

Immunization Programme

Management Review

Georgia

17–27 July 2006



World Health Organization

UNICEF

U.S. Centers for Disease Control and Prevention

World Bank

Ministry of Labour, Health and Social Affairs

Public Health Department

National Centre for Disease Control and Medical Statistics

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List of Acronyms

AEFI	Adverse Events Following Immunization
BCG	Bacillus Calmette-Guerin (tuberculosis vaccine)
CDC	US Centers for Disease Control and Prevention
CRS	Congenital Rubella Syndrome
DPT or DTP	Diphtheria-Tetanus-Pertussis vaccine
DQA	Data Quality Audit
DTaP	Diphtheria-Tetanus-acellular Pertussis vaccine
DT	Diphtheria-Tetanus toxoids
EPI	Expanded Programme on Immunization
EVSM	Effective Vaccine Store Management
FSP	Financial Sustainability Plan
GAVI	Global Alliance for Vaccines and Immunization
GoG	Government of Georgia
HepB	Hepatitis B vaccine
Hib	Haemophilus Influenza type b (disease or vaccine)
ICC	Interagency Coordinating Committee
IIP	Immunization in Practice
MDVP	Multi-Dose Vial Policy
MICS	Multiple Indicator Cluster Survey
MIS	Management Information System
MMR	Measles, Mumps and Rubella vaccine
MoLHSA	Ministry of Labour, Health and Social Affairs
MTEF	Medium Term Expenditure Framework
NCDC	National Centre for Disease Control and Medical Statistics
NIP	National Immunization Programme
NRA	National Regulatory Authority
OPM	Oxford Policy Management
OPV	Oral Polio Vaccine
PHC	Primary Health Care
PHD	Public Health Department
PHR Plus	Partners for Health Reform Plus
SIA	Supplementary Immunization Activity
SII	Serum Institute of India
SIP	Safe Immunization or Injection Practices
SOP	Standard Operating Procedures
SUSIF	State United Social Insurance Fund
Td	Tetanus and Diphtheria toxoids for adults
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VAR	Vaccine Arrival Report
VF	The Vaccine Fund
VPD	Vaccine Preventable Disease
VVM	Vaccine Vial Monitor
VRF	Vishnevska-Rostropovitch Foundation
WB	World Bank
WHO	World Health Organization

Executive Summary

A management review of the immunization programme in the Republic of Georgia was conducted from 17 to 27 July 2006. A team of specialists from the WHO Regional Office for Europe, UNICEF Georgia, US Centers for Disease Control and Prevention (Atlanta, USA) and World Bank was joined by national counterparts from the Ministry of Labour, Health and Social Affairs–Public Health Department (PHD) and National Centre for Disease Control and Medical Statistics (NCDC). The team members are shown in § II C.

Using a modified World Health Organization (WHO) protocol, the team examined various immunization programme components at the national and sub-national levels (regional and district (rayon) public health departments, and health facilities). The components are:

1. Management, Coordination and Service Delivery;
2. Immunization Strategies, Policies and Schedules;
3. Immunization Coverage and Monitoring;
4. Disease surveillance;
5. Immunization Quality and Safety;
6. Advocacy and Communication;
7. Financing and Sustainability.

In addition, Health Systems issues were examined.

After initial briefings and planning sessions, teams of one or two reviewers visited six regions and Abkhazia (conflict affected area), 15 districts and 28 health facilities during 3-4 days fieldwork. Region wise summaries of findings and key recommendations were then developed, and presentations of overall findings and key recommendations made to the Head of the PHD and to the members of the Interagency Coordinating Committee (ICC). International team members drafted sections for the full report according to the components listed above. The review timetable is shown as Annexe 4.

The **main findings of the review** were as follows:

The review team found many **strengths and positive features**. There is quite strong programme management, with important support from the Interagency Coordinating Committee. Significant progress has been made in recent years towards financial sustainability, particularly as regards government funding of vaccine and injection supplies, within the commitment to maintain and increase allocations to health care. There are many dedicated health staff, in general well provided with the right equipment, supplies and guidelines needed to do the job. Strategies and most policies are in general well in place for routine immunization activities, and are in progress for disease elimination and control objectives- measles/rubella and diphtheria, with polio free status maintained since 2002.

Recent years have seen improvement of overall national immunization coverage, including the newly introduced vaccines (Hepatitis B and MMR). An improved computerised recording/reporting tool enabling assessment of “timely” immunization by one year of age as well as vaccine management indicators has been introduced, and there is generally complete and regular reporting of data. Disease surveillance is improving, with clear and up-to-date national guidelines, case- based reporting for priority diseases and the introduction of computerised surveillance data management. The supply management system is working

well, with no stock-outs in the last 12 months, and important progress has been made at the national vaccine store since it was assessed in 2005.

There has been a variety of advocacy and communication approaches and methods used for the immunization programme, and a new communication plan (“COMBI”) for 2006-07 has been prepared. The ongoing primary health care reform is creating a window of opportunity for more effective institutionalization of immunization services in Georgia.

The review team also identified various **weaknesses and issues requiring attention**. The planning, management and financing of the NIP is fragmented between different agencies, and there is no earmarked budget for preventive health services. The health system is still recovering from near collapse after independence in 1991 when Georgia could no longer sustain universal free health care for all citizens. Transition to a market economy has been accompanied by reduction in economic production, a growing informal economy, a narrowing tax base and substantial reductions of public revenues. Despite the contribution of the immunization program to improvement of the overall health status of the population, the program is under threat in the turmoil of the transitional economy.

Although better quality immunization and disease surveillance data is now available there is not enough analysis of the data done, especially at health facility and district level, and apparently insufficient motivation to do so. There is a lack of financial incentives for health providers to stimulate actions for higher coverage.

While overall immunization coverage is improving, there are still 17 out of 65 districts reporting less than 80% coverage with DPT3 (2005), many of which have high drop-out also. There is still a significant proportion of false contraindications to immunization, especially in large cities. Sustainable financing of outreach sessions is still a problem in many districts with underserved populations, and there in some places there is a very poor quality of physical infrastructure (PHD buildings and health facilities). Surveillance system performance indicators are not monitored enough, AEFI guidelines are not yet fully implemented, and there is poor waste management (burning/burying of used syringes/needles in safety boxes) at many health facilities. As regards vaccine management, there is no intermediate (district) level storage in Tbilisi City and there is no budget line for cold chain equipment maintenance and repair at regional and district levels.

There are significant communications challenges facing the immunization programme: Inconsistent and unqualified media commentary and opinions voiced on matters of policy by neuropathologists as well as “popular physicians have sometimes affected the credibility of health facility staff and the immunization programme in general; similarly, questions raised about the quality of vaccines made in certain countries, sometimes by those with vested interests.

In the light of these findings, the **main recommendations** made by the review team are summarised below:

Management, Coordination and Service Delivery

Health prioritization:

1. Re-emphasise high priority to Communicable Diseases and Immunization by MoLHSA, in the context of health sector reform

Strategic planning:

2. Use new multi-year plan exercise to focus on priority activities, using this review recommendations

Coordination and Partnership:

3. Maintain Interagency Coordination Committee (ICC) as a pro-active body, to lead implementation of the review recommendations

Human resources:

4. Advocate for and support proper staff allocations, especially in low performing districts

Capacity building and training:

5. Strengthen training of nurses and physicians on immunization practices through local courses and supportive supervision

Immunization Strategies, Policies and Schedules

Immunization delivery strategy:

6. Start and gradually increase the planning and implementation of outreach sessions in low performing districts and for underserved population
7. Conduct assessment/analysis in the low performing districts to find out the main determinants for the lack of performance and motivation, and further adjust immunization delivery strategies
8. Move forward the Reach Every District (RED) main strategies, especially supportive supervision, linking services with communities and planning and management of resources
9. Conduct special work with neuropathologists, to drastically reduce false contraindications

Disease control strategy:

10. Strengthen surveillance for measles, rubella, CRS, diphtheria and AFP and start macro-planning for measles/rubella supplementary activities

New vaccines introduction:

11. Conduct disease burden studies to assess the need for new vaccine introduction (Rotavirus)

Immunization Coverage and Monitoring

12. Give priority focus on regions with districts reporting less than 80% DPT3
 - Priority review by ICC and meetings with identified regions/districts
 - Develop district specific plans of action with regular monitoring arrangements
13. Include priority actions for targeted districts/localities in new “Costed Multi Year Plan”, with specific focus on first 12 months activity (2007)
14. Improve analysis of coverage at health facility and rayon level
 - Use “left out”, “dropped out” and “late” for consistent target group analysis
15. Improve timeliness of immunization: e.g. better tracking of newborn from birth at maternity house to first contact at local health facility
16. Improve “Geovac” MIS e.g. further develop software to permit comparison with previous years data
17. Improve documentation of immunization
 - Ensure steady supply of immunization cards

- Explore arranging revisits to health facilities to get documented immunization data of all children sampled in the 2005 MICS
- Always include questions on reasons for non immunization in any health related coverage survey or study

Disease Surveillance

18. Refine overall surveillance management

- Ensure systematic feedback throughout the system
- Clearly define national targets for surveillance system performance and monitor their achievement by calculating key indicators
- Identify resources and clearly define responsibilities for the case-based surveillance data entry at the national level

19. Strengthen the surveillance infrastructure

- Strengthen laboratory capacity
- Increase awareness of the need and availability for laboratory confirmation at the district and facility levels
- Strengthen the data management system (“Geoepid”)
- Adapt the system to provide more flexibility for data analysis for programmatic purposes

20. Ensure analysis and use of surveillance data for programmatic purposes

21. Provide additional training for staff on surveillance issues

Immunization Quality and Safety

22. Reinforce and monitor Safe Immunization Practices and AEFI

- Improve AEFI surveillance guidelines and training for health staff, especially at district and health facility level
- Define, monitor and analyse AEFI system quality indicators
- Review and update guidelines/order for Healthcare Waste Management, with plans of action to include refresher training, supportive supervision and monitoring at all health facilities
- Ensure follow-up and decisions re: waste management assessment findings and recommendations (2004, UNICEF) in context of PHC reform
- Improve distribution and stocking of safety boxes where needed

23. Strengthen vaccine management

- For 2007 Government vaccine procurement through UNICEF Supply Division, start contract process in good time in 2006
- Identify actions needed to re-establish district level storage in Tbilisi
- Urgently identify suitable temporary PHD accommodation in Kobuleti (and other locations) while long term solution explored
- NCDC vaccine store: make action plan to adopt Model Quality Plan and SOP
- Vaccine registers: Introduce separate recording of freeze dried vaccine and diluents, and record VVM colour status at receipt and despatch
- Drug Agency (NRA): Keep in mind strengthening its functions in future, if vaccines other than UN prequalified ones are used

24. Address equipment issues

- Clarify funding mechanisms, including local government, for budgetary support for cold chain equipment maintenance and repair, transport etc

- List voltage stabilisers as separate inventory item; and procure as needed; ensure agreements with donors to automatically procure with refrigerators/freezers
- Keep equipment inventory for each region/rayon/HF by specific make/model of each refrigerator, freezer, cold box-use to reallocate/procure needed equipment

Advocacy and Communication

25. Ensure that the communication-for-behaviour-impact (COMBI) plan for 2006-07 is launched as early as possible, with a detailed action plan
26. Ensure that communication components are included in:
 - Ministerial Decree (#122/n)
 - In-service training, particularly at service delivery level
 - PHC protocols/guidelines under development
 - Pre-service university curricula
27. Prioritize improving staff motivation in relation to communication efforts and in the context of discussions on performance-based incentives

Financing and Sustainability

28. Maintain the same level of commitment and partnership in advocating legislative and budgetary changes for the NIP
29. Develop legislative mechanisms to ensure that necessary funds are earmarked at the sub-national levels for the immunization services (outreach sessions, incentives, equipment, maintenance)
30. Forecast national immunization budget increases in the FSP, and reflect in relevant budget planning tools–MTEF, annual state programme budgets- as vaccine prices are expected to grow and combination vaccines to be introduced

Health System Issues for Immunization

Macro organization:

1. Strengthen the stewardship function of MOH at all levels including review of role and function of NCDC, Department of Public Health and SUSIF
2. Review options for private public- partnership also in primary health care
3. Consider short–run options for non-financial incentives for staff with staff development options
4. Explore future options for improving efficiencies in institutional management including using civil service reform

Micro organization:

5. Define the model of PHC with all details
6. Speed up registration of patients to enable planning of immunization services among uninsured
7. Provide guidelines for public health programs implementation
8. Specify outreach services incentives in contracts

Regulations:

9. Consider reintroduction of immunization school entry requirement

10. Standardize forms, case definition, procedures and operations from central level
11. Introduce mandatory education on “Immunization in Practice” in medical schools
12. Explore options for continuous medical education (CME) and licensing of PHC and certification of staff

Advocacy and social marketing:

13. Use NIDs or SIA to promote prevention, provide training and create collective buy-in for immunization and healthy lifestyle in general
14. Use promotion of new model of PHC to promote quality health care and healthy behaviours including immunization

Financing-Revenue:

15. Promote coordination of donors support and consider SWOT type of approach
16. Enhance performance based budgeting process (MTEF)
17. Increase budget allocations to the health sector

Financing-Allocation:

18. Introduce equalization of funds among regions for public health programs
19. Earmark budget allocations at state level for key preventive services including immunization, by services and population groups covered
20. Introduce performance indicators in contracts with clear incentives for achievements, penalties for underperformance, and monitoring options and arrangements

Executive Summary Abkhazia

The review team found that the immunization programme in Abkhazia was generally working, with strongly dedicated staff at all levels, but also found many weaknesses. There are problems with the timeliness of immunization delivery, and immunization coverage is not properly monitored. Remote populations are not well covered and community knowledge of immunization is insufficient. Disease surveillance is not sensitive and specific enough, and there is no effective surveillance of AFP and AEFI. The system for vaccine forecasting and stock management is not appropriate and the cold chain is not properly functioning. The **main recommendations** are as follows:

Planning and management

1. A kind of inter-agency coordination committee (ICC) should be established for Abkhazia to seek technical and financial support for the immunization programme, with the involvement of senior health managers from Sukhumi and district level, and with UNICEF, WHO and other partners support
2. A multi-year plan (2007-2010), emphasizing on priority activities should be drafted to strengthen the immunization programme at the different levels
3. Key documents for the immunization programme (Decrees, guidelines) should be revised, printed and distributed
4. A series of training courses, mainly “Immunization in Practice”, should be implemented as soon as possible, targeting immunization nurses and physicians

Immunization coverage, including reporting procedures

5. The immunization monitoring system should be strengthened, with the revision and adoption of standard procedures, guidelines and forms
6. When the new monitoring procedures will in place, an appropriate training should be implemented for district and health facilities immunization officers

Disease surveillance

7. The disease surveillance system should be strengthened, with the revision and adoption of standard procedures, guidelines and forms
8. When the new surveillance procedures will in place, an appropriate training should be implemented for district and health facilities immunization officers
9. A surveillance system for Acute Flaccid Paralysis (AFP) and Adverse Events Following Immunization (AEFI) should be established

Immunization Quality and Safety

10. A high quality cold store should be established in Sukhumi, in a new building, with -20°C storage capacity for poliomyelitis vaccine (OPV)
11. An assistant for vaccine management purpose should be appointed for the Sukhumi cold store
12. An equipment inventory should be conducted, spare parts should be provisioned and a proper vaccines/supplies stock management system should be established
13. The vaccine forecast and stock management systems should be strengthened, with the adoption of standard monitoring tools, guidelines and forms
14. As previously mentioned, a series of training courses, mainly “Immunization in Practice”, should be implemented as soon as possible, targeting immunization nurses and physicians

Advocacy and Communication

15. A social mobilization campaign for immunization should be planned, targeting parents and health staff, and making use also of the 2007 European Immunization Week
16. Immunization cards (yellow card) and hands-out for maternity wards should be printed and distributed

Mission Report

I. Background and Introduction

The Republic of Georgia is approximately 69,700 square kilometres in area, and located on the southern slopes and to the south of the Caucasus Mountains, which serve as a natural border with the Russian Federation. Georgia is bordered by the Black Sea on the west, Armenia and the Turkish highlands in the south and Azerbaijan on the east.

Georgia is largely mountainous with the Great Caucasus Mountains to the north, the Lesser Caucasus Mountains in the south, the Kolkhida Lowland opening to the Black Sea in the west, and the Mtkvari River Basin in the east. The climate is generally warm and pleasant, and Mediterranean-like on the Black Sea coast.

The population of Georgia is estimated to be approximately 4.47 million, including, approximately 260,000 internally displaced persons (IDP) who fled areas of conflict in Abkhazia and South Ossetia in the early 1990s. The population is comprised of 70% Georgians, 8% Armenians, 6% Russians, 6% Azeri, 3% Ossetians, 2% Abkhaz and 5 % of other ethnicity. In 1989, it was estimated that 99% of the population ≥ 15 years could read and write, with 100% literacy among men and 98% among women.

Over the 1990s there was a decline in both the birth rate (16.7/1000 population in 1989 compared to 8.9/1000 in 1999) and the fertility rate (2.2 children born/woman in 1990 versus 1.7 children born/woman in 1999). Rates of infant mortality, under-five mortality and maternal mortality have all improved since 2000, though they remain low compared to European standards. Life expectancy at birth is 70 years for males, 77 years for females.

Health System and Immunization

The National Health Policy (1999-2010) has identified eight strategic priorities with performance and outcome targets, set out by the national health authorities in co-ordination and agreement with international development partners:

- improvement of maternal and child health;
- reduction of morbidity and mortality caused by cardiovascular diseases;
- improvement of prevention, detection and treatment of oncological diseases;
- reduction of traumatism;
- reduction of communicable and socially dangerous diseases;
- mental health;
- establishment of healthy lifestyle; and
- provision of an environment safe for human health.

The health system is still recovering from near collapse after independence in 1991 when Georgia could no longer sustain universal free health care for all citizens. Transition to a market economy has been accompanied by reduction in economic production, a growing informal economy, a narrowing tax base and substantial reductions of public revenues. In the period from 1992 to 1996 Georgia recorded a sharp decline in economic output that reached a drop of 78 percent compared to the 1990 level, resulting in public expenditures for health

dropping to a level of less than US\$1 per capita. Resources available were insufficient to sustain reasonable government salaries and introduced large informal and unregulated market for health care. This pattern has radically accelerated the de-facto privatization of primary care and resulted in significant formal and informal out of pocket payments from users. In devastated economy, sick people became less and less able to afford out of pocket payments and were increasingly simply turned away from health care system. As a result, health facilities experience a low volume of activity as well as patient's dissatisfaction with the limited services and supplies, including pharmaceuticals.

Immunization services, competing with other life saving services, with those ones that result in immediate gains and with ones that yield high financial gains for providers, suffered a significant drop in the early 1990s, today reflected in recurrent outbreaks of VPDs in age groups that missed immunizations then. Due to scarcity of resources and necessity to prioritize which services to use if any, generally high demand for immunization services from general public, inherited from Soviet period, dropped significantly.

In the 2005 Financial Sustainability Plan, the main objectives of the national immunization program are prioritized as follows:

1. Improving the timely immunization coverage against all 9 antigens up to 90% at the national levels and at least to 80% at all district levels throughout the country
2. Sustaining Polio free status and continuing accelerated disease control activities for Measles and Diphtheria
3. Decreasing vaccine wastage rates
4. Introduction of new vaccines based on epidemiological and cost-benefit analysis
5. Improving immunization coverage and program management capacities in conflict affected zones

II. Mission Description

A. Terms of Reference

The objectives of the review were:

- Review immunization strategies and policies as indicated in the national multi-year strategic plan for immunization (2002-2006)
- Review progress towards national targets and objectives set for immunization coverage and reduction in vaccine preventable diseases
- Identify achievements and constraints in the national immunization and vaccine preventable disease control programmes

On the basis of the observations and analysis of information gathered, the review team will develop and present conclusions and recommendations to the Ministry of Labour, Health and Social Affairs of Georgia and the ICC partner agencies.

The programmatic areas to be reviewed were:

1. Management, Coordination and Service Delivery
2. Immunization Strategies, Policies and Schedules
3. Immunization Coverage and Monitoring
4. Disease surveillance

5. Immunization Quality and Safety
6. Advocacy and Communication
7. Financing and Sustainability

It was also decided to include a special analysis of “Health Systems Issues for Immunization”.

The expected outcomes were:

- Better understanding by stakeholders in Georgia of the current status, priorities, achievements and constraints in provision of immunization services
- A set of recommendations for improvement, strengthening or modification, if necessary, of immunization policies and/or implementation for respective programmatic areas
- Recommendations for strengthening national managerial capacities

B. Evaluation Methods

Review team and process

A team of national experts from the Ministry of Labour, Health and Social Affairs–Public Health Department (PHD) and National Centre for Disease Control and Medical Statistics (NCDC), plus specialists from the WHO Regional Office for Europe, UNICEF Georgia, US Centers for Disease Control and Prevention (Atlanta, USA) and World Bank, conducted the review.

Using a modified WHO protocol for field visits and programme component assessment, the team examined strengths and weaknesses in the immunization programme components listed above at the national and sub-national levels (regional and district (rayon) public health departments, and health facilities). Financing and Sustainability were examined essentially at national level as was the Health System in relation to immunization.

In summary, the assessment process involved:

- Quick review of all documentation since 1999 (Annex 5)
- Interviews and observation at the national level (PHD, NCDC)
- Visits to Regional and District PHDs and vaccine cold stores
- Observation, interview and records review in selected Health Facilities

After initial briefings, planning sessions and initial assessment at national level, teams of one or two reviewers visited six regions and Abkhazia, 15 districts and 28 health facilities during 3-4 days fieldwork. Apart from Tbilisi, about half of the health facilities were polyclinics and half ambulatories. Region-wise summaries of findings and key recommendations were presented and discussed by the review team, and then overall findings and key recommendations were developed and presented to the Head of the PHD and to the Interagency Coordinating Committee (ICC). International team members drafted sections for the full report according to the various programme components examined. The review timetable is shown in Annex 4.

Figure 1: Areas visited by immunization programme review team, 19-22 July 2006



C. Team Composition

The team members and areas visited are shown below:

Adjara A.R.

- Nino Buadze, Epidemiologist, PHD
- Alasdair Wylie, UNICEF Consultant

Imereti Region

- Nona Bezadze, Epidemiologist, NCDC

Kvemo Kartli Region

- Lika Javidze, Head of Immunization Department, NCDC
- Nino Khesturiani, Medical Epidemiologist, CDC

Samegrelo-Zemo Svaneti Region

- Giorgi Kachlishvili, Head of Vaccine Logistics Department, NCDC

Samtskhe-Javakheti Region

- Tamar Sulkhavishvili, Epidemiologist, NCDC

Tbilisi Region and Kakheti Region, Akhmeta District

- Sopho Dolbadze, Epidemiologist, PHD
- Mariam Jashi, APO Health, UNICEF Georgia
- Nino Mamulashvili, Programme Officer, WHO Georgia

For Akhmeta District, also:

- Giovanna Barberis, UNICEF Representative
- Jonathan Hadaway, UNICEF UNV Emergencies Officer

Abkhazia

- Eric Laurent, Technical Officer, WHO Regional Office for Europe
- Ingrid Kolb-Hindarmanto, Programme Coordinator, UNICEF Georgia

At the National level, also:

- Levan Baidoshvili, Deputy Director, NCDC
- Tamar Sulkhavishvili, Epidemiologist, NCDC
- Nedim Jaganjac, Consultant, World Bank
- David Gzirishvili, Consultant, World Bank
- Nino Partskhaladze, Vishnevskia-Rostropovich Foundation

III. Evaluation by Component: Findings and Recommendations

All information included in the following sections is supported by data collected at national level, in 6 Regional Public Health Departments (PHD), 15 District PHDs and 28 health care facilities. To avoid an overload of data in the core report, essential findings will be presented with a SWOT (strength, weakness, opportunity, threat) followed by the main recommendations. Further information can be found in the regional reports (in Annex 1) and all original collected data (questionnaires) can be provided upon request.

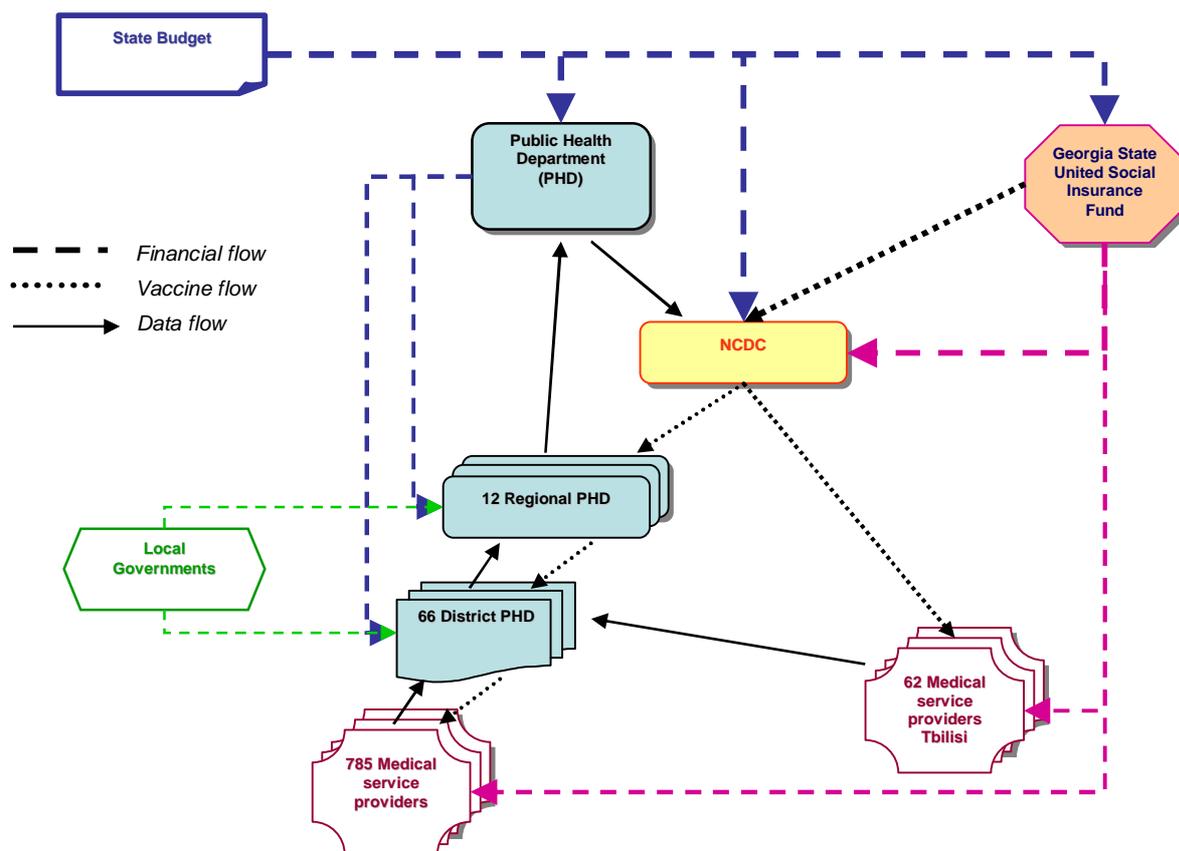
1. Management, Coordination and Service Delivery

Programme organisation

Immunization services are delivered by Medical Service Providers (785 plus 62 in Tbilisi), which include a greater number of actual immunization points (total around 1300). Supervision of the Medical Service Providers' activities is taken care of by Regional Public Health Departments (12 RPHD) and District Public Health Departments (66 DPHD). At the national level immunization issues, under the overall responsibility of the Ministry of Labour Health and Social Affairs (MoLHSA), are with the State United Social Insurance Fund (SUSIF) for issues concerning financial flows, and with the Public Health Department (PHD) and the National Centre for Disease Control and Medical Statistics (NCDC) for issues concerning vaccine management, monitoring activities and vaccine preventable Disease surveillance.

Up to 2006 vaccines and injection safety supplies have been provided through Government (SUSIF), UNICEF (USAID funded), Vishnevskia-Rostropovich Foundation (VRF) and the GAVI financial support. Logistics of the vaccines and injection safety equipment is managed by NCDC at National level, and by RPHD and DPHD at the sub-national level countrywide. The supply/distribution system seems to be well working as no major shortage was identified during the review. Concerning the vaccine procurement, new legislation allows SUSIF to purchase childhood vaccines through UNICEF Supply Division, a channel which was successfully tested for the first time in 2006 with a cost-saving of USD 400,000 for the state budget.

Figure 2: Immunization flow chart (funds, vaccine, data)



Policy development and priorities

Immunization policies are developed by NCDC which advises the Department of Public Health and the Department of Planning and Health Policies. Core policy and regulatory documents are the following:

1. Georgian National Health Policies (1999), mentioning the following relevant targets¹:
 - Reduction of infant morbidity and mortality rate by 15%
 - By 2000 elimination of poliomyelitis maintained and elimination certified by 2003
 - Elimination of infant tetanus by 2005
 - Elimination of measles by 2007 and certification of its liquidation by 2010
 - Reduction by 80% by 2010 of new cases of transmission of hepatitis B
 - Reduction of prevalence of epidemic parotitis, whooping cough and haemophilus influenza (B type) to less than 0.1 per 100,000 population
 - By 2006 the rate of congenital rubella should be less than 0.01 per 1000 live births
2. Decree #122/n “National Calendar for Prophylactic of Vaccination” (2003), including all information, practices and recommendations for the different components of the immunization programme, based on up-to-date methodologies and guidance from WHO, UNICEF, CDC and HBRB.

¹ Some of these targets were revised as measles and rubella with the elimination for 2010, or achieved as poliomyelitis certified in 2002

3. Decree #55/o “Control and Prevention of Vaccine-Preventable Diseases and Rabies including measles and rubella elimination” (February 2005)
4. Decree on Hepatitis B and Information System (2004), including immunization coverage monitoring and vaccine-preventable Disease surveillance
5. Orders on MMR (April 2004), stating the introduction of MMR vaccine with revision made on the schedules

The National Health Policies are currently under revision. The other documents are up to date, available in the health facilities and no further revision is actually required. The only comment made at the national level concerning policy development was that the process takes much time and that there is a long decision chain for policy issues.

Planning service delivery strategies

The **Strategic Health Plan for Georgia**, the tool for the implementation of Georgia's national health policy, covers the period 2000–2009. The Plan sets priorities among the health problems and presents solutions that take into account the projected economic situation of the country and the resources of the health system. This document focuses on specific interrelated issues: strategic health planning, situation analysis, the health system's vision for the 21st century and strategy implementation. It aims to lead policy-makers and programme planners through the process of strategic thinking to improve the chances of successful implementation. It was the first comprehensive document in Georgia that translates health policies and strategies into action.

As for immunization, Georgia issued a **National Plan of Action for Immunization** covering the period 2002-2006. This plan included the following objectives and priorities:

- a. Improving the timely immunization coverage against all 9 antigens up to 90% at the national levels and at least to 80% at all district levels throughout the country
- b. Sustaining Polio free status and continuing accelerated disease control activities for Measles and Diphtheria
- c. Decreasing vaccine wastage rates
- d. Introduction of new vaccines based on epidemiological and cost-benefit analysis
- e. Improving immunization coverage and program management capacities in conflict affected zones

As this multi-year plan reaches its term, a new multi-year plan is being drafted (currently under elaboration through WHO and World Bank technical assistance and engagement of the ICC partners). This multi-year plan, based on global and regional goals and national objectives and priorities, will provide implementation strategies and key activities for the immunization programme for the next 5 years. The recommendations coming out of the Georgia Immunization Programme Management Review will be used in defining essential priorities and activities for the multi-year plan. This multi-year plan will have a costed component, as was the case for the previous Financial Sustainability Plan.

Coordination and advocacy for support

The main support to the programme includes the following partners:

- UNICEF, since 1994 serving as the major partner for supply and logistics assistance, strategic planning and capacity building, advocacy and communication and monitoring/evaluation. Starting from 100% provision of vaccines and injection safety

supplies to the routine immunization programme and SIAs, UNICEF has succeeded in advocacy and political mobilization efforts within the Vaccine Independent Initiative leading to gradual replacement of donor funds by GoG resources from 0% in 2001 to 50% by 2006.

- WHO, providing technical support in the fields of routine immunization strengthening including introduction of new antigens and disease burden studies; disease control and elimination (diphtheria, polio, measles/rubella); coverage monitoring and disease surveillance; laboratory component; and finally immunization quality and safety, including vaccine procurement, vaccine management, injection safety and AEFI surveillance.
- Vishnevskaya-Rostropovitch Foundation (VRF), providing MMR vaccines and supporting outreach services for 2004-2008.
- Curatio IF, supporting the health information system for NIP/VPD surveillance (project completed).
- USAID, ensuring the major financial contributions to UNICEF supported activities as well as funding the Curatio IF/Abt project on health information system.

In order to optimize the support and coordination of the work of all agencies involved in the National Immunization Program, an **Interagency Coordinating Committee (ICC)** was created in September 2000. It is composed of all the major country-level partners, including the Public Health Department (PHD), the National Centre for Diseases Control and Statistics (NCDC), WHO, UNICEF, VRF, USAID and Curatio IF, and it is currently chaired by the Deputy Minister Dr Nikoloz Pruidze. It has met regularly, at least 4 times a year, with a good participation from the different members in ongoing review, strategic planning, coordination, resource leveraging and oversight of the programme implementation. However in common with other countries ICC meetings may face in the long run a kind of fatigue, therefore it will be important to find ways to keep it active.

At Regional and District levels the coordination of the immunization programme is also properly functioning, as observations during the review confirmed. Health staff and managers often demonstrated dedication and competence. However a lack of motivation was mentioned in some low performing districts, an issue which will need to be addressed with a specific strategy, as for other problems in those priority districts (refer to Policies and Strategy section on this issue).

Human resource allocation and development

Looking at recent concept paper on health sector reform, it appears that there are enough staff allocated to the immunization programme. In practice, there was noted an inadequacy in health staff allocation between districts, with a lack of physicians in remote or mountainous areas, and in low economic status districts. The proportion of nurses was also mentioned not to be sufficient in relation to the population. Such staffing problems, mainly related to the inequity between districts, are also mentioned in the section on health systems, with the need to find a balancing mechanism between regions.

Concerning capacity building and staff development, several training courses were implemented in the recent years, supported by Curatio, VRF, UNICEF and WHO, in the fields of surveillance and monitoring, introduction of new vaccine, vaccine management and AEFI. These courses mainly have targeted regional and district staff. In almost all of the regions visited there was mentioned a need to improve skills and practices at health facility

level, mainly for physicians and nurses; information and skills provided to the regional and district health staff during training sessions has not always reached health facility staff. The main courses required were stated during the review to be “Immunization in Practice”, disease surveillance, and advocacy and communication.

Beyond training, supportive supervision could be one option to support local health staff skills and development of good practice. The Reach Every District “RED” strategy includes such a component (refer to the Policies and Strategy section for further information).

One of the challenges faced by the immunization programme in terms of staff development is the introduction of family group practitioners or family doctors which will require additional training for the different components of immunization. Their current curriculum does not cover enough on operational guidance for the immunization programme.

SWOT analysis for Management, Coordination and Service Delivery

Strengths

- At national, regional and district level, the immunization programme management is quite strong, with competent and dedicated health staff.
- The Interagency Coordination Committee (ICC) is providing an important support to the immunization programme through its partnership.
- Training courses on the different components of immunization have been regularly conducted targeting regional and district level health staff.
- Overall the vaccine and injection equipment supply and distribution is adequate with a proper vaccine management.
- There is generally at all levels a good availability of guidelines, registers, modules and forms.

Weaknesses

- Low performing districts face difficulties in ensuring physicians and nurses’ availability and in motivating their health staff.
- Skills and practices at primary health care level are not up to required level, as the information provided to the regional/district staff during training has not always reached health facility staff.
- The quality of the infrastructure remains an issue in some district stores and health facilities, with poorly maintained building.

Opportunities

- The current high dedication of health staff contributes towards the strength of the immunization programme.
- The strong partnership for immunization is thought to be maintained in the coming years.
- In 2007, the European Immunization Week advocated by WHO will be a good opportunity to focus on low performing districts.

Threats

- The Health Sector Reform continuous changes are a potential threat for the immunization programme.
- Some international support, as vaccine financing, is progressively phasing out, emphasizing on the urgency to prepare the take-over by the Government.

- Human resources issue in low performing districts, with a lack of physicians and nurses, hamper the proper implementation of the immunization programme.

Recommendations on Management, Coordination and Service Delivery

On health prioritization:

1. In this period of Health Sector Reform changes, a high priority to Communicable Diseases and Immunization programme should be re-emphasized by the Ministry of Health, Labour and Social Affairs-regardless of the fact that nowadays the preventive and control measures against communicable diseases are priorities for health system of Georgia.

On strategic planning:

2. The new multi-year plan exercise should focus on essential priorities and activities, using the immunization programme management review recommendations.

On coordination and partnership:

3. The Interagency Coordination Committee (ICC) should be maintained pro-active and lead the implementation of the review recommendations.

On human resource availability:

4. Proper additional staff allocation, especially in low performing districts, should be advocated and supported through a national equity mechanism and with partners support.

On capacity building and training:

5. Training of primary health care staff, especially nurses and physicians, particularly family doctors, as system is still under development, on immunization practices should be strengthened through local courses and supportive supervision.

2. Immunization Strategies, Policies and Schedules

Routine immunization

The routine immunization delivery in Georgia is based on two classical strategies: fixed site and outreach session. As to the fixed site strategy, primary health care facilities delivering regular immunization include polyclinics in urban areas and ambulatories in rural areas, and maternity hospitals for BCG and Hepatitis B first dose. Outreach sessions (one day operations) are supposed to take place in facilities where no physician is allocated. Outreach sessions are also supposed to take place in schools, especially for catch up and booster doses. However lack of incentives and donor-dependency in financing the outreach sessions is a major challenge. Mobile teams (several days travelling to cover remote villages) operating in 2001-2003 were stopped due to a change in the immunization programme financing. In late 2006 a UNICEF and VRF funded project will be launched to strengthen supportive supervision and outreach immunization sessions. This is hoped to bring convincing evidence for sustainable integration of the component within the immunization programme from 2008.

Depending on the target population and geographical area, immunization sessions are organized on a daily basis (large polyclinics, maternity houses), on a weekly basis (ambulatories), or on a monthly basis for remote areas. Seasonality plays also a role, with mountainous area health facilities not always providing immunization during the winter.

Apart from the absence of physicians, another determinant influencing the mode and frequency of immunization delivery is vaccine utilization/wastage. Due to low populations in some areas, the immunization delivery frequency is often adjusted (reduced) to optimize vaccine utilization and minimise wastage. This adversely affects the timeliness of children's vaccination, recognized to be a major problem in Georgia (refer to Coverage Monitoring section).

Underserved populations

It was recognized during the review that a lack of transport means at district level prevents the regular organisation of outreach sessions, generating a population underserved by the immunization programme. Often this population, remote and with a low economic status, also has difficulties in bringing their children for immunization in fixed centres. Outreach sessions remain one of the key responses to this problem.

In 2000-2003 logistics support was provided by UNICEF for the establishment of extended immunization services in 24 of the most remote districts of 7 regions. 7,000 to 8,000 vaccinations were administered annually to the child population in hard to reach areas, reportedly not reached by the routine immunization services. By end of 2005, UNICEF had provided a 4 wheel drive vehicle to all 12 regional PHD departments and 2 district PHDs with special vulnerability, for outreach services and improved NIP coordination.

In 2005, the Vishnevskaya-Rostropovich Foundation (VRF) supported mobile teams to improve MMR coverage in several districts of Adjara A.R. and Kvemo Kartli region: Khulo, Shuakhevi, Marneuli, Tsalka, Tetrtskaro, Dmanisi. This opportunity has been used to vaccinate children not only with MMR vaccine but other antigens as well. As a result coverage rates and quality of statistics reportedly improved.

International partners continue to provide support to some of the low performing districts, as UNICEF and VRF will do by supporting outreach immunization sessions in Sept-Dec 2006, but the extent of the problem seems not to have been solved and in several regions this problem was raised during the review. The revitalization of the outreach services was also strongly recommended by the ICC. Sustainability of mobile team services remains an issue.

Other groups, such as displaced population from conflict zones, or poorly supported institutions like orphanages, were also recognized as vulnerable. In addition, minorities with language barriers, such as the Azeri and Armenian communities, equally represent an underserved population, as the current coverage in southern districts shows (see maps of coverage and drop-out in section 3.). Special efforts still need to be provided because the children of all these groups are still not fully immunized.

The "Reach Every District" (RED) strategy was introduced in Georgia three years ago with the objective of strengthening district capacity through five components:

1. Re-establishing outreach services

2. Supportive supervision
3. Linking services with communities
4. Monitoring and use of data for actions
5. Planning and management of resources

Although monitoring in Georgia has shown a completeness of reporting, the other components of the RED strategy were not fully implemented, leaving questions on how much these low performing districts were able to implement activities to overcome low coverage and high drop-out rate. Here also, analysis and stepping up of actions seems necessary.

Disease Control

Sustaining polio-free: Poliomyelitis has been eradicated in the European Region and certified in 2002. However Georgia should still be considered a “hot spot” for possible importation of poliovirus, for three main reasons. First, in 2005 17 of the 65 districts showed DPT-OPV3 coverage lower than 80% by one year of age and 3 of those districts have coverage lower than 50%. Second, the AFP surveillance has seen a decrease in its indicators, district-wise but also nationally, with a non-polio AFP rate being less than 1/100,000 children under 15 years (refer to Disease Surveillance section). Lastly, the Caucasus region remains a geographical high risk area, being a population transit zone with links to poliomyelitis endemic countries. The imported poliomyelitis case of 2001, although no further case was notified, showed the necessity to remain vigilant and reinforce coverage and surveillance.

Measles elimination: Although a preliminary plan for measles elimination was initiated in 2003, a major measles outbreak burst out in 2004-2005 with some 8,384 cases, mainly school children and young adults, in parallel to a rubella outbreak (2004-2005) with some 6,048 cases, mainly under 15 years. Meanwhile a MMR adolescent national supplementary immunization activity was implemented throughout 2005, targeting the 13-14 years old. The recent investigation of the outbreaks showed the urgent need to develop a formal Strategic Plan for Measles and Rubella Elimination, followed by the development of a specific plan for supplementary immunization activities, by the end of 2007, beginning 2008. Moreover the routine measles vaccination programme should be strengthened to achieve and maintain vaccination coverage of both first and second dose of MMR at $\geq 95\%$.

Controlling diphtheria: Following the major outbreak in the Region and in Georgia in 1995, the situation has been stabilised and the control of diphtheria progressively stepped up. Cases of diphtheria continued to occur, although at low level, with no fatal case reported in 2005, and an incidence continuing to decrease (refer to Disease Surveillance section). But here also coverage and surveillance remain a priority if the disease is to be fully controlled.

Introduction of new and combination vaccines

As shown with the comments during the review, Georgia successfully introduced Hepatitis B in 2002² (GAVI support) and MMR in 2004 (VRF support). However due to the Hepatitis B AEFI case of 2002, fierce resistance appeared, mainly in large cities like Tbilisi, partly due to the media coverage. Although Hepatitis B coverage increased steadily since

² HepB vaccine was introduced with UNICEF and USAID support in 2000 for the urban child population cohort, while in 2001 it was extended to nation-wide coverage. However it was only through GAVI/VF support that longer-term sustainability of the vaccine provision was feasible.

then, the event still continues to cause a lesser coverage than expected (73% nationally in 2005) and there is a need for further advocacy to overcome the remaining resistance (refer to Communication and Advocacy section).

Concerning the introduction of new vaccines, there are currently none in the pipeline, mainly due to financial constraints and sustainability issues. The first priority also remains the sustainable increase of immunization coverage for routine antigens. In the medium term (not before 2008), DPT-IPV as a 1st dose could be the next new vaccine among the combination vaccines to be introduced, as stated by NCDCS. Rotavirus is also another new vaccine to be considered, the current strategy being to initiate first disease burden studies, supported by WHO.

As a summary, introduction of new vaccines will have to be carefully managed, should it be on the financial side but also because of the media virulence concerning any AEFI case. During the interview, it was mentioned that the initial introduction of the above mentioned vaccines by the private sector could help in identifying further possible resistance.

Immunization Policies and Schedules

The current immunization calendar used in Georgia was adopted in the 2003 Decree no.122/n, with revision in the 2004 Order for MMR. This calendar is well adopted and followed-up although late vaccination occurs in some districts, for the reasons previously mentioned.

Vaccine	Ages of administration
BCG	2 nd to 5 th day after birth
OPV	2 nd , 3 rd , 4 th months and 5 th year
DPT	2 nd , 3 rd , 4 th and 18 th months
Hepatitis B	Within 12 hours after birth, 2 nd and 4 th months
MMR	12 th month and 5 th year
DT	5 th year
Td ³	14 th year

The only issue raised during the review was the simultaneous injection of Hepatitis B birth dose and BCG, at birth. Currently one injection is given at birth, the second when the mother and the child leave the maternity house. However WHO and CDC do not place any contraindication for the simultaneous injection of monovalent Hepatitis B and BCG at birth.

Concerning administration policies, no major mistakes were reported (e.g. for injection site), and the multi-dose vial policy seems to be respected. As Georgia is procuring most of the liquid vaccines in a multi-dose presentation, the multi-dose vial policy was adopted in order to reduce the wastage rate. The policy included DPT, DT, Td, Hepatitis B vaccines.

³ MLHSA Decree #122/n includes recommendations for Td vaccination for 24, 34, 44 and 54 age groups

Under the Decree 122/n, they may be used again within 1 month, if all of the following conditions are met:

- The vaccines are stored under appropriate cold chain conditions at all times;
- The vaccine vial has not been submerged in water;
- Sterile technique has been used to withdraw all doses;
- The VVM, if attached, has not reached the discard point.

For OPV, the Decree states that it is necessary to follow the manufacturers' instructions.

Contraindications

The current list of contraindications in use in Georgia is in line with WHO recommendations. However the proportion of false contraindications is high (national average of 23% for the 3 doses of DPT in 2005), especially in large cities like Tbilisi. It was mentioned that neuro-pathologists represent an important group preferring to advise not to vaccinate in certain conditions, conditions which were proved not to be in accordance with the nationally adopted contraindications list. This problem definitely needs to be tackled if coverage is to be increased, and is to be addressed with VRF support in 2006-07.

At the same time, information circulates among health staff and within the population that western country manufactured vaccines are of better quality than WHO pre-qualified vaccines from countries such as Indonesia (example for DPT). Currently vaccines for Georgia are all procured through UNICEF's Supply Division, with the effect of bringing in vaccines of different country origins. Such an issue will also require specific attention, and although it might be possible for Georgia to ask the UNICEF Supply Division to provide specific vaccine by origin, such a recommendation may set a precedent which in the long run may backlash (availability and price of vaccine in the long run).

A requested point during the review was to reintroduce immunization as a school entry requirement. Although done in the past in Georgia, it would need to be carefully discussed before adopting any regulation.

SWOT analysis for immunization strategies, policies and schedules

Strengths

- Immunization policies and schedules are currently well in place and respected by health staff.
- Procurement of quality-assured vaccines through UNICEF Supply Division is now in place in Georgia, with the effect of having substantially decreased vaccines budget.
- Diseases elimination and control strategies are in progress (measles/rubella, diphtheria).

Weaknesses

- Vulnerable and underserved population are still not fully covered (low performing districts, remote area, displaced people, minorities, orphanage).
- There are still a very important percentage of false contraindications, especially in large cities.

- Health staff and population attitude toward vaccine manufacturing origin continue to cause concern and remain a reason for the immunization coverage not to be at the required level.

Opportunities

- The maturity of the programme and the partnership will help in refining specific strategies for underserved population.

Threats

- Continuous influence by specialists like neuropathologists on refusing vaccination with unjustified contraindications still hampers the immunization programme.

Recommendations on Immunization Strategy, Policies and Schedules

Immunization delivery strategy:

6. Start and gradually increase the planning and implementation of outreach sessions in low performing districts and for underserved population.
7. Conduct assessment/analysis in the low performing districts to find out the main determinants for the lack of performance and motivation, and further adjust immunization delivery strategies (already planned for 2006-07).
8. Move forward the Reach Every District (RED) main strategies, especially supportive supervision, linking services with communities and planning and management of resources.
9. Conduct special work with neuropathologists, to drastically reduce false contraindications (already planned for 2006-07).

Disease control strategy:

10. Strengthen surveillance for measles, rubella, CRS, diphtheria and AFP and start macro-planning for measles/rubella supplementary activities.

New vaccines introduction:

11. Conduct disease burden studies to assess the need for new vaccine introduction (e.g. Rotavirus where a surveillance pilot system was already initiated).

3. Immunization Coverage and Monitoring

National Immunization Coverage

Since 2002 the USAID funded “Reform of the Health Information System for Disease Prevention and Control” has aimed at improving the accuracy and reliability of the information systems for immunization and vaccine management (MIS) and vaccine-preventable diseases (VPD) in Georgia. The new MIS for immunization and vaccine data was piloted in Kakheti region in 2002 and taken nationwide from 2003-04, with a new software tool “Geovac”.

Table 1 shows the reported national coverage for selected antigens in the primary series, from the years of supply disruption in the early 1990s, reaching over 90% reported for all in

2000 by the time Hepatitis B vaccine was introduced, first in urban areas. The effects of occasional supply interruptions in recent years are however visible, as well as of negative media comment (after Hep B AEFI in 2002) affecting 2003-04 coverage.

Up to 2000, immunizations were reported regardless of age given. “Timely” immunization—by one year of age (12–24 months of age for MCV/MMR)—was recorded and reported separately for the first time in Georgia in 2001; this is reflected in the drop in reported BCG, DPT, OPV and HepB coverage shown in Table 1 that year.

Table 1: Reported immunization coverage (%), 1993-2005

Vaccine	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
BCG	30.3	30.0	31.8	70.0	75.8	94.2	95.2	95.0	90.9	91.2	85.3	89.2	95.0
DPT	54.3	58.0	54.3	91.6	92.0	89.2	98.0	98.0	87.2	85.7	74.8	78.5	84.0
OPV3	81.5	82.0	81.5	93.5	98.4	95.0	98.0	98.0	82.7	90.3	74.3	66.3	83.5
MCV1	61.1	63.0	61.1	88.0	95.0	90.0	97.0	97.0	57.2	65.9	79.9	88.4	91.6
HepB3	-	-	-	-	-	-	-	51.2	62.0	51.1	47.8	64.1	73.5

Source: NCDC data

DPT, OPV, HepB immunizations given later than the “timely” age (12 months) are also recorded and reported in the “Geovac” system but no “overall” (all ages) coverage calculation is made for any antigen, combining those on time and late. For the birth (maternity house) doses of BCG and HepB1 an additional “timely” recording column of 0-5 days and 0-24 hours respectively is also included. No additional “timely” criterion is used for MMR1, just the 12-24 months, with over 24 months recorded separately.

National targets were set for the period up to 2010 in the Financial Sustainability Plan (FSP), as follows, but not specifying if for overall (any age) coverage or under 1 year coverage. Objective 1 of the FSP does target the improvement of timely immunization coverage.

Table 2: Projected coverage rates for selected antigens (%), 2004-2010

Vaccine	2004	2005	2006	2007	2008	2009	2010
BCG	90	92	95	95	95	95	95
DTP (1)	90	93	95	95	95	95	95
DTP(3)	85	87	89	92	95	95	95
MMR (1)	80	83	86	90	95	95	95

Source: Financial Sustainability Plan, revised 2005

Examining the last three years in some more detail (Table 3), the national reported coverage by one year of age shows an upward trend for all antigens since 2003, excepting a drop for OPV3 in 2004 because of vaccine shortage. 2005 reported coverage is in line with projections for BCG and DTP1, somewhat behind for DTP3, and significantly better than projected for MMR1. In addition, the difference between HepB3 and DTP3 has narrowed overall and there has been relative improvement in coverage with the other new vaccine

MMR (which replaced monovalent Measles and Mumps in 2004). The overall picture regarding dropout between the first and third doses of DPT has only slightly changed, possibly a factor behind the lower than projected DPT3 figure for 2005.

Table 3: Reported immunization coverage under 1 year (%), 2003-2005

Vaccine	2003	2004	2005	2005 (projected)
BCG	87	91	95	92
DPT1	86	88	94	93
DPT3	76	78	84	87
OPV3	75	66	84	
HepB3	49	64	73	
MMR1 *	80	86	93	83
MMR2 **	57	75	87	
DPT3-HebB3 Difference (%)	27	14	11	
Dropout DPT1-3 (%)	11.6	11.4	10.6	

*12- 24 months

**5-6 years

Source: WHO/UNICEF Joint Reporting Form, from MOLHSA Georgia (data excludes Abkhazia)

A national immunization coverage survey was conducted in 2005 as part of a UNICEF supported Multiple Indicator Cluster Survey (MICS), to assess the immunization status of children aged 12-23 months, the first such survey since 1999. Data checking is under way. Survey data was collected from the immunization cards of the sampled children kept at home, where available (less than 8% of cases) but not, it seems, from the children's immunization records kept at the health facilities where the immunizations were given. Data obtained from clinic records (as was done in the 1999 coverage surveys and as is recommended in the MICS3 manual, 2005) is much more reliable and detailed than relying on the recall of the mothers/caretakers of the children sampled and would permit much more reliable analysis and estimates of national and some sub-national coverage.

Target group/denominator calculation and accuracy

The denominator for coverage calculation is determined by house-to-house surveys carried out by local health staff annually (usually October/November) within their respective areas. According to NCDC two major factors can limit accuracy: 1) Integral migration of the population among some of the regions, and 2) Lack of financial incentives for the health care providers to carry out the surveys completely. Official national administrative statistics become available in mid-2006 and the coverage rates will be recalculated based on them.

A NCDC/Geovac analysis for 2005 reported as follows: "The projected number of newborns in Georgia reported by health facilities in 2005 equaled 46,875 which is consistent with the State Department of Statistics figure. The reported target group of children under one year (surviving infants at the age of 12 months) that is based on the door-to-door census was 44,227 children. The 5.6% difference between this number and the number of newborns can not be fully explained by the infant mortality rate in Georgia (2-3%), which indicates that some health care facilities might have missed a number of children during the census and thus

the reported national immunization coverage figures are probably overestimated by 3-4%.” (This conclusion would not apply for BCG and HepB1 coverage for which the denominator is newborns.)

Presentation of national coverage data

The new “Geovac” MIS presents national cumulative immunization coverage by antigen, age and region as shown below. For each antigen the “timely” column is shown first, and dropout for DPT1-3 and OPV1-3 is shown as well as DPT3-HepB3 as a “Missed Opportunities” indicator, which is useful. However DPT1 data is not shown (it is useful to have this to see in relation to BCG/HepB1), there is no provision for showing DPT3/OP3/HepB3 given over one year of age, and the sequence of the columns does not follow the chronology of the immunization schedule, making it difficult to see the data for the primary series as a series. The top line could helpfully be shown as follows: BCG, HepB1, DPT1, DPT3, OPV3, HepB3 and MMR1.

Table 4: Cumulative immunization coverage by antigen, age and by region and missed opportunities for vaccination, Jan-Sept. 2005

2005	BCG under 1y		HepB-1 under 1y		DPT-3 under 1y		DPT 18 mo		DT 5y		Polio-3 under 1y		Polio 18 mo	
	BCG (0-5 days)	BCG (more than 5 days)	HepB-1 (0-24hrs)	HepB-1 (25hrs to 11mo29d)	DPT-3 under 1y	DPT 1-3 dropout	DPT 18 mo	DPT over 24 mo	DT 5y	DT over 6y	Polio-3 under 1y	Polio 1-3 dropout	Polio 18 mo	Polio over 24 mo
GEORGIA														
Adjara	62.7%	6.6%	62.8%	25.1%	71.8%	-1.2%	54.6%	7.2%	44.6%	4.8%	68.3%	3.1%	53.2%	7.7%
Kakheti	59.9%	12.6%	61.2%	23.6%	63.9%	3.8%	57.8%	7.2%	39.3%	3.6%	67.7%	4.4%	59.5%	14.6%
Imereti	65.5%	6.4%	68.2%	18.3%	60.2%	10.3%	53.6%	21.3%	52.4%	5.3%	60.2%	19.4%	54.0%	30.6%
Samegrelo	72.6%	4.6%	63.8%	21.2%	60.8%	10.2%	51.9%	15.0%	34.4%	7.5%	60.5%	6.9%	53.0%	19.0%
Shida Kartli	65.8%	1.9%	62.4%	24.5%	60.6%	2.8%	41.9%	16.6%	33.3%	6.6%	55.5%	-0.5%	39.2%	16.0%
Kvemo Kartli	54.7%	12.2%	51.4%	29.0%	49.5%	11.6%	35.8%	16.1%	30.4%	16.5%	43.2%	9.6%	32.9%	16.7%
Guria	56.8%	0.5%	52.3%	22.0%	63.2%	7.3%	55.2%	17.9%	38.2%	13.3%	60.1%	3.4%	52.2%	18.5%
Tbilisi	77.3%	6.7%	54.1%	11.4%	61.0%	5.0%	52.2%	13.4%	53.6%	5.9%	60.9%	4.2%	50.7%	16.2%
Samtskhe-Javakheti	58.6%	6.9%	58.2%	6.9%	60.0%	1.3%	57.1%	4.0%	26.9%	1.2%	63.8%	-4.0%	56.2%	5.7%
Mtskheta-Mtianeti	64.2%	3.6%	64.4%	16.6%	61.4%	7.5%	54.4%	7.8%	35.1%	3.5%	59.8%	11.4%	55.6%	9.9%
Racha-Lechkhumi	48.1%	1.6%	21.8%	2.5%	44.0%	27.6%	51.4%	15.0%	38.4%	2.9%	41.8%	21.8%	50.7%	15.4%
Skhva	72.5%	13.5%	73.5%	33.3%	49.4%	5.8%	37.4%	9.7%	29.2%	10.3%	45.5%	4.4%	40.7%	10.6%
Total	68.1%	7.1%	58.5%	17.9%	60.3%	6.0%	50.2%	13.4%	42.5%	7.1%	59.1%	6.4%	49.3%	16.5%
	Polio 5y		HepB-3 under 1y		MMR-1		MMR-2		MMR 13 y		Td-14y			
September	Polio 5y	Polio over 6y	HepB-3 under 1y	Missed opportunities (DPT3-HepB3)	MMR-1 (12 mo)	MMR-1 (over 24 mo)	MMR-2 (5y)	MMR-2 (over 6y)	MMR (13 y)		Td-14y			
Adjara	34.7%	4.4%	71.5%	0.2%	66.4%	9.6%	56.9%	17.5%	42.0%		26.4%			
Kakheti	54.3%	7.1%	63.7%	0.2%	64.5%	4.3%	61.9%	9.9%	54.6%		39.9%			
Imereti	61.1%	9.6%	60.3%	0.0%	69.3%	10.8%	65.8%	9.8%	46.2%		49.6%			
Samegrelo	37.4%	5.6%	41.9%	18.9%	64.3%	13.3%	53.0%	9.5%	30.3%		22.9%			
Shida Kartli	29.3%	9.3%	55.9%	4.7%	69.8%	25.5%	53.4%	22.8%	47.1%		24.0%			
Kvemo Kartli	27.9%	11.0%	44.6%	4.8%	60.4%	37.4%	46.9%	63.7%	28.9%		24.3%			
Guria	43.8%	5.2%	40.9%	22.2%	58.0%	18.4%	62.4%	25.1%	49.1%		33.0%			
Tbilisi	51.8%	7.4%	52.4%	8.7%	59.8%	7.9%	49.9%	11.2%	34.6%		22.7%			
Samtskhe-Javakheti	42.4%	1.2%	55.5%	4.6%	59.8%	3.8%	57.2%	5.1%	57.0%		22.2%			
Mtskheta-Mtianeti	38.7%	4.1%	57.4%	4.0%	62.1%	16.1%	57.6%	5.1%	41.2%		29.5%			
Racha-Lechkhumi	37.9%	3.6%	27.6%	16.4%	59.6%	20.7%	43.6%	22.3%	9.2%		19.7%			
Skhva	25.5%	4.4%	34.5%	14.9%	46.3%	18.4%	41.2%	13.2%	22.6%		22.4%			
Total	43.9%	7.3%	54.2%	6.1%	62.7%	14.0%	54.5%	19.2%	40.2%		29.6%			

In addition, NCDC advised that the “Geovac” system is useful because “we can receive complete information about the immunization process throughout Georgia, but the software developed through the project is not perfect since it includes only one year’s data and does not give us the possibility to make a comparison with previous years”. NCDC has also informed that an update of the “Geovac” software has already been done and is now in process of distribution to sub-national and district levels.

Sub-National Coverage

The 48 districts (74%) which reported over 80% DPT3 coverage in 2005 compares favourably with the target of 39 districts (60%) set for 2005 in the Financial Sustainability Plan.

Table 5: Projected DPT3 district coverage rates (%), 2004-2010

Programme Indicator	Baseline 2003	2005	2006	2007	2008	2009	2010
% of districts (number) with >80% DPT 3 coverage	56%(36)	60%(39)	65%	70%	75%(49)	85%	>95%

Source: Financial Sustainability Plan, revised 2005

The overall reported national improvement, however, conceals varying performance at region and district levels: In 2005, 17 of the 65 Districts and also the “Railways” report showed less than 80% DPT3 coverage by one year of age. This was itself a significant improvement from 2004, when 30 districts reported less than 80% DPT3, but it still represents 26% of the districts in Georgia and about 16% of the annual target population under one.

These 17 districts lie in 6 regions of the country, 8 of these districts have less than 70% reported DPT3 coverage and three less than 50% (Table 6). In addition, 12 of these districts also have more than 10% DPT 1-3 dropout, and 7 of those more than 20% dropout. (Figure 4: there are 18 other districts in the country which also showed more than 10% DPT1-3 dropout, i.e. 30 in total.) The “negative dropout” figures in two other districts, shown in Table 6, also indicate probable data quality problems in these.

The map in Figure 3 shows the distribution of these 17 districts, with three noticeable groups: those in the sparsely populated mountainous northwest; those along the southern border, mainly with Armenia; and those in Samegrelo in the west (apparently quite accessible but with high dropout).

Figure 3: Districts with less than 80% reported DPT3 by one year, 2005

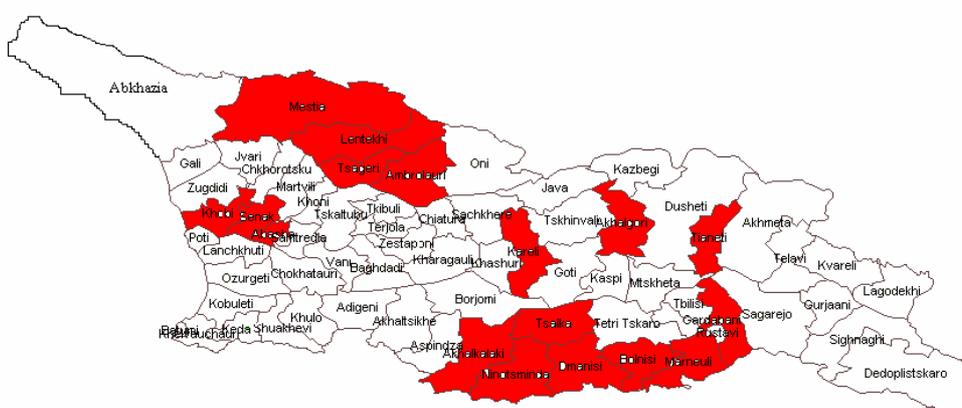
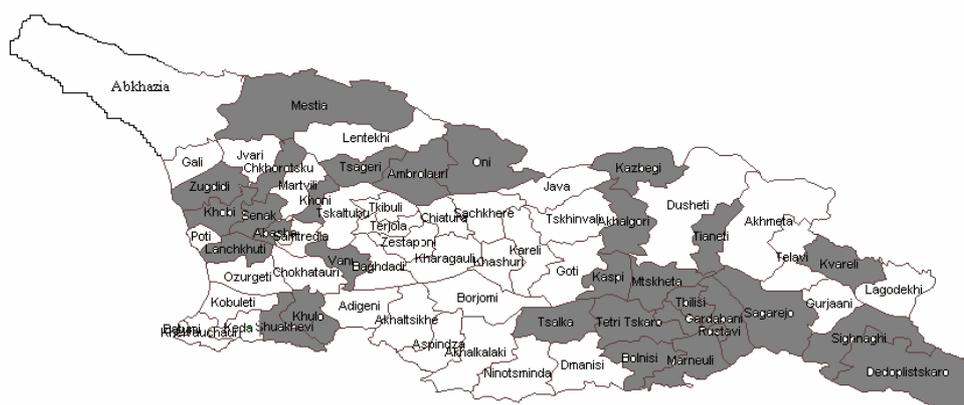


Table 6: Districts with reported <80% DPT3 coverage by 1 year and DPT 1-3 dropout (%), 2005

	Dist No.	District Name	Region Name	DPT3 Coverage (%)	Dropout (%) DPT1-3
1	28	Abasa	Samegrelo	66.2	23.7
2	30	Senaki	Samegrelo	75.0	23.0
3	33	Khobi	Samegrelo	73.2	20.4
4	36	Kareli	Shida Kartli	64.0	6.3
5	39	Bolnisi	Kvemo Kartli	74.1	26.2
6	40	Gardabani	Kvemo Kartli	68.3	16.9
7	41	Dmanisi	Kvemo Kartli	74.6	7.6
8	43	Marneuli	Kvemo Kartli	44.2	34.8
9	44	Tsalka	Kvemo Kartli	60.9	16.4
10	51	Akhalqalaqi	Samtskhe-Jamaketi	71.6	6.4
11	54	Minotsminda	Samtskhe-Jamaketi	79.5	-6.3
12	55	Akhalgori	Mtskheta-Mtianeti	70.6	17.2
13	57	Tianeti	Mtskheta-Mtianeti	76.5	17.9
14	60	Ambrolauri	Racha–Lechkhumi	45.7	36.8
15	61	Lentekhi	Racha–Lechkhumi	75.4	-2.4
16	63	Tsageri	Racha–Lechkhumi	69.1	18.8
17	65	Mestia	Racha–Lechkhumi	25.8	50.8

The map in Figure 4 shows the distribution of the 30 districts with DPT1-3 dropout over 10% in 2005.

Figure 4: Districts with more than 10% dropout DPT1-3, 2005



Timeliness and Accuracy of Reporting

For the first 9 months of 2005, NCDC reported “97% of rayon immunization reports and 77% of disease surveillance reports were submitted on time. Racha-Lechkhumi, Shida Kartli, Kvemo Kartli and Mtsketa-Mtianeti regions are still having difficulty with timely reporting.” The 12 months’ figures were 98.4% and 80% respectively.

Table 7: Assessment of Immunization and Surveillance Reporting Accuracy

Subordinated facilities	IMMUNIZATION												SURVEILLANCE												
	<i>Mark "X" if reports are complete, you have received clarifications (if needed) and not revealed inaccuracies during verification with your own records</i>																								
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average%	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Adjara	100%	100%	83%	83%	83%	100%	83%	100%	100%			92%	83%	67%	67%	67%	83%	100%							78%
Kakheti	75%	88%	63%	75%	75%	75%	75%	75%				75%	88%	88%	88%	88%	88%	88%							88%
Imereti	58%	67%	83%	92%	83%	67%	92%	75%	92%			75%	50%	58%	67%	42%	67%	58%							57%
Samegrelo	100%	71%	71%	71%	86%	86%	86%	100%	100%			81%	50%	100%	75%	100%	100%	50%							79%
Shida Kartli	25%	25%	50%	50%	50%	100%	75%	50%	50%			50%	50%	100%	75%	100%	100%	50%							79%
Kvemo Kartli	57%	43%	57%	43%	29%	71%	71%	71%	71%			50%	57%	86%	86%	71%	57%	71%							71%
Guria	67%	33%	67%	100%	100%	100%	100%	100%	100%			78%	33%	67%	100%	100%	33%	67%							67%
Tbilisi	100%	100%	100%	100%	100%	100%	100%	100%	100%			100%	100%	100%	100%	60%	100%	80%							90%
Samskhe-Javakheti	50%	83%	83%	83%	100%	100%	67%	83%	100%			83%	67%	100%	100%	83%	83%	100%							89%
Mtskheta-Mtianeti	100%	80%	100%	100%	100%	100%	100%	100%	80%			97%	60%	60%	60%	80%	100%	100%							77%
Racha - Lechkhumi	25%	50%	50%	50%	50%	50%	25%	25%	25%			46%	25%	25%	25%	100%	100%	50%							54%
Other	100%	75%	60%	75%	75%	100%	75%	0%	25%			79%	50%	50%	75%	75%	75%	100%							71%
Total	71%	68%	71%	77%	78%	87%	79%	73%	77%			75%	59%	75%	76%	80%	82%	76%							75%

Regions receive monthly reports from districts by the 4th-5th of the following month, and there is a monthly meeting on the 7th in Tbilisi at PHD with NCDC and all region and district PHDs. Note that the instruction on the form above is: “Mark X if reports are complete, you have received clarifications (if needed) and not revealed inaccuracies during verification with your own records”. It is not clear what methods are instructed or expected to be used by regions in order to verify the districts’ reports.

The review team was told of generally complete and timely receipt of monthly reports at regional and rayon PHDs visited, but did not have the opportunity to look into this in any detail, or to look into procedures used for verifying accuracy.

No Data Quality Audit (DQA) has yet been conducted for GAVI. (Georgia received GAVI support for Immunization Services Strengthening from 2002, as well as for Hepatitis B introduction and Injection Safety.)

Analysis of Sub-national Immunization Data using “Geovac”

A number of different types of analysis of regional and district reported immunization data are being done by NCDC using the “Geovac” MIS software. Annex 2 shows examples, to illustrate some of the issues regarding variation in sub-national immunization coverage which the new MIS can identify for management purposes, such as: late birth dose of HepB 1; DPT1-3 dropout; Missed Opportunities for HepB3 immunization; non immunization because of contraindications and refusals; late MMR1 immunization.

Reasons for Non-Immunization

A Vishnevskia-Rostropovitch Foundation KAP study in the three biggest cities in Georgia in 2005 with focus groups of refusers and acceptors of MMR vaccine found two main reasons for refusal:

1. Questions/fears about the quality of vaccine and safety of immunization, if given free by the state (mainly influenced by TV/media and word-of-mouth).
2. Belief that some diseases are natural and so immunization not needed.

The study also found that low knowledge about particular vaccines among 50% of acceptors did not affect their general enthusiasm for immunization and trust of health providers.

It is recognized—for example in the new UNICEF supported “Communication for Behavioral Impact” (COMBI) plan for Georgia—that not enough is known about why parents do or don’t bring children for immunization in differing situations. A revised COMBI work plan includes plans for baseline and follow-up surveys, both among parents/caregivers and health professionals, being finalized at the time of the review.

The 2005 MICS immunization survey appears not to have included a question for the mother/caretaker on reasons for none or partial immunization of a child, where identified-an unfortunate missed opportunity.

Sub-National and Health Facilities Monitoring Specifics

Immunization data are reported monthly from health facility to rayon and from rayon to regional PHD, reports always said to be carried in person, a requirement of the new MIS to permit discussion and verification of accuracy.

No calculation of coverage or dropout was found to be done at health facility level, or any other analysis, and it did not appear that much analysis was done at rayon PHDs. No catchment area maps and very few graphs/wall-charts of cumulative coverage were seen at sub-national levels.

Comparison of calculated coverage with selected antigens for the first 6 months of 2006 against the first 6 months of 2005 at regional and rayon PHDs revealed a mixed picture: At district level many more showed an increase for DPT and HepB than for BCG and MMR for immunization by one year of age (1-2 for MMR); at regional level the majority showed about the same coverage as 2005, for all antigens. The interesting findings here were that it was rare for the rayons to have calculated cumulative coverage themselves and that “overall” (timely plus late) coverage could only be calculated with some difficulty; it is not a normal part of the new MIS as designed.

On experience with the introduction of new vaccines, only about half of the regions and rayons indicated that this was positive with Hepatitis B whereas the great majority did with regard to MMR. Asked about problems to do with getting increased coverage, most frequently mentioned were drop-out, lack of supervision and lack of social mobilization, and almost all identified lack of motivation as an important cause.

Immunization registers and related records were generally found well kept and up to date at health facilities; there has however been a significant shortage of immunization cards in recent years (as also identified with the MICS).

SWOT analysis for Immunization Coverage and Monitoring

Strengths

- Improvement in “timely” (under 1 yr) overall national coverage since 2003.
- Improved recording/reporting tool (“Geovac” MIS), especially for “timely” coverage.
- Regular and complete reporting to rayons and regions.
- DPT3-HepB3 difference decreasing.
- Relatively greater increases in MMR coverage (1 and 2).
- Number of districts reporting DPT3 < 80% decreasing, ahead of target.

- Annual local area enumeration done to estimate target group.
- Potential for better verification of health facility and rayon data.
- “Missed Opportunities” indicators being calculated.

Weaknesses

- Coverage: Number of districts <80% DPT3 by 1 year is still significant (17/65 in 2005, and 3 <50%).
 - o Certain regions have low coverage in most districts.
 - o Overall DPT1-DPT3 dropout not improving enough.
- Not enough analysis of immunization data at health facility and rayon level.
 - o No coverage graphs or maps used.
 - o Missed opportunities to find out more about reasons for non immunization.
- Problems with late immunization e.g. HepB1 and MMR1.
 - o Late and non-immunization because of contraindications and refusals.
- “Geovac” MIS does not make possible a comparison with previous years data.
 - o Presentation of output not optimal; cannot show “overall” (timely plus late).
 - o No “timely” target for MMR1 other than 12-24 months.

Opportunities

- High dedication of health staff in the immunization programme in general (even if not always the motivation/incentive to do particular tasks).
- Much better availability of data for management purposes with “Geovac”.
- Possibility of integration with other MCH/PHC interventions for sustainability (e.g. MCH/growth card rather than immunization card).
- Use of COMBI to find out more about reasons for partial or non immunization.
- Supportive environment for introduction of local specific coverage analysis and improvement tools.
- Opportunities to know more about characteristics/determinants of districts and localities with improving performance and coverage in various settings.

Threats

- Incentive to include late DPT, OPV, HepB immunizations into “timely” report because otherwise these are not shown in coverage achievement.
- Performance incentives culture can lead to unsustainable expectations and distortion of health care priorities at local level.
- Staffs drain as private sector opportunities grow, especially in remote areas.

Recommendations on Immunization Coverage and Monitoring

12. Give priority focus on regions with districts reporting less than 80% DPT3.
 - o Priority review by ICC and meetings with identified regions/districts.
 - o Develop district specific plans of action with regular monitoring arrangements.
13. Include priority actions for targeted districts/localities in new “Costed Multi Year Plan”, with specific focus on first 12 months activity (2007).
14. Improve analysis of coverage directly at health facility and rayon level.
 - o Use “left out”, “dropped out” and “late” for consistent target group analysis.

- Adapt and translate “Increasing Immunization Coverage at the Health Facility Level” (WHO/V&B/02.27) as a resource for training, reference and supportive supervision (“Immunization in Practice” modules were already translated and distributed).

15. Improve timeliness of immunization.

- Better tracking of newborn from birth at maternity house to first contact at local health facility.
- Local baseline and follow-up surveys to permit evaluation of change in “timely” immunization coverage, particularly in context of COMBI initiative.
- Review and improve methods used to orient neuropathologists and other key medical professionals on contraindications policy and other key policies, including working through national and international professional associations.

16. Improve “Geovac” MIS.

- Further develop software to permit comparison with previous year’s data.
- Consider adopting a better “timely” indicator for MMR1 (12-15 months).

17. Improve documentation of immunization.

- Ensure steady supply of immunization cards.
- Explore arranging revisits to health facilities to get documented immunization data of all children sampled in the 2005 MICS.
- Design of coverage survey should always include questions on reasons for non immunization.

4. Disease surveillance

Background

Over the past few years, substantial work aimed at improving surveillance for communicable, primarily vaccine-preventable diseases, has been conducted in Georgia within the framework of a USAID-funded project on reforming the health information system and epidemiologic surveillance in Georgia. This was a collaborative project between NCDC/Ministry of Health, Curatio International Foundation, Abt Associates, PHR Plus and WHO. As a result, surveillance guidelines for public health services, clinicians and laboratory services that conform to WHO-recommended case definitions, classifications, and procedures, were developed and published in 2004-2005. These surveillance guidelines became the basis for the February 22, 2005 Decree of the Minister of Health on Control and Prevention of Vaccine-Preventable Diseases and Rabies. The Decree provides case definitions, reporting forms and guidelines for reporting these diseases, case classification, outbreak investigations, routine data analysis and monitoring. In addition, surveillance data management system (“Geoepid”) has been developed. The system has been implemented at the national level (although the resources and responsibilities for the data entry for individual case-based reports need to be identified). Its nationwide implementation at the regional and district level is currently underway.

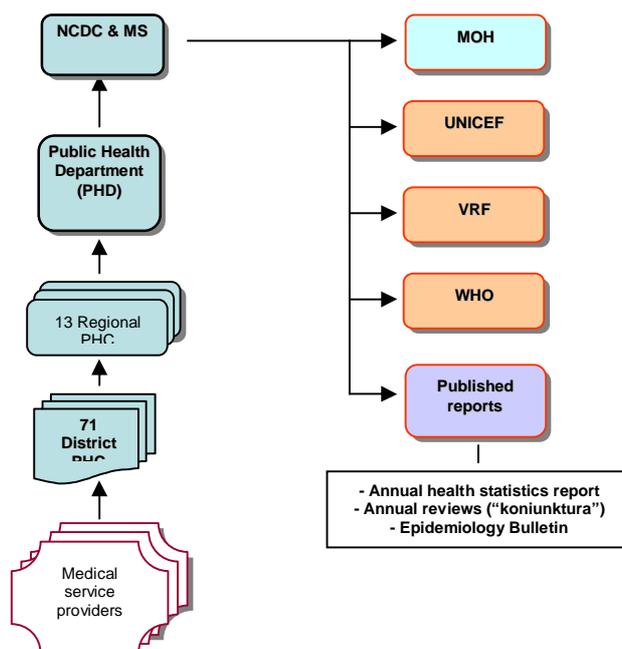
The list of reportable VPDs includes diphtheria, pertussis, neonatal tetanus, tetanus, polio/AFP, measles, rubella, mumps, CRS, acute hepatitis B. Zero reporting is required and

implemented. Hot cases concept is used for AFP surveillance purposes but not for other VPDs.

The flow of surveillance information is presented in the below figure:

- Health care providers are required to report cases of infectious diseases within 24 hours of identification using Form 58 to district Public Health Centre.
- District Public Health center reports monthly to regional Public Health center by providing the aggregate report plus the individual forms for the diseases under case-based surveillance Regional Public Health Center reports the data, including case-based information for certain priority diseases (e.g. AFP, measles, rubella, diphtheria) to NCDC monthly.
- NCDC compiles and analyzes the reports of communicable diseases.
- NCDC provides this information to the Ministry of Health, as well as to external partners (WHO, UNICEF, VRF).
- NCDC provides feedback in the form of the following publications:
 - a. Annual health statistics report.
 - b. Annual analysis of trends by disease (“koniunktura”).
 - c. Reports in the monthly Epidemiology Bulletin.

Figure 5: Communicable Disease surveillance scheme



Recent trends in VPDs are presented in Tables 8 and Figure 6. There was a major concurrent measles and rubella outbreak in 2004-2005, which is still not completely over. The number of cases of other diseases has been relatively stable. Cases of diphtheria continued to occur, although at low level. Annual numbers of reported AFP cases have declined during 2003-2005 to 8-11 compared to the 18-19 reported annually during 2000-2002. 2006, only 3 cases reported to date (annualized AFP rate 0.7/100,000, which does not meet the $\geq 1/100,000$ target).

The completeness of case-based reporting for measles/rubella is relatively high-83% of measles cases reported in 2004-2005 and 84% of rubella cases reported in 2005 had case-based information including age (individual years, not age groups), date of birth,

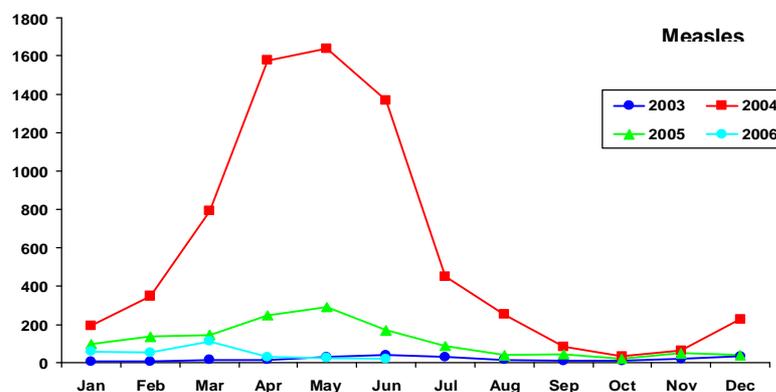
immunization status, laboratory confirmation, outcome, hospitalization status, and final classification, as well as general information on the district/region and onset date of the case and some clinical data. However, the analysis of completeness of case-based reporting for measles during 2004-2005 demonstrated differences by region. In most regions the percentage of reported cases with case-based information was between 80% and 98%, but this indicator was <80% in four regions (Racha-Lechkhumi-39%; Kakheti-49%, Samtskhe-Javakheti-65%, and Samegrelo-77%). CRS surveillance is in place since 1996, but its awareness among health care providers is very limited resulting in no cases reported during 1996-2003 and only two cases reported thereafter. Laboratory capacity for confirmation of measles and rubella is in place at the national level (reagents provided by WHO), but the rate of laboratory confirmation is very low (2.6 for measles and 0.8% for rubella in 2004-2005) due to the limited awareness by the providers and sometimes by public health staff of the need for laboratory confirmation for these diseases (reliance on clinical skills) and availability, free of charge, of testing for measles and rubella IgM at NCDC. The laboratory component of AFP surveillance is well functioning with testing performed at the National Polio Laboratory, WHO certified laboratory at NCDC.

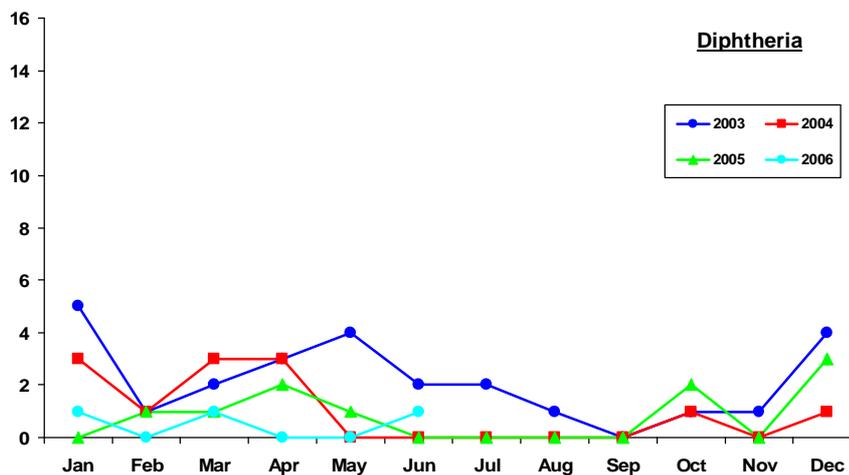
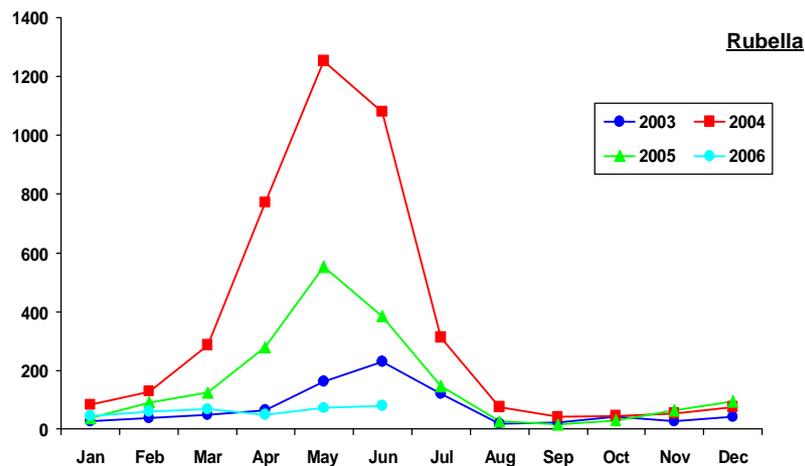
Table 8: Reports of selected vaccine-preventable diseases (number of cases), 2003-2006

Diseases	Cases (number)				Cases/100,000			
	2003	2004	2005	2006 (6 months)	2003	2004	2005	2006 (6 months)
Measles	223	7033	1358	294	5,1	162,5	31,3	6,8
Rubella	838	4215	1842	371	19,2	97,4	42,5	8,5
Diphtheria	26	12	10	3	0.6	0.3	0,2	0,07
Fatal cases of diphtheria	2	1	0	0	-	-	-	-
Pertussis	101	207	167	70	2,3	4,8	3,8	1,6
Tetanus	8	7	2	1	0,2	0,5	0,04	0,02
Mumps	131	134	111	38	3,0	3,0	2,6	0,9
Acute hepatitis B	257	279	309	134	5,2	6,4	7,1	3,1
AFP	8	8	11	3				0.35

Source: NCDC

Figure 6: Selected VPD cases by month, 2003-2006





Source: NCDC

SWOT Analysis for Disease surveillance

Strengths

- Clearly defined up-to-date national guidelines including standardized case-definitions, reporting forms and procedures provided in the MOH Decree.
- Case-based reporting for priority diseases (e.g. 83% of measles cases reported in 2004-2005 had case-based information available).
- Development of computerized data management system (“Geoepid”), which is currently being implemented nationwide.
- Introduction of laboratory confirmation for measles and rubella at the national level.
- Trainings on surveillance conducted for the regional and some district level staff (NIP managers).

Weaknesses

- Limited use of surveillance data for program management and impact evaluation.

- Limited awareness of recent guidelines at the facility level.
- Limited and irregular feedback from upper levels throughout the system.
- Lack of clearly defined national targets for general performance of surveillance system (completeness, timeliness and accuracy of reporting, etc.); lack of monitoring (with the exception of AFP surveillance) disease-specific surveillance performance indicators (for measles, rubella, CSR), for which the national targets exist.
- No data analysis below national level.
- Insufficient utilization of laboratory component.
- In some instances, incomplete investigation and response to reported cases/outbreaks.

Opportunities

- USAID/Curatio and WHO technical support.
- The flexibility of the system allowing incorporation of additional diseases to the reporting system if needed.
- The rotavirus surveillance study to be initiated by NCDC this year to estimate the contribution of rotaviruses to the burden of diarrhoeal illnesses among children in Georgia, which will provide information for programmatic purposes and decision making with regard to the need for the introduction of rotavirus vaccination.

Threats

- Insufficient funding limiting the capacity for monitoring the system performance.
- Persons responsible for surveillance at regional and district levels often have multiple other responsibilities.
- Only 1 person per district familiar with “Geoepid” system (without a back-up) is envisioned.
- Declining trend in AFP surveillance rate.

Conclusions

- Overall, the VPD surveillance system is running well. Substantial improvement from the situation in the 1990s has been observed during the past few years.
- The recent upgrades to the system represent important milestones toward strengthening communicable, including vaccine-preventable disease surveillance system in Georgia and are to be highly commended.
- The level of staff awareness at facility and sometimes at district level is variable.
- Use of surveillance data for programmatic purposes is suboptimal.
- Utilization of laboratory component of surveillance for measles/rubella is suboptimal
- Further strengthening of surveillance management and infrastructure overall and for individual diseases (measles, rubella, CSR, AFP, etc.) would generate better data for programmatic purposes and allow better monitoring of disease trends and progress toward achieving national targets.

Recommendations on Disease surveillance

- 18 Refine overall surveillance management.
 - o Ensure systematic feedback throughout the system.
 - o Ensure national targets for surveillance system performance are well known and consecutively ensure the monitoring of surveillance indicators, as defined by MoLHSA Minister’s orders #55/o and #101/n.

- Identify resources and clearly define responsibilities for the case-based surveillance data entry at the national level.
- 19 Strengthen the surveillance infrastructure.
- Strengthen laboratory capacity.
 - Increase awareness of the need and availability for lab confirmation at the district and facility levels.
 - Strengthen the data management system (“Geoepid”).
 - Adapt the system to provide more flexibility for data analysis for programmatic purposes.
- 20 Ensure use of surveillance data for programmatic purposes.
- Encourage ongoing analysis of surveillance data and ensure routine use of the surveillance data for program design and impact evaluation.
- 21 Provide additional training for staff on surveillance issues.
- Provide training on surveillance and case definitions to district and local level staff.
 - Provide refresher training on AFP surveillance to district and local level staff.
 - In the areas with predominantly non-Georgian speaking population, consider providing training and materials in Russian or in other locally understandable languages (Azeri, Armenian), through the support of partner organisations.
 - Further strengthen surveillance for individual diseases (measles, rubella, CSR, AFP, diphtheria, etc.).
 - Further improve the quality of case investigation and response to reported outbreaks.
 - Encourage improved case identification and reporting.
 - Increase laboratory confirmation rates for measles and rubella/CSR cases.

5. Immunization Quality and Safety

Background

Various assessments have been undertaken and plans produced in recent years relating to immunization quality and safety in Georgia: a Logistic Review and an Injection Safety Policy and Plan in 2001, followed by an Injection Safety Assessment in 2002, a Waste Management Assessment and Plan in 2004, and an Effective Vaccine Store Management (EVSM) assessment at the national vaccine store in September 2005.

Vaccine forecasting, procurement and import

Vaccines come through UNICEF Supply Division (donated by UNICEF/USAID, Government procured and GAVI procured) and Vishnevskaya-Rostropovitch Foundation (VRF, donated). Since 2002 the Government has gradually increased its share of funding for routine vaccine and safe injection equipment supplies for BCG, DPT (1-4) and OPV (1-4), from 20% in 2002 to 50% by 2006. The Government is committed to funding 100% of these from 2008, as well as 100% of HepB vaccine for which there is expected 75% funding from GAVI for 2006 and 2007. The Government already funds 100% of vaccine and safe injection supplies for DT, OPV5 and Td. 100% of MMR vaccine comes from VRF (USDA funded), until 2008.

Vaccine needs are calculated annually by UNICEF Supply Division in September and by the government in November, making allowance for the stock balance expected to be still on hand when the new supply arrives. The present supply frequency is once per year for UNICEF Supply Division and GAVI donated vaccines and 6-monthly for government procured and VRF donated vaccines. The WHO EVSM assessment recommended that all should be more frequently than once a year.

The Drug Agency assesses vaccine documentation and clears for import, but does not carry out any other functions of a National Regulatory Authority (NRA). Currently due to the fact that Georgia is importing UN prequalified vaccines, there is only a need for two functions for an NRA-licensing and surveillance; there is no need for lot release and laboratory control. NCDC reports that there are now better arrangements with the customs authority for clearance of vaccine shipments at Tbilisi airport, taking 1-2 days assuming that the documentation has been received one month in advance for Drug Agency clearance; this is said to now take 3-4 days compared with 2 months previously. Airport cold storage (not inspected) is said to be satisfactory, used for vaccine if necessary against a daily storage charge. Vaccines are delivered to NCDC by the airport authority against payment.

Vaccine stocks and stock monitoring

There have been no vaccine supply interruptions or stockouts at national level (or any reported at sub-national to the review team) in the last 12 months, although present national level stocks of OPV, DT and Td were very low at the time of this assessment (below table). This resulted from a delay in signing an agreement for the Government to purchase the vaccines which it is funding in 2006 through UNICEF, in order to assure supply from WHO prequalified manufacturers (eventually signed in May 2006).

Including regional and district level stocks, however, the situation for these three vaccines was just acceptable. BCG, DTP and MMR vaccines were in stock in acceptable quantities. HepB vaccine stock at NCDC in July 2006 was very high, the equivalent of 13 months' normal requirement, (an annual shipment had arrived in June) although with a very long 26 month expiry date.

Table 9: Vaccine stocks at national and sub-national levels, July 2006

Vaccine	2006 need (doses)	25% reserve (doses)	Total need (doses)	NCDC Stock at 26/07/06 (doses)	Expiry Date	Months' equivalent stock	Months' equivalent with regions/districts stock
HepB	132,000	33,000	165,000	179,766	09/2008	13	16
BCG	150,000	37,500	187,500	48,340	08/2007	3	5
DTP	256,720	64,180	320,900	86,829	03/2007 08/2007	3	5
OPV	324,480	81,120	405,600	39,060	04/2007	1	2.5*
MMR	182,280	45,570	227,850	72,700	04/2007	4	6*
DT	67,728	16,932	84,660	5,670	12/2007	1	4
Td	96,240	24,060	120,300	6,310	11/2007	0.5	3

Source: NCDC

* Notified next supply: OPV 08/2006 160,000; MMR 08/2006 170,000; no others known at 26/07/06

Vaccine stock rotation appeared to be correctly followed excepting one supply of OPV with expiry August 2006 which was distributed before a supply with expiry July 2006; both had been received in February 2005.

The new “Geovac” information system, taken nationwide from 2003-04, includes a vaccine management component, with the following objectives:

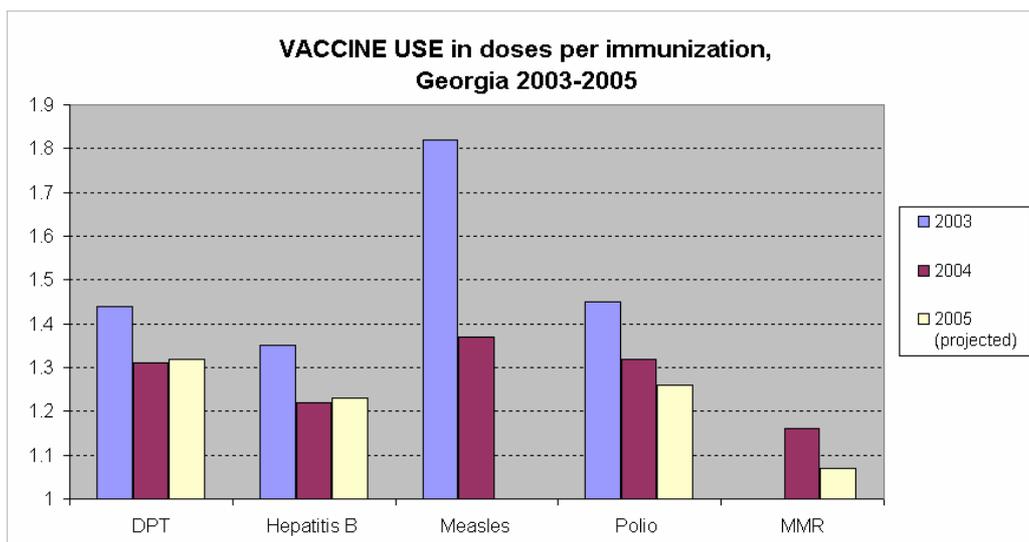
- Determination and monitoring of area-specific vaccine utilization/wastage patterns;
- Monitoring of vaccine distribution from existing stores to the point of consumption;
- Up-to-date tracking of vaccine balances in all facilities.

The computerized system was being well maintained at national level with data up to date and easily accessible and staff well familiar with its use.

Vaccine utilization and wastage

“Geovac” calculates vaccine utilization as an index of “doses per immunization” from data on vaccine used and immunizations given reported by districts and regions. National rates calculated by NCDC in 2005 (9 months data) compared with the previous two years appear to show very effective efforts to improve vaccine utilization and achievement in reducing wastage.

Figure 7: Vaccine Utilization 2003-2005



The NCDC “Geovac” report did also state that there are significant variations in vaccine utilization in geographically similar regions, and potential for improvement in regions where vaccine wastage rates are still high (Racha-Lechkhumi, Samegrelo, Mtskheta-Mtianeti, Guria).

Vaccine central storage and distribution

The national cold store was moved to a new location within NCDC in November 2005. There are two large + 4C walk in cold rooms with temperature chart recorders and “Stopwatch” indicators (Cold Chain Monitor Card + “Freezwatch”). Both are in very good condition, one new (Japan 2005), one 1996 and well maintained. Normally one cold room is sufficient for routine storage needs, although the addition of MMR vaccine in single dose presentation in 2004 together with anticipated storage need for planned MR campaigns does

justify the second cold room. An alarm system for the cold rooms sounds in the NCDC compound gatekeepers office in the event of temperatures above or below the specified range.

-20C storage capacity is a set of chest freezers (HF and SB series), with sufficient freezers also for icepack freezing (including one TFW791 upright fast freezer) and storage. A set of MK series ice-lined refrigerators provides considerable + 4C backup storage capacity, as well as some TCW units (refrigerator or freezer). Many units are at least 10 years old but all have clearly been well maintained and are in good operating condition, well located in clean and dry rooms and with up to date temperature records. All records, VVMs and Freezewatch indicators showed acceptable vaccine storage temperatures.

The NCDC national vaccine store supplies regional PHD stores on a quarterly basis, but also has to directly supply all 68 Polyclinics in Tbilisi City because vaccine storage at the five city district health offices is no longer permitted. The supply to polyclinics (which includes injection supplies) is officially quarterly but reported to be often more frequently because of lack of polyclinic transport capacity. This situation—not directly within NCDC control—is clearly making for a disproportionate and unnecessary workload for NCDC staff.

An Effective Vaccine Store Management (EVSM) assessment of the national vaccine store at NCDC was conducted by a WHO consultant in September 2005. Various recommendations were made, a number of which have been implemented. The computerised vaccine stock records system has been upgraded to include further information such as lot numbers. The Vaccine Arrival Report (VAR) (used since 2002 by UNICEF SD), was introduced for NCDC use as well in 2006 following the EVSM assessment. The vaccine despatch form (to regions), which recipients sign for, has been redesigned to include VVM status (although VVM status is not recorded on the vaccine stock records as such, just on the delivery and despatch documents). A cold chain emergency plan and procedures has been prepared and there are weekly meetings of the cold chain/logistics staff. Protective clothing and fire extinguishers are on order. The Head of Vaccine Logistics attended EVSM training in Bulgaria in December 2005, but is not yet involved directly in vaccine logistics training or supervision at regional level.

A 25% reserve stock at each level is not yet officially established, but it but it is understood that the Government budget for vaccine procurement does include this. A separate register for diluents is to be introduced but they are not listed separately on despatch notes/invoice as there is no separate manufacturer's price for diluents. The WHO recommended Model Quality Plan and Standard Operating Procedures have not yet been officially adopted but were understood to be in progress. NCDC advises that the central vaccine storage is ready to undergo WHO certification.

Adequate stocks of spare thermometers, icepacks and vaccine carriers are held at the national store (although not all regional PHD stores had sufficient). An inventory of cold chain equipment nationwide is held, by region/district/health facility; by donor; and by generic type of equipment i.e. MK, freezer, cold box. However no model numbers (e.g. MK142) or other identifying information is recorded by location. There is no separate inventory record for voltage stabilisers. It was advised that every refrigerator and freezer was assumed to have one, however shortages were found during field visits.

Safe Immunization Practices

There is a national policy on injection safety including management of waste, incorporated in various Orders including #122/n and #300. Guidelines also exist for surveillance of adverse events following immunization (AEFI). The multi-year plan has a safe injections component, including waste management, and there are sufficient quantities of all safe injection supplies for distribution to regions. Procurement of auto-disable syringes and safety boxes is bundled with injectable vaccines, except reconstitution syringes which are standard disposable.

At PHDs visited Order #122/n was generally found available, although most regions and districts visited did not have a designated person for safe injection practices and waste management. All stores and health facilities had only auto-disable syringes for immunization, except for the reconstitution syringe, and almost all had enough safety box stocks. BCG syringe quantities were appropriate to the amount of BCG vaccine at all stores, but none were recording BCG vaccine and diluent separately. Vaccine registers do not have a column for recording VVM status at receipt and dispatch.

Order #300 (August 2001) on Waste Management was available in most places but may need to be revised/updated. In one region they advised that Order #300 makes some mention of doing disinfection of syringe/needles after use and then burning in special equipment, but not what to do if no “special equipment” available, and that it did not specify that waste should be buried after burning. (Order #122/n does however specify this; neither of these orders exists in English at present.)

Healthcare waste management was found to be a weak aspect of SIP, with often poorly protected sites for burning of safety boxes (supposed to be done at each facility), and sometimes with visible remains of syringes/needles lying exposed. The 2004 assessment emphasized the priority of working on a plan of action to start to address this issue.

The review team observed 5 or 6 actual immunization sessions during field visits—polyclinics in lower population localities are now not giving immunizations every day in order to improve vaccine utilization. Good immunization practice was seen everywhere, with recapping of needles seen in just one ambulatory.

Sub-National Vaccine Storage, Management and Handling

Regional and district PHD and health facility vaccine storage capacity and vaccine stocks were generally found to be satisfactory, and icepack freezing capacity sufficient except some ambulatories only have a refrigerator (e.g. model MK 142) , so cannot freeze icepacks, only chill them, instead of a combined refrigerator/icepack freezer (e.g. model MK 4010, seen in some locations).

Two thirds of the district PHD stores and half of the regional PHD stores visited did not have voltage stabilisers fitted with all of their refrigerators and freezers. It was not clear whether they had been previously supplied, and then used elsewhere or never supplied—possible variation in donor practice regarding “bundling” equipment.

All refrigerators and freezers had functioning thermometers and were within the correct temperature range (review teams carried their own thermometers to verify), and most had up

to date and apparently reliable temperature records. Many also have “Freeze-watch” indicators with the adsorbed vaccines. VVMs were all found unchanged colour or with minimal change, but there is no procedure for recording VVM status in the vaccine register.

PHD and health facility staffs do generally know what to do if there is a cold chain breakdown, but in most places there are no written cold chain emergency plans. Most older MK units and freezers had Georgian language user instructions on the lid, but not all newer ones.

The cold chain equipment, although mostly ageing (mid 1990s) was generally found in good or condition for age, and well located and looked after by staff, excepting some dramatic examples of very poor condition old buildings/rooms, resulting in rusting as well as risks for staff (example Kobuleti in Adjara).

There is no PHD or any other state programme (i.e. ambulatory programme) budget line for maintenance and repair of cold chain equipment (or other such operational costs) at regional/district level and no clear responsibility for this. (A related issue with possible budget implication is that all older refrigerators and freezers have “CFC” R12 refrigerant, requiring separate maintenance and tools from the modern “CFC-free” equipment.)

Vaccine stocks were all within expiry date but the OPV stock in the districts in one region was due to expire in July 2006, the month of the review. Although it was expected to be used in time, it appeared that this supply of OPV had been received by the region relatively late and might have been in stock at NCDC for a long time (checked at NCDC, it had been for 12.5 months).

Knowledge of Multidose Vial Policy (MDVP) was variable among health staff, as was description of how it is practised, especially regarding OPV.

Surveillance of Adverse Events Following Immunization (AEFI)

The perception of vaccine safety by the public and health professionals represents a major threat in Georgia, therefore AEFI surveillance is a major component. National level officers were trained on this Moscow, and district officers (epidemiologists, paediatricians, neuropathologists) were trained in 2004. Training has not yet been conducted for physicians at health facility level.

AEFI surveillance guidelines appeared to be known to many PHD staff, but there were few official reports of AEFI found by the review team-individual cases in 3/6 regions and 1/13 districts visited, however more unofficial reports and anecdotal information. These were not being recorded in any organized way at most places visited

The functioning of the AEFI surveillance system should be assessed after further training has been conducted, and indicators of the quality of the system should be defined, monitored and analysed.

SWOT analysis for Immunization Quality and Safety

Strengths

- Good injection safety and vaccine management supplies, practice and records at national level and most regions, districts and health facilities.
- AEFI surveillance in progress.
- No vaccine or injection supply stockouts or cold chain breakdowns in last 12 months.
- Good progress at national cold store following EVSM evaluation.
- Good overall improvement in vaccine utilization and reduction in wastage.
- Proven political commitment to improve efficiency and lower the cost of the vaccine procurement system, by procurement of government funded vaccines through UNICEF Supply Division.

Weaknesses

Safe Immunization Practices and AEFI:

- AEFI guidelines not yet fully implemented and training not yet conducted for physicians at health facility level.
- Poor healthcare waste management (burning/burying) at many health facilities and some safety box shortages.

Vaccine Management Issues:

- Drug Agency not fully functional as NRA for vaccines.
- No intermediate (district) level storage in Tbilisi.
- Some regions making much less progress on improving vaccine utilization/reducing wastage.
- Vaccine registers: BCG/MMR vaccine and diluent details not recorded separately, and no procedure to record VVM status.

Equipment Issues:

- Shortages of voltage stabilisers at region and district PHDs.
- Model Quality Plan and SOP for national vaccine store not yet formally adopted.
- No budget line for cold chain equipment maintenance and repair at region/district.
- Some very poor building/vaccine store conditions e.g. Kobuleti, with severe risk to equipment and staff.
- Not all health facilities visited have icepack freezing capability.

Recommendations on Immunization Quality and Safety

22. Reinforce and monitor Safe Immunization Practices and AEFI.

- Improve AEFI surveillance guidelines and training for health staff, especially at district and health facility level.
- Define, monitor and analyse AEFI system quality indicators.
- Review and update guidelines/order for Healthcare Waste Management, with plans of action to include refresher training, supportive supervision and monitoring at all health facilities.
- Ensure follow-up and decisions re: waste management assessment findings and recommendations (2004, UNICEF) in context of PHC reform.
- Improve distribution and stocking of safety boxes where needed.

23. Strengthen vaccine management.

- For 2007 Government vaccine procurement through UNICEF Supply Division, start contract process in good time in 2006.
- Identify actions needed to re-establish district level storage in Tbilisi.
- Urgently identify suitable temporary PHD accommodation in Kobuleti (and other locations) while long term solution explored.
- NCDC vaccine store: make action plan to adopt Model Quality Plan and SOP.
- Vaccine registers: Introduce recording of freeze dried vaccine and diluents, and record VVM colour status at receipt and despatch (as stated in the Model Quality Plan and in line for the Central Vaccine Store certification).
- Drug Agency (NRA): Keep in mind strengthening its functions in future, if vaccines other than UN prequalified ones are used.

24. Address equipment issues.

- Clarify funding mechanisms, including local government, for budgetary support for cold chain equipment maintenance and repair, transport.
- List voltage stabilisers as separate inventory item; and procure as needed; ensure agreements with donors to automatically procure with refrigerators/freezers.
- Keep updated equipment inventory for each region/rayon/health facility by specific make/model of each refrigerator, freezer, and cold box (e.g. MK142, not just MK); use to reallocate/procure needed equipment. This will make it easier to determine location-wise priorities for future equipment procurement.

6. Advocacy and Communication

The review of advocacy and communication activities has revealed a diversity of initiatives, tools and channels used for reaching both service providers and the child caretakers. However the major issue identified has been the donor-dependency with no governmental funds earmarked within the state immunization programme, responsive initiatives (i.e. crisis communication), and inadequately structured and coordinated strategies with a lack of consistency and continuity of the interventions.

Advocacy and communication strategy

A multi-year strategy for advocacy and communication was included within the overall framework of the 2002-2006 immunization plan and the 2005-2010 FSP and NIP operational plan endorsed by the government in 2005. However a separate strategy with a comprehensive evidence-based behavior-focused approach was developed only in 2006 with external technical assistance from UNICEF Georgia. The 2006-2007 Communication for Behavior Impact (COMBI) Plan for immunization is under finalization with MLHSA and will be launched in October 2006. It is described below.

The Public Health Department in 2004 with support from Oxford Policy Management developed a Health Promotion Strategy that covers immunization as one of the key priorities. However the strategy has not been costed or articulated into the national programme budget planning process.

Currently advocacy and communication for immunization mostly relies on the mass media–TV, radio and press. The education sector (secondary school management) has been involved countrywide, though mostly limited to SIAs communication.

Budget, Leadership and Training

The National Immunization Programme has no separate budget line for communication activities either within NCDC or PHD implemented programmes. Communication activities have been mostly supported by donor and development agencies–UNICEF, USAID, VRF, and GAVI/VF. The 2005-2010 Financial Sustainability Plan specifies the communication budget as 1% out of total routine and supplemental immunization costs.

Senior officials of the national health authorities (Minister, Deputy Ministers), national agencies leading the state programme implementation (National Centre for Disease Control and Medical Statistics, Central and Regional Public Health Departments) are the key national leaders promoting NIP in the country. Leading paediatricians from the public and private sectors as well as medical academia have been involved in advocacy and communication upon request by Ministry and the ICC committee. The First Lady of Georgia has been supportive to the senior advocacy efforts, especially in response to the negative media publicity on immunization in 2004. The full potential of her commitment has not however been fully utilized due to inconsistency of senior advocacy events and lack of a structured approach.

National and regional level training for communication has included:

- “Immunization in Crisis” communication workshop for NCDC, ICC member agencies and all regional PHDs in 2002. Special Q&A materials were developed for public health departments and PHC workers to address the most common misconceptions on immunization among parents and clinical workers.
- Communication components in nationwide training on Order #122/N for primary health care managers supported by UNICEF in 2003-2004, and MMR training sessions by Vishnevskaya-Rostropovich Foundation.
- A communication component for immunization in Early Childhood Development training for primary health care staff since 2004; the project was a small scale initiative and could not have a systematic impact.

However “Immunization in Practice” (IIP) training supported by UNICEF in 2005-2006 for over 1,200 primary health care staff did not include a communication section. The latter has to be prioritized for future IIP training opportunities. NIP Mid-level Management training sessions are planned for 2006 and will include a communication section.

The COMBI Plan

The 2006-07 Communication for Behaviour Impact (COMBI) Plan, commissioned by UNICEF in March 2006, involves a comprehensive multi-sectoral approach to immunization including branding, administrative mobilization, media promotion, and interpersonal communication and leveraging of business partnership. It was developed by a national consensus workshop with participation of all key country-level stakeholders for NIP and primary health care (NCDC, central and regional PHDs, MLHSA, UNICEF, Curatio IF, VRF,

OPM, Co-reform project), ensuring contribution and agreement on key behaviour messages and the plan outline.

The COMBI plan focuses on improvement of the age-appropriate immunization coverage as the key target behavior. “On-Time-Immunization” at 2 months (DPT1, OPV1, HepB2), 3 months (DPT2 and OPV2) and 4 months (DPT3, OPV3, HepB3) is the key behavior change message; MMR is not at present explicitly included in the message. . It targets increasing coverage to over 90% for all routine antigens under the age of 12 months, from the current range of 73% to 95% per specific antigen. COMBI workshops have been held for national and 5 regional PHDs in 2006.

The Plan envisages countrywide mobilization of the secondary and higher education system, the media and private sector partnership. It involves feedback and publicity about improved performance as well as incentives for health care providers through administrative mobilization and business partnership. Non-financial incentives are also considered for parents through the acknowledgment notes and gifts for timely completion of the child vaccination series. Annex 3 provides more detail on the various components of the COMBI Plan.

Integration with PHC

There is an acute need to ensure system-wide integration of immunization programme communication into primary health care services. This will involve adoption of national unified guidelines, standard operational protocols and in- and post-graduate training curricula for immunization. The process is well underway: MOLHSA is planning by end 2006 to endorse the unified guidelines and standards for maternal and child health (including immunization), with relevant medical university and postgraduate training curricula modules. Consultancy work with involvement of all key national experts in the field of neonatology and paediatrics, as well as national immunization programme management, is supported by UNICEF Georgia.

SWOT analysis for Advocacy and Communication

Strengths

- A record of diversity of communication activities (TV talk-shows, press-conference, TV/radio spots, printed IEC, in-service staff training and orientation, national and regional w-shops) over the last 5 years.
- Distributed IEC materials (booklets, posters) are available at all service delivery points.
- A detailed behaviour-focused communication plan for immunization (COMBI Plan) prepared in 2006.

Weaknesses

- Lack of a comprehensive approach to immunization advocacy and communication, to ensure consistency of the strategies and activities.
- Low financial/non-financial motivation of staff is affecting NIP communication critically.
- Capacities in AEFI management and especially communication are inadequate, mostly at the facility level.

- Lack of any insurance/protection mechanisms from the state programme to support the PHC immunization staff in case a serious adverse event occurs.

Opportunities

- Highly committed and competent public health officials at central and sub-national level.
- Successful inter-agency partnership for immunization led by the Government with pledged commitments for advocacy and communication; opportunities for further partnership and resource leveraging.

Threats

- Unqualified and conflicting information from media, involving health professionals, particularly on coverage of AEFI cases.
- Neuropathologists and ‘‘popular physicians’’ continue to create barriers, especially to timeliness of immunization (false contraindications).
- Debate on the countries of vaccine manufacturers, especially in Tbilisi and major cities, possibly relating to: 1. commercial interest of the health care providers using private sector supplied vaccines; and 2. general tendency of the population to trust products from western manufacturers more than developing countries.

Recommendations on Advocacy and Communication

25. Ensure that the communication-for-behaviour-impact (COMBI) plan for 2006-07 is launched as early as possible, with a detailed action plan.
26. Ensure that communication components are included in:
 - Ministerial Decree (#122/n).
 - In-service training, particularly at service delivery level.
 - PHC protocols/guidelines under development.
 - Pre-service university curricula.
27. Prioritize improving staff motivation in relation to communication efforts and in the context of discussions on performance-based incentives.

7. Financing and Sustainability

Immunization programme financing

The immunization program is funded from central and local budgets: the share of the former has grown from 47% (in 2003) to 67% (in 2005). The overall budget from central government almost tripled in its size due to the efficient fiscal policies. The central budget covers costs of vaccines procured by the state (through a centralized procedure using Social Insurance State Insurance Fund as a purchaser) and costs of handling at the national level while the local budgets operational costs of vaccine transportation, cold chain maintenance and shared costs. Staff costs are mainly by the central budget.

Table 10: Breakdown of immunization programme financing, 2003-2005

	2003		2004		2005	
	Funds	% of total	Funds	% of total	Funds	% of total
Gov Central	\$360,306		\$481,278		\$384,758	
Gov Local	\$408,994		\$182,637		\$191,070	
Gov Total	\$771,303	79%	\$665,920	50%	\$577,833	46%
GAVI	\$54,642	6%	\$63,810	5%	\$46,177	4%
Others	\$148,317	15%	\$608,162	45%	\$636,762	51%
Total	\$974,262	100%	\$1,337,893	100%	\$1,260,772	100%

Source: Financial Sustainability Plan, 2005

Concerning vaccines and injection safety supplies, since 1994 up to 2001 the Government was completely relying on donor-support (UNICEF/USAID) both for routine and SIAs. Starting from 2002, the Government started replacement of 20% costs for routine traditional vaccines as per UNICEF-GoG Vaccine Independent Initiative (VII) Agreement. The MoLHSA fulfilled the VII Agreement, replacing 50% of under-2 child immunization supplies by 2006 (except for HepB and MMR). Furthermore starting from 2002 the Government is covering 100% needs for vaccine and injection safety supplies for the 5 and 14 year age groups (DT, OPV5, Td). Hepatitis B vaccine has been until now funded by GAVI and MMR vaccine by VRF. The Government is committed to funding 100% of traditional vaccines from 2008, as well as 100% of HepB vaccine for which there is expected 75% funding from GAVI for 2006 and 2007. VRF has planned to fund MMR until 2008. Concerning injection supplies and safety boxes, it is already 100% funded by the Government (GAVI support phased out).

The government followed key recommendation articulated in the Financial Sustainability Plan (FSP), purchasing traditional vaccines from UNICEF Supply Division instead of direct procurement from private suppliers. The first purchase took place in early 2006, significantly increasing the efficiency of public spending and hence the financial sustainability of the NIP.

Sustainability

The financing of purchase and delivery of the vaccines in accordance with the immunization schedule is described in detail in the Financial Sustainability Plan (FSP) of the National Immunization Program of Georgia developed and endorsed in 2005. It is intended to secure government funds for phasing out from donor assistance in procurement of all routine antigens from 2006 and new vaccines–HepB and MMR starting from 2007. The FSP will be revised soon, following the recommendations of the programme management review and the revision of the multi-year plan.

Financial sustainability has been achieved at the national level–Government and partners have demonstrated commitment to the steps/interventions presented in the FSP 2005. However considering fragmentation in the delivery and financing of the NIP between national and local levels, poor mechanisms of securing necessary funds at the sub-national level pose the main threat to efficient implementation of the NIP.

Health services financing

The financing of health service has been increasing since 2004 (due to political changes). However its share in the state budget has been decreasing (if current and planned state's investments in health care infrastructure are not counted). Total state budget (central and local) allocations as a percentage of the total health expenditure decreased 11.3% in 2001 to 8.3% in 2003; at the same time public health expenditures constituted 6.7% of the state budget in 2004 and only 5.9% in 2005. Majority of increased funding for health is allocated for capital investments (refer to Health System section for further information).

SWOT analysis for Financing and Sustainability

Strengths

- The Government of Georgia is committed to maintain and increase allocations to health care.
- There are sufficient financial and infrastructure resources relative to existing policies.
- The purchase of vaccines at a lower price from UNICEF Supply Division is a success, considering also the quality-assurance of these vaccines (UN pre-qualification).

Weaknesses

- The financing of the NIP is fragmented between different agencies at the central level and among the central, regional, district level actors (refer to Health System section for further explanation).
- There is a lack of financial incentives for providers that would enhance higher immunization coverage.
- Insufficient financing for supportive supervision and outreach sessions still remains a handicap in low performing districts (underserved population).

Opportunities

- Increased tax revenues could secure health sector financing.
- The MTEF⁴ provides opportunity for long term planning and sustainability by integrating the needs of health sector (including the NIP) in country priorities.
- Opportunity to use different set of incentives for providers and population should be ceased to increase immunization coverage.

Threats

- There is an ongoing administrative and governance restructuring with ineffective distribution of powers and responsibilities between central and local entities.
- The damaging mass media statements creating negative public attitude are demanding costly adjustments of the immunization program (communication plan and actions).
- Family medicine (replacement of existing practice of delivery primary health services covered by specialists) may be introduced without due consideration of the needs of immunization.

⁴ A Medium-Term Expenditure Framework (MTEF) is a budgeting process that aims to improve the linkage between policy planning and budget allocation. The MTEF offers a valuable vehicle for improving budget transparency and public expenditure efficiency

Recommendations on Financing and Sustainability

- 28 Maintain the same level of commitment and partnership in advocating legislative and budgetary changes for the NIP.
- 29 Develop legislative mechanisms to ensure that necessary funds are earmarked at the sub-national levels for the immunization services (outreach sessions, incentives, equipment, maintenance).
- 30 Forecast national immunization budget increases in the FSP, and reflect in relevant budget planning tools–MTEF, annual state programme budgets- as vaccine prices are expected to grow and combination vaccines to be introduced.

IV. Health Systems Issues for Immunization

Immunization is perhaps the most cost-effective health sector intervention modern science has ever devised. Its widespread success in the past in the transitional countries of Eastern and Central Europe and Central Asia contributed greatly to the improvement of human health and well being. Yet that accomplishment is under threat in the turmoil of the transitional economies and in post-Soviet era and we will not succeed in preserving that legacy if we ignore the challenges that new health sector reform effects are creating.

Events such as introduction of new vaccines, promotion of healthy lifestyle and health behavior presented as a governmental care for population, outreach services and SIA are all opportunities for government to use immunization of children for promotion of the government policies for political reasons. In its strong movement to reduce corruption and improve overall economic situation in the country, the government has the imperative to also strengthen its regulatory and stewardship functions in social sector. In this sense, promotion of immunization services are opportunity the government could use to strengthen its own position.

Financing of Health Care

According to different studies and official documents private out of pocket payments (as usually informal) account for around four fifth of total national health expenditures and constituted 3-4% of a household budget in average. There is no evidence that the high share of private payments created financial barriers to vaccination services that is fully financed by the state. However it is a common practice mostly in urban areas to offer alternative vaccines supplied by private providers; a patient has a choice to pay for expensive vaccines (produced in developed countries) or get for free the one purchased by the state.

When it comes to financing of immunization programs, it has also radically increased reliance upon, and the influence of, international agencies and funding sources. Immunization remains extremely popular with both national and international donors.

The mission has reviewed unusual quantity of policy documents, recommendations produced by consultants and advocates of a particular policy. These documents urge the nation to adopt particular policy solutions but they do so without explaining how or why that reform would change health system performance in a desirable direction. The definition of the problem should be based on a clear model of the health system, should be connected to outcomes that matter, and should be followed by analysis of the causes of the problem.

In response to the economic crisis and consequent changes in health sector organization the Government undertook number of reforms of the sector with variable degree of success. Several different attempts to introduce new model of financing which could combine social insurance, tax revenues and out-of-pocket payments were made during mid-nineties. Nevertheless, the model which was vastly relying on payroll taxes failed to generate sufficient funding for the sector leaving it dependent on general budget revenues.

Georgia attempted to move away from input-based financing model to a purchaser-provider split and greater use of market mechanisms. Health care was predominantly funded through payroll taxes complemented by general and municipal budgets. However, a high unemployment rate, a large and growing informal sector, poor fiscal performance and low level of budget revenues undermined government intentions in this respect. Making a success of provider autonomy is not easy: it takes good governance and audit, stronger management skills and systems, a system of rewards for good performance and sanctions for poor performance, regulation to protect safety and quality, and a smart system for contracting and paying providers—one that protects access for the poor, as well as encouraging providers to deliver the right services to the right patients, efficiently. Paying for outputs or services can motivate higher levels of service delivery and increase productivity and innovative payment methods can help to motivate delivery of immunization and screening services. Some countries have successful experience with paying performance bonuses to health care providers for achieving target population coverage rates for immunization and screening. This form of payments actually existed in Tbilisi. However, robust systems of measuring, monitoring and auditing output-based or performance-based payment was not in place and this model was subsequently abandoned.

During 2004, the new government embarked on ambitious quick-fix efforts to raise tax revenues through combination of administrative reforms in the tax and customs areas, strict reduction of tax evasion and dramatic improvements of governance reducing corrupt practices in the public sector focusing initially on civil sector. Gains in revenues were followed by improvements in budgetary expenditure management and reduction in arrears, all resulting in a rather stable macroeconomic environment, supported by a prudent monetary policy and further fiscal consolidation. The government started with significant reductions in public employment and used salary savings to increase the remuneration of remaining personnel. These changes have not yet affected all sectors including health sector.

Most significant changes in tax policy were introduced through streamlined/liberalized tax code which was passed at the end of 2004. Number of taxes was reduced from 21 to eight, and the social tax rate was decreased from 33 to 20 percent. Performance based budget expenditure framework in allocation of funding is also showing initial results. The constitutional guarantee to free health care was removed in 1995, and user fees were allowed formally either to co-finance services in the publicly financed benefit package or to pay for services not covered by public programs. The government opted for basic package of services that should be available for all, which includes immunization. As part of the tax code changes, the earmarked payroll tax for health that was part of social tax was abolished. Employed can purchase their own insurance, while those who are in need of social assistance still have free health care with public providers.

The flow of funds is illustrated in Figure 2 (Section Management, Coordination and Service Delivery). Although vaccines and key material support is funded from central budget, funding for preventive services including funding for regional public health departments largely depend on regional sources. Also there is no earmarked budget for preventive services including for immunization leaving immunization services to compete with other emerging

priorities. In such situation immunization services, although among most cost effective interventions in the sector, are still put in a position to compete for political attention and funding with other, less effective, more costly but more attractive services such as curative and diagnostic procedures, mostly digital imaging procedures.

In theory, decentralization of responsibilities for health care provision shifted responsibility for decisions about public services closer to the individuals and communities who use them, facilitating democratic input and community and consumer participation in decisions about and oversight of public services. If financing and delivery are decentralized, then the people whose taxes and contributions pay for public services are often the same people who use them or who are employed in them. This can help to build a sense of local ownership and responsibility for both costs and benefits of the services, but can also introduce some conflicts of interest. On the other hand, decentralization of health services poses risks. Regional differences in economic development are directly reciprocal to their financial capacity to allocate funds for preventive services. In resource scarce environment, focus remains on curative services while immunization and other preventive services get less attention.

With decentralized financing for preventive services, inequality in resources for health could continue to increase unless the central government puts in place a system of redistribution of revenue from taxes or contributions from richer to poorer regions. Also, unless decentralization is accompanied by new systems of national coordination and standards, it can pose risks to key public health functions such as surveillance, health data collection, and control of infectious diseases and environmental health risks that cross borders. Moreover, if responsibility for health services is decentralized to areas with small populations, the health system may lose the benefits of economies of scale. In health financing, there are economies of scale from pooling risks of high-cost health problems among a larger and more diverse population, and there can be scale economies in administration of revenue collection and payments operations. It is possible to manage these issues by coordination and contracting among decentralized government units (municipalities, etc), but this requires time, resources, leadership and good will.

Organizational issues and Institutional Capacity

Gains in revenues and improvements related to key economic indicators initiated to address lack of funding which is the key driving force behind the collapse of health system, including services for immunization. Basic package is free for all regardless of insurance. Role and capacity of key governmental agencies for defining basic package, costing it, and overseeing the implementation remains ill defined and weak. Responsibility of inclusion of immunization into basic package rests with MOH, funding for it has dual responsibility between SUSIF and regional authorities, monitoring of the overall immunization effectiveness is with NCDC. Unfortunately interagency relationship as well as relationship with providers and their responsibility remains ill defined.

Despite the importance of an immunization program, it is very interesting that up-to-date guidance on immunization techniques and procedures is not taught at universities, medical or nursing schools. Also, training activities for family medicine and other specialties in PHC do not have adequate modules for immunization that would be fully compliant with the national policy and operational guidelines. This immediately raises the question of relevance of the existing curriculum for the needs in PHC. Due to numerous changes in immunization practices immunization management is forced to use every opportunity to train PCH staff in immunization practices, which is not an easy undertaking given the limited budgets available.

The capacity of purchasing agency, which is Social Insurance State United Fund, is weak and lacks strategic direction. Immunization, along with several other preventive services, is part of mandatory package of services defined by the state. Contracts only in a broad way do specify minimum scope of services to be provided. At the same time there are no clear guidelines on how to implement preventive these services. If any, preventive services are usually run as standalone vertical programs run and implemented by different agencies. These services are usually not fully integrated into primary health care. Basic relations with providers are defined through contracting arrangements. However, these contracts are de facto not performance based.

The ability of the public system to actually monitor performance at the level of individual providers does not exist. In practice, immunization coverage as an indicator of providers' performance is monitored by public health agencies and NCDC. Unfortunately, the results of the observations of poor performance are usually not transferred to the purchasers. Even if the purchasers are informed about low coverage rates it is unlikely that any action will be taken to coerce providers. Contracts do not clearly define actual relationships between providers and purchasers and do not define penalties in case of non compliance. Contracts which are considered as "per capita" are still bulk contract based on historic cost with fixed budgetary amounts. Patients' registration with provider their choice, which in theory should be basis for planning and monitoring of effectiveness, is not completed and multiple channels of registration exist with no means to verify registration accuracies.

The key element in the process of improvement of PHC performance is the analysis and continuous monitoring of PHC performance. Paper patient's records and registry exists in each health center and unfortunately there is no electronic database on PHC level that could facilitate improvements of PHC performance. The quantity of data available at PHC level is unfortunately hard to utilize for decision making purposes and for continuous performance monitoring. Data are stored in variety of paper forms and notebooks and can hardly be collected and analyzed in a practical day to day management. Therefore performance based payments can not be efficiently introduced. Further more, from managerial point data are in electronic form gathered only at central level but these data are subject of delays and errors in paper form reporting and collection processes.

Delivery of services

It seems that there is no single and well defined model of primary care services in Georgia. It is rather a mix of old Soviet style specialized polyclinics, mostly in urban areas. New type of family physician based care is predominantly in rural areas and mix of private mostly diagnostic and specialized private clinics. Outreach services that are needed to enhance immunization program in rural areas is very weak as there are no funds or incentives to perform these services. (In this regard UNICEF/VRF will fund supportive supervision and outreach services countrywide starting from Sept 2006, but the component needs to be integrated and costed into the national programme, for sustainability. The GoG is committed to consider relevant budget allocations from 2008, based on the cost-effectiveness of the donor-funded project). This situation probably constraints the key managers at central level to define clear methodological guidelines to enhance performance of immunization program in Georgia.

There is an acute need to ensure system-wide integration of immunization programme communication into primary health care services. This will involve adoption of national unified guidelines, standard operational protocols and in- and post-graduate training curricula for immunization. The process is well underway: MOLHSA is planning by end 2006 to

endorse the unified guidelines and standards for maternal and child health (including immunization), with relevant medical university and postgraduate training curricula modules. Consultancy work with involvement of all key national experts in the field of neonatology and paediatrics, as well as national immunization programme management is supported by UNICEF Georgia.

At all levels, public primary care providers lack essential incentives to perform preventive services. In the past, there were clear incentives for enhancing immunization services (0.90 GEL per vaccination visit countrywide up to 2003, as an incentive for NIP staff). This model presented created supplier induced demand for immunization services. However, due to combination of mostly managerial factors including low technical capacity to sustain and monitor such contractual arrangements this model was abandoned several years ago. During our research for this report, almost all providers expressed low incentives for immunization as a primarily factor leading to weaknesses in performance on the program.

The private sector in Georgia focuses mostly on diagnostic and highly specialized services. However, with introduction of new vaccines, private providers started to also offer immunization services. Anecdotal reports state high prices for immunization with western produced vaccines. This practice fosters potential spread of rumors about “good” western manufactured vaccines and “bad or poor” vaccines which are free of charge—even when purchased from WHO prequalified manufacturers.. This is a serious situation which can result in significant increase in cost of immunization services combined with significant drop in immunization rates due to rather low acceptance of immunization in Georgia. It takes strong regulation, contracting skills, continuing professional education, information and monitoring systems, and stable financing on the part of the publicly financed health system, to deliver high rates of population coverage for public health programs through fragmented private health services.

Key Findings on Health Systems Issues for Immunization

Macro organization:

- Weaknesses in stewardship function of the government and constant changes in macro model of financing, delivery system and roles and status of key institutions.
- Initial steps towards separation of purchasing and provision of services are taken but still capacity of central agencies is very weak with low financial incentives for staff.
- Private sector is fostering a two-tier system and providing for costly vaccines.
- In the process of changes, institutions dealing with public health and prevention, including health promotion and health education, are getting less attention.

Micro organization:

- Several key questions remain unresolved and undefined at PHC level.
- New family medicine model of delivery PHC is being introduced.
- There are still many unanswered policy questions such as whether this will be an appropriate model for cities or only rural areas, what type of contracts will be the best, ownership and maintenance of the facilities.
- Family medicine would also require incentives to perform immunization services.

Regulations:

- Key central institutions show weaknesses in stewardship functions to develop and ensure compliance with key public health policies. Regional diversities indicate fragmentation of system and weaknesses in governance.
- Absence of procedural guidelines and regulatory mechanism including measures to enforce compliance.

Advocacy and social marketing:

- Acceptance of immunization services among the general population is still not high enough.
- Rumours and misinformation are used to justify extreme overcharging for some imported private sector vaccines.

Financing–Revenue:

- Rapid gains in tax collections with good results.

Financing–Allocation:

- No earmarked and secured budget for preventive services including immunization.
- Regional allocations do not provide for equity and risk mitigation.
- Purchasing agent is acting as “sickness fund” and allocation of resources for public health programs is dependent on local revenues with regional diversities.

Recommendations on Health Systems Issues for Immunization

Macro organization:

1. Strengthen the stewardship function of MOH at all levels including review of role and function of NCDC, Department of Public Health and SUSIF.
2. Review options for private public- partnership also in primary health care.
3. Consider short–run options for non-financial incentives for staff with staff development options.
4. Explore future options for improving efficiencies in institutional management including using civil service reform.

Micro organization:

5. Define the model of PHC with all details.
6. Speed up registration of patients to enable planning of immunization services among uninsured.
7. Provide guidelines for public health programs implementation.
8. Specify outreach services incentives in contracts.

Regulations:

9. Consider reintroduction of immunization school entry requirement.
10. Standardize forms, case definition, procedures and operations from central level.
11. Introduce mandatory education on “Immunization in Practice” in medical schools.

12. Explore options for continuous medical education (CME) and licensing of PHC and certification of staff.

Advocacy and social marketing:

13. Use NIDs or SIA to promote prevention, provide training and create collective buy-in for immunization and healthy lifestyle in general.
14. Use promotion of new model of PHC to promote quality health care and healthy behaviours including immunization.

Financing-Revenue:

15. Promote coordination of donors support and consider SWOT type of approach.
16. Enhance performance based budgeting process (MTEF).
17. Increase budget allocations to the health sector.

Financing-Allocation:

18. Introduce equalization of funds among regions for public health programs.
19. Earmark budget allocations at state level for key preventive services including immunization, by services and population groups covered.
20. Introduce performance indicators in contracts with clear incentives for achievements, penalties for underperformance, and monitoring options and arrangements.

V. Abkhazia: Findings and Recommendations

1. Planning and management of immunization service delivery

The situation in Abkhazia concerning the immunization programme is quite different from the rest of Georgia. Although childhood vaccines are supplied through NCDSCS from Tbilisi, the overall organisation of the immunization programme inside Abkhazia is using a different system, in fact the former soviet "Sanepid" system with centres at Sukhumi and district level. The head of the immunization programme is the Head of Treatment Department. Some 30 health facilities (polyclinics, ambulatories) are providing the immunization services, mainly through Paediatricians, and school sessions also take place. The immunization schedules are mainly following the former soviet calendar.

The system is in place and is working, mainly due committed health staff. However all Sanepid facilities are in bad conditions, building and equipment-wise, with unreliable cold chain and no computer for data monitoring and surveillance, added to a lack of staff (not always one epidemiologist in each centre). It was also noticed that outreach sessions to cover remote population barely take place due to lack of transport and funds, enhancing the fact that the financing of the immunization programme is a key challenge in Abkhazia. The training of the health staff is also a major concern. Although there was a mid-level manager training course supported by NCDSCS in 2003, no other course took place for many years, and the need to train on immunization practices all PHC staff is of a crucial importance. Moreover the lack and the ageing of the health staff pose another threat to the programme. It is obvious that the programme in Abkhazia needs strong support, with a planning process and a clear financing and sustainability mechanism.

Strengths

- There is strong and dedicated health staffs at the different levels.
- Overall the immunization programme is in place and working.

Weaknesses

- There was no new regulations and guidelines issued for a very long time (former soviet decree still in use).
- The remote and underserved population is not properly covered, mainly due to a lack of transport means but also not enough advocacy on the importance of immunization.
- Although the coverage seems high, there are problems in the timeliness of the immunization delivery, with children receiving late vaccination.
- Some practices considered as unsafe by WHO are still in use (injection in the buttocks, needles recapping).

Opportunities

- UNICEF recently positioned a technical officer in Sukhumi who can facilitate technical support within Abkhazia.

Threats

- The funding of the immunization programme in Abkhazia is very limited and currently not appropriate to ensure its full implementation.

Recommendations on planning and management of immunization service delivery

Inter-agency coordination committee (ICC):

1. A kind of inter-agency coordination committee (ICC) should be established for Abkhazia to seek technical and financial support for the immunization programme, with the involvement of senior health managers from Sukhumi and district level, and with UNICEF, WHO and other partners support.

Planning exercise:

2. A multi-year plan (2007-2010), emphasizing on priority activities should be drafted to strengthen the immunization programme at the different levels.
3. Key documents for the immunization programme (Decrees, guidelines) should be revised, printed and distributed.

Training course:

4. A series of training courses, mainly "Immunization in Practice", should be implemented as soon as possible, targeting immunization nurses and physicians.

2. Immunization coverage, including reporting procedures

Data management and immunization coverage reporting is a problematic issue in Abkhazia. Percent of coverage collected in Sukhumi during the review showed coverage from 63.7% for BCG to 180.9% for OPV revaccination, and no coverage for Hepatitis B. It

demonstrates the difficulty to properly monitor, analyse and use coverage data, mainly as it is based on a plan which may not reflect the proper denominator, but also using an old immunization calendar which makes difficult the calculation of the core coverage (DPT1, DPT3, MCV1). Moreover the health facilities and district Sanepid do not calculate their own coverage and only report monthly the number of children immunized. UNICEF introduced sometime ago a reporting form with detailed age groups, but the use of this form is not fully implemented. During the review, this new form was sometimes observed, but most of the time this is the lack of form which was noticed.

Strengths

- The number of children immunized are monthly collected and reported through the Sanepid system.

Weaknesses

- The immunization coverage monitoring and reporting system is lacking standard form and procedure, and timeliness/completeness of reporting is not achieved.
- Most of the health facilities do not calculate and monitor their immunization coverage.
- The monitoring and reporting system is not explicit enough (missing age, immunization status), preventing information data to be properly analyzed, interpreted and used for action.

Opportunities

- The health staff at different levels is open to recommendations and changes for improving the immunization monitoring system.

Threats

- Currently it is impossible to really know, through the existing monitoring and reporting system, which percent of children are immunized in Abkhazia.

Recommendations on immunization coverage, including reporting procedures

5. The immunization monitoring system should be strengthened, with the revision and adoption of standard procedures, guidelines and forms.
6. When the new monitoring procedures will in place, an appropriate training should be implemented for district and health facilities immunization officers.

3. Disease surveillance

The Disease surveillance system suffers similar issue than the data management and immunization coverage reporting. The reporting system lacks paper form and although a monthly reporting occurs, the completeness and timeliness of reporting is subject to variation from place to place. Here also it demonstrates the difficulty to properly monitor, analyse and use surveillance data. Case definitions are not in a written form, health staff referring only to their knowledge. The positive point is that diseases are detected and reported, as was the measles outbreak in 2004. However zero-reporting is not always implemented and surveillance of Acute Flaccid Paralysis (AFP) doesn't exist. Adverse Events following Immunization (AEFI) cases are also not formally reported.

Strengths

- Diseases seem to be detected and reported.

Weaknesses

- The Disease surveillance system is lacking standard form and procedure, and timeliness/completeness of reporting is not achieved.
- The Disease surveillance system is not specific and sensitive enough (only aggregated data, no age, no immunization status reporting), preventing information data to be properly analyzed, interpreted and used for action.
- Zero-reporting surveillance is seldom implemented.
- There is no surveillance for AFP and none also for AEFI cases.

Opportunities

- The health staff at different levels is open to recommendations and changes for improving the Disease surveillance system.

Threats

- Currently it is difficult to be sure, through the existing Disease surveillance system, that all diseases are reported and that any disease outbreak will be timely detected.

Recommendations on Disease surveillance

7. The Disease surveillance system should be strengthened, with the revision and adoption of standard procedures, guidelines and forms.
8. When the new surveillance procedures will in place, an appropriate training should be implemented for district and health facilities immunization officers.
9. A surveillance system for Acute Flaccid Paralysis (AFP) and Adverse Events Following Immunization (AEFI) should be established.

4. Immunization quality and safety

Immunization quality and safety is a major area of concern in Abkhazia. Although injection safety was observed to be correct with the use of AD syringe and safety box, cold chain and vaccine management are causing real problems for the quality of immunization. During the review, several health facilities visited had refrigerators out of order, with missing spare part to repair them. Practices to properly store and handle vaccines were often not so well known, as for example putting absorbed vaccine on icepack, or as all except one interviewed health staff did not know what Vaccine Vial Monitor (VVM) was. Several vaccines controlled had their VVM already turned grey, and batches of OPV had to be discarded in three facilities visited due to VVM turned dark grey. Vaccine stock management was also a concern with shortages of vaccines in several facilities (BCG, Hepatitis B, MMR) but also overstocks of vaccines (3 years stock of OPV in one facilities, 8 months stock of MMR in another one). The vaccine delivery system appeared to be a “push” system with too many vaccines at health facility level and almost no stock in Sukhumi cold store. Within the context of Abkhazia, the cold store in Sukhumi needs a full rehabilitation, with a 50% vaccine reserve stock to be held.

Injection safety practices need also some revision as nurses are recapping syringes before and after injecting. Healthcare waste management is also a priority as syringes and needles are disposed of in the regular waste stream.

Strengths

- Auto-disable (AD) syringes and safety boxes are in use in all health facilities.
- There is an overall sense of importance and dedication of keeping vaccine in the cold chain, although the current conditions challenge it.

Weaknesses

- Vaccine forecast, distribution and stock management are not appropriate as shown with the several overstocks and shortages of vaccines.
- The cold chain is not properly functioning with many refrigerators out of order and cold box, vaccine carrier and thermometer missing.
- There is a lack of knowledge on vaccine management and vaccine handling.
- Used syringes and needles are disposed of in the regular municipal waste stream.

Opportunities

- The health staff recognize the extend of the problem and the need for them to be trained and supported.

Threats

- Currently it is difficult to ensure the quality and efficacy of all vaccines in the cold chain in most of Abkhazia health facilities visited.

Recommendations on immunization quality and safety

System rehabilitation:

10. A high quality cold store should be established in Sukhumi, in a new building, with -20°C storage capacity for poliomyelitis vaccine (OPV).
11. An assistant for vaccine management purpose should be appointed for the Sukhumi cold store.
12. An equipment inventory should be conducted, spare parts should be provisioned and a proper vaccines/supplies stock management system should be established.
13. The vaccine forecast and stock management systems should be strengthened, with the adoption of standard monitoring tools, guidelines and forms.

Training course:

14. As previously mentioned, a series of training courses, mainly “Immunization in Practice”, should be implemented as soon as possible, targeting immunization nurses and physicians.

5. Advocacy and communication

Advocacy and communication have been previously supported with the printing and distribution of leaflets and posters. However stocks of those materials were found in some facilities and no poster were observed on the walls. Health staffs observed during their practices were giving advice to the mothers, mainly related to mild adverse event following immunization (AEFI). Some resistance was mentioned, mainly in one village where one AEFI case was observed, although not proved to be related to immunization. There was also information (not reported and quantified) that vaccine from Indonesia (DPT) had a high reactogenicity, and health staff express their preference for Western made vaccine.

Strengths

- The immunization programme is considered as an important public health priority by health managers and health staff.

Weaknesses

- The community knowledge appears to be insufficient, with late immunized children and some resistance.
- There are few media channels in Abkhazia and no communication plan is actually drafted.

Opportunities

- There are many international organisations and non-governmental organisations working in Abkhazia who can bring support for social mobilization.

Threats

- Without a good AEFI surveillance system, rumours could continue to spread concerning vaccine quality and safety.

Recommendations on advocacy and communication

15. A social mobilization campaign for immunization should be planned, targeting parents and health staff, and making use also of the 2007 European Immunization Week.
16. Immunization cards (yellow card) and hands-out for maternity wards should be printed and distributed.