Global Alliance for Vaccines and Immunisation (GAVI)

COUNTRY PROPOSAL of DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

For Support to:

New and Under-Used Vaccines
(Measles 2nd Dose)

4th February, 2008

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.

CONTENTS

Executive Summary:

Immunization coverage of measles is consistently high for the last few years (2005: 96.2%; 2006: 96.3% and 2007:99%). However due to accumulation of susceptible, measles outbreak occurred in February 2007.Total number of cases reported were 5,300 with 4 fatalities from 30 counties. Laboratory confirmed cases were 77. The most affected age group was children 11 – 19 years old. In rapid response to the emergency and combating the outbreak, MoPH organized a mass measles immunization campaign (99.5% coverage) in close collaboration with the international agencies like UNICEF, WHO and IFRC during March to May, 2007.

Service Delivery Infrastructure for immunization in DPRK is unique. Immunization services are provided through more than 12,000 immunization posts, 7008 PHC units, 433 county level hospitals, 130 central and provincial level hospitals and specialized hospitals, and Hygienic and Anti-Epidemic Institutes. In fact, each and every village has a heath clinic which offers immunization services for the children and women of that village.

Cold chain capacity has further improved in November 2007 through installing two 40 m3 walk-In cold rooms at the central level to absorb any additional vaccines in the future. Provincial level has big size ice-lined refrigerators and deep freezers, which has capacity to store 3 month doses of their province. County level is provided with small size ice-lined refrigerators and deep freezers, which has capacity to store one month doses of their counties. Vaccine carriers were supplied to the Ri level for the outreach sessions.

The national EPI team developed a five year plan of EPI (2007-2011) and submitted to GAVI on 2nd October 2006.This plan provides the framework on which activities should be planned to achieve the objectives of DPRK's goal of immunization within the coming five years, as well as the providing guidance for the introduction of new vaccines.

Considering all these factors, National EPI decided to introduce second dose of measles vaccine in routine immunization programme. Technical consultative group of SEARO also recommended introduction of 2nd dose of measles through routine immunization in DPRK in the yearly meeting conducted in July 2007. Hence DPRK is submitting this proposal under new/under used vaccine introduction support from GAVI to introduce 2nd dose of measles vaccine for children at the age of 15 months.

This proposal was reviewed by the existing ICC committee and agreed that the NVS support for the 2nd dose of measles by GAVI will greatly contribute to further increase the population immunity for measles and reduce the number of susceptible children in the country.

2. Signatures of the Government and National Coordinating Bodies

Government and the Inter-Agency Coordinating Committee for Immunisation

The Government of **DPR Korea** would like to expand the existing partnership with the GAVI Alliance for the improvement of the routine immunisation programme in the country, and specifically hereby requests for GAVI support for the introduction of second dose Measles vaccine in routine immunization schedule.

The Government of **DRP Korea** 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 17 of this application shows the amount of support in either supply or cash that is required from the GAVI Alliance.

Minister of Public Health:

Signature: ……

Name: Prof. Dr. Choe Chang Sik

Date: 06 February, 2008

Vice-Minister of Finance:

Signature: ……

Name: Mr. Sin Pong Ryol

Date: 06 February, 2008

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

We the members of the ICC met on 4th of February, 2008 to review this proposal and endorsed this proposal on the basis of the supporting documentation which is attached.

- The endorsed minutes of this meeting are attached as DOCUMENT NUMBER - **Four**

Name/Title	Agency / Organisation	Signature
Dr. Ri Pong Hun Chairman	Vice Minister, Ministry of Public Health (MoPH)	
Dr. Pak Myong Su Member	Director, State Hygiene & Communicable Disease Control Board, MoPH	
Dr. Pak Jong Min Member	Director, Department of External Affairs, Ministry of Public Health	
Ms. Kim Yong Suk Member	Deputy Director Central Bureau of Statistics	
Mr. Han Kyu Sam, Member	Director, Department of External Affairs, Ministry of Education	
Dr. Ko Kwang Jin, Member	Vice-Director, Academy of Medical Science	
Dr. Cha Chol U Member	Vice- Director, Central Hygiene & Anti-Epidemic Institute	
Mr. O Myong Il Member	Vice Director of Dept. Ministry of Finance	
Dr. Jong Pong Ju Member	Focal Point for UNICEF & Cive-Director, Department of External Affairs, MoPH	
Dr. Jang To Gyong Member	Director, Department of Treatment and Prevention, MoPH	
Dr. Han Yong Sik Secretary	National EPI Manager, MoPH	
Dr. Tej Walia	Representative, WHO DPR Korea	
Mr. Gopalan Balagopal	Representative, UNICEF DPR Korea	

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

Name: Dr. Jong Pong Ju Title: Vice-Director, Department of External Affairs, MoPH

Tel No.: 850-2-381-8067 Address: Ministry of Public Health, Sochang-dong, Central District, Pyongyang, DPR Korea

Fax No.: 850-2-381-4077 …….

Email: bogon.moph@co.chesin.com …….

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) supporting immunisation services are co-ordinated and organised through an inter-agency coordinating mechanism (ICC). The ICC is responsible for coordinating and guiding the use of the GAVI NVS support. Please see the information about the ICC in our country in the spaces below.

Profile of the ICC/HSCC

Name of the ICC: Immunization Programme Coordinating Committee DPR Korea.

Date of constitution of the current ICC: 30th May 2007

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

Frequency of meetings: Quarterly meeting

Composition:

Function	Title / Organization	Name
Chair	Vice-Minister. Ministry of Public Health (MoPH)	Prof. Dr. Ri Pong Hun
Secretary	EPI Programme Manager, MoPH	Dr. Han Yong Sik
Members	• Director, Dept. State Hygiene & Communicable Disease Control Board, MoPH • Director, Department of External Affairs, MoPH • Deputy Director, Central Bureau of Statistics • Director, Ministry of Education • Vice-Director, Academy of Medical Science • Vice-Director, Central Hygiene and Anti-Epidemic Institute • Vice-Director, Ministry of finance • Focal Point for UNICEF, Department of External Affairs, MoPH • Director, Department of Treatment and Prevention, MoPH • Representative, WHO DPR Korea • Representative, UNICEF DPR Korea	• Dr. Pak Myong Su • Dr. Pak Jong Min • Ms. Kim Yong Suk • Mr. Han Kyu Sam • Dr. Ko Kwang Jin • Dr. Cha Chol U • Mr. O Myong Il • Dr. Jong Pong Ju • Dr. Jang To Gyong • Dr. Tej Walia • Mr. Gopalan Balagopal

Major functions and responsibilities of the ICC:

1) Provide policy guidelines for immunization programme in the country and if found necessary review the guidelines periodically and make necessary modifications

2) Act as an advisory board to the Government on matters related to EPI including, self sufficiency in immunization programme, adequate national resource allocations, new developments and to acquire assistance for strengthening EPI.

3) Establish a forum for exchange of information and dialogue on global and national EPI status and coordination/elimination activities in the country

4) Ensure that partner agencies are provided necessary support for their activities to strengthening EPI and diseases eradication/elimination activities in the country.

5) Assist the Ministry of Public Health and partner agencies in identifying and developing support for new programme strategies when required

6) Mobilize resources for planned activities

7) Review the progress of EPI and advise Government on appropriate measures for achieving the targets

8) If necessary organize a sub committee/s for a specific EPI related activities, for in depth review and implementation

9) Assist in resource mobilization in supplementary immunization activities

10) Act as a liaison with regional and global institutions in issues related to immunization

11) Hold regular meetings

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

1. Ensure quarterly ICC meetings and circulating meeting minutes
2. Periodic review of the ICC's 2008 workplan
3. Strengthening provincial co-ordination through field visits

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 –**Two.a**
- Please refer to the two most recent annual WHO/UNICEF Joint Reporting Forms on Vaccine Preventable Diseases and attach them as DOCUMENT NUMBERS - **One**
- 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	2,3756,000	2006	Central Bureau of Statistics (CBS)
Infant mortality rate (per 1000)	20	2006	CBS
Surviving Infants*	401,926	2006	CBS
GNI per capita (US$)	480 US$	2004	CBS
Percentage of GDP allocated to Health	34 USD per capita	2006	CBS
Percentage of Government expenditure on Health	6.44%	2006	CBS

* 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
MID Term Immunization Strategic Plan DPR Korea - July 2006

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

Please indicate the national planning budgeting cycle for health
Annual planning budgeting cycle (January to December)

Please indicate the national planning cycle for immunisation
Annual planning cycle (January to December)

Table 3.2: Current Vaccination Schedule: Traditional, New Vaccines and Vitamin A Supplement *(cMYP page number 29)*

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	One dose within 7 days after birth	X		
OPV	Three dose in 1.5, 2.5 and 3.5 month after birth	X		
Hep B (Birth dose)	One dose within 7 days after birth	X		For all institutional deliveries HepB given right after birth
DPT+Hep B	Three dose in 1.5, 2.5 and 3.5 month after birth	X		
Measles	Single dose at the age of 9 month	X		Plan to introduce 2nd dose at the age of 15 month from July'2008. In cMYP it is 6 years which will be updated.
TT	Two dose in 3rd, 4th month of pregnancy	X		
Vitamin A	6-59th month	X		

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		93.8	95.5			Tuberculosis*		
DTP	DTP1	83	91.1			Diphtheria	Nil	Nil
	DTP3	78.7	88.9			Pertussis	493	409
Polio 3		97.4	98.1			Polio	Nil	Nil
Measles (first dose)		96.2	96.3			Measles	Nil	Nil
TT2+ (Pregnant women)		94.8	95.4			NN Tetanus	Nil	Nil
Hib3						Hib **	Nil	Nil
Yellow Fever						Yellow fever	Nil	Nil
HepB3		91.5	95.8			hepB sero-prevalence*		
Vit A supplement	Mothers(<6 weeks post delivery)							
	Infant(>6 months)	100	98					

* 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:

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

Number		Baseline and targets					
		Base year (2005)	**Year 1 2008**	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**
Births		401926	423864	423963	429051	434,199	441,537
Infants' deaths			8053	7631	7294	6,947	6,750
Surviving infants		401926	415811	416332	421757	427,252	434787
Pregnant women		420000	445058	445161	450503	455,909	485,691
Target population vaccinated with BCG		401926	415811	416332	421757	427,252	434787
BCG coverage*		93.8	95	95	95	95	95
Target population vaccinated with OPV3		391,410	415811	416332	421757	427,252	434787
OPV3 coverage**		97.4	95	95	95	95	95
Target population vaccinated with DTP3***		316,488	415811	416332	421757	427,252	434787
DTP3 coverage**		78.7	85	85	90	90	90
Target population vaccinated with DTP1***		391,410	415811	416332	421757	427,252	434787
Wastage[1] rate in base-year and planned thereafter		30	30	25	25	25	25
Target population vaccinated with **1st dose** of Measles		384,599	415811	416332	421757	427,252	434787
Target population vaccinated with **2nd dose** of Measles			415811	416332	421757	427,252	434787
Measles coverage**		96.2	95	95	95	95	95
Pregnant women vaccinated with TT+		395,987	445058	445161	450503	455,909	460,924
TT+ coverage****		94.8	95	95	95	95	95
Vit A supplement	Mothers (<6 weeks from delivery)						
	Infants (6-59 months)	2,010,000	2,100,000	2,130,000	2,160,000	2,190,000	2,220,000
Annual DTP Drop out rate [(DTP1-DTP3)/DTP1] x100		4.3	9	7	5	5	5
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

[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.

Table 3.5: Summary of current and future immunisation budget *(*Multi-Year Plan Costing for Democratic People's Republic of Korea (in US$) - Summary Table - under 3.Costing Sheet)

	Estimated costs per annum in US$ (,000)					
Cost category	**Base year (2005)**	**Year 1 2008**	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**
Routine Recurrent Cost						
Vaccines (routine vaccines only)	1,431,951	2,911,902	2,905,224	3,101,213	3,138,427	
Traditional vaccines	937,565	546,423	539,195	572,952	579,828	
New and underused vaccines	494,386	2,365,479	2,366,029	2,528,261	2,558,600	
Injection supplies	346,408	532,244	535,938	558,426	566,702	
Personnel	696,390	1,057,381	1,078,529	1,100,100	1,122,102	
Salaries of full-time NIP health workers (immunization specific)	481,328	726,651	741,184	756,008	771,128	
Per-diems for outreach vaccinators/mobile teams	215,063	330,730	337,345	344,092	350,973	
Transportation	326,018	514,734	596,741	391,477	452,868	
Maintenance and overheads	475,421	668,104	701,576	648,783	682,681	
Training	73,728	247,925	255,045	277,153	283,338	
Social mobilisation and IEC	31,000	1,747,872	1,825,278	1,867,195	1,910,060	
Disease surveillance	37,400	465,059	514,686	522,815	546,520	
Program management	128,000	114,444	116,733	119,068	123,657	
Other						
Subtotal Recurrent Costs	**3,546,316**	**8,808,996**	**9,102,801**	**9,176,154**	**9,444,640**	
Routine Capital Costs						
Vehicles		1,566,166	430,161	382,477	279,719	
Cold chain equipment		171,874	175,895	179,413	183,001	
Subtotal Capital Costs		**1,738,040**	**606,056**	**561,890**	**462,720**	
Campaigns						
Subtotal Campaign Costs						
GRAND TOTAL	**3,546,316**	**10,547,036**	**9,708,857**	**9,738,044**	**9,907,360**	

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 *(or refer to cMYP)*

		Estimated financing per annum in US$ (,000)					
Cost category	**Funding source**	**Base year 2005**	**Year 1 2008**	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**
Routine Recurrent Cost							
1. Traditional vaccines	UNICEF	937,565	546,423	539,195	572,952	579,828	
2. New and underused vaccines with injection supplies	GAVI & Govt	494,386	2,365,479	2,366,029	2,528,261	2,558,600	
3. Injection supplies for traditional vaccines	UNICEF	346,408	532,244	535,938	558,426	566,702	
4. Personnel	MoPH (the government	696,390	1,057,381	1,078,529	1,100,100	1,122,102	
5. Transportation	MoPH	326,018	514,734	596,741	391,477	452,868	
6. Maintenance and overheads	MoPH, UNICEF	475,421	668,104	701,576	648,783	682,681	
7. Training	MoPH, UNICEF, WHO	73,728	247,925	255,045	277,153	283,338	
8. Social mobilisation and IEC	MoPH, UNICEF, WHO	31,000	1,747,872	1,825,278	1,867,195	1,910,060	
9. Disease surveillance	MoPH, WHO	37,400	465,059	514,686	522,815	546,520	
10. Program management	MoPH, UNICEF, WHO	128,000	114,444	116,733	119,068	123,657	
11.	11.						
Routine Capital Costs							
1. Vehicles	MoPH, UNICEF		1,566,166	430,161	382,477	279,719	
2. Cold chain equipment	UNICEF, GAVI		171,874	175,895	179,413	183,001	
3. Other capital equipment	MoPH,						
Campaigns							
GRAND TOTAL		**3,546,316**	**10,547,036**	**9,708,857**	**9,738,044**	**9,907,360**	

4. Immunisation Services Support (ISS)

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 2005	Year 1 2008	Year 2 2009	Year 3 2010	Year 4 2011	Year 5 2012
DTP3 Coverage rate	78.7	85	85	90	90	90
Number of infants reported / planned to be vaccinated with DTP3 (as in Table 3.4)	316,488	353439	353882	379581	384,527	391,308
Number of *additional* infants that annually are reported / planned to be vaccinated with DTP3	Nil	11,020	443	25,699	4,946	6,781
Funds expected ($20 per additional infant)	$00	220,400	8,860	513,980	98,920	135,620

* 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
Organize IEC activities to increase the public awareness on immunization is essential	Higher coverage rate will be maintained through IEC activities on immunization
Promotive activities for the excellent health workers is important	Roles and responsibilities of health workers have been improved
Drop out children were immunized by house to house visits	More children could be immunized through special efforts
Strengthen national health system facilitate high coverage	HSS support would be contributable to higher immunization coverage
injection safety contributable for reduced AEFI rate	Use of AD syringes and national policy on “Injection safety” will reduce AEFI

If you have not received ISS support before, please indicate: (**DPRK received ISS support since 2004 amounting to US$ 1,188,800 and waiting for 1st award money amounting to US$ 492,500. Total amount will be US$ 1,681,300).**

a) when you would like the support to begin:

Current ISS support will be ended in 2008 and renewal application will be submitted soon.

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

Last DQA was organised in December 2004. MoPH is planning to carry out an International EPI Coverage Evaluation Survey during the 3rd quarter of 2008 with support from UNICEF and WHO.

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

Country would like to channel the funds from GAVI as per the present system

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

As DPRK will be receiving only award money (no more investment grant as per GAVI policy) country would like to use the funds to procure cold chain equipment & vaccination devices through UNICEF procurement services.

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

MoPH in consultation with ICC partners

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

5. Injection Safety Support

- 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 – **Two** , page-60, Objective#5.

- 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	
2008	4,073,876	44,813	260,600	34,058	284,658

Table 5.2: Estimated supply for safety of vaccination with measles 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)

	Measles vaccine (2nd dose)	Formula	Year 1 2008	Year 2 2009	Year 3 2010	Year 4 2011	Year 5 2012
A	Number of children to be vaccinated [2]	#	415811	416332	421757	427,252	434787
B	Percentage of vaccines requested from GAVI [3]	%	100	100	100	100	100
C	Number of doses per child	#	1 dose	1 dose	1 dose	1 dose	1 dose
D	Number of doses	*A x B/100 x C*	415811	416332	421757	427,252	434787
E	Standard vaccine wastage factor [4]	*Either 2.0 or 1.6*	1.6	1.6	1.6	1.6	1.6
F	Number of doses (including wastage)	*A x B/100 x C x E*	665,297	666,131	674,811	683,603	695,659
G	Vaccines buffer stock [5]	*F x 0.25*	166,324	166,533	168,703	170,901	173,915
H	Number of doses per vial	#	10	10	10	10	10
I	Total vaccine doses	*F + G*	831,622	832,664	843,514	854,504	869,574
J	Number of AD syringes (+ 10% wastage) requested	*(A x 1.11)*	457,392	457,965	463,933	469,977	478,266
K	Reconstitution syringes (+ 10% wastage) requested [6]	*I / H x 1.11*	91,478	91,593	92,787	93,995	95,653
L	Total of safety boxes (+ 10% of extra need) requested	*(J + K) / 100 x 1.11*	6,038	6,045	6,124	6,204	6,313

[1] GAVI supports the procurement of AD syringes to deliver two doses of TT to pregnant women. If the immunization 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.

All procurement will be done through UNICEF

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 national EPI team developed a five year plan of EPI (2007-2011) and submitted to GAVI on 2nd October 2006.This plan provides the framework on which activities should be planned to achieve the objectives of DPRK's goal of immunization within the coming five years, as well as the providing guidance for the introduction of new vaccines.

Key Points for the decision making process:

***Immunization Coverage*:** According to WHO/UNICEF estimates measles immunization coverage at 9 months was above 95% since 2000. Coverage was very high in the last three years (2005:96.2%; 2006: 96.3% and 2007:99%).

Disease epidemiology: However measles outbreak occurred in February 2007 and 5,300 cases reported. Highest incidence of 33.7 per 100,000 was in age group 11-19 years. The age groups 5-10 years and 20-29 years also reported incidence more than 25 per 100,000. Nevertheless comparatively lower incidence of 12.4 per 100,000 was observed in the age group of 1-4 years. Accordingly this outbreak is due to accumulation of susceptible when a single dose of measles vaccine is given at 9 months (85% vaccine efficacy). The data supported high coverage of measles immunization since 2000 and indicated that measles vaccination coverage/immunity of people over than 6 years had not been optimum.

Measles Mass Immunization campaign: As response to the outbreak mass measles vaccination campaign was conducted in March/April 2007 and remarkable coverage (99.5%) achieved and 16,109,432 people between 6 months - 44 years have been vaccinated. Since 8th April 2007 no more cases were reported.

***Service Delivery*:** Infrastructure for immunization in DPRK is unique. Immunization services are provided through more than 12,000 immunization posts, 7008 PHC units, 433 county level hospitals, 130 central and provincial level hospitals and specialized hospitals, and Hygienic and Anti-Epidemic Institutes. In fact, each and every village has a heath clinic which offers immunization services for the children and women of that village.

Cold chain: Capacity has further improved in November 2007 through installing two 40 m3 walk-In cold rooms at the central level to absorb any additional vaccines in the future. Provincial level has big size ice-lined refrigerators and deep freezers, which has capacity to store 3 month doses of their province. County level is provided with small size ice-lined refrigerators and deep freezers, which has capacity to store one month doses of their counties. Vaccine carriers were supplied to the Ri level for the outreach sessions.

TCG Recommendation: Technical consultative group of SEARO also recommended introduction of 2nd dose of measles through routine immunization in DPRK in the yearly meeting conducted in July 2007.

Considering all these factors, National EPI decided to introduce second dose of measles vaccine in routine immunization programme from July 2008.

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

DPRK has well established cold chain system from national to peripheral level. Recently two walk-In cold rooms with a capacity of 80 m3 (each 40 cbm) was installed at the central medical warehouse which will be enough to store the existing plus new vaccines for the country. Nation-wide cold chain assessment will be carried out in 2008 (important activity in 2008 annual workplan) with the support from UNICEF.

Table 6.1: Capacity and cost (for positive storage): (See above box/para*)*

		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:_____) (litres or m3)[2]	*Sum-product of total vaccine doses multiplied by unit packed volume of the vaccine*					
B	Annual ***positive*** capacity, including new vaccine (specify:_____) (litres or m3)	#					
C	Estimated minimum number of shipments per year required for the actual cold chain capacity	*A / B*					
D	Number of consignments / shipments per year	*Based on national vaccine shipment plan*					
E	Gap (if any)	*((A / D) - B)*					
F	Estimated cost for expansion	*US $*					

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.

cMYP reference: Chapter 2.10.4 (Priority actions that the government will take to fill any resource gap) page number-42

Co-financing is not required for the introduction of 2nd dose of measles as per GAVI guidelines for NVS support.

[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 immunization 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)*:

Disease	Title of the assessment	Date	Results
Measles	Epidemiological investigation on measles outbreak	Feb-March 2007	5,300 cases in 10 provinces in the country

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:

Lessons Learned	Solutions / Action Points
Full storage capacity to be ensured for the introduction of new vaccine	Two walk-In cold rooms are installed at the central medical warehouse to ensure proper storage of all vaccines.
Cold chain system from national to periphery needs to be monitored periodically	Focal point for the cold chain training identified at the national level and all EPI mangers were asked to routinely inspect their cold chain rooms.
Reduce vaccine wastage is important	Introduced multi-dose vaccine vial policy. EPI used to purchase vaccines with vaccine vial monitors (VVMs), wherever applicable.

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

Measles 2nd dose (10 dose/ vial)

First Preference Vaccine

As reported in the cMYP, the country plans to introduce Measles second dose *(antigen)* vaccination, Measles vaccine, in 10 dose *(n° of doses per vial) lyophilised from. (lyophilized or 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 (Measles 2nd Dose):

Vaccine: Measles	*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 second dose	*Table 3.4*	#	415811	416332	421757	427,252	434787
Target immunization coverage with the second dose	*Table 3.4*	#	95	95	95	95	95
Number of children to be vaccinated with the first dose	*Table 3.4*	#	415811	416332	421757	427,252	434787
Estimated vaccine wastage factor	*Annex 2a or 2b Table E - tab 5*	#	1.6	1.6	1.6	1.6	1.6
Country co-financing per dose *	*Annex 2a or 2b Table D - tab 4*	$	Not required	Not required	Not required	Not required	Not required

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

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

Measles vaccine		**Year 1 2008**	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**
Number of vaccine doses	#	831,622	832,664	843,514	854,504	869,574
Number of AD syringes	#	457,392	457,965	463,933	469,977	478,266
Number of re-constitution syringes	#	91,478	91,593	92,787	93,995	95,653
Number of safety boxes	#	6,038	6,045	6,124	6,204	6,313
Total value to be co-financed by country	**$**	Nil	Nil	Nil	Nil	Nil

Table 6.5: Portion of supply to be procured by the GAVI Alliance (Cost estimate based on 2007 UNICEF price including freight value in, US$)

Measles vaccine		**Year 1 2008**	**Year 2 2009**	**Year 3 2010**	**Year 4 2011**	**Year 5 2012**
Number of vaccine doses	#	831,622	832,664	843,514	854,504	869,574
Number of AD syringes	#	457,392	457,965	463,933	469,977	478,266
Number of re-constitution syringes	#	91,478	91,593	92,787	93,995	95,653
Number of safety boxes	#	6,038	6,045	6,124	6,204	6,313
Total value to be co-financed by GAVI (Full amount will be supported by GAVI for 5 years amounting to US$ 1.3 million)	**$**	** 333,660	334,066	338,424	342,838	348,875

*** Country decided to start 2nd dose of measles from July 2008. So, US$ **166,830** needs to be allocated for 2008 instead of US$ 333,660 for the whole year.*

- 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

Table 6.5 b: 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	#					
Number of AD syringes	#					
Number of re-constitution syringes	#					
Number of safety boxes	#					
Total value to be co-financed by GAVI	**$**					

- 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.

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):

Vaccines and injection devices will be procured through UNICEF.

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

Not applicable

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

Second dose of measles will be introduced in the entire country from July, 2008.

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

Not applicable. Country is expected to get measles vaccine and devices through UNICEF procurement services.

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

Not Applicable for the 2nd dose of measles

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

Immunization coverage survey will be conducted using immunization card and mothers history. Monitoring and supervisory activities will also be strengthened.

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$	Five years Total in US$
July 2008	423,864	Full amount by GAVI	1,531,033

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	5,000	
Social Mobilization, IEC and Advocacy	10,000	
Cold Chain Equipment & Maintenance	8,000	
Vehicles and Transportation	57,157	
Surveillance and Monitoring	5,000	
Human Resources	3,000	
Waste Management	2,000	
Technical assistance	9,843	
Other (please specify)		
Other (please specify)		
Other (please specify)		
Other (please specify)		
Total	**100,000**	

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

[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

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$)
Table 6.7: calculation of lump-sum

Year of New Vaccine introduction	N° of births (from table 3.4)	Share per birth in US$	Total in US$

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 6.8: 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	5,000	
Social Mobilization, IEC and Advocacy	10,000	
Cold Chain Equipment & Maintenance	8,000	
Vehicles and Transportation	57,157	
Surveillance and Monitoring	5,000	
Human Resources	3,000	
Waste Management	2,000	
Technical assistance	9,843	
Other (please specify)		
Other (please specify)		
Other (please specify)		
Other (please specify)		
Total	**100,000**	

[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):

Although immunization coverage increased significantly including measles for the last few years there has been measles outbreak in February 2007 in the country. The first case was diagnosed in 15 February, 2007 and the outbreak was ended on 8th April 2007. Total number of cases reported was 5,300 with 4 fatalities from 30 counties. Laboratory confirmed cases were 77. The most affected age group was children 11 – 19 years old. It was found that this outbreak was mainly due to the accumulation of not immunized susceptible children since the county only has one dose of measles immunization schedule. In rapid response to the emergency and combating the outbreak, MoPH organized a mass measles immunization campaign (99.5% coverage) in close collaboration with the international agencies like UNICEF, WHO and IFRC during March to May, 2007. From this context, ICC strongly recommended to introduce the second dose of measles vaccine in routine immunization programme.

8. Documents required for each type of support

Type of Support	Document	DOCUMENT NUMBER	Duration *
ALL	WHO / UNICEF Joint Reporting Form (last two)	1	2005-2006
ALL	Comprehensive Multi-Year Plan (cMYP)	2a. & 2.b	2007-2011
ALL	Endorsed minutes of the ICC/HSCC meeting where the GAVI proposal was discussed	3	February, 2008
ALL	Minutes of the three most recent ICC/HSCC meetings	4	Last 3 minutes from 2007
ALL	ICC/HSCC workplan for the forthcoming 12 months	5	January-December 2008
Injection Safety	National Policy on Injection Safety including safe medical waste disposal (if separate from cMYP)	-	
Injection Safety	Action plans for improving injection safety and safe management of sharps waste (if separate from cMYP)	-	
Injection Safety	Evidence that alternative supplier complies with WHO requirements (if not procuring supplies from UNICEF)	-	
New and Under-used Vaccines	Plan for introduction of the new vaccine (if not already included in the cMYP)	-	

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