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Implementing an Integrated Database System for PMTCT Monitoring in the Russian Federation

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ISSUES

In the Russian Federation, some 43 women—most in their reproductive years—are infected with HIV and 20 infants are born to HIV+ mothers each day. Consequently, healthcare providers involved in MCH and AIDS programs increasingly face the challenges of preventing mother-to-child transmission of HIV. Although Russia has started to build a normative base for PMTCT programs by establishing mechanisms of collaboration across MCH and AIDS care systems and increasing access to PMTCT interventions over the past few years, no effective system for tracking PMTCT outcomes regionally and nationally currently exists.

In most of Russia, PMTCT monitoring at healthcare institutions is based on paper records and is fragmented and inefficient. Standardization at both regional and national levels is needed so data across multiple institutions can be uniformly registered and analyzed, as well as reported in a timely manner to regional authorities and federal institutions.

PROJECT DESCRIPTION

The American International Health Alliance (AIHA) is implementing a USAID-funded PMTCT project in four regions of Russia: Orenburg, Samara, Saratov, and St. Petersburg. Developing an effective PMTCT monitoring system is one of key components of this project. AIHA's efforts in this arena include defining an optimal set of indicators related to scope and type of PMTCT interventions provided, as well as outcomes achieved by each one; standardizing institutional and regional data registration through normative orders—or *prikaz*—on information exchange and data collection; and improving methods of data collection, monitoring, and analysis.

Working with the Samara Information and Analytical Center and federal institutions responsible for PMTCT monitoring, AIHA developed an electronic PMTCT monitoring database in keeping with WHO/UNICEF/UNAIDS standards, yet adapted to Russia's conditions and resources. To protect patient confidentiality, the database automatically assigns a unique identification code to each entry thereby allowing deletion of personal information (names, addresses) when data is shared with other institutions.

The database contains standardized prenatal, delivery, and postpartum records; newborn data; and detailed information about follow-up care for mother and child. Tracking is done for registered cases of HIV+ pregnancies then, after delivery, for mother-infant pairs until the baby reaches the age of 18 months and HIV diagnosis is confirmed or dismissed. In addition to tracking vertical transmission rates, specific indicators monitor prenatal care coverage by stage, ARV prophylaxis, HIV counseling and testing, adherence counseling, breastfeeding counseling, delivery type, social status, risk factors, and level of assistance from social support organizations.

Available on CD-ROM, the program is supported by a manual on installation, data entry, and analysis, as well as technical guidance on establishing information exchange protocols. Further analysis can be performed using case management data.

Multi-institutional (see Figure 1) data exchange protocols resulted in regional regulatory orders supporting the project. This helps ensure consistent data collection and timely feedback to provider organizations, as well as proper analysis and generation of reports to regional and federal authorities.

Institution Type	Type of Data Collected
Women's Consultation Units	Prenatal
Maternity Departments	Labor and delivery
Pediatric Ambulatory Clinics	Post-delivery
Territorial AIDS Centers	HIV-specific treatment and support, PMTCT interventions

Figure 1: Key Russian Healthcare Institutions Involved in PMTCT Data Collection and Analysis

Current levels of info-tech capacity in Russia allow data entry/exchange to be done electronically through computers at AIDS centers and maternity departments, which may be linked through secured modem connections. Data from these sites are entered by assigned staff separately, while data from women's consultations is captured through paper-based forms used at these centers and entered by AIDS center staff. In regions with insufficient info-tech capacity, data may be entered into the database at AIDS centers, while women's consultations and maternity houses can provide data on paper-based forms.

The database is physically located at territorial AIDS centers where a staff member is assigned to the project to assure consistency in data entry and analysis. The data exchange incorporated in regulatory orders is schematically shown in Figure 2.

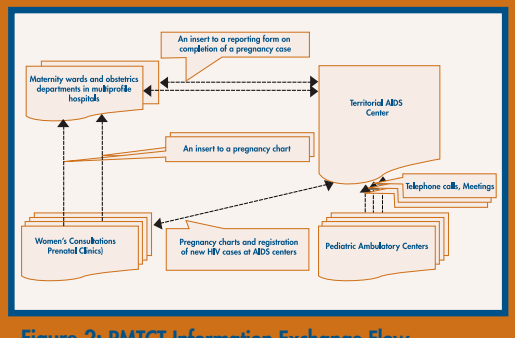

Figure 2: PMTCT Information Exchange Flow

In an effort to make the database more user-friendly, AIHA built in additional features to assist healthcare professionals providing care to women and their children. For example, they can fill out required reporting forms on screen, consult useful references and cue cards, or print educational materials to share with patients.

LESSONS LEARNED

Implementation of an automated PMTCT data collection system resulted in a more integrated approach to monitoring and evaluation of PMTCT activities at the institutional level. Better utilization of data for decision-making at individual healthcare facilities and throughout the healthcare system was also achieved.

Integration of data collection contributed to a critical shift from existing fragmented care to a case management approach capable of identifying needs and gaps in a timely manner. Continuity of care was greatly improved. For example, the monitoring system helped determine more efforts to engage outreach providers are needed to identify HIV+ pregnant women earlier and improve follow-up for these mothers and their babies after discharge from delivery institutions.

Common challenges met during database implementation include:

- difficulty in finding personnel for data entry and database management
- lack of info-tech infrastructure at maternity houses and AIDS clinics
- low level of computer literacy among regional staff
- poor links across key institutions involved in PMTCT programs

RECOMMENDATIONS

Integrated electronic data monitoring systems can improve management of a continuum of PMTCT interventions and care. Tracking key indicators enables health administrators to manage PMTCT programs more effectively and identify areas for improvement. When developing indicators for tracking PMTCT results, it is critical to follow WHO/UNICEF/UNAIDS recommendations and guidelines, while at the same time engaging local providers in a collaborative process to determine essential data points.

Although most PMTCT monitoring data is captured within existing data registration systems, it is not being used specifically for PMTCT monitoring activities. Regional healthcare systems should take full advantage of this information. Additional effort is needed to systematically retrieve the data and use it for PMTCT monitoring.

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