

Joint Appraisal report 2017

Country	Georgia
Full Joint Appraisal or Joint Appraisal update	Joint Appraisal Update
Date and location of Joint Appraisal meeting	6-9 June 2017, Copenhagen
Participants / affiliation¹	The list of participants is attached
Reporting period	January – December 2016
Fiscal period²	January – December
Comprehensive Multi Year Plan (cMYP) duration	2017 - 2021

1. SUMMARY OF RENEWAL AND EXTENSION REQUESTS

This section is not applicable to Georgia. Last year of Gavi support for PCV is 2017.

2. CHANGES IN COUNTRY CONTEXT SINCE LAST JOINT APPRAISAL

Key contextual factors

2016 was generally steady and did not pose any major uncertainties that would affect the performance of national immunization program (NIP) in Georgia. VPD outbreaks have not been observed during 2016 and the confirmed number of measles cases was much lower than what was observed in previous years.

There are no identified problems with access to immunization services in Georgia, especially in major cities where vaccinations are provided regularly.

In light of vaccine management practices, new legislation is being prepared for approval by the MoH (NRA) harmonized to the EU best practices.

Despite the complexity of new vaccine introduction processes, Georgia has maintained good coverage rates for most of the 12 antigens and the government firmly expressed its intent to continue to procure vaccines through UNICEF SD following the transition, which is stated in Georgia’s budgeting legislation as well.

Primary Health Care reform is under way and expected to be completed in 2018.

NIP Financing

The budget allocation for National Immunization program in 2016 was US\$ 6.1m. Although the country faced devaluation of the national currency, corrective measures were taken by the government to ensure the NIP performance is not affected and the budget increased to US\$ 6.9m (total increase of US\$ 0.8m). Historically, funding of the NIP increased - from US\$ 4.8m (2015) to US\$ 6.9m (2016).

Policy-making, purchasing, service delivery and regulation functions are separated in the current health system arrangements in Georgia, where the Ministry of Labour Health and Social Affairs (MoLHSA) is responsible for policy development, regulation, developing and overseeing implementation of public health programs including National Immunization Programme. The NCDC is a legal body of Public Law accountable to the MoLHSA with a dedicated line in the state budget.

¹ If taking too much space, the list of participants may also be provided as an annex.

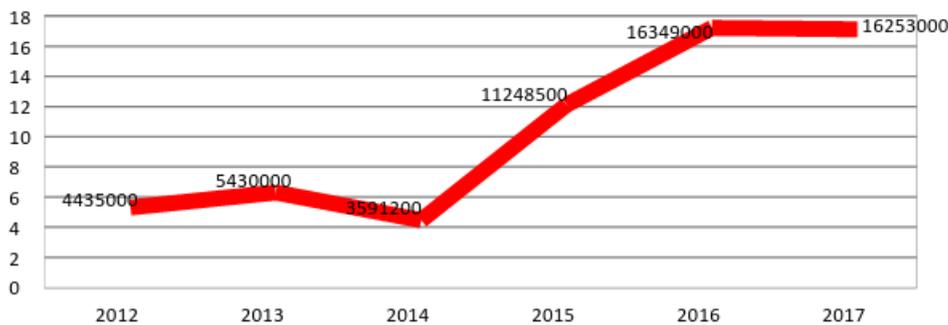
² If the country reporting period deviates from the fiscal period, please provide a short explanation.

The State Immunization Programme (December 30.12.2015 ordinance #660, December 30.12.2016 #638) covers vaccine and vaccine supplies costs, as for the fee for immunization services is integrated into consolidated budget for primary health care services and considered by the Universal Health Care Program Budget and the budget of Village Health Care State Program. The program is designed to ensure:

- Procurement of vaccines for routine immunization;
- Procurement of vaccines, serums and immunoglobulin for infectious disease prevention and treatment (yellow fever, rabies, tetanus, botulism, venom viper, malaria);
- Receipt, storage and distribution of Immunization supplies, monitoring the needs of the cold chain system.

Significant increase of vaccine funds and strong political commitment and prioritization of the national immunization program was observed to support the achieving the MDG's, from US\$ 1.7m in 2012 to US\$ 6.9m in 2016.

Figure 12. NIP budget, 2012-2016 (millions of Georgian Lari)



Georgia widely uses the opportunity of purchasing vaccines through pooled mechanism and procures all routine vaccines (except hexavalent) through UNICEF Supply Division.

Figure 13. Government expenditure on health and immunization

Government Expenditure (millions US\$)	2012	2015	2016	2017 forecast	2018 forecast	2019 forecast
Nominal GDP	11,089	12,995	14,375	14,375	17,218	18,799
Overall MoHLSA Budget	760	1,223	1,448	1,447	1,335	1,357
MoHLSA Budget as a % of GDP	6.8%	9.4%	10.0%	10.0%	7.7%	7.2%
Health Care Program budget	141	327	379	379	373	378
Health Care Program budget as a % of GDP	1.3%	2.4%	2.6%	2.6%	2.1%	1.9%
State Immunization Program	1.4	4.8	6.9	6.9	8.2	8.2
Immunization Program as a % of Health Care Program	0.96%	1.58%	1.83%	1.83%	1.71%	1.67%
Routine Vaccine Expenditure	0.7	3.4	5.2	4.9	6.4	6.4
Routine Vaccine budget as a % of Health Care Program	0.49%	1.09%	1.38%	1.29%	1.32%	1.28%

Financial sustainability strategies (cMYP2017-2021)

The main strategy to ensure financial sustainability of the National Immunization Program during the period 2017—2021 will be directed towards securing probable funds and mobilizing additional financial resources through accelerating EPI fundraising activities, which could include the following:

1. Advocate for sufficient allocations in the State, MoHLSA budget for national immunization program, especially for funding system components, other than vaccines and injection supplies such as Activities and recurrent costs and cold-chain equipment.
2. Effective use of the cMYP as the fundraising instrument for acceleration of fundraising activities and work with donor community over the course of cMYP cycle to secure additional funds for filling existing funding gaps related to the Logistics component of the program.

Regions with limited access: Abkhazia and South Ossetia

In **Abkhazia** activities are carried out through the UNICEF country office. Since 1996, Georgia in the frame of the NIP fully provides the region with all vaccines, injection supplies and cold chain system equipment, based on the government's decision. One of the issues in this regard is feedback - a routine reporting on the age groups, number of vaccinated children, vaccine flow, etc. is not provided. However, UNICEF has access to the key indicators, monitor them and share with NCDC upon request. Abkhazia region makes request for annual need of routine vaccines through UNICEF country office, based on which the NIP ensures quarterly dispatch of the stock, delivered to the region by the representatives of the Georgian - Abkhazian Commission. As for **South Ossetia**, country has no information since the conflict in 2008.

Developments in the NIP since the previous Joint appraisal

- Country switched to full self-financing of rotavirus vaccine (as of January 2016);
- Comprehensive Multi Year Plan for 2017-2021 developed and approved (2016);
- Partnership Framework Agreement signed (February 2016);
- The National level parliamentary network on immunization developed (2015-2016);
- Parliamentary hearing on results of immunization program (April 2016);
- Nationwide Immunization Coverage survey completed (final report available. US CDC, WHO);
- The difference between the number of new-borns and under 1 population receiving 1st dose of DPT containing vaccine has decreased from 6,3% in 2015 to 2,5% in 2016;
- Reporting and recording system compliance – 100% (Abkhazia has separate recording and reporting system, information sharing for key indicators ensured through UNICEF);
- The mobile and web application on vaccination for parents was developed and introduced;
- Supportive supervision activities carried out with GAVI and CDC support to sustain strong immunization surveillance system at all levels;
- In frames of influenza preparedness for 2016-2017 season 20000 doses of seasonal flu vaccine was procured, and selected target population was vaccinated timely;
- Flu seasonal preparedness plan renewal (twice);
- Measles and Rubella surveillance and outbreak response guidelines updated;
- Annual Status Update on measles and Rubella Elimination was prepared and submitted to the WHO certification committee.

Coverage and data quality

- Georgia is rolling out an integrated health and immunization information system, which captures and manages information on all aspects of healthcare in Georgia and is integrated with the civil and birth registries through a unique ID number;
- NCDC made decision to take over the technical maintenance and management of e-health modules (including immunization and stock management modules).

NVS

- The application approved to use the catalytic HPV support opportunity - HPV 2-dose vaccine demonstration project for cohort of 9 year olds, across 4 distinct provinces with diverse socioeconomic and religious backgrounds over the course of two years (starting Q4 2017);
- Bivalent oral poliomyelitis vaccine was successfully introduced in the country starting April 18, 2016.

Cold chain

- To meet the country needs for the routine and specific immunization, more than 50,000 kg of vaccines, serums, immunoglobulins and syringes were safely received, stored and distributed by the central store at NCDC. Vaccines and other supplies expedition throughout the country is on average every 1.5 months. Total of 145,000 doses of vaccines were distributed in 2016.
- Additional storage capacities set up (Rustavi, Kutaisi, Batumi) for uninterrupted logistics of required immunization supplies.
- Computerized web-based temperature monitoring systems were installed at the national vaccine cold store in Tbilisi and at four sub-national vaccine stores (Tbilisi city, Batumi, Kutaisi and Rustavi).

Communication and crisis management

- Wide scale communication activities were implemented during the European Immunization Week, dedicated to the achievements and challenges faced in process of Measles and Rubella elimination in the country;
- KAP Research Among Key stakeholders (Mothers, PHCWs) – to identify the major barriers/gaps in the current immunization program and key determinants that influence participation of infant and child in vaccination;
- 2017–2021 National Communication Strategy for Immunization in Georgia is under development.

Meetings:

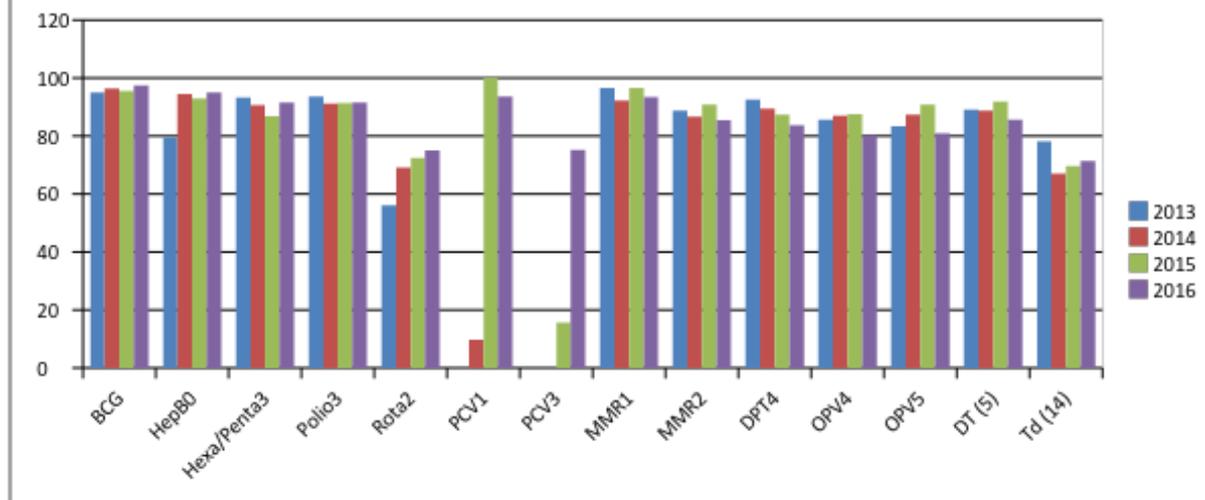
- GAVI former Board Chair and current Special Envoy for GAVI (Dagfinn Høybråten) visit to Georgia (March 2017);
- Regional workshop on immunization legislation organised by the Sabin Vaccine Institute with participation of representatives from Armenia, Georgia and Moldova;
- National Workshop on Vaccine safety and contraindications was held November 29-30, 2016.

3. PERFORMANCE OF THE IMMUNISATION SYSTEM IN THE REPORTING PERIOD

3.1. Coverage and equity of immunisation

2016 Coverage by antigens by the age of 12 months was above 90%. Compared to 2015, coverage rates for the most of the antigens decreased by 4% on average. Increase of coverage was observed for 7 antigens: BCG from 96% in 2015 to 98% in 2016, Polio3 from 91% to 92% in 2016, HepB0 from 93% to 95% in 2016, Td from 70% to 72% in 2016, ROTA2 from 72% to 75% in 2016, PCV2 from 90% to 92% in 2016 and PCV3 from 16% in 2015 to 75% in 2016.

Figure 1. Immunization coverage trend (%), Georgia, 2013-2016



Coverage with the 1st dose of PCV, 3rd dose of DPTcV (Hexa) and birth dose of HepB vaccines declined slightly compared to 2015. The main reason for HepB0 coverage is attitude of paediatricians at maternity houses to HepB vaccine - traditionally lower than BCG coverage rates, e.g. HepB coverage in Tbilisi City is 91%, while BCG coverage is 98%. Based on the monitoring data, paediatricians at maternity houses often do not vaccinate newborns as they consider further three HepB doses (2,3,4 months of age, included in combined hexa vaccine) enough for protection against the disease. False contraindications are also one of the reasons for lower coverage. The issues with accurate reporting of coverage data due to use of inconsistent calculation techniques for the number of surviving infants also matter.

Quality of denominator data remains an issue in Georgia (with the denominator used by health facilities being considerably lower than the number of live births, which suggests that some infants are not being

registered and vaccinated in health facilities. Electronic birth registries have been introduced in Georgia. The country is working on linking these with the Immunization management module (registry).

Lower coverage was observed for Td vaccine (72%), 3rd dose of PCV (75%) and 2nd dose of Rota (75%). Rotavirus vaccination continues to lag behind that of other vaccines due to missed opportunities to vaccinate (delayed onset caused by short-term contraindications, age restrictions, and lack of effective call and recall system).

Figure 2. Hexa 3 coverage by regions, 2016

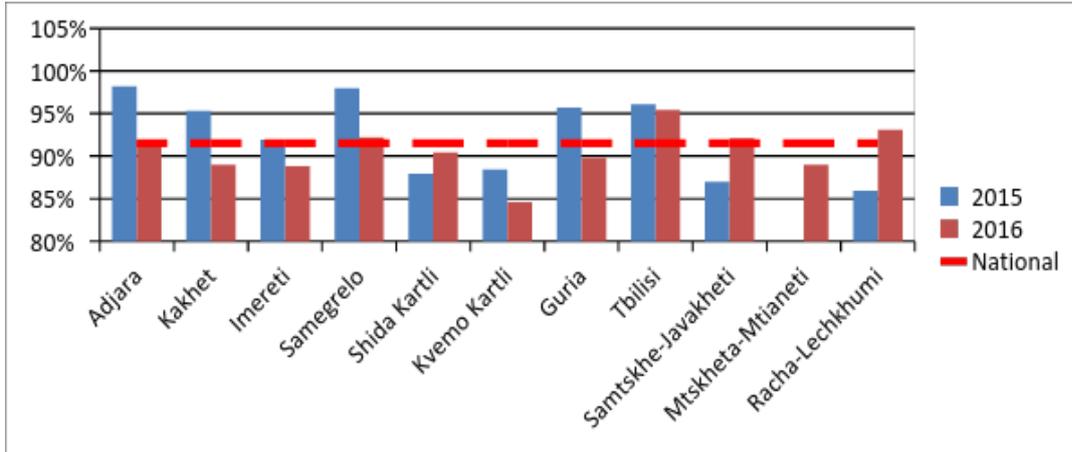
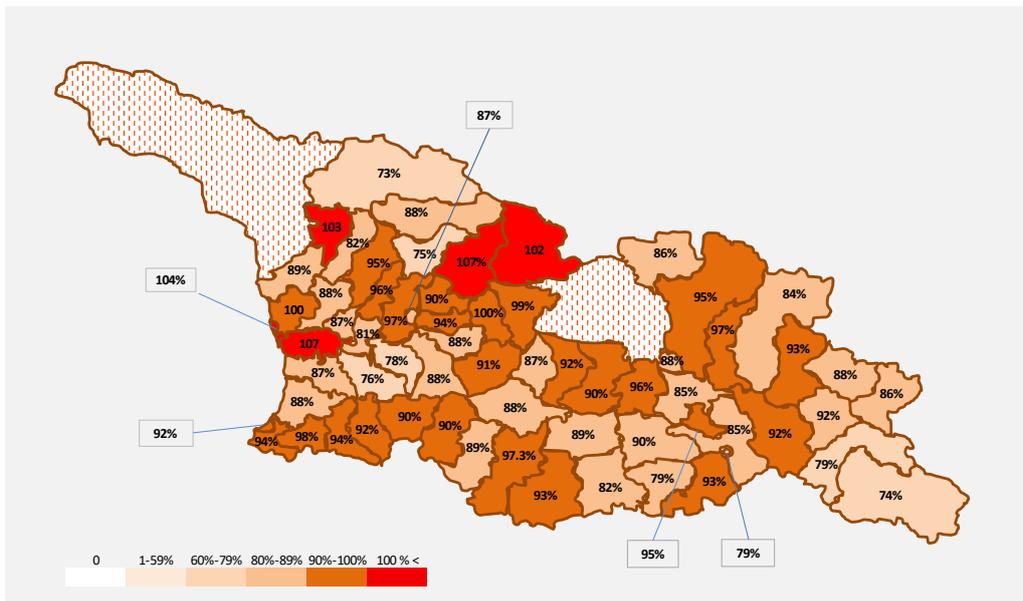


Figure 3. Hexa3 coverage by districts, 2016



Georgia experiences some issues with equity in terms of immunization coverage across regions - only 62% of the districts had measles coverage above 95% (compared to 49% in 2015), and 13 of the 65 districts (20%) had DTPcV3 coverage below 80%. There are no identified problems with access to immunization services in Georgia, especially in major cities where vaccinations are provided regularly. Rural health centres vaccinate children on designated dates (in some areas – once a month) due to low

number of children per health facility in rural areas. School doctor/nurse system is being re-introduced and will help to increase awareness about vaccination status among parents.

Figure 4. MMR1 coverage by districts, 2016

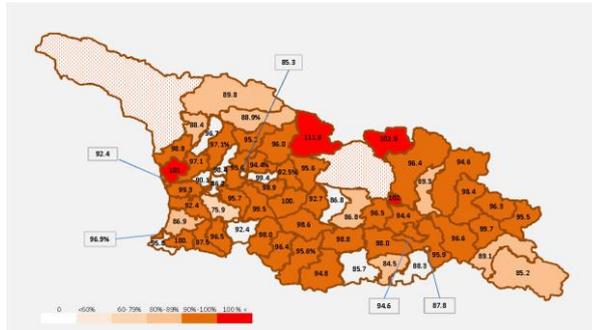
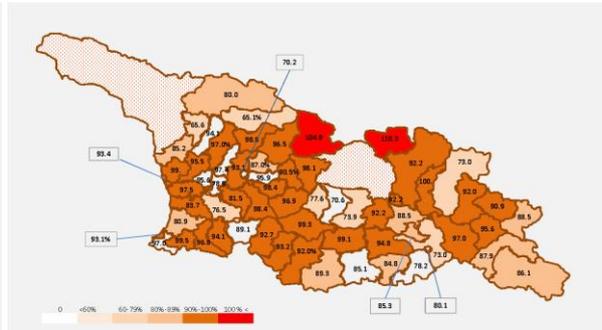


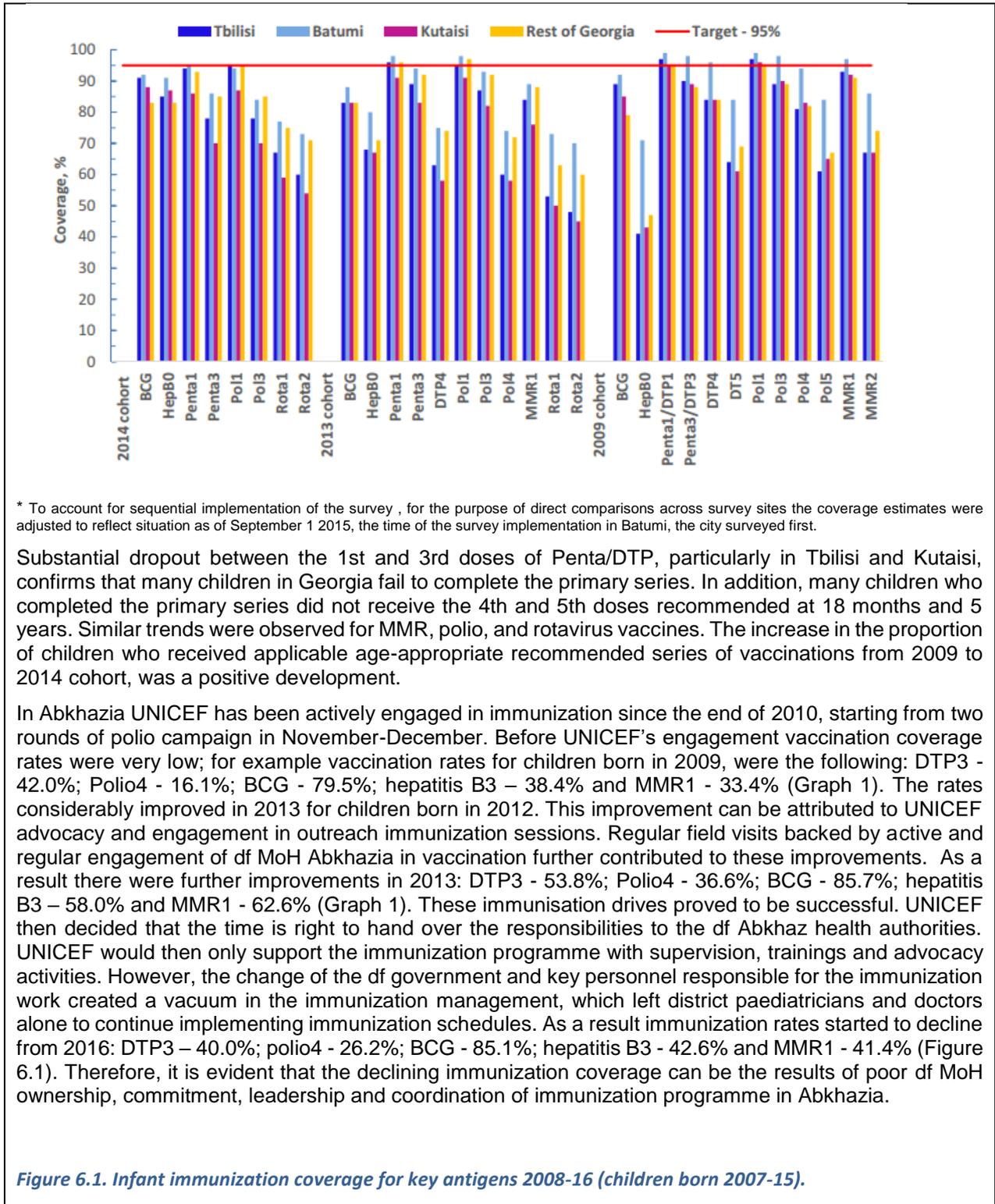
Figure 5. MMR2 coverage by districts, 2016



According to the nationwide immunization coverage survey, the current administrative reporting of immunization coverage (GEOVAC) overestimates coverage for most vaccine doses, in some cases, to a substantial extent. The Immunization Management Module linkage with the Civil Registry data set has been critical for having access to sampling frame needed for design and implementation of the survey.

Based on the immunization coverage survey findings, Georgia has a well-developed, functioning immunization program and despite challenges associated with the ongoing reforms in primary health care, the system is successful in providing access to and delivering immunization services to children across the country. However, the survey also revealed geographic variations in immunization coverage and certain weaknesses with various aspects of immunization process – initiating vaccinations, completing the recommended series, and vaccinating on time. Across major urban centres, immunization services appear strongest in Batumi, which consistently had highest immunization coverage, fewer dropouts and better timeliness, and weakest – in Kutaisi. Immunization services outside these major urban centres performed better, than in Tbilisi, particularly, in Kutaisi, but mostly at a lower level than in Batumi. At the time of the survey, immunization coverage among the surveyed birth cohorts was in moderate to very high range for most vaccinations recommended during the 1st year of life, but much lower for vaccinations recommended during the 2nd year of life, and, particularly, at 5 years of age. In terms of equity issues in Abkhazia, although Georgia provides vaccines and immunization supplies to this region, the official reporting is not provided.

Figure 6. Immunization coverage by survey site and birth cohort - status as of September 1, 2015.*

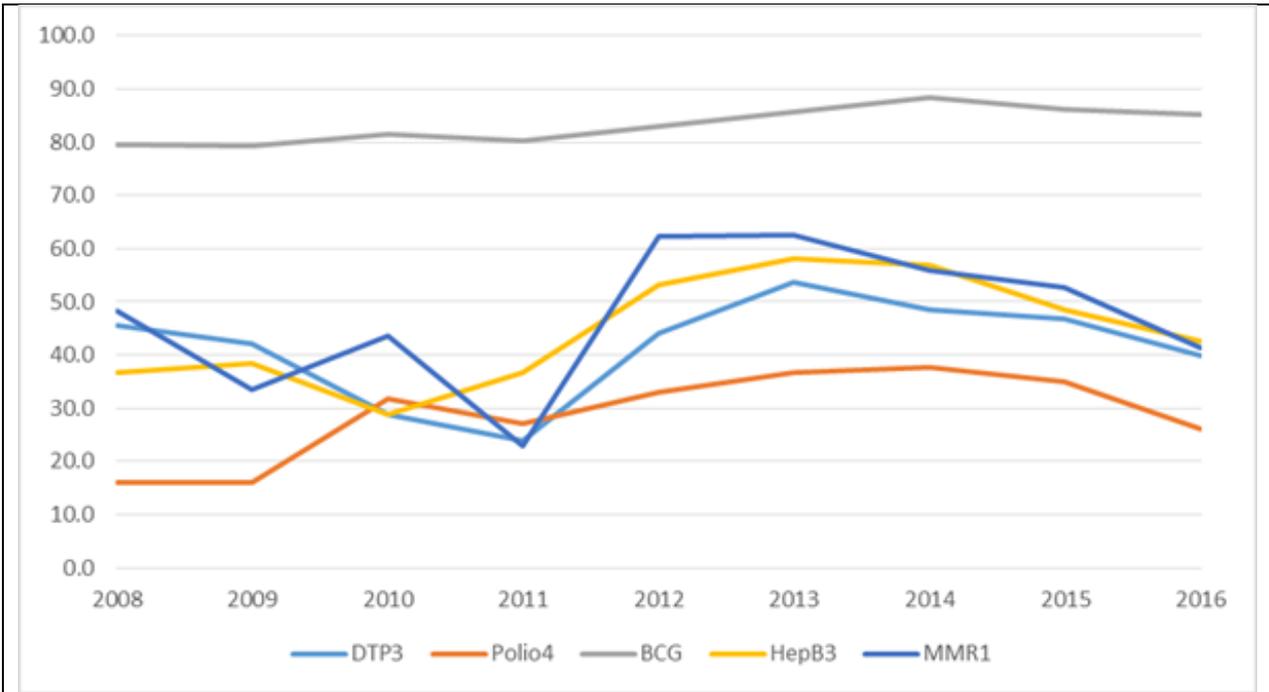


* To account for sequential implementation of the survey , for the purpose of direct comparisons across survey sites the coverage estimates were adjusted to reflect situation as of September 1 2015, the time of the survey implementation in Batumi, the city surveyed first.

Substantial dropout between the 1st and 3rd doses of Penta/DTP, particularly in Tbilisi and Kutaisi, confirms that many children in Georgia fail to complete the primary series. In addition, many children who completed the primary series did not receive the 4th and 5th doses recommended at 18 months and 5 years. Similar trends were observed for MMR, polio, and rotavirus vaccines. The increase in the proportion of children who received applicable age-appropriate recommended series of vaccinations from 2009 to 2014 cohort, was a positive development.

In Abkhazia UNICEF has been actively engaged in immunization since the end of 2010, starting from two rounds of polio campaign in November-December. Before UNICEF’s engagement vaccination coverage rates were very low; for example vaccination rates for children born in 2009, were the following: DTP3 - 42.0%; Polio4 - 16.1%; BCG - 79.5%; hepatitis B3 – 38.4% and MMR1 - 33.4% (Graph 1). The rates considerably improved in 2013 for children born in 2012. This improvement can be attributed to UNICEF advocacy and engagement in outreach immunization sessions. Regular field visits backed by active and regular engagement of df MoH Abkhazia in vaccination further contributed to these improvements. As a result there were further improvements in 2013: DTP3 - 53.8%; Polio4 - 36.6%; BCG - 85.7%; hepatitis B3 – 58.0% and MMR1 - 62.6% (Graph 1). These immunisation drives proved to be successful. UNICEF then decided that the time is right to hand over the responsibilities to the df Abkhaz health authorities. UNICEF would then only support the immunization programme with supervision, trainings and advocacy activities. However, the change of the df government and key personnel responsible for the immunization work created a vacuum in the immunization management, which left district paediatricians and doctors alone to continue implementing immunization schedules. As a result immunization rates started to decline from 2016: DTP3 – 40.0%; polio4 - 26.2%; BCG - 85.1%; hepatitis B3 - 42.6% and MMR1 - 41.4% (Figure 6.1). Therefore, it is evident that the declining immunization coverage can be the results of poor df MoH ownership, commitment, leadership and coordination of immunization programme in Abkhazia.

Figure 6.1. Infant immunization coverage for key antigens 2008-16 (children born 2007-15).



In 2007, 2013 and 2016 the number of children vaccinated were 7,582, 16,126 and 8,526 respectively (out of ca 43,000 children, registered in children database, some of whom have been fully immunized already in the recent years). For the same years the number of doses administered were 22,645, 49,818 and 20,953 respectively (see Graph 2). Some of the decline in the number of doses administered was due to the introduction of multi-valent vaccines (penta- and hexa-valent). This shows that the capacities of the MoH is still weak and further support is required to sustain the improvements made in the immunization coverage.

At the same time, the school immunization programme is much stronger in Abkhazia and, as a result, coverage of viral hepatitis B (third dose), polio vaccine (third dose) and MMR (second dose) reaches 70-80% among teenagers. These observations were confirmed through the recent Joint National-International Review of Immunization and VPD Surveillance for Georgia, including Abkhazia, which was conducted in July-August 2015.

In 2016 UNICEF, with the assistance from GAVI, started to actively re-engage in immunization and support outreach immunization sessions. As a result, in the first half of 2017 in comparison to the first half of 2016 74% more children were reached with immunization and 60% more immunizations performed.

VPD surveillance

Georgia has conducted sentinel surveillance for rotavirus disease since 2006 as part of the WHO-coordinated Global Rotavirus Surveillance Network (GRSN). Rotavirus vaccine was added to the national immunization program in March 2013; it is scheduled to be given at 2 and 3 months of age.

In 2016, 1,171 children were enrolled in rotavirus surveillance with 140 (12%) testing rotavirus positive and the two most common genotype strains were G4P[8] and G1P[8]. In addition, the rotavirus national laboratory at NCDC passed the external quality assurance (EQA) program coordinated by the Global Reference Laboratory in Atlanta, GA, USA and the external quality control (EQC) program coordinated by the Regional Reference Laboratory in Minsk, Belarus. Rotavirus disease in Georgia occurs in a seasonal cycle with peak occurrence in winter months (December – April).

As part of a WHO-coordinated invasive bacterial vaccine-preventable diseases (IB-VPD) surveillance network (GISN) in the region, Georgia performs sentinel surveillance for IB-VPD (*Streptococcus pneumoniae*, *Neisseria meningitidis*, *Haemophilus influenzae*) since 2009. PCV10 was added to the national immunization program in November 2014; it is scheduled to be given at 2, 3, and 12 months of age. The decision to introduce PCV10 was made before a cost-effectiveness study by T. Komakhidze et al. was initiated; however, the study provided important economic evidence in support of the decision for

introduction (Source: <http://www.sciencedirect.com/science/article/pii/S0264410X14017253?via%3Dihub>).

At the 10th International Symposium on Pneumococci and Pneumococcal Diseases in June 2016, a poster entitled “Global Pediatric Bacterial Meningitis Disease: Data from 54 Countries Who Report to the Global Sentinel Site Invasive Bacterial Vaccine-Preventable Disease (IB-VPD) Surveillance Network” was presented pooled data for each WHO region including Europe. One of the key findings was that the highest prevalence of *Neisseria meningitidis* was in the European and African regions.

Based on the (IB-VPD) sentinel surveillance data in 2016, 90 cases of meningitis were investigated, of which 69 were suspicious and 21 were probable. Out of 21 probable cases 9 were confirmed:

- 5 cases were caused by *Streptococcus pneumoniae* (1 patient out of nine was vaccinated),
- 3 cases were caused by *Neisseria meningitidis*
- 1 case was caused by *Haemophilus influenzae*.

Also in 2016, both the hospital laboratory and the national laboratory at NCDC participated in and passed the external quality assurance (EQA) program coordinated by Public Health England, London (PHE). The national laboratory at NCDC participated in and passed the external quality control (EQC) program coordinated by PHE.

The sustainability of rotavirus and IB-VPD sentinel surveillance activities in Georgia after the Gavi support is over is uncertain, as they heavily depend on assistance from Gavi Alliance partners.

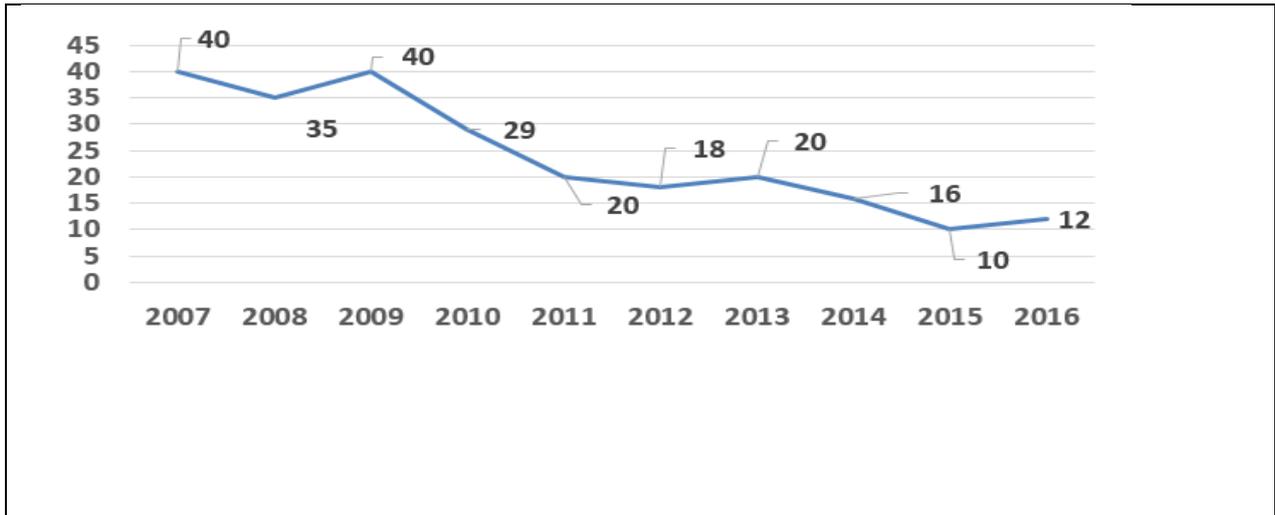
Sentinel surveillance for influenza became available by the end of 2016 funded by the government of Georgia and based on Individual study of lethal cases risk groups for vaccination were expanded.

Figure 7. Reported Vaccine-preventable Diseases 2011-2016, Georgia

VPD	2016	2015	2014	2013	2012	2011
Diphtheria	0	1	2	4	0	1
Measles	14	431	3,188	7,872	31	64
Mumps	46	50	55	52	50	44
Pertussis	120	176	94	115	346	33
Polio	0	0	0	0	0	0
Rubella	11	100	149	224	75	64
Tetanus (neonatal)	0	0	0	0	0	0
Tetanus (total)	5	0	7	2	6	5

Since countrywide introduction of Rotavirus vaccination, RV Diarrhoea cases declined, among investigated ones. In 2013, portion of diarrhoea’s caused by RV was 20%, in 2014 – 16%, 2015 – 10%, 2016 – 12%.

Figure 8. Spread of Rotavirus %, Sentinel Sites, Georgia



3.2. Key drivers of low coverage/equity

The major challenges Georgia is facing in terms of achieving higher coverage rates and ensuring the universal coverage and equal access to the services, which were corroborated by the recent KAP as well as nationwide coverage surveys (reports are available in English):

- The majority of health service providers, including at primary health care level, are private providers and there is limited regulation in place allowing MoLHSA to monitor their performance. This creates barriers to the overall system management and quality/efficiency control of the services provided. The relevant regulatory bodies are currently working to improve the regulations.
- Quality of denominator data remains an issue in Georgia (with the denominator used by health facilities being considerably lower than the number of live births, which suggests that some infants are not being registered and vaccinated in health facilities).
- Lack of consistent use of routine Immunization data (coverage data, timeliness, reasons for not being vaccinated and characteristics of un/under vaccinated) for better program planning at all levels.
- Lack of systemic approaches and incentives for increasing/maintaining immunization performance among service providers; Lack of self-confident, trained/skilled professionals for health promotion (at all levels).
- Lack of activities at the Primary Health care providers level to tailor immunization program according to the needs of un/under vaccinated, build up the trust of parents in state-procured vaccines, improve communication between healthcare providers and Public Health centers, improve compliance with the regulations by the healthcare providers, provide more training on immunization and supportive supervision (to reduce delayed vaccinations, false contraindications, missed opportunities, misperceptions, inadequate communications).

Drop-out rates greater than 10% for DTPcV was reported by 7% of districts in 2016 and the rest were in accordance with the UNICEF and WHO-suggested targets, except PCV with 19% dropout rate.

Figure 9. Immunization drop-out rates (%), Georgia, 2012-2016

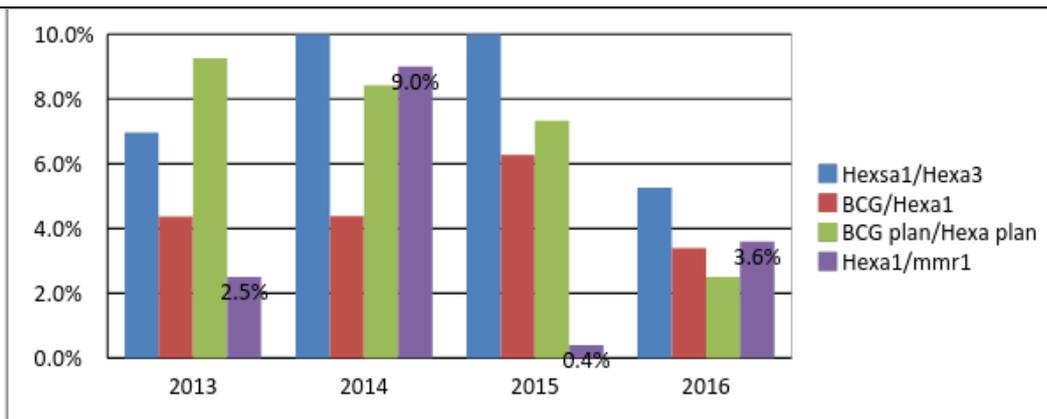


Figure 10. Wastage Rates, Georgia, 2014-2016



Figure 11. Number of Health Workers by Regions in Georgia, 2016, Georgia

Region	Doctor	Nurse
Tbilisi	390	105
Imereti	197	227
Kakheti	209	221
Kvemo Kartli	165	179
Samegrelo and Zemo Svaneti	167	188
Samtskhe-Javakheti	84	142
Mtskheta-Mtianeti	52	65
Shida-Kartli	94	102
Guria	75	83
Racha-Lechkhumi and Kvemo Svaneti	62	130
Ajara	218	110
Total	1,713	1,552

The immunization coverage survey revealed geographic variations in immunization coverage and certain weaknesses with various aspects of immunization process – initiating vaccinations, completing the recommended series, and vaccinating on time. These weaknesses lead to suboptimal coverage for some

vaccine doses, particularly the ones recommended after the 1st year of life, and prevent the country from consistently achieving the national immunization targets.

The overall national target of >95% for all vaccine doses is very high and difficult to achieve without well-defined strategy. Establishing interim milestones for coverage levels with clear timeframe for their achievement would help to better monitor the progress and help achieve the target. Setting coverage milestones would be particularly helpful in underperforming areas and for later vaccine doses with coverage far below the target. Generally, the highest coverage and best adherence to the recommended time of vaccination was observed for the first doses of routine vaccines recommended at 2 months of age, but both coverage and timeliness declined with each consecutive dose.

The very high (>95%) proportion of children who received at least one vaccine dose recommended at >2 months of age in most groups demonstrates that the vast majority of children in Georgia access immunization system at some point in time. However, there was a considerable problem in Kutaisi where 13%, or approximately 1 in 8 children, in 2014 cohort had not begun routine immunizations by the time of the survey.

Substantial dropout between the 1st and 3rd doses of Penta/DTP, particularly in Tbilisi and Kutaisi, confirms that many children in Georgia fail to complete the primary series. In addition, many children who completed the primary series, did not receive the 4th and 5th doses recommended at 18 months and 5 years. Similar trends were observed for MMR, polio, and rotavirus vaccines. There is a need for improvement in the timeliness of vaccination throughout the country.

3.3. Data

Gavi's data quality requirements

- Georgia has not conducted a data quality desk review in recent years.
- Currently, there is no data quality improvement plan.
- Georgia continues to experience challenges with denominator setting and inaccurate population estimates, leading to imprecise estimation of coverage (e.g. administrative data reported above 100% PCV 1 coverage).
- Electronic birth registries have been introduced in Georgia. The country is working on linking these with the Immunization management module (registry).
- Evaluation of the Immunization management module (IMM³) is planned for 2017 to assess the accuracy, timeliness and completeness of the information and outline the strengths and weaknesses of the module's analytical capacity. Identify the challenges for healthcare staff.
- Full implementation of the module will help to address the denominator problem for the immunization program, as it will allow identification and tracking of unvaccinated children. Once fully in place and functioning, the module can be used as a means of obtaining reliable information on immunization coverage, at all levels, thus eliminating the need for expensive coverage surveys to validate the administrative data currently provided by the GEOVAC system.

Gavi's survey requirement

A nationwide immunisation coverage survey was conducted during 2015-2016 and covered all vaccines included in the routine immunization schedule through 5 years of age. In addition, the survey aimed to assess timeliness of immunization by vaccine dose in Georgia. The survey was also designed to allow obtaining separate estimates for three largest cities of Georgia (Tbilisi, Batumi and Kutaisi). The areas currently not under Georgian Government control (South Ossetia and Autonomous Republic of Abkhazia)

³The Immunization Management Module is one of the HMIS system modules; a comprehensive immunization management system developed to ensure smooth implementation of the State Immunization program. It functions as the National Immunization Registry of Georgia - allows creation of vaccination profiles, tracks vaccinations administered to beneficiaries, both, ongoing and historical. Also, the system allows to record potential complications and adverse reactions to vaccinations, incorporates vaccination guidelines for service providers and can give real-time information on coverage. The system is built around the citizen's national ID number that enables patients to receive vaccination services at any facility countrywide, as the service provider has instant access to the vaccination history of the beneficiary using the patients national ID and enables monitoring of migration of beneficiaries.

were excluded due to lack of population data, inaccessibility and security concerns. More details on the methodology are attached as Annex B to this report.

3.4. Role and engagement of different stakeholders in the immunisation system

Georgia has developed a strong partnership framework for immunisation with government, parliament private sector and technical partners working closely together. Within the government there is multi-sectorial approach and accountability for health care through the Health in all Policies approach which is set as a priority for 2014-2020. This is also reflected in the governance model that oversees the National Centre for Disease control, which Board consists of the Ministries of Labour, Health and Social Affairs, Ministry of Finance, Ministry of Agriculture, Ministry of Education, Ministry of Defence and Ministry of Economy and Statistics.

An Immunisation Coordination Council (ICC) was established in 2000 to strengthen oversight over the National Immunisation Programme and decision making process and since 2014 there is an independent National Immunisation Technical Advisory Group (NITAG), supported through the transition grants. NRA is also functional in the country. Georgia's health care sector has benefitted from funding and technical assistance from a number of partners, including the US government, the World Bank, the Global Fund to fight Aids, Tuberculosis and Malaria, NGOs and various universities and research centres. External support for the health sector is currently phasing out and the government has already taken over most of the costs related to prevention and treatment.

MoLHSA is still depended on and benefitting from technical assistance through the Gavi supported transition grants and Targeted Country Assistance under the Partnership Engagement Framework until 2018 as well as catalytic support for an HPV demonstration program; support for operational costs for HIV and TB through Global Fund grants until 2020, and operational and research support, in particular from the US government, for surveillance and biological security through the R. Lugar Center for Public Health Research.

Immunization program is implemented through decentralized arrangements by primary health care providers, maternity facilities, municipal public health centres (established by the local governments and financed from three different sources: local municipalities, central budget transfers and contracts from the NCDC), NCDC and Social Service Agency (SSA) under the stewardship of the MoLHSA.

Municipal public health centres ensure vaccine storage and logistics at sub national level, disease surveillance, outbreak investigations, planning of control measures and monitoring of immunization activities, as well as sub-national level immunization information system management, collection and transfer of health statistical reports including immunization reports.

The SSA is responsible for contracting health care providers and purchasing immunization services along with other primary care services. The NCDC is responsible for overseeing of immunization program implementation, program performance monitoring and evaluation, routine data analyses, monitoring of adverse effects following immunization, central level logistics (functionality of the central vaccine warehouse and distribution of vaccines to the regional level).

Health care providers at primary level and maternity facilities provide immunization services, identify target population and provide routinely primary data on immunization activities. The immunization program services are provided by private individual entrepreneurs – PIE and village doctors in rural areas, and maternity hospitals for BCG and Hepatitis B birth dose.

4. PERFORMANCE OF GAVI GRANTS IN THE REPORTING PERIOD

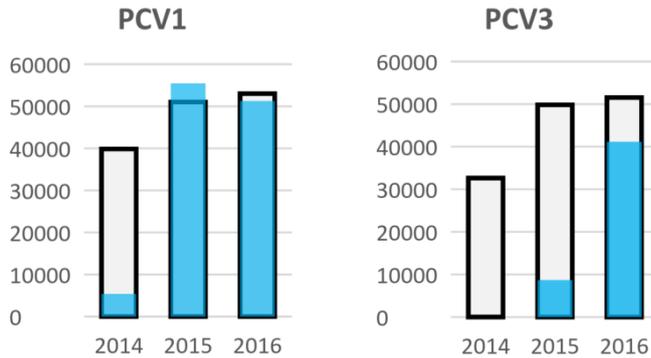
4.1. Programmatic performance (PCV)

During 2016, Georgia has not received any cash support from GAVI for PCV (PCV introduction grant was utilized in 2013-2015).

The difference in the PCV coverage rates (PCV1 – 94% and PCV3 – 75%) have age related explanation - the third dose is given at the age of 12 months, and not all children timely receive the last dose.

Addressing the issues with timely vaccination is one of the main priorities of the NIP, and it is expected that targeted interventions will also reduce the dropout rate between first and third doses of PCV.

Figure 14. PCV drop-out



The PCV support for Georgia will end in 2017.

Based on previous discussions, Georgia’s understanding is that the PCV and Rota vaccines will be available through the UNICEF Supply Division and the country can procure PCV and Rota vaccines at Gavi prices for the next 10 years.

The country was consulted about a potential interest in switching to PCV13 presentation, but chose to maintain the current vaccine formulation, until at least full graduation from Gavi support. It is important to highlight that one of prerequisites to switch from PCV10 to PCV13 is maintaining the GAVI prices for PCV13 after graduation.

4.2. Financial management performance (Transition Grant)

Figure 15. Partner budget breakdown, 2016-2017 Transition grants, US\$

	Activities	PSC	Total
WHO	499,517	34,966	534,483
UNICEF	97,000	7,760	104,760
Total	596,517	42,726	639,243

UNICEF

As of December 2016, UNICEF expended 58% of the total funding allocated to UNICEF (US\$ 104,760). It is expected that UNICEF will absorb 100% of funding by the end of the grant, i.e. December 2017.

WHO

As of December 2016, WHO expended 30% of the total funding allocated to WHO (US\$ 534,483). The implementation of outstanding activities will be closely monitored and in September 2017, a no-cost extension may be requested.

Reporting on utilization of transition grants by partners was provided the Gavi Secretariat in compliance with financial reporting and audit requirements.

NCDC

Cash balance remaining from the HSS grant (which ended in 2011) amounts to US\$ 124,500. These funds are held at the National Treasury account and are earmarked specifically for the NIP and held in separate NCDC&PH bank accounts. These funds have been approved for use in the context of the Transition Grant and have been made available to the NIP for implementation of the transition activities (mostly surveillance and health worker trainings and SSA).

According to the 2016 financial statement, NCDC expended US\$ 45,736 and the remaining balance of US\$ 78,624 is planned to be absorbed in 2017.

Reporting on utilization of transition grants:

1. NCDC sends an annual report (including financial) about ongoing grants to the MoHLSA according to the government regulations.
2. Reporting on utilization of transition grants was provided in May 2017, in compliance with requirements GAVI.
3. 2016 financial statements have been submitted through the country portal as per Gavi requirements.
4. The most recent annual financial statement was conducted by the Audit Department at MoHLSA for the period September – October 2016.

No FMA has been conducted in Georgia during the years of Gavi support. There were also no audits of previously disbursed cash grants due to their amounts being below the established threshold.

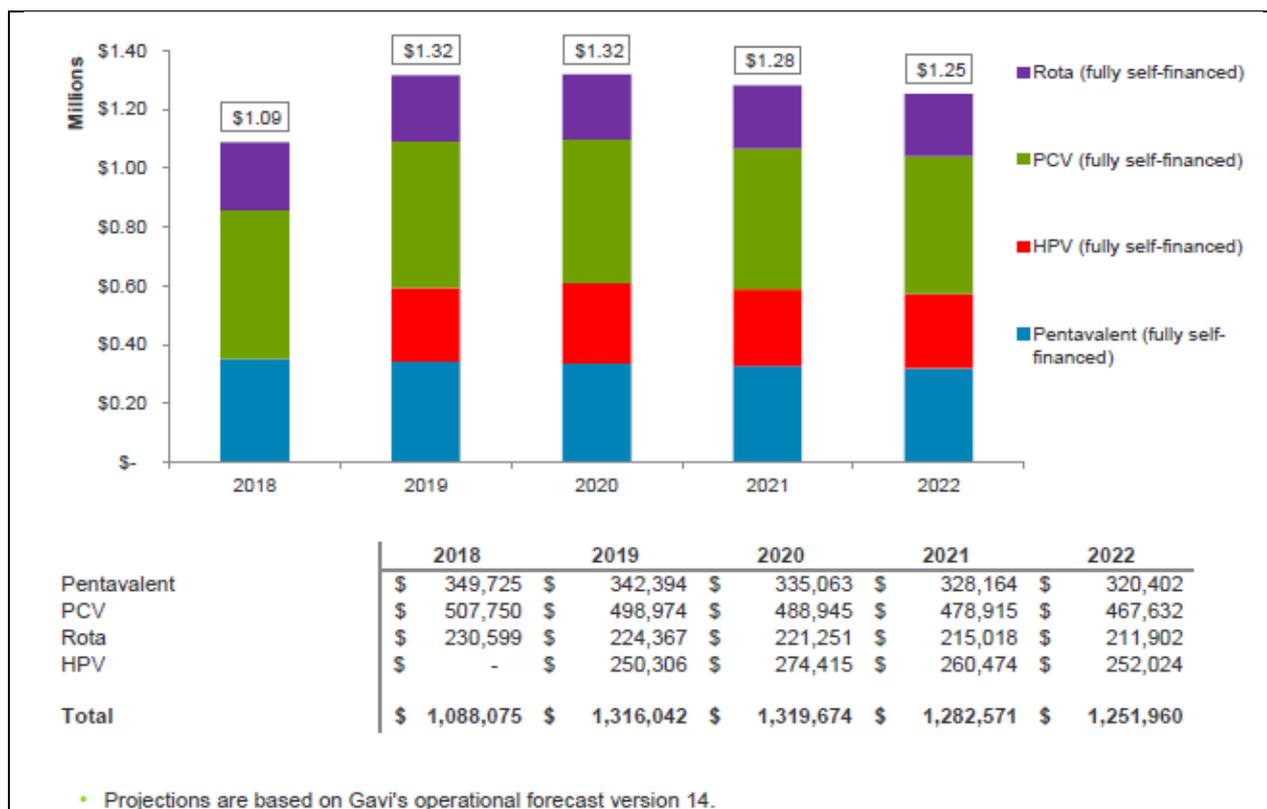
4.3. Sustainability and transition

The most recent evolution of NIP financing is described in detail under section 2.

Gavi support to Georgia will cease in 2018 following country’s transition to self-financing. Georgia demonstrated strong political commitment for immunization and country ownership over the program by significantly increasing spending on immunisation. Country consistently and timely fulfilled its co-financing requirements. Since 2016, Georgia is fully self-financing pentavalent and rotavirus. The government tripled its immunisation budget between 2012 and 2015, including investments in the cold chain system and strengthening of vaccine management.

The total cost of Gavi-supported programs to Georgia in the next five years is projected at approximately \$1,25 mln per year (Figure 16). Introduction of HPV vaccine will have cost implications for the vaccine budget and result in a 21% increase of total budget requirements from 2018 to 2019.

Figure 16. Projection of government expenditures on previously co-financed routine vaccines 2018-2022



Some of the key challenges related to sustainability of the results of the Georgian programme are related to: sustainable strategy for human resources in health (aging health workforce; low motivation of new doctors; lack of immunization-related education in medical universities); lack of specific budget allocation for operational activities aimed at maintaining coverage (training, surveillance, monitoring, supervision, cold chain maintenance); sub-optimal structure of health service providers (majority are private) and need for regulatory work to strengthen the system for improved cost-efficiency and services quality control.

An important long-term challenge for Georgia is the independent region of Abkhazia where coverage rates are the lowest and anti-vaccine sentiment is an increasing concern. Even though Georgia supplies Abkhazia with vaccines, there is no equipment nor capacity-building support that the Georgian authorities can provide to the region. UNICEF is main international organization working in Abkhazia in the field of immunization through Gavi support and it may not be able to maintain staff in the region due to lack of funding, following exit by Gavi. This situation could pose a risk of potential disease outbreaks in the region.

Country is still benefitting from Gavi support through transition grants and Targeted Country Assistance under the Partnership Engagement Framework. Transition grant currently supports surveillance, supervision and strengthening of the National Immunisation Technical Advisory Group (NITAG), however these activities will require additional funding from state budget once Georgia will move to full self-financing in 2018. Government feels that external expertise will continue to be required for the next years: access to the pool of knowledge and peer-learning would enable Georgia to further scale up its capacities in advocacy and resource mobilisation for immunisation.

Main areas of work for 2016-2017 in the frame of the Transition Grants:

1. Support NIP in evidence-based decision making and strengthening the NITAG through capacity building activities.
2. Improve communication and advocacy (including advocacy for resource mobilization).
3. Strengthen vaccine management and immunization logistics.
4. Vaccine procurement.
5. Improve program performance and data quality.
6. Strengthen pharmacovigilance function (AEFI surveillance system) of the National Regulatory Authority.

Progress Update – Transition Grants

UNICEF

During the reporting period (January – December 2016), UNICEF implemented the following activities as per the transition grant:

- ✓ Conducted research into knowledge, attitudes and practice (KAP) among public and health care workers;
- ✓ Developed a communication and advocacy strategy and detailed action plan;
- ✓ Developed a crisis communication strategy;
- ✓ Provided technical assistance for national vaccine procurement assessment and development of improvement action plan;
- ✓ Conducted capacity building workshop for national level immunization, procurement and financing focal persons.

The following remaining activities will be completed by UNICEF in 2017:

- Train health care workers on IPC in immunization to tackle with vaccine hesitancy and resistance;
- Train media.

WHO

During the reporting period (January – December 2016), WHO implemented the following activities as per the transition grant:

- ✓ Evidence-based decision making support to the NIP and strengthening the NITAG (note: Activities were funded using TCA and transition grant funding):
 - WHO EURO arranged a visit of UNK NITAG (JCVI) to Georgia NITAG to provide feedback on GEO NITAG meetings and recommendations on improvement of GEO NITAG composition and functioning.
- ✓ Rotavirus and invasive bacterial vaccine-preventable diseases sentinel surveillance (note: Activities were funded using TCA and transition grant funding).
- ✓ WHO provided support in conducting of rotavirus and invasive bacterial disease surveillance. Details of the support provided by WHO EURO are in Section 4.4.
- ✓ The National Centre for Disease Control and Public Health of Georgia (NCDC) were contracted for implementation of sentinel surveillance activities on rotaviruses and IBDs. Both the rotavirus laboratory and the IB-VPD laboratory at NCDC passed the external quality assurance program and the external quality control program.
- ✓ Surveillance results are reported to the WHO Regional Office on monthly basis.
- ✓ Regional training of new direct RT-PCR method which does not require DNA extraction was conducted in Georgia during 24-28 April, 2017 and a representative from Georgia attended. (Details of this hands-on workshop are in Section 4.4).
- ✓ Strengthen vaccine management and immunization logistics (note: Activities were funded using TCA and transition grant funding).
- ✓ Technical support provided to the National Cold Store to strengthening temperature monitoring system in vaccine cold chain at critical levels: computerized web-based temperature monitoring systems were installed at the national vaccine cold store in Tbilisi and at four sub-national vaccine stores (Tbilisi city, Batumi, Kutaisi and Rustavi).

- ✓ Technical support was provided in development of integrated national regulations on storage of vaccines and pharmaceutical requiring cold chain, including development /adaptation of vaccine management SOPs.
- ✓ Three country representatives participated at WHO Sub-regional Integrated Workshop on AEFI Surveillance, Causality Assessment and Communications, 21-25 November, Budva-Montenegro. The workshop: aimed to familiarize and orient national immunization programme and national regulatory authority staff from 15 Member States to AEFI surveillance system that WHO defines and sets the standards for; encouraged participants to think about weaknesses and challenges of their systems and; motivated them to outline a country action plan that addresses the identified challenges in order to strengthen their AEFI surveillance systems, including causality assessment and communication response to vaccine safety events functions.
- ✓ Programme performance and data quality (note: Activities were funded using TCA and transition grant funding).
- ✓ Due to the lack of independent validation of the coverage data in Georgia and ongoing uncertainty with target populations, a nationwide immunization coverage survey was conducted to assess coverage with vaccines included in the routine immunization schedule through 5 years of age.
- ✓ The objectives of the survey was: obtaining nationwide estimates of coverage for all major vaccines by dose given in 2014 in accordance with currently used immunization schedule; obtaining separate estimates of immunization coverage for three largest cities: Tbilisi, Kutaisi, and Batumi, and for the rest of Georgia; retrospectively validating reported immunization coverage in Georgia for the years when children vaccinated in 2014 received their earlier doses; assessing the timeliness of immunization by vaccine dose in Georgia.
- ✓ Preparatory training for the survey was held on September 27, 2016 at the National center for Disease Control and Public Health and was attended by 21 survey interviewers and 25 District coordinators recruited for the survey. The training was followed by the field work, data collection and analysis. The final report is under the development with US CDC colleagues.
- ✓ Strengthening pharmacovigilance function (AEFI surveillance system) of the National Regulatory Authority (note: Activities were funded using TCA and transition grant funding).
- ✓ WHO provided support with strengthening AEFI surveillance system (pharmacovigilance function) and strengthening functions of the National Regulatory Authority?
- ✓ The workshop “NRA Strategic Plan: Short-Term, Medium-Term & Long-Term Planning” conducted in Tbilisi, Georgia during 28 – 30 November 2016 to develop the long term and short term of the strategic planning in order to develop and strengthening the NRA.
- ✓ Another national workshop on marketing authorization process was conducted for the Georgian NRA -“Marketing authorization and licensing of medicinal products (vaccines)” in country workshop; Tbilisi, Georgia - 14 – 18 November 2016 for all the NRA officers responsible for the marketing authorization of the vaccines in the Georgian NRA.

NCDC

Completed activities:

- ✓ Improve immunization coverage among low performing areas/population group through trainings.
- ✓ 225 trainings on practical immunization topics and the “National immunization schedule and immunization management” (decree #-01-57/n 19.11.2015) were conducted in every district for epidemiologists, physicians and nurses (2 970 specialist were trained).
- ✓ Capacity building activities, Cold Chain trainings for Public Health specialists.
- ✓ District level trainings in 18 districts were conducted, 456 specialists were trained.
- ✓ Knowledge, Attitudes and Practices study (KAP) among public and health care workers.
- ✓ Develop a communication and crisis communication strategies.
- ✓ Coverage survey.

WHO, CDC – Nationwide Coverage survey

In progress (NCDC)

- Conduct supportive supervision on primary health care level. To sustain strengthening immunization surveillance system.
- Conducting rotavirus surveillance to monitor impact of rotavirus vaccine (See Section 4.4 for details of assistance provided by WHO EURO).
- Conducting invasive bacterial disease surveillance to monitor impact of PCV (See Section 4.4 for details of assistance provided by WHO EURO).
- Strengthening the NITAG through capacity building activities.
- Cold Chain Equipment needs.
- Developing /adapting vaccine management SOPs.

Implementation bottlenecks and corrective actions

No major bottlenecks. A slight delay in the implementation of KAP survey due to the Parliamentary elections, however, UNICEF accomplished the process in a quality and timely manner.

Decision letter on the Gavi support for transition plan was received on November 19, 2015 and accordingly TG activities started late and as a result the country (with partners) did not have the opportunity to implement all planned activities timely. Depending on the progress review in September 2017, the country may request a no-cost extension till the end of 2018.

4.4. Technical Assistance (TA)

WHO

During the reporting period (January – December 2016), WHO implemented the following activities as per the planning under PEF TCA 2016:

- AEFI surveillance
- Supply chain
- Decision making and preparedness for introduction of HPV vaccine:
 - NIP Manager and the Chair of NITAG from Georgia attended WHO regional meeting on HPV vaccine introduction was held on 16-17 March 2016. The meeting provided an opportunity to present and discuss data necessary for making NITAG recommendations on introduction of HPV vaccine as well as discuss the country plans to apply for GAVI support.
 - WHO EURO sent a letter to the Minister of Health of Georgia to advocate for making informed decision on introduction of HPV vaccine in the context of an opportunity to receive GAVI support.
 - WHO EURO in collaboration with WHO CO supported NCDC in conducting a national conference on HPV diseases and vaccines for leading clinicians and medical academia to ensure medical society support to HPV vaccine introduction. The conference was held on 1 July 2016 in Tbilisi, Georgia. The WHO EURO Technical Officer attended the conference and made a presentation on HPV diseases, vaccines and other countries experience with HPV introduction.
 - WHO EURO provided technical support to Georgia in development of proposal to GAVI for the support in implementation of HPV vaccine demonstration project. The consultancy mission was carried out on 1-3 August 2016. The development of the proposal included definition of HPV vaccine delivery system, preliminary estimate of HPV vaccination cost, and outlining communication and social mobilisation strategy.
 - Georgian NIP representatives participated in Regional Meeting on Preparedness for introduction of HPV vaccine was held on 14-16 March 2017 in Minsk, Belarus.
- NITAG strengthening:
 - The Chair and the Secretary of NITAG participated in ETAGE meeting was held on 12-13 October 2016.
 - The NITAG evaluation was conducted and the evaluation results and future steps in improvement of NITAG performance were discussed at WHO Regional NITAG Meeting was held on 14 October 2016.
- Reducing missed opportunities to vaccinate infants due to false contraindications:
 - VPI provided support to the MoH in conducting training for health care professionals and medical academia on vaccine safety and contraindications. The training was held on 30 November - 1 December 2016.
- Rotavirus and Invasive Bacterial Vaccine-preventable Disease (IB-VPD) Sentinel Surveillance (note: sentinel surveillance activities were funded using TCA and transition grant funding).

Rotavirus Surveillance

- WHO EURO continued to provide technical assistance for rotavirus surveillance, procured the WHO recommended enzyme immunoassay (EIA) kits to detect the rotavirus antigen, began initial planning with WHO Country Office for an in-country rotavirus genotyping training led by the Global Reference Laboratory with assistance from the Regional Reference Laboratory, and provided logistics assistance for the external quality assurance (EQA) and external quality control (EQC)

programs. In 2016, the rotavirus national laboratory passed both the EQA program overseen by the Global Reference Laboratory at CDC, Atlanta and EQC program overseen by the Regional Reference Laboratory in Minsk, Belarus.

- WHO EURO met with epidemiology and laboratory leads for rotavirus surveillance in April 2017 during the regional hands-on training workshop on the use of new, direct real-time PCR method for detection and molecular characterization of molecular agents. Sustainability of rotavirus surveillance was discussed. Requests for in-country rotavirus genotype training and provision of primers and probes necessary for genotyping were made during this meeting.
- WHO EURO created practicums on analysis and presentation of rotavirus surveillance data. Standard rotavirus surveillance outputs, general data analysis tips, and data cleaning and validation rules were presented at the regional rotavirus surveillance meeting. Specific analysis topics included filtering data, creating analysis variables, and generating summaries using pivot tables. Participants practiced producing the standard outputs using case-based rotavirus surveillance data.
- WHO EURO coordinated the regional rotavirus surveillance meeting in June 2017. Country-level, regional, and global updates on Global Rotavirus Surveillance Network (GRSN) activities and updates on epidemiology and laboratory topics were presented. Countries engaged in discussions about sustainability of rotavirus surveillance. Participants from each country participated in the workshop on rotavirus surveillance data analysis and presentation techniques.

IB-VPD Surveillance

- WHO EURO provided technical assistance for IB-VPD surveillance, procured rapid diagnostic test kits (RDT) (i.e., Latex agglutination kits and Binax kits), and provided logistics assistance for the external quality assurance (EQA) and external quality control (EQC) programs. In 2016, the laboratory at the sentinel hospital and the national laboratory passed the EQA program overseen by the Public Health England, London (PHE). The IB-VPD national laboratory passed the EQC program overseen by PHE.
- WHO EURO met with epidemiology and laboratory leads for IB-VPD surveillance in April 2017 during the regional hands-on training workshop on the use of new, direct real-time PCR method for detection and molecular characterization of molecular agents. Sustainability of IB-VPD surveillance was discussed.
- WHO EURO coordinated a regional hands-on training workshop to improve capacities to detect the causes of bacterial meningitis. The workshop was on the use of new, direct real-time PCR method for detection and molecular characterization of molecular agents (*Streptococcus pneumoniae*, *Neisseria meningitidis*, *Haemophilus influenzae*); this method does not require DNA extraction. The workshop facilities were kindly provided by the R.G. Lugar Center for Public Health Research, National Center for Disease Control and Public Health of Georgia. A representation from the national laboratory in Georgia participated in the workshop conducted by staff from the Global Reference Laboratory in April 2017. This method has several advantages compared to conventional multiplex PCR, as it reduces the risk of contamination, requires a lower volume of CSF, saves processing time, and results in cost savings. (A detailed description of the workshop is provided at <http://www.euro.who.int/en/health-topics/disease-prevention/vaccines-and-immunization/news/news/2017/05/training-of-lab-experts-improves-capacities-to-detect-causes-of-meningitis> and at <http://www.who.int/immunization/gin/en/>).

5. UPDATE OF FINDINGS FROM PREVIOUS JOINT APPRAISAL

Prioritised actions from previous Joint Appraisal	Current status
1. Support for introduction of HPV vaccine (communication, advocacy, cost-effectiveness, KAPB study, building preparedness for vaccine safety events, demand generation, medical staff training, etc.)	<p>In progress</p> <ul style="list-style-type: none"> - GAVI Decision letter received May 17, 2017 - Vaccine implementation planned for November 2017 - KAPB performed in 2017 - Trainings planned for late 2017 - Currently preparing for the implementation and Government approval.
2. Training for health staff on immunization and supportive supervision (delayed vaccinations, false contraindications, vaccine safety, missed opportunities, misperceptions, inadequate communications)	<p>Completed</p> <p>225 trainings on practical immunization topics and the “National immunization schedule and immunization management” (decree #-01-57/n 19.11.2015) were held in every district for epidemiologists, physicians and nurses</p>
3. Continuing to address vaccine hesitancy and knowledge gaps among medical personnel; developing a concrete plan for addressing vaccine hesitancy, notably based on the finding of the coverage survey	<p>In progress</p> <p>The 2017-2021 National Communication Strategy for Immunization of MoLHSA in Georgia will aid reaching the NIP targets:</p> <ul style="list-style-type: none"> - Increase the confidence, demand and take up for childhood immunizations amongst parents of all children - Improve the quality of the health service delivery of childhood immunizations to all children - Reduce regional and district variations in immunization coverage rates - Reduce the potential for a measles outbreak
4. Further support for rotavirus and IB-VPD surveillance	<p>In progress</p> <p>Surveillance for rotavirus disease is ongoing. Stool specimens are being collected, demographic, clinical, and laboratory data are collected and shared with the Global Rotavirus Surveillance Network (GRSN) as requested.</p> <p>Surveillance for IB-VPD is ongoing. Cerebrospinal fluid (CSF) specimens are being collected, demographic, clinical, and laboratory data are collected and shared with the Global IB-VPD Surveillance Network (GISN) as requested.</p>
5. Addressing lower immunization rates in Abkhazia (through support to communication, communication, cold chain procurement, maintenance and repair, trainings to medical personnel, mobile outreach, trainings to medical personnel, mobile outreach)	<p>In progress</p> <p>Vaccines continue to be provided to Abkhazia (including the newly introduced hexavalent vaccine). UNICEF continues active implementation of capacity building and outreach work in Abkhazia. Further efforts are however needed for improved coverage, especially in remote areas.</p>
6. Support for NITAG and NRA strengthening (to be addressed through the Transition plan)	<p>In progress</p> <p>Strengthening of NITAG through participation of Georgian NITAG in ETAGE meeting and Regional WHO Meeting for NITAGs and evaluation of Georgian NITAG by members of UNK JCVI.</p>
7. Support for data quality assessment to identify data-related gaps and needs and address existing	<p>In progress</p>

challenges (including persistent denominator issue)	Evaluation and improvement of the Immunization management module (IMM)
8. Impact study for PCV vaccine	Cancelled GAVI did not provide funding for this activity
9. Training to medical personnel on using the electronic immunization registry	In progress It is planned that in 2017 the technical maintenance of some e-health system modules including the Immunization management module will be performed by the NCDC. Number of technical improvements, evaluation of IMM (US CDC), introduction of stock management module is planned as well as training of HCPs throughout the country.
10. Strengthening the country's self-procurement capacity in view of transitioning of Gavi support and self-procurement of some vaccines (e.g. hexavalent)	In progress With UNICEF support, the vaccine procurement assessment for Georgia was conducted in line with WHO's Generic Vaccine Procurement Assessment Tool during the period of 21- 26 November 2016 in consultation with all key stakeholders: (i) the National Regulatory Agency, (ii) the NCDC&PH, (iii) private vaccine supplier network, (iv) international and national organizations involved in immunization. UNICEF shared the preliminary findings and recommendations of the vaccine procurement assessment with partners for feedback and endorsement. The assessment report is already available.
11. Support for conducting an EVM Assessment	Cancelled for 2017/Moved to 2018 Considering that in the end of 2017, the NCDC will be moving to the new building and respectively the new central store will be available for NIP stocks, it was decided to conduct the next EVM in mid-2018.
12. Implementation of performance-based approaches in NIP planning and financing	In progress Waiting for IMM to be fully functional to ensure reliable indicators are available for implementation of PB approaches.
Additional significant IRC / HLRP recommendations (if applicable)	Current status
Not applicable for Georgia	

6. ACTION PLAN: SUMMARY OF FINDINGS, ACTIONS AND TECHNICAL ASSISTANCE NEEDS IDENTIFIED AND AGREED DURING THE JOINT APPRAISAL

Overview of key activities planned for 2018:

Key recommendations for 2018 based on JA Update discussions and review of country performance:

1. Data quality and analyses
 - Continue improving data quality and aligning data systems with international requirements by conducting a data quality review and implementing its recommendations. Work on improvement of IMM and SMM.
2. Coverage
 - Targeted interventions to improve coverage in Kutaisi and selected districts of the region found to be underperforming according to the coverage survey.

- Targeted intervention, including communication activities to increase the timely coverage for all antigens.
 - Continue addressing lower coverage in Abkhazia through designated technical assistance targeting communication, cold chain, support of outreach immunization sessions and medical personnel capacity building (through UNICEF).
 - Continue addressing vaccine hesitancy and refusals through use of qualitative research, and through development and implementation of communication strategies aiming at behaviour change;
 - Continue addressing medical workers' concerns about safety of new vaccines and immunization in general to ensure their ability to properly identify contraindications and reduce false contraindications
3. NITAG
- Continuous strengthening of NITAG
4. HPV
- Conduct necessary preparatory activities and analyses to ensure successful introduction of HPV vaccine and its acceptance by parents and medical personnel.
 - Evaluate implementation of Year 1 of HPV vaccine demonstration project and prepare report to GAVI
5. Update/develop SoPs for cold chain management based on WHO standard Sops and GDP
6. Continue strengthening resource mobilization capacities to maximize EPI program's ability to be self-sustainable following transition from Gavi support.

Key prioritized need 1	Support for introduction of HPV vaccine
Agreed country actions	<ul style="list-style-type: none"> - Conduct HPV demo project year 1 post-introduction evaluation (PIE) including evaluation of communication strategy as a part of HPV post-introduction evaluation - Conduct HPV vaccine coverage survey - Conduct HPV vaccine cost estimate - Assess joint delivery of adolescent health intervention - Develop HPV vaccine demonstration project year 1 report - Implement preparatory activities for year 2 HPV vaccine demonstration project - Build NIP capacity to respond to HPV vaccine AEFI
Associated timeline	Q1- Q3 2018
Technical assistance needs	Need for technical assistance from partners to implement preparatory activities and evaluate implementation of year 1 HPV vaccine demonstration project
Key prioritized need 2	NITAG - Continuing support in building capacity of NITAG to make evidence-based recommendations on immunization
Agreed country actions	Strengthening the NITAG through capacity building activities (participation in regional meetings on immunization, regional trainings for NITAGs, ETAGE and SAGE meetings, and continuing collaboration with UNK NITAG)
Associated timeline	2018

Technical assistance needs	Yes
Key prioritized need 3	Improving data quality through further strengthening of Immunization Information System (IMM and SMM)
Agreed country actions	Data cross checks. Ongoing technical assistance for the Immunization module and future updates: <ul style="list-style-type: none"> - Solve existing issues and problems identified through evaluation (planned Q3 2017, USCDC) - Development of Dynamic Analytical Instruments (Visualizations) - Preparation Manuals & Video Tutorials - Stock management module: modification, automation of real-time deduction of stocks, connecting with IMM; developing inventory page - Introduction of SMS Engine (Reminders, Notifications. Interface should have possibility to be managed by NCDC Immunization Team) - Development of parent/beneficiary page (Web Page & Application) - Mobile Immunization Application for Data entry
Associated timeline	3Q - Q1 2018
Technical assistance needs	Yes (funds budgeted for EVM 2017 to be considered)
Key prioritized need 4	Immunization Information System (IMM and SMM) rollout to end users and Training of HCW providing immunization services
Agreed country actions	<ul style="list-style-type: none"> - Piloting of different functions of updated immunization module (parents page, stocks deduction and etc.) - Ongoing trainings and Manuals updates
Associated timeline	Q2 - Q3 2018
Technical assistance needs	Yes
Key prioritized need 5	Supply Chain
Agreed country actions	<ul style="list-style-type: none"> - Support for conducting an EVM Assessment (the NCDC will be moving to the new building by the end of 2017, and respectively the new central store will be available for NIP stocks) - TA to adopting Guidance and tools to support VM supervision programmes - TA to support implementation of the EVM improvement plan actions (the assessment will be implemented early 2018 using TCA-2017 funds)
Associated timeline	Q3 or Q4 2018
Technical assistance needs	Yes
Key prioritized need 6	Surveillance

Agreed country actions	<p>AEFIs</p> <ul style="list-style-type: none"> - Assessment of the national AEFI surveillance system - TA to develop national AEFI surveillance guideline - TA to establishing national AEFI causality assessment committees - TA to establishing national AEFI databases - AEFI training: data analyses <p>Rotavirus and IB-VPD sentinel surveillance support</p> <ul style="list-style-type: none"> - Ensure continuous and sustainable disease surveillance for rotavirus and IB-VPD - For rotavirus surveillance, need for financial support for diagnostic kits and laboratory supplies, transportation of stool specimens to NCDC, customs clearance for the panels for the external quality assurance program, and shipment of samples to Regional Reference Laboratory in Minsk, Belarus for the external quality control program. - For IB-VPD surveillance, need for financial support for rapid diagnostic kits and laboratory supplies, primers and probes for serotyping and serogrouping, transportation of cerebrospinal fluid specimens to NCDC, customs clearance for the panels for the external quality assurance program, and shipment of samples to Public Health England, London (PHE) for the external quality control program. - TA for rotavirus and IB-VPD surveillance activities
Associated timeline	2018
Technical assistance needs	Yes
Key prioritized need 7	Continue addressing vaccine hesitancy and knowledge gaps among HCWs
Agreed country actions	Develop/Implement district/region specific action plan based on the findings from the coverage and KAP surveys
Associated timeline	2018
Technical assistance needs	Yes
Key prioritized need 8	National Communication Strategy 2017-2021
Agreed country actions	Activities planned according to the recommendations of the national communication strategic action plan.
Associated timeline	2018
Technical assistance needs	yes

Key prioritized need 9	Abkhazia-specific needs to strengthen immunization programme and improve coverage
Agreed country actions	<ul style="list-style-type: none"> - EPI review - Immunization coverage survey - Cold chain assessment and strengthening - Capacity building of immunization programme management - Support to immunization registry, capacity building of relevant local medical staff on immunization data entry and analysis - Conduct research on knowledge, attitudes and practices on immunization among public and health care workers - Development and implementation of immunization promotion strategy - Support to capacity building of healthcare workers on immunization with the special focus on immunization hesitancy, delays and false contraindications - Support to outreach sessions in the rural remote settlements and hard-to-reach communities - Technical advice, overall coordination of implementation and monitoring of immunization program in Abkhazia, ensuring sustainability of immunization programme, leadership in and ownership of immunization by of government in Abkhazia on a medium-term perspective
Associated timeline	2018
Technical assistance needs	Yes
Key prioritized need 10	Regulatory mechanisms/legislation
Agreed country actions	<p>Develop systemic approaches and strengthen regulatory/legislative mechanisms to improve immunization service delivery and vaccine uptake:</p> <ul style="list-style-type: none"> - strengthen public private partnership and introduce performance based approaches of immunization service delivery; - support institutionalization of effective collaboration of key stakeholders for improved immunization coverage.
Associated timeline	2017 Q3-Q4
Technical assistance needs	Yes (in collaboration with Sabin)

7. JOINT APPRAISAL PROCESS, ENDORSEMENT BY THE NATIONAL COORDINATION FORUM (ICC, HSCC OR EQUIVALENT) AND ADDITIONAL COMMENTS

8. ANNEX A

Compliance with Gavi reporting requirements

	Yes	No	Not applicable
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Grant Performance Framework (GPF) reporting against all due indicators	x		
Financial Reports			
Periodic financial reports			n/a
Annual financial statement	x		
Annual financial audit report			n/a
End of year stock level report	x		
Campaign reports			n/a
Immunisation financing and expenditure information	x		
Data quality and survey reporting			
Annual desk review		x	
Data quality improvement plan (DQIP)		x	
If yes to DQIP, reporting on progress against it		x	
In-depth data assessment (conducted in the last five years)		x	
Nationally representative coverage survey (conducted in the last five years)	Final survey report not yet available; will be shared with Gavi once finalized		
Annual progress update on the Effective Vaccine Management (EVM) improvement plan			n/a
Post Introduction Evaluation (PIE)			n/a
Measles-rubella 5 year plan			n/a
Operational plan for the immunisation program			
HSS end of grant evaluation report			n/a
HPV specific reports			n/a
Transition Plan	x		

National coverage survey (conducted in the last five years) will be finalised in 2017.

9. Annex B

Immunization Coverage Survey

Although immunization services in Georgia have improved in the last decade, major challenges remain, as demonstrated by continued occurrence of outbreaks of vaccine-preventable diseases (VPD), such as measles and rubella. As the administrative coverage data have not been validated for over a decade (Multiple Indicator Cluster Survey implemented in Georgia in 1999), and due to the lack of independent validation of the coverage data and ongoing uncertainty with target populations, nationwide immunization coverage survey was conducted during 2015-2016 to assess coverage with vaccines included in the routine immunization schedule through 5 years of age.

In 2015, at the time of planning of the present survey, the national immunization schedule included vaccinations against 12 infections: tuberculosis, diphtheria, tetanus, pertussis, hepatitis B, Haemophilus influenzae type b (Hib), measles, mumps, rubella, poliomyelitis, rotavirus, and pneumococcal infection (Table 2). The schedule also underwent changes to accommodate new vaccines (rotavirus, PCV) and new combination products, such as hexavalent vaccine containing diphtheria, tetanus, acellular pertussis, Hib, hepatitis B and inactivated polio vaccine (IPV) components (Hexa)⁴.

The objectives of the survey were:

- To obtain nationwide estimates of immunization coverage for vaccines included in the national immunization schedule through 5 years of age;
- To obtain estimates of immunization coverage for vaccines included in the national immunization schedule through 5 years of age for major cities (Tbilisi, Batumi, and Kutaisi);
- To assess timeliness of immunization by vaccine dose in Georgia.

The survey was designed to allow obtaining separate estimates for three largest cities of Georgia. Therefore, the three largest cities of Georgia – Tbilisi (population in 2015 - 1,100,000), Batumi (154,000), and Kutaisi (148,000), which together account for 38% of total population of the country⁵, and rest of Georgia were surveyed separately and nationwide estimates were obtained by pooling the data from these surveys. The areas currently not under Georgian Government control (South Ossetia and Autonomous Republic of Abkhazia) were excluded due to lack of population data, inaccessibility and security concerns.

Children eligible for routine immunizations in 2014, the most recent year with available coverage data at the time of planning and initiation of the survey were included in the survey, three birth cohorts:

- Children born in 2014, eligible to receive in 2014 vaccines recommended during the 1st year of life;
- Children born in 2013, eligible to receive in 2014 vaccines recommended during the 2nd year of life;
- Children born in 2009, eligible to receive in 2014 vaccines recommended during the 6th year of life.

Immunization coverage with age-appropriate vaccines for each birth cohort was estimated based on the national immunization schedule applicable to each one. The differences applicable between schedules are related to introduction of new vaccines during this period. Due to the very recent introductions, coverage for PCV for 2014 birth cohort and for Hib vaccine for 2009 birth cohort were not assessed.

Conducting a household survey for the purpose of coverage assessment in three age strata was not practicable because of the small average household size and small birth cohort in Georgia. The existence of the Civil Registry data base linked to the Immunization Management Module provided opportunity to conduct the survey targeting individual children rather than the households. Information on immunizations

was obtained from HCFs where they receive immunization services, in accordance with recently revised WHO guidance on conducting immunization coverage surveys⁶.

Design and sample size: A complex stratified multi-stage design was used. The country was divided into 4 survey domains consisting of the 3 largest cities: Tbilisi, Kutaisi, Batumi, and the rest of the country. In the three large city domains, simple random sampling (SRS) was used to select children from each of the 3 age groups.

⁴ Beginning in 2015, Penta was replaced by Hexa for the first three doses given at 2, 3, and 4 months (primary series) in the national immunization schedule. However, children eligible for the present survey were not affected by this change.

⁵ National Statistics Office of Georgia (GEOSTAT). 2014 General Population Census -Main results, general information. Available at: http://census.ge/files/results/Census_release_ENG.pdf. Accessed March 14, 2017

⁶ WHO. 2015 Update of vaccination coverage survey manual. Available at: http://www.who.int/immunization/monitoring_surveillance/Briefing_note_CSManual.pdf. Accessed March 14, 2017.

The fourth domain was divided into seven strata. The first stratum (Rustavi and Poti) participants within each age group were selected by SRS because the sampling frame had no easily identifiable subdivisions to be used as sampling units for cluster survey. Five strata required a two-stage cluster design. The first stage selected settlements (village/town) by probability proportionate to population size (PPS), followed by a SRS of children within each age group. Very small settlements were pooled to create sampling unit with >10 children in it.

A sample size of 750 per birth cohort was allocated to Tbilisi (3.8% of all children), and 600 per birth cohort to Batumi and Kutaisi (20.0% and 22.1%, respectively), resulting in a total of 1,950 children per birth cohort. Due to larger population, a sample size of 50 per birth cohort was allocated to Gori and combined Rustavi/Poti stratum. A sample size of 25 per birth cohort was allocated to 5 of the strata (five per PSU). This resulted in 800 children per birth cohort in the fourth domain (2.4% of all children). A total of 2,750 children per birth cohort were selected, resulting in a sample size of 8,250 children for all three birth cohorts included in the survey. Selection of sampling units was performed using the population data for the 2014. Individual children were selected from the sampled units using line-lists for respective birth cohorts. Further details on the survey, as well as findings and recommendations can be found in the Survey report.