Health System Strengthening (HSS) Cash Support

Application Package – Proposal Form

COUNTRY NAME: CAMBODIA DATE OF APPLICATION: 23 January 2015

This proposal form is for use by applicants seeking to request Health System Strengthening (HSS) cash support from the GAVI Alliance. Countries are encouraged to participate in an iterative process with GAVI Alliance partners, including civil society organizations (CSOs), in the development of HSS proposals prior to submission of this application for funding.

TABLE OF CONTENTS

TABLE OF CONTENTS **1**

GAVI's Key Elements for Health System Strengthening Grants 3

PART A - SUMMARY OF SUPPORT REQUESTED AND APPLICANT INFORMATION **5**

1. Applicant Information 7
2. The Proposal Development Process 7

PART B – EXECUTIVE SUMMARY **11**

3. Executive Summary 11
4. Abbreviations 13

PART C– SITUATION ANALYSIS **14**

5. Key Relevant Health and Health System Statistics 14
6. Description of the National Health Sector 15
7. National Health Strategy and Joint Assessment of National Health Strategy (JANS) 18
8. Monitoring and Evaluation Plan for the National Health Plan 18
9. Health System Bottlenecks to Achieving Immunization Outcomes 19
10. Lessons Learned and Past Experience 20

PART D - PROPOSAL DETAILS **23**

11. Objectives of the Proposal 23
12. Description of Activities 25
13. Results Chain 31
14. Monitoring and Evaluation 34

PART E – BUDGET, GAP ANALYSIS AND WORKPLAN **34**

15. Detailed Budget and Workplan Narrative 34
16. Gap Analysis and Complementarity 35
17. Sustainability 36

PART F – IMPLEMENTATION ARRANGEMENTS AND RISK MITIGATION **37**

18. Implementation Arrangements 37
19. Involvement of CSOs 37
20. Technical Assistance 38
21. Risks and Mitigation Measures 40
22. Financial Management and Procurement Arrangements 43

As an important supplement to this document, please also see the '*General Guidelines for Expressions of Interest and Applications for All Types of GAVI Support*, available on the GAVI web site:
http://www.gavialliance.org/support/apply/

The General Guidelines serve as an introduction to the principles, policies and processes that are applicable to all types of GAVI support, both Health Systems Strengthening (HSS) and New and Underused Vaccines Support (NVS).

All applicants are encouraged to read and follow the accompanying '*Supplementary Guidelines for Health System Strengthening Applications in 2014*' in order to correctly fill out this form. Each corresponding section within the Supplementary HSS Guidelines provides more detailed instructions and illustrative instructions on how to fill out the HSS proposal form.

Please note that if approved your application for HSS support will be made available on the GAVI website and may be shared at workshops and training sessions. Applications may also be shared with GAVI Alliance partners and GAVI's civil society constituency for post-submission assessment, review and evaluation.

GAVI's Key Elements for Health System Strengthening Grants

The following key elements outline GAVI's approach to health system strengthening and should be reflected in an HSS grant:

- One of GAVI's strategic goals is to "contribute to strengthening the capacity of integrated health systems to deliver immunization". The objective of GAVI HSS support is to address system bottlenecks to achieve better immunization outcomes, including increased vaccination coverage and more equitable access to immunization. As such, it is necessary for the application to be based on a strong bottleneck and gap analysis, and present a clear results chain demonstrating the link between proposed activities and improved immunization outcomes.
- Performance based funding (PBF) is a core approach of GAVI HSS support. All applications must align with the GAVI performance based funding approach introduced in 2012. Countries' performance will be measured based on a predefined set of PBF indicators against which additional payments will be made to reward good performance in improving immunization outcomes. Under the PBF approach for HSS, the programmed portion of HSS grants must be used solely to fund HSS activities. Countries have more flexibility on how they wish to spend their reward payments, as long as they are still spent within the health sector. Neither programmed nor performance payments may be used to purchase vaccines or meet GAVI's requirements to co-finance vaccine purchases, and shall not be used to pay any taxes, customs, duties, toll or other charges imposed on the importation of vaccines and related supplies.
- GAVI's HSS application requires a strong M&E framework, measurement and documentation of results, and an end of grant evaluation. The performance of the HSS grant will be measured through intermediate results as well as immunization outcomes including diphtheria-tetanus-pertussis (DTP3) coverage, measles-containing vaccine first dose (MCV1) coverage, fully immunized child coverage, difference in DTP3 coverage between top and bottom wealth quintiles, and percent of districts reporting at least 80% coverage of DPT3. Additionally, so as to systematically measure and document immunization data quality and data system improvement efforts, independent and recurrent data quality assessments and surveys will be a condition for all HSS applications.
- GAVI's approach to HSS includes support for strengthening information systems and improving data quality. Strong information systems are of fundamental importance both to countries and to GAVI. GAVI requires that countries have in place routine mechanisms to independently assess the quality of administrative data and track changes in data quality over time. Countries are strongly encouraged to include in their proposals actions to strengthen data systems, and to demonstrate how their grant will be used to help implement recommendations or agreed action items coming from previous data quality assessments. The process of conducting periodic data quality assessments and monitoring trends should be credible and nationally agreed. For example, incorporating an independent element to the assessments could involve national institutions that are external to the program that collects or oversees the data collection.
- GAVI supports the principles of alignment and harmonization (in keeping with Paris, Accra and Busan declarations and the International Health Partnership, IHP+). The application must demonstrate how GAVI support is aligned with country health plans and processes, complementary to other donor funding, and uses existing country systems, such as for financial management and M&E. The IHP+ Common Monitoring and Evaluation Framework is used as a reference framework in the Supplementary Guidelines for HSS Applications.
- GAVI supports the use of Joint Assessment of National Strategies (JANS). If a country has conducted a JANS assessment the findings can be included in the HSS application. The

Independent Review Committee (IRC) will use the findings of a JANS assessment to gain an understanding of the policy and health sector context that will inform their assessment of the credibility and feasibility of the HSS proposal.

- GAVI requests countries to identify and build linkages between HSS support and new vaccines implementation (GAVI New Vaccines Support - NVS) – linkages to routine immunization strengthening, new vaccine introduction, and campaign planning and implementation must be demonstrated in the application. Countries should demonstrate alignment between HSS grant activities and activities funded through other GAVI cash support, including vaccine introduction grants and operational support for campaigns.
- As part of vaccine introduction, GAVI HSS support should be used during pre-and post-introduction for strengthening the routine immunization system to increase the coverage e.g. through social mobilization, training, supply chain management etc. (see grant categories in table 1) for all the vaccines supported. This should complement other sources of funding including vaccine introduction grants from GAVI.
- GAVI's approach to HSS includes support for community mobilization, demand generation, and communication, including Communication for Immunization (C4I) approach.
- GAVI supports innovation. Countries are encouraged to think of innovative and catalytic activities for inclusion in their grants to address HSS bottlenecks to improving immunization outcomes.
- GAVI strongly encourages countries to include funding for Civil Society Organizations (CSOs) in implementation of GAVI HSS support to improve immunization outcomes. CSOs can receive GAVI funding through two channels: (i) funding from GAVI to Ministry of Health (MOH) and then transferred to CSO, or (ii) direct from GAVI to CSO. Please refer to Table 1 for potential categories of activities to include in budget for CSOs and Annex 4 for further details of GAVI support to CSOs.
- Applications must include details on lessons learned from previous HSS grants from GAVI or support from other sources such as previous New Vaccine Support, the Effective Vaccine Management (EVM) assessment or Post Introduction Evaluation (PIE) tools, EPI reviews etc.
- Applications must include information on how sustainability of activities and results will be addressed from a financial and programmatic perspective beyond the period of support from GAVI.
- Applications must include information on how equity (including geographic, socio-economic, and gender equity) will be addressed.
- Applications will need to show the complementarity and added value of GAVI support to reducing bottlenecks and strengthening the health system, relative to support from other partners and funding sources and relative to other funding from GAVI specific to new vaccines and/or campaigns.
- Applicants are encouraged to identify technical assistance (TA) and capacity building needs for implementation and monitoring of the HSS grants. Applicants are required to include details of short term and long term TA if they are requesting TA as part of the HSS application to ensure strong implementation and effectiveness of GAVI HSS support.

PART A - SUMMARY OF SUPPORT REQUESTED AND APPLICANT INFORMATION

HSS Proposal Forms and Mandatory GAVI attachments *→ Please place an 'X' in the box when the attachment is included*		
No.	*Attachment*	***X***
1.	HSS Proposal Form	*X*
2.	2a. Cover letter 2b. Signature Sheet for Ministry of Health, Ministry of Economy & Finance and Health Sector Coordinating Committee (HSCC) members – ***to be submitted once signed by both parties (see contents of Attachment 2a)***	*X*
3.	3a. Minutes of TWGH (HSCC) meeting endorsing Proposal – ***endorsement meeting was held on 15 January 2015. Final minutes will be approved at next meeting in February 2015.*** 3b. Signature sheet of TWGH meeting endorsing Proposal. 3c. Signature of chair of TWGH (p. 10 of Proposal)	*X* *X*
4.	4a. TWGH minutes June 2014 4b. TWGH minutes July 2014 4c. TWGH minutes August 2014	*X*
5.	HSS Monitoring & Evaluation Framework	*X*
6.	Detailed budget, gap analysis and work plan	*X*
7.	Detailed Procurement Plan (18 month)	*X*

Existing National Documents - Mandatory Attachments Where possible, please attach approved national documents rather than drafts. For a decentralized country, provide relevant state/provincial level plan as well as any relevant national level documents. → *Please place an 'X' in the box when the attachment is included*		
No.	*Attachment*	***X***
8.	8a. Health Strategic Plan 2008-2015 8b. National Policy, National Immunization Program (updated 2012)	*X*
9.	National M&E Plan (this is Chapter 6 of Attachment 8a)	*X*
10.	National Immunization Plan (National Immunization Policy 2012)	*X*
11.	Country cMYP (National Immunization Strategic Plan 2008-2015)	*X*
12.	12a. EPI Review 2010 12b. EVM Assessment 2012 12c. EVM Progress Report, August 2014	*X*
13.	Terms of Reference of TWGH (HSCC) – Annex III of this document	*X*

Existing National Documents - Additional Attachments Where possible, please attach approved national documents rather than drafts. For a decentralized country, provide relevant state/provincial level plan as well as any relevant national level documents. → *Please place an 'X' in the box when the attachment is included*		
No.	*Attachment*	***X***
14.	Joint Assessment of National Health Strategy (if available)	
15.	Response to Joint Assessment of National Health Strategy (if available)	
16.	If funds transfers are to go directly to a CSO or CSO Network, please provide the 3 most recent years of published financial statements of the lead CSO, audited by a qualified independent external auditor	
17.	Cambodia Demographic and Health Survey 2010	*X*
18.	Joint Appraisal 2014	*X*
19.	Implementation Guidelines for High-Risk Communities	*X*
20.	Annual Health Financing Report 2012	*X*

21.	Strategic Framework for Health Financing 2008-2015	X
22.	Data Quality Improvement Plan 2014	X
23.	Data Quality Progress Report 2013	X
24.	WHO Data Quality Report Card Cambodia 2012	X
25.	NIP Annual Operating Plan 2015	X
26.	List of high-risk communities 2014	X
27.	Cold chain data 2013	X
28.	Unit cost details	X
29.	Summary of external evaluation of high-risk community strategy 2012	X
30.	Draft guidelines for incentive payments 2015	X

1. Applicant Information	
Applicant:	**Ministry of Health**
Country:	**Cambodia**
Proposal title:	**Strengthening the National Immunization Program**
Proposed start date:	***July 2015***
Duration of support requested:	***5 years***
Total funding requested from GAVI:	***USD18,058,048***
Contact Details	
Name	**Prof. Sann Chan Soeung**
Organization and title	**Advisor to Ministry of Health**
Mailing address	**No. 2, Boulevard Kim YI Sung, Sangkat Boeung Kak II, Khan Tuol Kork, Phnom Penh 12152, Cambodia**
Telephone	**+855 23 426257**
Fax	**+855 23 426167**
E-mail addresses	**workmoh@gmail.com**

2. The Proposal Development Process

a. The proposal preparation process was led by the National Immunization Program (NIP) with technical support from the World Health Organization (WHO). NIP coordinated inputs from other units in the Ministry of Health (MOH), WHO and UNICEF.

b. The Technical Working Group for Health (TWGH) functions as the health sector coordinating committee. It is the main government forum for policy and strategy discussions between government, civil society and donor partners in the health sector. The TWGH reviews draft funding proposals for GAVI and other multilateral donors and submits any comments/suggestions for consideration before finalization. It endorses applications before submission by a majority vote. Its Terms of Reference can be found in Annex III of Attachment 13.

c. NIP, which manages implementation of the expanded program for immunization (EPI), cooperated with a number of MOH units in the preparation and finalization of this GAVI proposal. Consultations were held with the Department of Planning & Health Information (DPHI), which provided inputs in the areas of data quality assessments, integration of immunization data into the health management information system (HMIS), and supervision of data collection in the field to check on quality of both data entry and aggregation. The Department of Budget & Finance (DBF) provided inputs on funding flows and issues with the procedures for advances and reconciliations of spending by units using GAVI funds, as well as its current proposals to address some of those issues. It also provided information on the recent (July 2014) government changes to daily subsistence allowances for civil servants working away from their home office. The Communicable Diseases Control (CDC) unit oversees the implementation of integrated management of childhood illnesses (IMCI) and advised on how GAVI support had been used to ensure that immunization is covered in IMCI and checks are implemented to verify that children being treated have vaccination registration cards and up-to-date vaccination records. The Department of Preventive Medicine, which prepared the MOH guidelines on outreach management, provided inputs on outreach activities and progress on the national goal of increasing use of fixed-site health facilities for services including immunization. Since 2013, the newly created Internal Audit Department has provided audits of financial management in MOH. It reports directly to the Minister for Health and to the National Audit Authority.

d. Current GAVI support focuses on 10 operational districts (ODs) in 9 provinces. Staff from provincial health departments (PHDs) and ODs have been involved in regular workshops, annual overview meetings and mid-

year reviews to analyze data and progress against objectives under the current GAVI-HSS grant. The annual meetings have summarized lessons learned for use in the preparation of this proposal.

e. Medicam sits on the TWGH and is a voting member. Medicam is the umbrella organization which represents both national and international non-government organizations (NGOs) in the health sector. It conducts its own quarterly and annual forums with communities throughout Cambodia and from time to time makes presentations to the TWGH on issues of concern in the sector.

f. WHO has been actively involved in providing technical support to NIP, including support for the implementation of a number of existing GAVI grants and preparation of proposals for new grants covering new vaccines introduction, as well as this proposal. It has provided technical support for increasing coverage including implementation of the high-risk community strategy, surveillance activities including implementing activities for sustaining polio eradication status, measles and neonatal tetanus elimination and Hep B control, new vaccine introduction and EVM assessment including implementing activities in the EVM improvement plan. UNICEF has been a close technical partner in the strengthening of cold chain management, communication campaigns and looking at strategies to reach mobile high-risk groups to improve vaccination coverage. Other cooperation has been with the group of donor partners pooling funds in the Second Health Sector Support Project (HSSP2). This group is led by World Bank and includes bilateral support from Australia, and other support from UNICEF and UNFPA. HSSP2 has provided complementary funding in a number of areas, but will end in December 2015. Preparations for a follow-on project are under way and NIP remains in close consultation with the partners in order to ensure any complementary funding leverages GAVI support.

g. There has been no private sector involvement in the preparation of this proposal. There is no umbrella organization representing practitioners or service providers in the private sector, either generally across the health sector or in specific thematic areas.

h. An individual consultant was funded by WHO in order to provide technical support in the preparation of this proposal. WHO technical staff also provided inputs.

i. An expression of interest for this proposal (along with proposals for new vaccines) was prepared in April 2014. A joint appraisal of the immunization program was held with a GAVI team in May-June 2014, and a debriefing of key issues made to Prof. Eng Huot, Secretary of State in MOH on 4 June 2014. This proposal is based on the issues raised in that joint appraisal mission. Preparation of the detailed proposal began in late June with a series of consultations with WHO, UNICEF and various units in MOH. A technical adviser was supplied by WHO from early August to assist with preparation of the documents and detailed work plans. All analytical work was based on existing documents and data sets, except for analysis of high-risk communities and their locations, which resulted in the setting up of a specific database that will be used for ongoing management of immunization targeting these groups. All elements of planning and budgeting in this proposal will be included in the annual planning process in MOH which culminates in preparation of the ministry's Annual Operational Plan (AOP) and provincial AOPs at the end of the calendar year. This guides implementation in the following calendar year. There has been no Joint Assessment of National Systems in Cambodia. In November 2014, the Independent Review Committee issued a report on Cambodia's original proposal, which was submitted on 12 September 2014, and recommended that the proposal should be ready for approval once a series of recommendations had been addressed. This revised proposal takes into account those recommendations, and the attachment to the cover letter summarizes how the recommendations have been addressed. Revised sections of this proposal are shaded in yellow.

j. A Cambodia Demographic and Health Survey (CDHS) is currently under way but preliminary results will not be available until about April 2015, so up to date baseline data from that survey was not yet available. However, the early scheduling of the CDHS (the prior survey was in 2010) means that the next survey will be in 2019 and provide end of grant data for evaluation. Consultations with MOH units and partners were held in the process of preparing the original proposal, and for this revised proposal, further consultations were held with WHO, UNICEF and the HSSP2 Secretariat, focused on maintenance and repair systems, community outreach and demand creation, and financial management.

Signatures: Government endorsement	
Minister of Health Name: Signature: Date:	Minister of Economy and Finance Name: Signature: Date:

Signatures: Health Sector Coordinating Committee endorsement

We the members of the HSCC, or equivalent committee met on 15 January 2015 to review this proposal. At that meeting we endorsed this proposal on the basis of the supporting documentation which is attached. The minutes of the meeting endorsing this proposal are attached to this application.

PLEASE SEE ATTACHMENT 3 FOR A FULL LIST OF SIGNATORIES

Please list all HSCC members	Title / Organization	Name	Please sign below to indicate the attendance at the meeting where the proposal was endorsed	Please sign below to indicate the endorsement of the minutes where the proposal was discussed
Chair	Secretary of State, MOH	Prof. Eng Huot		
Secretary				
MOH members				
Development partners				
CSO members				
WHO				
UNICEF				
Other				

Please tick the relevant box to indicate whether the signatories above include representation from a broader CSO platform: Yes ✓ No ☐

Individual members of the HSCC may wish to send informal comments to: gavihss@gavialliance.org
All comments will be treated confidentially.

PART B – EXECUTIVE SUMMARY

3. Executive Summary

1. Bottlenecks

A detailed discussion of bottlenecks is provided in Section 9 below.

A Joint Appraisal between GAVI and NIP in June 2014 identified some key areas requiring support.

Twenty percent of children remain unvaccinated, despite substantial progress in extending immunization coverage over the past two decades. Many of these children are located in high-risk communities and NIP has developed guidelines for targeting these communities and for gradually incorporating them into the routine immunization program. The process is high cost and relatively slow as many of these communities live in difficult to reach locations, but extending coverage to these areas is vital to achieve national immunization targets. Objective 1 will address this issue.

The cold chain is increasingly at risk because a substantial proportion of equipment is now very old and storage capacity at central level is insufficient to cope with increased population numbers and the introduction of new vaccines. There are minimal budget allocations for maintenance and repair of cold chain equipment at all levels of the system, and insufficient staff to respond to demand for servicing of equipment. Objective 2 will address these issues.

Current communication methods used by health staff rely heavily on written materials. Yet a substantial proportion of the population in rural areas, and especially in high-risk communities, has low formal education and literacy levels. There is a need for more innovative and effective methods to reach these groups in order to improve understanding of immunization, especially among mothers, and to increase demand for immunization. Objective 3 will address this issue.

The current surveillance system works well but is heavily reliant on technical support and advice from WHO. There is a need to improve staff capacity for management and resource deployment at all levels in order to manage the system on a more sustainable basis and ensure timely responses to outbreaks. Objective 4 will address these issues.

The Joint Appraisal between GAVI and NIP in June 2014 identified a number of weaknesses in the management of NIP. Capacity to analyze and use data in planning needs to be improved, as does coordination and deployment of resources for outreach work. Coordination with other units in MOH needs to be strengthened so that the immunization program can be implemented with greater efficiency and impact. A new National Immunization Strategic Plan for 2016-2020 needs to be prepared. Objective 5 will address these issues.

2. Population coverage

The total population of Cambodia in 2014 is estimated at 15.18 million (51.0% female, 49.0% male), based on growth projections from the 2008 census[1]. The population is expected to reach 16.5 million in 2020 (50.8% female, 49.2% male), with women aged 15-39 years numbering about 3.58 million and children under 5 years old about 1.69 million. General activities under this proposal will cover all public health facilities in Cambodia and thus provide benefits to a substantial number of women of reproductive age and young children.

In 2014, 1,832 communities were defined as high risk. These hold a total population of 1,976,415. This includes 835,233 women aged 15-39 and 202,582 children aged under 5[2]. These groups will receive direct immunization benefits from expansion of coverage to high-risk communities in Objective 1.

3. Objectives and budget

There are 5 objectives in this proposal:

1***: Increase immunization coverage in high risk communities*** – this will target 1,832 communities defined as high risk (where full immunization coverage is <80%). The target communities fall into four categories: those in remote rural locations, the urban poor, migrant and mobile workers, and ethnic

[1] National Institute of Statistics (2009) *General Population Census of Cambodia 2008, National Report on Final Census Results* Ministry of Planning, Phnom Penh, August.

[2] These figures are based on the overall population proportions as the current data set in NIP for high-risk communities is not disaggregated by age or sex.

minority groups. NIP has developed a strategy to reach these communities. The cost of reaching them is high, but extending coverage to them and progressively bringing them into the routine immunization program is a priority if overall immunization targets are to be met. Government will fund the vaccines.

2: Strengthen cold chain system through improved equipment and management – almost two-thirds of cold chain equipment is now over 10 years old, threatening the integrity of the cold chain, and the demand for maintenance and repairs is high. The current capacity to maintain and repair equipment is very limited, with only one full-time mechanic located in NIP to serve the whole of the country. A detailed database of cold chain equipment has been established to monitor and manage the system, and needs regular updating to be effective. Activities will address all of these issues.

3: Increase community awareness of, and demand for, immunization – current communication methods rely heavily on written materials, yet formal education levels and literacy in target communities is relatively low. There is a need for more effective methods and materials to inform mothers about immunization and to increase demand for immunization, especially in high-risk communities. Activities will tackle this issue and pilot some new strategies to increase penetration of difficult to reach groups.

4: Strengthen the surveillance of vaccine-preventable diseases – the surveillance system uses both routine and sentinel surveillance and generally works well, but there is very strong reliance on technical expertise from WHO to keep the system operational. In order to strengthen the sustainability of the system, activities will build the capacity of surveillance staff at all levels to improve resource allocation and responses to outbreaks.

5: Strengthen management capacity to support EPI – a Joint Appraisal between GAVI and NIP in mid-2014 noted a number of management areas that needed strengthening in order to improve the operation of the program. These included planning and data analysis skills, staffing and resourcing of outreach work, identification of high-risk communities and coordination with other units in MOH. Activities will address these areas and build a stronger management capacity in NIP.

The total budget will be USD18,058,048. Allocations to the 5 objectives are set out in the following table:

Objective	Budget USD
1: Increase immunization coverage in high risk communities	6,600,120
2: Strengthen cold chain system through improved equipment and management	2,796,000
3: Increase community awareness of, and demand for, immunization	1,538,660
4: Strengthen the surveillance of vaccine-preventable diseases	1,914.030
5: Strengthen management capacity to support EPI	5,021,238
Program management	188,000
TOTAL	**18,058,048**

4. Implementation arrangements

The current GAVI HSS grant will end in June 2015. It covers 10 ODs in 9 provinces. An evaluation of the strategy to reach high risk communities was externally evaluated in 2012 and found to be effective. This proposal extends coverage of the strategy to all 83 ODs in Cambodia as well as strengthening systemic support in the areas of surveillance, cold chain integrity and management. Both currently effective and some new strategies for improving community awareness and creating demand for immunization have been included.

Most activities will be implemented by NIP and the 25 PHDs, with data quality activities undertaken by DPHI and audit activities by IAD. Technical and operational support in a number of key areas will continue to be provided by WHO and UNICEF on a no-cost basis for this grant.

Funds from GAVI will go to a designated account held at the HSSP2 Secretariat in MOH. It uses financial arrangements agreed between MOH, the Ministry of Economy & Finance, and the 7 donor partners in HSSP2, led by World Bank. Funds from there will be paid directly to DPHI and IAD for their activities on a quarterly basis. Funds for NIP and the 25 provinces will be transferred to a designated GAVI account in the National Maternal and Child Health Center (NMCHC), which is the administrative unit to which NIP belongs. NMCHC will transfer and acquit funds on a quarterly basis.

Procurement of cold chain equipment will be done by UNICEF, using its procurement service mechanism. All other procurement will be done by the HSSP2 Secretariat. Its procurement systems are agreed between government and the donor partners in HSSP2 and conform to both government and World Bank requirements. HSSP2 is subject to external quarterly technical and financial audits.

Data collection for monitoring and evaluation will be done by DPHI using the HMIS in MOH. DPHI will do regular data quality assessments and these will be supplemented by external data quality assessments. Data from DPHI will be analyzed by NIP for use in planning, budgeting and the allocation of resources. Key indicators for this program will be tracked over the life of the grant period. Impact indicators are monitored by

the 5-yearly Cambodia Demographic and Health Surveys. A survey is currently being done and results will be available in about April 2015. The next survey will then be in 2019, so this data will roughly coincide with the start and end points of the grant period.

4. Abbreviations

Abbreviation	Abbreviation Meaning
AOP	Annual Operational Plan
CDC	Communicable diseases control
CDHS	Cambodia Demographic & Health Survey
CSO	Civil society organization
DBF	Department of Budget & Finance
DPHI	Department of Planning & Health Information
EPI	Expanded program of immunization
EVM	Effective vaccine management
HC	Health Center
HCMC	Health Center Management Committee
HEF	Health equity fund
HMIS	Health management information system
HSS	Health system strengthening
HSSP2	Second Health Sector Support Project
IAD	Internal Audit Department
IMCI	Integrated management of childhood illness
M&E	Monitoring and evaluation
MD	Medical doctor
MDG	Millennium Development Goal
MEF	Ministry of Economy & Finance
MOH	Ministry of Health
NGO	Non-government organization
NIP	National Immunization Program
NMCHC	National Maternal and Child Health Center
OD	Operational District
PHD	Provincial Health Department
RH	Referral Hospital
RMNCH	Reproductive, maternal, neonatal and child health
SOP	Standard operating procedure
THE	Total health expenditure
TWGH	Technical Working Group for Health
UHS	University of Health Sciences
UNFPA	United Nations Population Fund
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
VHSG	Village Health Support Group
VPD	Vaccine-preventable disease
WHO	World Health Organization

PART C– SITUATION ANALYSIS

5. Key Relevant Health and Health System Statistics

The following reports which present system-wide data are attached:

- Cambodia Demographic & Health Survey (CDHS) 2010 – Attachment 17.
- EPI Review 2010 – Attachment 12a.

Other attachments are referred to in relevant sections of this proposal.

The CDHS disaggregates data by sex and geographic location. It shows that overall, the number of children 12-23 months fully vaccinated (BCG, measles, DPT and polio) was 79%. This compares to 67% in 2005 and 40% in 2000. Child vaccination was lowest in the north-east provinces of Ratanakiri and Mondulkiri (28%) and highest in the north-west province of Banteay Meanchey (93%). Significant differences in coverage occur both between and within provinces.

Infant mortality was 45 per 1,000 live births in 2010, compared to 95 in 2000 and 66 in 2005. Infant mortality was highest in the north-east provinces of Stung Treng and Preah Vihear (95) and lowest in Phnom Penh (13). Under 5 mortality in 2010 was 54 per 1,000 live births, compared to 124 in 2000 and 83 in 2005. Under 5 mortality was highest in the north-east provinces of Stung Treng and Preah Vihear (118) and lowest in Phnom Penh (18). Again, significant differences in rates can be found both within and between provinces.

The maternal mortality ratio was 206 per 100,000 live births, down from 472 in 2005.

The HIS data shows immunization coverage by type of vaccine for 2013: 61% HepB <24hrs; 97% BCG; 80% OPV3; 95% DPT-HepB-Hib3; 92% M9; 66% M18. The last confirmed measles case was in November 2011.

Vaccines Currently Used by the Immunization Program

Vaccine	**Year of introduction**	**Comments** (including planned product switches, wastage etc.)
BCG	1986	
DTP1	1986	
DTP3	1986	
HepB3	2001	
Pol3/OPV3	1986	
MCV	1986	Switch to MR1 in 2015
HepB birth dose	2007	
Neonatal tetanus protection	2009	
Hib3 (as pentavalent)	2010	
MCV2	2012	Switch to MR2 in 2015
MR	2014	

Vaccines Planned for Future Use by the Immunization Program

Note: This section should include any future vaccines currently under consideration by the country and does not represent a commitment by the country to introduce the vaccines listed below.

Vaccine	**Month / Year of Introduction**	**Comments** (including planned product switches, wastage etc.)	**Plan for vaccine introduction taken into account in HSS application? If not, why not?** (Requirements for cold chain, human resources etc.)
PCV	January 2015		Yes
IPV	October 2015		Yes
JE	January 2016		Yes
HPV	April 2016		Yes

6. Description of the National Health Sector

Service delivery

The public health system is overseen by MOH and operates at 4 levels: national, provincial, district and commune. MOH supervises the work of 25 PHDs, 81 ODs, 1,088 health centers (HCs) and 86 health posts[3]. ODs can comprise more than one government administrative district. HCs serve an average of 10-12 villages, normally within one administrative commune. There are 94 referral hospitals (RHs) at district and provincial levels, classified into 3 categories depending on the level of service provided. There are also 8 national level hospitals. In the private sector, there were 1,795 licensed medical facilities in 2013, mostly small clinics, but including 8 private hospitals and 48 polyclinics. All private facilities that applied for registration were licensed by MOH.

In 2012, total health spending was USD52 per capita, of which 24% came from government spending, 15% from development partners and 61% from out-of-pocket spending[4]. All health facilities charge fees for service (except for exempted services such as immunization) and public health facilities must display a list of fees. At public facilities, Health Equity Funds (HEFs) are operated by NGOs or CSOs under contract to MOH and pay the service fees for poor households identified by the government's ID Poor scheme. In 2013, 68 hospitals and 516 HCs had HEFs[5]. The goal is to have universal HEF coverage by 2020. HEFs have led to a general increase in the use of health facilities, especially by the poor, allowing health staff to better monitor the immunization histories of children from those households.

MOH's Health Strategic Plan 2008-2015 (Attachment 8a) has service quality improvement as one of its 4 cross-cutting themes (along with accountability, efficiency and equity). Service quality is monitored through monthly integrated supervision visits that are implemented on a cascade basis: MOH to PHD, PHD to OD, OD to HCs. Supervision checklists used by health staff on these visits include a number of items focused on service quality. The Second Health Sector Support Project (HSSP2), led by the World Bank, implements quarterly integrated financial and technical audits which cover a number of service quality items. Feedback to MOH on these audits has been used to refine the MOH checklists on a rolling basis.

Immunization is managed by NIP and most vaccinations are done by staff at HC level. There is both fixed site and outreach immunization, but government policy as set out in the Health Strategic Plan is to work towards fixed site immunization. This is challenging as many communities are located at substantial distances from HCs, and access can be severely limited in many rural areas during the wet season. Outreach immunization is likely to remain an integral part of the system in the medium term. NIP also provides some vaccines to approved private sector facilities so they can provide immunizations, but all facilities must use the government registration card and provide data to NIP on a regular basis.

Workforce and human resources

At the end of 2013 there were 20,668 staff employed in the public health system[6]. These comprised 2,021 medical doctors (MDs) and 962 medical assistants, 5,534 secondary nurses and 3,387 primary nurses, 2,734 secondary midwives and 2,332 primary midwives, 529 pharmacists, 226 dentists, 460 laboratory technicians and 2,483 other staff. All health facilities now have at least one midwife. 389 staff left the system in 2013, but there were 1,325 new recruits. Another 452 staff took long-term leave without pay, mostly to work on projects in the sector.

The main pre-service training institutions for health staff in the public sector are the University of Health Sciences (UHS) in Phnom Penh, 3 regional training centers in Kampot, Kampong Cham and Stung Treng provinces, and the Institute for Health Science of the Royal Cambodian Armed Forces. UHS covers all specialties and had 239 MD graduates in 2013. It is the only institute that trains physiotherapists and radiologists. The 3 regional training centers train nurses and midwives (including a combined nursing/midwifery qualification) and laboratory assistants. In 2013 they had a combined total of 2,699 students (Kampong Cham 1,065; Kampot 873; Stung Treng 761). The army institute trains MDs, dentists, nurses, midwives and laboratory technicians and had a total of 2,087 students in 2013, including 400 reading for a MD degree. There are also 13 private tertiary institutions that are approved providers of health science degrees. Most of these are based in Phnom Penh but there are some in provincial centers. Most focus on training nurses, midwives and laboratory technicians, but International University, Puthisastra University and Norton University (all in Phnom Penh) teach MD and dental surgery courses as well as other specializations.

There is a Health Workforce Development Plan 2006-2015 and annual reports on progress against the plan, but it lacks a strategic logic and is weak on overall development of the sector. Annual training assessments and plans are prepared at PHD and national levels for inclusion in the AOPs. All prior staff salary supplement and incentive schemes for the sector ended in June 2012 after a government decree. The only exception is the midwifery incentive

[3] MOH (2014) *Health Sector Progress in 2013* DPHI, March.
[4] MOH (2013) *Annual Health Financing Report 2012* Department of Health Economics & Financing, DPHI, March (Attachment 20).
[5] Ibid.
[6] All figures in this paragraph are from MOH (2014) *Health Sector Progress in 2013* DPHI, March.

payment, which gives USD15 to each midwife who successfully has a mother deliver a live baby at a HC or RH. With support from HSSP2, a system of Special Operating Agencies (SOAs) was established using performance based contracts to allow health staff to retain a portion of user fee income if specific service targets were met. Currently 36 SOAs work on this basis, covering 31 referral hospitals and 387 HCs, but immunization targets are usually not included in the standard performance contracts. Expansion of the SOA system is uncertain due to concerns about the sustainability of financing.

Procurement and supply chain management
Procurement of vaccines is done through UNICEF, which purchases via the central United Nations procurement office based in Copenhagen. Vaccines imported into Cambodia are initially stored in the Central Medical Stores (CMS) in the capital, Phnom Penh, and distribution is managed by CMS on a quarterly basis through a network of provincial stores. CMS does not do any interim supply between the quarterly distributions, but if units in the provinces are running low on stocks, NIP can alert CMS and those units can come to CMS to get an interim supply.

Procurement of equipment is managed by NIP and is based on annual procurement plans from PHD level and quarterly requests. Procurement of general items is done through the HSSP2 Secretariat, while procurement of cold chain equipment is done by UNICEF. Although the HSSP2 Secretariat was set up to manage the finances and procurement for HSSP2, it is regularly used for other procurement by MOH units because its system is agreed between MOH and a group of donor partners, and conforms to the procurement guidelines of the World Bank. NIP manages the distribution of equipment and has a small amount of storage capacity at central level.

Health Management Information System (HMIS)
DPHI manages the HMIS and also trains staff at national, provincial and OD levels in data input, management and analysis. It has designated HMIS officers at each of these levels. MOH has published HMIS guidelines since 2007 and updates these regularly. Data input at HC level is in handwritten registers. The data from these is aggregated onto tally sheets, then sent to OD level in monthly reports. Minor errors are common and supervision visits check for consistency between the different forms. At OD level paper-based data from HC level is aggregated and entered into a computer database and a report sent to PHD level, from where aggregated provincial data is sent to MOH. DPHI is currently planning to extend computerized entry of data down to HC level to improve timeliness and accuracy of data, but the strategy to achieve that is still in draft form.

DPHI produces detailed statistical tables to help inform the Annual Operational Plan (AOP) process, and these are used to help set priorities for budget allocation each year, both by MOH and donor partners. Generally data analysis skills are weak at OD and PHD levels, and there is a focus on reporting data to national level rather than using data as a management tool. There are few linkages between the HMIS and databases held in other ministries, especially in terms of denominating population figures and integrating data from the ID Poor scheme.

DPHI has a data quality assessment (DQA) improvement plan (Attachment 22) which looks at strengthening data quality at lower levels and its use in AOP preparation, improving data analysis and its use in management, and introducing an electronic patient management record system.

The most recent EPI review (2010) is Attachment 12a.

Community and other local actors
Health Center Management Committees (HCMCs) are established at each HC and are supposed to meet monthly to oversee the work of HCs. They include community representatives and staff from Commune Councils. However, in practice their meetings are irregular. The National Committee for Decentralization and Deconcentration (in the Ministry of Interior), in cooperation with World Bank, will initiate a program from 2015 to introduce community scorecards for all local government services, including services at HCs and RHs, and will also aim to strengthen input from HCMCs. The program will use both annual and interim feedback workshops to hold government staff accountable for service quality.

A significant number of NGOs are involved in health promotion activities, training of health staff and village health volunteers, community mobilization for preventive health and nutrition promotion. USAID delivers all its health sector support through NGOs. Some NGOs are directly involved in service delivery, e.g. for eye care and provision of short- and long-term contraceptive methods. None deliver immunization services. There are no organized incentive schemes for community organizations, but many NGOs pay per diem costs and gratuities to participants in activities. USAID is seeking to get Commune Councils to fund the work of village health support groups (VHSGs) but this has met with little success to date.

NGOs have not been involved in demand generation activities specifically for immunization. This has been done in activities focused on maternal and child health, nutrition and reproductive health services more generally.

Legal, policy and regulatory environments

The principal guiding document for the sector is MOH's Health Strategic Plan 2008-2015 (Attachment 8a). This commits to provision of free immunization services. Goal 1 of the plan includes expansion of the immunization program, elimination of measles and tetanus, and the introduction of new vaccines. Under the reproductive, neonatal, maternal and child health (RMNCH) strategy of Goal 1, immunization should be integrated into the continuum of care for mothers and babies. Immunization is also included in Goal 2 – reducing the burden of communicable diseases – and one of the strategies under this goal includes health promotion and awareness raising about the importance of immunization.

There is a National Immunization Program Strategic Plan 2008-2015 (Attachment 11), and a National Policy on Immunization (Attachment 10) which was revised in 2012 and is currently undergoing a further revision. The MOH Outreach Management Guidelines were updated in 2013 by the Department of Preventive Medicine, and in 2014 NIP also prepared Implementation Guidelines for High Risk Communities (Attachment 19) to help increase immunization coverage for those groups. A new Immunization Law is currently being prepared for the National Assembly and is expected to be enacted in early 2015. It will include provisions for immunization coverage and the introduction of new vaccines.

Preparation of the new Health Strategic Plan and the new Immunization Strategic Plan, both to run for a five year period from 2016, will take place from late 2014.

At national level, the Technical Working Group for Health (TWGH) is the main forum for dialogue between government, donor partners and NGOs (represented by Medicam). It meets monthly and considers major documents and plans, approving them where this is in its mandate (its terms of reference are in Annex III of Attachment 13). The TWGH is mirrored at provincial level by provincial technical working groups where individual NGOs attend along with PHD and OD representatives. These meet every 1 to 3 months to monitor activity progress. At this level NGOs should submit annual plans for integration into the government's annual operational plans (AOPs), but compliance with this is very uneven. The AOP process works from OD level up from about July-August each year, culminating in a national workshop late in the year with MOH, donor partners and NGOs. This is linked to detailed planning meetings of 4 Task Forces in MOH to help finalize the national AOP (which operates on a calendar year). The 4 Task Forces are: RMNCH; Communicable Diseases; Non-communicable Diseases; and Health System Strengthening (HSS). A challenge for NIP is that it is assigned to the RMNCH Task Force, but its work cuts across two other Task Forces, making coordination of planning inputs more complex.

Health and community systems financing

MOH annual budgets are approved by government and funds are released by the Ministry of Economy & Finance (MEF), usually in January-February of the current financial year. MOH releases funds to its composite units and PHDs on the basis of the provincial AOPs, usually approved in December-January. The Department of Budget and Finance (DBF) in MOH manages the disbursement of these funds. MEF also releases funds directly to provincial governors for spending on health initiatives but MOH has no role in the allocation of these funds.

Funds for the current HSS grant from GAVI come into a designated bank account. At the outset of the grant period this account was managed by the HSSP2 Secretariat but in 2012 management of the funds was moved to DBF. Procurement remained the responsibility of the HSSP2 Secretariat. This arrangement has resulted in a number of delays in disbursement and the release of funds on the basis of specific activities rather than quarterly plans. During the joint appraisal mission in mid-2014 GAVI recommended that the arrangement be reconsidered. For this grant the financial management arrangement will revert to the HSSP2 Secretariat. Its financial guidelines and manual are agreed between MOH and the donor partners in HSSP2, which include the World Bank. It manages large sums of money (the HSSP2 budget is over USD125 million for five years) and is subject to quarterly external audits.

Main recipients of the current grant are NIP, DPHI, the Internal Audit Department (IAD), the CDC unit and the 25 PHDs. Recipient units currently submit annual and quarterly work plans to DBF. This process will be changed under the new grant so that both financial management and procurement become the responsibility of the HSSP2 Secretariat. It will release and acquit funds to implementing units on a quarterly basis, with funds to NIP and the 25 provinces going via a designated GAVI account in the National Maternal & Child Health Center (NMCHC), the administrative unit to which NIP belongs.

As set out in the 2013 Annual Progress Report to GAVI, total expenditure on immunization was USD14,238,141. Of this, 26.5% came from government, 67.3% from GAVI, 1.0% from UNICEF, 2.8% from WHO and 2.4% from GAVI-HSS. This proposal will increase the proportion of funding from GAVI-HSS.

7. National Health Strategy and Joint Assessment of National Health Strategy (JANS)

Health Strategic Plan 2008-2015 (Attachment 8a)
This document, prepared by MOH in 2008, outlines the overall strategy for the health sector and focuses on issues of accountability, efficiency, quality and equity. The strategy is guided by the Millennium Development Goals (MDGs) set for 2015. The document does not set targets beyond 2015. Service delivery goals are set out in 3 areas: RMNCH, communicable diseases and non-communicable diseases. The service delivery goals are underpinned by strengthening of health system management and improvement in the quality and use of data.

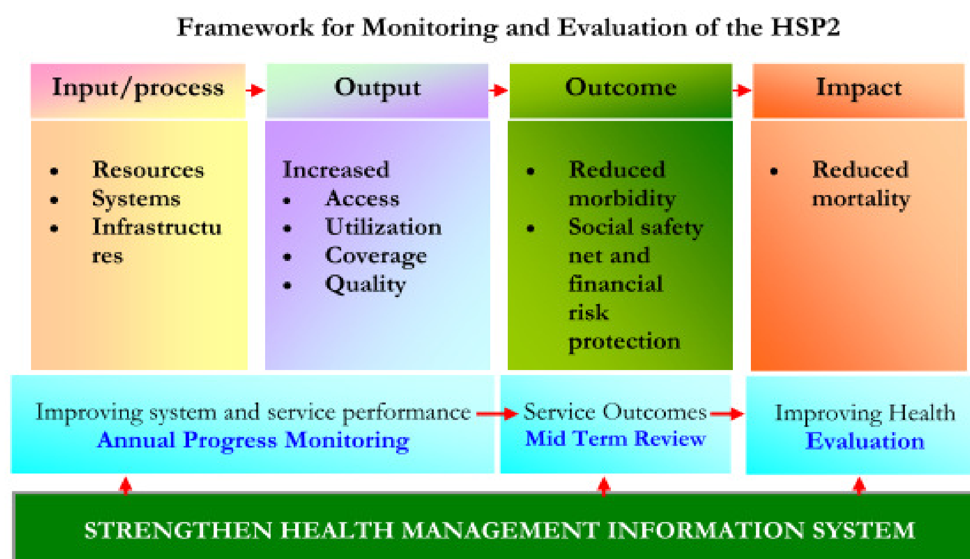
Under Goal 1 (RMNCH), the plan commits to 'integrated postnatal care of mothers and newborns, immunization including measles and tetanus elimination, and introduction of new vaccines' (Table 9, p.20; also p.51). Increased EPI coverage is an indicator for Goal 1 (p. 22). The plan also commits to provision of free immunization (p.52). Under Goal 2 (communicable diseases control), the plan supports the involvement of local authorities (Commune and District Councils) and communities in health promotion, including raising awareness of, and knowledge about, immunization (p. 58).

National Immunization Program Strategic Plan 2008-2015 (Attachment 11)
This document elaborates how the goals in the broader Health Strategic Plan will be put into effect by NIP. It provides a summary of major barriers to universal coverage of immunization (pp. 5-8). The goals and objectives of the program are set out on pp.25-26 and cover areas of service delivery, surveillance and disease control, logistics, communications and training, and health system and program management. Specific strategies in each of these areas are set out on pp. 27-31.

Joint Assessment of the National Health Strategy
No joint assessment has been conducted in Cambodia.

8. Monitoring and Evaluation Plan for the National Health Plan

Health Strategic Plan 2008-2015 (Attachment 8a)
The overall monitoring and evaluation (M&E) framework for the current strategic plan is summarized in the following diagram:



The framework includes input, output, outcome and impact indicators. Chapter 6 of the strategic plan details how the system will work and provides for annual reviews and a mid-term review of the strategic plan (undertaken in 2011), Core indicators are set out on pp.80-81. DPHI manages the M&E system and the HMIS. It conducts regular supervision visits to monitor data quality and trains designated staff in data entry. At HC level data is entered, collated and reported using a paper-based system. Aggregated data is entered into DPHI's software at OD level. DPHI is preparing a strategy for computerization of data entry down to HC level.

DPHI produces data reports on all key indicators, including immunization, for use in the joint annual review workshop late in the calendar year where MOH, donor partners and NGO representatives analyze the data in order to set priorities for the coming year. Results of this workshop, and more detailed planning by 4 task forces in MOH, feed

into the AOP. Much, though not all, of the data is disaggregated by location, sex and age, but there is no disaggregation by wealth quintiles (this is captured in the CDHS) or ethnicity. Disaggregation is strongest in the indicators for RMNCH.

National Immunization Program Strategic Plan 2008-2015 (Attachment 11)
The monitoring and evaluation section (pp. 32-33) provides a summary of baseline indicators, and sets immunization targets to be met by 2015. No targets are included beyond that date. Annual and mid-term program reviews monitor progress against these indicators, and results feed into the planning process for MOH's Annual Operational Plan.

Data quality assessments (DQAs)
These are conducted by DPHI on the basis of spot checks. DPHI has a Data Quality Improvement Plan (Attachment 22) which covers the following four key areas:

- improving the quality of health information, strengthening HMIS supervision and feedback with a focus on performance standards;
- enhancing HMIS funding, coordination and resources, and including this in the new health sector strategic plan (from 2016) and health sector AOPs;
- increasing data sharing, management, analysis, dissemination and use of data for management, and continuation of the process of simplifying forms and software; and
- improving the patient medical record system in public and private health facilities and moving this to a computer-based system.

A progress report on the Plan based on 2013 activities was published in January 2014 (Attachment 23).

An independent evaluation of data quality was undertaken by WHO in 2012 and the results were generally positive (Attachment 24). Independent assessments of data quality will take place in Activity 5.13 of this proposal.

9. Health System Bottlenecks to Achieving Immunization Outcomes

20% of children remain unvaccinated
Despite strong progress in vaccination coverage as evidenced in the Cambodian Demographic and Health Surveys (CDHS) in 2000, 2005 and 2010, the latest CDHS found that about 20% of children were not vaccinated. In response, NIP undertook an analysis of these children and identified 1,832 'high-risk communities'. These have been entered into a database and a strategy developed for getting them immunized. The high-risk groups fall into 4 categories: mobile workers and their families; ethnic minorities with different languages and belief systems from the Khmer majority; the urban poor and poor households within settled communities; and unofficial or remote settlements that are not recognized or recorded by local administrations.

There is an urgent need to extend immunization to these groups. NIP has developed Implementation Guidelines for High Risk Communities (Attachment 19) and a database to track progress on extending immunization (Attachment 26). Communities with <80% immunization coverage are categorized as high risk and the Guidelines set out a 5-step process for HC, OD and PHD staff to target these groups and provide catch-up or full immunization. Outcome monitoring is done at the measles 18-month vaccination when vaccination registration cards are checked.

Objective 1 of this application focuses on support to closing this gap among high-risk communities.

The cold chain is undermined by non-functioning equipment and gaps in capacity to accept new vaccines
A recent assessment of cold chain capacity in Cambodia conducted by WHO indicates that when current vaccines are supplemented by those planned for the next 2-3 years, capacity at the Central Medical Stores (CMS) will be exceeded[7]. Activities under Objective 2 will address this with the construction of new cold rooms and the replacement of an existing cold room.

NIP maintains a detailed database of cold chain equipment nationwide, disaggregated by facility, equipment make and model, purchase date and type of electricity supply (Attachment 27). The database includes an inventory of spare parts. The database shows that a about two-thirds of equipment is now over ten years old and other equipment is not functional due to wear and tear. This undermines the integrity of the cold chain and puts potentially millions of dollars' worth of vaccines at risk.

Community awareness of the importance of immunization remains low

[7] Details are outlined in the Plan of Action Cambodia Japanese Encephalitis Campaign to be submitted to GAVI in Q4 of 2014.

The 2010 CDHS (Section 2.2, pp. 11-13) shows that 21% of all women and 11% of all men have had no formal education. The proportion rises significantly for those aged over forty-five. 48% of women and 46% of men have had some primary education but did not complete primary school. There are substantial differences in education figures by geographic location. Formal education levels are much lower in remote provinces and rural areas. The overall literacy rates are 70% for women and 83% for men. Again, literacy tends to be higher among younger cohorts, while those in more remote rural locations and poorer households tend to have much lower literacy levels (CDHS 2010, pp. 40-44). This presents a challenge for raising community awareness about immunization, especially among poor households and high-risk communities. Low literacy means that campaigns have to rely more strongly on face-to-face communications and repeated outreach visits to instill key messages. The role of village health support groups (VHSG) is important here, as written materials can be left with VHSG who then use them to communicate oral messages to target groups.

It is important that materials and communication methods use simple graphics and rely more strongly on oral messages. However, there is a need to improve the appeal and effectiveness of communication methods. Mass media communications through television and radio, which have extensive geographic coverage, are popular, but do not cover 'media dark' areas of the country. Mobile phone penetration is increasing rapidly, including in rural areas, and some donor partners are piloting outreach strategies using this technology.

Low education and literacy levels provide fertile ground for rumors and misinformation about health practices generally and immunization in particular. NIP needs to improve its capacity to respond to community concerns about unusual events such as disease outbreaks, adverse events following immunization and rumors about the safety of vaccines.

There is insufficient capacity to manage the surveillance system
NIP has experience with both sentinel and routine surveillance systems, but most of the technical advisory and management support on this aspect of the program comes from WHO. While NIP has the capacity to manage the distribution and collection of surveillance forms at field level, skills to aggregate and analyze the data, and to allocate resources on the basis of that analysis, remain weak. There is a need to improve the technical and management skills of staff at all levels in order to reduce the reliance on WHO inputs in the longer term and to make the surveillance system more sustainable. The ability of NIP to be an active partner with WHO in the broader regional surveillance structure would be improved if sustainability of the system were greater.

Program management skills need strengthening
The Joint Appraisal conducted in 2014 (Attachment 18, p.4) noted some challenges in program management: limited capacity for planning and use of data; insufficient staff and resources for outreach services, including identification of hard to reach communities; and no engagement with civil society organizations. Also, the current HSS grant is implemented by a number of units in MOH apart from NIP and there has been limited coordination between them.

There is a need to improve management skills, and to improve the use of routine and surveillance data to inform management and planning, particularly the allocation of human and material resources. Outreach immunization will remain an important part of the EPI for the foreseeable future so it is important that this is managed well. This applies particularly to the strategy to reach high-risk communities which must be implemented effectively if national immunization targets are to be reached.

Coordination with other units in MOH could be improved by regular meetings between NIP, DPHI, IAD and the HSSP2 Secretariat in order to review management issues, including financial flows and procurement, and monitor progress against implementation and disbursement targets.

10. Lessons Learned and Past Experience

Objective	Lessons learned, highlighting both successes and challenges; include any lessons learned from grant implementation
Objective 1: Increase immunization coverage in high risk communities	The EPI Review 2010 (Attachment 12a) noted that immunization among certain groups was low, though overall the system had shown great success (pp. 1-2). The groups with low immunization rates included remote villages, mobile populations, the urban poor and the very poor in settled rural villages (pp. 8-9). These groups are both hard to reach and averse to using fixed site health facilities because of distance and road conditions in rural areas. This problem was noted in the Joint Appraisal in June 2014 (Attachment 18). A strategy to reach high-risk groups and increase the immunization rates (Attachment 19) was developed by NIP and was

	independently evaluated in 2012 (Attachment 29). A further evaluation will be undertaken in 2015. The 2012 evaluation showed that intensive targeting of high-risk communities was effective in increasing vaccination coverage, but also required significant increases in resourcing. It also showed the need for close follow-up and community awareness raising by VHSG. The most recent update of the strategy to reach high-risk communities sets out five steps to target high-risk communities: update the list of high-risk communities on the basis of immunization figures so that resources are targeted appropriately; develop local micro plans for immunization visits and outreach work, linking OD and HC staff, and VHSG based at community level; preparation of budgets that include cold chain support and payments for VHSG involvement; conducting outreach visits to check immunization records, give vaccinations and support VHSG in community education; and monitoring of the progress of micro plans through targeted supervision visits and checking of immunization records. VHSG visits to households and outreach visits by health staff will also provide an opportunity to refer patients to other health services, especially in the areas of maternal and child health and reproductive health. This will be strengthened by MOH moves from 2015 to more closely link the work of the various health volunteers working at village level (VHSG, Village Malaria Workers, Tuberculosis Watchers, and Community Carers for People Living with HIV). This Objective will support implementation of that strategy in the remaining high-risk communities with the goal of progressively reducing the number of high-risk communities and moving them into the routine immunization program.
Objective 2: Strengthen cold chain system through improved equipment and management	The Joint Appraisal in June 2014 (Attachment 18) noted that a cold chain assessment had been done in 2012, and an EVM assessment in the same year (p. 3). Two issues were highlighted: insufficient equipment to maintain the cold chain due to old equipment no longer being functional, and limited capacity for storage of vaccines given plans for new vaccine introduction over the next few years. Some funding for replacement of refrigerators was requested in the new vaccine request for PCV and IPV (ibid.) but funding under this Objective will ensure that both equipment and capacity are sufficient to maintain the cold chain beyond the period of this grant proposal. A major challenge is insufficient government funding for maintenance and repair of equipment. NIP has only one technician for equipment maintenance and he must service facilities nationwide. AOPs at both provincial and national level continue to allocate little or no budget for maintenance. This Objective includes funding support for maintenance and repair, but in management training NIP will work towards finding a viable strategy for including maintenance and repairs in national and provincial budget allocations during the AOP preparations.
Objective 3: Increase community awareness of, and demand for, immunization	The CDHS 2010 (Attachment 17, Section 2.2, pp. 11-13) details the problem of low formal education levels and low literacy levels in Cambodia, especially in rural areas and among women. NIP's approach to raising community awareness and knowledge has relied strongly on written leaflets and posters (and this is true for most community awareness raising done through the public health system). However, these materials appear to have little effect where literacy is low. No research has been conducted on how to address this issue, so this Objective includes an activity that will research the effectiveness of current methods for raising awareness and knowledge about immunization, especially in high-risk communities, and recommend new strategies that can be tested and rolled out. A number of subsequent activities will be guided by the results of this research. Mobile phone penetration in Cambodia is high: BBC Media Action estimates ownership at over 60% of the population, and a higher coverage than traditional mass media. Health staff at HC level and VHSG generally have a mobile phone. Two banks, Acleda and ANZ Royal, operate successful mobile-phone based systems for sending remittances, mainly from urban centers to rural locations. Oxfam GB and USAID are testing key-based recorded messages (for information) and text alerts (for clinical appointments) to access hard-to-reach groups, usually via village level volunteers. This Objective includes a pilot testing of this approach so that VHSG can alert mothers about immunization schedules, especially for mobile and high-risk groups. Kits to support community education by VHSG will be produced, and regular meetings with OD and HC staff and VHSG will ensure lessons are used to improve the quality of outreach, both in high-risk and other communities.

Objective 4: Strengthen the surveillance of vaccine-preventable diseases (VPDs)	A surveillance system is in place, and the Joint Appraisal in June 2014 noted its success in helping to eradicate polio (Attachment 18, p. 4). However, much of the technical expertise to plan, manage and implement the surveillance system comes from WHO staff and NIP capacity to operate the system sustainably remains weak. This Objective therefore focuses on capacity building and the introduction of some simple tools to help improve management and resource allocation in the surveillance system.
Objective 5: Strengthen management capacity to support EPI	Low staff salaries, insufficient funding for outreach and staff retention are problems across MOH and affect NIP in particular, given its focus on outreach work to achieve high immunization coverage. GAVI under the current HSS grant provides extra funding for staff to try and address the salary and staff retention issues, and this will continue under the current proposal. However, a long term sustainable solution to these problems will require commitment from government to better health sector financing and resource allocation, and the TWGH has agreed to a joint review by MOH and donor partners of the role of incentive payments for health staff. This Objective also includes various training to improve staff capacity at NIP, particularly in areas such as planning, budgeting, data analysis and use of data in planning and resource allocation. NIP remains reliant on technical inputs from partners such as WHO and UNICEF to manage the system and this Objective will focus on greater sustainability by improving NIP staff skills in some key areas. Improving the quality of routine supervision is vital in order to reduce the risk of communities falling into the high-risk category. Other activities support national surveys of EPI coverage and data quality, and data and financial audits. These activities are necessary to provide an overall picture of the system and how well it is working, and to improve the quality of evidence available to policy makers and planners.

PART D - PROPOSAL DETAILS

11. Objectives of the Proposal

The current Health Sector Strategic Plan 2008-2015 (Attachment 8a) and National Immunization Strategic Plan 2008-2015 (Attachment 10) both expire at the end of 2015. They will be replaced by new strategic plans covering a 5-year period from 2016. These documents will include new targets to 2020. Preparation of the new documents will begin from the end of 2014. The issues covered in the following objectives will be fed into the preparation workshops for the new sector plan and the objectives will be reflected in more detail in the new national immunization strategic plan.

Objective 1: Increase immunization coverage in high risk communities
Increased EPI coverage is an indicator under Goal 1 in the Health Sector Strategic Plan 2008-2015 (Attachment 8a, p. 22). Generally immunization coverage has been high but there has been a persistent problem of reaching mothers and children in high-risk communities, meaning that about 20% of children remain unvaccinated (Joint Appraisal 2014, Attachment 18, pp. 1-2). NIP has developed a strategy to target these communities and to increase immunization rates (Attachment 19) but reaching them is expensive in comparison with routine immunization outreach and there are insufficient government funds to ensure that the gap in coverage is closed, and that high-risk communities can be progressively covered by the routine program. This Objective will support coverage of immunization in high-risk communities and track their progression into the routine program. A specific database of high-risk communities (current number 1,832 – Attachment 26) has been developed to allow targeted monitoring, and NIP has prepared and updated guidelines for targeting these communities, using a 5-step process that relies on local micro plans linking the work of OD and HC staff, and VHSG at community level (see section 10 above for details of the five steps). An independent evaluation of the strategy to reach high-risk groups was conduced in 2012 (Attachment 29) and found that the strategy was effective, but resource intensive and reliant on sound follow up by VHSG and HC staff in supervision visits. Lessons learned from implementing immunization in these communities are fed into revisions of the guidelines for targeting high-risk groups, with the most recent revision being done in May 2014. Given that high-risk communities are generally poor, in isolated areas, and with limited access to health services, this Objective will help to redress the obstacles of remoteness and poverty, and by targeting women and children in particular will help to improve gender equity in terms of access to services. Many of the communities in remote areas are comprised of ethnic minorities and this Objective will improve their access to immunization as well as other health services. Immunization will be undertaken by health staff from HC level, supervised by specialist EPI staff from OD and PHD levels. Identification of children and women requiring immunization, awareness raising in communities and encouraging compliance with immunization schedules will be done by VHSG at community level in cooperation with health staff. These visits will also allow health staff and VHSG to advise communities on services available at HCs and health posts, encourage women in particular to attend antenatal and postnatal visits, and to get information on reproductive health and modern family planning. They will also allow health staff to identify community members who should be referred for examination at HC level or higher. Information from the outreach visits and supervision visits will be used to improve the guidelines and the effectiveness of the strategy for targeting high-risk communities.

Objective 2: Strengthen cold chain system through improved equipment and management
As noted in the Joint Appraisal 2014 (Attachment 18, p. 3), an analysis of cold chain gaps was conducted by a UNICEF consultant in 2014 and the findings presented to the joint appraisal team. Various items of equipment were found to be out of date and in need of replacement, especially refrigerators (see Attachment 27 – facilities serving high-risk locations are highlighted in yellow in this Attachment). Cold room capacity at central level also needed extension given the introduction of new vaccines over the next four years. This was signaled in new vaccine proposals to GAVI and the cold rooms will be funded under this proposal. Insufficient resources for repair and maintenance of equipment was noted as a constraint in the Joint Appraisal (ibid.) and there have been minimal allocations for this in AOPs at both central and provincial levels. There is little medium term prospect for increased allocations, but UNICEF, in conjunction with NIP, will conduct a study to recommend how to put the repair and maintenance system on a more sustainable footing. The study will be funded by UNICEF. This Objective addresses both the gaps identified in the cold chain and also ensures that sufficient resources are available for maintenance and repair. Activities will also ensure that both cold chain and EVM assessments take place. By strengthening the cold chain nationwide, including in facilities serving high-risk communities, this Objective will address inequities based on geographic location and minimize the risk of losing a large volume of expensive vaccines.

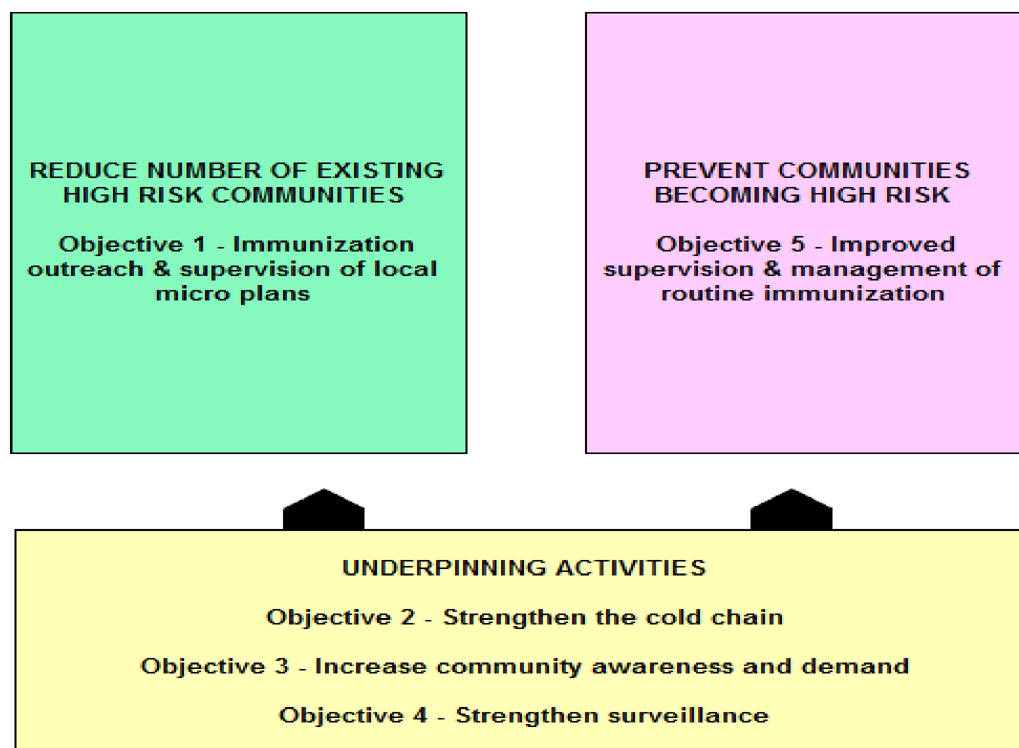
Objective 3: Increase community awareness of, and demand for, immunization
As detailed in sections 9 and 10 above, increasing community knowledge and awareness about immunization faces a significant challenge because of low literacy and formal education levels in rural areas, especially among women. This is a particular problem in the high-risk communities targeted under Objective 1. NIP has relied to a large degree on written materials to spread messages, but new approaches are needed if groups with low education and literacy

levels are to be better covered by immunization services and encouraged to maintain visit schedules for vaccination of mothers and children. While local and international NGOs often work to promote awareness and knowledge about maternal and child health, including essential vaccinations, it is not known how many of them work in the high-risk communities or the degree to which they focus on EPI issues. This Objective will analyze weaknesses in the current approaches and test some innovative methods for targeting difficult to reach groups so that the approaches can be scaled up nationally. Television and radio spots, and flip charts that will help health staff in face-to-face counseling on immunization, will also be produced. New approaches that demonstrate success will be rolled out, mainly to target high-risk communities in the first instance, but more generally as resources allow. In collaboration with NIP, UNICEF will be undertaking a mapping and assessment exercise to look at NGO involvement in high-risk locations and the findings from this will be used to trial and roll out successful collaborations between NIP and NGOs. The mapping activity will be funded by UNICEF. VHSG will play a key role in community awareness raising and education, and promoting demand for immunization among households. This Objective will have a strong focus on women and children, and explore ways to overcome the challenges faced by women in accessing and understanding immunization services. Given that many of these women are located in poor and remote rural locations, the Objective will also address geographic inequities. Many remote communities have a large proportion of ethnic minority households and some of the research will look at how best to reach them.

Objective 4: Strengthen the surveillance of vaccine-preventable diseases (VPDs)
The surveillance system works well, and uses both routine and sentinel surveillance. However, the system is heavily reliant on technical expertise and management advice from WHO staff. That is not sustainable in the longer term and NIP needs to take a more active role in management of the system, analysis of data and initiation of responses to outbreaks where these are needed. The focus of this Objective is to enhance the sustainability and local management of the surveillance system, including developing more efficient links between local, provincial and national levels so that data analyzed at national level is timely and complete. Activities will focus on training, review meetings and the adoption of user-friendly management tools in order to achieve greater sustainability of the system. By strengthening surveillance nationwide, this Objective will address geographic inequalities in the provision of immunization resources.

Objective 5: Strengthen management capacity to support EPI
The Joint Appraisal in June 2014 (Attachment 18, p. 4) noted some management weaknesses in delivery of the immunization program. These included limited capacity for planning and use of data, limited joint supervision due to a lack of staff and other resources for outreach services, and limited coordination across the various departments using the current GAVI HSS grant funds. This Objective will focus on improving data analysis and management skills, as well as improving data quality and timeliness. More resources are included to allow supervision visits that focus on the routine immunization program specifically, given that attempts at integrated supervision with other programs in MOH has often left immunization as a low priority. It is important to improve the quality of routine supervision in order to minimize the risk of communities falling into the high-risk category. There will be fewer units in MOH implementing this proposed grant and NIP will address coordination by hosting quarterly meetings with DPHI, IAD, NMCHC and the HSSP2 Secretariat in order to monitor any management issues and progress in activity planning and budget disbursement. They will also discuss proposed action plans each year to feed into the AOP process at both national and provincial levels, and produce an integrated work plan for implementation of the grant activities each year. Management training will include gender issues and analysis of how to target vulnerable groups more effectively in order to close the immunization gap apparent in many rural areas, and especially in the identified high-risk communities.

The overall logic of the approach in this proposal is summarized in the following diagram:



A key element is implementing the guidelines for targeting high-risk communities (Objective 1). This will increase immunization coverage and allow those communities to be gradually absorbed into the routine immunization program. At the same time, the quality of management and supervision of the routine program (Objective 5) will need to be improved in order to complement the first element by ensuring that communities do not lapse into the high-risk group once they are part of the routine program. These two complementary efforts will be supported by three systemic elements: strengthening the cold chain (Objective 2), improving community knowledge and awareness about immunization to stimulate demand (Objective 3), and better surveillance of vaccine-preventable diseases (Objective 4), allowing quick responses to outbreaks and more efficient allocation of resources.

12. Description of Activities

Objective / Activity	Explanation of link to improving immunization outcomes
Objective 1: Increase immunization coverage in high risk communities	This Objective supports grant categories 1.4, 1.6 and 4.4 in the GAVI guidelines. About 20% of children remain unvaccinated. This was noted as a priority issue in the Joint Appraisal with GAVI in June 2014. Activities under this Objective will close the gap and maximize the coverage of high-risk communities.
Activity 1.1: Conduct quarterly outreach visits to high-risk communities to conduct immunization	In this activity, HC staff will visit high-risk communities to give vaccinations to mothers and children. They will work in cooperation with VHSG to identify those requiring immunization and check that immunization cards are up to date. These visits will be done in line with local micro plans that have been prepared according to the guidelines for targeting high-risk communities. This activity will have a direct output of increasing coverage, but will also ensure that over time these communities can move into the routine immunization program.
Activity 1.2: Support VHSG to get data on numbers of women and children in high-risk	This activity will ensure that the database of high-risk communities contains up to date and accurate information. This will help efficient allocation of resources for immunization

communities not vaccinated and report quarterly to HCs	to ensure the locations in greatest need are given priority. The data will also be used by HC staff and VHSG to update local micro plans. VHSG will visit households and promote the importance of vaccinations for mothers and small children, inform household members about the timing of vaccination outreach visits and encourage relevant household members to attend those visits. VHSG will also inform households about other services that can be accessed at HCs and health posts, particularly in the areas of maternal and child health, and reproductive health and family planning.
Activity 1.3: Purchase motorbikes and helmets for HC staff serving high-risk communities to allow outreach visits	This activity will provide the means for staff to conduct outreach to increase immunization coverage. There are currently 1,832 high-risk communities, served by 382 HCs.
Activity 1.4: Prepare and distribute immunization packages to high-risk communities	These packages will include education materials, vaccination schedules and surveillance forms, and will be used by VHSG in their awareness raising activities at community level and to provide accurate information to households about vaccinations and why they are important. The materials will also assist timely data collection on vaccination coverage.
Activity 1.5: Conduct quarterly meetings between VHSG and HC staff	The meetings will be used to identify key problems at community level in getting high-risk households to take up immunization and attend immunization outreach visits, and how these obstacles might be addressed. The meetings will also allow VHSG to update data on high-risk communities and immunization coverage. Information from the meetings will be used by HC staff and VHSG to update local micro plans, and to suggest any improvements to the current guidelines for reaching high-risk communities. The outputs will be lessons to improve the guidelines for reaching high-risk communities, updated local micro plans, and better quality data.
Activity 1.6: Produce and distribute leaflets to increase awareness of the need for immunization in high-risk communities	Leaflets will go to both HC staff and VHSG. The information will improve the knowledge of HC staff and VHSG on how to reach high-risk groups, develop local micro-plans, increase community use of HCs, and improve access to routine immunization services.
Activity 1.7: Support quarterly supervision visits to high-risk communities	PHD staff will visit a sample of ODs, and ODs will visit all HCs, with NIP staff in some cases. Staff will monitor the strategy to increase immunization coverage in high-risk communities, assess the impact of VHSG work, and assess how well the high-risk strategy is working in practice. They will check local micro-plans and how well these have been implemented, and assess the reasons for any slow progress. Lessons from supervision visits will be used to refine the guidelines for reaching high-risk groups. This Activity will complement the supervision of the routine immunization program in Activity 5.6.
Activity 1.8: Conduct quarterly workshops to review immunization coverage in high-risk communities	These will be held in Year 1 and Year 2 at central level to review the strategy's success and to decide on any changes required.
Objective 2: Strengthen cold chain system through improved equipment and management	This Objective supports grant categories 3.2, 3.3, 3.4 and 3.5 in the GAVI guidelines. Activities under this Objective will directly address gaps in the cold chain and strengthen cold chain management, ensuring that resources are available for the immunization program in all geographic locations.
Activity 2.1: Replace one existing cold room and build 3 new cold rooms at the CMS	This will resolve storage constraints to cope with routine stocks and anticipated new vaccines over the next four years, including the 2016 JE campaign.
Activity 2.2: Purchase spare parts for, and fund maintenance of all cold rooms at CMS	This will address the problem of insufficient allocations for maintenance and repair in AOPs.
Activity 2.3: Purchase refrigerators for use at HCs	This will replace refrigerators >10 years old and those that cannot be repaired, to ensure vaccines remain available in all locations. All facilities that serve high-risk communities will receive updated equipment where their existing equipment is

	out of date or in disrepair. These facilities are highlighted in yellow in Attachment 27.
Activity 2.4: Purchase power stabilization units for refrigerators using electric mains power	This was to address the problem of power surges in many rural locations. However, refrigerators with built-in surge protection can be procured in Activity 2.3 so this activity has been shown as a zero cost in the budget.
Activity 2.5: Purchase cold boxes for use at HCs	This will support immunization outreach activities by HC staff in all locations.
Activity 2.6: Purchase vaccine carriers for use at HCs	This will support immunization outreach activities by HC staff in all locations.
Activity 2.7: Purchase temperature monitoring devices (fridge tags) for refrigerators	A pilot has been conducted in 2 provinces. This will scale up the initiative so that refrigerators can be monitored more effectively, reducing the loss of vaccines.
Activity 2.8: Purchase spare parts for, and pay for maintenance of, refrigerators	This will address the problem of insufficient current allocations for maintenance and repair in AOPs. Funds in part will allow PHD and OD managers to engage maintenance contractors on a casual basis to address urgent problems, thereby reducing the demand on the single technician at central level. As noted in Section 11 when discussing Objective 2, this activity will be complemented by a collaborative study between UNICEF and NIP to look at a sustainable strategy for resourcing repairs and maintenance.
Activity 2.9: Print and distribute standard operating procedures (SOPs) for cold chain management	The SOPs are being finalized by NIP. This will ensure all units have them to strengthen the integrity of the system.
Activity 2.10: Conduct EVM assessments in 2015 and 2018	Two assessments are due during the period covered by this grant application. Support from GAVI will be supplemented by technical support from WHO and UNICEF.
Activity 2.11: Conduct annual cold chain assessments	This will ensure that issues and gaps in cold chain management are identified and can be addressed by management on a more regular basis than the EVM assessments. WHO will provide technical support.
Activity 2.12: Conduct annual cold chain management meetings	These meetings will include staff responsible for cold chain management from both central and provincial levels. They will review the results of Activity 2.11 and recommend items for inclusion in work plans for the coming year.
Objective 3: Increase community awareness of, and demand for, immunization	This Objective supports grant category 5.1 in the GAVI guidelines. Activities will increase knowledge and awareness among women and men, especially in high-risk communities, of the importance of immunization and adhering to schedules, and thereby increase demand for, and use of, immunization services.
Activity 3.1: Produce mass media information spots on TV and radio	These will target high-risk communities and groups with low literacy to provide oral and graphic information about immunization for women and children and the availability of services, in order to increase demand and coverage. In year 4 extra mass media spots will be produced to publicize the introduction of new vaccines.
Activity 3.2: Conduct external evaluation of the effectiveness of the existing communications strategy	Current methods are heavily reliant on written materials. This will review the effectiveness of current approaches and recommend new strategies to target key groups. In Y1, UNICEF will work with NIP to conduct a mapping and assessment exercise of NGOs working in high-risk communities. This assessment will indicate opportunities for collaboration at community level and areas where linkages between NGOs and VHSG can be strengthened.
Activity 3.3: Conduct pilot study for sending text messages via mobile phones to mothers about vaccination schedules	This will test methods to increase compliance with immunization schedules using mobile phone alerts to HC staff and VHSG. The trial will be undertaken at the same time as a malaria program trial of computer tablets for information gathering by Village Malaria Volunteers, and NIP will assess the relative merits of the two approaches in order to identify

	ways that compliance with immunization regimens can be improved.
Activity 3.4: Update and disseminate IEC materials	A large proportion of the contents of this Activity will depend on the outcomes of Activities 3.2 and 3.3, and focus on scaling up methods that demonstrate success in increasing use of immunization services. Details of activities will be provided in annual work plans and budget has been increased to allow flexibility in implementing this Activity. The focus will be on improving the capacity of VHSG to spread information messages and to increase community demand for vaccinations, but will also look at NGO involvement where they are targeting high-risk communities. Common strategies that are proven to be effective will be scaled up nationally as resources allow.
Activity 3.5: Conduct annual training workshops at OD level for 2 staff from each HC on promotion of immunization awareness	This will increase the capacity of health staff to improve face-to-face communications with local communities in order to raise awareness, publicize services, and increase the use of services. It will also allow HC staff to provide more expert guidance to VHSG and NGOs at community level on awareness raising and demand promotion.
Activity 3.6: Support media/public relations training for 2 NIP staff to manage responses to unusual events, e.g. disease outbreaks, AEFI, rumors about vaccines	NIP currently has no capacity to respond to public rumors, incorrect information or public concern about adverse events or disease outbreaks. This will build that capacity in order to maintain public confidence in the immunization program and to ensure that use of immunization services is not adversely affected.
Activity 3.7: Plan and manage annual Immunization Week	This event increases awareness about immunization and the services provided by health facilities more generally. Technical support and some promotion materials will be provided by WHO, and some government funding will also contribute to staging this event. At community level VHSG and NGOs will be encouraged to participate in events.
Activity 3.8: Design, produce and distribute immunization flip charts to HCs and RHs	This will ensure that all HCs have a simple but attractive tool to supplement face-to-face advice to mothers about the importance of immunization and keeping to immunization schedules.
Objective 4: Strengthen the surveillance of vaccine-preventable diseases	This Objective supports grant category 4.4 in the GAVI guidelines. It will strengthen the sustainability of the surveillance system in order to improve resource allocation and the effectiveness of responses to outbreaks.
Activity 4.1: Conduct 3 regional trainings for PHD and OD staff on surveillance methods	This will improve the knowledge of provincial and OD staff on surveillance methods and build capacity to manage local surveillance activities. There will be 3 trainings over 5 years.
Activity 4.2: Conduct 3 trainings at OD level for HC staff on surveillance methods	This will improve the ability of health staff to carry out surveillance activities and improve the quality of data. Referral hospitals and private sector staff at local level will be included in the training. There will be 3 trainings over 5 years.
Activity 4.3: Print and distribute posters to promote awareness of symptoms of VPDs and increase reporting of suspected cases	The master copy of this poster already exists, so the Activity will focus on printing and distributing sufficient copies to ensure coverage of all locations, including facilities serving high-risk communities. The output will be increased awareness of the symptoms of VPDs and thereby the reporting of diseases to VHSG and health staff.
Activity 4.4: Hold six-monthly meetings for core surveillance staff from PHD level	These will include surveillance staff from each province and be held at central level to provide monitoring of the integrity of the system and to address any issues in implementation.
Activity 4.5: Hold six-monthly meetings for core surveillance staff from OD and HC levels	These will be held at provincial level and focus more on ensuring the quality of surveillance activities and the accuracy of data being generated.
Activity 4.6: Develop surveillance maps for use by OD and PHD levels	This will provide managers with a simple graphic tool to track implementation and to identify locations not submitting data. The tool will be used to help allocate resources more efficiently.

Objective 5: Strengthen management capacity to support EPI	This Objective supports grant categories 2.2, 2.3, 6.2 and 9.1 in the GAVI guidelines and will address identified weaknesses in management capacity to ensure that the system functions more efficiently and that data is used as a management and planning tool to increase evidence-based resource allocation.
Activity 5.1: Hold annual EPI management meetings at PHD level	These meetings will review overall management, budget and resource allocation and recommend activities for the AOP.
Activity 5.2: Hold annual management review workshop	This meeting at national level includes 2 management staff from each province and OD chiefs. It reviews results of Activity 5.1 and prepares evidence for the AOP.
Activity 5.3: Conduct annual training in EPI practice at regional level	Trainees are from provincial, OD and HC levels. The focus is on new staff, but there is some refresher training in order to ensure EPI staff have up to date skills.
Activity 5.4: Support workshops to update the 5-year national immunization strategic plan	These will involve a broad range of stakeholders and follow preparation of the new Health Sector Strategic Plan. The output will be a detailed 5-year plan to guide implementation, management and monitoring of the immunization program.
Activity 5.5: Print and distribute new guiding documents	This will ensure that the strategic plan prepared after Activity 5.4, and the new Immunization Law expected in early 2015, are distributed to all units.
Activity 5.6: Conduct quarterly supervision visits to assess management of immunization program	Attempts at integrated supervision linking immunization to other programs in MOH have been unsuccessful, with immunization often receiving a low priority. High quality supervision is necessary to prevent communities falling into the high-risk category. This activity will strengthen supervision and monitoring of the integrity of the routine immunization program so that communities can be prevented from falling into the high-risk category. This supervision will complement the supervision visits targeting high-risk communities in Activity 1.7.
Activity 5.7: Conduct EPI review	The 2015 review will update data. WHO will provide technical advice.
Activity 5.8: Conduct annual EPI coverage survey	This will be based on sample locations and ensure data is updated and progress monitored.
Activity 5.9: Conduct annual mid-level management training	This targets staff from PHDs and ODs and improves skills in supervision, management, planning and budgeting.
Activity 5.10: Support study visits in the ASEAN region	This will address a knowledge gap among NIP staff of how others in the region improve management effectiveness of their immunization programs.
Activity 5.11: Procure equipment for program management	This will enable staff to improve productivity in management of the program. The equipment includes lightweight laptops with docking stations for NIP, laptops for NIP managers at PHD level, and at NIP new projectors, 2 combined photocopiers/scanners/printers and 2 vehicles for use in supervision work.
Activity 5.12: Conduct annual data quality assessments	This will be done by DPHI staff to ensure data integrity and quality. A data quality improvement plan has been prepared.
Activity 5.13: Conduct external evaluations of data collection and reporting system	These will be conducted every 2 years and provide an independent assessment of the data system.
Activity 5.14: Conduct 6-monthly internal audits of financial management of GAVI HSS funds	These will be conducted by IAD, and will promote financial probity. They will be supplemented by external independent audits.
Activity 5.15: Support quarterly supervision visits by DPHI staff to monitor recording and reporting of data	These visits by DPHI will focus on how well the the collection and aggregation of data at HC and OD levels is working in order to minimize errors in reporting. There will be a special focus on the point of transfer between paper-based and computerized data sets, which is where many errors occur.
Activity 5.16: Support incentive payments for immunization program staff	This will address problems of retention and motivation among staff at each level to ensure sustainability of the program. Payments will go to NIP staff, cooperating departments in MOH, and key EPI staff at PHD, OD and HC levels. Previous guidelines for GAVI incentive payments under HSS1 have

	worked well. They are in the process of being updated for approval by the Minister for Health and MEF for use during this grant period. A draft is appended as Attachment 30. In line with government rules that forbid staff receiving more than one type of incentive, payments will not go to staff receiving incentives via SOAs. The level of incentive payment under this activity ranges between 25% and 50% lower than incentives paid by the SOAs.

13. Results Chain

Objective 1: Increase immunization coverage in high risk communities

Key Activities		Intermediate Results		Immunization Outcomes
Key Activities: ▪ *Conduct quarterly outreach visits to high-risk communities to conduct immunization* ▪ *Support VHSG to promote awareness of immunization and encourage participation in outreach campaigns, and collect data on numbers of women and children in high-risk communities not yet vaccinated, reporting monthly to HCs* ▪ *Conduct quarterly meetings between VHSG and HC staff to assess how well guidelines are being implemented and the effectiveness of the high-risk strategy* ▪ *Support quarterly supervision visits to high-risk communities to ensure compliance with guidelines and to monitor the strategy* ▪ *Conduct quarterly workshops to review progress on improving immunization coverage in high-risk communities*		**Intermediate Results:** ▪ *Immunization outreach visits take place as planned* ▪ *HC staff and VHSG cooperate to prepare local micro-plans as per the guidelines for high-risk communities*		**Immunization Outcomes:** • *Increased Immunization coverage of women and children in high-risk communities* • *Number of high-risk communities decreases*
Related Key Activities Indicators: ▪ *Quarterly outreach visits and immunizations conducted in high-risk communities* ▪ *Data submitted on a timely basis* ▪ *Quarterly supervision visit reports produced*	→	**Related Intermediate Results Indicators:** ▪ *Proportion of immunization visits conducted in high-risk communities as per annual micro plan targets* ▪ *Percentage of quarterly meetings held between HC staff and VHSG in high risk locations* ▪ *Percentage of quarterly data (including yellow card and TT card checks) submitted on time to NIP* ▪ *Number of provincial supervision plans prepared targeting high-risk communities*	→	**Related Immunization Outcome Indicators:** ▪ *Percentage of children receiving DTP3/Penta3 vaccine* ▪ *Percentage of children receiving MCV1/MR1* ▪ *Percentage of districts with ≥80% DTP3/Penta3 coverage* ▪ *Drop-out rate between DTP1 and DTP3/Penta3* ▪ *Percentage of children 12-23 months fully immunized* ▪ *Number of communities in high-risk communities database*

Objective 2: Strengthen cold chain system through improved equipment and management

Key Activities		Intermediate Results		Immunization Outcomes
Key Activities: ▪ *Provide new equipment for central cold rooms and cold chain equipment for provincial level and lower* ▪ *Conduct EVM assessments in 2015 and 2018* ▪ *Conduct annual cold chain assessments* ▪ *Conduct annual cold chain management meetings*		**Intermediate Results:** ▪ *All geographic areas covered for cold chain equipment* ▪ *Cold chain equipment <10 years old maintained*		**Immunization Outcomes:** ▪ *Vaccine stocks available in all geographic locations*
Related Key Activities Indicators: ▪ *New equipment supplied and functioning* ▪ *EVM assessment reports* ▪ *Cold chain assessment reports*	→	**Related Intermediate Results Indicators:** ▪ *Cold chain equipment inventories submitted to NIP are up to date and disaggregated by location and facility*	→	**Related Immunizations Outcome Indicators:** ▪ *Difference in DTP3/Penta3 coverage between lowest and highest wealth quintiles*

	▪ *Percentage of facilities with cold chain refrigerators >10 years old*	

Objective 3: Increase community awareness of, and demand for, immunization

Key Activities	Intermediate Results	Immunization Outcomes
Key Activities: ▪ *Produce mass media information spots on TV and radio* ▪ *Conduct external evaluation of the effectiveness of the existing communications strategy* ▪ *Implement new strategies in line with evaluation* ▪ *Conduct annual training workshops at OD level on promotion of immunization awareness* ▪ *Support media/public relations training for 2 NIP staff* ▪ *Plan and manage annual Immunization Week*	**Intermediate Results:** ▪ *Increased public awareness of the importance of immunization and immunization schedules*	**Immunization Outcomes:** ▪ *Increased public willingness to vaccinate children and mothers*
Related Key Activities Indicators: ▪ *Media spots broadcast nationwide* ▪ *New communications strategy produced* ▪ *VHSG conducting awareness raising and education activities at community level* ▪ *2 NIP staff skilled in public relations and media liaison* ▪ *Immunization Week reports*	→ **Related Intermediate Results Indicators:** ▪ *Number of media spots broadcast* ▪ *Number of villages where outreach activities promoting awareness of immunization have been held*	→ **Related Immunizations Outcome Indicators:** ▪ *Percentage of children 12-23 months fully immunized* ▪ *Percentage of pregnant women immunized for TT/Td*

Objective 4: Strengthen the surveillance of vaccine-preventable diseases (VPDs)

Key Activities	Intermediate Results	Immunization Outcomes
Key Activities: ▪ *Conduct 6 regional trainings for staff from PHD level and lower on surveillance methods* ▪ *Hold two sets of 6-monthly meetings for core surveillance staff from PHD, OD and HC levels* ▪ *Develop surveillance maps for OD and PHD levels*	**Intermediate Results:** ▪ *Surveillance data submitted on time to NIP from all locations* ▪ *Surveillance data analyzed and disseminated regularly* ▪ *Response and management of VPD outbreaks is done quickly and effectively*	**Immunization Outcomes:** ▪ *Incidences of VPDs are reduced*
Related Key Activities Indicators: ▪ *Pre- and post-test results for surveillance trainees* ▪ *Minutes of 6-monthly meetings on file* ▪ *Surveillance maps being used in ODs and PHDs*	→ **Related Intermediate Results Indicators:** ▪ *Reported Acute Flaccid Paralysis cases with 2 specimens collected < 14 days since onset* ▪ *Proportion of subnational units reporting ≥2 cases of measles/rubella per 100,000* ▪ *Suspected measles/rubella cases with adequate investigation* ▪ *Proportion of ODs that report neonatal death cases on timely basis (even with zero cases)*	→ **Related Immunizations Outcome Indicators:** ▪ *Incidence of suspected/confirmed measles cases by location* ▪ *Incidence of suspected/confirmed Japanese encephalitis cases by location*

Objective 5: Strengthen management capacity to support EPI

Key Activities		Intermediate Results		Immunization Outcomes
Key Activities: ▪ *Annual EPI review and annual management meetings for key staff from national, PHD and OD levels* ▪ *Conduct regional trainings in EPI practice* ▪ *Prepare new 5-year immunization strategic plan for 2016 onwards* ▪ *Conduct quarterly supervision visits of EPI management* ▪ *Conduct EPI review in 2015 and annual EPI coverage surveys* ▪ *Conduct annual DQAs* ▪ *Conduct 6-monthly audits*		**Intermediate Results:** ▪ *Results of EPI reviews and coverage surveys used in preparation of annual work plans* ▪ *New immunization strategic plan incorporates lessons from current 5-year plan period* ▪ *Data quality improves* ▪ *Staff incentives paid on the basis of performance*		**Immunization Outcomes:** ▪ *Immunization coverage is less uneven in terms of both geographic and wealth quintile distributions*
Related Key Activities Indicators: ▪ *EPI review and coverage survey reports produced* ▪ *Pre- and post-test results for EPI trainees* ▪ *EPI quarterly supervision visits conducted* ▪ *DQA reports produced* ▪ *6-monthly audit reports produced*	→	**Related Intermediate Results Indicators:** ▪ *Annual work plans produced* ▪ *Immunization strategic plan for 2016-2020 produced* ▪ *Incidence of data errors in DQA reports* ▪ *Incidence of issues of concern in audit reports* ▪ *Percentage of staff reaching annual performance targets for incentive payments*	→	**Related Immunizations Outcome Indicators:** ▪ *Percentage of children 12-23 months fully immunized by location* ▪ *Percentage of children 12-23 months fully immunized by wealth quintiles*

IMPACT:

- *Infant and child survival is improved*
- *Maternal mortality is reduced*

Indicators

- *Infant mortality rate*
- *Under-5 mortality rate*
- *Maternal mortality rate*

ASSUMPTIONS:

- *Current government funding for the immunization program (as a percentage of the total MOH budget allocation) will be maintained or increased over the period covered by the grant.*
- *Government maintains funding for the purchase of routine vaccines.*

14. Monitoring and Evaluation

Data from the 25 provinces is submitted directly to DPHI. Aggregated data is then supplied to NIP for analysis and use in management and planning. Two EPI Managers in NIP are responsible for analysis of general data, while the Surveillance Manager leads analysis of specific surveillance data. Monthly management meetings are held in NIP to monitor data and any issues are incorporated into checks during supervision visits. Quarterly meetings are held with EPI managers from all 25 provinces, and data analysis is disseminated and discussed at these meetings.

DPHI will be responsible for data collection, aggregation and management of the HMIS in MOH. It can provide data disaggregated by sex and age for certain indicators, and geographic disaggregation by province for most indicators. It can provide vaccine-specific disaggregation for immunization figures. It does not disaggregate data by wealth quintile or ethnicity. DPHI prepares detailed data sets of all key indicators for the AOP planning process and for the mid-year review of the AOPs in MOH.

DPHI is responsible for conducting data quality checks and annual data quality assessments (Activity 5.12) and there will be an independent external check of data quality on an annual basis (Activity 5.13).

The HSSP2 Secretariat produces annual data reviews including dashboards of key indicators but none of these focus on immunization. However, they provide a useful source of analysis of maternal and child health indicators in the HIS.

The CDHS provides substantial data on health indicators and immunization coverage. It disaggregates data by age, sex, location and wealth quintile for many indicators. A CDHS is currently under way and preliminary results are expected in April 2015. The following CDHS will take place in 2019, so the two surveys will align roughly with the start and end points of the proposed grant period.

HEFs reimburse the cost of health services for the poor and currently cover about two-thirds of ODs. They collect data on clients so can provide a supplementary data set for information about poor and vulnerable households. Specific research projects on immunization-related activities are carried out from time to time by research organizations (including the National Institute of Public Health), academics and NGOs and these can provide supplementary and qualitative data to assist analysis of mainstream data sets. The National Institute of Public Health is currently proposing to establish a research unit focused on HSS, so NIP will track progress on this and potential for linking its work to the M&E system.

The M&E indicators for this program are set out in Attachment 5. Targets for impact and intermediate indicators show Millennium Development Goal targets for 2015 where appropriate. Cambodia has surpassed a number of these targets already and revision of future targets will be part of the preparation for the new Health Sector Strategic Plan 2016-2020. Revised targets will be inserted into the M&E framework in 2016.

An end of program external evaluation will take place in Year 5.

Total expenditure on M&E is approximately USD 1.65 million (including monitoring-focused supervision), or 9.1% of the overall budget.

PART E – BUDGET, GAP ANALYSIS AND WORKPLAN

15. Detailed Budget and Workplan Narrative

A detailed budget is set out in Attachment 6. This shows the annual allocations for all activities planned under this grant. However, the GAVI budget template only works on the basis of calendar years, whereas ***this proposal covers a 5-year period from July 2015 to June 2020. The years in the budget template therefore refer to the years in which the implementation year begins, that is, 2015 = July 2015 to June 2016; 2016 = July 2016 to Jun3 2017 etc., with the final year 2019 = July 2019 to June 2020.***

Total expenditure is USD 18,058,048.

Unit costs for preparation of the budget follow cost assumptions used by NIP for preparation of AOP estimates or are in line with cost assumptions under the current GAVI HSS grant. Details of all unit costs and their sources are set out in Attachment 28. Costs for data quality assessments and supervision visits to monitor data quality and the data collection system have been provided by DPHI and are in line with cost estimates used in the current GAVI

HSS grant. Cost estimates for EVM and cold chain assessments were provided by WHO technical staff. Costs for staff outreach work and other work involving daily subsistence allowances have taken into account the new payment levels listed by government in Sub-decree 216 issued on 22 July 2014. The levels are shown in Cambodian riel but the standard level is currently equivalent to about USD $36 per day, with higher amounts for more senior staff. Costs for media-related activities under Objective 3, a new form of expense for NIP, were estimated after informal discussions with media organizations in the public and private sectors locally.

Quantities and costs of cold chain items are based on the cold chain inventory database at NIP which lists all items by location and facility and includes the make and model of equipment, serial numbers and date of purchase (Attachment 27). The database also includes types and quantities of spare parts. Cost estimates for new purchases have been supplied by UNICEF.

A procurement plan for the first 18 months is provided in Attachment 7.

Cold chain procurement will be done through UNICEF, using its procurement service mechanism. The remaining procurement will be done by the HSSP2 Secretariat using its procurement guidelines which have been agreed between government and the HSSP2 donor partners (led by World Bank) and which conform to the requirements of all those parties.

16. Gap Analysis and Complementarity

In Year 1 (July 2015 to June 2016) there will be a total contribution of USD 2,028,485 from government, WHO and UNICEF to supplement the support from GAVI under this grant. Amounts for future years have not yet been calculated and will be shown in annual plans, but are expected to remain at similar levels during the 5-year period. There are no other donors supporting the NIP. Previous support from JICA for equipment provision has ended. USAID only supports NGOs, not MOH directly, and the German aid program focuses on health insurance and maternal and child health. The HSSP2 partners do not support any activities already supported by GAVI or the Global Fund so as to avoid the risk of duplicating resources. In 2015, the focus of funding by HSSP2 will further narrow to cover health insurance for the poor and service delivery grants for HC and OD levels focusing mainly on maternal and child health. A new program to follow on from HSSP2 is likely to be designed to begin in 2016, but the policy of not supporting activities receiving GAVI or Global Fund support is likely to continue.

Government support for 2015 will total USD1,924,000 and is summarized in the following table:

Objective	Input	Value USD
Objective 1: Increase immunization coverage in high risk communities	Vaccines	1,800,000
Objective 2: Strengthen cold chain system through improved equipment and management	Cold chain equipment	70,000
Objective 3: Increase community awareness of, and demand for, immunization	IEC materials	50,000
Objective 5: Strengthen management capacity to support EPI	Supervision	4,000
TOTAL		**$1,924,000**

WHO support for 2015 will total USD42,484.79 and is summarized in the following table:

Objective	Input	Value USD
Objective 4: Strengthen the surveillance of vaccine-preventable diseases (VPDs)	AFP surveillance	10,000.00
	Measles surveillance	15,000.00
	Mid-year review	5,000.00
	Annual workshop	5,000.00
Objective 5: Strengthen management capacity to support EPI	Support NIP data management	1,000.00
	Supervision	5,000.00
	Incinerator	1,484.79
TOTAL		**$ 42,484.79**

UNICEF support for 2015 will total USD62,000 and is summarized in the following table:

Objective	Input	Value USD
Objective 2: Strengthen cold chain system through improved equipment and management	Management and supervision	10,000
	MNTE evaluation	10,000
	Training workshop	2,000
	Study of maintenance and repair systems	20,000
Objective 3: Increase community awareness of, and demand for, immunization	Assessment and mapping exercise of NGO activities in high-risk communities	20,000
TOTAL		**$62,000**

There are no projections for funding from these partners beyond 2015.

The gap analysis for Objective 1 relied on data in the CDHS 2010 (Attachment 13) and coverage data from the HMIS. The need for this was noted in the Joint Assessment in 2014 (Attachment 18, p.2). The gap analysis for Objective 2 relied on the cold chain assessment conducted by UNICEF in 2012 (see Attachment 18, p.3) and the cold chain equipment inventory maintained by NIP (Attachment 27). Objective 3 will support implementation of the MOH Outreach Management Guidelines (2013) and the NIP Implementation Guidelines for High-Risk Communities (Attachment 19). Gap analysis for Objective 4 has relied largely on WHO, which has identified a strong need for capacity building in NIP in order to manage the surveillance system more sustainably. For Objective 5, a number of management issues were raised in the Joint Assessment in 2014 (Attachment 18, sections 4 and 8). A detailed AOP for NIP for 2015 showing the contributions of government and other partners is in Attachment 25.

17. Sustainability

The Strategic Framework for Health Financing 2008-2015 (Attachment 21) provides the overall strategy for financial sustainability in the health sector, while recognizing the challenges faced by Cambodia as a relatively poor country. The strategy commits MOH to delivering a full Minimum Package of Activities at all HCs and a Complementary Package of Activities at all RHs in all ODs, and to provide access to health services for the poor. The long-term aim of the strategy is to achieve universal coverage of the population with funded pre-payment mechanisms, but this is recognized as a long-term goal. The key elements of the strategy are:

- More efficient use of existing resources
- Advocacy for greater government revenue collection through taxation
- Targeting resources to under-funded areas
- Decentralization of management and funding
- Support for social health protection measures
- Empowering communities in health system management and planning.

Progress on the Strategic Framework is monitored on a regular basis. The Annual Health Financing Report 2012, produced in 2013 (Attachment 20), estimated total health expenditure (THE) at about 5% of Gross Domestic Product. THE was USD52 per capita, of which 61% came from out-of-pocket spending, 24% from government and 15% from development partners. This is a substantial rise in government contributions from 19% in 2008, and a drop in the reliance on development partner funding, which contributed 20% in 2008.

The progress towards financial sustainability has therefore been positive, but will require long-term commitment from government. Funding for the immunization program and prospects for financial sustainability have to be seen in this larger context.

Specific measures for financial sustainability to be taken by NIP will include a stronger evidence-based focus on resource allocation in planning and budgeting, and adoption of audit and evaluation recommendations into reviews, supervision visits and planning. The progressive shift of high-risk communities into the routine immunization rounds will also reduce costs in the longer term, as will purchase of new cold chain equipment and better surveillance management tools.

Sustainability of repairs and maintenance is a difficult and complex problem that affects all sectors in Cambodia, not just health. It is beyond the scope of a single GAVI activity to resolve this problem. Prior assessments of maintenance systems have focused on system planning and management only, without looking at financial and institutional sustainability. This proposal allocates a total of USD 575,000 (Activities 2.2 and 2.8, up from USD 550,000 in the original proposal) to maintenance and repairs, but a longer term sustainable approach is needed.

In collaboration with NIP, in 2015 UNICEF will be undertaking an assessment of repair and maintenance systems for health equipment generally, including EPI cold chain equipment. This will include assessment of human resource needs and a financing strategy and provide recommendations for putting the system on a more sustainable footing. The study will be funded by UNICEF.

Institutional sustainability of activities under this grant will be strengthened by improving the skills of NIP staff in program management, and increasing the skills of staff at national, provincial and OD levels in surveillance, outreach, cold chain management, planning and budgeting.

PART F – IMPLEMENTATION ARRANGEMENTS AND RISK MITIGATION

18. Implementation Arrangements

Grant management arrangements

NIP will take the lead role in managing the grant and monitoring the progress of activities. Receipt and disbursement of funds from GAVI, and procurement, will be done by the HSSP2 Secretariat. This represents a return to the arrangement in place at the outset of the current GAVI HSS grant and will address inefficiencies that have resulted since 2012 in dividing responsibilities for financial management and procurement. DPHI will take primary responsibility for data collection and aggregation, and sharing data between the implementing entities. NIP will take the lead role in data analysis, though all implementing entities will do this to varying degrees. IAD will conduct internal audits of expenditure and report on these directly to the Minister for Health and to the National Audit Authority. The General Directorate for Audit in MOH will be responsible for monitoring actions taken in response to audit findings. External audits will supplement the work of IAD. NIP will take the lead in preparation of the Annual Progress Reports to GAVI. NIP will also employ additional accounting staff to help ensure timely management of the grant.

Coordination of implementing entities

There is a relatively small number of implementing entities within MOH. These are NIP, DPHI, IAD and the 25 provinces, with financial and procurement management done by the HSSP2 Secretariat. Disbursement to NIP and the 25 provinces will be via NMCHC, the administrative unit to which NIP belongs. As noted in the final paragraph of Section 9 above, coordination between these units will take the form of quarterly meetings to monitor progress on activity and disbursement targets, to identify any management issues, and to allocate remedial action to individual entities where required. Meetings will be recorded in minutes so that progress on tackling management issues can be tracked over time. All provinces will be represented in these meetings, and quarterly meetings will also take place at provincial level for OD and HC staff.

Financial resources for grant management and implementation

Financial resources for grant management will be provided from the government budget and the total contribution over the 5-year period is estimated at USD100,000. Some contributions will come from WHO and UNICEF. Funds from the GAVI HSS grant will be used to support data quality and management activities in DPHI and audit activities in IAD. Total funding to DPHI over the 5 years will be USD 495,000 (2.7% of the overall budget), and to IAD a total of USD 100,000 (0.6% of the overall budget). The remaining 96.7% of the budget will be allocated to NIP and the 25 provinces. Program management support funded by GAVI will take the form of two additional accounting staff to help manage the GAVI HSS funds, and a consultancy to conduct the end of program external evaluation. The total cost of this support in the budget is USD188,000.

Role of development partners in grant implementation

As noted in Section 16 above, the number of partners is very limited. WHO and UNICEF will provide technical advice to NIP during grant implementation. Both will provide advice on a no-cost basis in terms of the GAVI HSS budget. The technical advice will focus on increasing coverage, especially in high-risk communities, cold chain management and planning, improving the sustainability of the surveillance system and strengthening management skills in NIP. Technical advisers from both WHO and UNICEF meet regularly with NIP staff and have allocated offices in the NIP building so that they can provide on-the-job mentoring and support on a regular basis.

19. Involvement of CSOs

There has been no involvement of CSOs or NGOs in implementing activities under the current GAVI grant, though some NGOs promote awareness about immunization in broader activities supporting maternal and child health

programs. These NGOs are not involved in delivering immunization services, as all immunizations are conducted by public health staff and a small number of private providers.

Formal links with NGOs are maintained in consultations with Medicam in the TWGH and with individual NGOs at provincial level that participate in the provincial TWGH meetings. NIP invites NGOs to information sessions for the roll-out of new vaccines and for any special campaigns, including the annual immunization week.

It is not known how many or which NGOs currently work in the communities listed as high-risk, what activities they carry out, or whether their activities relate to maternal and child health or immunization education and awareness raising. In collaboration with NIP, UNICEF will therefore undertake an assessment and mapping exercise in 2015 which will detail the NGOs working in these locations and the current activities they implement. NIP staff at local level and VHSG will cooperate in the mapping exercise and the results will allow NIP to identify NGOs with which it can work in terms of increasing community awareness and knowledge about the importance of immunization and of keeping to immunization schedules. If NGOs are active in high-risk locations but not supporting health-related activities, it might still be possible to supply them with support materials through the VHSG so that they can disseminate information and encourage local community members to comply with immunization regimens.

A risk in relying on NGOs to do community awareness raising and education work relates to sustainability. NGOs tend to work in locations and on specific sectoral programs only as long as external funding is available. This presents a particular problem in an era when aid funds in the health sector are decreasing. While NIP does cooperate with NGOs where feasible, it is putting a stronger emphasis on the use of VHSG to build community knowledge and demand. VHSG are an integral part of the health system and under the next Health Strategic Plan there will be a move to increase the role of village level volunteers and integrate the work of other health volunteers, e.g. Village Malaria Workers.

VHSG are also being increasingly linked to the government's D&D strategy, with administrative management of VHSG proposed to be taken over by Commune Councils while HCs and ODs provide technical oversight. As the D&D system is rolled out, Commune Councils and District Councils are likely to play an increasingly important role in funding the work of VHSG, putting the system on a more sustainable footing and integrating it more closely into permanent local government structures.

The current guidelines for targeting high-risk communities will be revised by NIP over the next two years (the most recent revision was in May 2014). These revisions will build on lessons from the field and refine some of the targeting procedures in the current guidelines. The revised guidelines will elaborate on the roles to be played by NGOs and VHSG in community-level awareness raising, knowledge improvement and demand creation.

20. Technical Assistance

Technical assistance will be engaged to implement the following activities:

- Activity 1.1 to 1.7 – WHO will provide technical support and advice on reaching high-risk communities, on a no-cost basis for this proposal.
- Activity 2.10: Conduct EVM assessments in 2015 and 2018 – technical advice will be provided on a no-cost basis by WHO and UNICEF. This will build NIP's capacity to manage and implement such assessments.
- Activity 2.11: Conduct annual cold chain assessments – technical advice will be provided on a no-cost basis by WHO. This will build NIP's capacity to conduct these assessments.
- Activity 3.1: Produce mass media information spots on TV and radio – this will be contracted to a specialist entity by public tender through the HSSP2 Secretariat. This provides a function that is absent from NIP but will help to raise awareness about immunization over a wide geographic area.
- Activity 3.2: Conduct external evaluation of the effectiveness of the existing communications strategy – this will be contracted to a consulting entity through public tender and will be open to public, private and non-profit entities. It will help to improve the effectiveness of communications for increasing knowledge and awareness about immunization, and thereby increase demand for services.
- Activity 3.3: Conduct pilot study for sending text messages via mobile phones to mothers about vaccination schedules – this will be contracted to a specialist consulting entity by public tender. It will test whether this technology can increase use of immunization services and compliance with immunization schedules so that successful interventions can be scaled up.
- Activity 3.6: Support media/public relations training for 2 NIP staff to manage responses to unusual events, e.g. disease outbreaks, AEFI (with technical inputs from WHO), rumors about vaccines – this will be contracted by public tender to a specialist entity and will build a new capacity in NIP to address community concerns about immunization and tackle misinformation.
- Activity 4.1 to 4.5 – WHO will provide general technical advice on these activities, on a no-cost basis for this proposal.

- Activity 4.6: Develop surveillance maps for use by OD and PHD levels – this will be contracted by public tender and will provide a simple graphic tool to increase the efficiency of the surveillance program in terms of both data collection and resource allocation.
- Activity 5.7: Conduct EPI review – this will provide an overview of the program and its effectiveness. WHO will provide technical advice on a no-cost basis.
- Activity 5.13: Conduct external evaluations of data – this will be contracted by public tender through the HSSP2 Secretariat every 2 years.

21. Risks and Mitigation Measures			
Description of risk	***PROBABILITY (high, medium, low)***	***IMPACT (high, medium, low)***	***Mitigation Measures***
Objective 1: Increase immunization coverage in high risk communities			
Institutional Risks 1. Newly settled communities are not registered with local authorities and are not be covered by outreach activities	***Low***	***Medium***	1. Issue yellow immunization cards and conduct immunization with grant funds. Lobby Commune and District Councils to support registration and encourage Ministry of Planning to include villages in ID Poor assessments.
Fiduciary Risks None anticipated			
Operational Risks 1. Insufficient funds available for maintenance and operation of motorbikes needed for outreach 2. VHSG fail to conduct awareness activities and submit data on monthly basis	***1. Low*** ***2. Low to Medium***	***1. High*** ***2. Low***	1. NIP will stress to ODs and HC managers the importance of ensuring staff have funds and comply with outreach schedules 2. HC managers to contact VHSG failing to submit data, and to get interim data by phone if accessibility is a problem, e.g. in the wet season
Programmatic and Performance Risks None anticipated.			
Overall Risk Rating for Objective 1	***Low***	***Medium***	
Objective 2: Strengthen cold chain system through improved equipment and management			
Institutional Risks None anticipated.			
Fiduciary Risks None anticipated.			
Operational Risks 1. Purchased cold chain equipment becomes non-functioning much earlier than planned 2. PHDs fail to recruit repair and maintenance staff for cold chain equipment	***Low*** ***High***	***High*** ***High***	1. Address equipment quality issues in tender specifications. Allocate resources for maintenance and repair.

			2. Allocate funds from the spare parts and maintenance budget to engage local maintenance staff.
Programmatic and Performance Risks None anticipated.			
Overall Risk Rating for Objective 2	***Medium***	***High***	
Objective 3: Increase community awareness of, and demand for, immunization			
Institutional Risks None anticipated.			
Fiduciary Risks None anticipated.			
Operational Risks 1. Mass media ineffective in 'media dark' areas of the country 2. External assessment of approaches fails to identify effective strategies	***Medium*** ***Low***	***Low*** ***Medium***	1. Use alternative means of communication, especially face-to-face advice 2. Include study of experiences in regional and international sites as part of terms of reference for assessment
Programmatic and Performance Risks None anticipated			
Overall Risk Rating for Objective 3	***Low***	***Low***	
Objective 4: Strengthen the surveillance of vaccine-preventable diseases (VPDs)			
Institutional Risks None anticipated			
Fiduciary Risks None anticipated			
Operational Risks 1. Surveillance meetings do not receive complete or timely data 2. Staff do not make use of surveillance map tool	***Low*** ***Low***	***Medium*** ***Medium***	1. Ensure submission of data sets to NIP prior to meetings and follow up 2. Check use of maps in supervision visits to ODs and PHDs and get staff feedback on issues
Programmatic and Performance Risks 1. Delayed response to disease outbreaks leads to failure of early intervention	***Low***	***High***	1. NIP to ensure well-prepared response team is on call and funds held in reserve
Overall Risk Rating for Objective 4	***Low***	***Medium***	

Objective 5: Strengthen management capacity to support EPI			
Institutional Risks None anticipated			
Fiduciary Risks 1. Funds not released on time for activity implementation	***Medium***	***High***	1. Request HSSP2 Secretariat to identify and address funding bottleneck
Operational Risks 1. DQAs not carried out in a timely manner	***Low***	***Medium***	1. NIP to negotiate schedule with DPHI and to send information letters to target locations to prepare data for inspection
Programmatic and Performance Risks 1. National health sector strategic plan for 2016 onwards not completed on schedule	***Low***	***Medium***	1. Update the current 5-year immunization strategy to guide implementation in the interim
Overall Risk Rating for Objective 5	***Low***	***Medium***	

22. Financial Management and Procurement Arrangements	
Question (a): applicants should indicate whether an existing financial management mechanism or modality will be employed (pooled funding, joint financing arrangements or other), or if a new approach is proposed. If an agency-specific financial arrangement will be used, specify which one. A rationale for this choice should be provided.	An existing mechanism will be used for financial management of this grant. This mechanism was used until 2012 for the current GAVI HSS grant, when financial management and procurement were divided between DBF and the HSSP2 Secretariat respectively. Under the new grant both functions will return to the HSSP2 Secretariat. The advantage of this is that the Secretariat, which was set up to provide financial management and procurement support for HSSP2, has substantial experience and expertise in managing very large grant funds and a pooled fund of USD125 million under HSSP2. Its financial management procedures have been agreed between MOH and the seven HSSP2 donor partners, and comply with World Bank requirements. HSSP2 is subject to external quarterly technical and financial audits which have also helped to improve the quality of work in the Secretariat.
Question (b): Financial Management Arrangements Data Sheet	
1. Name and contact information of Focal Point at the Finance Department of the recipient organization.	Mr Krang Makol, Chief Financial Management Officer, HSSP2 Secretariat, Ministry of Health, Kampuchea Krom, Phnom Penh; Tel. +855 23 880260; Mobile +855 12 885900; E-mail: accts2.hssp@online.com.kh
2. Does the recipient organization have experience with GAVI, World Bank, WHO, UNICEF, GFATM or other Development Partners (e.g. receipt of previous grants)?	YES
3. **If YES** • Please state the name of the grant, years and grant amount. • **For completed or closed Grants of GAVI and other Development Partners:** Please provide a brief description of the main conclusions with regard to use of funds in terms of financial management performance. • **For on-going Grants of GAVI and other Development Partners:** Please provide a brief description of any financial management (FM) and procurement implementation issues (e.g. ineligible expenditures, mis-procurement, misuses of funds, overdue / delayed audit reports, and qualified audit opinion).	GAVI support to Cambodia from 2001 to 2014 was USD43,826,575 million. In total including new vaccine support, GAVI has disbursed the following: • Immunization Services Support (ISS) 2001 to 2010: $1,828,700 • Health System Strengthening (HSS) 2007 to 2014: $9,762,270 • Injection Safety Support (INS) 2001 to 2004: $587,653 • Vaccine Introduction Grant (VIG) 2001 to 2014: $646,000 • New Vaccine Support (NVS) 2001-2014: $31,001,952 (Hepatitis B, Hib, Measles Second Dose and Rubella) The Royal Government of Cambodia has progressively increased its co-financing of GAVI support. It guaranteed a co-financing budget of 10% for the cost of vaccines supported by GAVI and has procured all traditional vaccines since 2008. The cost of the latter (Hep B birth dose and MR vaccine) has risen from an initial cost of about USD 1 million in 2008 to USD 2.2 million in 2013. There have been no adverse findings on the use of GAVI or other donor partner funds by NIP.
Oversight, Planning and Budgeting	
4. Which body will be responsible for the in-country oversight of the program? Please briefly describe membership, meeting frequency as well as decision making process.	Regular oversight of the program will be done by the TWGH, which meets monthly. It will endorse plans, review progress and receive regular reports from NIP. Larger policy issues and strategic direction of the program will be overseen by the National EPI Committee. This meets annually and is chaired by the Minister for Health.

5. Who will be responsible for the annual planning and budgeting in relation to GAVI HSS?	NIP
6. What is the planning & budgeting process and who has the responsibility to approve GAVI HSS annual work plan and budget?	Planning and budgeting will be done by NIP. The plans and budgets for this program will be linked to the AOP process in MOH and activities and resource allocations reflected in the national AOP. Approval of the work plan and budget will be done by the Secretary of State for Health and Director of HSSP2, Prof. Eng Huot.
7. Will the GAVI HSS program be reflected in the budget of the Ministry of Health submitted every year to the Parliament for approval?	YES
Budget Execution (incl. treasury management and funds flow)	
8. What is the suggested banking arrangement? (i.e. account currency, funds flow to program) Please list the titles of authorized signatories for payment release and funds replenishment request.	A new specific account for the program will be opened at the National Bank of Cambodia. The currency will be United States dollars. Signatories to the account will be the Minister for Health, the Secretary of State for Health, the head of NMCHC, and the HSSP2 Coordinator (currently the Director of DPHI). Funds will be transferred from this account to the HSSP2 Secretariat for disbursement to implementing units on the basis of work plans and quarterly acquittals. Funds flowing to NIP and the 25 provinces will go through an account at the National Maternal & Child Health Centre (NMCHC), which is the administrative unit that encompasses NIP. That account will only hold GAVI HSS funds intended for NIP and the provinces. Payments to other recipient units (DPHI and IAD) will go directly to them from the HSSP2 Secretariat. NMCHC has strong capacity to manage external funds, having experience with managing funds for US-CDC, Global Fund, UNICEF, WHO, UNFPA, JICA and HSSP2. Current NMCHC financial staff comprise the Chief of the Accounting Office, 4 Accountants and one Bookkeeper. Four staff hold bachelor of accounting degrees, one holds a master degree in auditing, and one holds a PhD.
9. Will GAVI HSS funds be transferred to a bank account opened at the Central Bank or at a commercial bank in the name of the Ministry of Health or the Implementing Entity?	The National Bank of Cambodia
10. Would this bank account hold only GAVI funds or also funds from other sources (government and/or donors- “pooled account”)?	Only GAVI funds
11. Within the HSS program, are funds planned to be transferred from central to decentralized levels (provinces, districts etc.)? **If YES**, please describe how fund transfers will be executed and controlled.	YES – all funds will be managed in line with the MOH Financial Policies and Procedures manual (2008) and the MEF Financial Management Manual (May 2012). The HSSP2 Secretariat will be responsible for overall financial management including fund receipts and disbursement from GAVI, replenishment of funds to NMCHC, payments to relevant MOH departments. financial controls and financial reporting. NMCHC will disburse funds to NIP (through an advance and reconciliation mechanism) and to the 25 provinces (through provincial advance accounts). The ceiling of provincial advance accounts will be one-quarter of the total annual budget

	(excluding procurement), and replenishment to the advance accounts will be made on a monthly basis based on the Summary of Expenditures received. At the PHD level, a Provincial Focal Group will be responsible for overall management including planning, monitoring and financial management. The Group will include at least the PHD Director, NIP Manager, and Chief Finance Officer.
Procurement	
12. What procurement system will be used for the GAVI HSS Program? (e.g. National Procurement Code/Act or WB/UNICEF/WHO and other Development Partners' procurement procedures)	Most procurement will be done by the HSSP2 Secretariat. The Secretariat uses procurement arrangements agreed between MOH, MEF and the 7 donor partners involved in HSSP2. The procurement procedures are in line with World Bank requirements (World Bank is the lead partner in HSSP2) and also conform to requirements of the Royal Cambodian Government. For cold chain equipment, procurement will be done by UNICEF using its procurement service mechanism. These arrangements are those used for the current GAVI HSS grant.
13. Are all or certain items planned to be procured through the systems of GAVI's in-country partners (UNICEF, WHO)?	YES – procurement of cold chain equipment will be done using UNICEF's procurement system.
14. What is the staffing arrangement of the organization in procurement?	In the HSSP2 Secretariat, there is one Chief Procurement Officer and 2 procurement staff. There is also an international Procurement Adviser, funded by HSSP2, to build capacity and monitor compliance with World Bank guidelines. At UNICEF, a designated officer is responsible for cold chain procurement using its procurement service mechanism.
15. Are there procedures in place for physical inspection and quality control of goods, works, or services delivered?	YES
16. Is there a functioning complaint mechanism? Please provide a brief description.	NO
17. Are efficient contractual dispute resolution procedures in place? Please provide a brief description.	YES – procurement contracts issued by the HSSP2 Secretariat include a clause on contractual dispute resolution, in line with World Bank requirements.
Accounting and financial reporting (incl. fixed asset management)	
18. What is the staffing arrangement of the organization in accounting, and reporting?	In the HSSP2 Secretariat, there are 8 accounting staff: Chief Financial Management Officer, Senior Financial Management Officer, Finance Officer and 5 Accounts Assistants. Reporting is done monthly and there are quarterly external audits funded by HSSP2. At NIP, there are 2 accountants. They prepare monthly financial reports which are submitted to the National Maternal and Child Health Center, and from there to the Department of Budget and Finance. Under the new proposal this last step will be to the HSSP2 Secretariat.
19. What accounting system is used or will be used for the GAVI HSS Program? (i.e. Is it a specific accounting software or a manual accounting system?)	Accounts will be managed using Peachtree software

20. How often does the implementing entity produce interim financial reports and to whom are those submitted?	Quarterly reports are submitted to the National Maternal & Child Health Center, which is the administrative supervisor for NIP within the MOH structure.
Internal control and internal audit	
21. Does the recipient organization have a Financial Management or Operating Manual that describes the internal control system and Financial Management operational procedures?	YES
22. Does an internal audit department exist within recipient organization? If yes, please describe how the internal audit will be involved in relation to GAVI HSS.	YES – The Internal Audit Department is a unit in the Ministry of Health and will audit the finances of the GAVI HSS grant on a quarterly basis.
23. Is there a functioning Audit Committee to follow up on the implementation of internal audit recommendations?	YES – General Directorate for Audit, Ministry of Health
External audit	
24. Are the annual financial statements planned to be audited by a private external audit firm or a Government audit institution (e.g. Auditor General)?[8]	YES – financial statements are audited annually by Price Waterhouse Coopers, an external audit firm.
25. Who is responsible for the implementation of audit recommendations?	NIP

Question (c): Financial Management System Constraints

The main constraint in the health sector's financial system, and a constraint that affects the public sector as a whole, is the delay in disbursement of government financing at the start of the calendar year. This is due to the approval process for AOPs, which pass through several government bodies before budgets are finalized. In practice this means that funds for Quarter 1 in any year are generally disbursed half way through the quarter or later. While government is aware of the issue, there is currently no strategy to address the problem and this therefore should be considered as an operating constraint that is likely to persist for the duration of the proposed grant.

A further constraint is that a share of public spending on the health sector is not allocated to MOH but disbursed by a separate mechanism directly to provincial governors. MOH has no control over how such funds are spent and the funds are not reflected in AOP budgets, so managers at provincial level and lower do not have a comprehensive picture of health sector spending in their areas. This disbursement system is a political choice and is highly unlikely to change during the course of the proposed grant.

NGOs supporting the health sector differ greatly in the degree to which they report planned activities and funding to PHDs and ODs. A substantial amount of NGO activity and funding is not captured in the AOPs either at provincial or national levels. Again, this means that managers at provincial level and lower do not have a comprehensive picture of health sector spending in their areas. MOH has urged NGOs to share information through the provincial TWGHs, but compliance has highly variable. This issue might be addressed in the government's proposed new law to regulate the work of NGOs in Cambodia.