KINGDOM OF CAMBODIA

NATION RELIGION KING

Ministry of Health
National Maternal and Child Health Center
National Immunization Program

Five Year Strategic Plan

National Immunization Program

Cambodia

2006 – 2010

Phnom Penh
September 1 2006

TABLE OF CONTENTS

FOREWORD

The National Immunization Program, Ministry of Health, Cambodia developed the Multi Year Plan for National Immunization Program in Cambodia 2006-2010 to ensure an effective and coordinated response to improve child survival and child health in the country through provision of optimal immunization services against vaccine preventable diseases.

The multi year plan for immunization and upcoming operational plans supports the directions of the Regional Child Survival Strategy, Cambodian Child Survival Strategy, Millennium Development Goals and Cambodian Development Goals.

The goal is to attain a better quality of life for all Cambodian Children by improving immunization coverage, and thereby controlling, eliminating or eradicating all vaccine preventable diseases targeted by the National Immunization Program. The strategy includes four strategic areas: (1) Surveillance and Disease Control, (2) Health System and Program Management, (3) Logistics, Communication and Training and (4) Service Delivery.

This Multi Year Plan for National Immunization Program in Cambodia 2006-2010 has been jointly developed by the National Immunization Program Management team, National Immunization Program partners (WHO,UNICEF and PATH), and NGOs that support the National Immunization Program such as Save the Children Australia, CARE, RHAC, RACHA. This plan was developed with the participation of the Department Planning and Health Information. A consultative workshop for multi year planning was conducted in Kampong Som in June 2006, with participation from national program planners, the Departments of Planning and Finance and international organizations. The plan was drafted based on the MYP guidelines of WHO/UNICEF, and in close consultation with other MOH strategies including the Health Sector Plan (2003 – 2007) and draft Child Survival Strategy (2006 – 2010).

A `wider consultation on key objectives and strategies will then be undertaken with regional representatives of WHO and UNICEF and sub nationally with provincial and District Health Departments during a mid term review in August 2006. This two month consultation process will also provide the opportunity for input of the MYP into the next health sector planning strategy 2006 – 2010.

Professor Sann Chan Soeung

Deputy Director General for Health

Manager of National Immunization Program

Phnom Penh, August 2006

EXECUTIVE SUMMARY

Since 2000, the NIP, MOH and health services across the country have achieved important health gains through expanding the reach of immunization services. More children are being immunized than ever before against 7 preventable diseases, and increasing numbers of women of child bearing age and their infants are being protected against tetanus. Two demographic health surveys conducted between 2000 and 2005 have demonstrated a 26% increased in fully immunized child status. In the same period, there has been a decline in the incidence of vaccine preventable diseases, with measles cases declining from over12,000 suspected cases in 2000 to 264 suspected cases in 2005.

The reasons for this improvement are *potentially* attributable to many factors. Some of these are *immunization program specific factors*, such as the use of GAVI, NGO and Government finance for community based outreach, social mobilization and communication activities, and the increased accountability by PHDs for performance. *Health system factors* include expansion of the health coverage plan – there is now a network of over 930 health centres across the country. Finally, there are *socio economic factors* operating, such as improved transport and communications, increased literacy and economic growth.

The overall goal of the NIP is to *improve child survival and health and support achievement of Millennium Goals 1 (Poverty Reduction) and 4 (Mortality Reduction) by controlling, eliminating, or eradicating all vaccine preventable diseases targeted by the National Immunization Program*. The NIP proposes 12 objectives in the areas of service delivery, disease control and program management.

These objectives shall be achieved through a range of *routine immunization strategies* focusing on the needs of specific population groups – the high risk, hard to reach and accessible populations. Services at the fixed site will be strengthened, while at the same time reaching out to harder reach populations. *Programmatic strategies* will focus on resource co ordination and mobilization (vaccine and operational financing), decentralization (PHD accountability), capacity building (surveillance, planning, and immunization technique) and by building demand through application of multiple channels of communication (community health volunteers, service delivery, media). *Health system strengthening strategies* will include closer linkages between the EPI program and rural midwifery, strengthening of integrated micro-planning systems at district level and below, investment in transport capital, promotion of health centre utilization and reaching to high risk populations for the Ministry of Health minimum package of primary care services.

Major milestones in the 5 year planning period include neo natal tetanus elimination, raising of coverage targets above 90%, development of a school based immunization program, strengthening research and surveillance for new interventions, maintenance of polio free status and identifiable progress towards elimination of measles and hepatitis B as major public health problems by the year 2012. *Major outcomes* expected by the year 2010 are improvements in immunization coverage for 7 preventable diseases and measurable reductions in childhood mortality in support of higher Royal Government of Cambodia Goals of Poverty Reduction and Millennium Development Goal Achievement by the Year 2015. The following two pages summarize key content of this plan in terms of country background, situation analysis (immunization and health systems), baseline indicators, objectives, milestones, strategies and vaccine financing.

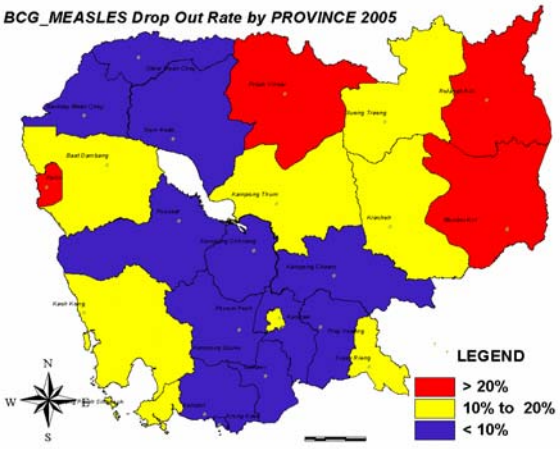
IMMUNIZATION 5 YEAR STRATEGIC PLAN

2006 - 2010 CAMBODIA INFORMATION SHEET

Country Background 2005

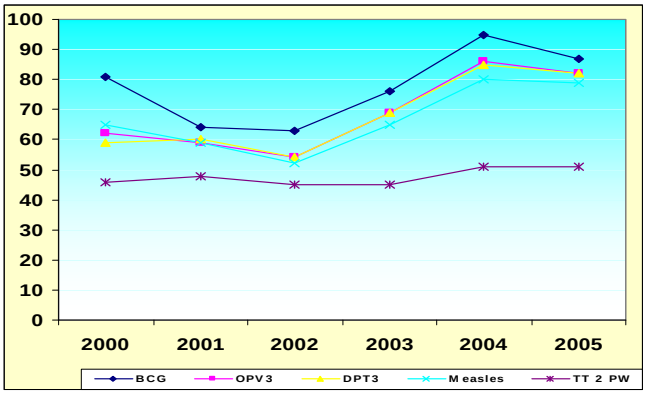
Total population (census year)	13,806,923
Birth Cohort	367,000
Population growth (%)	2.30%
Infant Mortality Rate	68
GNI	$320
% Population Urban	20%

Cambodia NIPGoal: To improve child survival and health and support achievement of Millennium Goals 1 (Poverty Reduction) and 4 (mortality reduction) by controlling, eliminating, or eradicating all vaccine preventable diseases targeted by the National Immunization Program



Situation Analysis

Immunization Coverage 2000 - 2005 (JRF)



Baseline Indicator

Baseline	Result	Source
Hep B Sero-Prevalence Age 5	3.50%	NIP Survey 2005
Hepatitis B Birth Dose	24%	NIP Report 2005
DPT – Hepatitis B3 Coverage	82%	JRF 2005
Suspected Measles Cases	264	NIP Report 2005
Laboratory Confirmed Measles	3	Nip Report 2005
Neonatal Tetanus cases	68	NIP Report 2005
TT2+ Pregnant women	51%	NIP Report 2005
DPT-Hepatitis B1-3 Drop Out	9%	NIP Report 2005
BCG – Measles Drop Out	12%	NIP Report 2005
Fully ImmunizedChild	66%	CDHS 2005
DPT Hepatitis B Wastage	33%	NIP Report 2005

Immunization System Issues

Communication - High risk and remote populations required targeted communication strategies. Guidelines and implementation of adverse events following immunization needs to be improved.

Surveillance – Surveillance has been strengthened in recent years, but there is a need to integrated VPD disease surveillance, and improve coverage monitoring in high risk areas.

Services Delivery – There is high dependence on outreach services (80%) as a service delivery strategy. There is high drop out in remote area provinces and pockets of un immunized in high density provinces. High risk populations (slum, ethnic group and remote areas) on occasions have high drop out / low coverage.

Logistics – Waste management and cold chain systems have been strengthened in recent years, but improvements are required for maintenance systems. Vaccine management at middle level management also needs to be strengthened in coming years

Program Management – Sub national accountability for program performance needs to be decentralized to Provincial level.

New Vaccines - The burden of disease for some vaccine preventable diseases is not known well enough. More information is required to support country decsion making about new and underutilized vaccines (HIB, JE) (with CDC)

Health System Issues

Cambodia completed ***health sector reform*** in 1997. There is now a network of 24 provinces, 76 operational health districts and over 930 health centres.

The ***service delivery model*** is highly focussed on health outreach. There iare opportunities to improve utilization for fixed facilities, while still maintaining outreach for remote and at risk populations.

A new ***health planning*** system has been designed, but there are opportunities to strengthen integrated micro-planning and use of health information at district and health centre level.

In terms of ***health financing, t*** here is inconsistant and irregular funding of basic operational costs at the primary level of care, including transport systems, vaccine finance

There is malidistribution of ***human resources*** for health in Cambodia, with a high concentration of medical doctors in urban areas and very low population midwife ratio in many rural areas.

There is a rapidly expanding and unregulated ***private sector*** in Cambodia.

There are opportunities at National and sub national level for closer ***program co ordination*** of EPI with child survival strategy implementation

Strategic Plan Objectives

SERVICE DELIVERY
To improve *routine immunization* for children under 1 year of age
To ensure that all immunization is *given safely* /waste is disposed appropriately

DISEASE CONTROL
To maintain *polio free status* until the time of global eradication
Achieve maternal *neo natal tetanus elimination* by 2010
To effectively reach *measles elimination* by the year 2012
To control *hepatitis B disease* by reducing carriage in new infants to 2% by 2012

PROGRAM MANAGEMENT
To ensure that *AEFI guidelines and monitoring systems* are in place
To strengthen country decision making for *new interventions* by strengthening research and surveillance of new vaccine preventable diseases
To increase *community participation* in immunization at local authority/decision maker level (advocacy) and community level
To improve *vaccine management* through provision of adequate functional cold chain equipment, reduction of vaccine wastage and increased efficiency of vaccine delivery and usage
To *build the capacity* of PHD, OD and facility managers
To fully equip all health facilities and management levels with *functional transport and maintenance systems* by the year 2010
To *secure national budget* for vaccine and operational financing

Program Milestones / Targets

2006: Finalize Measles Elimination Plan
2006: JE sentinel surveillance (with CDC)
2007: Develop national guidelines for fixed site integrated with other national programs
2007: Outside the cold chain and < 24 hour hepatitis birth dose guidelines disseminated
2007: School vaccination program pilot
2007: National /Provincial AEFI committees
2007: Measles campaign completed (<5)
2009: Country Decision JE
2010: School entry Immunization program (Td & measles)
2010: Tetanus validation survey
2010: EPI Review and DHS
2010: Neo Natal Tetanus Elimination
2010: Polio free status Certification maintained
2011: Hep B Sero Survey Conducted
2012: Measles Elimination
2012: Hepatitis B disease carriage 2%

Routine Immunization Strategy

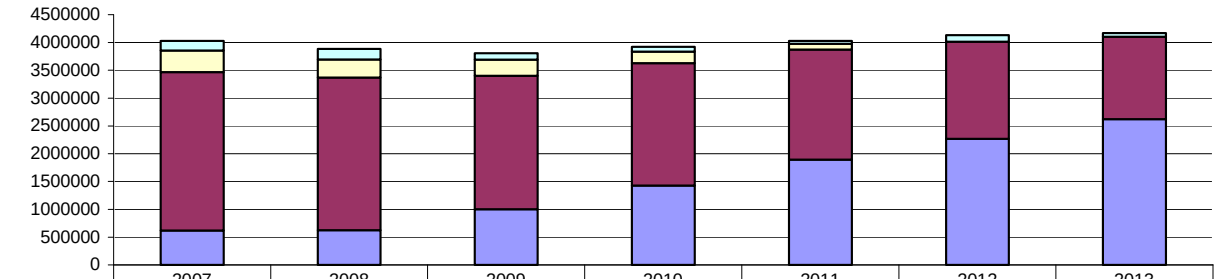
Promote and expand a ***fixed site strategy for*** accessible pop.
Implement ***coverage improvement strategy*** in high un-immunized/drop out population
Conduct ***health outreach strategy*** in remote population
Conduct ***immunization campaigns*** in selected high risk pop.
Conduct ***Private Sector collaboration strategy*** in urban pop.
Apply ***application of a midwife strategy for birth dose hepatitis B for*** population born outside facilities.
CBAW pop.strategy by improved registration/communication
Apply ***integrated planning and management strategy*** at District level support coverage other ***child survival intervention***
Strengthening demand for immunization by using a wide channel of ***communication strategies*** *(media, local authority, VHV)*

Management Strategies

Establish national and provincial ***AEFI response systems*** & committees
Strengthen ***active case finding*** in hospitals and community
Improve ***integration of EPI micro-planning*** with child survival strategy& health system planning
Ensure co ordination of NGO resources
Strengthen role of VII system, and identify additional bi lateral ***vaccine finance***
Improve access to ***operational finance*** for basic health services and social mobilization
Support ***decentralization*** by promoting accountability for performance by the PHD

Vaccine Financing 2007 - 2013

Estimated cost for vaccine and injection equipment by sources & by year 2007 - 2013 (Update price 2007)



	2007	2008	2009	2010	2011	2012	2013
Unfunded	172529.2533	188362.9761	117301.3165	87815.4493	51375.54297	112013.8367	72377.39333
JICA	388739.1783	324618.5374	290687.1795	212022.0859	101201.6646	0	0
GAVI	2846382.162	2746175.488	2394056.579	2198814.54	1983619.613	1748942.767	1480581.612
GOC	622102.679	625018.3776	1004413.19	1426912.344	1893293.144	2268668.431	2619898.965

BACKGROUND

The population of Cambodia is 13 million. Administratively Cambodia is divided into 24 municipalities and provinces. Municipalities and provinces are further subdivided into districts and then communes. Communes are further subdivided into villages, which are discrete administrative units. In Cambodia there are 183 districts, 1609 communes, and 13,406 villages[1]. The population is predominantly rural (80%). Table 1 outlines main demographic indicators.

Table 1: Demographic Indicators in Cambodia

Demographic Indicators	*Amount*	*Source*	*Year*
Total Population	*13.806923*	*CIPS*	*2004*
Average annual population growth rate	*1.8*	*CIPS*	*2004*
Total fertility rate (Births per woman)	*3.3*	*CIPS*	*2004*
Contraceptive prevalence rate[2]	*23.8*	*CDHS*	*2000*

Socio and Economic Features

Cambodia is one of the poorest countries in Southeast Asia. The periods of war and internal conflict (1970-1993) severely destabilized health infrastructure and services. Recovery was set further back in the 1990s by political upheaval and regional recession. The Paris Peace Agreements of October 1991 enabled peace and stability to be progressively re-established, allowing focus on longer – term development. Despite significant progress, major disparities continue between urban and rural living standards (e.g. .56% of urban versus 11% of rural households use electricity as their main source of light) Poverty remains high, with more than 35% below the poverty line and 15% in extreme poverty. This poverty is also largely rural, with over 90% of the poorest living in rural areas. Limited linkages to the domestic economy, limited access to basis services, landlessness, environmental degradation, and low literacy exacerbate poverty.

Cambodia gross domestic product (GDP) is proximately US $ 320 per capita[3], from 1999 to 2002, GDP grew at an average of 6.8%. Development assistance remains high at around UD$ 39 per capita. Bilateral and multilateral organization, UN agencies, international NGOs, Local NGOs and private sector organizations support development initiatives throughout the country.

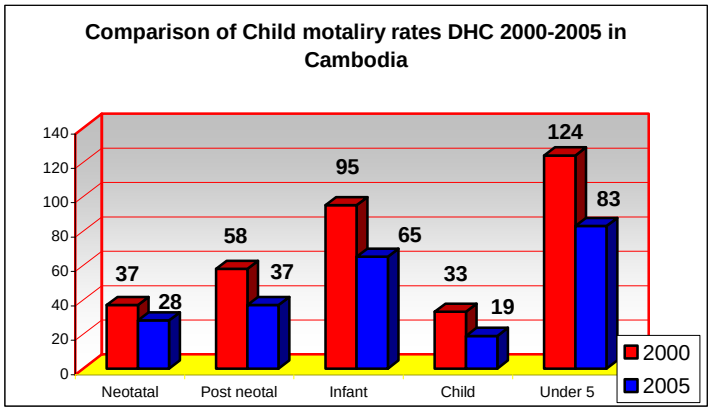
Table 2: Socio-Economic Indicators in Cambodia

Socio-Economic Indicators	*Amount*	*Source*	*Year*
Gross domestic product (GDP) per capita	*USD 320*	*CAR*	*2005*
Health Expenditure (% of GDP)	*Total 12/puplic 2.1*	*MoH*	*2002*
Households with electricity as main source of light (%)	*Urban 56/ Rural 11*	*CIPS*	*2004*
Adult literacy rate (%)	*female 64/male 85*	*CIPS*	*2004*
School enrolment (%)	*female 55/male 63*	*CIPS*	*2004*
Completed primary school (%)	*female 19.5/male27.3*	*CIPS*	*2004*
Migration (%)	*Urban-Rural 69 / Urban-Rural 14*	*CIPS*	*2004*

[1] *Cambodia Demographic Health Survey 2000*
[2] *Cambodia Demographic Health Survey 2000*
[3] *Council for Administrative Reform 2005 (www.car.gov.kh)*

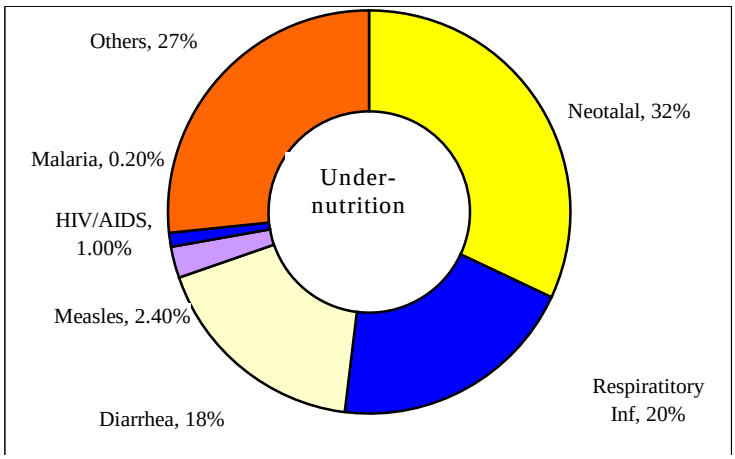
Health Status of Children

Recently released data from the DHS 2005 has demonstrated sharp declines in infant and child mortality as demonstrated in the figure below.[4]



Population-based data on causes of death are not available. Recent child and neonatal health data from the WHO Western Pacific Region on causes of death in 0-4 year old children show a yearly average of approximately 1.02 million deaths over the period 2000-2003. The main causes of mortality are outlined in the figure on the left.

Figure – Percentage of Under 5 Deaths by Cause Western Pacific Region [5]



In response to the above, the Ministry of Health has developed a 5 year child survival strategy which includes 5 strategic areas and a list of "scorecard" interventions, which includes a plan to scale up measles and tetanus coverage to close to elimination status by 2010.[1]

Health System Structure

Since 1994, health sector reforms have begun the process of establishing a comprehensive basis for the Ministry of Health to address population health issues. As part of health sector reform (HSR), Operational Districts (ODs) have been created as the units responsible for providing health services to the population. ODs are different from the administrative geopolitical units. Often they combine parts of different administrative districts. The development process to establish fully functioning ODs is still in the implementation phase.

The health system in Cambodia is divided into three levels: Central, Provincial and Operational District including health centres and referral hospitals. The Central level consists of two training institutions, two institutes, six national centres and eight national hospitals. The Provincial level consists of 24 Provincial Health Departments and four

[4] MOH Preliminary Report DHS 2005
[5] Child Survival Strategy Western Pacific Region

regional training centres. There are 76 Operational Districts, which will manage over 930 Health Centres (HC). Recent re-organization of the health system based on criteria of population and accessibility has resulted in a more decentralized approach to service planning and delivery. The Operational District is the new focal point for service management, providing a comprehensive approach to primary care. Health Centres overseen by the Operational District provide a Minimum Package of Activities (MPA), including preventive, promotive and curative services.

Subsequent to health sector reform, the MOH developed a new planning system in 2002 and drafted the National Health Sector Strategic Plan (2003 – 2007) which identifies 6 key areas of work including health service delivery, health financing, human resource development, institutional development, quality improvement and behavior change. Under the new planning system, health systems at all levels, including national health programs, share common strategic areas, planning formats, and planning tools and follow the same annual and three-year planning cycle. This new immunization strategic plan will be an input to the development of the new health sector plan (2006 – 2010) currently being developed. It will also align with the social economic development plan of the Royal Government of Cambodia (2006 – 2010).

The National Immunization Program

The History of the NIP

The government of Cambodia, since 1986, through funding support from UNICEF has started implementing the expanded program for immunization (EPI) and all program activities have reached all provinces across the country by 1998. Early 1999 immunization for tetanus was also provided to pregnant women. In 1995 a polio eradication team was established to speed up the activities of polio eradication. At the same time, the Ministry of Health has developed the national immunization program (NIP) in order to integrate the expanded program for immunization and the polio eradication into a single structure.

Policy Context of the NIP

The NIP has developed a *comprehensive policy framework* on the main components of immunization. The policy covers such areas as immunization schedule, safe injection practices, cold chain management, and waste management. Immunization services in the public sector should be provided free of charge to the public. Private sector immunization is common, and in 2005 the NIP developed quality standards and guidelines for private sector immunization practice.[6] The NIP since 2003 has also developed *annual operational plans* and three year rolling plans for the central program. At the sub national level, immunization planning is integrated with Provincial, District and health centre plans according to the planning system of the Ministry of Health.

Immunization is a key component of the *child survival strategy* of the Ministry of Health, with neo natal tetanus and measles elimination being two of the "scorecard interventions" for promotion of child survival.[7] Regionally, WHO has set *regional targets* for measles elimination and hepatitis B control.[8] Globally, WHO and UNICEF have developed a Global

[6] NIP/PATH Study on Private Sector Immunization in Cambodia
[7] MOH / WHO Draft Child Survival Strategy Phnom Penh 2005
[8] Report of Technical Advisory Group WPRO Beijing 2005

Immunization Vision and Strategy (GIVS) which has identified 4 strategic areas for immunization up the the MDG target date of 2015. They are as follows:

Strategic Areas I: Protecting more people in a changing world

Strategic Areas II: Introducing new vaccines and technologies

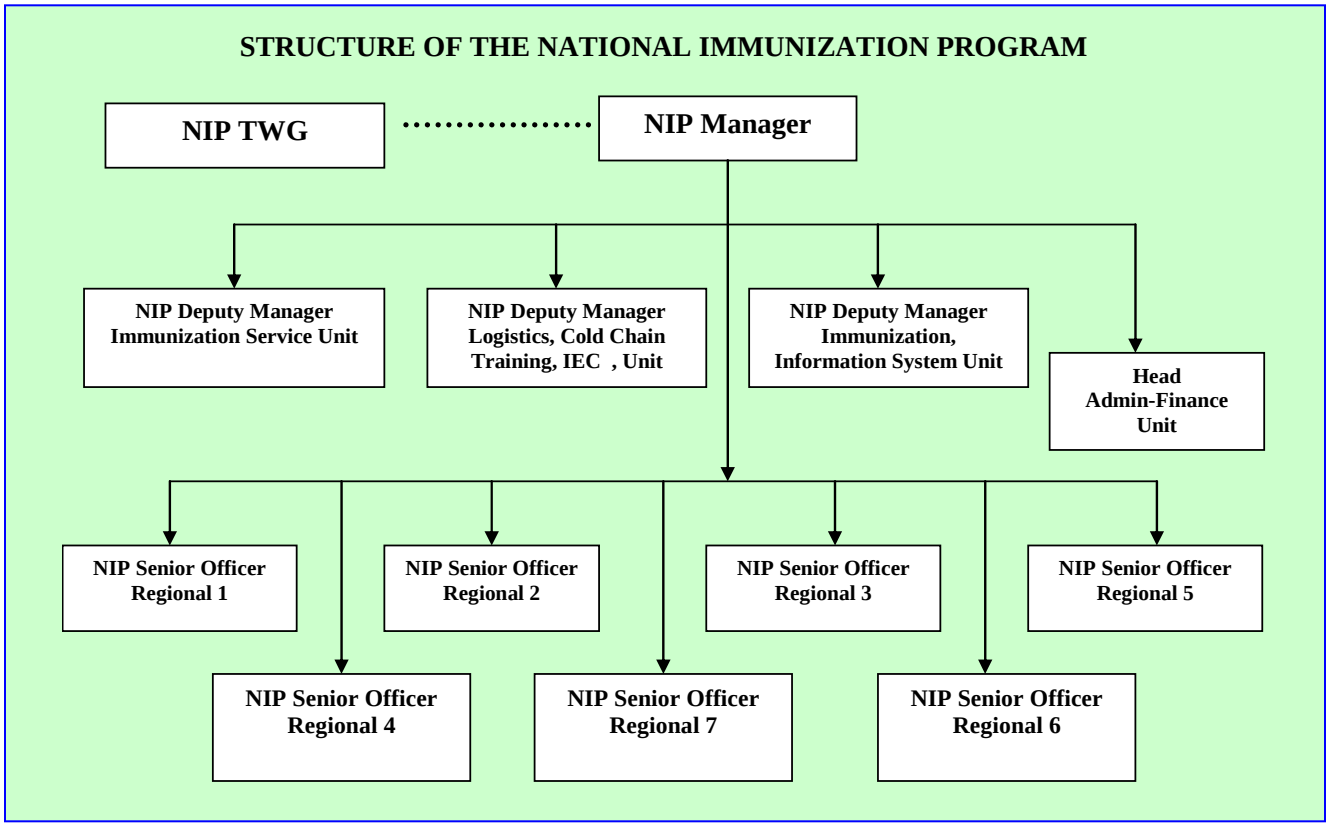
Strategic Areas III: Integrating immunization, other linked health interventions and surveillance in the health system context

Strategic Areas IV: Immunizing in the context of global interdependence

Immunization activities also relate to higher level national and global goals outlined in the *Poverty Reduction Strategy Paper* and the *Millennium Goal 1* (poverty reduction) and *Millennium Goal 4* (reduction in child mortality by 2/3 rds between 1990 and 2015).

The Structure of the NIP

The structure of the central level NIP is outlined below:



At the Provincial level, central supervisors interact with the Provincial Health Director and the MCH supervisor and EPI manager. At the OD level, programs are managed by the OD Director and District EPI manager. At the service delivery point, services are provided by health centre staff (midwives and nurses) under the direction of the health centre manager. 80% of immunizations are provided in villages through outreach services, often in collaboration with local authorities, NGOs and village volunteers. Immunization is one

service provided as part of a minimum package of primary care services that include maternal and child health services and communicable disease control activities.[9]

Important milestones in the development of the NIP are outlined below:

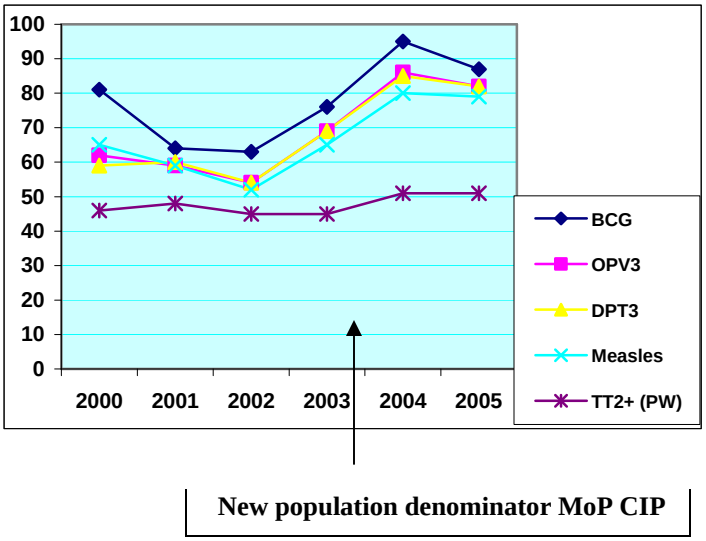
1. The last laboratory-confirmed case of *poliomyelitis* occurred in March 1997 and Cambodia was certified polio free in 2000.
2. Beginning in 1996, *Vitamin A* capsules have been offered to children aged 12-59 months during selected supplementary OPV immunization rounds. Between 2001 and 2004, Vitamin A and mebendazole was integrated into measles supplementary immunization campaigns.
3. Between 2000 and 2005, *hepatitis B vaccine* was introduced successfully into the national program with a 4 dose schedule including delivery of a birth dose to infants less than 7 days old.
4. *Measles elimination* activities were accelerated through routine and campaign immunization effort, with subsequent sharp decline in the incidence of measles cases.
5. *Neo natal tetanus* campaigns were conducted in 50 high risk districts with also sharp declines in reported numbers of cases.
6. In terms of *logistics,* every health centre has now been supplied with gas/electric powered refrigeration systems.
7. In 2001, through support from WHO, UNICEF, JICA and the Government of Japan and GAVI, the national immunization program has introduced a *safe injection policy and strategy*.
8. *Waste management* facilities have been established in most operational districts, and auto disposable syringes and safety boxes are now used for all vaccinations.
9. In 2003, a *national communication strategy* was developed, and increased involvement of local authorities in promotion of immunization in both rural and urban areas.
10. Routine immunization program activities have been accelerated by a range of service delivery strategies including *coverage improvement planning, fixed facility utilization, high risk campaigns* and *NGO co ordination.* Many of the latter activities have resulted from support through GAVIs Immunization Systems Strengthening finance which commenced in 2002.

[9] MOH Outreach Guidelines

SITUATION ANALYSIS

Immunization Coverage

Figure Immunization Coverage 2000-2005 [10]



The following tables and graphs outline the evolution of immunization coverage between 2000 and 2005. Coverage surveys and an independent data quality audit by GAVI in 2004 indicate high levels of accuracy between reported and actual immunization coverage.

Coverage surveys (card + history) have been conducted since 1997 mainly based on the household surveys. The Asian Development Bank *(ADB)* conducted household coverage survey in 10 rural operational districts in 1997 and 2001 (*Shwardz and Bhushan, 2004*).

A Demographic Health Survey *(DHS)* was conducted in 2000. A National Health Survey *(NHS)* was conducted in 1998 and 2002. *PATH* recently conducted a 30-cluster coverage survey in two operational districts in 2003. A Demographic Health Survey *(DHS)* was conducted again in 2005-2006 (Table 6). The figure of official coverage data in 2000 - 2003 is rather close to the figure of survey within 10 % difference, and 2005 is rather close to the figure of survey within 3-5% difference.

Table 3: Result of coverage survey in Cambodia (1997 – 2005)

Vaccine	*ADB 1997*	*NHS 1998*	*DHS 2000*	*ADB 2001*	*NHS 2002*	*DHS2005*
BCG	**72.0**	**66.7**	**71.4**	**89.9**	**77.9**	**91.5**
DPT3	**39.0**	**46.5**	**48.5**	**66.8**	**53.0**	**78.3**
Measles	**30.0**	**49.5**	**55.4**	**70.0**	**56.5**	**77.0**
Fully Immunized	**30.9**	**38.9**	**39.9**	**56.7**	**41.6**	**66.0**

The sharp rises in coverage between 2000 and 2005 coverage surveys (26% increase for fully immunized child) is potentially attributable to a range of factors. Some of these are *immunization program specific factors*, such as the use of GAVI finance for community based outreach and communication activities, the co ordination of NGO support and increased accountability by PHDs for performance. *Health system factors* include expansion of the health coverage plan – there is now a network of over 930 health centres across the country. Finally, there are *socio economic factors* operating, such as improved transport and communications, increased literacy and economic growth.

[10] Source – Joint Report Form WHO & UNICEF

I. Surveillance and Disease Control

Reported cases and incidence of EPI – target diseases

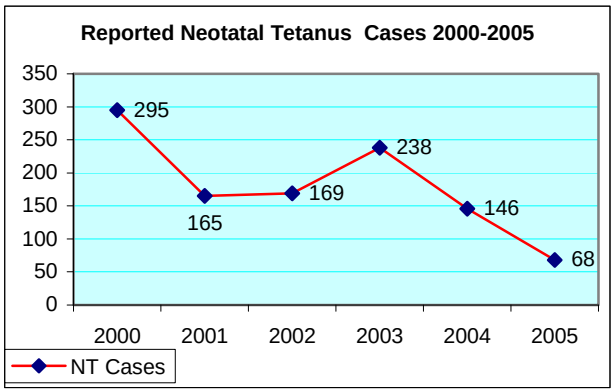
There has been a sharp decline in vaccine preventable diseases. (Table 7) The last case of wild *poliovirus* in Cambodia was in March 1997, which was also the last case of Western Pacific Region. 3 cases of vaccine derived polio virus were detected in a low coverage area in the capital city in 2005 – 2006. Also measles surveillance has been improved since measles catch-up campaigns were conducted nationwide during 2001-2005 [11]. There has been a sharp reduction in *measles incidence.* Improved diphtheria and pertussis surveillance has demonstrated the first laboratory confirmed cases in 2004, which suggests still existing circulation of *diphtheria and pertussis* in the low DPT3 coverage area in Cambodia. There have been sharp reductions in *neo natal tetanus* cases since introduction of an elimination strategy in Cambodia in the last 5 year plan. A *Hepatitis B* sero survey was conducted in 2003 indicating an 11% Hep B Surface Antigen positive sero prevalence in adults and 3.4% sero prevalence in the under 5 age group. [12] A similar result for the under 5 age group was identified in a nation wide survey n 2005.[13]

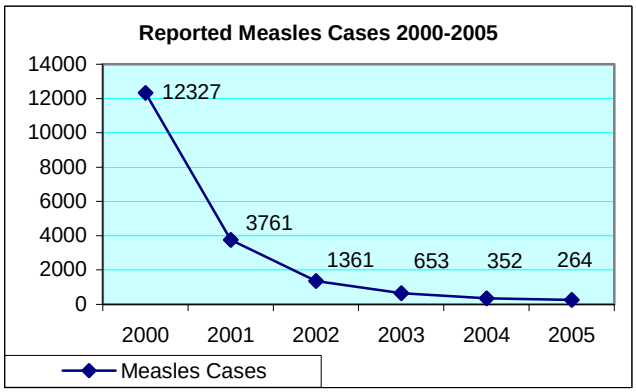
Table 4: Reported cases and incidence of five EPI – target diseases

Vaccine	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*
Diphtheria (Lab Confirm)	***0***	***0***	***0***	***0***	***4 (1)***	***0***
Measles (Lab Confirm)	**12,327 *(78)***	**3,761 *(157)***	**1,361 *(85)***	**653 *(84)***	**352 *(32)***	**264 *(3)***
Pertussis (Lab Confirm)	**2,068**	**4,714**	**320**	**281**	**66 (4)**	**462 (43)**
Polio (Lab Confirm) (VDPV)	***0***	***0***	***0***	***0***	***0***	***2***
NT	**295**	**165**	**169**	**238**	**146**	**68**

***NA**: data Not Available, ( ); laboratory confirmed case*

Figures – Decline in Measles and Tetanus Cases[14]





[11] *Annual questionnaire on Immunization Activities in WPR 2003*
[12] *NIP/PATH/AIHI Hepatitis B Sero Survey 2003*
[13] *NIP / WHO Draft Report Sero Survey Hepatitis B*
[14] *NIP Reported 2000-2005*

Surveillance System

The figure below summarizes progress in surveillance between 2000 and 2005.

Summary of Progress 2000 – 2005 Surveillance

- ⇨ AEFI System has been established. Case reports are unchanged between 2001 (61) and 2005 (53).
- ⇨ The AFP rate was 2.99/100,000 in 2001, and was 2.14/100,000 in 2005. 3 vaccine derived polio cases were detected in 2005 and early 2006.
- ⇨ No tetanus deaths were detected in 2001. Since then, case detection has ranged from a high of 238 cases in 2003 to 68 cases in 2005.
- ⇨ Data Quality Audit – 98% verification of reports between health centres and national level in 3 districts in 2002. Very close match between DHS survey 2005 and routine health Information data
- ⇨ Measles cases have been reduced to 264 in 2005

The following headings summarize strengths and weaknesses of the NIP surveillance systems for vaccine preventable diseases.

1. Strengths of Surveillance Systems:

- Laboratory systems have improved for measles & rubella
- Quality of case investigations of vaccine reportable diseases has improved
- Community, clinician and local authority understanding of surveillance has improved.
- Research has been undertaken of hepatitis B sero prevalence

2. Weaknesses and constraints of Surveillance Systems

- Active case finding in hospitals and the community needs to be improved
- There is sometimes late reporting and feedback on reportable diseases
- There are sometimes problems regarding transport and collection of specimens from remote areas
- There is limited IEC materials on vaccine reportable diseases
- There is lack of clear AEFI guidelines and response system
- Reporting of coverage/monitoring and reportable diseases in high risk areas (slums/ethnic groups) requires strengthening

In terms of new interventions, a range of studies have been conducted on the incidence of *japanese encephalitis.* Studies conducted at sites in Phnom Penh, Siem Reap and Takeo generally indicate that 20-30% of all encephalitis cases are attributable to the virus. Early results from the sentinel surveillance system established in 2005 are consistent with these research findings. This fits the pattern of JE endemic countries in the region. In terms of *haemophylus influenzae B*, a study conducted at Khanta Bopha Hospital indicates that 49% of the bacterial meningitis cases in children under the age of 2 are attributable to this agent. In terms of *rotavirus*, results from the sentinel site at the National Pediatric Hospital indicate that 40 to 50% of < 5 year old childhood admissions are attributable to this virus. Once again, these two latter findings are consistent with regional country assessments. These studies and surveillance systems are limited and in the early stages of development, so more information

is required to make evidence based decisions about vaccine introduction. Issues of affordability and cost effectiveness also need to be considered.

3. New Plan Focus for Surveillance

There is a strong focus in surveillance strategies in the new plan on integration of vaccine preventable disease surveillance, improving coverage monitoring and case response, strengthening approaches to adverse events following immunization, improving active case finding and building the evidence base for new interventions (HIB, JE, Rotavirus).

II. SERVICE DELIVERY

1. New Vaccine Introduction (DPT-HepB) – Strengths, Weaknesses and New Plan Focus

Program Weaknesses/Constraints

The main weaknesses and constraints of new vaccine introduction are outlined below:

- Most HepB birth dose vaccine is currently given > 24 hours post birth
- It is difficult to control payment for vaccination by the midwife strategy
- There are management and logistical difficulties associated with keeping Hep B vaccine outside the cold chain
- It is not clear how waste management of A-D syringes will be managed by midwives
- Delivery rates by Traditional Birth Attendants remain very high

Program Strengths

The NIP commenced introduction of Hepatitis B Birth Dose in 2004. Initially, the strategy focused on health facility administration of the birth dose. But given the very low rate of delivery in public facilities (<10%), the program was expanded to outreach health services. By the end of 2005, coverage of birth dose reached 28%, only 2% lower than the expected target. The introduction of combined vaccine proceeded smoothly, and by the end of 2005, 100% of districts were reached with the combined vaccine. There was no decline in coverage associated with the new vaccine introduction effort.

New Plan Focus - Hepatitis B

WPRO now has a regional target to reduce transmission of the hepatitis B virus to children aged 5 to 2% by 2012. Hepatitis B sero surveys conducted provincially in 2001 and nationally in 2005 indicate a baseline sero-prevalence in this age group of 3.5%. In order to reach the target of 2%, WPRO is now proposing coverage targets for reaching infants within 24 hours of birth. For this reason, the NIP is now proposing the introduction and trial of midwife strategy (administration of birth dose by midwives during home deliveries). An additional advantage is that, given that hepatitis B is a heat stable vaccine, there are additional opportunities for midwives to carry this vaccine outside the cold chain.

NIP managers have observed high demand from the public for hepatitis B birth dose vaccine. Introduction of the vaccine is also seen as an opportunity to improve the fixed facility immunization strategy. Given the high rate of deliveries in the private professional medical sector, particularly in urban areas, there are also opportunities seen by managers to Introduce the vaccine into this sector.

There is now a focus in this new strategic plan on widening access to a timely birth dose

through adoption of a midwife strategy and promotion of guidelines for administration of the vaccine with 24 hours post delivery.

2. Fixed Facility Strategy –Strengths, Weaknesses and New Plan Focus

Fixed facility Strengths

A fixed facility immunization strategy has been implemented by the NIP in collaboration with WHO and PATH and GAVI over the last 3 years. In 2005, the strategy was expanded to 100 facilities. Early results indicate no decline in coverage, reduced vaccine wastage and increased health centre utilization.
Overall strengths of the strategy can be summarized as follows:

- Reduced workload during outreach for health workers
- Increased community awareness of health center services
- Closer communication between HC and Community/local authority
- Increase in utilization of other health service interventions at health centres
- The strategy promotes sustainability in health services delivery
- There is reduced vaccine wastage

Weaknesses/Constraints of Fixed Facility Strategy

However, some weaknesses and constraints have been experienced with the fixed strategy. The strategy is not suitable for expansion to remote areas or areas with complicated village geography. Some health centre staff has incentive for outreach activities, and loses these incentives with introduction of the fixed strategy.

A major constraint is sustaining social mobilization finance support for fixed site. Health education and communication with local authorities is critical to raise awareness of the population of the services that facilities provide. But currently, there is no government budget source to finance village based social mobilization of health education.

To date, the fixed strategy has been focused o immunization. However, to function in a sustainable way, the strategy needs to incorporate other MPA and child survival interventions. This participation is necessary in order to provide a consistent approach to health centre utilization. It should also be recognized that implementation of a fixed strategy does not imply the cessation of health outreach services – its imply means obtaining a better balance between service delivery at fixed facilities and through village outreach.

New Plan Focus – Fixed Facility Strategy

In this new strategic plan, there will now be a focus on widening the fixed facility strategy, and strengthening links between this strategy and the child survival strategy and IMCI. This supports one of the 4 key strategic areas of GIVS – strengthening links between immunization and other components of the health system.

3. Coverage Improvement Planning Strategy – Strengths, Weaknesses and New Plan Focus

Strengths of CIP

This strategy was introduced in Cambodia following a Reaching Every District Planning meeting conducted in early 2003 by the NIP, WHO and UNICEF. The strategy is based on micro-planning, strengthened supervision and agreements. Increased coverage was

obtained from 10 out of 12 districts in the first year. The advantages of the strategy are that health centres can develop a detailed costed micro-plan for their catchment area.

Weaknesses/Constraints of CIP

But some ODs have undertaken CIP but the coverage was not improved. This is due to the fact that there is on occasions lack of monitoring and responsibility from the PHD and ODs, and some ODS were not able to set up micro-planning processes. Additionally, there is remains the problem of sustainably financing incentives for health workers to reach the most difficult to access areas.

New Plan Focus – CIP

In this new strategic plan, there will therefore be a focus on strengthening of micro-planning processes that includes a wider package of interventions and a focus on high risk areas.

4. Supplementary Immunization Activities (SIAs) – Strengths, Weaknesses and New Plan Focus

In the period 2000 to 2005, immunization campaigns were conducted for polio, tetanus and measles elimination/control. Following the detection of vaccine derived polio cases in 2005/2006 (3 cases), > 95% coverage was received following 3 rounds of campaign. One of the persistent problems with polio campaigns is lack of funding support for the operational costs for implementing OPV SIA in high risk areas (slum and Tonlesap river).

Tetanus campaigns were conducted 3 rounds in 43 ODs and 244 factories (approximately 2 million CBAW). A sharp decline in reported neo natal cases has been reported. There are difficulties associated with the fact that there is no health centre system for registering / recording CBAWS. There are also concerns that TT campaigns have negative impacts on routine immunization services. Between 2001-2004 *measles campaigns* were conducted across the country (also including Vitamin A and Mebendazole). > 95% coverage for measles has been obtained and there has been a sharp decline in disease incidence. There has been good participation from local authorities in support of these campaigns.

In this new plan, *there will be a focus* on adapting routine strategy (fixed, CIP, Campaign) to the specific population characteristics (accessible populations, remote populations, at risk populations, clusters of un immunized or high drop out populations, women of child bearing age, infants born outside institutions). There are also opportunities to support improved coverage of other child survival interventions, through support for integrated planning and management at District level and below.

Progress 2000 – 2005 Service Delivery Immunization

- ⇨ More children are being immunized in Cambodia than ever before, and disease incidence has sharply declined
- ⇨ A wider range of service delivery strategies have been applied, each adapted to specific population groups
- ⇨ Integration of campaign activities have taken place with other interventions
- ⇨ Improvements in collaboration with the PHD and with NGOs means the NIP can program activities in a more efficient (reduced resource overlap) and effective (wider reach) manner
- ⇨ The further development of the health system (numbers of health centres) also serves to widen the reach of the immunization program

III. Logistics, Communication and Training

1. Logistics– Strengths, Weaknesses and New Plan Focus

In the last 5 years, there have been significant improvements to *logistics* for immunization. A national policy for safety injection has been developed and syringes and safety boxes have been developed. An incineration waste management system has also been introduced. However, 33% of districts do not have incinerators, and transport distances for delivery of the safety boxes to incinerators are sometimes too large.

In terms of *vaccine management*, stock cards have now been merged with physical stock, but there is still lack of attention to vaccine management. Vaccine wastage is not calculated at sub national and facility level. At the central level, monitoring between the Central Medical Store (which manage the cold room) and the central NIP needs to be strengthened.

In terms of *cold chain management*, there is now adequate gas and electricity in most locations and enough storage capacity. However, there is lack of maintenance skill at all levels, and there is no system from the PHD for repairing refrigeration systems.

In terms of logistics, *the focus in this new plan* will be to develop replacement systems for the 2000 to 2005 investments in cold chain and waste management, and to develop guidelines and accountability for maintenance of these new systems.

2. Communication – Strengths, Weaknesses and New Plan Focus

A *National Communication Strategy* for immunization has been has been disseminated, but in relation to communication, there is lack of research and evaluation capacity. There is also lack of emphasis on communication strategies for high risk and hard to reach groups. However, important developments have taken place in gaining local authority support for routine and campaign immunization efforts. Although a system for responding to adverse events exists, it requires a significant degree of program strengthening at national and sub-national level.

The DHS 2005 survey indicates there is little difference in coverage between rural and urban populations. However, coverage differences between educated and less educated population are substantial.[15] Recent surveys have demonstrated that face to face education is a critical requirement for reaching high risk and rural populations.[16] Many of the high risk areas of Cambodia for vaccine preventable disease include remote areas, urban slums and ethnic minorities. Education strategies need to be adapted to the specific conditions of these social groups.

The NIP and partners (e.g. UNICEF & PATH) have assisted with advocacy for EPI with local authorities. However, follow up action on the advocacy has not been clearly defined. Local authorities also assisted significantly with immunization campaigns. It is likely that in coming years the power and influence of local authorities over health issues is likely to increase.

[15] Ministry of Planning DHS Survey Cambodia 2005
[16] PATH – KAP Study Immunization 2002. See also American Red Cross KAP Study 2005

The focus in this new plan between 2006 and 2010, the NIP will strengthen linkages between the public health sector and local authorities in support of routine immunization, improve the guidelines and implementation of adverse events response and develop a more focussed communication strategy for at risk groups.

3. Training – Strengths, Weaknesses and New Plan Focus

EPI staff *training programs* in recent years have supported new vaccine introduction, cold chain management and safety injection. However, more effort is required at integrating training and taking a more systematic approach to training needs analysis. There is a high turnover of staff, and training programs (middle level management and immunization in practice) need to keep pace with these staff changes. *The focus of training* in the new plan will be on middle level management and immunization practice, with training programs targeted to new staff and staff not trained in the last 5 years.

Progress 2000 – 2005 Communication, Logistics, Training

- ⇨ % Districts now have adequate cold chain equipment has increased from 18% to 100%
- ⇨ % Districts with AD syringes has increased from 0% to 100%
- ⇨ % Districts with adequate disposal and incineration system has increased from 5% to 100%
- ⇨ Vaccine wastage has been reduced from 70% of DPT , 65% of TT,90% of BCG , 80% of Measles and 60% OPV in 2001 to 45 % of DPT ,58% of TT, 88% of BCG , 77% of Measles and 40% of OPV in 2005
- ⇨ A strategic Plan for communication was developed first in 2004

IV.Health System and Program Management

1. Health Financing – Strengths, Weaknesses and New Plan Focus

In terms of *Vaccine Financing,* the capacity of RGC for provision of vaccine is still very limited. However, the government is increasing the national budget for vaccine procurement. International financing for immunization is still increasing. But there is concern that the VII system for procurement is still too complicated and causes dely in financing.

In terms of Infrastructure finance, the main issue is recurrent financing of maintenance for logistics systems. Government has committed to financing of gas supply for cold chain, but some provinces are still not accepting responsibility for this. The MOH needs to ensure there is a budget line for gas and recurrent costs The main issue for transport is recurrent funding for fuel to travel. In some locations staff uses their own transportation. In some remote areas requiring water transport, there is lack of transport for outreach altogether.

Operational Financing of basic health services presents continuing constraints. Following the 10 km decree limiting outreach per diems below 10 kms from a facility, there remains a lack of operational budget for outreach and a lack of strategy for financing of social mobilization. Government financing for operational costs are actually decreasing (Decree

limiting travel less than 10 kms since 2005). However, there is good support from partners/NGO to finance and assist outreach.

When government budgets are available, they are frequently late and create uncertainty for planners. There is also limited support from government for financing of emergencies or campaigns (not flexible). Sometimes there is a lack of coordination/collaboration between national programmers and NGOs. Outreach is then funded separately causing lack of efficiency with outreach.

In the new plan, there will be a focus on strengthening the VII mechanism to support vaccine financing as well as the identification of an additional bi lateral donor to support vaccine financing. Access to operation costs will be improved through enhanced NGO co ordination and the promotion of greater PHD accountability for the financing of the operational costs of immunization.

2. Human Resource – Strengths, Weaknesses and New Plan focus

Human Resources: In many places EPI activity is assured and human resource shortage is not as acute as for reproductive health with lack of midwives. However, some health centres do not have enough staff, and cannot do outreach and fixed site at the same time. In these situations, staff cannot undertake all tasks (cold chain, vaccine management etc). There is also a huge problem of distribution of staff. There is significant over-representation of all health professions in Phnom Penh and in most provincial towns, leaving rural and remote areas under-staffed with many staff under-qualified.

At PHD and Central level, staff quantity and quality are good, but there is only one OD EPI manager (population catchments 100,000). Turn-over of staff is a particular issue at HC level, and requires constant orientation of new staff by the NIP. Midwives need to be trained especially for Hepatitis Birth Dose, BCG and TT. This is important issue for integration of EPI with MCH.
In general staff has good technical and management skills, but there is real problem with motivation. Coverage increased after 2002 with good resources coordination between Govt, GAVI and NGO. These funds were used to provide incentives for staff to reach targets according to a micro-plan and performance agreement.

In the new plan, there will be a focus on strengthening links between immunization and EPI, capacity building of midwives in the area of immunization, and the application of performance based strategies to raise immunization performance.

3. Health Planning & Information – Strengths, Weaknesses and New Plan focus

In terms of *health planning,* an integrated planning system has been developed by the Ministry of Health. However, planning still often takes place on a vertical program basis, and there is limitation in capacity of district and facility managers to develop needs based and integrated micro-plans based on the MPA. In terms of *service delivery models,* there is a high dependence on health outreach to achieve program objectives. This has resulted in the new focus to develop fixed site utilization for the MPA. Equally, there are high risk and remote areas that will require application of health outreach and community based programs.

Staff lack capacity for management of information for planning purposes. Staff are good at collecting data but not at analyzing it and using it to develop a good plan. This also effects vaccine management in terms of reducing wastage.

Although there has been progress in the last 5 years, links between community and health are still not strong enough (births and deaths registration). However, in the past 5 years, local authorities have improved data collection on the population (for example commune and village data book).

Data quality is greatly improved. Surveys have shown close accuracy between reported and actual coverage. However, this does not mean that the information is well used for planning or mobilizing resource and finance from the government. Sometimes the flow of information is slow - data flow needs to increase (reporting process). The NIP and MOH still has parallel systems for reporting. This is because the NIP needs more detailed information for planning purposes.
In the new plan, there will be a focus on supporting links between immunization and other interventions through strengthening of integrated micro-planning at District level and below, and by building the capacity of OD and HC managers to analyze data for planning purposes.

4. Decentralization & the Private Sector – Strengths, Weaknesses and New Plan focus

Regional supervisors have improved the communication between the central NIP and the provinces. Their supervision is still necessary to provide additional advice and training to the lower levels and give motivation to the health workers at Health Centre level. NIP needs to promote accountability for performance to the PHD, OD and health centre level. As discussed above, the power of local authorities is increasing, but the role of commune councils is not yet clear in relation to health sector provision and management.

Research in 2005 has indicated that the private sector is playing a substantial role in immunization especially for birth dose but the issue of low quality and low regulation (does not follow policy). Guidelines have now been developed for pilot partnership at 12 clinics.

In the new plan, the NIP will continue to maintain links with local authorities and strengthen accountability for performance at PHD and OD level.

5. NIP Program Management – Strengths, Weaknesses and New Plan focus

Logistics management has improved (cold chain, wastage, safety injection, wastes management. The Technical Working Group (TWG) is functioning effectively. But the ICC needs strengthening. It requires more high level input. At central level, planning functions are also very good. Multi Year Plans for immunization have been developed with financial sustainability planning. A regional supervision system has also improved the performance of central supervisors. At the Provincial level, functions of provincial level supervisors need to be defined more clearly, and management support for district EPI supervisors will be required. *The new plan* will focus on strengthening the capacity of middle level managers at PHD and OD level, particularly in relation to health planning and logistics management.

The Health System – Summary of New Plan focus

Based on the above strengths and weaknesses/constraints, the NIP recently identified health system strengthening opportunities in the progress report to GAVI.[17] These were identified as:

1. Strengthened planning and delivery of minimum package of activity (MPA) of primary health care services to underserved or high risk areas
2. Promotion of health centre utilization for MPA
3. Strengthening of decentralized health planning (including building capacity for use of health information in the local area)
4. Support for health education / communication strategy for MPA in areas of low service access
5. Support for increased delivery by midwife (including increased post natal care coverage and birth dose hepatitis B/BCG)

A recent annual health sector program review prioritized the IMCI strategy and distribution of midwives in Cambodia as being key areas of focus for the health sector in coming years.

In the coming 5 years, opportunities will be sought by the NIP to strengthen links between the national program and the health system, in order to use the success of EPI to support other child survival interventions, while at the same time promoting sustainability of EPI through closer co ordination with other national programs and delivery interventions.

GOALS AND OBJECTIVES

GOAL OF THE NATIONAL IMMUNIZATION PROGRAM

To improve child survival and health and support achievement of Millennium Goals 1 (Poverty Reduction) and 4 (mortality reduction) by controlling, eliminating, or eradicating all vaccine preventable diseases targeted by the National Immunization Program

OBJECTIVES OF NATIONAL IMMUNIZATION PROGRAM

I. Service Delivery

1. To improve routine immunization for children under 1 year of age in year 2010 as follow :
   - Hepatitis B birth dose (< 24 hrs) 65%
   - BCG 95%
   - DPT-Hepatitis B3 92%
   - OPV3 92%
   - Measles 95%
   - Fully immunized 80%
   - TT2+ Pregnancy women 80 %

II. Surveillance and Disease Control

2. To maintain polio free status until the time of global eradication
3. Achieve maternal neo natal tetanus elimination by 2008
4. To effectively reach measles elimination by the year 2010

[17] MOH/NIP 2005 GAVI Progress Report MOH Phnom Penh 2005

5. To control hepatitis B disease by reducing carriage in new birth cohorts to 2% by 2010
6. To ensure AEFI guidelines and monitoring systems are in place
7. To strengthen country decision making for new interventions by strengthening research and surveillance of new vaccine preventable diseases (HIB disease, JE, Rotavirus)

III. Logistics, Communication and Training

8. To increase community participation in immunization at local authority/decision maker level (advocacy) and community level
9. To ensure that all immunization is given safely and waste is disposed of appropriately
10. To improve vaccine management through provision of adequate functional cold chain equipment, reduction of vaccine wastage and increased efficiency of vaccine delivery and usage

IV. Health System and Program Management

11. To improve the capacity of PHD, OD and facility managers regarding technical and management functions
12. To secure national budget for vaccine and operational financing

STRATEGIES OF NATIONAL IMMUNIZATION PROGRAM

Service Delivery

1. ROUTINE IMMUNIZATION

Objective	*Summary*	Means of Verification
OBJECTIVE 1	*To improve routine immunization for children under the age of 1 by the year 2010 (see targets)*	• *CDHS 2010* • *EPI Review 2010*
STRATEGIES	⇨ Promote and expand a *fixed site strategy* in accessible populations, and strengthen the health system through integration with other national programs ⇨ Implement coverage improvement strategy in populations wit high numbers of un-immunized in the last quarter of each year. ⇨ Conduct integrated health outreach strategy in low access or remote populations ⇨ Conduct immunization campaigns in selected high risk or hard to reach area ⇨ Implement a Private Sector collaboration strategy in urban populations ⇨ Expand access to a Hepatitis B Birth Dose and post natal care through application of a midwife strategy for populations where births take place outside institutions ⇨ Enhance access for women of child bearing age to tetanus immunization, by improving registration through improved co operation between local authorities, health centre managers and VHVs.	

⇨ Support improved coverage of other child survival interventions, through support for integrated planning and management at District level and below.

Surveillance and Disease Control

1. POLIO ERADICATION

Objective	*Summary*	Means of Verification
OBJECTIVE 2	*Maintenance of polio free status until the time of global eradication*	• *National Certification Committee* • *WHO-UNICEF Report*
STRATEGIES	⇨ Strengthening AFP surveillance ⇨ Maintain high OPV coverage < 5 years of age in high risk area ⇨ Increase OPV coverage through routine immunization (see strategies under objective 1)	

2. MATERNAL NEO NATAL TETANUS ELIMINATION

Objective	*Summary*	Means of Verification
OBJECTIVE 3	*Achieve maternal neo natal tetanus elimination by 2010.*	• *Receive WHO Certificate* *In year 2010*
STRATEGIES	⇨ Reinforce neo natal tetanus surveillance with VPD surveillance system ⇨ Improved registration systems (CBAW) for TT immunization status ⇨ Increase TT2+ for PW and CBAW through routine strategies and targeted SIAs ⇨ Improve case response through promotion of reports of neo natal deaths/tetanus deaths ⇨ Co ordination with MCH and child survival committee in relation to clean delivery ⇨ Apply high risk approach based on districts with low delivery by trained staff or ANC, low TT coverage and high reported cases of neo natal tetanus. ⇨ Focus supervision and routine strengthening planning on high risk districts ⇨ Develop targeted communication plan to reach all women of child bearing age ⇨ Develop and Review detailed tetanus elimination plan in 2007 ⇨ Prepare country assessment for neo natal tetanus elimination in 2008 ⇨ Consider school based immunization (Td) & integration with measles & school de-worming program 2008 ⇨ Validate elimination in 2010 through survey (mortality survey)	

3. MEASLES ELIMINATION

Objective	*Summary*	Means of Verification
OBJECTIVE 4	*To effectively reach measles elimination by the year 2012*	• *Receive WHO Certificate 2012*
STRATEGIES	⇨ Finalize detailed measles elimination plan in 2006 ⇨ Improve measles surveillance by improving coverage monitoring and active case finding (Expansion and enhancement of active case finding to all districts) ⇨ Increase and sustain 95% population immunity against the measles virus, by improving coverage of measles through routine immunization strategies (see objective 1 above) ⇨ Conduct SIA for all children < 5 in 2007 ⇨ Pilot introduction of second dose of measles (school entry) in 2007, with full expansion and integration into school health program by 2010 ⇨ Target supervision and planning and SIAs to high risk groups, the under-immunized and isolated populations ⇨ Conduct survey/review to validate elimination in 2011	

4. CONTROL OF HEPATITIS B

Objective	*Summary*	Means of Verification
OBJECTIVE 5	*To control hepatitis B disease by reducing carriage in new birth cohorts to 2% by 2012*	• *Hep B Serological Survey in Year 2011*
STRATEGIES	⇨ Establish guidelines for delivery of hepatitis B birth dose (including health facility and home delivery within 24 hours) ⇨ Promote administration of birth dose by the midwife outside the cold chain ⇨ Design and implement outside the cold chain strategy based on WHO guideline ⇨ Development of collaboration strategy with private sector to administer birth dose in large maternity clinics ⇨ Ensure high coverage for DPT HEP B 3 through routine strategy (see objective 1) ⇨ Validate Hep B Sero prevalence in 2011	

5. ADVERSE EVENT FOLLOWING IMMUNIZATION (AEFI)

Objective	*Summary*	Means of Verification
OBJECTIVE 6	*Ensure AEFI guidelines and monitoring systems are in place*	• *Guideline developed* • *Surveillance Report*
STRATEGIES	⇨ To operationalize the national AEFI Committee ⇨ Establish national guideline for AEFI surveillance and response and reinforce guideline implementation through supervision ⇨ Build management capacity for AEFI through improving skill of managers through supervision and training	

- ⇨ Establish and operationalize provincial AEFI Rapid Response Teams
- ⇨ Develop improved communication with Drug Control Committee MOH & WHO reference laboratory in relation to issues surrounding vaccine quality

6. NEW INTERVENTIONS

Objective	*Summary*	Means of Verification
OBJECTIVE 7	*To strengthen country decision making for new interventions by strengthening research and surveillance of new vaccine preventable diseases (HIB, JE, RV)*	• *CDC Surveillance Report* • *Approval letter from decision making for new interventions*
STRATEGIES	⇨ Establish surveillance guideline for new vaccine preventable diseases (HIB, JE, RV) with CDC ⇨ Conduct economic analysis of benefits of new interventions ⇨ Assess affordability of new interventions	

Logistics, Communication and Training

1.COMMUNITY PARTICIPATION

Objective	*Summary*	Means of Verification
OBJECTIVE 8	*To increase community participation in immunization at local authority/decision maker level (advocacy) and community*	• *CDHS 2010* • *EPI Review 2010*
STRATEGIES	⇨ Strengthen utilization of communication strategies ⇨ Develop and implement health education strategy for high risk populations (face to face education strategies using local social networks) ⇨ Maintain electronic and print media approaches to communication ⇨ Strengthen role and responsibilities of local authorities through joint planning at all levels ⇨ Explore opportunity for MOH decision maker to support immunization	

2. SAFE INJECTIONS

Objective	*Summary*	Means of Verification
OBJECTIVE 9	*To ensure that all immunization is given safely and waste is disposed of appropriately*	• *EPI Review 2010* • *NIP Report*
STRATEGIES	⇨ Advocate to MOH to procure AD syringe and safety box ⇨ Improve network of incinerator and waste management system (including private sector pratice)	

3. VACCINE MANAGEMENT

Objective	*Summary*	Means of Verification
OBJECTIVE 10	*Improve vaccine management through provision of adequate functional cold chain equipment, reduction of vaccine wastage and increased efficiency of vaccine delivery and usage*	• *EPI Review 2010*
STRATEGIES	⇨ Improve adequate functional cold chain equipment (including solar systems for remote health facilities) ⇨ Strengthens the implementation of MDVP by promotion of use of VVM ⇨ Improve and strengthen vaccine management system by through staff capacity building and adequate equipment supply (includes computerization of PHD NIP level by 2008)	

4. TRANSPORT SYSTEMS

Objective	*Summary*	Means of Verification
OBJECTIVE 11	*To fully equip all health facilities and management levels with functional transport and maintenance systems by the year 2010*	• *NIP Transport Inventory*
STRATEGIES	⇨ Identify transport needs from financial sustainability plan ⇨ Submit proposals to government and international donors for financing of transport plan ⇨ Establish maintenance and monitoring system for transport plan	

Health System and Program Management

1. CAPACITY BUILDING

Objective	*Summary*	Means of Verification
OBJECTIVE 12	*Increase the capacity of PHD, OD and facility managers regarding technical and management functions*	• *EPI Review 2010*
STRATEGIES	⇨ Ensure 100% of positions are filled at all levels ⇨ Improve / develop manager skills at PHD, OD and HC level by supportive supervision and in service management training ⇨ Improve integration of EPI programming with child survival strategy and PHD, OD and HC planning (based on NIP plan with clear budget line) ⇨ Strengthen evaluation function of Manager at central NIP ⇨ Maintain data base on staff trained in middle level management (MLM) and immunization in practice (IIP) ⇨ Provide training in MLM and IIP to all new staff or staff who have not received training in the last 5 years.	

2. MANAGEMENT

Objective	*Summary*	Means of Verification
OBJECTIVE 13	*Secure national budget for vaccine and operational financing*	• *WHO-UNICEF Report*
STRATEGIES	⇨ Conduct long term vaccine forecasting and financial planning ⇨ Advocacy for resource mobilization from national and international sources ⇨ Promote efficiency of the national program through (1) Co ordination of NGO investment for investment in operational costs and social mobilization (2) Vaccine wastage reduction and (3) promotion of fixed site ⇨ Ensure that annual national budget allocated to vaccines supply is fully used ⇨ Clarify functions of EPI managers at Provincial and District level ⇨ Promote integration of EPI with child survival strategy and the health system through integrated fixed site and outreach micro-planning.	

MONITORING AND EVALUATION

RESEARCH AND PROGRAM EVALUATION

Framework	*Timeframe*
Immunization Coverage Survey	*2008 and 2010*
Report on Results of JE Surveillance	*2008*
TT Serological Survey	*2009*
Hepatitis B Serological survey	*2010*
Cambodia DHS	*2010*
EPI Review	*2010*

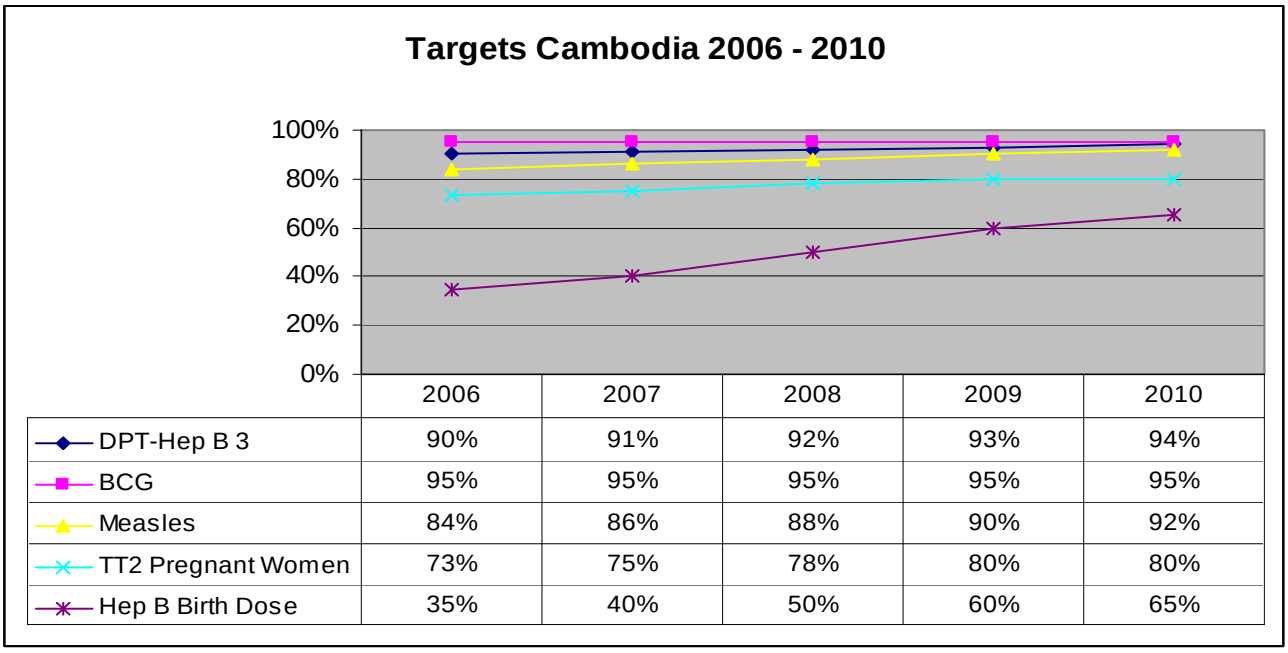
BASELINE INDICATORS

Baseline Indicators	*Source of Data*
Hepatitis B Serological Prevalence < 5 = 3.5%	*NIP Serology Survey 2005*
Hepatitis B Birth Dose 24%	*NIP Report 2005*
DPT – Hepatitis B3 Coverage 78%	*CDHS 2005*
Diphtheria cases 0 case	*NIP Report 2005*
Pertussis cases 462 case	*NIP Report 2005*
Measles Cases264 cases	*NIP Report 2005*
Measles Coverage 1st Dose 77%	*CDHS 2005*
Neonatal Tetanus cases 68 cases	*NIP Report 2005*
TT2+ Pregnancy women51%	*NIP Report 2005*
DPT-Hepatitis B1-3 Drop Out 9 %	*NIP Report 2005*
BCG – Measles Drop Out 12 %	*NIP Report 2005*

Fully Immunized66 %	*CDHS 2005*
Hepatitis B birth dose Wastage 26%	*NIP Report 2005*
DPT Hepatitis B Wastage 33%	*NIP Report 2005*
BCG Wastage 86%	*NIP Report 2005*
OPV Wastage45%	*NIP Report 2005*
Measles Wastage 73%	*NIP Report 2005*
TT Wastage 55%	*NIP Report 2005*

IMMUNIZATION TARGET FOR 2010

Hepatitis B Serological Prevalence < 5 years	**2 %**
NIP Hepatitis B Birth Dose < 24 hours	**65%**
DPT – Hepatitis B3 Coverage	**92%**
Measles Coverage 1st Dose	**95%**
BCG Coverage	**95%**
Neonatal Tetanus cases	**1/100,000**
Measles Cases	**1/1 Million**
TT2+ Pregnancy women	**80 %**
DPT-Hepatitis B1-3 Drop Out	**<10 %**
BCG – Measles Drop Out	**<10%**
NIP Fully Immunized	**80%**
Hepatitis B birth dose Wastage	**10%**
DPT Hepatitis B Wastage	**25%**
BCG Wastage	**63%**
OPV Wastage	**28%**
Measles Wastage	**53%**
TT Wastage	**32%**



	2006	2007	2008	2009	2010
DPT-Hep B 3	90%	91%	92%	93%	94%
BCG	95%	95%	95%	95%	95%
Measles	84%	86%	88%	90%	92%
TT2 Pregnant Women	73%	75%	78%	80%	80%
Hep B Birth Dose	35%	40%	50%	60%	65%

EVALUATION PROCESS

This plan will be monitored and evaluated through the following processes:

1. Global strategies (GIVS) and regional disease elimination targets provide a frawork for monitoring and evaluation of national program outcomes.
2. This NIP strategic plan will also be an input to the overall health sector plan of the Ministry of Health 2006 – 2010.
3. An annual and mid term program review will be undertaken by the NIP with provincial and operational health departments. This will be the means by which the national strategic plan objectives and targets will lnik with provincial and district planning.

4. This strategic plan will be incorporated within the child survival strategy. Key interventions of the NIP strategic plan are part of the "scorecard interventions" of the child survival strategy.
5. This strategic plan will form the basis for developing annual operational plans for the national program.

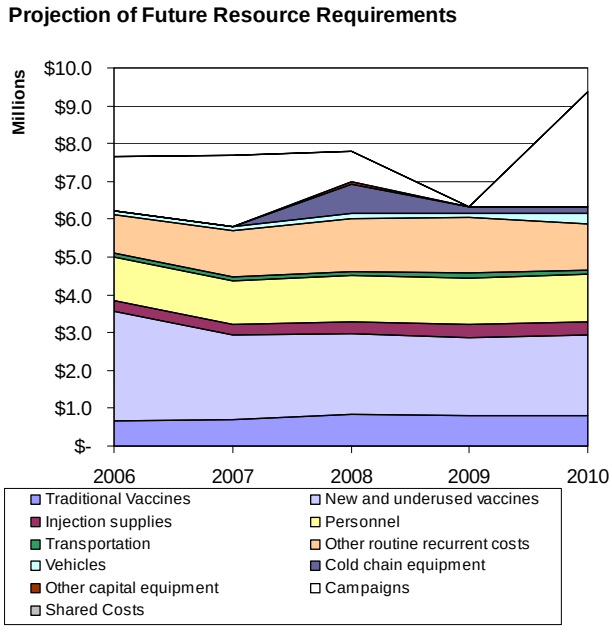
ANNEX 1 COSTING OF THE STRATEGIC PLAN

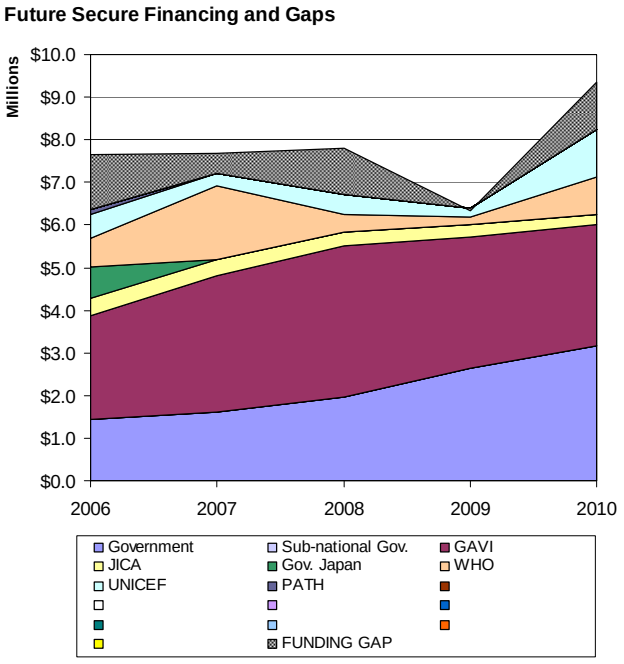
Analysis of the current and projected future costs for the program

Baseline Indicators	2005
Total Immunization Expenditures	$7,192,863
Campaigns	$543,045
Routine Immunization only	$6,649,818
per capita	$0.5
per DTP3 child	$20.8
% Vaccines and supplies	68.0%
% National funding	17.6%
% Total health expenditures	1.4%
% Gov. health expenditures	12.9%
% GDP	0.14%
Total Shared Costs	$495,921
% Shared health systems cost	6%
TOTAL	$7,688,784

In 2005, the total expenditures on immunization totaled at 7.1 million $US. In the baseline year, over 92% of spending on immunization was for routine delivery systems, the remainder for supplemental immunization activities. Translated into indicators, the cost of routine immunization represented $0.5 per capita or .13% of GDP. The costs to fully immunize children with DPT-Hep B are $20.8 in 2005. This compares favorably with the international GAVI estimate for most developing countries of $20 to $25 per DPT3 vaccinated child.

Figure Baseline Costing and Future Resource Requirements 2007-2011



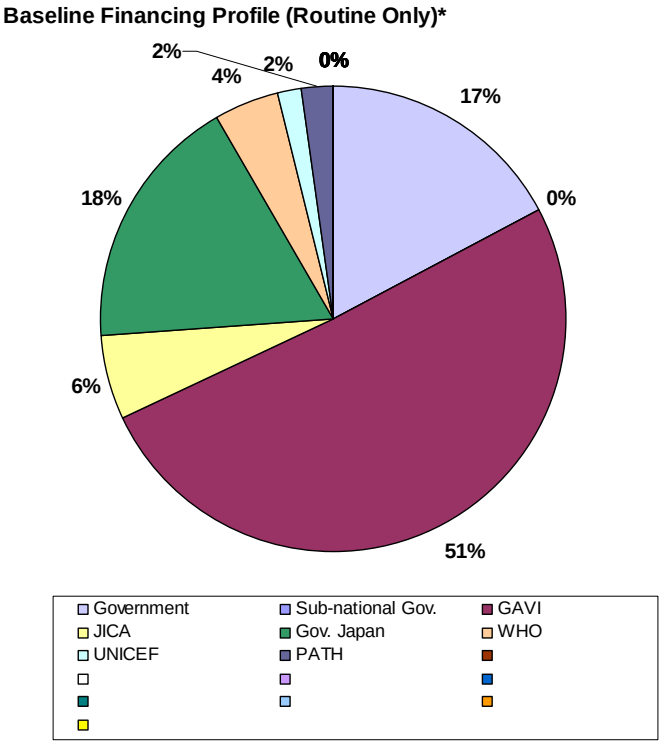


	Future Resource Requirements					
	2006	2007	2008	2009	2010	Total 2006 - 2010
MYP Components	US$	US$	US$	US$	US$	US$
Vaccine Supply and Logistics	4,242,531	3,800,669	4,485,071	3,503,991	4,599,244	20,631,506
Service Delivery	3,314,226	3,801,762	3,197,228	2,707,091	4,623,731	17,644,038
Advocacy and Communication	285,600	291,312	297,138	303,081	309,143	1,486,274
Monitoring and Disease Surveillance	152,600	114,444	148,569	151,541	154,571	721,725
Programme Management	167,635	202,878	206,936	211,074	215,296	1,003,819
Grand Total	8,162,593	8,211,064	8,334,942	6,876,777	9,901,985	41,487,362

In 2005, the baseline cost profile for Cambodia shows that the major cost driver of routine immunization lies with vaccines and injection supplies (69%), personnel and other recurrent expenses (12%) such as training, social mobilization, surveillance activities and IEC. Over the life of this strategic plan, the total costs for the program are 41.4 M $.

Projected financing from all sources for the same time period

In Cambodia, the main funding sources for routine immunization are the national government (17 %), GAVI (51%), Govt. of Japan (18 %), UNICEF (2%)[18] and WHO (4%). USAID and other bilateral donors also support the cost of immunization programs through community health project support. Over the period it is expected that GAVI will continue to be the major funding source to the national immunization program through new vaccine introduction support, health system strengthening and immunization services support.



Future funding was projected over the period and by including both monies that are secured and those that could be available (probable). Of the funds that are considered secure, national financing is expected to increase in the future from $3.4 to over $4.2 million. This is approximately a 30% increase in national funding over the 5 year period.

Funding from the ***GAVI Fund*** to cover for the new vaccines has been projected up to 2010 and Cambodia expects to begin co-financing for the DTP-HepB vaccines in the year 2008 at 10% of the value of combined vaccine, and to 20% of the value of combined vaccine in 2009, and to 30% in 2010. Health system strengthening grants from GAVI have also been included in this financing projection.

[18] This analysis sub national financing of immunization by UNICEF and NGOs largely funded through USAID.

Funding from ***WHO and UNICEF*** has been estimated at about the same levels as for previous years up to 2008. ***PATH funding*** will cease from the end of 2006. ***JICA finance*** for traditional vaccines has been included from 2007 and with a steady phasing out until 2010. The Government of Japan financing has been included for vaccine supply and injection safety up till 2007.

The main information gap in the financial analysis is the funding of basic health services by ***USAID and other bi lateral donors*** of basic health services. This has not been included in the sub national analysis.

Estimates of ***government financing*** of supervision, IEC and health outreach has been calculated at 20% of the estimated cost in 2007 and gradually increasing to 60% of the costs by 2010 .

Despite the availability of funding for immunization, some funding gaps emerge, and if not filled, could compromise reaching the objectives of the program between 2006 – 2010.

If only secure funding is considered, some 46% of resources requirement over the entire period are unmet (about $9.7 million for 2006 - 2010). At least a $2 million shortfall exists every year of the period.

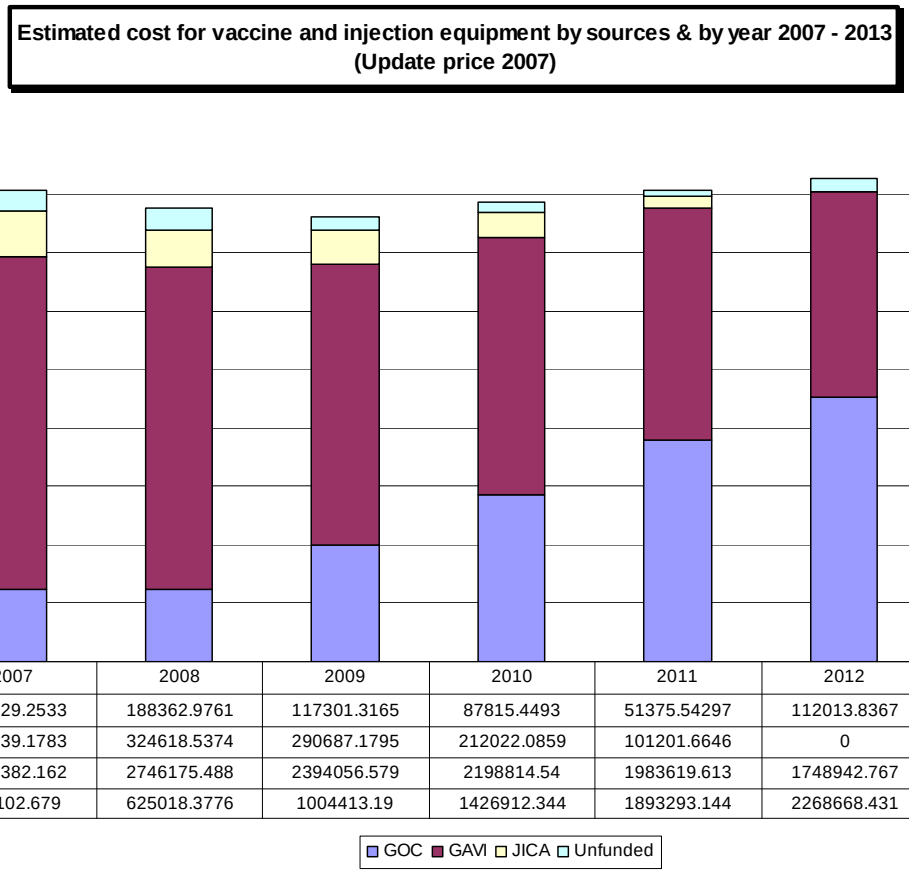
Figures Current and Future Financing - 2007-2011

Composition of the funding gap	2006	2007	2008	2009	2010	2006 - 2010
Vaccines and injection equipment	$301,975	$428,970	$448,584			$895,230
Personnel	$641,603	$429,550	$171,090	$116,342	$59,334	$1,417,919
Transport		$3,718		$46,569	$27,465	$44,512
Activities and other recurrent costs	$159,122	$170,097	$154,945	$132,649	$137,132	$753,944
Logistics (Vehicles, cold chain and other equipment)			$557,846	$294,703	$220,816	$841,413
Campaigns	$278,275	$617,989	$305,853		$1,351,374	$2,553,491
Total Funding Gap*	**$1,295,720**	**$1,471,105**	**$1,637,599**	**$465,746**	**$1,636,340**	**$6,506,510**

The main area of finance gap is with the traditional vaccines and injection supplies (assuming a government co-financing of combined vaccine with GAVI from 2008). An alternative scenario is for government to fully fund traditional vaccines and an additional bilateral donor is identified to finance combined vaccine.

There is a significant level of unfunded personnel costs between 2006 and 2008 for outreach and supervision. The gradual decrease is based on the assumption of a government increase of personnel funding from 20% to 60% of estimated costs along with investment by GAVI HSS funds.

The graph below includes a longer term projection of vaccine financing, with also taking into account retaining JICA funding with a steady phasing out of support and co financing by GAVI of combined vaccine. The graph also describes the exact financial commitment of government and donors. Should JICA be unable to continue vaccine funding, the gap will necessarily widen.



	2007	2008	2009	2010	2011	2012	2013
Unfunded	172529.2533	188362.9761	117301.3165	87815.4493	51375.54297	112013.8367	72377.39333
JICA	388739.1783	324618.5374	290687.1795	212022.0859	101201.6646	0	0
GAVI	2846382.162	2746175.488	2394056.579	2198814.54	1983619.613	1748942.767	1480581.612
GOC	622102.679	625018.3776	1004413.19	1426912.344	1893293.144	2268668.431	2619898.965

Aside from vaccine, the majority of the funding gaps are for activities (social mobilization, advocacy and communication, training and surveillance) personnel (outreach and supervision) as well as for logistics (vehicles and cold chain equipment). The gaps in campaign financing are for neo natal tetanus elimination. These gaps are likely to be filled by UNICEF.

Composition of the funding gap	2006	2007	2008	2009	2010	2006 - 2010
Vaccines and injection equipment	$301,975	$428,970	$448,584			$895,230
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Total Funding Gap*	**$1,295,720**	**$1,026,545**	**$1,637,599**	**$465,746**	**$1,636,340**	**$6,061,950**

Financial Sustainability Strategies

The government's willingness to ensure financial sustainability of immunization was already well established in the previous multi-year plans and the Cambodia Financial Sustainability Plan (2002 and updated in 2004 and 2005). The RGC and national program will promote sustainability of the program through the following strategies

- Increase national government financial contribution to immunization services: There are opportunities to increase government commitment in two ways. Firstly, the government will steadily increase government commitment to vaccine financing through the VII initiative. The costing i this plan includes a steady increase in vaccine financing. This financial commitment will need to increase when co financing of combined vaccine commences with GAVI in 2008. Secondly, there are now increasing program costs associated with maintenance of new capital investments in the areas of cold chain and waste management. The NIP therefore proposes to develop and finance maintenance systems for these new investments.

- Increase program efficiency: The program will increase program efficiency through the following strategies:

  - Reducing wastage rates: Cambodia has already implemented a Multi Dose Vial Policy to reduce wastage rates and established future targets for wastage rates. The Multi Dose Vial Policy will be available in all sites and staff trained in its use for fixed and outreach sessions.
  - Strengthening fixed facility immunization. Although investment will be required for social mobilization to support this activity, it will promote efficiency by reducing costs for outreach and transport for village based programs in accessible areas.
  - Co ordination of NGO resources (NGO Mapping). Co ordination of NGO investment iin basic health services will ensure there is no overlap between government and non government finance for operational costs.

- Increase external resources available: of possible future immunization costs. There are major challenges with vaccine financing as outlined above. The potential loss of support from JICA and the Government of Japan will require the MOH and NIP to advocate to and identify a bilateral partner to assist the NIP meet its program objectives

Detailed activities in support of these objectives are outlined under objective 12

ANNEX 2 ACTIVITY TIMELINE OF NIP

SERVICE DELIVERY

OBJECTIVE 1 : To improve routine immunization for children under 1 year of age by the year 2010 (HePB birth dose <24 h , 55 % , BCC 95 % , DPT-HepB3 92 %, OPV3 92 % ,Measles 90 % ,fully Immunize 85 % and TT2+PW 75 %)

ACTIVITIES	TIMELINE					Primary Responsibility
	2006	2007	2008	2009	2010	
STRATEGY : Fixed site strategy :						
1.1. Develop national guidelines integrated with other national program		X				NIP National Level
1.2. Communication (IEC, BCC, regular monthly meeting with VHSG/local authority/TBA), Conduct regular monthly		X	X	X	X	NIP National Level
1.3. Expand of Fixed Strategy		X	X	X	X	NIP National Level
STRATEGY : Outreach strategy :						
1.4. Follow-up regular schedule based on monthly plan	X	X	X	X	X	NIP National Level
1.5. Update target by HC cooperated with VHV/LA	X	X	X	X	X	NIP National Level
1.6. Identify and follow-up missed children by HC and VHV/LA	X	X	X	X	X	NIP National Level
1.7. Regular monitoring & supervision by OD/PHD	X	X	X	X	X	NIP National Level
1.8. Mobilize local fund to support outreach activities in remote areas	X	X	X	X	X	NIP National Level
STRATEGY : Coverage Improvement Plan (CIP) strategy :						
1.9. Provide training on micro planning to OD-HC by supportive supervision	X	X	X	X	X	NIP National Level
1.10. Regular & effective monitoring and supervision to HC by OD/PHD following national checklist	X	X	X	X	X	NIP National Level
1.11. Validate CIP result by conducting PAA by OD/PHD with support from NIP	X	X	X	X	X	NIP National Level

STRATEGY : Immunization for high risk and hard to reach population strategy :						
ACTIVITIES	TIMELINE					Primary Responsibility
	2006	2007	2008	2009	2010	
1.12. Identify high risk and hard to reach populations	X	X	X	X	X	NIP National Level
1.13. Mapping high risk and hard to reach populations at OD	X	X	X	X	X	NIP National Level
1.14. Conduct case study	X	X	X	X	X	NIP National Level
1.15. Define appropriate strategies	X	X	X	X	X	NIP National Level
1.16. Conduct package SIA (immunization, vit. A, IEC, etc.) at least 4 times / year	X	X	X	X	X	NIP National Level
STRATEGY :Private sector immunization strategy :						
1.17. Introduce immunization to private sector		X	X	X	X	NIP National Level
1.18. Monitor implementation of private sector by OD/PHD/NIP	X	X	X	X	X	NIP National Level
1.19. Conduct performance based evaluation		X				NIP National Level Partners
1.20. Expand private sector strategy as necessary			X	X	X	NIP National Level Partners
STRATEGY :Hepatitis B birth dose strategy :						
1.21. Provide awareness on HepB birth dose within 24 h including administration by public sector midwife and large private sector clinics		X	X	X	X	NIP National Level
1.22. Advocate high level management or decision maker to approve policy for outside cold chain for HepB vaccine	X					NIP National Level Partners
1.23. Advocate high level management or decision maker to approve policy for outside cold chain for HepB vaccine	X					NIP National Level Partners

OBJECTIVE 2 : Maintenance polio free until the time of global eradication						
STRATEGY : Strengthening AFP surveillance :						
ACTIVITIES	TIMELINE					Primary Responsibility
	2006	2007	2008	2009	2010	
2.1. Integrated surveillance all vaccines preventable diseases		X	X	X	X	NIP National Level
2.2. NIP to coordinate surveillance activities with private sector providers.		X	X	X	X	NIP National Level
2.3. NIP to provided input and share experience with CDC department (meeting, reporting and network surveillance)		X	X	X	X	NIP National Level
2.4. To increase the knowledge of health staff and community how to report AFP case (meeting, Training, Supervision, Leaflet and IEC materials)		X	X	X	X	NIP National Level
STRATEGY: Maintenance high OPV3 coverage in population< 5years old of age in high risk area and difficult area. :						
2.4. NIP to define the difficult access areas that have low coverage for OPV3 (supervision, quick survey report)		X	X	X	X	NIP National Level
2.5. Through campaign in low coverage for OPV3		X	X	X	X	NIP National Level
STRATEGY: Increase OPV3 through routine coverage activity						
2.6 Outreach session	X	X	X	X	X	NIP National Level
2.7.Fixed site (HC, Private clinic	X	X	X	X	X	NIP National Level
2.8 Integrate with TT SIA and Measles SIA Through campaign		X		X		NIP National Level
OBJECTIVE 3 : Achieve maternal neonatal tetanus by elimination by 2008						
STRATEGY : Improve NT surveillance:						
3.1. Integrate NT surveillance with AFP, Measles	X	X	X	X	X	NIP National Level
3.2. Coordinate with MCHC (clean delivery)		X	X	X	X	NIP National Level

3.3. Coordinate with NCHP to strengthening awareness of target diseases		X	X	X	X	NIP National Level
3.4. TT Serological survey				X		NIP National Level Partners
STRATEGY: Increase TT2 + PW and CBAW						
3.5.Routine (Register, CBAW, PW)		X	X			NIP National Level
3.6. Invitation, letter to CBAW and PW not immunize		X	X	X	X	NIP National Level
3.7. Improve awareness of PW and CBAW (Health education, Meeting ,IEC.....)		X	X	X	X	NIP National Level
STRATEGY: Improve case response						
3.8.Health education (meeting with Community)	X	X	X	X	X	NIP National Level
3.9. Catch-up in high risk areas		X		X		NIP National Level Partners
OBJECTIVE 4 : To effectively reach measles elimination by the year 2010						
STRATEGY : Improve measles surveillance						
4.1. Develop Guideline for measles elimination		X				NIP National Level
4.2. Integrate measles with AFP, NT.....		X	X	X	X	NIP National Level
4.3. Coordinate with laboratory at NIPH		X	X	X	X	NIP National Level
STRATEGY: Improve immunization coverage of measles						
4.4. Routine (first dose) 9- month coverage 90%		X	X	X	X	NIP National Level
4.5. Measles SIA < 5 years old 2007		X		X		NIP National Level
4.6. 2nd dose 2008 (school entry)			X	X	X	NIP National Level Partners

OBJECTIVE 5 : To control hepatitis B disease by reducing carriage in new birth cohorts to 2% by 2010 Hepatitis B Birth dose coverage 50% (<24 hrs) DPT-Hepatitis B Coverage 90%						
STRATEGY : To establish guideline and capacity for management Hep B birth dose; Improve birth dose at health facilities, at home (encourage < 24 hrs)						
ACTIVITIES	TIMELINE					Primary Responsibility
	2006	2007	2008	2009	2010	
5.1 Conduct Training		X	X	X	X	NIP National Level
5.2 Conduct Midwife hepatitis B birth dose		X	X	X	X	NIP National Level
5.3. Delivery at HC- RH, Private sector		X	X	X	X	NIP National Level
5.4. Awareness of mother		X	X	X	X	NIP National Level
STRATEGY: To ensure high coverage for DPT3-HepB: 90%						
5.5.. Routine activities	X	X	X	X	X	NIP National Level
5.6. CIP, Supervision	X	X	X	X	X	NIP National Level
5.7. Conduct Serological survey (at 2010)					X	NIP National Level , Partners
OBJECTIVE 6 : To ensure that AEFI can monitor						
STRATEGY : Establish Policy and guideline for AEFI						
6.1. Created AEFI committee at National and Provincial level		X	X	X	X	NIP National Level
6.2. Workshop for dissemination		X	X	X	X	NIP National Level
6.3. Develop plan of action		X	X	X	X	NIP National Level Partners
STRATEGY: Building capacity for management of AEFI						
6.4. Training on AEFI		X	X	X	X	NIP National Level
6.5. Monitoring system		X	X	X	X	NIP National Level
6.6. Case response		X	X	X	X	NIP National Level
6.7. Develop IEC materials		X	X	X	X	NIP National Level

OBJECTIVE 7 : To strengthen country decision making for new intervention by strengthening research and surveillance of new vaccine preventable diseases(HIB,JE,RV)						
STRATEGY :Established surveillance guideline for new vaccine preventable diseases(HIB, JE, RV)						
ACTIVITIES	TIMELINE					Primary Responsibility
	2006	2007	2008	2009	2010	
7.1.Created sentinel site surveillance	X	X	X	X	X	NIP National Level CDC/ MoH
7.2. Research study			X			NIP National Level CDC / MoH
7.3. Collaborated with CDC department	X	X	X	X	X	NIP National Level CDC / MoH

LOGISTIC COMMUNICATION AND TRAINING

OBJECTIVE 8 : To increase community participation in immunization at local authority/decision maker level (advocacy) and community level						
STRATEGY : Strengthens utilization communication strategies						
8.1. Review and used existing document with capacity building (train Health staff & local Authorities) and strong monitoring	X	X	X	X	X	NIP National Level, PHD, OD
STRATEGY : Strengthens role and responsibilities of local authorities						
8.2. Include NIP activities in commune council plan. Health staff attend monthly meeting with local authority (at Commune and OD). Develop and distribute IEC to local authority.	X	X	X	X	X	NIP National Level, PHD, OD, HC
STRATEGY : Explore opportunity for decision maker to support immunization						
8.3. Conduct regular ICSC and NGOs meeting. Integrate EPI key messages in the important National events (International Children Day, World Health day...). Identify well-known person in sociality to support dissemination of key activity.	X	X	X	X	X	NIP National Level
OBJECTIVE 9 : To ensure that all immunization is given safely and waste is disposed of appropriately						
STRATEGY : Advocate ministry of health to procure AD Syringes and safety boxes						
9.1. Include AD syringes in the national line Budget.	X	X	X	X	X	NIP National Level, Dept. Finance, Ministry Finance

ACTIVITIES	TIMELINE					Primary Responsibility
	2006	2007	2008	2009	2010	
STRATEGY : No stock out AD syringes and Safety boxes						
9.2. Improve District request and reporting AD/SB. Conduct regular monitoring exclusive use and stock AD/SB.	X	X	X	X	X	NIP National Level, CMS
STRATEGY : Improve network of incinerator and waste management system						
9.3. Strengthening incinerator management .Strengthening exchange system. Develop plan to procure and replace incinerator	X	X	X	X	X	NIP National Level
OBJECTIVE 10 : Improve vaccine management through provision of adequate functional cold chain equipment, reduction of vaccine wastage and increased efficiency of vaccine delivery and usage						
STRATEGY : Improve adequate functional cold chain equipment						
10.1. To ensure regular energy supply for refrigerator. Select and purchase equipment to replace 30% of cold chain each year. Identify and train person at PHD level for repair refrigerator. Regular update inventory for cold chain equipment.	X	X	X	X	X	NIP National Level, PHD, OD
STRATEGY : Strengthens the implementation of MDVP						
10.2. Refresher training for MDVP.PHD and OD monitor vaccine wastage and cold chain equipment.	X	X	X	X	X	NIP National Level, PHD, OD
STRATEGY : Improve and strengthening vaccine management systems						
10.3. Develop effective Vaccine forecast. Develop and implement annual vaccine procurement national budget. Implement NIP local VAR to PHD and OD level. Build capacity for effective vaccine management through training, supervision and monitoring system.	X	X	X	X	X	NIP National Level, PHD, OD

HEALTH SYSTEM AND PROGRAM MANAGEMENT

OBJECTIVE 11 Increase the capacity of Central, PHD, OD and facility managers regarding technical and management functions

ACTIVITIES	TIMELINE					Primary Responsibility
	2006	2007	2008	2009	2010	
STRATEGY : Ensure 100% of EPI positions are filled at all levels						
11.1. Collect baseline data on HR distribution and numbers		X	X	X	X	NIP National Level
11.2. Advocacy with MOH and provincial health directors for appropriate HR Distribution		X	X	X	X	NIP National Level, Dept Planning, Personnel Dept
STRATEGY : Improve/develop manager skills at PHD, OD and HC level						
11.3. Implement MLM and HC training programs		X	X	X	X	NIP National Level, PHD
11.4.. Develop an EPI information dissemination newsletter		X	X	X	X	NIP National Level
11.4. Increase on the job training opportunity through supportive supervision		X	X	X	X	NIP National Level
11.5. Promote best practice staff exchange between provinces		X	X	X	X	NIP National Level
STRATEGY : Clarify function/responsibility of staff at each level						
11.6. 1. Reach consensus on TOR for EPI managers - staff at PHD and OD Level		X	X	X	X	NIP National Level
11.7. Disseminate information on TOR		X	X	X	X	NIP National Level
11.8. Monitor quality of performance based on TOR		X	X	X	X	NIP National Level
STRATEGY : Improve integration of EPI programming with PHD and OD and HC planning (based upon NIP Plan and with clear budget line)						
11.9. Before PHD and OD` make annual plan, NIP should disseminate on time the annual NIP plan		X	X	X	X	NIP National Level
11.10.NIP communicate national plan with Annual Congress of MOH and Annual Review of NIP		X	X	X	X	NIP National Level
11.11. Strengthen collaboration with planning department to ensure NIP priorities and strategies are included in health sector plan and annual action plans of PHD, OD and HC		X	X	X	X	NIP National Level

ACTIVITIES	TIMELINE					Primary Responsibility
	2006	2007	2008	2009	2010	
STRATEGY : Strengthen evaluation function of managers of central NIP						
11.12. Implement regular country EPI review and DQA (timeframe to be defined)			X		X	NIP National Level
11.13. For new interventions conduct economic analysis and financial affordability for decision making		X	X	X	X	NIP National Level
OBJECTIVE 12 : Secure national budget for vaccine and operational financing						
STRATEGY : Conduct long term vaccine forecasting & financial planning						
12.1. Update annual vaccine forecast and financial plan		X	X	X	X	NIP National Level
STRATEGY : Advocacy for resource mobilization from sub national, national and international sources						
12.1. NIP/PHD/OD to clearly put adequate budget for immunization operational costs in their annual plans		X	X	X	X	NIP National Level PHDs
12.2. Strengthen collaboration between concerned national programmes and MOH to advocate to MOF on operational financing for outreach under 10 km		X	X	X	X	NIP National Level MoH
12.3. Collaborate with concerned national programmes and partners NGOs to ensure additional financial support to outreach and fixed site activities.		X	X	X	X	NIP National Level Partners
12.4. Seek continued support from donors.		X	X	X	X	NIP National Level Partners
12.5. Government to make strategic decision on bridge financing from GAVI for vaccine financing		X	X	X	X	NIP National Level MoH
STRATEGY : Ensure that annual national budget allocated to vaccines supply is fully used						
12.6. To advocate with UNICEF and MOH/MOF to ensure VII ceiling matches vaccine forecasting needs (increase ceiling and cycle)		X	X	X	X	NIP National Level Partners

ANNEX 3 IMMUNIZATION SCHEDULE

Vaccine	Age of Administration	Additional Comment
Hepatitis B vaccine	Within 24 hours of birth, or as soon as possible within 7 days after birth	
BCG	At birth	
OPV	6, 10 and 14 weeks	
DPT-Hepatitis B	6, 10 and 14 weeks	Introduction of combined vaccine was completed in all districts by the end of 2005
Measles	9 months	A second dose of measles vaccine through school immunization will be trialled in 2007
TT	1st dose at 1st contact 2nd dose At least 4 weeks after 1st dose or during next pregnancy 3rd dose at least 6 months after 2nd dose or during subsequent pregnancy 4th dose at least 1 year after 3rd dose 5th dose At least 1 year after 4th dose	
Vitamin A	Children 6-11mths Children 12-59 months Women after delivery	

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