



GIS MAPPING OF HEALTH FACILITIES

Identifying health facilities to provide integrated, high-quality maternal, newborn and child health services in Pakistan

DATA COLLECTION

Implementation date: April 2014

Each year approximately 105,000 children under the age of five and 3,000 mothers die from preventable causes in Pakistan. Lack of access to quality health care is a primary determinant of high maternal and child mortality in rural Sindh. USAID is implementing a maternal and child health (MCH) program in Sindh to improve the quality of rural health care services. At the end of its five years, the program aims to leave behind 1,000 maternal, newborn and child health (MNCH) centers which provide integrated MNCH and family planning services in rural districts of Sindh. A critical initial step in this process is the identification of health facilities spread across the districts which have the potential to provide integrated, high quality MNCH services.

Taking advantage of advances in smartphone technology, MCHIP/Jhpiego, a component of USAID's MCH program, conducted a Geographic Information System (GIS) census of all health facilities in ten rural districts of Sindh. Quality improvement and facility upgrading activities are concentrated in these ten districts during the first three years of the program.

About GIS Mapping of Health Facilities

A short, structured instrument was used to collect data on facility ownership status (i.e. public, private or managed by the People's Primary Health Care Initiative (PPHI)), facility opening hours and types of services provided. An application was developed for the Android operating system and 90 data collectors used Samsung Tab 2 smartphones to collect and transmit data on all health facilities identified and visited by them during the census operation. Two photographs, one of the exterior and the other of the interior of each facility were also submitted along with Global Positioning System (GPS) coordinates of the facility.

A web portal was designed to allow data submitted wirelessly through smartphones, to be directly entered in an easily accessible environment. The portal displayed the location of each facility location on Google Maps. It allows a user to conduct searches for facilities by district, public or

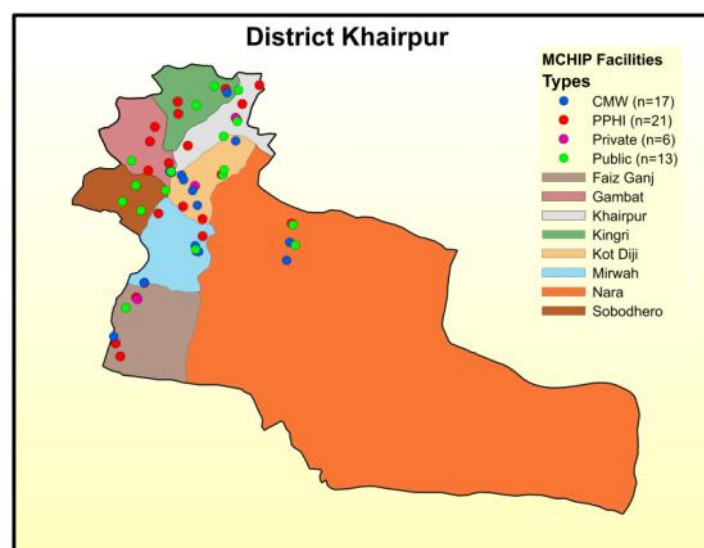
private sector ownership, and services. In addition, once a user clicks on a particular facility's symbol on Google Maps, the two photographs and all data collected on the facility are shown. The portal makes the data accessible to anyone with internet access that has an interest in getting information on health facilities in rural Sindh.

The map shown identifies 57 service delivery points that the program is working on in Khairpur district. These include facilities managed by PPHI, public sector managed facilities and private sector managed facilities. The database also permits the integration of additional data, such as service delivery statistics from the government's District Health Information System, Lady Health Worker Program's Management Information Systems (MIS), Community Midwife and MNCH Program MIS, and private sector facilities.



Evaluation and Results

Out of 1,425 facilities which provide maternal and reproductive health services in ten rural districts, 687 (48 percent) facilities were under private management (including NGOs), 516 (36 percent) were under PPHI management, and the remaining 222 (16 percent) were under public sector management. About 489 (34 percent) facilities reported providing 24/7 normal delivery services and 134 (9 percent) facilities reported providing caesarian sections around the clock. Of facilities open during any time of the day, about 85 percent reported providing family planning/reproductive health or antenatal care services, and 75 percent reported providing normal delivery services. No information was collected during the census on the quality of care provided at these facilities.



Lessons Learned

- Since the census relied on provider reports, follow-up efforts will need to be made to ensure the accuracy of census data
- Almost all of the private health facilities did not have a record keeping system, making verifying reported information challenging
- An in-depth facility assessment would be needed to determine the actual capacity of each health facility

Conclusion

GIS mapping of health facilities in Sindh, provides valuable information on public and private sector facilities, including times of operation, available services, delivery volume, and images for facility identification. The geographical maps and analyzed data also aid program managers in identifying potential facilities for implementing quality improvement activities and facility upgrades. Integrating datasets around service delivery, quality of care, voucher schemes, and health provider profiles will be a key step to help bolster planning and donor reporting within the province.

Geographic Coverage: Sindh, Pakistan

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