Global Alliance for Vaccines and Immunisation (GAVI)

APPLICATION FORM FOR COUNTRY PROPOSALS

For Support to:

The Government of the REPUBLIC OF MOLDOVA

Immunisation Services, Injection Safety and New and Under-Used Vaccines

Revised 15 July 2007

Please return a signed copy of the document to:
GAVI Alliance Secretariat; c/o UNICEF, Palais des Nations, 1211 Geneva 10, Switzerland.

Enquiries to: Dr Ivone Rizzo, irizzo@gavialliance.org or representatives of a GAVI partner agency. All documents and attachments must be in English or French.

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Executive Summary

The Republic of Moldova is a country of 4.2 million population, located in Eastern Europe, which had to address after getting its independence in 1990ths the economical crisis, a war conflict in its eastern region, significant social and demographical problems. Its health system has faced lack of funds and supplies and in order to improve its cost-efficiency and quality of services has experienced an extended reform process with focus on strengthening the primary health care.

Moldova is among countries with high prevalence of both Hepatitis B (HBV) and Hib infections. It has a long time standing National Immunization Programme (NIP), which is integrated into the primary health care and preventive services and whose with the infrastructure developed goes down to the community level.

The vaccination coverage for each of the 9 NIP antigens has achieved over 90% and is maintained at high level during the last 10 years. The NIP for 2006-2010 sets vaccination coverage targets over 95% for all antigens during the first year of life and focuses on ensuring universal access, high quality of services and safety of immunization. Moldova has implemented a complex information system allowing monthly monitoring of vaccination coverage, drop-out rates, vaccine wastage rates, vaccine and supplies stocks down to the service provision level. An significant upgrade and improvement of its cold chain and vaccine supply at all levels was achieved and in 2004 Moldova was granted the WHO certificate for effective vaccine store management.

Over the last decade Moldova's NIP has incorporated a range of new antigens in its immunization schedule. Universal infant immunization of newborns against Viral Hepatitis B started in 1995. Rapid achievement and maintenance of high immunization coverage in the subsequent birth-cohorts resulted in a reduction of acute VHB cases in children under six years of age by more than 97%. Effective immunization campaigns against polio (children under 5) and diphtheria/tetanus (all population 0-60 years of age) conducted in 1995-1996 resulted in achieving polio-free status of the country and elimination of diphtheria cases. A measles-rubella vaccination campaign (8-29 years of age) conducted in 2002 achieved high coverage and a dramatic decrease of the number cases of both diseases. In 2002 combined measles-mumps-rubella vaccine has replaced the monovalent measles at 12 months and the second dose was established at 7 years of age. In 2005 a vaccination campaign against hepatitis B covered all school children under 18 and allowed extending protection of the population of risk to hepatitis B virus infection. All above mentioned contributed to strengthening the capacity of Moldova health system to implement new antigens.

Hib meningitis has been culture-confirmed in the country, however the surveillance and laboratory capability to isolate Hib is not yet well developed due to financial constraints to procures required laboratory supplies and equipment. Therefore there is no accurate information on prevalence rates of meningitis and pneumonia caused by Haemophilus influenza type B. Acute respiratory infection accounted for 18.3% from infant mortality in 2006 and was the third main cause of death in Moldova following perinatal pathology and congenital malformations according to the national health statistics. According to WHO estimated the average annual number of severe diseases caused by Hib in Moldova reaches 1301 cases and the average number of deaths is 39. The estimated incidence rate of Hib meningitis among children < 5 years of age in Moldova is 10-16 cases per 100,000 children. Hib disease in Moldova is responsible for important financial costs of medical treatment of severe cases and is an important factor contributing to under five mortality.

The purpose of this application is to submit the Ministry of Health (MoH), Government of Moldova's request to the GAVI Fund for support in the provision of tetravalent vaccines (DTP-Hib, liquid, 10-dose/vial or as a second choice DTP-Hib, lyophilized 1-dose/vial) and related supplies and its introduction within the renewed GAVI phase II commitment for the period 2008-2010.

The Introduction of the pentavalent vaccine is expected to start in July 2008 and end in December 2009 according to the lifetime of the current NIP cMYP (2007-2010).

The total amount of funds the Government of Moldova is requesting from the GAVI for the tetravalent DTP-Hib vaccine (fully liquid formulation in 10-dose vial presentation) is US$1,233,500 for three years (2008-2010). In addition the Government is requesting U$ 100,000 to facilitate the introduction of the vaccine.

This proposal has been developed through an interactive and inclusive process of the ICC partners with consultation of the Health Sector Departments. The whole process was guided by the Deputy Minister of Health and the Director General of National Center of Research and Applied Preventive Medicine, Chief Sanitary Doctor of the Republic of Moldova, with internal and external technical support of WHO and UNICEF.

2. Signatures of the Government and National Coordinating Bodies

Government and the Inter-Agency Coordinating Committee for Immunisation

The Government of the Republic of Moldova would like to expand the existing partnership with the GAVI Alliance for the improvement of the infants routine immunisation programme of the country, and specifically hereby requests for GAVI support for new and under used vaccine, namely introduction of Haemophilus influenzae type B vaccine through the implementation of the combined DTP-Hib liquid vaccine (10 dose vials)

The Government of the Republic of Moldova commits itself to developing national immunisation services on a sustainable basis in accordance with the comprehensive Multi-Year Plan presented with this document. The Government requests that the GAVI Alliance and its partners contribute financial and technical assistance to support immunisation of children as outlined in this application.

Table N° 6.5 of page 29 of this application shows the amount of support in either supply or cash that is required from the GAVI Alliance.

Rounded up portion of supply that is procured by GAVI and estimate of related cost in US$.		**2008**	**2009**	**2010**
Total value to be co-financed by GAVI	*$*	$294,000	$509,500	$443,000

Table N° 6.4 of page 29 of this application shows the Government financial commitment for the procurement of this new vaccine (NVS support only).

Rounded up portion of supply that is procured by the Government of Moldova and estimate of related cost in US$		**2008**	**2009**	**2010**
Total value to be co-financed by the country	*$*	$28,500	$50,500	$44,000

Minister of Health:

Signature: .....

Name: Ion ABABII

Date: .....

Minister of Finance:

Signature: .....

Name: Mihail POR

Date: .....

National Coordinating Body - Inter-Agency Coordinating Committee for Immunisation:

We the members of the ICC/HSCC[1] met on September 27th, 2007 to review this proposal. At that meeting we endorsed this proposal on the basis of the supporting documentation which is attached.

- The endorsed minutes of this meeting are attached as DOCUMENT NUMBER: .....

Name/Title	Agency/Organisation	Signature
Dr. Golovin Boris, Deputy Minister	Ministry of Health	
Dr. Bahnarel Ion, General Director	National Centre for Research and Applied Preventive Medicine	
Dr. Melnic Anatolie, Head of the General Epidemiology Department	National Centre for Research and Applied Preventive Medicine	
Dr. Osoianu Iurie, Deputy director	National Company for health Insurance	
Ms. Perebicovschi Liubovi, consultant	Ministry of Finance, Direction for financing health and social sphere	
Mr. Ray Virgilio Torres, Representative	UNICEF, Moldova	
Dr. Ursu Pavel, Leason officer	WHO Leason Office in Moldova	

In case the GAVI Secretariat has queries on this submission, please contact:

Name:	Dr. Anatolie Melnic	Title:	Head of the General Epidemiology department
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The GAVI Secretariat is unable to return documents and attachments to individual countries. Unless otherwise specified, documents may be shared with the GAVI partners and collaborators.

[1] Inter-agency coordinating committee or Health sector coordinating committee, whichever is applicable.

The Inter-Agency Coordinating Committee for Immunisation

Agencies and partners (including development partners and CSOs) supporting immunisation services are co-ordinated and organised through an inter-agency coordinating mechanism (ICC/HSCC). The ICC/HSCC are responsible for coordinating and guiding the use of the GAVI ISS and NVS support. Please provide information about the ICC/HSCC in your country in the spaces below.

Profile of the ICC/HSCC

Name of the ICC/HSCC: Coordination Committee for development and financing of the National Immunization Programme for 2006-2010

Date of constitution of the current ICC/HSCC:
February 12, 2001 - the first constitution meeting of the ICC
28 May 28, 2001 - the Government of Moldova formally approves The ICC
15 May 2006, - new composition of ICC approved by the Government decree no. 523

Organisational structure (e.g., sub-committee, stand-alone): Stand-alone

Frequency of meetings: at least once a quarter

Composition:

Function	**Title / Organization**	**Name**
Chair	Deputy Minister, Ministry of Health	Dr. Golovin Boris
Deputy Chair	General Director, National Centre for Research and Applied Preventive Medicine	Dr. Bahnarel Ion
Secretary	Head of the General Epidemiology Department, National Centre for Research and Applied Preventive Medicine	Dr. Melnic Anatolie
Members	• Deputy director, National Company for health Insurance • Consultant, Direction for financing health and social sphere, Ministry of Finance, • Representative, UNICEF Moldova, • WHO Leason officer, WHO leason office in Moldova,	• Mr. Osoianu Iurie • Ms. Perebicovschi Liubovi • Mr. Ray Virgilio Torres • Dr. Ursu Pavel

Major functions and responsibilities of the ICC/HSCC:

Provide support on evaluation and planning of short-term and long-term activities related to the NIP

Provide support in the implementation of NIP' s priorities

Establish good partnership to coordinate use of local and external resources, so that to use them most rationally and increase NIP effectiveness

Provide assistance for local and external resource mobilization aiming at the NIP successful implementation

Assist in ensuring transparency on using NIP' s funds and resources

Stimulate sharing information among national and external partners

Provide assistance in finding approaches for reaching new NIP objectives

Provide support in monitoring of NIP activities and performance

Assist in creation of public opinion on importance of immunization

Three major strategies to enhance the ICC/HSCC's role and functions in the next 12 months:

1. Develop annual plans of activity and conduct regular meetings

2. Develop and monitor performance indicators of the NIP

3. Regularly circulate minutes of meetings to ICC members

3. Immunisation Programme Data

Please complete the tables below, using data from available sources. Please identify the source of the data, and the date. Where possible use the most recent data, and attach the source document.

- Please refer to the Comprehensive Multi-Year Plan for Immunisation (or equivalent plan), and attach a complete copy (with an executive summary) as DOCUMENT NUMBER 2.

- Please refer to the two most recent annual WHO/UNICEF Joint Reporting Forms on Vaccine Preventable Diseases and attach them as DOCUMENT NUMBERS 3 and 4.

- Please refer to Health Sector Strategy documents, budgetary documents, and other reports, surveys etc, as appropriate.

Table 3.1: Basic facts for the year **2006** (the most recent; specify dates of data provided)

	Figure	Date	Source
Total population	4,200,000	2006	Ministry of Health
Infant mortality rate (per 1000)	11,8	2006	Ministry of Health
Surviving Infants*	41,880	2006	Ministry of Health
GNI per capita (US$)	936	2006	Ministry of Health
Percentage of GDP allocated to Health	4.8	2006	Ministry of Health
Percentage of Government expenditure on Health	50.0	2006	Ministry of Health

* Surviving infants = Infants surviving the first 12 months of life

Please provide some additional information on the planning and budgeting context in your country:

Please indicate the name and date of the relevant planning document for health

National Health Policy
In august 2007 the Government issued the National Health Policy (Government of Moldova Decree no. 886 of 06.08.2007) defining it as a priority in the framework of the efforts made by the Government and civil society, aimed at continuous strengthening of the population's health and improvement of the economic and social situation in the country.
The general objectives of the National Health Policy are as follows:
a) increase in life expectancy at birth and lengthening the healthy life;
b) ensuring life quality and diminishing the differences in terms of health for all social groups;
c) strengthening the intersector partnership in order to improve the population's health;
d) increase in the individual's responsibility for one's own health.
The specific objectives of the National Health Policy are as follows:
a) ensuring the economic and social security of population;
b) promotion of health and disease prevention;
c) ensuring a healthy start in life;
d) maintenance of health of the young generation;
e) strengthening the health of the elderly;
f) combating noncontagious chronic diseases;
g) creating a healthy and safe environment;
h) rational nutrition and increased physical activity;
i) modeling a society free of tobacco, alcohol and drugs;
j) guaranteeing a life free of violence and traumas;
k) ensuring the prerequisites for the improvement of mental health;

l) combating contagious diseases;
m) achieving new performances in the health protection system.
Immunizations were defined as one of the basic tools to be sustained and promoted in order to achieve diseases prevention and control.

Following the National health Policy, the Health System Development Strategy for the period 2007-2016 has been developed with the goal to improve people's health, upgrading the financial protection and degree of satisfaction of the public through adequate enhancement of the Health system performance.

National Immunization Program
In may 2006 the Government issued the National Immunization Program for 2006-2010 (Decree no. 523 of 15.05.2006) that targets 10 infectious diseases (TB, hepatitis B, Polio, Diphtheria, tetanus, pertussis, measles, Mumps, Rubella and haemophilus influenzae type b. it defines specific objectives, strategies and targets to control/eliminate diseases, achieve high coverage rates**,**
The main objectives of the program are to ensure vaccination coverage > 95% at national and district level; maintaining the status of the country free of polio neonatal tetanus and cogenital rubella, sustainable elimination of local measles, rubella and diphtheria cases, reducing the incidence rate of tetanus cases under 0,05 cases per 100000 population, of viral hepatitis B in children - under 2 cases per 100000 population, of pertussis - uder 1,5 cases per 100000 population, and of mumps – under 6 cases per 100000 population; reduce morbidity and mortality caused by septic meningitis and pneumonia following Hib infection in children under 3 years

The main strategies of the program were defined as follows: sustainable financing; continuous supply of vaccines, syringes and other consumables; ensure efficient functioning of the continuous "Cold chain" during transportation and storage of vaccines; ensuring quality and safety of immunizations; ensuring universal access of population to immunization services; strengthening epidemiological surveillance of vaccine-preventable diseases; supervision, monitoring and assessment of the Program; personnel training; research; international collaboration; social mobilization and information of population.

The Programme includes an annual budget for centralized procurement of vaccines and injection safety supplies that is scheduled to increase from 6.2 in 2006 to 8.4 million Moldovan lei in 2008

Planning
The Ministry of Health (MOH) is responsible for policy development and quality control and manages national level tertiary facilities and hospitals. At the district level, health authorities are responsible for the organization of health care services. The Ministry of Health has the overall responsibility for health care, with a shift from the provision of services towards setting guidelines, monitoring and the provisions of national programs, such as immunization and tuberculosis control. Planning is mainly the responsibility of the Ministry of Health, although the role of the regional health administration in this area is growing. Several national level institutions and the Scientific and Practical Centre for Public Health and Management contribute to the planning process through the provision of data and expertise. The Ministry of Health is responsible for regulating standards of medical training.

Public health remains focused on control of communicable disease and environmental health. These activities are run as separate vertical programmes with their own structures apart from the health care delivery system (with the exception of immunization) and the regional health administrations. However, some parts of the public health system have been reformed and expanded including efforts to introduce broader health promotion activities to address issues such as smoking and HIV prevention. The National Health Policy has also called for a broader focus on public health.
The Ministry of Health is responsible for public health services. Health promotion epidemiological services and environmental health activities are run by the National Scientific Practical Centre of Preventive Medicine, which focuses on communicable disease control, including management of the national immunization program, and environmental health issues.

Mandatory health insurance

The GoM introduced mandatory health insurance in January 2004 in accordance with the Law on Mandatory Health Insurance (#1585-XIII, 27 February 1998).

The National Health Insurance Company (NHIC) is a public non-for-profit organization, has local agencies in rayons and is in charge of the mobilization, management of the insurance premiums and payment for the medical services.

The NHIC contracts health care providers (in accordance with the model health care contract approved by the GoM) defining the volume and quality of services to be provided and the reimbursement mechanisms.

Employers are obliged to pay the premiums for their employees. The government pays premiums for unemployed and other social groups without income. The premium rates for the mandatory insurance of employed are calculated as a percentage of the wages (before deducting other taxes), are revised annually by the NHIC and adopted by the Parliament. The insurance premiums for self-employed individuals are calculated as fixed amount equal to the premium paid from the central budget for unemployed.

Unified Program

The volume of medical services covered by the mandatory health insurance is determined by the Unified Program developed by the MOH and approved by the GoM. The total cost of the Unified Program to be financed under the mandatory health insurance was 1.25 billion LEI in 2004 (~100 million US$ or ~25% per capita), out of which 2 million US$ has to be spent on preventive measures.

Under the Unified Program the insured person is eligible to receive the following services:

- urgent care (ambulance services)
- primary health care delivered by FDs at the medical facility or home and including (among others):
  - vaccination in accordance with the NIP
  - supervision of child development
  - antenatal and postnatal care
  - activities to implement national health programs
- specialist care and diagnostic services
- inpatient care
- free drugs for outpatient treatment for the children under the age of 5

Primary health care services are fully financed by the NHIC allocating 35% of the fund for medical services (~332 million LEI or 27 million US$).

Is the cMYP (or updated Multi-Year Plan) aligned with this document (timing, content etc)

The Moldova cMYP was developed in accordance to the National Health Policy, National Immunization Program for 2006-2010 and is aligned to their vision, objectives, strategies and targets.

Please indicate the national planning budgeting cycle for health

Budgetary process

The MOH is in charge for the design and execution of the state budget in health sector.

The National Center for Preventive Medicine defines resource requirements for the next fiscal year by the end of May and submits the budget of the national immunization program to the MOH. The MOH drafts and approves the consolidated budget for entire health sector including the budget of the NHIC and submits it to the Ministry of Finance.

The Government submits the state budget to the Parliament for the review and adoption. The bill contains aggregated public expenditure budget lines. The main discussion in the Parliament could be around the share of health sector in the overall state budget and it is very unlikely that the Parliament Members to revise specific components of the sectoral budget.

As soon as the Parliament approves the state budget, the MOH becomes responsible for the execution of the state budget in health sector. It means that the MOH receives budgeted funds from the Ministry of Finance and manages these funds on its own in accordance with needs of the national health programs. The MOH can reallocate the flow of resources between different national health programs based on the priority or emerging needs.

Flow of resources and vaccines among different state actors during the implementation of the national immunization program is provided in the Annex 1.

Please indicate the national planning cycle for immunisation

The national planning cycle for immunization includes the following stages:

1. National level issue on annual base recommendations for planning immunizations with specific guidance for planning each separate antigen (September, for the next year)
2. Vaccine planning workshops are conducted at district level for all primary health care facilities.
3. Census of the population from each catchment area is conducted by primary health care workers and population evidence registries are updated accordingly.
4. Lists of population by birth cohorts from immunization registries are updated according to the census
5. Screening of persons requiring immunization during the forthcoming year is performed and counts are produced for each antigen, following the national immunization schedule
6. A summary immunization plan for the next year is prepared by each primary health facility and is submitted to the district epidemiologist for review and aggregation. The submitted plan is accompanied by population data, stocks of vaccine and other supplies at health facility, previous vaccination coverage data.
7. Based on data submitted from primary health care units a district / municipality plan is compiled and reviewed.
8. Districts/municipalities submit aggregated plans and reports to the national level for review and producing the national plan
9. The plans (national/district/health facility) are used to monitor performance toward achieving vaccination coverage as well as to schedule appropriate supply of vaccines and other consumables.
10. Vaccination coverage and vaccine/supplies stocks are monitored on a monthly base
11. Performance of the programme is assessed on annual base, providing feedback and feed forward to appropriate management levels.
12. Twice a year information on program achievements is submitted to local administrations and to the national government

13 In April each year estimates on financial needs for procurement of vaccines and supplies are prepared and submitted to the |MoH and ministry of Finance for preparing the budget for the next year

Table 3.2: Current Vaccination Schedule: Traditional, New Vaccines and Vitamin A Supplement *(refer to cMYP pages)*

Vaccine *(do not use trade name)*	**Ages of administration** *(by routine immunisation services)*	**Indicate by an "x" if given in:**		**Comments**
		Entire country	**Only part of the country**	
BCG	**At birth, 6-7 years**	**X**		
HepB	**At birth, 1 month, 6 months**	**X**		**The 3d dose of hepatitis b vaccine is given at 2 months of age to children born from HBsAg positive mothers**
DPT/OPV/ Hib	**2 months, 4 months, 6 months,**	**X**		
MMR1	**12 months**	**X**		
DPT/OPV	**22-24 months**	**X**		
DT/OPV/ MMR2/ BCG2	**6-7 years**	**X**		**DT/OPV simultaneously before school entry** **MMR2/BCG2simultaneously at school entry**
Td	**15, 20, 25, 30, 35, 40, 50, 60 years**	**X**		
Vitamin A	Not applicable			

Table 3.3: Trends of immunisation coverage and disease burden
(as per last two annual WHO/UNICEF Joint Reporting Form on Vaccine Preventable Diseases)

Trends of immunisation coverage (in percentage)						Vaccine preventable disease burden		
Vaccine		Reported		Survey		Disease	Number of reported cases	
		2005	2006	2005	200…		2005	2006
BCG		97.4%	97.8%	99.7%		Tuberculosis*	5632	5471
DTP	DTP1	98.2%	99.2%	98.3%		Diphtheria	0	0
	DTP3	97.6%	97.2%	93.5%		Pertussis	24	44
Polio 3		98.5%	98.2%	94.8%		Polio	0	0
Measles (first dose) (MMR)		96.9%	96.9%	90.6%		Measles	6	34
TT2+ (Pregnant women)		NA	NA	NA		NN Tetanus	0	0
Hib3		NA	NA	NA		Hib **	1	0
Yellow Fever		NA	NA	NA		Yellow fever	0	0
HepB3		98.8%	98.8	94.5%		Acute hepatitis B	411	299
Vit A supplement	Mothers (<6 weeks post-delivery)	NA	NA	NA				
	Infants (>6 months)	NA	NA	NA				

* If available
** Note: JRF asks for Hib meningitis

If survey data is included in the table above, please indicate the years the surveys were conducted, the full title and if available, the age groups the data refers to:

Moldova Demographic and Health Survey, 2005, children 15-26 months of age.

Moldova's first Demographic and Health Survey (2005 MDHS) is a nationally representative sample survey based on 400 sample points (clusters) throughout Moldova (excluding the Transnistria region). Detailed data are provided in the chapter 2.3 of the cMYP

Table 3.4: Baseline and annual targets *(refer to cMYP pages)*

Number		Baseline and targets					
		Base year 2006	**Year 1 2008**	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**
Births		42,379	42,977	43,917	44,462	45,156	44,929
Infants' deaths		499	507	483	489	452	452
Surviving infants		41,880	42,470	43,434	43,973	44,704	44,929
Pregnant women		42,379	42,977	43,917	44,462	45,156	45,156
Target population vaccinated with BCG		41,473	42,548	43,478	44,017	44,704	44,704
BCG coverage*		98%	99%	99%	99%	99%	99%
Target population vaccinated with OPV3		40,756	42,548	43,478	44,017	44,704	44,704
OPV3 coverage**		97%	99%	99%	99%	99%	99%
Target population vaccinated with DTP3***		40,127	26,592	-	-	-	-
DTP3 coverage**		96%	62%	NA	NA	NA	NA
Target population vaccinated with DTP1***		40,575	26,592	-	-	-	-
Wastage[2] rate in base-year and planned thereafter		7%	15%	15%	15%	15%	15%
Target population vaccinated with **3rd dose of DTP-Hib vaccine**		NA	21,022	42,998	43,533	44,257	44,480
……. Coverage**		NA	50%	99%	99%	99%	99%
Target population vaccinated with **1st dose** of **of DTP-Hib vaccine**		NA	21,234	43,432	43,973	44,704	44,929
Wastage[1] rate in base-year and planned thereafter		NA	15%	12%	9%	9%	9%
Target population vaccinated with **1st dose** of Measles (MMR)		41,356	42,118	43,039	43,573	44,252	44,253
Target population vaccinated with **2nd dose** of Measles (MMR)		40,563	42,118	43,039	43,573	44,252	44,253
Measles coverage**		99%	99%	99%	99%	99%	99%
Pregnant women vaccinated with TT+			NA	NA	NA	NA	NA
TT+ coverage****							
Vit A supplement	Mothers (<6 weeks from delivery)		NA	NA	NA	NA	NA
	Infants (>6 months)		NA	NA	NA	NA	NA
Annual DTP Drop out rate [(DTP1-DTP3)/DTP1] x100		<1%	<1%	<1%	<1%	<1%	<1%
Annual Measles Drop out rate (for countries applying for YF)		NA	NA	NA	NA	NA	NA

* Number of infants vaccinated out of total births
** Number of infants vaccinated out of surviving infants
*** Indicate total number of children vaccinated with either DTP alone or combined
**** Number of pregnant women vaccinated with TT+ out of total pregnant women

[2] The formula to calculate a vaccine wastage rate (in percentage): [(A – B) / A] x 100. Whereby : A = The number of doses distributed for use according to the supply records with correction for stock balance at the end of the supply period; B = the number of vaccinations with the same vaccine in the same period. For new vaccines check **table α** after Table 7.1.

Table 3.5: Summary of current and future immunisation budget *(or refer to cMYP pages)*

	Estimated costs per annum in US$ (,000)					
Cost category	**Base year 2006**	**Year 1 2008**	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**
Routine Recurrent Cost						
Vaccines (routine vaccines only)	$420,173	$716,791	$964,365	$921,724	$956,364	$992,054
Traditional vaccines	$164,951	$165,047	$161,038	$171,188	$182,552	$191,680
New and underused vaccines	$255,222	$551,744	$803,327	$750,536	$773,813	$800,374
Injection supplies	$123,526	$115,897	$118,342	$119,811	$121,448	$121,787
Personnel	$8,181	$8,508	$8,849	$9,202	$9,571	$9,953
Salaries of full-time NIP health workers (immunisation specific)	$1,144	$1,189	$1,237	$1,286	$1,338	$1,391
Per-diems for outreach vaccinators / mobile teams	$7,037	$7,319	$7,612	$7,916	$8,233	$8,562
Transportation	$8,740	$18,354	$21,078	$22,132	$39,174	$41,133
Maintenance and overheads	$965,433	$1,015,000	$1,086,909	$1,155,034	$1,215,725	$1,240,039
Training	$35,000	$36,720	$40,576	$44,571	$48,709	$49,684
Social mobilisation and IEC		$40,800	$43,697	$46,693	$49,792	$50,788
Disease surveillance	$7,500	$69,360	$74,389	$79,591	$84,971	$90,535
Program management	$56,500	$45,900	$41,616	$42,448	$43,297	$44,163
Other		$22,440	$24,970	$27,591	$30,308	$30,914
Subtotal Recurrent Costs	**$1,625,053**	**$2,089,771**	**$2,424,790**	**$2,468,798**	**$2,599,360**	**$2,671,050**
Routine Capital Costs						
Vehicles		$29,079	$26,010		$25,978	
Cold chain equipment		$57,630	$86,873	$171,544	$181,502	
Other capital equipment		$121,822	$238,668	$158,651	$113,114	
Subtotal Capital Costs		**$208,531**	**$351,551**	**$330,195**	**$320,595**	
Campaigns	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
Polio	NA	NA	NA	NA	NA	NA
Measles	NA	NA	NA	NA	NA	NA
Yellow Fever	NA	NA	NA	NA	NA	NA
MNT campaigns	NA	NA	NA	NA	NA	NA
Other campaigns	NA	NA	NA	NA	NA	NA
Subtotal Campaign Costs	NA	NA	NA	NA	NA	NA
GRAND TOTAL	**$3,907,579**	**$4,672,417**	**$5,245,724**	**$5,367,469**	**$5,591,504**	**$5,449,811**

Please list in the tables below the funding sources for each type of cost category (if known). Please try and indicate which immunisation program costs are covered from the Government budget, and which costs are covered by development partners (or the GAVI Alliance), and name the partners.

The Government of Moldova has traditionally been and remains the major financier of the National Immunization Programme. In 2006 National Government, Local Administrations and National Health Insurance Fund (NHIF) together covered nearly 96% of the total Programme needs. The situation will not change significantly even with the introduction of the new tetravalent DTP-Hib vaccine in 2008 although the balance will inevitably slightly shift towards the GAVI which in 2006 was shouldering 2.46% of the Programme cost supplying Hepatitis-B vaccine and relevant injections supplies.

While the role of other partners in implementing the Programme may seem rather insignificant in terms of covered costs, the technical assistance provided by WHO (1.64% of total cost) and UNICEF was vital for achieving Programme objectives and effective Programme planning.

Current GAVI Phase-I Hepatitis-B support for Moldova comes to an end in 2008 after which the Government will have to increase its own allocations for Hepatitis-B vaccine procurement at least by $44 thousand – the cost of Hepatitis-B vaccine supplied by GAVI in 2006. Taking into account, however, that the latest price per dose of the vaccine procured by the Government for vaccinating outside EPI constituted $0.79, the ultimate increase in the needed allocations for procuring hepatitis-B vaccine is likely to be twice as big (i.e. around $90 thousand). Apart from that, injection supplies for vaccination are also likely to be more expensive than those supplied through GAVI.

It is expected that WHO and UNICEF will continue providing technical assistance to the NIP of Moldova financing Short-term Training programmes, IEC & Social Mobilisation, Disease Surveillance and Program Management activities that have historically been experiencing problems with financing. WHO is planning to commit to this end around $260,000 during 2008-2010 while UNICEF around $30,000. These contributions will allow to substantially reduce financing gap for these components.

Past and Future Financing of the Multi-Year Plan for Immunization by funding sources for each type of cost category

Year	Cost Category	Total Resource Requirements	Available Financing	Government	Sub-national Gov.	National Health Insurance Fund	GAVI Vaccine Fund	WHO	UNICEF
		US$	US$	US$	US$	US$	US$	US$	US$
2006	Subtotal Recurrent Costs	$ 1,625,053	$ 1,625,053	$ 885,868	$ 579,185	$ -	$ 96,000	$ 64,000	$ -
	Subtotal Capital Costs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Subtotal Campaign Costs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Subtotal Optional	$ 2,282,526	$ 2,282,526	$ 170,684	$ -	$ 2,111,842	$ -	$ -	$ -
	GRAND TOTAL	$ 3,907,579	$ 3,907,579	$ 1,056,552	$ 579,185	$ 2,111,842	$ 96,000	$ 64,000	$ -
	Routine Services (Fixed and Outreach)	$ 3,907,579	$ 3,907,579	$ 1,056,552	$ 579,185	$ 2,111,842	$ 96,000	$ 64,000	$ -
	Supplemental Immunization Activities	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2008	Recurrent Costs	$ 2,089,771	$ 1,551,776	$ 996,708	$ 555,069	$ -	$ 384,494	$ 100,000	$ 10,000
	Capital Costs	$ 208,531	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Campaign Costs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Optional	$ 2,374,116	$ 2,374,116	$ 177,800	$ -	$ 2,196,316	$ -	$ -	$ -
	GRAND TOTAL	$ 4,672,417	$ 3,925,892	$ 1,174,508	$ 555,069	$ 2,196,316	$ 384,494	$ 100,000	$ 10,000
	Routine Services (Fixed and Outreach)	$ 4,672,417	$ 3,925,892	$ 1,174,508	$ 555,069	$ 2,196,316	$ 384,494	$ 100,000	$ 10,000
	Supplemental Immunization Activities	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2009	Recurrent Costs	$ 2,424,790	$ 1,690,496	$ 1,124,326	$ 573,466	$ -	$ 547,328	$ 90,000	$ -
	Capital Costs	$ 351,551	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Campaign Costs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Optional	$ 2,469,383	$ 2,469,383	$ 185,215	$ -	$ 2,284,168	$ -	$ -	$ -
	GRAND TOTAL	$ 5,245,724	$ 4,159,879	$ 1,309,540	$ 573,466	$ 2,284,168	$ 547,328	$ 90,000	$ -
	Routine Services (Fixed and Outreach)	$ 5,245,724	$ 4,159,879	$ 1,309,540	$ 573,466	$ 2,284,168	$ 547,328	$ 90,000	$ -
	Supplemental Immunization Activities	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2010	Recurrent Costs	$ 2,468,798	$ 1,785,000	$ 1,207,507	$ 617,064	$ -	$ 442,903	$ 70,000	$ 10,000
	Capital Costs	$ 330,195	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Campaign Costs	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Optional	$ 2,568,476	$ 2,568,476	$ 192,941	$ -	$ 2,375,535	$ -	$ -	$ -
	GRAND TOTAL	$ 5,367,469	$ 4,353,477	$ 1,400,448	$ 617,064	$ 2,375,535	$ 442,903	$ 70,000	$ 10,000
	Routine Services (Fixed and Outreach)	$ 5,367,469	$ 4,353,477	$ 1,400,448	$ 617,064	$ 2,375,535	$ 442,903	$ 70,000	$ 10,000
	Supplemental Immunization Activities	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Table 3.6: Summary of current and future financing and sources of funds *(or refer to cMYP)*

	Expenditures	Future Resource Requirements					
Cost Category	2006	2008	2009	2010	2011	2012	Total 2008 - 2012
Routine Recurrent Cost	US$	US$	US$	US$	US$	US$	US$
Vaccines (routine vaccines only)	$420,173	$716,791	$964,365	$921,724	$956,364	$992,054	$4,551,298
Traditional vaccines	$164,951	$165,047	$161,038	$171,188	$182,552	$191,680	$871,505
New and underused vaccines	$255,222	$551,744	$803,327	$750,536	$773,813	$800,374	$3,679,793
Injection supplies	$123,526	$115,897	$118,342	$119,811	$121,448	$121,787	$597,285
Personnel	$8,181	$8,508	$8,849	$9,202	$9,571	$9,953	$46,083
Salaries of full-time NIP health work	$1,144	$1,189	$1,237	$1,286	$1,338	$1,391	$6,442
Per-diems for outreach vaccinators	$0	$0	$0	$0	$0	$0	$0
Per-diems for supervision and mon	$7,037	$7,319	$7,612	$7,916	$8,233	$8,562	$39,641
Transportation	$8,740	$18,354	$21,078	$22,132	$39,174	$41,133	$141,872
Fixed site and vaccine delivery	$7,255	$15,235	$17,497	$18,372	$32,518	$34,144	$117,765
Outreach activities	$1,485	$3,119	$3,582	$3,761	$6,656	$6,989	$24,107
Maintenance and overhead	$965,433	$1,015,000	$1,086,909	$1,155,034	$1,215,725	$1,240,039	$5,712,707
Cold chain maintenance and overh	$114,625	$123,471	$134,029	$152,879	$173,907	$177,385	$761,672
Maintenance of other capital equipr	$38,592	$63,069	$107,850	$140,225	$162,648	$165,901	$639,693
Building overheads (electricity, wat	$812,216	$828,461	$845,030	$861,930	$879,169	$896,752	$4,311,342
Short-term training	$35,000	$36,720	$40,576	$44,571	$48,709	$49,684	$220,259
IEC/social mobilization	$0	$40,800	$43,697	$46,693	$49,792	$50,788	$231,770
Disease surveillance	$7,500	$69,360	$74,389	$79,591	$84,971	$90,535	$398,845
Programme management	$56,500	$45,900	$41,616	$42,448	$43,297	$44,163	$217,425
Other routine recurrent costs	$0	$22,440	$24,970	$27,591	$30,308	$30,914	$136,223
Subtotal Recurrent Costs	$1,625,053	$2,089,771	$2,424,790	$2,468,798	$2,599,360	$2,671,050	$12,253,768
Routine Capital Cost							
Vehicles	$0	$29,079	$26,010	$0	$25,978	$0	$81,068
Cold chain equipment	$0	$57,630	$86,873	$171,544	$181,502	$0	$497,550
Other capital equipment	$0	$121,822	$238,668	$158,651	$113,114	$0	$632,255
Subtotal Capital Costs	$0	$208,531	$351,551	$330,195	$320,595	$0	$1,210,872
Campaigns							
Subtotal Campaign Costs	$0	$0	$0	$0	$0	$0	$0
Other Costs							
Shared personnel costs	$2,253,684	$2,343,831	$2,437,585	$2,535,088	$2,636,492	$2,741,951	$12,694,947
Shared transportation costs	$28,842	$30,284	$31,798	$33,388	$35,058	$36,811	$167,339
Construction of new buildings	$0	$0	$0	$0	$0	$0	$0
Subtotal Optional	$2,282,526	$2,374,116	$2,469,383	$2,568,476	$2,671,549	$2,778,762	$12,862,286
GRAND TOTAL	$3,907,579	$4,672,417	$5,245,724	$5,367,469	$5,591,504	$5,449,811	$26,326,926
Routine (Fixed Delivery)	$3,630,221	$4,314,740	$4,830,737	$4,944,855	$5,144,301	$4,990,151	$24,224,784
Routine (Outreach Activities)	$277,358	$357,678	$414,988	$422,614	$447,202	$459,660	$2,102,142
Campaigns	$0	$0	$0	$0	$0	$0	$0

4. Immunisation Services Support (ISS) – NOT APPLICABLE

Please indicate below the total amount of funds you expect to receive through ISS:

Table 4.1: Estimate of fund expected from ISS

	Base Year	Year 1 20…	Year 2 20…	Year 3 20…	Year 4 20…	Year 5 20…
DTP3 Coverage rate						
Number of infants reported / planned to be vaccinated with DTP3 (as in Table 3.4)						
Number of *additional* infants that annually are reported / planned to be vaccinated with DTP3						
Funds expected ($20 per additional infant)						

* Projected figures
** As per duration of the cMYP

If you have received ISS support from GAVI in the past, please describe below any major lessons learned, and how these will affect the use of ISS funds in future.

Please state what the funds were used for, at what level, and if this was the best use of the flexible funds; mention the management and monitoring arrangements; who had responsibility for authorising payments and approving plans for expenditure; and if you will continue this in future.

Major Lessons Learned from Phase 1	Implications for Phase 2
1.	
2.	
3.	
4.	
5.	
6.	

If you have not received ISS support before, please indicate:

a) when you would like the support to begin:

b) when you would like the first DQA to occur:

c) how you propose to channel the funds from GAVI into the country:

d) how you propose to manage the funds in-country:

e) who will be responsible for authorising and approving expenditures:

- Please complete the banking form (annex 1) if required

5. Injection Safety Support – NOT APPLICABLE

- Please attach the National Policy on Injection Safety including safe medical waste disposal (or reference the appropriate section of the Comprehensive Multi-Year Plan for Immunisation), and confirm the status of the document: DOCUMENT NUMBER…….

- Please attach a copy of any action plans for improving injection safety and safe management of sharps waste in the immunisation system (and reference the Comprehensive Multi-Year Plan for Immunisation). DOCUMENT NUMBER…….

Table 5.1: Current cost of injection safety supplies for routine immunisation

Please indicate the current cost of the injection safety supplies for routine immunisation.

	Annual requirements		***Cost per item (US$)***		***Total Cost (US$)***
Year	***Syringes***	***Safety Boxes***	***Syringes***	***Safety Boxes***	
20…					

Table 5.2: Estimated supply for safety of vaccination with …….. vaccine

(Please use one table for each vaccine BCG(1 dose), DTP(3 doses), TT(2 doses) [1], Measles(1 dose) and Yellow Fever(1 dose), and number them from 6.1 to 6.5)

		Formula	**Year 1 20…**	**Year 2 20…**	**Year 3 20…**	**Year 4 20…**	**Year 5 20…**
A	Number of children to be vaccinated [2]	*#*					
B	Percentage of vaccines requested from GAVI [3]	*%*					
C	Number of doses per child	*#*					
D	Number of doses	*A x B/100 x C*					
E	Standard vaccine wastage factor [4]	*Either 2.0 or 1.6*					
F	Number of doses (including wastage)	*A x B/100 x C x E*					
G	Vaccines buffer stock [5]	*F x 0.25*					
H	Number of doses per vial	*#*					
I	Total vaccine doses	*F + G*					
J	Number of AD syringes (+ 10% wastage) requested	*(D + G) x 1.11*					
K	Reconstitution syringes (+ 10% wastage) requested [6]	*I / H x 1.11*					
L	Total of safety boxes (+ 10% of extra need) requested	*(J + K) / 100 x 1.11*					

[1] GAVI supports the procurement of AD syringes to deliver two doses of TT to pregnant women. If the immunisation policy of the country includes all Women in Child Bearing Age (WCBA), GAVI/The Vaccine Fund will contribute to a maximum of two doses for Pregnant Women (estimated as total births)
[2] To insert the number of infants that will complete vaccinations with all scheduled doses of a specific vaccine.
[3] Estimates of 100% of target number of children is adjusted if a phased-out of GAVI/VF support is intended.
[4] A standard wastage factor of 2.0 for BCG and of 1.6 for DTP, Measles, TT, and YF vaccines is used for calculation of INS support
[5] The buffer stock for vaccines and AD syringes is set at 25%. This is added to the first stock of doses required to introduce the vaccination in any given geographic area. Write zero under other years. In case of a phased introduction with the buffer stock spread over several years, the formula should read: [F – number of doses (incl. wastage) received in previous year] * 0.25.
[6] It applies only for lyophilized vaccines; write zero for other vaccines.

- If you do not intend to procure your supplies through UNICEF, please provide evidence that the alternative supplier complies with WHO requirements by attaching supporting documents as available.

6. New and Under-Used Vaccines (NVS)

Please give a summary of the cMYP sections that refer to the introduction of new and under-used vaccines. Outline the key points that informed the decision-making process (data considered etc):

INTRODUCTION OF TETRAVALENT DTP-Hib VACCINE INTO THE NATIONAL IMMUNIZATION PROGRAMME

Hib related diseases are important public health problems in the Republic of Moldova. Three separate studies, performed by the international experts using WHO methodology, testify intense circulation of the Hib infection among children in the Republic of Moldova. Implementation of the Hib vaccination would prevent an average of 20 cases of bacterial meningitis and 1273 cases of pneumonia, saving annually approximately 48 children's lives.

Costs of Hib vaccine introduction: The various scenarious of the costs of Hib vaccine introduction was estimated by a joint WHO/contry mission for an annual birth cohort of 44,000 children. (Cost-effectiveness of universal Hib, vaccination in Moldova, Final draft, 3 April 2007).
A coverage rate of 98% was assumed for the 3d dose. As the introduction of Hib vaccine was only assessed in combination with DTP, it was assumed that the new vaccine would not affect salary costs, as it would not involve any additional injections. However, if Hib vaccine is introduced in pentavalent form, a change in the vaccination schedule is necessary. According to the national immunization schedule, hepatitis B vaccine is currently delivered at birth, 1 month and 6 moths of age. Children born from mother tested positive for HBsAg recive the 3d dose at 2 moths of age in order to achive a quicq boost of immune response and increase protection against perinatal and early childhood transmission of hepatitis B virus infection. If pentavalent vaccine is introduced, four doses of hepatitis B will be delivered; at birth and at 2, 4 and 6 months, in line with the current DTP schedule. The 1-month vaccination visit will therefore be removed, which would likely generate cost savings to the primary health care system.

Choice of the vaccine formulation: Monovalent Hib-vaccine does not represent a feasible choise due to increasing number of injections and lojistical inconveniences. Moldova is among the European countries with the highest burden of viral hepatitis B infection, therefore two main alternative formulations of combined vaccine were considered for the introduction of Hib antigen: the pentavalent DTP-HepB-Hib versus DTP-Hib and maintaining the current immunization with monovalent HepB vaccine.
The following advantages were considered for the pentavalent vaccine: reduced number of injections (1 less), reduced number of visits (1 less), operationally and logistically simple to manage, more cost savings. The main inconvenience of the above mentioned vaccine was considered the lack of flexibility to provide 2nd and 3d Hepatitis B dose during the first two months of life, that represent a high demand to protect children at risk for perinatal hepatitis B transmission in Moldova.
The implementation of combined DTP-Hib vaccine and continuous use of the monovalent hepatitis B vaccine that allows providing three HepB doses by the age of two months to newborns at risk of perinatal transmission of hepatitis B virus infection, was considered a safer choise from the public health perspective, until sufficient evidence is collected that shift to pentavalent vaccine will not increase the risk of hepatitis B perinatal transmission. Furhter activities will be conducted during 2008-2010 in cooperation with WHO and partners to assess that impact of delaying 2nd and 3d dose of hepatitis B containing vaccine for children at risk of perinatal and early childhood transmission of hepatitis B virus infection and to build an evidence based decision toward the epidemiological and cost efficiency to shift to pentavalent vaccine.
Significant efforts will be focused as well on assessing the frequency of false contraindications and

implementing adequate strategies to improve the adherence to the immunization schedule.
Liquid presentation of the combined vaccine is requested in order to achieve low wastage and increase cost-efficiency of immunization.

Goals: To reduce morbidity and mortality associated with Hib related diseases.

Objectives: To vaccinate all infants (by age 12 months) with 3 doses of tetravalent vaccine (DPT-Hib) attaining a coverage of 95% by the year 2009.

Strategies: Strengthening and building immunization staff capacity
Strengthening procurement management, logistics, wastage and injection safety
Reduce false contraindications related to pertussis component
Strengthening monitoring and supervision system
Undertaking Communication & Advocacy activities

Implementation Plan: Tetravalent DTP-Hib vaccine will be introduced in Moldova NIP in July 2008 if support is received from GAVI following this application. Building on the exisisting coutry experience and capacity to manage a variety of vaccine presentations and formulations, long-term use of open vial policy, achieved low wastage rates of liquid vaccines in multi-dose vial presentations, and at last but not the least – the market availability of specific presentations, the DPT-Hib liquid vaccine in 10-dose vial presentation, is requested and will be incorporated into the existing NIP schedule by replacing the DPT vaccine administered at 2, 4, and 6 months of age.

The NIP currently uses 10-dose vial of DPT with a wastage rate less than 10%, and the introduction of the fully liquid combination DPT-Hib vaccine in 10-dose vial presentation will not require any increase of the storage capacity at all levels. Adequate storage capacity exists at the national, rayon/municipality and service delivery level.

The NIP in Moldova has been exclusively using auto-disable (AD) syringes with accompanying safety boxes since 1999. Injection safety studies performed during the last five years found injections generally were administered safely, but problems were identified with disposal and incineration. Additional training focusing on appropriate immunization safety and sharp waste disposal is planned before the DTP-Hib vaccine is introduced.

Cascade training will be provided to staff, beginning at the national level and proceeding to health facility level, as part of a nationwide training of NIP programme management planned for March to June 2008. Immunization records, vaccination coverage momnitoringforms and vaccine stock monitoring forms have been already adapted for the introduction of Hib component and will be available for use during these training. Micro-planning activities for the introduction of the new vaccine will be conducted during November-December 2007. DTP-Hib vaccine related IEC activities will be incorporated into other NIP social mobilisation programmes. The conducted in April 2008 European immunization Week will be used as a good opportunity to inform population and create demand for the new vaccine. Advocacy efforts are planned, including orientations for health professional organisations.

Budget and financing: Most of the activities included in this plan were budgeted for in the comprehensive multi-year plan 2007-2010. The opportunity offered by GAVI associated with the various sources of funding including the Government of Moldova should make it possible to implement the activities listed in the timetable.

The chapter 4 of the cMYP includes a detailed plan of actions to introduce DTP-Hib vaccine into Moldova NIP. Additional information on cold chain storage capacity can be found in the chapter 3.4.

Chapter 5 of the cMYP provide a detailed financial analysis of the cost components of the programme.

Please summarise the cold chain capacity and readiness to accommodate new vaccines, stating how the cold chain expansion (if required) will be financed, and when it will be in place. Please use attached excel annex 2a (Tab 6) on the Cold Chain. Please indicate the additional cost, if capacity is not available and the source of funding to close the gap

The national vaccine cold store has been established and equipped in 1994. Moldova immunization programme follows WHO recommendations in storage temperatures. All vaccines except OPV are kept in +2°C to +8°C cold rooms. OPV is kept in 4 units of Vestfrost model HF506 with net storage capacity of 1,852 litres. Cold room net storage capacity is measured as 4596 litres in chiller 1 and 4114 litres in chiller 2. The volume calculations in order to check availability of sufficient storage capacity are done with the assumption of total amount of vaccines of annual needs arriving once a year and on the same day. Even with this assumption, only 89% of the available storage capacity in +2°C to +8°C and 23% of the -15°C to -25°C will be occupied. Vaccine storage volume calculations by type of vaccine and storage temperature are shown in the table below.

Vaccine storage volume calculations for Chisinau primary vaccine store (EVSM, Dec. 2004)

Temperature	Type of vaccine	Annual needs in doses including safety stock	Total volume required in litres	Available storage volume in litres
+2°C to +8°C	BCG	280,408	337	8,990
	MMR	107,479	2,042	
	DTP	202,210	607	
	DT	66,218	199	
	Td	753,477	2,260	
	HepB	133,199	2,331	
	Subtotal for +2°C to +8°C		7,776	
-15°C to -25°C	OPV	288,728	433	1,852

Assumptions: *All vaccines arrive once a year and on the same day.*
MMR is in mono-dose and HepB is in 2 dose vials
The measured net capacity of the two rooms assumes 80% utilization of available shelf volume.

There net storage capacity of cold rooms was increased from 8,708 litres up to 8,990 litres with additional installed wooden crates (282 litres total for 2 cold rooms) under the wall mounted units.
As for campaigns a separate +2°C to +8°C cold room which is located in the same compound but in another building in the basement with approximately 82,000 litres capacity is used. This volume is way beyond the any campaign that has been conducted in Moldova.
In case the Moldova NIP plan to implement Hib component using 1 dose pentavalent (DTP-HepB-Hib) or 10 dose tetravalent (DTP-Hib) vaccines, the net storage volume in cm3 per fully immunized child per year will change from 106 cm^3 in existing schedule to 103 cm^3 in case of implementation of DTP-Hib, or to 99 cm^3 in case of implementation of DTP-HepB-Hib. That would mean no any additional storage capacity is required for the national vaccine store in case of introduction of the above mentioned vaccines.

During period of time 1994-2002 more than 1,160 refrigerators and freezers have been supplied to the rayon and primary health care levels in order to strengthen the cold chain. A cold chain inventory is kept both at the national and the municipal/rayon level which is updated annually.

Refrigerators are now available down to the village level (about 2/3 are “ice-lined”). Cold boxes, vaccine carriers, thermometers, icepacks and freeze-watch indicators were supplied to each health facility providing immunization services.

At the rayon/municipality level, where vaccines are supplied on a quarterly base, the required vaccine storage capacity is 1.7 m3, while the available capacity is 8.7m3.

At the primary health care level there are 1551 health facilities providing vaccinations. The average number of children under one covered by one facility is 27. Of the 87% are equipped with refrigerators with minimal volume of 20 litters that is far beyond the needs for storagy of the monthly quantity of vaccine. The estimated existing storage capacity at operational level is over 55,700 liters while the required monthly capacity, including 50% reserve is about 800 liters. All health units covering more than 400 population are equipped with refrigerators. Those who are not equipped with refrigerators represent very small health units covering up to 400 population (4 children under one year of age). Outreach vaccination sessions are conducted there by family doctors from health centers that cover those small areas. All primary health care facilities are equipped with vaccine carriers and ice packs to ensure transportation of the vaccine and temporary storage duing outreach activities.

Care is also taken to maintain the cold chain. Special guidelines on maintaining the cold chain were issued in Moldovian and Russian language and distributed to the vaccine stores and all immunization-providing sites. A special emphasis is placed on temperature regime (VVMs, freeze indicators etc). A reporting system for each case of violation of safe temperature range, documented by freeze intigators has been established in 2004.

Spare parts enough for the country's several years needs have been ensured. A cold chain service centre was established and equipped at the NSPCPM with the aim to check-up and timely repair refrigerators and freezers countrywide. An engineer, who is a staff-member of the NSPCPM, was trained on maintenance issues of ice-lined refrigerators and of CFC free equipment.

A plan for gradual replacement of aging cold chain equipment is incorporated into the cMYP. It should be noted that it addresses requirements for additional capacity in case of both further new vaccines introduction and/or adding large scales supplementary immunization.. Cost of cold chain maintenance and overheads will also be covered under the cMYP.

Table 6.1: Capacity and cost (for positive storage) (*Refer to Tab 6 of Annex 2a or Annex 2b)*

		Formula	Year 1 2008	Year 2 2009	Year 3 2010	Year 4 20…	Year 5 20…
A	Annual ***positive*** volume requirement, including new vaccine (specify: **DTP-Hib**) (litres or m3)[3]	*Sum-product of total vaccine doses multiplied by unit packed volume of the vaccine*	4.423 m^3	4.520 m^3	4.576 m^3		
B	Annual ***positive*** capacity, including new vaccine (specify: **DTP-Hib**) (litres or m3)	#	41.2 m^3	41.2 m^3	41.2 m^3		
C	Estimated minimum number of shipments per year required for the actual cold chain capacity	*A / B*	**0.11** Allows <= 1 shipment /year	**0.11** Allows <= 1 shipment /year	**0.11** Allows <= 1 shipment /year		
D	Number of consignments / shipments per year	*Based on national vaccine shipment plan*	1	1	1		
E	Gap (if any)	*((A / D) - B)*	No gap	No gap	No gap		
F	Estimated cost for expansion	*US $*	NA	NA	NA		

[3] Use results from table 5.2. Make the sum-product of the total vaccine doses row (I) by the unit packed volume for each vaccine in the national immunisation schedule. All vaccines are stored at positive temperatures (+5°C) except OPV which is stored at negative temperatures (-20°C).

Please briefly describe how your country plans to move towards attaining financial sustainability for the new vaccines you intend to introduce, how the country will meet the co-financing payments, and any other issues regarding financial sustainability you have considered (refer to the cMYP):

The funding gap of Moldova NIP is rather evenly distributed throughout Programme duration and reflects the current character of budget line items being in the deficit and the replacement nature of capital investments for the cold chain equipment and vehicles. The gap structure reveals that programme activities, namely IEC & social mobilisation, disease surveillance, program management and other routine accounts for 27% of the total gap and capital equipment needs account for 73% of the total gap.

The proposed financial sustainability strategies are tailored addresses main areas of the funding gap and are summarized in the table below:

Summary of financial sustainability strategies:

Areas of the funding gap	Proposed Strategies	Main activities	Indicators	Responsible
Investment in immunization specific infrastructure	Mobilize additional resources (government, local administrations & external donors)	• Organize consultations and advocacy meetings with high level officials including the parliament members and sub-national authorities • Development of rayon/municipality level immunization programmes with specific budgeting and their endorsement by local administrations • Develop project proposals for strengthening cold chain and transportation means and their submission to external donors	• Output indicator(s): – number of meetings organized – number of high level officials informed – number of rayons/municipalities that have endorsed immunization programmes and budgets – number of development partners (donors, international agencies) approached • Outcome indicator(s): – % of the funding gap related to logistics/assets decreased by 2010 (50% as target)	MoH & NSPCPM
Increase financing for programme activities (IEC & social mobilisation, disease surveillance, program management etc)	Mobilize additional resources (primarily from the government)	• Conduct prioritization of program areas for sustainable financing • Participate actively in the budgeting process to secure annual funding • Approach Health Insurance Fund to finance IEC & social mobilization activities	• Output indicator(s): – Lists of priority areas issued and endorsed – Budget proposals submitted – Number of IEC & social mobilization projects financed by Health Insurance Fund • Outcome indicator(s): – % of the funding gap related to program activities decreased by 2010 (50% as target)	MoH & NSPCPM
Reliable Vaccine and supplies procurement	Increase the reliability of resource	• Develop and endorse NIP budget for short	• Output indicator(s): – NIP budget endorsed by	MoH & NSPCPM &

	availability (public funds)	and long term perspective • Establish agreements and procedures for vaccine procurement through UNICEF SD • Redice vaccine wastage and identify cost-effective vaccine formulation / presentation alternatives	the Government – Agreement with UNICEF endorsed • Outcome indicator(s): – % of the Government share for vaccines procurement adequately financed by 2010 (100% as target)	UNICEF

Table 6.2: Assessment of burden of relevant diseases *(if available)*:

Disease	Title of the assessment	Date	Results
Hib	Haemophilus influenzae type b (Hib) disease burden in Moldova: WHO Hib rapid assessment tool	July 15-24, 2003	See attached report, doc # 5
Hib	Cost-effectiveness of universal Hib vaccination in Moldova	3 April 2007	See attached report, doc # 6
Hib, Streptococcus pneumoniae	WHO HQ estimates of Hib and Spn burden in the Republic of Moldova IVB/EPI/HibSPGDB	20.08.2007	See attached report, doc # 7

If new or under-used vaccines have already been introduced in your country, please give details of the lessons learnt from storage capacity, protection from accidental freezing, staff training, cold chain, logistics, drop out rate, wastage rate etc., and suggest solutions to address them:

The Moldova NIP has a large past experience in the introduction of new antigen into the programme and extending its services to different target population groups. The Hepatitis B vaccine was implemented for children at risk for perinatal transmission in 1989 and from 1995 universal immunization against hepatitis B virus infection was expanded to all newborns. In 2002 was implemented 2-dose immunization schedule against measles, mumps, rubella using combined MMR vaccine. Extensive immunization campaigns against diphtheria, polio, measles and rubella were conducted in during period of time 1995-2002. Expansion of HepB vaccination to all children below 19 years of age that did not benefited of infant vaccination was performed in 2005.

Lessons Learned	Solutions / Action Points
There is a need for detailed action plans for all levels, appropriate micro-planning formats should be prepared, tested and distributed in advance	All new vaccine implementation/expansion activities were performed after detailed plans /microplans and activities were prepared and performed.
Appropriate training packages (guidelines, samples) shall be developed and provided in advance to districts.	Staffs at all levels of the health system were trained,
New vaccines increase the sensitivity of population to vaccination, concerns over the producer, safety and effectiveness	Communication in favour of the new vaccine using different media channels, 24/24 dedicated phone hotline to address population concerns
Even with a good preparation and training Health workers at operational level meet different unexpected situations that require an external assistance. The also need to get a filling on what they do well and what they might improve	Supportive supervision conducted during and after the introduction of the new antigen in the immunization schedule.

Please list the vaccines to be introduced with support from the GAVI Alliance (and presentation):

First Preference Vaccine

As reported in the cMYP, the country plans to introduce **Hib** *(antigen)* vaccinations, using **DTP-Hib tetravalent** vaccine, in ***10 doses per vial, liquid*** form.

Please refer to the excel spreadsheet Annex 2a and proceed as follows:

- Please complete the "Country Specifications" Table in Tab 1 of Annex 2a or Annex 2b, using the data available in the other Tabs: Tab 3 for the commodities price list, Tab 5 for the vaccine wastage factor and Tab 4 for the minimum co-financing levels per dose[4].
- Please summarise the list of specifications of the vaccines and the related vaccination programme in Table 6.3 below, using the population data (from Table 3.4 of this application) and the price list and co-financing levels (in Tables B, C, and D of Annex 2a or Annex 2b).
- Then please copy the data from Annex 2a or 2b (Tab "Support Requested") into Tables 6.4 and 6.5 (below) to summarize the support requested, and co-financed by GAVI and by the country.
- Please submit the electronic version of the excel spreadsheets Annex 2a or 2b together with the application

Table 6.3: Specifications of vaccinations with new vaccine

[4] *Table D1 should be used for the first vaccine, with tables D2 and D3 for the second and third vaccine co-financed by the country*

Vaccine: DTP-Hib, 10-dose vial, liquid	*Use data in:*		Year 1 2008	Year 2 2009	Year 3 2010	Year 4 2011	Year 5 2012
Number of children to be vaccinated with the third dose	*Table 3.4*	#	21,022	42,998	43,533	44,257	44,480
Target immunisation coverage with the third dose	*Table 3.4*	#	99%	99%	99%	99%	99%
Number of children to be vaccinated with the first dose	*Table 3.4*	#	21,234	43,432	43,973	44,704	44,929
Estimated vaccine wastage factor	*Annex 2a or 2b Table E - tab 5*	#	1.18	1.14	1.1	1.1	1.1
Country co-financing per dose *	*Annex 2a or 2b Table D - tab 4*	$	$28,500	$50,500	$44,000	$59,500	$59,500

* Total price pre dose includes vaccine cost, plus freight, supplies, insurance, fees, etc

Table 6.4: Portion of supply to be co-financed by the Republic of Moldova (and cost estimate, US$)

Required supply item		2008	2009	2010	2011	2012
Number of vaccine doses	#	8,300	15,000	13,000	17,700	17,800
Number of AD syringes	#	8,100	14,800	13,200	17,900	17,900
Number of re-constitution syringes	#	0	0	0	0	0
Number of safety boxes	#	100	175	150	200	200
Total value to be co-financed by the country	*$*	$28,500	$50,500	$44,000	$59,500	$59,500

Following the regulations of the internal budgeting and financing cycles the Government will annually release its portion of the co-financing funds in the month of **April.**
The payment for the first year of co-financed support will be around **April 2008**.

Table 6.5: Portion of supply to be procured by the GAVI Alliance (and cost estimate, US$)

Required supply item		2008	2009	2010	2011	2012
Number of vaccine doses	#	85,800	152,000	132,200	130,500	130,800
Number of AD syringes	#	83,600	150,300	133,400	131,700	132,000
Number of re-constitution syringes	#	0	0	0	0	0
Number of safety boxes	#	950	1,675	1,500	1,475	1,475
Total value to be co-financed by GAVI	*$*	$294,000	$509,500	$443,000	$437,500	$438,500

- Please refer to http://www.unicef.org/supply/index_gavi.html for the most recent GAVI Alliance Vaccine Product Selection Menu, and review the GAVI Alliance NVS Support Country Guidelines to identify the appropriate country category, and the minimum country co-financing level for each category.

Second Preference Vaccine

If the first preference of vaccine is in limited supply or currently not available, please indicate below the alternative vaccine presentation

Alternative scenario: in case tetravalent DTP-Hib vaccine in 10-dose liquid presentation is not available on the market, the requested alternative is one-dose DTP-liquid+Hib lyophilised vial presentation. Even with its high storage volume per dose, the existing storage capacity at the national level (32.3 m3) is able to fit comfortable the annual quantity of the alternative vaccine supply scenario.

The liquid-lyophilized formulation of DPT-Hib in 10-dose vial presentation does not represent a cost-efficient choice for the Moldova NIP due to the high wastage rates determined by the small session size in Moldova primary health care facilities (average number of children under one served by one health facility is 27, that would result in less than 7 immunizations performed per month by a health facility).

Procurement and Management of New and Under-Used Vaccines

a) Please show how the support will operate and be managed including procurement of vaccines (GAVI expects that most countries will procure vaccine and injection supplies through UNICEF):

Moldova procures its NIP vaccines and injection safety supplies by conducting local public tenders. Hepatitis B vaccine and accompanying injection safety supplies provided by GAVI during the 1st phase of assistance has been done through UNICEF SD. Moldova plans to continue local procurement of traditional vaccines and supplies (including HepB and MMR vaccines), while for the procurement of teravalent DPT-Hib it will use UNICEF procurement procedures. An agreement between the Ministry of Health and UNICEF country office will be signed, expressing commitments of the parties. Annual UNICEF vaccine forecast tool will be updated in order to reflect country needs for the new vaccine.

Vaccine orders will be submitted on annual basis to the UNICEF country office, and with appropriate revision when necessary. Vaccines will be delivered once or twice a year to the national programme.

b) If an alternative mechanism for procurement and delivery of supply (financed by the country or the GAVI Alliance) is requested, please document:

- *Other vaccines or immunisation commodities procured by the country and description of the mechanisms used.*
- *The functions of the National Regulatory Authority (as evaluated by WHO) to show they comply with WHO requirements for procurement of vaccines and supply of assured quality.*

Not applicable

c) Please describe the introduction of the vaccines (refer to cMYP)

The detailed vaccine introduction plan is provided in the chapter 4 of the cMYP.

d) Please indicate how *funds* should be transferred by the GAVI Alliance (if applicable)

Not applicable

e) Please indicate how the co-financing amounts will be paid (and who is responsible for this)

The co-financing amounts will be introduced (for 2008 the co-paiment has been introduced already) in the annual budget of the MoH for vaccine procurement. An agreement between the Ministry of Health and UNICEF country office will be signed, expressing commitments of the parties, schedule of activities and the expected budget. The MoH will prepare vaccine requirements according to its share part and will submit its requirements to UNICEF country office. The UNICEF CO will submit an request for price estimates to the UNICEF Supply Division. After the price estimates for the required quantity of vaccine and injection safety supplies are received and submitted to the MoH, a vaccine supply order will be issued and financing schedule defined. The MoH will pay the vaccine cost to the country UNICEF office and the last will ensure appropriate links and communication with UNICEF Supply Division. Vaccines will be delivered in one or two shipments a year to the Chisinau international airport. The national Center of Preventive Medicine of the MoH through its national vaccine store staff will ensure customs clearance and transportation of the vaccine to the national vaccine store. A vaccine arrival report will be completed at the national vaccine store upon arrival of each shipment of vaccine and will be submitted to UNICEF CO.

f) Please outline how coverage of the new vaccine will be monitored and reported (refer to cMYP)

Detailed information on monitoring of vaccination coverage of the new vaccines is provided in chapter 4 of the cMYP.

With the introduction of DTP-Hib vaccine, all NIP forms will be revised, updated and reprinted. These include:

- Immunization schedules and cards,
- Vaccine stock forms and cards,
- Vaccination cards, vaccination registers, and computer programs.
- Immunization reporting forms
- Immunization certificates

New informational materials for parents and training material for health care workers will be updated. This process will be initiated once funding has been assured so that forms will be available by the time the new vaccine is introduced in July 2008.

Monitoring of tetravalent DTP-Hib vaccine will be incorporated into routine coverage monitoring systems at the same time as the vaccine is introduced. The monitoring and supervision tools will be reviewed to incorporate specificities pertaining to the new vaccine. The monitoring system will include the proportion of children who complete the DTP-Hib primary series of three doses by 12 months of age. It will also include:

- The proportion of the target population receiving 1, 2 and 3 doses of DTP-Hib vaccine,
- The number of fully immunized, which will now be defined as including 3 doses of DTP-Hib, as well as the traditional NIP vaccines,
- The drop out rate.
- Regular supervisory visits will be paid to each level to monitor progress and take appropriate corrective measures if necessary.

New and Under-Used Vaccine Introduction Grant

Table 6.5: calculation of lump-sum

Year of New Vaccine introduction	N° of births (from table 3.4)	Share per birth in US$	Total in US$
2008	42,977	$ 0.30	$12,893

Please indicate in the tables below how the one-time Introduction Grant[5] will be used to support the costs of vaccine introduction and critical pre-introduction activities (refer to the cMYP).

Table 6.6: Cost (and finance) to introduce the first preference vaccine (US$)

Cost Category	Full needs for new vaccine introduction	Funded with new vaccine introduction grant
	US$	**US$**
Training		**$ 25,000**
Social Mobilization, IEC and Advocacy		**$ 25 000**
Cold Chain Equipment & Maintenance		
Vehicles and Transportation		
Programme Management		
Surveillance and Monitoring		**$ 50,000**
Human Resources		
Waste Management		
Technical assistance		
Other (please specify)		
Other (please specify)		
Other (please specify)		
Other (please specify)		
Total		

- Please complete the banking form (annex 1) if required

Please complete a table similar to the one above for the second choice vaccine (if relevant) and title it **Table 6.7: Cost (and finance) to introduce the second preference vaccine (US$)**

[5] The Grant will be based on a maximum award of $0.30 per infant in the birth cohort with a minimum starting grant award of $100,000

7. Additional comments and recommendations from the National Coordinating Body (ICC/HSCC)

The Coordination Committee for development and financing of the National Immunization Programme for 2006-2010 at its meeting of 28 September 2008 reviewed and discussed the application of the Ministry of Health of the Republic of Moldova for GAVI assistance toward implementation of the Hib vaccine into the NIP.

Mr. Boris Golovin (Deputy minister of health, chairman of the ICC) mentioned that due to immunization, Moldova has achieved sustainable success in prevention of vaccine preventable infectious diseases. There are bigger immunoprophylaxis possibilities for a wider range of infections; however, financial shortage limits their implementation. GAVI offers to the Republic of Moldova assistance in implementation of new vaccines under the co-financing conditions, favorable for the country. Immunization Program staff for several years has been willing to implement vaccine against infectious caused by Haemophilus influenzae type b and it is only now, during phase 2 GAVI assistance, when this has become possible. He expressed the MoH gratitude to WHO Euro, international experts and local specialists for theirs dedication during preparation of application documents.

Mr. Ray Virgilio Torres (UNICEF Representative) agreed with the initiated proposals and assured that UNICEF would support implementation of the new vaccine and the co-funding mechanism to be specified and supported.

Mr. Valeriu Chicu (medical university professor) supported the proposals initiated, having mentioned that measures for monitoring of vaccine implementation efficiency should be undertaken and epidemiologic surveillance of the Hib infection in vaccination conditions should be provided.

Ms Lilia Gantea (Head of the Economic-Financial and Planning Section, MoH) reported that the Governmental Decree No. 523 of 15 May 2006 „On Approval of the National Immunization Program" envisaged certain funds for procurement of vaccines and consumables for the year 2008 within the NIP. She expressed her support for the co-finacing mechanism as far as the budget for vaccine procurement will not exceed the approved amount of funds for the NIP.

8. Documents required for each type of support

Type of Support	Document	DOCUMENT NUMBER	Duration *
ALL	WHO / UNICEF Joint Reporting Form (last two)	1	
ALL	Comprehensive Multi-Year Plan (cMYP)	2	2008-2010
ALL	Endorsed minutes of the National Coordinating Body meeting where the GAVI proposal was endorsed	3	
ALL	Endorsed minutes of the ICC/HSCC meeting where the GAVI proposal was discussed	3	
ALL	Minutes of the three most recent ICC/HSCC meetings	3	
ALL	ICC/HSCC workplan for the forthcoming 12 months	4	
Injection Safety	National Policy on Injection Safety including safe medical waste disposal (if separate from cMYP)	NA	
Injection Safety	Action plans for improving injection safety and safe management of sharps waste (if separate from cMYP)	NA	
Injection Safety	Evidence that alternative supplier complies with WHO requirements (if not procuring supplies from UNICEF)	NA	
New and Under-used Vaccines	Plan for introduction of the new vaccine (if not already included in the cMYP)	NA, Capter 4 of the cMYP	
	Haemophilus influenzae type b (Hib) disease burden in Moldova: WHO Hib rapid assessment tool, July 15-24, 2003	5	
	Cost-effectiveness of universal Hib vaccination in Moldova, 3 April 2007	6	
	WHO HQ estimates of Hib and Spn burden in the Republic of Moldova IVB/EPI/HibSPGDB, 20.08.2007	7	

** Please indicate the duration of the plan / assessment / document where appropriate*

ANNEX 1
The Republic of Moldova has provided the completed “Banking Form” (Annex 1) with the proposal for Injection safety support.