

# Immunization Program Needs and Budget Calculation

Dilorom Tursunova

National Expanded Program on Immunization

National Coordinator

# Uzbekistan

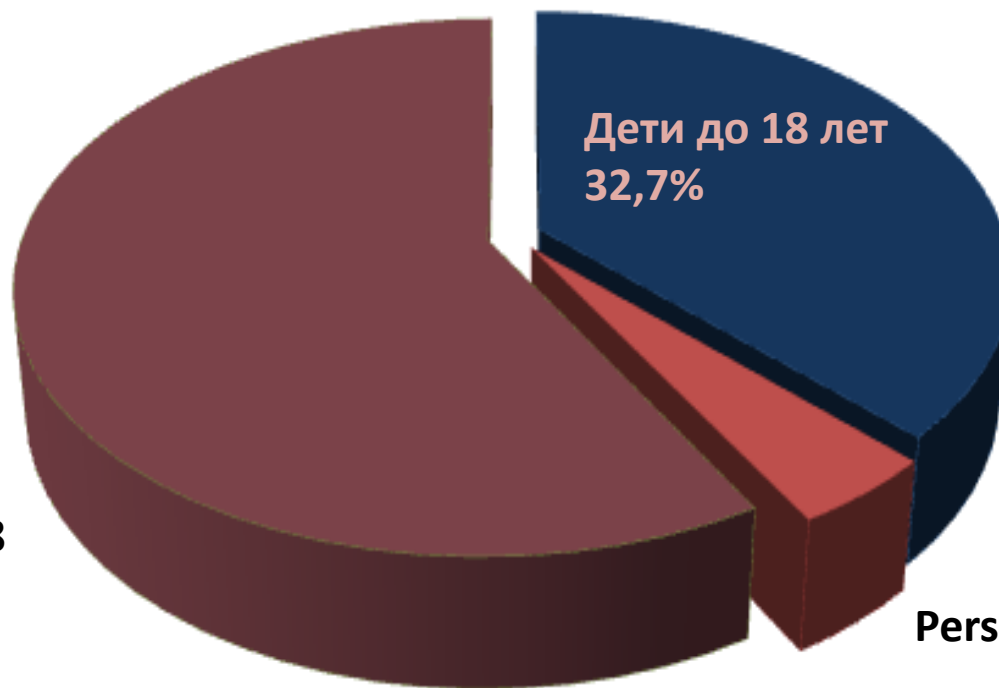


Capital – Tashkent

Population – 32 121 100.

Population density 69.1 people / sq. m.

# Age Structure of the Population of the Republic of Uzbekistan



Persons from 18  
to 65 58,8%

Persons over 65 8,5%



# Immunization Program- Development

Past

- For the past 17 years immunization program had been financed from several sources
- Since 2000 the immunization programs had been financed only by the international organizations

Current

- Since the beginning of 2008 the country has actively switched to self-financing
- In 2015 a multi-year plan for the immunization program was developed
- Timely planning and accurate calculation
- Advocacy for increasing the immunization program funding
- Strengthening the cold chain capacity

Future

- Key strategy for strengthening the financing – drawing internal resources and cost optimization
- The country will become completely independent in terms of immunization program funding from 2021

# Achievements and Strengths of NPI

- High political commitment to the National Immunization Program (NPI);
- Increasing vaccine funding to sustainable levels;
- Achievements in leadership, legislation, funding and overall coordination of the EPI program over the past decades in Uzbekistan;
- High-level immunization coverage, which helps prevent AFP cases for many years;
- Strong epidemiological surveillance system;
- Good relations and program coordination with partners;

# Immunization Program

Immunization Schedule

Age	Name
24 hours	<b>HBV-1</b>
2-5 days	<b>BCG-1</b>
2 months	<b>DPT-1, HBV-2 +Hib-1, OPV-1+ ROTA-1. PNEUMO-1</b>
3 months	<b>DPT-2, HBV-3 +Hib-2, OPV-2+ ROTA-2. PNEUMO-2</b>
4 months	<b>DPT-3, HBV-4 +Hib-3, OPV-3, IPV</b>
12 months	<b>MMR – 1. PNEUMO-3</b>
16 months	<b>DPT- 4, OPV - 4</b>
6 years	<b>MMR-2</b>
7 years	<b>Td, OPV-5</b>
9 years	HPV
16 years	<b>Td-6</b>

NEW VACCINE INTRODUCTION DATES

2001	Viral Hepatitis B
2007	Measles-epidemic parotiditis and mumps-MMR
2009	Pentavalent vaccine- DPT+HBV+Hib (diphtheria-pertussis-tetanus-hepatitis B-Hib infection)
2014	Rotarix vaccine against ROTA virus infection
2015	Pneumococcal vaccine Prevenar -13
2017-18	Inactivated Polio Vaccine
2019	Vaccine human papilloma virus HPV

# Goals and Strategic Directions of Immunoprophylaxis in the Republic of Uzbekistan

- Ensuring the financial sustainability of the National Immunization Program (NPI);
- Maintain timely coverage by quality and safe planned immunization of at least 95% of the target population in all administrative territories;
- Strengthening epidemiological surveillance of infections managed by specific prophylaxis;
- Prevention of introduction and spread of infectious agents;
- Monitoring and supervision of the quality of activities carried out under the National Program of Immunization;
- Regularly improving the national immunization schedule on the basis of the best international practice, introducing new vaccines into it.

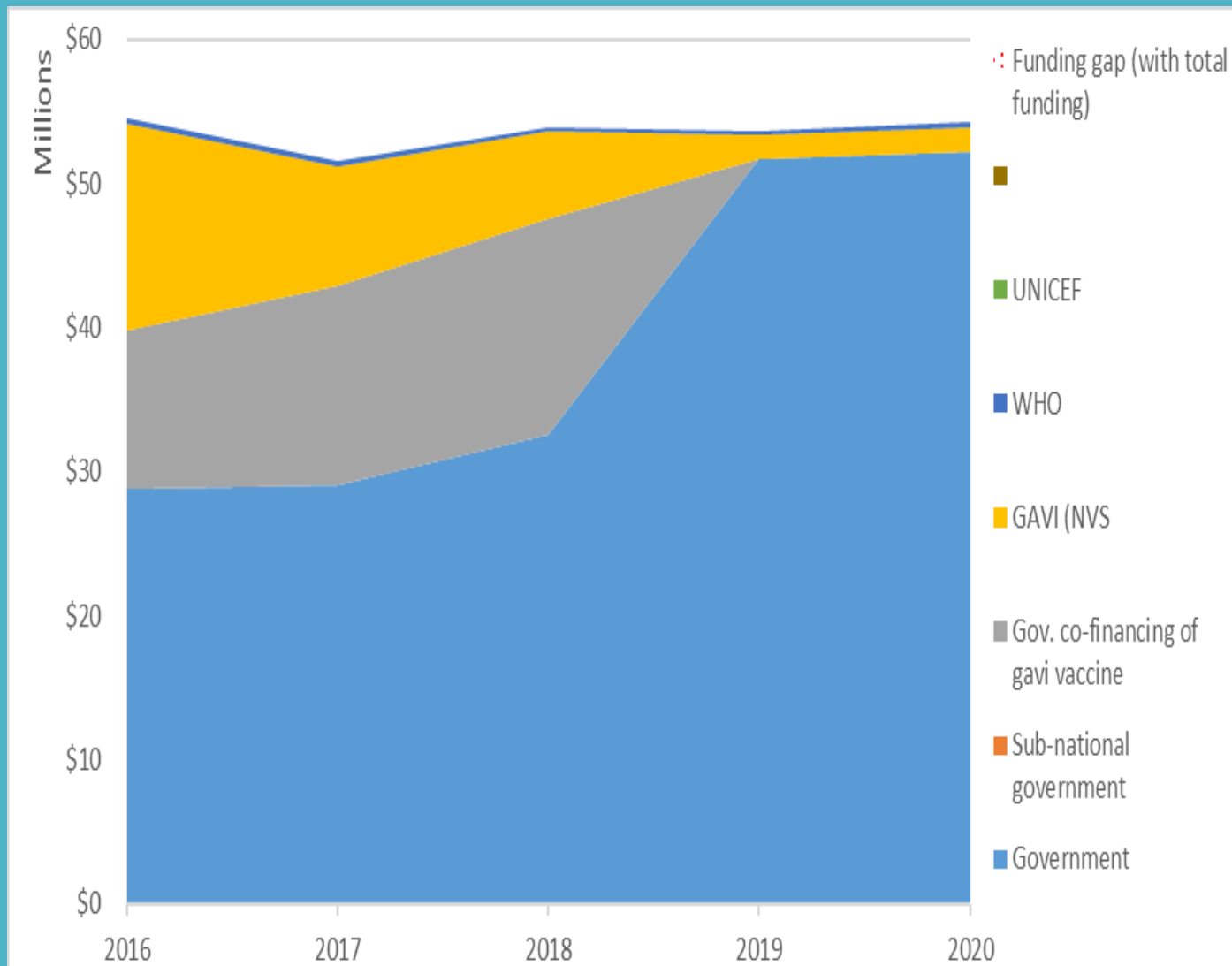
# Funding and Receiving Humanitarian Aid in the Republic of Uzbekistan

Years	Amount requested (mln.soum.)	Funded( mln.soum.)	Hum. aid (thousand \$.)	% of state budget	% of hum. aid	Incl. GAVI WHO UNICEF		
2001-2003			7 162,0	0	100,0			Japan JICA»
2004	1 703,2	142,274	781,8	8.4	91.6	83.5	8,1	-
2005	2 396,8	1526,8	870,1	6.2	93.8	93.8	-	-
2006	2 250,5	1 422,3	828,2	63,2	36.8	36.8	-	-
2007	2 735,0	1 593,4	1 141,6	58,3	41.7	-	41.7	-
2008	4 885,0	2 566,0	2 319,0	52,5	47.5	-	30,7	16,8
2009	6 544,5	3 738,6	7 270.0	57,1	42.9	31.3	10,6	1,0
2010	2.2 4 395,1	4 669,9	10 252,0	77,0	23,0	-	22,0	-
2011	4 700,0	4 700,0	4 635,7	76,2	23,7	23,7	-	-
2012	5 668.17	5 150.0	3 825,6	89,5	10,5	10,5	-	-
2013	6 622.935	5 646.3	2 489,8	85.3	14.0	14.0	-	-
2014	8 056.000	7 945.550 (3 407 075.41\$)	4 958,9	90.0	10.0	10.0	-	-
2015	13 600.000 (5 469.050\$)	13 600.000 (5 359.436\$)	12 059,8\$	90,0	10,0	10,0	-	-
2016	18.794.000 +1 300.0= 20 094.0 млн.сум (6 862 619,0\$)	18 794.000 +1 300.0= 20 094.0 млн.сум (6 862 619,0\$)	9 033 406,42\$	90,0	10.0	10.0	-	-
2017	42 119,8 млн.сум. (12 184 005\$).	27 600,0+14 619,8= 42 119,8 млн.сум. ( 12 184 005,0\$).	6 456 986,81	90,0	10,0	10,0	-	-
2018	105 845,42	100 518,048	4 686 779,14	94,0	6,0	6,0	-	-
2019	144 082,03							



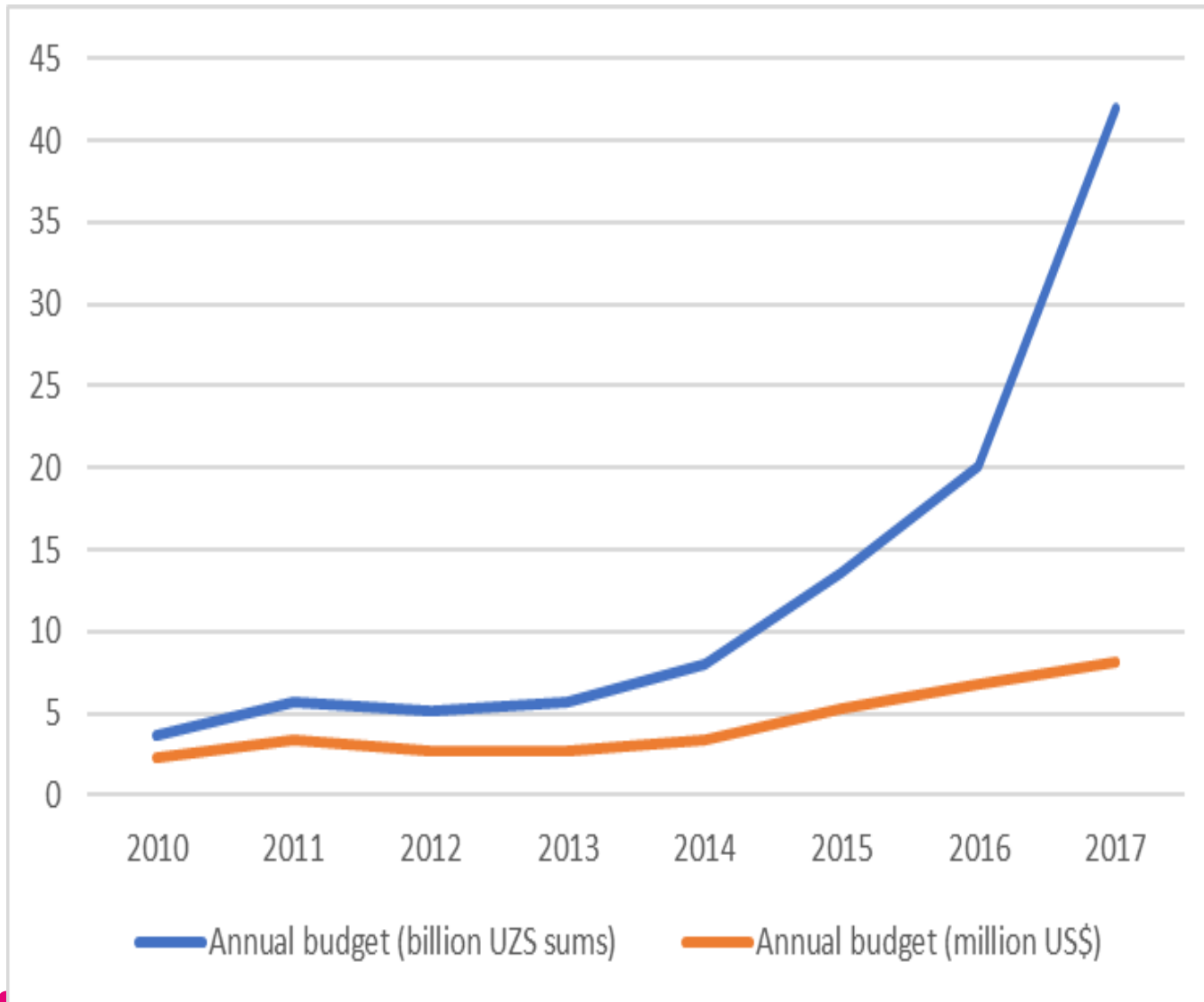
# Gaps in Funding

In 2002, the percentage of funding from the state budget was below 5%. From 2003, the state share of co-funding with GAVI began to rise reaching 90% by 2010. This increase was the result of the introduction of new vaccines, such as ROTA, Pneumo and Penta vaccines in the National Immunization Schedule, and due to the transition from the support of GAVI to self-procurement and purchase of vaccines.



## Increase of the State Budget for Vaccine Procurement

The public investment in the immunization program has increased due to several reasons: a) Annual increase in the number of newborns. Over the past 7 years, the number of newborns has doubled; b) the immunization schedule has expanded significantly because of the introduction of new vaccines; c) the budget includes the cost of syringes and other necessary supplies. A sharp increase in the state budget is observed in Uzbek soums due to removing restrictions on the currency exchange in 2017 and doubling the dollar rate. However, the budget for the immunization program has increased only 3.5 times in the US dollars.



# Current Funding Problems

General lack of funding for the health care system;

Budget for the health care system is not consolidated, there are differences in funding of different regions;

Inefficient funding of health facilities does not provide incentives to improve the use of the funds, optimize cost and increase the provided services;

The major portion of the provided budget (around 66%) is used for the maintenance of the infrastructure of the medical facility;

Ineffective system of motivation of medical personnel based on the type of organization, position held, qualification category and work experience in this area, that is, there are no indicators on the complexity and quality of medical care provided by this specialist;

Inflation and increase of the budget volume in the local currency;

Lack of awareness of the key staff of the Ministry of Finance, who determine the financing policy of the health system in general and immunization in particular, about current changes in the immunization program (introduction of new vaccines, 25% vaccine stock, increase in the share of co-financing, etc.);

Fluctuation of the prices of vaccines in the global market;

Differences in time and procedures for summing up financial results arising from the partial supply of vaccines, partial use of money and partial closure of accounts provided by Copenhagen to the Ministry of Finance;

Local market formation;

Lack of the budget allocated for customs procedures, insufficient practice to include direct and indirect costs associated with immunization in the budget.

# Development of a Planning and Budgeting Tool

- Since 2016, UNICEF has supported the Ministry of Health and the Ministry of Finance of the Republic of Uzbekistan in developing a tool for long-term standard planning and budgeting of vaccines;
- Since 2017 vaccine budget has been completely calculated in this tool;
- Calculations in the tool are standardized and described in the manual;
- Workers of the Reb. Center for Sanitary and Epidemiological Supervision, the Ministry of Health and Ministry of Finance have been trained and work with the tool;
- The tool was finalized in 2018 and submitted for institutionalization;
- In 2019-2020 the tool will include the cost of maintenance of cold chain equipment.

# The Vaccine Planning and Budgeting Methodology Concept

- Compatibility with the multi-year immunization program plan(CMYP);
- Flexibility of the tool : key parameters for planning the delivery of vaccines and injection materials can be changed to meet the current needs of the country;
- Inclusion of vaccines for epidemic indications and other services associated with the immunization program (customs clearance, transportation, other services).

Вакцины для Рутинной Иммунизации (РИ)

Расчеты потребностей (Год: 2019)



Наименование вакцин	Дозы в календаре	Администрирование	Презентация	Размер флакона	Тип шприца для смешивания	Набранная в шприц	Когорта	Охват		Уровень розлива				Оплаченные донором	Кол-во доз, оплаченных донором	Количество доз с учетом со-финансирования	Резерв			Итоговое количество для бюджетирования	Поставки через ЮНИСЕФ		
								Размер когорты	Окончательный	кМЛП	Вручную	Количество доз для прививания	кМЛП				Вручную	Коэффициент розлива	Количество доз с учетом потерь			Остаток	как % от годовой потребности
БЦЖ вакцина (Lyophilized @20)	1	ID	Lyophilized	20	BCG/Hib_Norm	N	Births	715,535	95.0%	100.0%	100.0%	715,535	50%	16%	2.000	1,431,070	1,431,070	507,000	25%	357,768	-149,233	1,281,838	Y
АКДС вакцина (Liquid @10)	1	IM	Liquid	10	None	N	Surviving infants	715,535	95.0%	100.0%	100.0%	715,535	15%	15%	1.183	846,787	846,787	224,000	25%	211,697	-12,303	834,484	Y
КПК вакцина (Lyophilized @10)	2	SC	Lyophilized	10	MSL/YF_Norm	N	Surviving infants	715,535	95.0%	100.0%	100.0%	1,431,070	15%	15%	1.183	1,692,572	1,692,572	500,000	25%	423,143	-76,857	1,615,716	Y
Полиомиелитная вакцина (оральная) (Liqu	5	Oral	Liquid	20	None	N	Surviving infants	715,535	95.0%	100.0%	100.0%	3,577,675	15%	15%	1.181	4,223,937	4,223,937	1,000,000	25%	1,055,984	55,984	4,279,922	Y
ВГБ вакцина (Liquid @10)	1	IM	Liquid	10	None	N	Births	715,535	95.0%	100.0%	100.0%	715,535	5%	15%	1.176	841,806	841,806	300,000	25%	210,451	-89,549	752,257	Y
АД вакцина (Liquid @10)	2	IM	Liquid	10	None	N	Children 7 years old	624,909	95.0%	100.0%	100.0%	1,249,818	15%	15%	1.183	1,478,200	1,478,200	200,000	25%	369,550	169,550	1,647,750	Y
Пентавалентная вакцина (Liquid @10)	3	IM	Liquid	10	None	N	Surviving Infants	715,535	95.0%	100.0%	100.0%	2,146,605	5%	15%	1.183	2,538,859	2,538,859	950,000	25%	634,715	-315,285	2,223,573	Y
Рота вакцина (Liquid @1)	2	Oral	Liquid	1	None	N	Surviving infants	715,535	95.0%	100.0%	100.0%	1,431,070	5%		1.053	1,506,389	1,506,389	300,000	25%	376,597	76,597	1,582,987	Y
Пневмококковая вакцина (Liquid @1)	3	IM	Liquid	1	None	N	Surviving infants	715,535	95.0%	100.0%	100.0%	2,146,605	5%		1.053	2,259,584	2,259,584	600,000	25%	564,896	0	1,731,700	Y
Полио Инъекционная вакцина (Liquid @5)	1	IM	Liquid	5	None	N	Surviving infants	715,535	95.0%	100.0%	100.0%	715,535	5%		1.053	753,195	753,195	0	25%	188,299	188,299	941,493	N
Папилловир вакцина (Liquid @1)	2	IM	Liquid	1	None	N	Adolescent girls 12 years old	317,604	0.0%	100.0%	100.0%	635,208	0%	5%	1.053	668,640	668,640	73,030	25%	167,160	167,160	240,190	Y

# Key Components of Tool Data

- Demographic data on routine immunization for 5 years (a multi-year plan);
- Demographic data for vaccines not included in the National Immunization Schedule;
- Vaccines characteristics and details of vaccination (coverage, bottling);
- Vaccine stock and buffer stock (25%);
- Characteristics and use of injection materials;
- The agency through which the procurement will be made (through UNICEF or local procurement) – defined by Ministry of Health of the Republic of Uzbekistan;
- Prices according to the UNICEF catalogue;
- Local market prices;
- Current exchange rate.

# What can this tool do?

- Calculate the number of vaccines to be purchased, based on variable parameters (cohort, target population, coverage, filling percentage, stock of vaccines and 25% buffer);
- Calculate the budget, including co-financing;
- Connect the annual budget with the long-term budget;
- On 2 languages;
- There are variable parameters that are introduced annually, based on the actual situation;
- Print the form in the format of the State Request for vaccines from the National Immunization Schedule and beyond it;
- The budget is calculated in the 2 currencies: Uzb. soums and US dollars.

Расчет потребности в средствах для приобретения вакцин через ЮНИСЕФ на 2019 год для иммунизации детей согласно Календаря профилактических прививок Республики Узбекистан и по эпидемиологическим показателям



Курс US\$ 1 = UZS 7,790

№	Наименование вакцин	Предположительный остаток на 01.01.2019	Подлежащий контингент на 2018 год, человек	К-во доз на 1 ребенка	Коэффициент розлива	Всего необходимо закупить, доз	Количество доз		Цена 1 дозы (долл. США)	Сумма, оплачиваемая донором	Общая сумма бюджета	
							Оплачивается донором	Оплачивается из гос. бюджета			Тыс. долл. США	Млн. Сум
1	БЦЖ вакцина	507,000	715,535	1	2.000	1,281,838		1,281,838	0.13		162.7	1,267.3
2	АКДС вакцина	224,000	715,535	1	1.183	834,484		834,484	0.25		208.5	1,624.5
3	КПК вакцина	500,000	715,535	2	1.183	1,615,716		1,615,716	1.53		2,465.2	19,204.6
4	Полиомиелитная вакцина (оральная)	1,000,000	715,535	5	1.181	4,279,922		4,279,922	0.16		680.7	5,302.7
5	ВГБ вакцина	300,000	715,535	1	1.176	752,257		752,257	0.25		184.9	1,440.6
6	АД вакцина	200,000	624,909	2	1.183	1,647,750		1,647,750	0.18		304.6	2,373.0
7	Пентавалентная вакцина	950,000	715,535	3	1.183	2,223,573		2,223,573	0.80		1,776.2	13,837.1
8	Рота вакцина	300,000	715,535	2	1.053	1,582,987		1,582,987	2.49		3,949.0	30,763.3
9	Пневмококковая вакцина	600,000	715,535	3	1.053	2,259,584	527,884	1,731,700	3.82	2,016.7	6,615.8	51,538.4
10	Папилловиральная вакцина	0	317,604	2	1.053	835,800	595,610	240,190	5.67	3,375.8	1,361.4	10,605.3
11	Шприц, однор., 2 мл с иглой					6,265,728		6,265,728	0.04		278.5	2,169.5
12	СР Шприц, 0.5 мл					4,170,363		4,170,363	0.08		316.7	2,467.1
13	Шприц, однор., 5 мл с иглой					225,663		225,663	0.04		9.7	75.9
14	Коробки безопасности					106,618		106,618	0.86		92.1	717.2
<b>В итоге</b>										<b>5,392.6</b>	<b>18,406.0</b>	<b>143,386.7</b>

## What is that the tool cannot do?

- Budget calculation for only one year (any from the multi-year plan);
- The tool does not allow to change the characteristics of vaccines, as they are specified in the multi-year plan;
- The tool is created in Excel 2016, can be used with 2013 and 2010 versions of the program. The earlier versions of the program do not open the document.



# Key Components of the Tool

The tool consists of 16 key components and introduction:

- Consolidated budget for all types of delivery;
- Consolidated budget for supplies through UNICEF;
- The budget format for the Ministry of Finance: all procurements;
- Format of the budget for the Ministry of Finance: Procurement through UNICEF;
- Calculating the annual budget for vaccines and injection materials for routine immunization;
- Calculating the number of vaccines and injection materials for routine immunization, based on multi-year planning;
- Injection materials;
- Budget calculation for vaccines outside the immunization schedule;
- Demographic data;
- Characteristics and description of vaccines.

# Key Components of the Tool

**Template | Шаблон**

For annual budgeting of vaccines and injection supplies based on cMYP projections  
Для расчета годового бюджета вакцин и инъекционных материалов в соответствии с прогнозами комплексного многолетнего плана иммунизации

Select Language | Выберите язык: **Ru**

Выберите год для расчетов: **2019**

№	Описание	Ссылка	Описание
06	Бюджет для Министерства Финансов: местные закупки	<a href="#">MoF_Locally</a>	Показывает бюджет для распечатки в формате для Министерства Финансов: наименования вакцины для закупок в стране
07	Стоимость вакцин и инъекционных материалов для рутинной иммунизации	<a href="#">Price_RI</a>	Расчитывает годовой бюджет вакцин и инъекционных материалов для рутинной иммунизации после ввода данных о (a) стоимости единицы, и (б) дополнительных расходах для товаров, закупаемых через Отдел поставок ЮНИСЕФ
08	Вакцины для Рутинной Иммунизации (РИ)   Расчеты потребностей (Год: 2019)	<a href="#">RI_Vaccines</a>	Расчитывает количество вакцин для рутинной иммунизации (РИ) на основании или (a) изначальных прогнозов «МЛП», или (б) уточненных параметров, и позволяет указать канал/источник закупок для каждой вакцины
09	Инъекционные материалы (для рутинной иммунизации)   Расчеты потребностей (Год: 2019)	<a href="#">RI_Inject</a>	Расчитывает количество инъекционных материалов для вакцин, предназначенных для рутинной иммунизации (РИ), после уточнения наименования инъекционных материалов, указания канала/источника закупок, или корректировки изначальных параметров, указанных в «МЛП»
10	Стоимость других вакцин и инъекционных материалов	<a href="#">Price_Other</a>	Расчитывает годовой бюджет других вакцин и инъекционных материалов (используемых помимо рутинной иммунизации) после ввода данных о (a) стоимости единицы, и (б) дополнительных расходах для товаров, закупаемых через Отдел поставок ЮНИСЕФ
11	Другие вакцины	<a href="#">Other Vaccines</a>	Расчитывает количество других вакцин после ввода характеристики вакцин и программных параметров, и указания канала/источника закупок каждой вакцины
12	Инъекционные материалы (для Других Вакцин)	<a href="#">Other Inject</a>	Расчитывает количество инъекционных материалов для других вакцин после уточнения наименования инъекционных материалов, указания канала/источника закупок, или корректировки изначальных параметров, указанных в «МЛП»
13	Демография	<a href="#">Demography</a>	Позволяет изменить изначальные демографические расчеты из «МЛП», или ввести новые когорты для иммунизации другими вакцинами
14	Перечень данных - «МЛП	<a href="#">cMYP_Summary</a>	Показывает расчеты количества вакцин в «МЛП» для любого года планируемого периода
15	Детали по вакцинам - «МЛП	<a href="#">cMYP_Vaccine</a>	Показывает детали каждой вакцины из «МЛП» (вакциноустойчивости, а также программные параметры), включая количество

Ready

4:00 PM 3/27/2019