constituting both local and international THRIVE project members and in-country key stakeholders will be held to ensure local ownership and governance of the project.

To date, five countries have been identified where government engagement and readiness would allow for OpenSRP to be refined, tested, and scaled as exemplars for other LMICs. Over the next four years, the THRIVE consortium will consolidate several best-of-breed solutions guided by the principles of user-centered design, incorporating both end-user needs and workflows and the enterprise architecture necessary for national health information system integration. ■

Geographic Coverage: Gaibanda District (Rangpur Division), Bangladesh; Lombok District (West Nusa Tenggara Province), Indonesia; Sindh Province, Pakistan; Koppal District (Karnatka State), India; Nagpur, Wardha, Yavatmal districts (Maharashtra State), India

Implementation Partners: WHO-RHR/HRP; Ona Systems; ThoughtWorks; mPower Social Enterprises; Summit Institute of Development; Interactive Health Solutions; Johns Hopkins University Global mHealth Initiative; Harvard University School of Public Health; Summit Institute of Health; Interactive Research and Development (IRD); Foundation for Research in Health Systems (FRHS)

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