



Georgia Project Summary



August 2006

Georgia Immunization MIS and Disease Surveillance Reforms: Achievements, Lessons Learned and Future Directions

Background

In the first decade after gaining independence in 1991, Georgia faced political instability and armed conflicts as well as increased migration. The country's health system nearly collapsed and immunization services were disrupted. Worsening sanitary conditions, widespread poverty, and inefficient implementation of preventive health measures resulted in increased incidence of infectious diseases and a major diphtheria epidemic in 1993-1999. Poor data quality and limited information management capacity impeded the ability of health workers to quickly restore proper functioning of the disease prevention and control system.

From 2001 to 2006, the government of Georgia and the Partners for Health Reform *plus* (PHR*plus*) project collaborated to strengthen two components of the Georgia Health Information System (HIS): the immunization management information system (MIS) and infectious disease surveillance system (IDS). The work was funded by USAID/Caucasus and coordinated by a multidisciplinary expert group of stakeholders. Participating expert group members came from the Ministry of Labor, Health and Social Affairs, the Department of Public Health, the National Center for Disease Control and Medical Statistics, local Centers of Public

Health (CPH), and several international donors (USAID, UNICEF, and the World Health Organization). Implementation was the responsibility of the Georgian nongovernmental organization Curatio International Foundation, subcontracted by PHR*plus*.

Immunization MIS

Effective management of immunization programs is premised on knowledge of the target population. The improved MIS model is thus based on an accurate census of the child population, performed by every health facility in its catchment area on an annual basis. Health workers are now able to more accurately determine target population, project vaccine needs, compute immunization coverage, and evaluate performance of individual facilities due to an emphasis on the accuracy of census and data verification through crosschecks.

The reformed MIS model also includes a number of innovations that allow better immunization program management and more rational use of resources at all levels, in particular:

- ▲ identification of district-specific factors preventing children from being immunized (such as vaccine stockouts, medical contraindications, parental refusals);
- ▲ determination and monitoring of area-specific vaccine utilization/wastage patterns;

▲ monitoring of vaccine distribution from existing stores to the point of consumption;

▲ up-to-date tracking of vaccine balances in all facilities.

New MIS guidelines, job aids, and a software application were developed to assist health workers in information-based program management.

After a successful year-long pilot project in Kacheti, the new immunization MIS was implemented in the rest of the country in 2003-2004. For the first time since independence, the Georgian routine immunization information system fairly accurately estimated the actual coverage rates in the country. Availability of quality data has led to improved information use for management at all levels: vaccine supply management improved, resulting in fewer stockouts at the peripheral level; efficiency of vaccine use increased due to application of wastage reduction strategies (see Figure 1); and immunization coverage for many antigens increased (see Table 1) as a result of timely follow-up with poorly performing facilities, attention to the validity of medical contraindications, and improved vaccine supply at the district level. Immunization coverage targets (85-90 percent) were not reached in many districts, but this was due to general constraints (discussed below) of the Georgian health system.

Figure 1. Increased Efficiency of Vaccine Use in Doses per Immunization, Georgia, 2003 - 2005

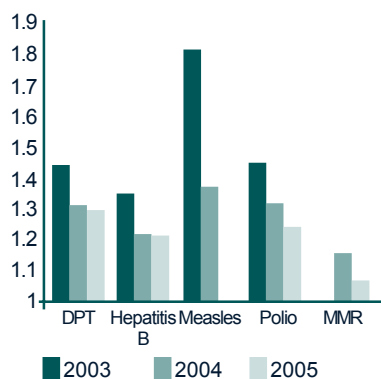


Table 1. Reported Immunization Coverage, Georgia, 2003 - 2005

Coverage/Antigens	2003	2004	2005
DPT-3	75%	79%	81%
Number of regions with DPT-3>80%	4 of 12	5 of 12	9 of 12
Polio-3	75%	67%	81%
Hepatitis B-3	48%	65%	71%
Measles-1	82%	89%	88%
Measles-2	57%	76%	83%
Mumps	77%	85%	88%

Strengthening Infectious Disease Surveillance

To strengthen communicable disease prevention and control, the team developed a reform package that included:

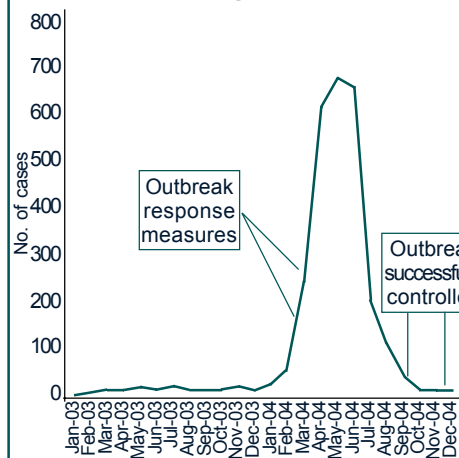
- ▲ Communicable surveillance guidelines for CPH and health care providers;
- ▲ Job aids for rayon (district)-level CPH and facility workers;
- ▲ A software application for regional CPH;
- ▲ A laboratory reference manual on sampling, sample transport, bio-safety, and quality control;
- ▲ Rayon-level training;
- ▲ Continuous supervision and support; and
- ▲ Monitoring and evaluation.

Results included the successful pilot of the IDS reforms in the Imereti region in 2004, and in 2005, roll-out of the reforms moved forward: The Minister of Labor, Health and Social Affairs formally approved and signed a decree for the nationwide implementation of the reforms, which was successfully completed by the end of the year.

Even before roll-out was completed, the new IDS system was contributing to prompt identification of abrupt epidemiological changes and initiation of outbreak control and disease prevention measures. For example, an outbreak of measles in mid 2004 was quickly brought under control (see figure 2) through the following measures:

- ▲ Isolation of cases

Figure 2. Number of Measles Cases by Month, Imereti, Georgia 2003 -2004



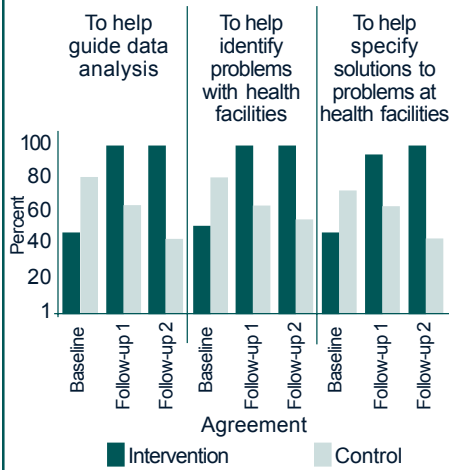
- ▲ Identification and immunization of susceptible persons
- ▲ Outreach health education in affected communities

PHRplus operations research to assess effectiveness of the reforms on improving analysis and response revealed measurable improvements in timeliness of surveillance data submission, completeness of surveillance data forms, and coverage of surveillance reporting. Timeliness and coverage of surveillance reporting have been 100 percent since PHRplus started collecting such data in the pilot region in October 2003. Completeness/accuracy also improved over the life of the project. Ten of 12 rayons (83 percent) demonstrated improved accuracy of surveillance data in 2004, compared to 2003,¹ and 11 of the 12 (91 percent) demonstrated increased completeness and accuracy of surveillance reports between 2003 and 2005.

Utilization of data for response, however, remained weak due to constraints in the broader Georgian health system, including inadequate public funding of surveillance and response activities, and a lack of legal and administrative authority for CPH personnel to actually implement program management decisions and overall governance issues. Acknowledging the

¹ 2003 represents a baseline, since this is before PHRplus activities would have had an impact.

Figure 3: Percent of Respondents Knowledgeable about VPD Surveillance Guidelines in Pilot and Control Areas in Georgia



importance of these constraints, the Parliament and the Ministry of Health decided to restructure finance and disbursement mechanisms for surveillance activities, and to revise legislation to improve the structure and functioning of the public health service. The government of Georgia, with the assistance of PHRplus and Curatio International Foundation, began revising legislation needed to improve the structure and functioning of the public health service. A new organizational structure for the public health system has been proposed to address challenges faced by the current system. The government and partners are also undertaking several other interventions to address barriers related to the broader health system, such as: developing a network of reference laboratories; improving human resource management and supportive supervision through special projects; and establishing a National School of Public Health to train a cadre of public health professionals, including dedicated health information officers.

Lessons Learned

This five-year experience in strengthening immunization and surveillance information systems has provided a wealth of lessons learned. To fully exploit this experience, a multidisciplinary stakeholder group reviewed and summarized the results of the collaboration and offered the following lessons for interested donor organization, technical agencies, and decision makers in other countries that plan to strengthen their immunization or disease surveillance systems:

- ▲ **Changes must reflect priorities.** In order for changes/improvements to have a chance for success, they need to reflect high priorities as seen by the national government. Prior to the initiation of reforms, advocacy measures may be required to help identify and clarify such priorities.
- ▲ **Overall strategic vision should be developed prior to reforming individual system components.** Donor and government funds earmarked for reforming individual components of a broad HIS, such as a disease surveillance or immunization information system, can be used more efficiently if the country has a strategic vision for the development of the entire HIS and a plan to guide individual programs ensuring that all technical developments are in line with the national strategy. In the absence of such a vision, there is a risk that donor-driven reforms will result in fragmented and inconsistent systems.
- ▲ **All aspects of the HIS need to be improved to ensure quality information.** In order to ensure relevant and quality information, a well-designed HIS should include an appropriate organizational structure; sufficient infrastructure and financial resources; and adequate staffing with clearly defined roles and responsibilities as well as rules and procedures for data collection, transmission, analysis, and dissemination. If collected data are not meant to be used by health providers themselves, they should clearly understand and see examples of how and by whom each data element is used for program management.

- ▲ **Training cannot substitute for routine professional and continuous education.** Episodic training provided within framework of various programs is not sufficient to develop satisfactory human resource capacity in a given technical area. Human capacity should be built through adequate professional education and sustained by a routine program of continuous education covering HIS topics.
- ▲ **Certain surveillance responsibilities need to remain at the central level.** Decentralization is effective in a stable economic environment or in geographically big or administratively federal countries. In small countries like Georgia, local authorities have weak capacity, inadequate financial resources, and limited political accountability to the public, and thus they do not place an adequate priority on public health activities. In these circumstances, holding the central government accountable for activities of public health importance, such as communicable disease surveillance and response, makes more sense and therefore such activities should be financed from the central budget.
- ▲ **General health system constraints greatly affect use of information for response.** Even though the new immunization and surveillance systems have improved data quality and availability as well as the technical capacity of health workers to analyze available information, utilization of data for response remained weak due to more general constraints of the Georgian health system including:
 - 1) a lack of legal and administrative authority for the Public Health Department and CPH personnel to actually implement program management decisions;
 - 2) inadequate public funding of the immunization and disease surveillance services, e.g., outreach, investigation, and response activities;
 - 3) inadequate financial and administrative motivators for service providers to perform as required.

▲ **Government cost-sharing can improve success of reforms.** Prior to funding of surveillance reform projects, donors should be more active in demanding that governments share a portion of the cost. This can serve three purposes:

- △ Ensure that reforms reflect the current government priority;
- △ Increase operational/program funds and ability to respond to information;
- △ Improve chances for the sustainability of results after donor assistance stops.

▲ **Nationwide system reforms take time: adequate support should be planned.** Disease surveillance reform projects should be planned for five (not three) years – at least two years for the development and testing of the system and three years for adequate institutionalization.

Specific Recommendations For Georgia

The stakeholder group also provided several suggestions for future directions. While these recommendations are designed for Georgia, they may be useful for other countries that wish to improve their disease prevention and control programs.

- ▲ Develop a strategic vision and plan for the development of the entire Georgian HIS.
- ▲ Create adequate organizational roles and responsibilities and finalize the development of the public health law to address legal and administrative barriers to effective system functioning.
- ▲ Ensure increased government financing of immunization and disease surveillance programs by developing advocacy strategy and materials and justifying to the government why this is a priority.
- ▲ Advocate for centralized management and financing of public health programs, specifically communicable disease surveillance activities related to the epidemiological security of the country.

▲ Develop financial motivation mechanisms for primary care personnel by i) considering performance-based reimbursement for immunization activities and ii) ensuring strong linkage between the financing agency (State United Social Insurance Fund of Georgia) and the public health system (rayon CPH) with regard to performance indicators.

▲ Allocate national public health program budget based on data/evidence. Engage appropriate technical expertise as needed.

▲ Integrate individual program-specific software applications into a unified more advanced platform.

▲ Ensure that training modules developed by the project are integrated into a routine program of continuous education (1-2 times per year) for public health personnel and health service providers, particularly newly trained family doctors, and ensure that funding is available for this continuous education program.


▲ Develop financial (CPH reimbursement) standards for outbreak investigation that are based on respective technical standards.

▲ Further develop the National Immunization and Disease Surveillance Programs and an operational framework specifying functions and responsibilities of all organizations/units involved in the program.

In Conclusion

The Georgian immunization MIS and disease surveillance system built on approaches currently promoted by WHO/EURO can serve as a regional model for other New Independent States and can be replicated with relatively few additional resources given the increasing pool of technical human resources in the region.

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