2017

Joint Appraisal of GAVI Grant Implementation

REPUBLIC OF UZBEKISTAN, MAY 2018

Contents

Joint Appraisal Report — 2018

Country	Uzbekistan
Full JA or JA Update	☑ **Full JA** ☐ JA Update
Date and Location of Joint Appraisal Meeting	May 16-18, 2018, Tashkent, Uzbekistan
Participants / Organizations	GAVI, WHO, UNICEF, One23 National Immunization Program, Ministry of Health, Ministry of Finance, Ministry of Economy
Reporting Period	Calendar year — 2017
Fiscal Period	01.01.2017-30.04.2018
Comprehensive Multi Year Plan (cMYP) Duration	2017-2021
GAVI Transition and Co-financing Group	*accelerated transition to self-financing*

1. RENEWAL AND EXTENSION REQUESTS

1.1. Renewal Requests were submitted on the Country Portal

Vaccine (NVS) Renewal Request (by May 15)	YES
HSS Renewal Request	N/A X
CCEOP Renewal Request	N/A X

Observations on Vaccine Requests

Target Population	721 000					
Birth Cohort	718 834					
Vaccine	**PCV**	**RotaC**	**IPV**			
Population in the Target Age Cohort	716 500	716 500	716 500			
Target Population to Be Vaccinated (First Dose)	716 500	716 500	**500,000**			
Target Population to Be Vaccinated (Last Dose)	702 170	702 170				

Implied Coverage Rate	98	98	70%			
Last Available WUENIC Coverage Rate	99%	99%	-			
Last Available Administrative Coverage Rate	99.5	99.8	**-**			
Wastage Rate	0.03	0.03	5%			
Buffer	540 000	400 000	220,000			
Stock Reported	677 817 (01.01.2019)	300 000	-			

Indicative Interest to Introduce New Vaccines or Request Health System Strengthening Support from GAVI in the Future

Indicative Interest to Introduce New Vaccines or Request Health System Strengthening Support from GAVI	**Programme**	**Expected Application Year**	**Expected Introduction Year**
	HPV	2018	2019

2. RECENT CHANGES IN COUNTRY CONTEXT AND POTENTIAL RISKS FOR NEXT YEAR

The population of the Republic of Uzbekistan is 32 656 000. A characteristic feature of the country is a high birth rate, which has been decreasing in recent years. In 2017, 715 500 infants were born in Uzbekistan, corresponding to a birth rate of 22.1 per 1000 population. In 2017, 161 500 people died in Uzbekistan corresponding to a total mortality rate from all causes of 22.1 per 1000 population. During 1991 – 2010, the infant mortality rate in Uzbekistan declined from 35.5 to 11.3 per 1000 live birth (68%) but has stagnated since then. In 2016, life expectancy of men was 71.4 years while that of women was 76.2 years.

Over the past two years the country has undergone an intensive and significant phase of fundamental changes that have affected all spheres, including health care. To ensure transition consistency, an action strategy was developed for five priority development areas of the Republic of Uzbekistan for 2017-2021. It included five main directions of the country's development policy:

- Improvement of state and social construction
- Ensuring the rule of law and further reforming the judicial and legal system
- Development and liberalization of the economy
- Development of the social sphere
- Ensuring security, interethnic harmony and religious tolerance, implementing a balanced, mutually beneficial and meaningful foreign policy

The development of the social sphere included a development strategy aimed at the consistent increase in employment and real incomes of the population, improvement of the welfare system and health care of citizens, increase in social and political activity of women, implementation of targeted programs for affordable housing construction, development and modernization of road transport, engineering-communication and social infrastructures, development of education, culture, science, literature, art and sports, improvement of state youth policy.

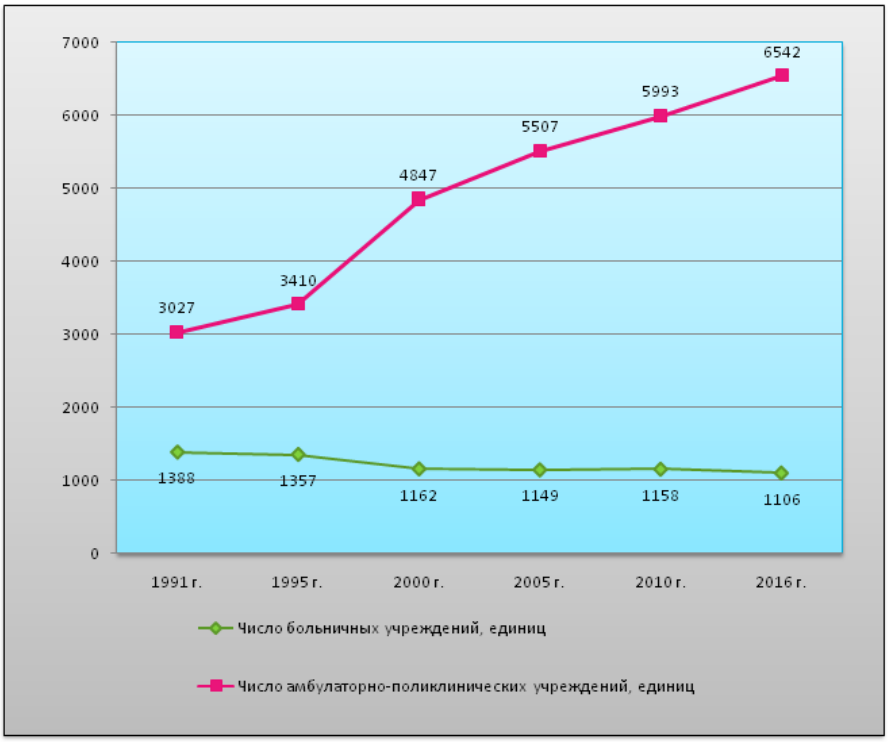
The health system reform, carried out during the last few years before the new wave of reforms in health care, was supported by the appropriate legal framework in the field of combating infectious diseases: one law “On Sanitary and Epidemiological Welfare of the Population” and three presidential decrees: PP-1652 “On Measures to Protect Motherhood and Childhood in Uzbekistan for 2014-2018”, PP 2650 “On Measures for Further Improvement of Maternity and Childhood Protection in Uzbekistan for 2016-2020” and PP 2857 “On Measures to Improve Activities of Primary Health Care Institutions in the Republic of Uzbekistan”. The relevance and prospects of implementation of these legislative acts has significantly decreased in the light of a new wave of reforms and adoption of new legal acts regulating the current situation. In particular, Presidential Decree PP-2857 dated March 29, 2017 “On Measures to Further Improve Activities of Primary Health Care Institutions in the Republic of Uzbekistan”, which regulates the following aspects:

- Optimization of the PHC sector based on the rational placement of primary medical institutions taking into account geography, regional specifics and population, improving the quality of services provided, radically improving the patronage system and further improving preventive measures.
- Equipping with modern medical equipment and redistribution of equipment of liquidated rural medical facilities
- Employment of rural medical facilities’ staff dismissed as a result of optimization, provision of housing to rural family polyclinics’ staff, mandatory distribution of new graduates to rural family polyclinics for a period of 36 months; compensation of travel expenses to health care patronage staff working in rural family polyclinics. Development of a new methodology for financial motivation based on the evaluation (Ranking System) of PHC staff.

In addition, at the level of the Ministry of Health, mechanisms and standards for the immunisation program implementation are constantly updated, e.g. orders are revised in line with updates from WHO and UNICEF, the vaccination schedule is updated to include new vaccines, ICC and NITAG’s composition, provisions and work plan are developed and updated.

So, during implementation of the aforementioned Presidential Decree MoH issued the following order: MoH Order No. 175 “On the Organization of Rural Family Polyclinics” dd. April 22, 2017, which states: Tentative Regulations on Rural Family Polyclinics (RFP); Organizational structure; List of services provided by RFPs; Standard equipment list; Procedures for organizing the provision of services; Regulates economic and financial activities (sources of financing, coordination of financial activities), including equipping with soft and hard equipment and devices, medicines, etc.

The current reform of the primary health care is aimed at optimizing and improving the effectiveness of institutions at this level. The process includes not only a quantitative change in the number of polyclinics and rural medical facilities (RMFs), but also an improvement in the quality of services due to the change in the format of medical care provided (introduction of rates for specialist physicians).



Still, the current reform of primary health care can lead to some difficulties as related to vaccination, such as:

1) Lack of a physicians in the vaccination office, who must examine the child before vaccination, a paediatrician is only present in Family polyclinics (City or Rural), and Rural Health Facilities only have one GP, 2) The increased of distance from the target group's place of residence to the vaccination office. Previously distance to a service centre did not exceed 5 km, now some RHF have a distance to service of up to 25 km and more.

The government has identified priority areas in which the main improvements will be carried out, and included them into the development of the health system of the Republic of Uzbekistan for 2019-2029. These priorities include the efficiency and effectiveness of funding, the quality of medical care, drug supply issues, personnel issues, training and development of partnership with private organizations. In connection with the abovementioned, the following risks have been identified, which may affect the immunisation program effectiveness:

- Newly recruited staff who do not have sufficient knowledge of immunisation practices and innovations
- Missed opportunities, which can increase in the case when one nurse works both at the vaccination office and the procedural office at the same time;
- Weakening of surveillance because of the change in the composition of staff at the primary level of health care;
- Reforms in health care lead to significant changes at the primary level, a reduction in the number of medical posts leads to the fact that experienced medical workers are dismissed, increasing the service radius increases the burden on medical personnel, which also leads to the dismissal of experienced personnel. This ultimately leads to a decrease in the quality of services;
- The openness of state borders has led to an increase in immigration flows, which in turn leads to an increased risk of importation of vaccine-preventable infections from countries with a lower control of these infections.
- The final staff structure is not formed. The vaccinator's position is absent. Duties of vaccination have been assigned to the procedural nurse, which increases work volume on the nurse eliminating the position of a separate nurse who would only be involved in immunization services.

In this regard, MoH of the Republic of Uzbekistan is working within the framework of HSS project and the CCEOP in improving cold equipment at all levels, training of staff on safe immunisation with a focus on primary health care staff, developing national leadership, work of mobile teams in hard-to-reach areas, implementing

preparatory works and supervisory visits. All these issues were noted in ongoing projects: HSS, CCEOP, and TCA.

The national development strategy 2017-2021 provides a number of opportunities to improve health and well-being through improved governance for health and well-being, and in particular at the local level with regional development being one of the main priority areas for the President.

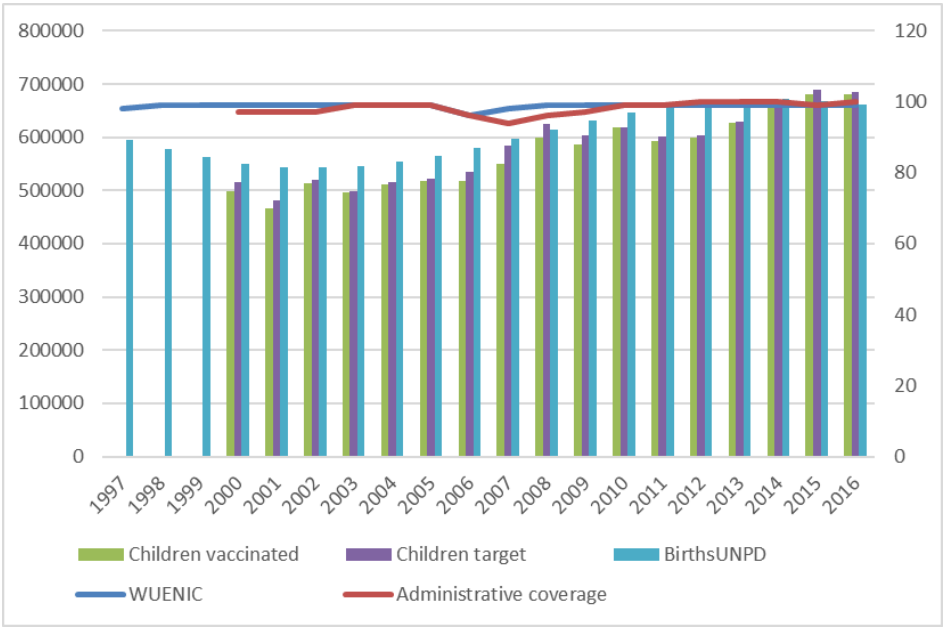
The priority for the Ministry of Health is to ensure that the reforms do not undermine the existing strengths in the system, nor contribute to detrimental outcomes, and therefore it is prioritising a conservative approach to the health reforms.

The recent analysis by the UN inter-agency mission on the results of the 25-year process of reforming and improving the health system has shown that real improvements and achievements have been made. These are primarily due to the reform of the system of management and organization of medical care for the population of the country, as well as the strengthening of its facilities and resources (material and technical base). There remain serious imbalances and shortcomings associated with the imperfection of the current system and the newly introduced health financing mechanisms.

3. PERFORMANCE OF THE IMMUNISATION PROGRAMME

3.1. COVERAGE AND EQUITY OF IMMUNISATION

The immunisation program in Uzbekistan has shown high coverage for a long period of time. Coverage rates for all vaccines have always achieved rates of between 96%-99%. The same trend is observed both at the national and at the district levels.

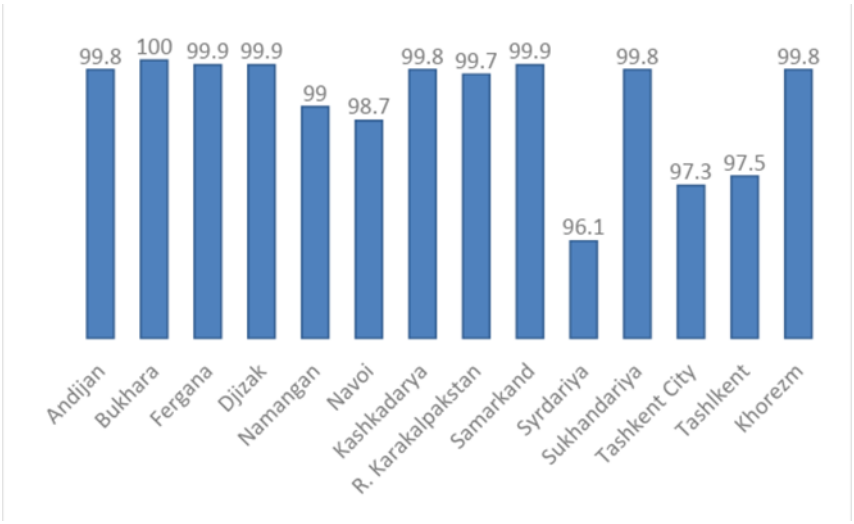


Country reported data on system indicators of DTP1 vaccination

Data source: WHO and UNICEF estimates of immunization coverage: 2016 revision

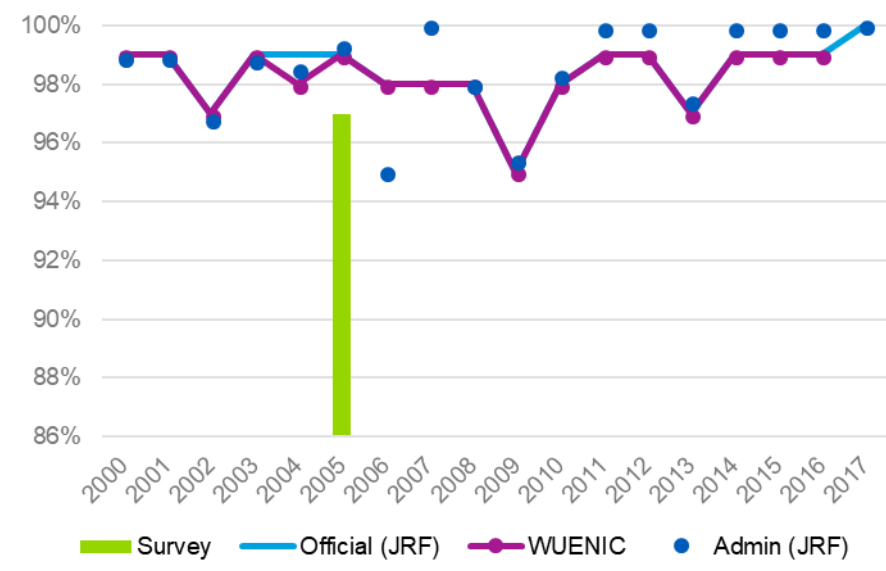
- WUENIC-WUENIC coverage estimate 2015 revision
- Administrative Coverage-Administrative coverage reported by national authorities
- Children Vaccinated-Number of doses administered as reported by national authorities
- Children In Target-Number in target group as reported by national author
- Births UNPD-Births from World Population Prospects: 2015 revision from the UN Population Division

For the last ten years, the coverage rate for DTP1 at the national level is 99% according to the official data of MoH of the Republic of Uzbekistan, with the exception of 2007, when the coverage rate dropped to 94%, and 2006 and 2008, when coverage was 96%. WUENIC estimates also confirm these results. Quantitative coverage rates of the target population in relation to the number of people planned for coverage also correspond to the coverage reporting indicators. However, there are some differences in the number of children to be vaccinated and the estimated number of expected newborns according to UN Population Division. Thus, estimated indicators for the entire observation period (except for 2015-2016) exceed the indicators of the number of the target population to be vaccinated. On average, the difference in the indicators ranges between 4% -10%. Only in 2015 and 2016 official country indicators exceeded estimated ones. Perhaps this is due to a change in the method of planning the number of target population to be vaccinated.



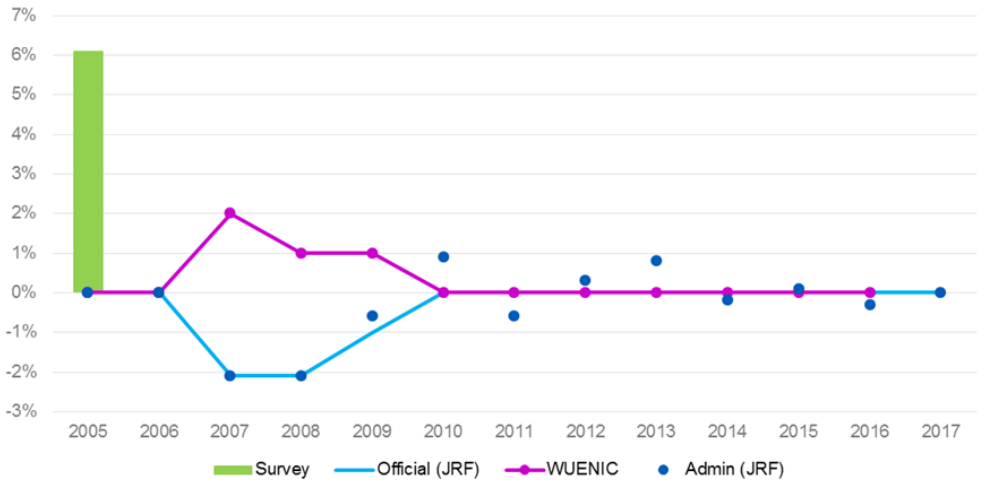
DTP1 vaccination coverage of target population at the level of regions of the Republic of Uzbekistan.

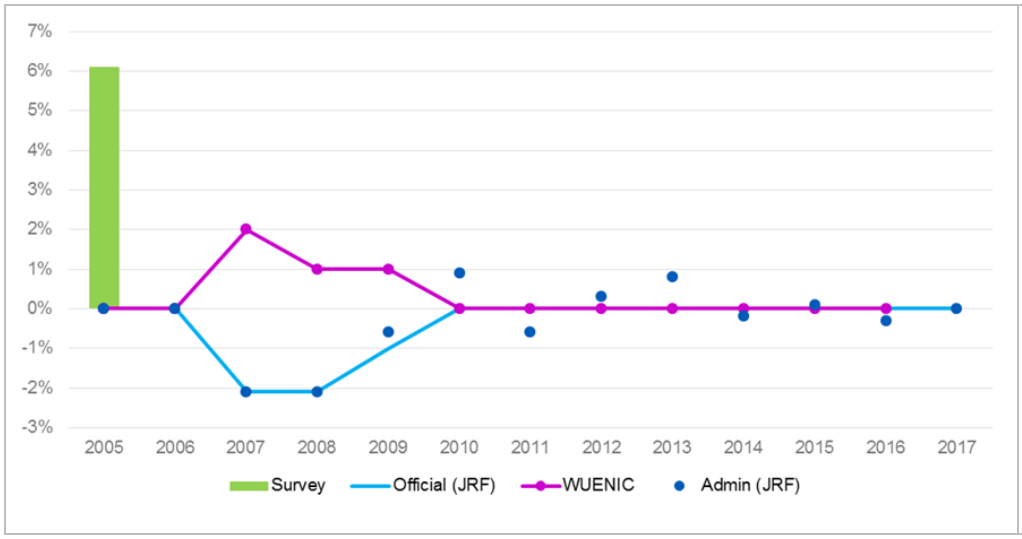
Vaccination coverage at the subnational (regional) level confirms national data on high coverage, high effectiveness of the immunisation system in the Republic and the provision of universal coverage of the population. There is a somewhat low level of coverage in the Syrdarya region, which is caused (possibly) by a high level of migration processes in this region, however in the quantitative aspect at the republic level this difference is less than 0.01% of the total population.



MCV1 coverage at the national level for Uzbekistan (2000-2017)

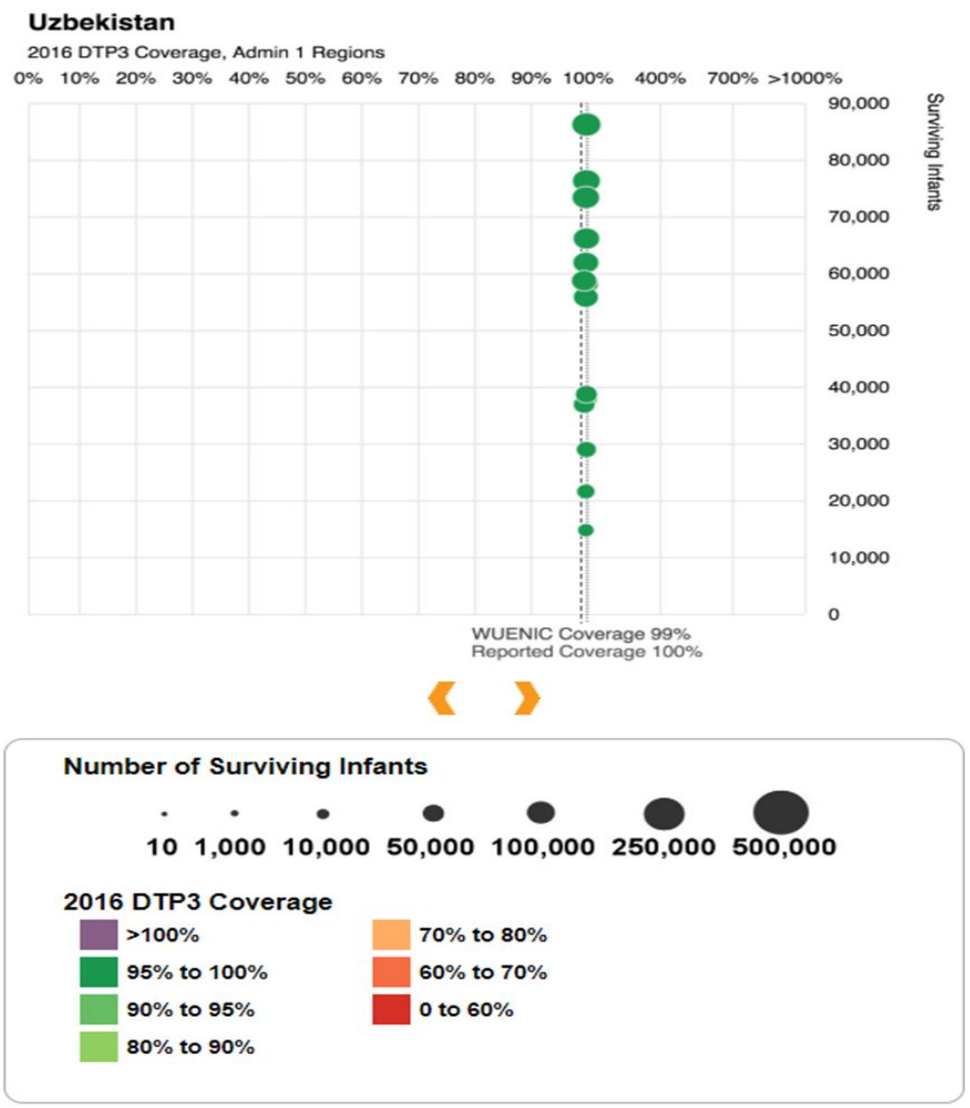
Unfortunately, the last household study was conducted in 2006, and at that moment the gap between coverage data and administrative data for the third dose of Penta vaccine was about 5%. For the vaccine containing measles antigen, the difference in coverage rates between different data was slightly less than 4%. An MICS survey is planned for 2019.





Penta1-Penta3 Drop-Out rate for Uzbekistan (2005-2017)

As for the drop-out rate in 2016, there was a negative drop-out rate between the 1st and the 3rd dose of Penta vaccine, which can be explained by errors in reporting. In order to strengthen the country's capacity to collect data, GAVI Technical Assistance Grant for 2018 includes funds to carry out a number of activities to improve the quality and strategic utilization of data.

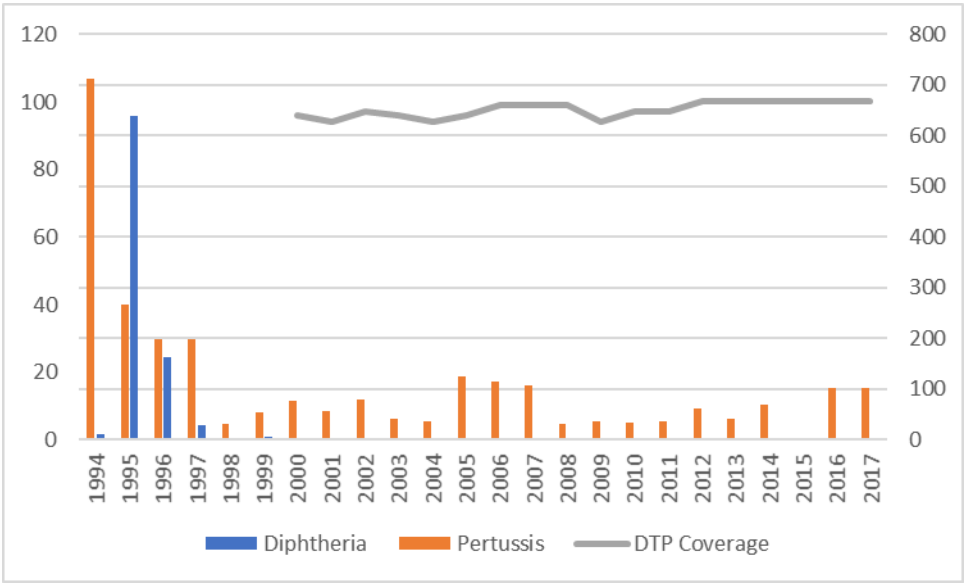


DTP3 Coverage at subnational level 1, Uzbekistan 2016

The coloured dots in this graphs show 2016 administrative coverage data for DTP3 at administrative level 1, as reported the country in 2017 through their WHO/UNICEF Joint Reporting Form (data as of July 15, 2017).

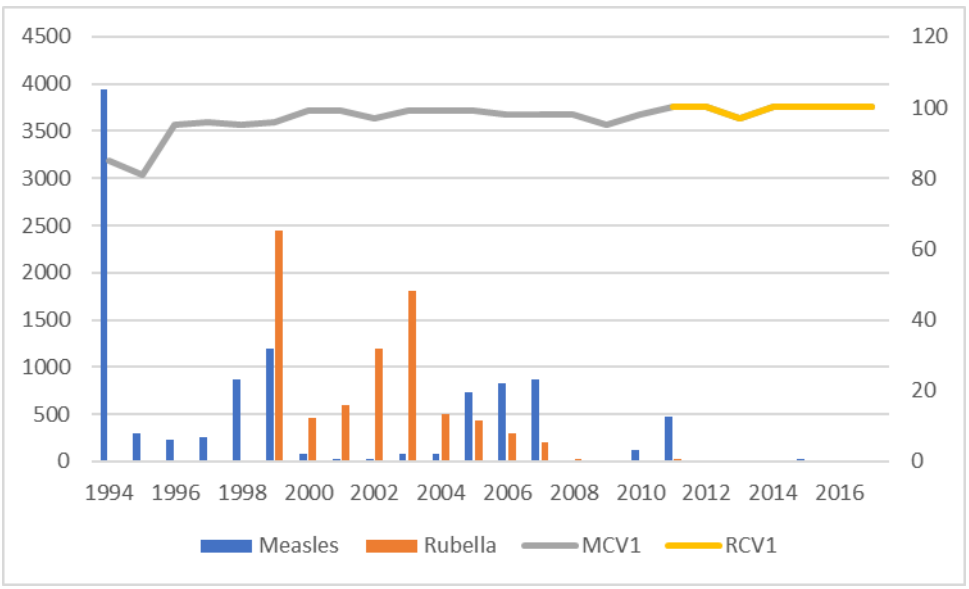
As it is the first year that subnational data has been collected at the global level, there are some limitations to the data, particularly in terms of data completeness and data quality. Graphics have been built for countries with useable data that reported DTP3 at the administrative level 1.

Coverage at the subnational level according to DTP3 vaccination coverage data submitted by the Ministry of Health is 100%, WHO/UNICEF WUENIC estimates are 99%, which supports the national data.



Incidence of diphtheria and pertussis and dynamics of DTP vaccination coverage in Uzbekistan for the period from 1994 to 2017

Source: WHO vaccine-preventable diseases: monitoring system. 2018 global summary
http://apps.who.int/immunization_monitoring/globalsummary/countries?countrycriteria%5Bcountry%5D%5B%5D=UZB&commit=OK#



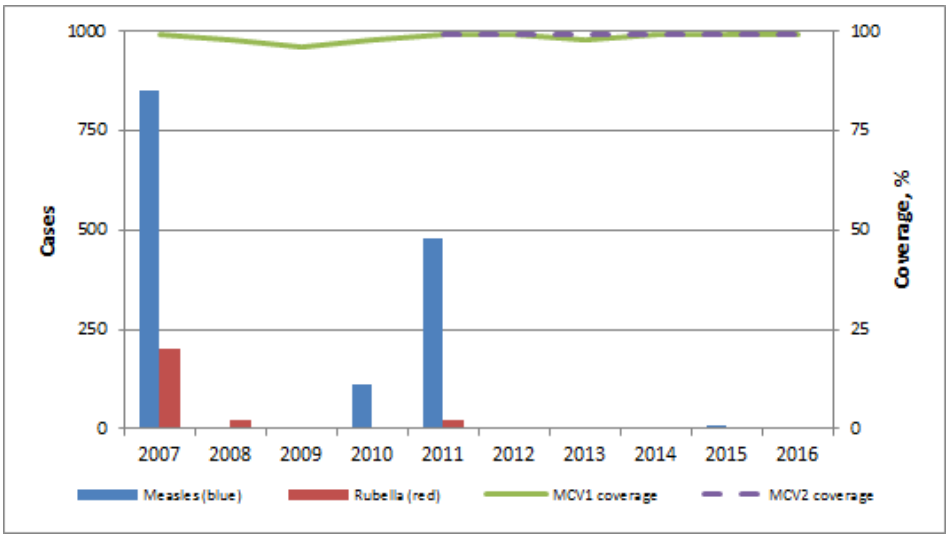
Incidence of measles and rubella and dynamics of coverage with measles and rubella containing vaccines in Uzbekistan for the period from 1994 to 2017

Source: WHO vaccine-preventable diseases: monitoring system. 2018 global summary
http://apps.who.int/immunization_monitoring/globalsummary/countries?countrycriteria%5Bcountry%5D%5B%5D=UZB&commit=OK#

A direct indicator of immunisation system effectiveness and high coverage is the incidence rates for target diseases. According to monitoring of infectious incidence, incidence rates for diphtheria and pertussis, measles and rubella has significantly decreased.

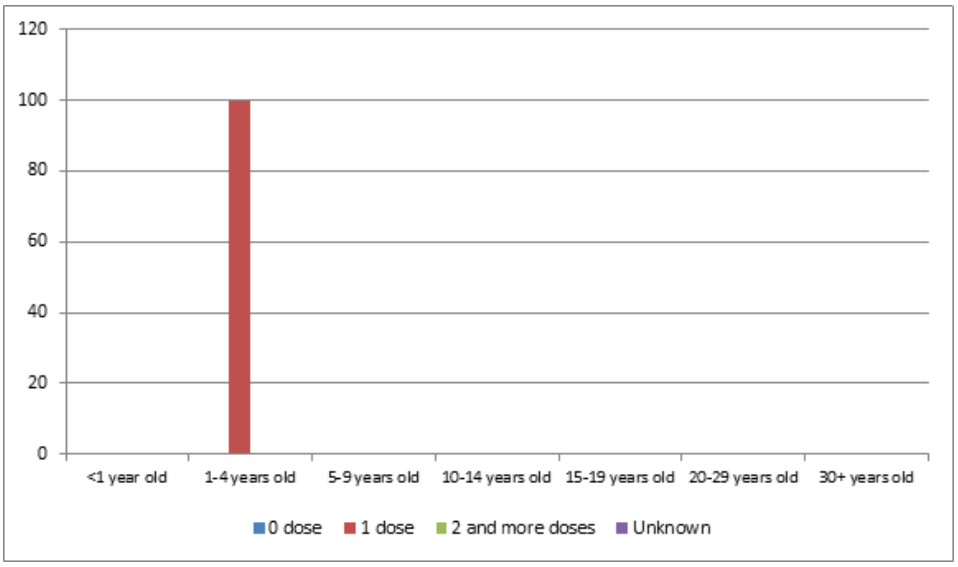
Epidemiological Surveillance of Measles

Regional Commission for Verification of Measles Elimination concluded that the endemic transmission of measles and rubella in Uzbekistan in 2016 remained interrupted, and confirmed sustainability of measles and rubella elimination. RVC congratulated national authorities on this achievement, but called for consideration of the possibility of additional activities aimed at improving the quality of reporting and surveillance of measles, rubella and CRS.



Measles and rubella: cases and immunization coverage, 2007 – 2016

Source: Disease Incidence and Immunization coverage, WHO, Data and Statistics
Immunization Monitoring and Surveillance (http://www.who.int/immunization/monitoring_surveillance/data/en/)
MCV1 - 1st dose of measles containing vaccine
MCV2 - 2nd dose of measles containing vaccine



Measles cases by age group and vaccination status, 2016

Source: Measles and rubella elimination Annual Status Update report, 2016

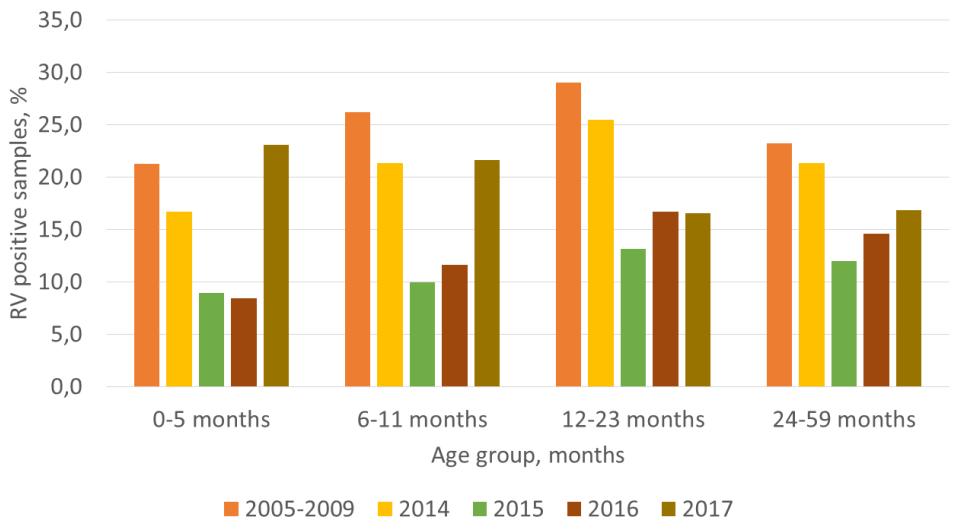
Rota Surveillance.

Rotavirus vaccine was added to the national immunisation program in Uzbekistan in June 2014, to be given at 2 and 3 months of age. Uzbekistan conducts sentinel surveillance for rotavirus gastroenteritis as part of the Global Rotavirus Surveillance Network (GRSN). Rotavirus surveillance began in January 2014 in Tashkent and in August 2014 in Bukhara. In 2005-2006, the percentage of hospital admissions positive for rotavirus among children aged <5 years in 2005-2006 was 30%. (Source: R Latipov et al., Epidemiology and burden of rotavirus disease in Central Asia; International Journal of Infectious Diseases 2011; 15, e464-e469). These surveillance activities were funded by the Research Council of Norway and the Norwegian Institute of Public Health.

To reduce the cost of rotavirus surveillance, systematic sampling of eligible children for enrolment in rotavirus surveillance was implemented in 2017. A total of 1243 children were enrolled in rotavirus surveillance in 2017 with 134 (11%) testing rotavirus positive. The most common genotype strain in 2016 was G9P[4]; genotyping results for 2017 are pending at the Regional Reference Laboratory (RRL) in Minsk, Belarus. The national rotavirus laboratory at the Institute of Virology passed the external quality assurance (EQA) program

coordinated by the Global Reference Laboratory in Atlanta, GA and the external quality control (EQC) program coordinated by the Regional Reference Laboratory in Minsk, Belarus. Rotavirus disease in Uzbekistan occurs in a seasonal cycle with peak occurrence in fall months (September-December).

The rotavirus surveillance platform was used to conduct a case-control study to estimate rotavirus vaccine effectiveness (VE) with enrolment in the study ending 31 December 2016. In 2017, polyclinics continue to be visited to obtain information on the vaccination status of eligible children for the VE study. Data analysis is ongoing. In 2017, Uzbekistan began participation in the WHO-coordinated Global Paediatric Diarrhoea Surveillance Network (GPDS). The country leveraged the existing rotavirus surveillance platform in 2017 to monitor more than twenty enteric pathogens.



Summary/Conclusion

The presented data illustrates the achievements of Uzbekistan in ensuring high vaccination coverage, expansion of the immunization schedule. However, this estimate is based on the results of official statistics provided by the MoH. Further studies are needed to assess the vaccination coverage by third-party independent assessment. The official estimate is based on the coverage of the planned population. The estimate does not include children with medical contraindications nor people living in a changing localities due to migration or other reasons. It is necessary to estimate the coverage in relation to the whole population. Considering this, assessment of coverage will be included into MICS planned for 2019-2020.

3.2. Key Drivers of Sustainable Coverage and Equity

Due to the on-going reforms in healthcare system, immunization is being impacted by changes mainly at primary level. Decreasing of the number of vaccination points, shifting the role of vaccinator to regular nurse, and increasing the distance to the nearest vaccination points for population in some remote areas – these all may negatively influence the coverage.

There are few key drivers identified for sustainable coverage and equity, such as cold chain, immunization coverage and monitoring, vaccine forecasting and budgeting, supportive supervision and AEFI monitoring, quality of services, demand creation and awareness raising among population.

Cold chain:

The recommendations of EVM assessment conducted in 2016 regarding strengthening of cold chain system are being addressed through GAVI grants for HSS and CCEOP with a large-scale construction and repair of cold warehouses at all levels. Cold chain equipment is being procured to equip the facilities. Fifteen cold chain storage facilities at national, regional and district levels will be constructed or renovated, equipped with modern walk in cold rooms and electrical monitoring devices to maintain its functionality. All cold chain devices will be part of a comprehensive system with constant temperature and stock control, alarm system and regular notification about current status of most important features of cold chain system.

The major upgrade at national, regional and selected district levels is supported through GAVI HSS budget framework, whereas equipment supply for remaining districts and all primary levels is planned under CCEOP

budget. Upgrading of the cold chain equipment at primary health level is delayed due to lack of available funds within CCEOP framework.

By 2020 country will have more than 7 000 units of new and modern equipment, an inventory list is being developed for major equipment such as WIC rooms, generators, and refrigerators. This will facilitate the inclusion of maintenance costs into the budget forecasting and preparation tool for the Ministry of Finance. This activity builds on to the previous work of the Ministry of Health together with UNICEF SD and UNICEF CO on development of vaccine budgeting and forecasting tool by preparing additional line for the cold chain equipment maintenance cost.

Vaccine forecasting, budgeting and delivery (Financial sustainability):

As mentioned above UNICEF supported the Ministry of Health in development of vaccine procurement forecasting and budgeting tool. This tool has successfully been used for calculation of public budget for immunization during last two calendar years. The tool is still under improvement and will include the tables for calculation of cold chain equipment maintenance cost.

Delivery of vaccine to the country still has number of problems with custom clearance and registration in National Registration Agency (Pharm Committee). Relevant provisions have been developed by MoH of the Republic of Uzbekistan in cooperation with UNICEF to be included into the presidential decree:

- Preferential taxation for customs clearance
- Accelerated procedure for registration of vaccines

In order to avoid stock out periods for the vaccines, the budget and forecast for the procurement of vaccines now includes 25% of buffer which is three-month vaccine stock for Uzbekistan.

Immunization coverage and monitoring:

As part of implementation of recommendations of the EVM assessment, SOPs are being developed in accordance with nine EVM criteria for each level of the immunisation supply chain, using EVM SOP templates recommended by WHO. The adapted SOP templates that are being piloted in 4 districts of Tashkent and the Tashkent region. It is expected that after piloting the country will expand the zone of SOPs application to the national level.

There were series of recommendations after the assessment conducted upon introduction of pneumococcal vaccine which also contribute to the monitoring of immunization. For example, the instructions for reporting forms No 5 and 6 were translated into Uzbek and conducting refresher trainings for about 100 epidemiologists on filling out reporting forms and data analysis.

In May 2018, the training on vaccine safety and contraindications was conducted in accordance with WHO recommendations. Furthermore, development of the national guidance is planned in 2019.

Supportive supervision and AEFI monitoring:

The supportive supervision guide with a questionnaire was developed and approved to standardize and improve the quality of supportive supervision.

Three trainings for specialists on conducting supervisory visits in Tashkent, Tashkent region, Syrdarya, Jizzakh, Kashkadarya, Bukhara, Navoi, Surkhandarya, Samarkand regions were organized in order to improve the ability of curators to identify shortcomings and provide practical feedback and trainings for staff.

Follow up on the implementation of recommendations submitted following the supervisory visits will be carried out systematically in the same regions where supportive supervision visits are held.

In order to continue implementation of the action plan to strengthen the national system for monitoring and investigating cases of AEFI, a WHO mission took place in May 14-18, 2018, to support the MOH's efforts to assess the national adverse effects following the immunization surveillance system. As a result, a national steering committee was established to develop and update the national guide for AEFI surveillance. It is expected that the updated national guide will be approved in the second half of 2018.

Quality of services,

Service delivery and *demand creation and awareness raising among population:*

Knowledge, Attitude and Practice on immunization among parents was planned to be conducted twice during project implementation period: at the beginning and at the end. Thus, information collected through first survey would serve as a baseline for development of communication strategy and action plan, whereas second one will register the changes in knowledge, attitude and practice among parents toward immunization. The survey was split into two parts: quantitative and qualitative. The quantitative part of survey was completed in April 2018 and revealed initial findings that will be completed by additional information collected from qualitative part.

Among initial findings the most interesting ones related to knowledge and attitude among parents and caregivers towards vaccination. For example, more than 96% of parents confirmed the vaccination of their children, however, only half of them could name the vaccine and refer to disease it prevents. There is a little difference between parents with different level of education, rural or urban as well as wellbeing level in attitude and practice of vaccination. The level of trust of medical workers for providing information about vaccination is high among all population (58% - from doctors, 73.2% - home visiting nurses). People learning about vaccination in the media has significantly grown from 5.9% to 19.1%. Parents residing in cities are more likely to use media and printed materials as a source of information about vaccination.

Conclusion: Despite many efforts in immunization area and support from donors, there are challenges identified in this area that should be addressed in future. Some of them are beyond control of the Ministry of Health and require cross sectoral attention to ensure its sustainability and efficiency.

3.3. Data

The health and immunisation reporting system is of a strict vertical nature and is built on periodic collection, aggregation and submission to the higher level based on the completion of specialized forms. Data at each level (district, regional, republican) are subject to analysis aimed at determining the current situation and identifying trends in comparison with the previous period. In immunisation, the information collection system includes filling in the following forms: No.5 annual report on preventive vaccinations and No. 6 monthly form on preventive vaccinations. These forms are filled in on the basis of data from Form No. 63 Vaccination Card and Preventive Vaccinations Register (Form 064/x), Syringes and Needles Use Register (Form 340/x), Effects Following Immunization Register (Form 352/x), Medical Exemptions Register (Form 344/x), Register of Temperature Record of Cold Equipment (Form 358/x). Primary data (as per list) is available only at the primary level, subsequent levels have only aggregated data. All information is stored and collected in paper form. The Information System for Epidemiological Monitoring of Infectious Diseases collects information on cases of incidence of infectious diseases included in the list of mandatory for registration.

Information on the number of target population is a challenge. The latest population census was carried out in 1989, information on population is collected on the basis of data from Civil Registry Offices. Civil Registry Offices receive information from maternities. The information is corrected by means of patronage visits. Because of the multicomponent nature of the source of birth rate data, information at different levels of the system may vary, and this is especially true for different departments, for example, data on birth rate and population from the Ministry of Finance, the Ministry of Economy and the Ministry of Health may often be inconsistent. No targeted programs to determine the numbers of population were carried out, the next population census is planned in 2020. There is also a MICS planned for 2019.

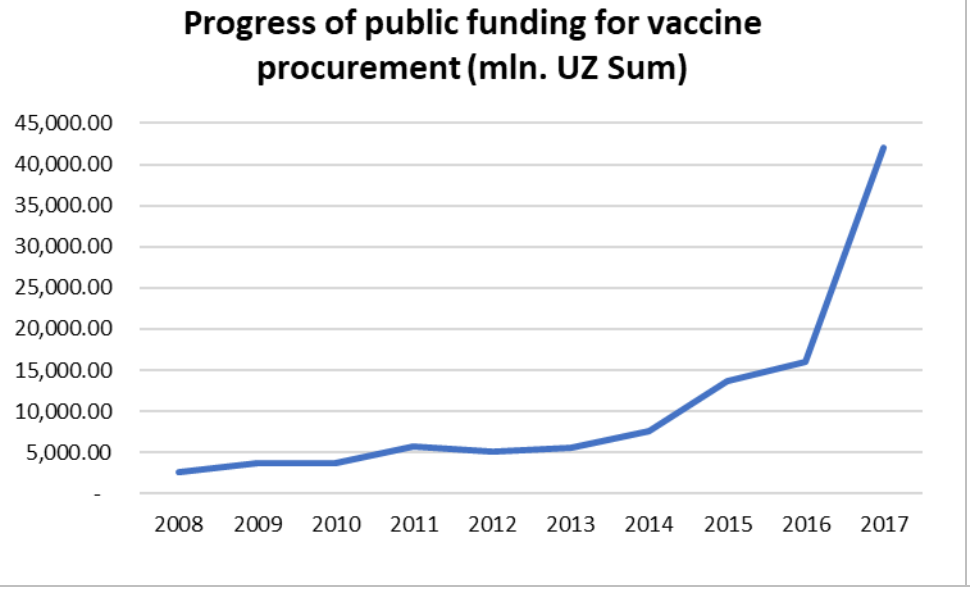
UZMEDINFO e-Health Development Center is an independent structural unit of the Ministry of Health and is the head institution of the Ministry of Health in the implementation and development of information and communication technologies, telemedicine and remote learning. The Center is engaged in the development of electronic health tracking system in Uzbekistan, including e-Health system. An interesting possibility for tracking immunization is the development of Electronic Birth and Death Registration system: the system records the birth of a person (the opening of a medical card), as well as the closure of this card in connection with the patient's death. The system allows keeping records of newborns with their primary anthropological and medical data, monitoring the condition of parturient women and pathological forms of childbirth, as well as taking into account all fatalities that have occurred throughout the Republic and their registration according to the international classification of diseases. At the moment, the system is being piloted in the Samarkand region and in Tashkent. Because of the limited resources of the Center and the need for additional funding for the development of information and computer capacity on sites, there are certain problems with the implementation of this system in the Republic of Uzbekistan. The lack of a single automated data collection and movement system leads to problems in ensuring the availability of data and their quality.

Insufficient development of information systems in health care:

Information in health is a key factor in ensuring high performance health system. Its further development will continue in accordance with the Decree of the President of the Republic of Uzbekistan no pp-1989 dated 27.06.2013 "on measures for further development of national information and communication system of the Republic of Uzbekistan for the period 2013-2020 and Complex information systems «Soғliқni saқlash» National integrated information system of the Republic of Uzbekistan, including calling for the realization of events: in the short term (2019-2020): to establish necessary IT meeting world standards for infrastructure in health institutions, as well as a network that brings all participants into a single system, including the implementation of geolocation in real time emergency medical services. The goal is to unite the disparate AIS health into a single information system.

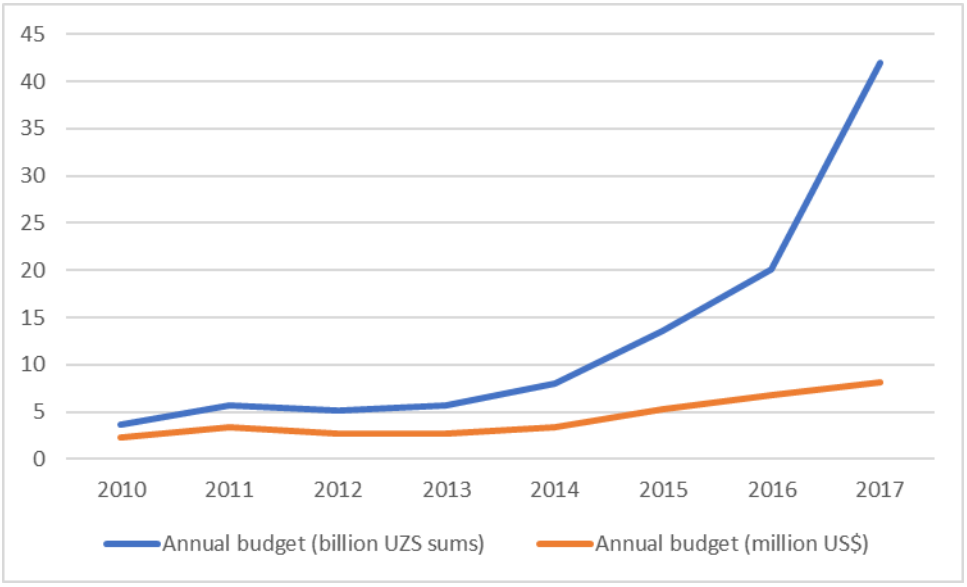
3.4. Immunisation Financing

The share of health expenditures in the total expenditures of the State Budget was increased to 14.7% (in 1998 - 8.9%), which ensures the implementation of activities specified in health development programs. In general, over the past decade the volume of credit and grant funds aimed at strengthening the material and technical base of health care amounted to 2,8 trillion soms (360 million US$ at current exchange rate) of capital investment from state trust funds and 573.8 million US$ of foreign investments as credit and grant funds from international financial institutions and donor countries.



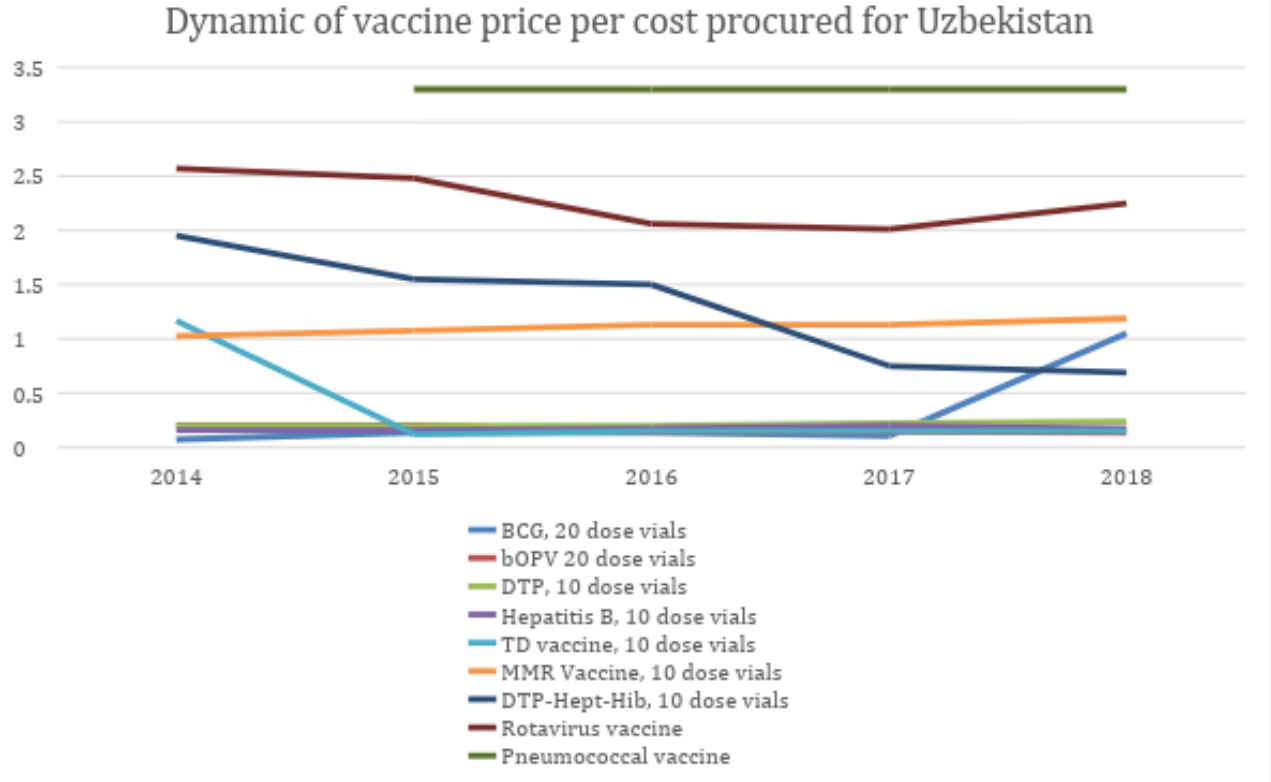
Shared distribution of funding sources for immunisation programs (vaccine procurement) in Uzbekistan for the period 2001 - 2017

Over the past 17 years the immunisation system in the Republic of Uzbekistan has been funded from a variety of sources, the share of which, as well as their number, varied over time. Thus, in the early 2000s, the main source of financing for immunisation was donor assistance from international organizations, and their share was much higher than the share of state support. In 2002 the share of state support was less than 5%. Since 2003 there has been a trend towards an increase of state share to Gavi co-financing, which exceeded 90% since 2010. This increase was a result of introduction of new vaccines such as Rota, PCV and Penta to the National Immunization calendar, and because of entering to the transition period out of GAVI support towards sustainable vaccine procurement and budgeting.



Annual funding of the immunisation system from the budget

With the increase in the state share of financing of the immunisation system, the amount of funding has also increased. An increase in funding is determined by several reasons: a) a yearly increase in the cohort of newborns. In the last 7 years the number of newborns has doubled; b) the immunisation schedule has expanded significantly over the past ten years, vaccines against rotavirus, pneumococcus, and others have been introduced; c) in addition to financing vaccines procurement, the budget has begun to include expenditures for consumables (syringes, safety boxes, etc.). The increase in financing the budget for immunization (by 11.4 times in 2017 as compared with 2010) is especially obvious when calculated in national currency, but this increase is not so significant (by 3.5 times) when calculated in international currency (US Dollar). This dynamics is influenced by inflation indicators and recent changes in the national currency exchange rate. There is also price decrease for some of the vaccines procured through UNICEF, whereas price for some of the vaccines increased.



System financing, as well as planning, is strictly centralized, based on the work of the central apparatus of the Ministry of Health and the Republican CSSES. The practice of procurement planning of EPI vaccines at the district or region level is no longer used. In order to simplify the process of vaccine procurement Uzbekistan has signed the Vaccine Independence Initiative with UNICEF SD for 3 million US$ to be allocated to country account for immediate procurement of vaccine and other immunization materials. The VII strategy was successfully used in 2017 and partially in 2018 to ensure timely procurement and delivery of vaccines to the country. Starting from 2018, the Ministry of Finance allocates the annual budget for vaccine procurement in January which simplified the budgeting and forecasting process.

Even with such a positive change in the financing system, however, weaknesses that affect the effectiveness of the immunisation system implementation in the Republic of Uzbekistan are noted:

- Insufficient financial support of healthcare sector;
- Budget for health is not consolidated and there is a lack of distribution of public funds among regions as there is a significant difference in regional budgeting for health care;
- Ineffective funding of health facilities does not create incentives to improve the spending efficiency, optimize costs, and improve the quality of care provided;
- A high portion of costs are expenses for maintenance of inpatient medical institutions (about 66%), including due to the inefficient structure of non-medical divisions of health institutions;
- Ineffective system of remuneration of medical personnel, which is based on the type of medical organization, position held, qualification category and length of service in the specialty, i.e. there are no indicators of complexity and quality of medical care provided by an individual specialist.
- Inflation and increase in the volume of budgeting in the som equivalent.
- Insufficient awareness of key employees of the Ministry of Finance, who determine the policy of financing the system of the Ministry of Health in general, and immunisation in particular, about current changes in immunisation (introduction of new vaccines, 25.0% vaccine storage buffer, safety boxes, syringes, increase in co-financing budget)
- Fluctuation of the prices of vaccines in the global market
- Discrepancy in timing and procedures of summarizing financial results appeared due to partial delivery of the vaccine and partial disbursement and partial closure of funds transferred to UNICEF Copenhagen from MOF of Uzbekistan
- Discrepancy in planning procedures for the budget allocated to vaccines
- Formation of the local market and introduction of separate payments not included in the budget
- Lack of the process of allocating the budget for customs and current procedures, lack of practice of including costs related to direct and indirect expenses related to immunisation in the project cost and budget planning process.

4. PERFORMANCE OF GAVI SUPPORT

4.1. Performance of vaccine support

Measles and rubella situation analysis update

In Uzbekistan, there is measles and rubella five-year plan, which is regularly updated. RVC concluded that the endemic transmission of measles and rubella in Uzbekistan in 2016 remained interrupted, and confirmed sustainability of measles and rubella elimination. RVC congratulated national authorities on this achievement, but called for consideration of the possibility of additional activities aimed at improving the quality of reporting and surveillance of measles, rubella and CRS. In 2016-2017 no cases of CRS were registered.

Summary of measles and rubella vaccine coverage, 2015-2017

Routine immunisation coverage[1]	2015	2016	2017
Measles containing vaccine, 1st dose	99,9	99,9	99,9
Measles containing vaccine, 2nd dose	99,9	99,9	99,9
Rubella containing vaccine, 1st dose	99,9	99,9	99,9
Rubella containing vaccine, 2nd dose	99,9	99,9	99,9

[1] Immunisation coverage from the official report on national immunisation coverage (ETF).

Заболеваемость краснухой, эпидемиологические и вирусологические характеристики, 2012-2016

	Случаи, подозрительные на краснуху	Подтвержденные случаи краснухи				Отвергнутые, как не краснуха	Заболеваемость краснухой	Установленные генотипы
		Лабораторно	Эпид. связанные	Клинически	Всего			
2012	0	0	0	0	0	0	0	НД
2013	0	0	0	0	0	0	0	НД
2014	21	0	0	0	0	21	0	НД
2015	33	0	0	0	0	33	0	НД
2016	17	0	0	0	0	17	0	НД

Source: Measles and rubella elimination Annual Status Update report, 2012-2016, and internal communication from country
Incidence calculated per 1 million population
НП = не применимо, НД = нет данных

Эпиднадзор за краснухой и работа лаборатории, 2012-2016

	Показатель отвергнутый, не краснуха	% субнациональных единиц 1-го уровня с ≥ 2 отвергнутыми случаями	% случаев с адекватным лабораторным расслед ованием	% случаев, когда известно происхождение инфекции	Кол-во образцов, протестированных на краснуху	% оказательных на краснуху результатов	Показатель выявления вирусов	%лабораторий ВОЗ и профессиональных лабораторий
2012	0	0%	100%	НД	13	0%	НД	100%
2013	0	0%	100%	НД	8	0%	НД	100%
2014	0.6	0%	100%	НД	50	0%	НД	100%
2015	0.1	0%	100%	НД	85	0%	НД	100%
2016	0.5	0%	100%	НД	152	0%	НД	100%

Source: ASU 2012-2016, RubeNS 2012-2016 and laboratory accreditation results 2012-2016, and internal communication from country
НП = не применимо, НД = нет данных
A proficient laboratory is WHO accredited and/or has an established quality assurance programme with oversight by a WHO accredited laboratory

Заболеваемость краснухой, эпидемиологические и вирусологические характеристики, 2012-2016	Incidence of rubella, epidemic and virological characteristics, 2012-2016
Случаи, подозрительные на краснуху	Suspected cases of rubella
Подтвержденные случаи краснухи	Confirmed cases of rubella
Лабораторно	Laboratory confirmed
Эпид. связанные	Epidemiologically related
Клинически	Clinically confirmed
Всего	Total
Отвергнутые, как не краснуха	Rejected as non-rubella cases
Заболеваемость краснухой	Rubella incidence
Установленные генотипы	Established genotypes
НД	ND
НП = не применимо, НД = нет данных	NA = not applicable, ND = no data

Эпиднадзор за краснухой и работа лаборатории, 2012-2016	Surveillance of rubella and laboratory work, 2012-2016
Показатель отвергнутый, не краснуха	Rejected rate, non-rubella
% субнациональных единиц 1-го уровня с ≥ 2 отвергнутыми случаями	% of subnational units of the 1st level with ≥ 2 rejected cases
% случаев с адекватным лабораторным расследованием	% of cases with adequate laboratory investigation
% случаев, когда известно происхождение инфекции	% of cases when the infection origin is known
Кол-во образцов, протестированных на краснуху	Number of samples tested for rubella
% положительных на краснуху результатов	% of positive rubella results
Показатель выявления вирусов	Virus detection rate
% лабораторий ВОЗ и профессиональных лабораторий	% of WHO laboratories and professional laboratories
НД	ND
НП = не применимо, НД = нет данных	NA = not applicable, ND = no data

Индикаторы качества эпиднадзора и цели

a. Показатель отвергнутых случаев: минимум 2 отвергнутых случая кори или краснухи на 100 000 населения
b. доля случаев с адекватным лабораторным расследованием: ≥ 80%
c. доля известных случаев происхождения инфекции: ≥ 80%
d. Показатель выявления вирусов: ≥ 80%

Индикаторы качества эпиднадзора и цели	Indicators of surveillance quality and objectives
a. Показатель отвергнутых случаев: минимум 2 отвергнутых случая кори или краснухи на 100 000 населения	a. Rejected cases rate: at least 2 rejected measles or rubella cases per 100,000 people
b. доля случаев с адекватным лабораторным расследованием: ≥ 80%	b. share of cases with adequate laboratory investigation: ≥ 80%
c. доля известных случаев происхождения инфекции: ≥ 80%	c. share of known cases of infection origin: ≥ 80%

d. Показатель выявления вирусов: ≥ 80%	d. Virus detection rate: ≥ 80%

Заболеваемость корью, эпидемиологические и вирусологические характеристики, 2012-2016

	Случаи, подозрительные на корь	Подтвержденные случаи кори				Отвергнутые, как не корь	Заболеваемость корью	Установленные генотипы
		Лабораторно	Эпид. связанные	Клинически	Всего			
2012	13	0	0	0	0	13	0	НД
2013	8	0	0	0	0	8	0	НД
2014	29	8	0	0	8	21	0.3	B3,D8
2015	52	22	0	0	22	34	0.1	D8
2016	135	1	0	0	1	134	0	НД

Source: Measles and rubella elimination Annual Status Update report, 2012-2016, and internal communication from country
Incidence calculated per 1 million population
НП = не применимо, НД = нет данных

Заболеваемость корью, эпидемиологические и вирусологические характеристики, 2012-2016	Incidence of measles, epidemic and virological characteristics, 2012-2016
Случаи, подозрительные на корь	Suspected cases of measles
Подтвержденные случаи кори	Confirmed cases of measles
Лабораторно	Laboratory confirmed
Эпид. связанные	Epidemiologically related
Клинически	Clinically confirmed
Всего	Total
Отвергнутые, как не корь	Rejected as non-measles cases
Заболеваемость корью	Measles incidence
Установленные генотипы	Established genotypes
НД	ND
B3,D8	B3,D8
НП = не применимо, НД = нет данных	NA = not applicable, ND = no data

Introduction of HPV vaccine

In 2014, GAVI approved Uzbekistan's request to support HPV vaccine introduction, and in 2017 it approved a change in the appropriate age for girls to be vaccinated from 12 to 9 years old. Also in the second year of introduction, GAVI will support vaccination against HPV for girls aged 11-14.

In 2017, the HPV vaccination plan was revised and sent to GAVI Secretariat, in order to ensure its timeliness. The revised HPV Vaccine introduction plan has been submitted to Gavi for approval and introduction is planned for October 2019.

Uzbekistan was selected by WHO in Europe to participate in the first phase of the United Nations Global Joint Program for Prevention and Control of Cervical Cancer. In this regard in November 2017 the mission of the United Nations Global Program for Prevention and Control of Cervical Cancer visited the country and recommended to establish the interdisciplinary national coordinating council that develops necessary guidelines and programs to combat cervical cancer.

4.2. Performance of GAVI HSS support

Immunization has been and remains to be a main priority for the government of Uzbekistan which is shown by the high immunization coverage rate for all vaccines (99.6%)[1]. During last decade National Immunization calendar was updated several times to include new vaccines like Pentavalent vaccine, Pneumococcal vaccine and Inactivated Poliomyelitis vaccine as part of intensive and continuous development of immunization services by the country. This year Uzbekistan has been granted with WHO certificate for officially documented elimination of Measles and Rubella during period from January 2014 to December 2016.

Since 2000 Uzbekistan has received GAVI funding in both vaccine/injection supplies and vaccines' introduction areas. In 2008 Uzbekistan started using public budget for the procurement of vaccines and vaccine related commodities. Since then, budget allocations to immunization area have been consistently increasing which led Uzbekistan to the transition phase to full-fledged sustainability in procurement of vaccine and vaccine-related products. To support Uzbekistan in the transition period, GAVI approved a Health System Strengthening (HSS) Grant in early 2014 for the amount of US$ 17,218,479.

The activities within HSS grant are focused on several priority areas to address key challenges identified by the Financial Management Assessment (FMA) for Uzbekistan in May 2014. As result, the following priorities are included into HSS grant framework:

1. Increase performance and sustainability of immunization services (UNICEF);
2. Improve management of PHC services (WHO);
3. Increase demand for preventive and Mother and Child Health (MCH) services (UNICEF);
4. Strengthen data collection and reporting for MCH and preventive services (UNICEF);
5. Programme management (UNICEF/WHO)

For smooth, efficient and rapid implementing of HSS activities by UNICEF and WHO the government of Uzbekistan has proved its commitment towards project targets through inclusion of grant activities in Presidential decree # 2857 in March 2017 with co-financing of US$3 million towards infrastructure improvement of cold chain facilities at district level.

[1] Government data for 10 months of 2017

Objective 1	
Objective of the HSS grant (as per the HSS proposals or PSR)	Increase in working capacity and sustainability of immunisation services (UNICEF)
Priority geographies / population groups or constraints to C&E addressed by the objective	All areas, including central
% activities conducted or budget utilization	48% of the budget allocated for 2016-2017 years
Major activities implemented and review of implementation progress, including key successes and outcomes, activities not implemented or delayed, financial absorption	• 15 construction and repair projects: – Meet requirements of the country, WHO and UNICEF – coordinated with regional administrations (khokimiyats) and planning commissions – included into master plans of respective cities – at the end of May construction of cold store facilities in 15 locations began – technical assessment of 6 regional stores is completed – 2 storage facilities have been rehabilitated – 33 cold rooms and 33 stabilisers purchased – Specifications for 20 generators are put out to tender – All equipment is harmonized with local legislation and meets the requirements of WHO, UNICEF – In the process of certification of the Committee of Nature of the Republic of Uzbekistan • Companies for installation of fire and alarm systems were selected
Major activities planned for upcoming period (describe significant changes or budget reallocations and associated **needs for technical assistance**)11	• During the next reporting period, a number of activities are planned, such as: • implementation and completion of construction in 15 cold store facilities • monitoring of quality and implementation of construction projects according to the plan • installation of cold equipment and personnel training • equipping of store facilities with modern fire and security alarm and protection equipment • development of an electronic software for registration and inventory of vaccines and injecting material • equipping of store facilities managers' offices with computer equipment and bar code reading equipment • equipping of central and regional levels with refrigerated machines • conclusion of agreements with the local manufacturer for procurement of machines for the district level • Together with WHO put together a working group and make changes to the program of medical colleges and universities to introduce principles of safe immunisation in the educational program After preliminary calculations it was found out that the budget for construction increased almost more than 2 times (3.7 million US$

	instead of 1.6 million US$), whereas savings are expected in other budget lines (see below).
Objective of the HSS grant (as per the HSS proposals or PSR)	Improving primary health care management (WHO)
Priority geographies / population groups or constraints to C&E addressed by the objective	Nationwide
% activities conducted or budget utilization	100%
Major activities implemented and review of implementation progress, including key successes and outcomes, activities not implemented or delayed, financial absorption	• 643 teachers from medical colleges and institutes in 10 regions were trained • Monitoring of the effectiveness of training among 100 teachers and 50 students was conducted • Improving teachers' knowledge by 18% Within the framework of HSS grant implementation with WHO support the Ministry of Health organized cascade training courses for immunisation providers in Samarkand, Kashkadarya and Djizak regions. Trainings were developed on the basis of WHO training course on MLM on safe immunisation and consisted of a three-day training for doctors and 1-day training for nurses. A total of 620 doctors and 620 nurses/vaccinators were reached. In order to timely respond to ongoing reforms and a full-scale change of administrative apparatus at the primary health care level, a two-day training course "Immunisation Service Organization in Primary Health Care Facilities" for managers of PHC units was developed in cooperation with the Department of Health and Management of Tashkent Institute for Advanced Training of Physicians. The training course Included: Fundamentals of Immunology and Population Work, Vaccine Management, Cold Chain Management, Immunisation System Monitoring and Surveillance of Vaccine - Preventable Infections. Through May 2018, about 100 PHC managers had been trained. A follow-up of ongoing trainings is organization and holding of supportive supervisory visits. In cooperation with several subdivisions of the Ministry of Health and WHO in Uzbekistan, the National Guide for Supportive Supervision was developed and adopted, containing a section on immunoprophylaxis. This section of the guide was developed in accordance with WHO recommendation as per module 4 of the training course for MLM.
Major activities planned for upcoming period (describe significant changes or budget reallocations and associated **needs for technical assistance**)11	In order to organize the practice of supportive supervision, it is planned to establish special trainings for supportive supervisors. It is planned to organize 3 trainings: one for specialists of Tashkent city, Tashkent region and Syrdarya region, one for specialists of Samarkand, Dzhizak and Kashkadarya regions, and one for specialists of Bukhara, Navoi and Surkhandarya regions. Upon completion of trainings, MoH plans to support the implementation of supportive supervision in the all regions the Republic.

	It is planned to assemble a working group to review the training program in medical colleges and institutes on immunisation, to amend the guide, making it easier for more successful mastering of the material
Objective 3	
Objective of the HSS grant (as per the HSS proposals or PSR)	Increase in demand for preventive services for women and children (UNICEF)
Priority geographies / population groups or constraints to C&E addressed by the objective	All regions with a focus on priorities identified during the KAP survey
% activities conducted or budget utilization	77%
Major activities implemented and review of implementation progress, including key successes and outcomes, activities not implemented or delayed, financial absorption	• The KAP survey was conducted in 4,200 households in all regions • The level of vaccination registration in primary health care cards ranges from 38.8% to 66.7% • In more than 70% of cases, a vaccination card was presented to the interviewer • Parents' knowledge of whether their child received any vaccine varies from 70% to 94% • 90.2% of parents indicated prevention of diseases as the main objective of immunisation • More than 90% of parents intended to continue vaccinating their children • The trust of parents in medical workers is very high - more than 73.2%, as well as trust in medical workers as a source of information about immunisation • There was no or insignificant difference on all parameters among parents of different levels of education, income and place of residence (city/village)
Major activities planned for upcoming period (describe significant changes or budget reallocations and associated **needs for technical assistance**)	At the moment, the collection of qualitative data continues by conducting in-depth interviews and focus groups with parents in certain regions, of certain level of education and living in a city or village to obtain the following information: 1. parents/caregivers/young people's perceptions of vaccination: deeper knowledge about the reasons for unwillingness or doubts of parents to vaccinate their child 2. gaps in information sharing among medical professionals and parents/caregivers: what kind of information is provided, when and where does the exchange take place; 3. willingness of parents to keep records about vaccination at home, and parents/caregivers' willingness to take on the responsibility to keep the records updated; 4. possible reasons behind decreasing parents/caregivers' attention to vaccination, once the child reaches the age of 1 and beyond; 5. differences among parents/caregivers/young people's attitudes towards vaccination in the rural vs, urban areas; 6. what type of information and communication materials about vaccination would convince parents/caregivers/young people to vaccinate their children/future children.

	After receiving full qualitative and quantitative information and its analysis develop a strategy for working with the population, based on priorities determined by the data obtained.
Objective 4	
Objective of the HSS grant (as per the HSS proposals or PSR)	Strengthening data collection and reporting system for maternal and child health and preventive services (UNICEF)
Priority geographies / population groups or constraints to C&E addressed by the objective	During the reporting period – consultancy at central level
% activities conducted or budget utilization	63%
Major activities implemented and review of implementation progress, including key successes and outcomes, activities not implemented or delayed, financial absorption	The consultant was selected for conducting situational analysis and development of the Terms of References for data collection system. Timing: May 27 – June 10.
Major activities planned for upcoming period (describe significant changes or budget reallocations and associated **needs for technical assistance**)	After receiving the consultant's report, a tender will be announced among ICT companies for the development of software for electronic vaccines data collection system, its installation, piloting and staff training. Also, technical specifications will be used for equipment procurement
Objective 5	
Objective of the HSS grant (as per the HSS proposals or PSR)	Project management (UNICEF/WHO)
Priority geographies / population groups or constraints to C&E addressed by the objective	Not applicable
% activities conducted or budget utilization	63%
Major activities implemented and review of implementation progress, including key successes and outcomes, activities not	Project team is hired and providing ongoing support to the NIP in program management, financial management and reporting.

implemented or delayed, financial absorption	
Major activities planned for upcoming period (describe significant changes or budget reallocations and associated **needs for technical assistance**)	

Main conclusions: the activities under all objectives are on track. The KAP survey (quantitative part) will be enriched with the qualitative part and joint report will serve as a baseline for development of communication strategy and action plan.

4.3. Performance of GAVI CCEOP support

The country requested CCEOP support in September 2016. The application was signed in December 2017, so the operational equipment deployment plan at the district level was drawn up and submitted for tender to the Supply Division of UNICEF in Copenhagen in March 2018. At the moment a tender process is taking place, the results of which will be sent to the country in July 2018 for a final decision. The delivery of equipment is planned in October 2018. At the first stage of the project (the district level) 558 units of refrigeration equipment will be supplied to district SES. A plan is being prepared for CCEOP deployment for primary health care - the second stage of the project.

Due to the fact that the CCEOP support application was signed at the end of December 2017, the report on indicators is planned for 2019. After a detailed discussion of the deployment plan, a number of changes were proposed:

1. Replace solar energy cold equipment for equipment powered by electricity
2. Change the number of refrigerators delivered to the district level according to the list of districts approved after administrative changes
3. Prioritize primary health care facilities that will receive new cold equipment, due to reduced available funding. That is, cold equipment will be replaced according to the following principle: 1 of 2 or 1 of 3 instead of the originally planned 2 of 3.
4. Decrease of funds allocated by GAVI for CCEOP implementation lead to cut in the amount of cold chain equipment to be supplied to primary level. This has led to a gap in the optimisation of the planned cold chain which remains to be addressed.

The state allocated 3 million US dollars to improve the structure of the district Sanitation and Epidemiology Centers. In 2018, funds will be allocated for repair and reconstruction of 37 district centers of Sanitation and Epidemiology, which will account for 1/3 of all available district centers. The remaining centers will be renovated step by step in 2019 and 2020.

4.4. Financial management performance

HSS Project:

HSS grant was allocated to the country in September 2016 and the first tranche to UNICEF was transferred in October 2016, while WHO received the first transfer in June 2017.

Financial expenditure of the project is as follows:

	UNICEF	WHO
Employees and other personnel	81,580.19	67,690
Goods and Cargo (Courtesy Expenses)	1,559,631.77	20,427
Equipment, transport and furniture	3,915.00	4,706
Contractual services	1,912,968.66	56,493
Trips	42,020.31	15,577
Program Support Costs	23,375.16	16,982
Total operating costs and other direct costs	169,070.53	77,730
Total	**3,792,561.62**	**259,577**

CCEOP

According to preliminary calculations, at the first stage of the project US$ 1,063,710 will be spent by the first quarter of 2019 tentatively, which is 44% of the allocated amount of US$ 2,409,698 planned for the project. Preliminary calculations included the cost of equipment for 209 district SES and related transport costs.

Conclusions: there is a need to review certain budget lines due to changed totals expected through implementation period. There also a need to review CCEOP allocation in view of the additional funds required for full equipping of primary healthcare level with cold chain equipment. The use of the HSS additional flexibilities and Performance Based Funds awarded will be considered to complete the cold chain requirements.

4.5. Transition planning

Uzbekistan is in the phase of accelerated transition from GAVI support. In order to ensure smooth and painless transition, the country received in March 2018 a GAVI grant for three years (2018-2020). Over the next two years, Gavi will be phasing out its support and Government committed to gradually take over all costs for the immunization programme, such that in 2021 they bear full responsibility.
The Transition Plan takes into account all types of the Gavi support and need for stepped-up domestic financing. The administration of this grant is divided between WHO and UNICEF offices. The Transition Plan is seen as a complement to the activities planned under HSS and TCA. The main focus for implementing the grant activities are ensuring smooth transition to self-financing, ensuring improvement of data quality, strengthening effective vaccine management and provision of specific support for vaccines. TP aims to increase commitment to adequate allocation of domestic funding to the Immunization program (activities by both WHO and UNICEF), the establishment and capacity building of the NITAG (WHO) to make evidence based decisions on immunization implementation and policy, the continued UNICEF support to MOH in building capacity in procurement and cold chain will significantly contribute to smooth country transition. The EPI review funded from the TP, to be carried out in September 2018, will provide more information on transition needs and plans can be revised accordingly.

More activities to assure successful transition are budgeted across the Gavi supported programs in Uzbekistan, HSS, TCA as well as the Transition Plan. Under the HSS program there are initiatives to

reinforce and regularize supportive supervision across levels and institute a budget line for the supportive supervision in regional and district budgets (WHO). Also planned is the training of financial managers at the district level. The HSS is also funding the development and implementation of LMIS and HMIS data systems (UNICEF).

TCA programs in 2018 has focus on high level advocacy with government and parliament to assure sustainable immunization financing (WHO). UNICEF will work with the MOF and the MOH to institutionalize a cooperative and agreed upon method for forecasting and budgeting vaccine and supply procurement. In the next year, through TCA, WHO will support a new EVM assessment and develop a new improvement plan based on the result. An assessment of the health reforms is planned for the first quarter of 2019.

Activities for the transition plan will commence in August 2018, activities under HSS and TCA are on going.

4.6. Technical Assistance (TA)

The targeted country assistance grant (Targeted Country Assistance under Partners' Engagement Framework (PEF)) of 2017 is in the final stage. Thanks to this grant, the country was able to:

1. Effectively implement program activities, all mid-term and final reports were prepared and delivered to GAVI on time;
2. Elaborate gaps in immunisation coverage for previously unvaccinated and under-vaccinated children through conducting a workshop on vaccine safety and contraindications to immunisation. Thanks to this workshop on vaccine safety and contraindications to immunization, twenty country clinicians improved their knowledge on immunisation safety and contraindications to vaccination. As is expected, this will reduce the cases of non-fulfilment of the preventive vaccination schedule due to the use of false contraindications to immunisation. It will also improve preventive vaccinations coverage and reduce unreasonable medical exemptions.
3. Conduct sentinel surveillance for rotavirus and support the conduct of a study of similar cases of rotavirus disease. In 2017, the national rotavirus laboratory at the Institute of Virology passed the EQA and EQC programs. To reduce the cost of rotavirus surveillance, WHO EURO provided technical assistance on implementing systematic sampling of eligible children for enrolment in rotavirus surveillance beginning in 2017. The rotavirus surveillance platform was used to conduct a case-control study to estimate rotavirus vaccine effectiveness (VE). In 2017, polyclinics continued to be visited to obtain information on the vaccination status of eligible children for the VE study. WHO EURO is providing technical support for the data analysis of the rotavirus VE evaluation. In 2017, Uzbekistan began participation in the Global Paediatric Diarrhoeal Surveillance (GPDS) network; the rotavirus surveillance platform was expanded to determine the hierarchy of causes of paediatric diarrhoea requiring hospitalisation in post-rotavirus vaccine era while continuing to monitor the impact of rotavirus vaccine. WHO EURO provided training to hospital staff on the expanded case definition and the revised case report form and assessed and re-enforced the implementation of these revisions in July 2017.
4. Support the development of a detailed operational plan for deployment of CC equipment related to CCEOP application. To this end, a consultant was engaged, who helped the country complete the development of a CC equipment deployment plan for procurement under CCEOP. The working group was able to draw up a deployment plan at the district level and began developing a deployment plan for primary health care.
5. Support adaptation of SOPs for effective vaccine management. In order to test adapted SOPs, piloting of SOPs in 4 districts of Tashkent and Tashkent region was initiated. At the moment, SOPs are being translated into Uzbek. Thanks to the availability of simple and clear SOPs, operation of new cold chain equipment procured under the HSS project and CCEOP will be more efficient and sustainable.
6. A rapid assessment of the current surveillance system for adverse events following immunisation was carried out. The results of the assessment revealed the need to update and systemize the existing AEFI surveillance system. To this end, the country adapted WHO AEFI surveillance guide and updated reporting forms. A national technical expert group has been established, which will be trained to conduct a causal investigation of serious adverse effects following immunisation.
7. Joint work was carried out to update cMYP by recalculating the budget for vaccines procurement in 2018 and a preliminary forecast for vaccines procurement in 2019 and 2020, using a unified budgeting template developed under the previous TCA support. As a result of joint work, MoH and MoF specialists were able to improve their skills in working with the template (through the on-the-job refresher training), make adjustments and set certain tasks for the next years. The budget calculation

exercise also supported the longer-term planning of budgetary needs given the country's upcoming transition from Gavi support.

8. MoH and MoF capacity in the field of procurement (including procurement procedures through UNICEF SD (Supply Division)) was improved to support proper planning of immunisation supplies. Representatives of MoH and MoF actively participated in sub-national Vaccine Procurement Practitioners Exchange Forum held in Copenhagen and Bishkek. As a result of participation the country developed an action plan to eliminate difficulties both in the implementation of ongoing GAVI projects and in the work of the immunisation service.
9. Improve capacity of National Immunization Technical Advisory Group in making evidence-based recommendations through participation of NITAG representatives in the WHO EURO Regional training workshop on evidence-based decision making in immunization was held in Copenhagen, Denmark on 14-17 May 2018 and in Regional Meeting for National Immunization Programme Managers and meeting of European Technical Advisory Group were held in Budva, Montenegro on 24-27 October 2017.
10. Increase knowledge of medical workers on vaccine safety and contraindications to reduce missed opportunities to vaccinate children due to vaccine safety concerns and false contraindications at WHO Training Workshop on Vaccine Safety and Contraindications to Vaccination was held on 2-4 May 2018.
11. Evaluate introduction of pneumococcal conjugate vaccine and develop recommendations on its sustainable implementation; PCV post-introduction evaluation was conducted on 20-28 April 2017.
12. Support Ministry of Health in making decision on vaccinating multiple cohorts against HPV and allocating necessary funds.
13. Evaluate cost-effectiveness of HPV vaccine and utilize the study data to advocate for allocation of funds for introduction of HPV vaccine and vaccination of multiple cohort of teenage girls.

5. UPDATE OF FINDINGS FROM PREVIOUS JOINT APPRAISAL

Prioritized Activities from Previous Joint Appraisal	Current Status
Sustainability	Delegates of Uzbekistan NITAG participated in the Workshop on Intensification of Resources Mobilization Efforts held in Copenhagen, November 8-10, 2017. At the workshop, the country reported on important aspects of resources mobilization in the context of the country, discussed potential challenges to successful efforts to mobilize resources and prepared a concise plan to intensify country resources mobilization efforts. WHO documentation for working with decision-makers was translated into Uzbek, its adaptation and active use for advocacy was planned.
Leadership Management and Coordination	**ICC.** Following the ToR of technical assistance and after having reached the consensus with Gavi Secretariat and ICC it was decided to concentrate the TA in the following areas: • Analysis of the ability of the ICC to carry out its activities in accordance with the requirements and expectations of Gavi; • Training and coaching for ICC members on the GAVI activities and principles, their role in the ICC, expectations, basic knowledge and skills; • Identification of "weaknesses" in the knowledge of ICC mandate and functions between members of the ICC;

	• Strengthening of the ICC Secretariat, especially in the field of administrative knowledge, preparation and conduct of meetings, reporting and monitoring of decisions; **Outcomes of technical assistance to ICC** • **A**wareness of the ICC procedures and process • By decree. The MOH endorsed the new regulations for the ICC, which replaced the previous one from 2000. • The new regulations on the ICC fully comply with the requirements of Gavi. **NITAG.** The country revised the composition of NITAG. For the first time it included employees of the Ministry of Finance and a lawyer from MoH. In order to strengthen the capacity of new NITAG members, WHO Regional Workshop on Strengthening the Making of Evidence-Based Immunisation Decisions was held.
Specific vaccines support	In order to prevent false contraindications to immunisation, WHO European Regional Office held a workshop in Uzbekistan on vaccine safety and contraindications for clinicians. Within the workshop 20 specialists have been trained, who will be able to introduce materials from similarly-named WHO guide into training materials before and after graduation. Consultancy support was provided to the MoH in making decision to vaccinate multiple cohorts of teenage girls against HPV and allocating necessary resources. HPV cost-effectiveness study was finalised; the results were used to advocate for allocation of funds for HPV vaccine introduction.
Data	An assessment of the national adverse effects following immunisation (AEFI) surveillance system was conducted. As a result of the assessment, the need to develop a single guidance document for AEFI surveillance was identified. A working group was created that was authorized to develop this guide before July 1, 2018. The WHO Regional Office for Europe (WHO EURO) continued to provide overall technical assistance for rotavirus surveillance and the newly implemented paediatric diarrhoea surveillance In 2017, the national rotavirus laboratory at the Institute of Virology passed the EQA and EQC programs. To reduce the cost of rotavirus surveillance, WHO EURO provided technical assistance on implementing systematic sampling of eligible children for enrolment in rotavirus surveillance beginning in 2017.

Supply chain	• EVM SOPs are adapted and are currently being piloted in 4 regions. The piloting process is documented and will serve as the basis for SOPs finalization • A detailed CC equipment deployment plan aligned with CCEOP application is developed and sent to UNICEF SD for procurement and cold chain delivery; • cMYP costing is updated through recalculation of 2018 vaccine procurement budget using the unified budgeting template; along with conducted capacity building of relevant stakeholders for both MoH and MoF on use of unified budget template for vaccine calculation • Capacity of MoH and MoF staff on procurement (including procedures of procuring through UNICEF SD) to support proper planning of immunization related supplies is improved
IPV introduction	IPV was introduced in April 2018.

6. ACTION PLAN: SUMMARY OF FINDINGS, ACTIONS AND NEEDS OF RESOURCES OR SUPPORT IDENTIFIED AND AGREED DURING THE JOINT APPRAISAL

Overview of key activities planned for the next year:

- In 2019, the country is to introduce HPV vaccine into preventive vaccination schedule. It is expected that the vaccine will be introduced in October and will be administered on the basis of secondary schools. The country submitted an updated plan of action for preparation of HPV vaccine introduction for a single age cohort aged nine and is waiting for a decision letter from GAVI to receive the vaccine introduction grant (VIG). Additional rounds of immunisation for a multi-age cohort of girls aged 11-14 years is planned for 2020 depending on the availability of vaccines.
- In 2019, the country expects to receive GAVI assistance for additional rounds of immunisation with inactivated polio vaccine for those cohorts of children who were missed by immunisation with the trivalent vaccine between 2016 and 2018, when the transition from tOPV to bOPV took place and IPV was not yet available.
- It is necessary to continue capacity building of MoH and MoF in vaccine procurement forecasting and budgeting and in the field of logistics and procurement of vaccines and injectables. Also, it is important to elaborate tool used for vaccine forecasting and budgeting for cold chain equipment being installed over the country, so budget presented to MOF will have the maintenance fee included to the annual budget.

Key finding / Action 1	Management strengthening and improve efficiency of program management
Current response	Activities on management strengthening and efficient program management are supported through TCA 2017 and TCA 2018

Agreed activities in the country	Assessment of management capacity • Action plan for the review of the immunisation program • Staffing support • Strengthening NITAG role • Strengthening ICC functions • Assessment of the impact of primary health care reforms on the immunisation program
Expected outputs and results	Achieve programmatic effectiveness and financial sustainability of the NIP through: • Improving programme efficiency; • Tailoring staffing of the NIP; • Ensuring that programmatic decisions are made based on evidence; • Improving coordination of the programmes and adoption of the notion of holistic healthcare without fragmentations of the services/programmes; • Constant monitoring of the sustainability of programme efficiency
Relevant schedule	Second half of 2018 and 2019
Required resources and support	These directions will be supported by GAVI current grants through WHO and UNICEF, and directly by GAVI.
Key finding / Action 2	Sustainability
Current response	Through activities under the TCA
Agreed activities in the country	• Capacity building in vaccine procurement, budget planning and procurement needs calculations, plus the revision of the 3-year budget plan and the institutionalization of the budgeting support(see supply chain as per the maintenance plan) • Advocacy for attracting domestic funds - a higher-level event, annual, resource mobilization • The consequent expansion of the planning and budgeting tool to include the reporting module and the module for calculating the cost of cold chain equipment maintenance • Development and adoption of SOPs on the procurement planning process
Expected outputs and results	The State budget allocation for immunization programme to include: • Cost of cold chain maintenance at all levels • Increased utilities cost for cold chain facilities
Relevant schedule	Second half of 2019
Required resources and support	TCA 2019, TP
Key finding / Action 3	Supply chain
Current response	HSS support to rehabilitation of cold stores and purchase and deployment of equipment. Development of SOP on EVM.
Agreed activities in the country	• Drawing up the cold chain equipment maintenance plan • Transition plan for supporting of CCEOP implementation • Strategic review of HSS and CCEOP program implementation as related to procurement • Action plan for rapid assessment of human resources in the supply chain • Continuation of technical assistance in CCEOP implementation • Assessment of effective vaccine management and development of an action plan for improvement

	• Continuation of procurement capacity improvement • Piloting of the module in the planning and budgeting tool for the cost of cold chain equipment maintenance; • Possible further procurement of CC supplies for the primary care level facilities
Expected outputs and results	Immunization programme is improved through upgrade of cold chain equipment, human resources and operating procedures. • Development of HR strategy and its endorsement at government level; • Institutionalization of supply and cold chain positions in healthcare system including immunization; • Effective use of cold chain maintenance plan
Relevant schedule	Second half of 2019 and first half of 2020
Required resources and support	TCA funds
Key finding / Action 4	Data
Current response	Currently support around data collection and usage is concentrated around polio, measles surveillance and surveillance of the newly introduces vaccines and
Agreed activities in the country	• Continue Surveillance of newly introduced vaccines • Strengthen AEGI Surveillance • Conduct Data quality review • Development of the Roadmap for data quality review findings • Improve target population estimates; • Development of analytical functions of current information system • MICS 2020
Expected outputs and results	Evidence based programming and use of data for policy making programme improvement through: • High-quality rotavirus surveillance data on burden of Rotavirus disease during post introduction to monitor vaccine impact for policy making; • National AEGI guidelines update and operationalization. • Maintain and build trust in vaccination to reduce missed opportunities reduced and sustain high immunization coverage;
Relevant schedule	Throughout 2018-2020
Required resources and support	These activities will be financed from GAVI Transition Plan grant and GAVI Targeted Country Assistance grant
Key finding / Action 5	Vaccine Specific support
Current response	IPV VIG and TCA 2018
Agreed activities in the country	• HPV vaccine introduction • Improving vaccination by preventing false medical exemptions • Immunisation in practice modules adaptation • Support for studying the burden of typhoid infection • Introduction of collaborative procedures for vaccines registration • Continuation of support for the promotion of HPV information
Expected outputs and results	
Relevant schedule	Throughout 2018-2020

Required resources and support	VIG for HPV, Operational grant for HPV, TCA grant 2018 and TCA 2019
Key finding / Action 6	Demand Stimulation
Current response	
Agreed activities in the country	• Completion of coverage estimates study and development of communication strategy and plan; • Upgrade of the national immunisation website www.privivka.uz; • Support in implementing communication and social mobilization plan for HPV vaccine introduction (WHO and UNICEF);
Expected outputs and results	Benefits of immunization are understood on all levels and demand for immunization is consistently high.
Required resources and support	These activities are included in GAVI Transition Phase and Country Technical Support grants
Key finding / Action 7	NITAG capacity building
Current response	Through TCA
Agreed activities in the country	• Support in developing NITAG Charter • Support in making evidence-based recommendations on sustainable implementation of HPV vaccine after GAVI support is finished
Expected outputs and results	National Immunization Programme is using evidence to make decisions
Required resources and support	These activities are included in GAVI Transition Plan

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

This report has been translated into Russian and returned to the country for ICC endorsement. The review and endorsement is expected to take place in the last week of September.

8. ANNEX Compliance with GAVI reporting requirements

	Yes	No	Not applicable
Grant Performance Framework (GPF) * Reporting on all indicators due to have been completed	X		

Financial reports*			
Periodic financial reporting	X		
Annual financial statement	X		
Annual financial audit report			X
End of year stock level report (which is normally provided by 15 May as part of the vaccine renewal request) *	X		
Campaign reports*			
Supplementary immunisation activity technical report			X
Campaign coverage survey report			X
Immunisation financing and expenditure information	X		
Data quality and survey reporting			
Annual data quality desk review			X
Data quality improvement plan (DQIP)			X
Progress report on data improvement plan implementation			X
In-depth data assessment (conducted in the last five years)	X		
Nationally representative coverage study (conducted in the last five years)		X	
Annual progress update on the Effective Vaccine Management (EVM) improvement plan			
CCEOP: updated CCE inventory			
Post Introduction Evaluation (PIE)	X		
Measles and rubella situation analysis and 5 year plan			X
Operational plan for the immunisation programme			X
HSS end of grant evaluation report			X
HPV specific reports			X

Reporting by partners on TCA and PEF functions	X		

In case any of the required reporting documents is not available at the time of the Joint Appraisal, provide information when the missing document or information will be provided.

National MICS is planned for early 2019.