Global Alliance for Vaccines and Immunisation (GAVI)

APPLICATION FORM

New and Under-Used Vaccines -
Introduction of Pentavalent Hib Vaccine

REPUBLIC of UZBEKISTAN

05 February 2007

CONTENTS

Executive Summary

Uzbekistan (UZB) has long standing traditions in the control of vaccine-preventable diseases. The National EPI program has been established in 1974. High immunization coverage with good quality vaccines resulted in effective control of pertussis, measles and tetanus; and eradication of polio (polio free status obtained in 2002), diphtheria and neonatal tetanus control (no cases for more than 5 years).

Good immunization reporting and disease surveillance systems in place and reliable public statistics allowed monitoring coverage, measuring major VPDs' burden, drawing trends, and adequate planning for vaccine supplies.

Current routine immunization schedule includes 6 vaccines with 10 antigens. The most recent vaccine included in routine immunization was Measles-Mumps-Rubella. The Government of Uzbekistan is thus requesting support for introduction of Hib vaccine in its pentavalent presentation : DTP-HepB-Hib.

Infections due to Haemophilus influenzae are a major cause of morbidity and mortality in young children throughout the world. Six serotypes (types a-f) are known to cause disease, but type b is responsible for over 90% of the life-threatening H. influenzae infections in children, including meningitis and pneumonia. From 300,000 to 500,000 children die each year due to these H. influenzae type b (Hib) diseases.

Current Hib vaccine is safe and highly effective - 90-99% of children develop antibodies after three doses. It prevents meningitis, pneumonia, epiglottitis, and other serious infections caused by the Hib bacterium. Starting from November 2006, WHO recommends global implementation of the Hib vaccination. WHO strongly recommends universal infant immunization against Hib even if little disease burden data exists in country but there is a regional prevalence – which is a case for Uzbekistan, the country considered medium-high risk for Hib. Sentinel surveillance for Hib was established in Uzbekistan in 2007, and there is a special Working Group under Ministry of Health on Hib Surveillance and introduction of new vaccines.

The Introduction of the pentavalent vaccine is expected to start in July 2008 and end in December 2010 according to the lifetime of the current EPI cMYP (2006-2010). Vaccine will be administered three times exactly on the current schedule of DTP, i.e. 2-3-4 months.

The total amount of funds the Government of Uzbekistan is requesting from the GAVI for the pentavalent vaccine (fully liquid formulation in one-dose vial presentation) is US$ 15,342,500 for three year (2008-2010). In addition the Ministry of Health is requesting U$ 157,747 to facilitate the introduction of the vaccine. At the same time, the Government is committing payment of US$1,402,000 for the same two-and-half-year period, as its share of co-financing of the new vaccine.

This proposal has been developed through an interactive and inclusive process of the ICC partners, with internal technical support of WHO, in September 2007. The proposal is being submitted for GAVI's consideration in February 2008 round after clarification of state budget allocation to the health system following the September 2007 Presidential Decree on restructuring in the healthcare system, and related financial commitments.

2. Signatures of the Government and National Coordinating Bodies

Government and the Inter-Agency Coordinating Committee for Immunisation

The Government of Uzbekistan Republic 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 introduction of pentavalent *Haemophyllus Influenzae type b* (Hib) vaccine

The Government of Uzbekistan Republic 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 18 of this application shows the amount of support in either supply or cash that is required from the GAVI Alliance. Table N° 6.4 of page 18 of this application shows the Government financial commitment for the procurement of this new vaccine (NVS support only).

Minister of Health:

Signature: ……

Name: Dr. Nazirov F. G.

Date:

Minister of Finance:

Signature: ……..

Name: Azimov R. S.

Date:

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

We the members of the Inter-Agency Coordinating Committee met on the 25 September 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 4

Name/Title	Agency/Organisation	Signature
Niyazmatov B. I.	Deputy Minister of Health, ICC Chair	
Tursunova D. A.	NPI Head, ICC Secretary	
Kamilov A. I.	Deputy Minister of Health	
Saidaliyev S. S.	Head, Dept. State Sanitary Surveillance	
Yadgarova K.T.	Head, MCH Dept.	
Hashimov B.A.	Head, Dept. of Econ/Finance	
Shoumarov S. B.	Chief, RCSES	
Barotova V.D.	Deputy Chief, RCSES	
Mahmudova D.I.	Director, SRI of Pediatrics	
Ambartsumova L.S.	Dept. Head, Ministry of Finance	
Zadorozhnaya R.A.	Dept. Head, Ministry of Econ.	
Kim L. N.	Head, Dept of Immunoprophylaxis, RCSES	
Akhmedova D.I.	Chief Pediatrician, MOH	
Musabaev E.I.	Institute of Virology	
Hudaykulova D.	WHO	

Khudaykulov U.	UNICEF	
Rakhimova A.	JICA	
Mills B.	USAID	
Salikhova F.	World Bank	
Karimova Z.	ADB	

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

Name: Dr. Niyazmatov Bakhtiyor I.

Title: Deputy Minister of Health
Chief Sanitary Doctor of Uzbekistan Republic

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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.

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 is 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: *Inter-agency Coordinating Committee on Immunization*

Date of constitution of the current ICC/HSCC: *The ICC was established in May 1999*

Organisational structure (e.g., sub-committee, stand-alone): *The ICC is a stand-alone committee under the Ministry of Health of the Republic of Uzbekistan*

Frequency of meetings: *The ICC meets regularly quarterly and on ad-hoc basis when necessary*.

Composition: *The composition of ICC is as follows:*

Function	**Title / Organization**	**Name**
Chair	Deputy Minister of Health	Niyazmatov B.I.
Secretary	NIP Manager	Tursunova D.A.
Members	• Ministry of Health (Deputy Minister) • Dept. of State Sanitary Surveillance • Dept. of Mother and Child Health • Dept. of Economy and Finance • Republican Centre of SES (Chief) • Republican Centre of SES (Deputy Chief) • Research Institute of Pediatrics	• Kamilov A. I. • Saidaliev S. S. • Yadgarova K.T. • Hashimova B.A. • Shoumarov B.S. • Barotova V.J. • Mahmudova D. I

	• Ministry of Finance (Dept. Head) • Ministry of Econ. and Planning (Dept. Head) • Dept. of Immunoprophylaxis (RCSES) • Research Institute of Virology • Chief Pediatrician of MoH • WHO • UNICEF • The World Bank • USAID • JICA • ADB	• Ambartsumova L.S. • Zadorozhnaya R.A. • Kim L.N. • Musabaev E. • Akhmedova D.I. • Hudaykulova D • Khudaykulov U. • Salikhova F. • Mills B. • Rakhimova A. • Karimova Z.

Major functions and responsibilities of the ICC/HSCC:

- Coordination of all matters related to immunization and vaccine-preventable diseases in the Republic of Uzbekistan
- Coordination and facilitation of National Immunization Programme implementation; strengthening management of the NIP.
- Review of national EPI policy and strategies.
- Fostering partnership in immunization field and mobilization of resources.

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

1*. Increase high-level commitment to immunization programme through further advocacy and resource mobilization*

2. Increase the role of ICC in health sector through further collaboration with sectors beyond immunization, particularly health systems, health information, and health planning and financing.

3. Ensure regular information sharing and feedback of ICC to national authorities as well as to regional and district levels.

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 3.

- Please refer to the two most recent annual WHO/UNICEF Joint Reporting Forms on Vaccine Preventable Diseases and attach them as DOCUMENT NUMBERS 1 (JRF 2006) and 2 (JRF 2007).

- 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)
(demographic data for 2007 is not available yet)

	Figure	Date	Source
Total population	26,593,000	2006	State Statistics Committee
Infant mortality rate (per 1000)	13.6	2006	SSC
Surviving Infants*	522,468	2006	cMYP
GNI per capita (US$)	530	2005	World Bank
Percentage of GDP allocated to Health	2.9	2005	SSC
Percentage of Government expenditure on Health	10.5	2006	Ministry of Finance

* 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

Uzbekistan does not have long-term planning document for health, and strategic planning is based on Law on Health Protection of 1996 and Presidential Decrees of 1998 and 2002. On 19 September 2007, the President of the Republic of Uzbekistan signed a Decree on "Further Strengthening the Reforms and Implemenattion of the State Programme on Health Care"

Planning and budget allocation for health system are being done annually by the Ministry of Finance in coordination with the MOH.

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

The cMYP endorsed in 2007 is fully aligned with the National immunization programme and other planning documents. Decision to introduce Hib vaccine is elaborated in cMYP (pp.22)

Please indicate the national planning budgeting cycle for health

Annual, from April to March of the next calendar year.

Please indicate the national planning cycle for immunisation

Annual, January to December; and Quarterly.

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	D2-5, Y7, Y14	x		
OPV	D2-5, M2, M3, M4, M16, Y7	X		
DTP	M2, M3, M4, M16	X		
MMR	M12, Y6	X		
HepB	Birth, M2, M6	X		
Td	Y7, Y16, Y26, Y46	X		
Vitamin A	M6-59	X		Twice a year

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**	**2006**		**2005**	**2006**
BCG		93.3	98.3		99.2	Tuberculosis*	20020	18665
DTP	DTP1	98.9	95.8			Diphtheria	0	0
	DTP3	98.9	95.3		90.4	Pertussis	126	115
Polio 3		99.7	94.0		86.8	Polio	0	0
Measles (first dose)		99.3	94.9		96.0	Measles	737	823
TT2+ (Pregnant women)		n/a	n/a			NN Tetanus	0	0
Hib3						Hib **		
Yellow Fever						Yellow fever	0	0
HepB3		99.3	97.4		86.5	hepB sero-prevalence*	2321	1928
Vit A supplement	Mothers (<6 weeks post-delivery)							
	Infants (>6 months)							

* 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:

No specific immunization coverage surveys conducted in past three years.
Data in the table refers to the Multiple Indicator Cluster Survey conducted in 2006. MICS included responses on 4,986 children under 5 years of age.

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

Number	Baseline and targets					
	Base year (2007)	**Year 1 2008**	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**
Births	520,619	525,825	531,084	536,395		
Infants' deaths	7,705	7,782	7,860	7,939		
Surviving infants	512,914	518,043	523,224	528,456		
Pregnant women	885,053	893,903	902,842	911,871		
Target population vaccinated with BCG	510,207	515,309	520,462	525,667		
BCG coverage*	98.0	98.0	98.0	98.0		
Target population vaccinated with OPV3	515,413	515,309	525,773	531,031		
OPV3 coverage**	99.0	98.0	99.0	99.0		
Target population vaccinated with DTP3***	510,207	515,309	525,773	531,031		
DTP3 coverage**	98.0	98.0	99.0	99.0		
Target population vaccinated with DTP1***	510,207	515,309	525,773	531,031		
Wastage[1] rate in base-year and planned thereafter	1.18	1.18	1.00	1.00		
Target population vaccinated with **3rd dose** of HepB	515,413	520,567	525,773	531,031		
HepB3 Coverage**	99.0	99.0	99.0	99.0		
Target population vaccinated with **1st dose** of HepB	515,413	520,567	525,773	531,031		
Wastage[1] rate in base-year and planned thereafter	1.18	1.18	1.18	1.18		
Target population vaccinated with **1st dose** of Measles	510,207	515,309	520,462	525,667		
Target population vaccinated with **2nd dose** of Measles	-	-	-	-		
Measles coverage**	98.0	98.0	98.0	98.0		
Pregnant women vaccinated with TT+	0	0	0	0		

[1] 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.

TT+ coverage****		-	-	-	-	-	-
Vit A supplement	Mothers (<6 weeks from delivery)						
	Infants (>6 months)						
Annual DTP Drop out rate [(DTP1-DTP3)/DTP1] x100		0.45	0.45	0.45	0.45	0.45	0.45
Annual Measles Drop out rate (for countries applying for YF)		-	-	-	-	-	-

* 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

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

	Estimated costs per annum in US$					
Cost category	**Base year (2007)**	**Year 1 2008**	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**
Routine Recurrent Cost						
Vaccines (routine vaccines only)	3,779,658	13,610,028	11,300,391	11,432,166		
Traditional vaccines	1,889,829	1,917,131	1,397,302	1,430,046		
New and underused vaccines	1,924,443	11,692,897	9,903,089	10,002,120		
Injection supplies	,392,983	1,706,587	1,497,482	1,527,021		
Personnel	7,250,381	7,397,995	7,548,098	7,699,060		
Salaries of full-time NIP health workers (immunisation specific)	7,059,138	7,200,756	7,344,771	7,491,666		
Per-diems for outreach vaccinators / mobile teams	191,063	197,239	203,327	207,394		
Transportation	45,942	57,251	65,188	50,188		
Maintenance and overheads	5,118,851	5,853,962	6,234,521	6,058,738		
Training	74,460	0	0	21,649		
Social mobilisation and IEC	111,680	65,472	67,800	122,147		
Disease surveillance	351,900	351,655	355,505	373,439		
Program management	187,517	181,904	185,542	189,252		
Other	69,360	0	21,224	43,297		
Subtotal Recurrent Costs	**18,422,898**	**29,224,855**	**27,275,751**	**27,516,957**		
Routine Capital Costs						
Vehicles	117,300	119,646	110,366	0		
Cold chain equipment	1,291,703	565,561	427,667	398,335		
Other capital equipment	4,090,200	2,659,262	1,108,962	1,131,142		
Subtotal Capital Costs	**5,499,203**	**3,344,470**	**1,646,995**	**1,529,477**		

Campaigns						
Polio	535,411	535,455	535,500	535,546		
Measles	8,498,874	0	0	0		
Yellow Fever						
MNT campaigns						
Other campaigns	0	0	9,918,320	0		
Subtotal Campaign Costs	**9,034,285**	**535,455**	**10,453,820**	**535,546**		
GRAND TOTAL	32,956,386	33,104,780	39,376,566	29,581,980		

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.

Table 3.6: Summary of current and future financing and sources of funds

		Estimated financing per annum in US$ (,000)					
Cost category	**Funding source**	**Base year (2007)**	**Year 1 2008**	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**
Routine Recurrent Cost							
1. Traditional vaccines	Government	1,889,829	1,917,131	1,397,302	1,430,046		
2. New and underused vaccines	Government	1,393,130	2,914,705	2,222,171	3,418,476		
	GAVI	531,313	8,778,192	7,680,918	6,583,644		
3. Injection supplies	Government	1,214,307	1,546,175	1,497,482	1,430,774		
	GAVI	178,677	160,412	128,329	96,247		
4. Salaries of full-time NIP health workers	Government	7,059,138	7,200,756	7,344,771	7,491,666		
5. Per-diems for outreach vaccinators / mobile teams	Government	191,243	197,239	203,327	207,394		
6.Transportation	Government	51,494	57,251	65,188	50,188		
7. Maintenance and overheads	Government	5,118,851	5,853,962	6,234,521	6,058,738		
8. Training	Government	59,460	65,472	-	-		
	UNICEF	15,000					
9. Social mobilisation and IEC	Government	111,680	65,472	67,800	122,147		
10. Disease surveillance	Government	311,900	251,655	255,505	373,439		
	WHO	40,000	100,000	100,000	100,000		

11. Program management	Government	187,517	181,904	185,542	189,252		
12. Other	Government	20,000	-	21,224	21,649		
	WHO	30,000					
Routine Capital Costs							
1. Vehicles	Government						
2. Cold chain equipment	Government						
3. Other capital equipment	Government						
Campaigns							
Polio	Government	535,411	535,455	535,500	535,546		
Measles	IFFI	8,498,874					
Diphtheria	Government						
GRAND TOTAL		27,437,823	29,825,782	27,939,581	28,109,206		

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 – <u>Not Applicable</u>

- 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 5.1 to 5.5)

		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):

- *The MoH is well aware of other countries' findings on H.influenzae type b (Hib) as a major etiological agent of bacterial meningitis and other invasive disorders (epiglotitis, pneumonia, otitis media, osteomyelitis etc.) in infants and young children.*
- *MOH established sentinel surveillance points to assess Hib diseases burden.*
- *Challenges: Lack of laboratory diagnosis of Hib; Unclear Hib disease burden; Hib vaccine is not affordable for the Government at the present economic situation of UZB*

Introduction of Hib vaccine allows adding an additional antigen into the routine immunization.

Introduction of a new vaccine would allow improving surveillance of Hib infection, decreasing disease burden of infant meningitis with unclear etiology.

Introduction of pentavalent DTP-HepB-Hib vaccine allows to extend GAVI support for routine antigens and ensure financial sustainability in the transition period.

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 comprehensive cold chain assessment was conducted by UNICEF in 2002. With a technical support from WHO, an Integrated Assessment of Immunization Quality and Safety with a component on cold chain was done in March 2007, and a Cold Chain Temperature Monitoring Study conducted in March 2006.

The conditions of cold stores at national, regional and district levels were assessed by the MOH in 2007 in preparation to the national MR campaign, and necessary repairs done from the state budget and with UNICEF assistance.

Current capacities of national stores are sufficient for receipt of a new vaccine in several shipments, as specified in the table 6.1 of this application. Additional cold chain volume will be obtained through regular government financing and the GAVI cash grant for introduction of the new vaccines.

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 2011	Year 5 2012
A	Annual ***positive*** volume requirement, including new vaccine (specify: DTPw-HepB liquid-Hib combined) (litres m3)[2]	*Sum-product of total vaccine doses multiplied by unit packed volume of the vaccine*	20,828	20,828	20,828		
B	Annual ***positive*** capacity, including new vaccine (specify: DTPw-HepB liquid-Hib combined (litres or m3)	#	6,344	6,344	6,344		
C	Estimated minimum number of shipments per year required for the actual cold chain capacity	*A / B*	3	3	3		
D	Number of consignments / shipments per year	*Based on national vaccine shipment plan*	2	2	2		
E	Gap (if any)	*((A / D) - B)*	4070	4070	4070		
F	Estimated cost for expansion	*US $*	0	0	0		

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 Ministry of Finance has a special directive and budget line No. 01841 for procurement of vaccine for children under 2 years of ages. The resources allotted for this purposes are increasing annually. Only in 2006, the Government allotted equivalent of USD1.2 mln in the national currency for procurement of routine vaccines through UNICEF. Uzbekistan has an experience of introducing a new vaccine (MMR) relying only on internal resources.

In 2007, the Government of Uzbekistan three times exceed the pledged co-financing for measles/rubella mass immunization campaign, having allocated 29 million sums (UZS) instead of committed UZS10 million.

According to cMYP, the only external support for routine vaccine and immunization supplies procurement (new vaccines only, with support for HepB ending in 2008) comes from GAVI. Ad hoc assistance for SIAs comes from other partners (WHO, UNICEF, CDC), while the government is already the major financing agency for personnel, maintenance, overhead and logistics cost, and for procurement of routine vaccine.

Regarding the co-financing, the Government of Uzbekistan will ensure the release of its portion to the UNICEF country office annually in national currency equivalent. UNICEF is responsible for the issue of currency conversion.

[2] 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).

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

No comprehensive Hib disease burden assessment was conducted in Uzbekistan; burden of disease not available. The working Group on Hib surveillance established in the MOHand sentinel Hib surveillance in 3 sites introduced in 2007.

Disease	Title of the assessment	Date	Results
Hib	*Hib Consultation Country Visit*	*2006*	*Pneumonia is a major cause of morbidity and mortality in Uzbekistan. One local study reported that Hib caused at least 21% of all pneumonia cases in Uzbekistan. Studies from Uzbekistan have demonstrated that 50% of all childhood mortality under 5 years of age is due to pneumonia*
Hib	*Hib Rapid Assessment*	*2002*	*The rate of Hib meningitis pere 100,000 children under 5 years of age is 4-22, with estimated number of deaths due to Hib 37-351*

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:

HepB vaccine was introduced with GAVI support in 2001 and MMR was introduced with national financing in 2006. The lessons learned from introduction of new vaccines are as follows:

Lessons Learned	Solutions / Action Points
Health staff, including medical professionals and vaccination personnel, need an advance training on new vaccines.	*Specific training to health staff to be conducted prior to new vaccine introduction. This should be complemented by relevant and effective advocacy and communication activities. The lump-sum grant for facilitating the introduction of the new vaccine will be used for this purpose as described in a chapter below.*
The nominal cold chain capacity at national, regional and district levels is adequate to accommodate new volumes. However, in reality, available cold chain at lower lever level is often out of order.	*Funds are allocated from the state and local budgets for maintenance of cold chain equipment. USD40,000 from the cash grant for introduction will also be used for improving the cold chain capacity.,*
Forms and document are to be revised which causes certain confusion among health staff and parents.	*Lump-sum funds (USD157,747) allotted for introduction of new vaccines are used for these purposes. Solution is also linked to action points for capacity building.*

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

Uzbekistan is now applying for support in introduction of Hib vaccine in the following presentation: pentavalent DTPw-HepB liquid-Hib combined as the first preference. If the primary-choice presentation is not available or is available in insufficient quantity, Uzbekistan is requesting DTPw-HepB-Hib vaccine in liquid+lyophilized presentation as the second prefrence.

In future, Uzbekistan is planning to apply for introduction of rotavirus vaccine as specified in the cMYP.

First Preference Vaccine

As reported in the cMYP, the country plans to introduce *Hib* vaccinations, using pentavalent Hib vaccine, in *1 doses per vial liquid* form.

Please refer to the excel spreadsheet Annex 2a or Annex 2b (for Rotavirus and Pneumo vaccines) 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[3].
- 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

Vaccine: Hib (pentavalent)	*Use data in:*		**Year 1 2008**	**Year 2 2009**	**Year 3 2010**		
Number of children to be vaccinated with the third dose	*Table 3.4*	#	253,841	512,760	517,887		
Target immunisation coverage with the third dose	*Table 3.4*	#	49.5	98.0	98.0		
Number of children to be vaccinated with the first dose	*Table 3.4*	#	310,826	517,992	523,171		
Estimated vaccine wastage factor	*Annex 2a or 2b Table E - tab 5*	#	1.05	1.05	1.05		
Country co-financing per dose	*Annex 2a or 2b*	$	0,30	0,30	0,30		

[3] *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*

*	*Table D - tab 4*						

* 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 country (and cost estimate, US$)

		Year 1 2008	**Year 2 2009**	**Year 3 2010**		
Number of vaccine doses	#	98,578	144,402	149,087		
Number of AD syringes	#	105,253	153,347	157,625		
Number of re-constitution syringes	#	0	0	0		
Number of safety boxes	#	1,168	1,702	1,750		
Total value to be co-financed by country	**$**	367,163	538,445	495,621		

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

		Year 1 2008	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**
Number of vaccine doses	#	1,125,299	1,650,415	1,502,982		
Number of AD syringes	#	1,201,497	1,752,654	1,589,063		
Number of re-constitution syringes	#	0	0	0		
Number of safety boxes	#	13,337	19,454	17,639		
Total value to be co-financed by GAVI	**$**	4,191,283	6,154,052	4,996,488		

- 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

In case if the first preference vaccine presentation is not available in the required quantity, the alternative vaccine presentation would be DTPw-HepB liquid + Hib (liquid + lyophilized)

- Please complete tables 6.3 – 6.4 for the new vaccine presentation

- Please complete the excel spreadsheets Annex 2a or Annex 2b for the new vaccine presentation and submit them alongside the application.

Table 6.3.1: Specifications of vaccinations with new vaccine (Option2)

Vaccine: Hib (pentavalent)	*Use data in:*		**Year 1 2008**	**Year 2 2009**	**Year 3 2010**		
Number of children to be vaccinated with the third dose	*Table 3.4*	#	253,841	512,760	517,887		
Target immunisation coverage with the third dose	*Table 3.4*	#	49.5	98.0	98.0		
Number of children to be vaccinated with the first dose	*Table 3.4*	#	310,826	517,992	523,171		
Estimated vaccine wastage factor	*Annex 2a or 2b Table E - tab 5*	#	1.11	1.11	1.11		
Country co-financing per dose *	*Annex 2a or 2b Table D - tab 4*	$	0,30	0,30	0,30		

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

Table 6.4.1: Portion of supply to be co-financed by the country (and cost estimate, US$) (Option2)

		Year 1 2008	**Year 2 2009**	**Year 3 2010**		
Number of vaccine doses	#	106,412	155,907	156,534		
Number of AD syringes	#	108,754	157,466	156,577		
Number of re-constitution syringes	#	59,059	86,528	86,877		
Number of safety boxes	#	1,863	2,708	2,702		
Total value to be co-financed by country	**$**	388,144	569,213	523,942		

Table 6.4.2: Portion of supply to be procured by the GAVI Alliance (and cost estimate, US$) (Option 2)

		Year 1 2008	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**
Number of vaccine doses	#	1,187,400	1,741,472	1,589,939		
Number of AD syringes	#	1,213,523	1,758,884	1,590,371		
Number of re-constitution syringes	#	659,007	966,517	882,416		
Number of safety boxes	#	20,785	30,252	27,448		
Total value to be co-financed by GAVI	**$**	4,331,089	6,358,093	5,321,745		

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):

The support will operate through the usual GAVI-UNICEF collaboration mechanisms. The MOH of Uzbekistan has a current Memorandum of Understanding with UNICEF on procurement of vaccines, and request to incorporate pentavalent vaccine into procurement for Uzbekistan has already been submitted by MOH to UNICEF Supply Division through the UNICEF Country Office.

Computerized vaccine supply management system has been introduced with assistance of UNICEF in 2007 and will be used for management of new vaccines as well. Reports on vaccine management will be submitted regularly for ICC's attention.

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.

No alternative mechanism for procurement and delivery of vaccine is requested. The current system of procuring routine vaccines through UNICEF is well-functional and effective.

There is no National Regulatory Authority as evaluated by WHO in Uzbekistan. Registration/licensing of vaccine and monitoring/reporting of AEFI are done by the pharmaceutical and sanitary-epidemiological departments of the MOH respectively.

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

The cMYP suggests introduction of Hib vaccine into universal infant immunization to reduce morbidity and mortality associated with Hib-related diseases.
In order to achieve objective of high (98.3%) vaccination of infants within a year after introduction of vaccine with 3 doses of pentavalent vaccine the following strategies are planned:

- *Strengthening capacity of vaccination staff and medical professionals at all levels*
- *Wide public information and communication/advocacy activities*
- *Strengthening monitoring and supportive supervision from national and regional levels*
- *Improving cold chain management, injection safety, vaccine management systems*
- *Improving logistics and operations*
- *Better targeting underserved population (migrants, hard-to-reach)*

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

GAVI will pay directly to UNICEF for procurement of vaccines and injection and injection safety materials. GAVI funds to facilitate the introduction of pentavalent vaccine should be transferred to MOH to the account indicated in this application.

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

The co-financing amount will be transferred to UNICEF country office by the Ministry of Finance of Uzbekistan in coordination with the Ministry of Health. UNICEF country office is expected to liaise with UNICEF supply division. While the Memorandum of Understanding between MOH and UNICEF Country Office on procurement mechanism exists, additional agreement related to pentavalent vaccine may be signed.

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

Monitoring of the pentavalent vaccine will be incorporated into routine coverage monitoring systems on a monthly basis once 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 pentavalent primary series of three doses by 12 months of age, checking implementation of true contraindications, safe administration, timely vaccination, quality of vaccine storage, safe waste management.

In April each year the coverage will be reported in the MOH-WHO-UNICEF Joint Reporting Form and in May each year it will be reported as well in the GAVI Annual Progress Report. An EPI Info based software to be developed by WHO EURO in 2008 for monitoring of new vaccines will be used in Uzbekistan

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	525,825	$ 0.30	157,747

Please indicate in the tables below how the one-time Introduction Grant[4] 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	**35,000**	**30,000**
Social Mobilization, IEC and Advocacy	**25,000**	**22,000**
Cold Chain Equipment & Maintenance	**50,000**	**40,000**
Vehicles and Transportation	**10,000**	**10,000**
Programme Management	**7,000**	**7,000**
Surveillance and Monitoring	**12,000**	**12,000**
Human Resources	**10,000**	**5,000**
Waste Management	**5,000**	**5,000**
Technical assistance	**13,000**	**13,000**
Other (Revision and printing of new forms)	**7,000**	**3,747**
Other (please specify)		
Total	**173,000**	**157,747**

Table 6.7: Cost (and finance) to introduce the second preference vaccine (US$)

Cost Category	Full needs for new vaccine introduction	Funded with new vaccine introduction grant
	US$	US$
Training	**40,000**	**35,000**
Social Mobilization, IEC and Advocacy	**25,000**	**20,000**
Cold Chain Equipment & Maintenance	**50,000**	**40,000**
Vehicles and Transportation	**10,000**	**9,000**
Programme Management	**7,000**	**7,000**
Surveillance and Monitoring	**12,000**	**10,000**
Human Resources	**10,000**	**5,000**
Waste Management	**5,000**	**5,000**
Technical assistance	**13,000**	**13,000**
Other (Revision and printing of new forms)	**7,000**	**3,747**
Other (please specify)		
Total	**178,000**	**157,747**

[4] 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 ICC is commended continuous support provided by GAVI for immunization programmes in Uzbekistan. The ICC emphasized that the current opportunity allows the country to introduce a new important antigen along with continuation of external support for HepB supply in view of discontinuation of GAVI support for HepB in 2008 and taking over provision of part of other antigen, thus relieving financial burden on the national health system and ensuring sustainability for the next few years. Introduction of pentavalent Hib vaccine is important for the country as shown by several assessments and described in the cMYP.

The ICC noted that the immunization programme has proved itself as the most effective and beneficial health development intervention; therefore with full confidence the Government of Uzbekistan is committed for co-financing of the pentavalent vaccine and its partners are committed to support the immunization programme towards sustainable development of the programme.

The Ministry of Health of Uzbekistan and its immunization partners are therefore appealing to the GAVI board for positive response of the proposal to support the Uzbekistan's endeavours in achieving national, regional and global child survival targets.

8. Documents required for each type of support

Type of Support	Document	DOCUMENT NUMBER	Duration *
ALL	WHO / UNICEF Joint Reporting Form (last two)	1-2	X
ALL	Comprehensive Multi-Year Plan (cMYP)	3	2010
ALL	Endorsed minutes of the National Coordinating Body meeting where the GAVI proposal was endorsed	4	
ALL	Endorsed minutes of the ICC/HSCC meeting where the GAVI proposal was discussed	4	
ALL	Minutes of the three most recent ICC/HSCC meetings	4	
ALL	ICC/HSCC workplan for the forthcoming 12 months	5	2008
New and Under-used Vaccines	Plan for introduction of the new vaccine (if not already included in the cMYP)	6	2008

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