

Immunisation Services

Assessment Report

Cambodia National Immunization Program (NIP)

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List of Abbreviations

AEFI	Adverse Events Following Immunisation
A/D	Auto disable (syringe)
ADD	Accelerated District Development
AFP	Acute Flaccid Paralysis
BCG	Bacille de Calmet et Guérin Vaccine
CMS	Central Medical Store
CVP	The Bill and Melinda Gates Children's Vaccination Program
DPT	Diphtheria, Pertussis and Tetanus Vaccine
EPI	Expanded Program on Immunisation
ESAF	Enhanced Structural Adjustment Facility
GAVI	Global alliance for Vaccines and Immunisation
GDP	Gross Domestic Product
GFCV	Global Fund for Children's Vaccination
HC	Health Centre
HIS	Health Information system
ICSC	Immunisation Coordination Sub-Committee
MOH	Ministry of Health
MPA	Minimum Package of Activities
NIP	National Immunisation Program
NMCHC	National Maternal and Child Health Centre
NNT	Neonatal Tetanus
OD	Operational District
OPV	Oral Polio Vaccine
PAP	Priority Action Program
PATH	Program for Appropriate Technology in Health
PHD	Provincial Health Department
UNICEF	United Nations Children's Fund
VII	Vaccine Independence Initiative
WHO	World Health Organisation

I. Background and Introduction

I.1 Purpose of the Report

The purpose of this report is to present in detail the findings of the Cambodia NIP Assessment, conducted 22 May – 6 June 2000, in order to provide the Ministry of Health and partner agencies with a comprehensive description of both the assessment findings and the logic underlying the assessment team's recommendations. The information on which this report is based will be used in updating the NIP National Five Year Plan and to inform the preparation of a series of funding proposals to the Global Alliance for Vaccines and Immunization (GAVI).

I.2 Background to the Study

The rationale for conducting an assessment at this time was as follows:

- The last comprehensive review of immunization services was conducted in 1992.
- As current immunization services management and delivery systems were substantially defined and implemented in the period 1992-1996, prior to recent implementation of health sector reforms, an immunization services review is timely in this transitional period.
- Within the framework of the Immunization Coordination Sub-Committee (ICSC), the National Immunization Programme is developing in 2000 a multi-year national action plan for the period 2001-2005. An assessment will provide an adequate framework for review of programme priorities, strategies, and components and also provide recommendations to be included in the five-year plan.
- Cambodia has applied to GAVI for support from the newly established Global Fund for Children's Vaccination (GFCV). A programme assessment three years or fewer prior to application to GAVI is a prerequisite for receiving support from the Fund.

I.3 Acknowledgements

The Ministry of Health (MOH) Technical Working Group on Immunization was responsible for organising the assessment with technical support provided by WHO, UNICEF, the Bill and Melinda Gates Children's Vaccination Program (CVP)/PATH, BASICS and Abt Associates. The assessment was primarily funded by UNICEF, with additional support from CVP and WHO.

II. Assessment Approach

II.1 Terms of Reference

The assessment was designed to:

- Review current performance and financing of the national immunization programme (NIP);
- Assess current management and delivery of immunization services;
- Provide recommendations on how to achieve maximum programme effectiveness within the overall principles and operational framework of health sector reforms.

The expected outputs were:

- A concise report presenting key findings and recommendations and responding to the specific objectives.
- Programmatic and financial data allowing the MOH:
 - to update immunization policies and operational guidelines;
 - to update the national strategic plan for immunization 2001-5;
 - to prepare an initial proposal for support by the Global Alliance for Vaccines and Immunization;

II.2 Methodology

Data were collected in three ways:

- Central level assessment of 5 days, consisting of document review, interview of main stakeholders in the MOH for different NIP functional areas, and final adaptation of questionnaires. This central level assessment was conducted by external consultants hired by CVP and the MOH Technical Working Group, and helped to guide the “peripheral level” assessment.
- Field assessment at provincial, operational district and health centre level, based on an adapted version of the GAVI draft tools for assessment of immunization services.
- Financial assessment, using an adapted version of the draft CVP/Abt immunization financing tool. A section containing finance-related questions was included in the field assessment.

The field assessment consisted of 11 teams covering 15 operational districts (ODs) within 11 provinces (Annexe 1). Each assessment team consisted of one national level MOH staff member, one provincial level PHD technical bureau staff member, and one member of a partner agency. [Due to a late cancellation of participation by partner agencies and one PHD, two teams consisted of 2 MOH staff.]

Upon completion of the field assessment, the teams convened for two days of meetings at the National Maternal and Child Health Centre (NMCHC) to discuss and summarise key findings and recommendations arising from the assessment.

II.3 Locations

The 15 operational districts were selected based on the geographic and demographic situation. Consideration was made of the following in the selection process:

- Central areas which represent high populated areas.
- Northwest representing the Thai border with high movement of population
- Southwest representing the Vietnam border with high movement of population
- Northeast representing minority groups, remote and difficult to access areas.
- Coastal representing people living in remote and difficult to access areas.

Factors for the selection of the health centres included:

- Health centre with Minimum Package of Activities (MPA)
- Health centre which was a former district hospital (with beds)
- Health centre with no MPA (Khum Clinic)
- Health centre in high populated areas and
- Health centre in remote areas.

III Principal Findings and Recommendations

III.1 Overall Findings

Programme Management Findings

Implementation of the proposed restructure of the current EPI Unit and polio Eradication Program into a single National Immunisation Program is critical to the achievement of national health goals

Supporting Observations

At central level, the MOH initiated in December 1999 with WHO and UNICEF assistance a process to reorganize the national immunization programme. This was deemed essential to be able to respond to the new challenges posed by health sector reforms, accelerated EPI disease control and vitamin A supplementation initiatives, introduction of hepatitis B vaccine and injection safety issues.

The overall roles of the existing EPI and Polio Eradication Units have been evolving as part of the changes brought about by health sector reforms. It is planned that there be less focus on direct implementation and micro-management of operations and far more emphasis on providing technical guidance to provinces and districts and liaising/coordinating with units in the MOH that are taking over responsibility for EPI functional areas, such as vaccine and supply distribution, health information systems and financial and strategic health planning.

The MOH Technical Working Group on immunization has proposed to merge the EPI Unit (until now responsible for routine immunization services and neonatal tetanus elimination) and the Polio Eradication Unit (responsible for polio eradication and accelerated measles control), so that human and financial resources are more efficiently used and programme performance improved.

Recommendation: The MOH fully implement the planned National Immunisation Program re-structure at central level

Strategic Direction Findings

The principal strategies outlined in the EPI National Five Year Plan 1998-2002 remain a suitable basis for the development of the updated National Immunization Programme Five Year Strategic Plan.

Supporting Observations

The goal of routine immunisation within the NIP is to reduce sickness and death due to six diseases (tuberculosis, diphtheria, pertussis, tetanus/neonatal tetanus, measles and poliomyelitis) through the immunisation of all infants under the age of one year and through immunisation of pregnant women with tetanus toxoid (TT). In the past four years the national immunisation services network has also been used for distribution of vitamin A capsules to children between the age of six months and five years and to women within eight weeks after delivery.

The EPI National Five Year Plan 1998-2002 articulated a series of objectives supporting the principal strategies of increasing immunisation coverage, strengthening disease surveillance and improving injection safety. Additional strategies for the integration of Vitamin A supplementation and the introduction of new vaccines were also described.

The objectives for the 1998-2002 Plan were as follows:

- To raise immunisation coverage among children under 1 year of age for all EPI antigens (BCG, DPT, OPV and measles) to at least 90% in all districts of the 15 most populated provinces (95% of the national population), and to at least 80% in all districts of the remaining provinces by the year 2002.
- To reduce to zero the incidence of poliomyelitis by 1998, and to achieve certification of poliomyelitis eradication by 2000.
- To reduce the incidence of neonatal tetanus (NNT) to less than one case per thousand live births per district by 2001.
- To reduce the incidence of measles to such a low level by 2002 that complete elimination of indigenous transmission within the next decade will be feasible.
- To fully integrate provision of Vitamin A into EPI services so that Vitamin A coverage for children aged 6 months to 5 years is at least equal to the coverage for EPI antigens (see objective 1, above).
- To introduce additional antigens (such as hepatitis B) to the EPI.
- To ensure that all immunisations are given safely, with potent, high quality vaccine.

An observable outcome of the implementation of strategies for increasing immunisation coverage, articulated in the previous five year plan, was an arresting of the decline in coverage rates for BCG, OPV3, DPT3, Measles and TT2. This decline, observed between 1995-1998, followed three years of reported substantial increases in the coverage rates of all antigens (UNICEF, 1999). In addition, further development of disease surveillance systems, notably for AFP as a marker for poliovirus infection, has indicated that there is no evidence of circulating wild poliovirus. Strategies for strengthening measles surveillance activities, as well as supplemental measles immunisation programs resulted in the implementation pilot programs in 6 provinces in 1999 and surveillance activities in all provinces in 2000. Neonatal tetanus surveillance had been commenced at National-level facilities and, in 1998 and 1999, community-based NNT surveillance activities were piloted in two ODs.

In summary, the principal strategies articulated in the existing plan appeared to be producing measurable outcomes and there was no indication of need for fundamental change in strategic direction.

Recommendation: The NIP Five Year Strategic Plan should be based on the principal strategies detailed in the existing plan.

Peripheral Health Service Management Findings

The management capacity at OD and HC levels requires strengthening to achieve the efficient organisation and delivery of integrated outreach, as proposed in the current draft of the 'Guidelines for Outreach Services' by the MOH Health Sector Reform group.

Supporting Observations

In many of the Health Centres visited, staff reported difficulties with the availability of funding for ice and fuel for transportation, resulting in the cancellation or deferment of scheduled immunisation outreach activities. At the village level, this was reported to result in low confidence in predictability of visits by health centre outreach teams, with negative impacts on numbers presenting for immunisation when teams actually arrived.

While acknowledging the need for strengthening of facility-based service provision, the Assessment team formed the strong view that outreach-based services, including immunisation services, were in at least equal need of strengthening throughout the period of the updated NIP Five Year Plan (2001-2005). The Assessment team formed the view that the addition of outreach-strengthening tasks into the position descriptions of existing OD and HC management and supervisory staff would result, in the life of the Five Year Plan, in improved outreach planning, coordination and supervision. Ultimately, this would contribute to improved coverage and reduced drop-out and wastage rates.

In addition, such measures would highlight recognition of the continuing priority of outreach-based strategies for achieving service quality and coverage objectives.

Recommendation: The MOH should strengthen management capacity for outreach-based services conducted by OD and HC levels to achieve an integrated outreach focus, through the addition of outreach-related tasks into the position descriptions of supervisory staff at both OD and HC levels.

NIP Management Information Needs Findings

Assuming timely and complete standard HIS reports, the management information needs of the NIP for immunisation will be met. Disease surveillance will require additional reporting activities.

Supporting Observations

At the time of the Assessment, it was reported that the amended HIS reporting format included all necessary routine immunisation information for NIP purposes. The issues for the NIP with the HIS process included the frequency, timeliness and completeness of reporting.

However, in the context of disease surveillance, there was recognition generally that the information provided through HIS was not detailed enough to enable program managers to guide disease control activities.

Recommendation: The NIP should phase in the use of standard HIS reports for NIP management, as these reports are completed and distributed in a timely manner.

Recommendation: The NIP continue with and improve on collection of specific disease information needed for guiding disease control activities.

Health Services Information Feedback Finding

Feedback systems to Province, OD and HC levels within the NIP require additional development.

Supporting Observations

There was little evidence of effective information feedback, from higher to lower levels of the health service provision structure. This included both NIP reporting and HIS mechanisms. The need for effective feedback to inform quality management decision-making was universally recognised by the Assessment teams.

Recommendation: The NIP should develop and implement a process for publishing, disseminating and evaluating a periodic feedback instrument. .

Issues related to Health Sector Reform Findings

The NIP has not been sufficiently pro-active in ensuring its priorities are reflected in HSR planning

Supporting Observations

The Assessment teams noted the crucial coordination role of the HSR Group within the MOH. The Assessment has noted that there is a mutual obligation between the NIP and

the HSR Group to actively and effectively coordinate for planning for immunisation program priorities.

Specifically, the Assessment noted that the distribution of cold chain equipment had yet to be implemented according to the Health Coverage Plan. The teams also noted that the immunisation program relies heavily on outreach and that the initial focus of health sector reform was facility-based.

It was further noted that the NIP has a responsibility to carry out specific disease control measures, such as surveillance and supplementary immunisations, which are additional to the routine HIS data collecting activities and which may place demands on the time of health centre staff.

Recommendation. The NIP actively participate in HSR planning and policy development

III.2 Specific Findings

Cold Chain and Logistics Findings

In many of the locations visited, especially at province and operational district level, cold chain function appeared to be satisfactory. However, at all levels including the central level, significant problems requiring priority attention with vaccine forecasting and ordering, cold chain equipment use, and programmed maintenance and repair were identified.

Supporting Observations

Numerous observations on specific cold chain and logistics issues were documented by Assessment team members, from each of the 11 Provinces, 15 ODs and individual HCs visited. The range of problems identified in the assessment exercise in this area included:

- National policy concerning the distribution of all drugs and supplies to OD level is not currently being implemented for vaccines and other immunisation supplies
- Cold chain equipment not yet allocated according to the Health Coverage Plan
- Faulty refrigerators not replaced or repaired in some PHD and OD, resulting in acute storage space shortages
- Kerosene quality reported as variable, resulting in refrigerator failure
- Funding for ice purchases frequently reported as inadequate or unavailable
- Loss of vial labels and subsequent wastage of the vaccines, due to melting of ice and immersion of the vials in the resulting water
- Low levels of administrative control of vaccine stock levels and subsequent determination of quantities for re-ordering at some ODs and many HCs.
- Minimum stocks not maintained in many ODs
- Vaccine wastage rate concept not understood at many HCs and some ODs.
- Vaccine quality frequently not monitored at OD and HC levels

- Very few Cold Boxes (glaciers) had thermometers for temperature monitoring
- Vaccines frequently stored in vaccine carriers at HC due to insufficient ice for Cold Box

Based on these observations, the Assessment team proposed a series of recommendations to address the fundamental planning, management, administration, technical and logistics problems identified.

Recommendation: The NIP should develop a plan for the rational distribution and storage of vaccines at appropriate sites, in coordination with CMS

Recommendation: The NIP should implement an inventory of and procurement plan for the cold chain, that should be regularly updated according to the Health Coverage Plan.

Recommendation: The NIP should undertake a comprehensive review of cold chain operations, including personnel and management capacity.

Recommendation: The NIP should identify the major causes of vaccine wastage and take appropriate action to redress these causes.

Injection Safety Findings

In some of the locations visited, there was evidence of the dissemination and implementation of the 1996 Injection Safety policy and the related 1998 Guidelines. However, in a number of operational districts and health centres, the policy appeared to be poorly understood and inadequately monitored.

Supporting Observations

- Low levels of staff knowledge of 1998 Injection Safety Guidelines, as many new staff have not yet received training
- Low levels of knowledge of Adverse Events Following Immunization (AEFI) policy and related reporting requirements
- Considerable variation in the knowledge levels of standard sterilisation and disposal procedures at OD and HC levels
- Frequently reported difficulties with blunt needles
- Distribution of injection equipment to local levels (re-usable needles and syringes) inadequate to meet replacement demand, resulting in shortages and the necessity to re-sterilise during immunisation sessions
- Low levels of knowledge and practice on safe disposal of used injection materials
- In compliance with joint WHO/UNICEF policy recommendations, it is the NIP policy to use A/D syringes for all campaign immunisations

- The disposal of A/D syringes is not adequate in some locations

Recommendation: The NIP should gradually introduce “auto-disable” (AD) syringes into routine immunization activities, replacing reusable syringes.

Recommendation: Wherever AD syringes are introduced, NIP should assure the prior existence of a system for collection and safe destruction of used injection equipment.

Disease Surveillance Findings

NIP target disease surveillance systems require further development to ensure the provision of information necessary to achieve effective disease control activities.

Supporting Observations

In many of the locations visited, there was evidence, in the form of cases recorded and reports completed, that disease surveillance was being undertaken. However, there was little evidence that the information collected through disease surveillance activities was being used to inform programme decision-making. In addition, there was no evidence of feed-back of the use of disease surveillance data from operational districts to the service delivery and community levels. Specific observations included:

- Low general levels of understanding of outbreak investigation
- Reporting forms not available at many HC
- Feedback on reports received generally non-existent, except at training sessions or workshops
- Case definitions for target diseases could not be produced on request
- AFP surveillance, carried out in the context of polio eradication activities, was consistently reported as well functioning

Recommendation: Based on the successful acute flaccid paralysis (AFP) surveillance system, the NIP should combine disease surveillance functions for AFP, Measles and neonatal tetanus (NNT) under the direction of a designated staff member, throughout the next five year plan.

Immunization Services Delivery

In most of the locations visited, there was evidence that routine immunization sessions were occurring at health centres and through outreach programmes. In some locations, immunizations were not occurring routinely, but only through special campaigns. In general, the assessment found that planning and management capacity at OD and HC levels required significant strengthening.

Supporting Observations

In general, technical understanding of the reasons for calculation of key statistics including target population, coverage rate, drop-out rate and wastage rates was low at OD and HC levels. No attempts were apparent to use these indicators of service performance to improve quality of immunisation service delivery. Very few respondents at these levels were aware of all of these statistics or of the formulae for their derivation. In particular, the following observations were made:

- There was insufficient planning for immunisation activities at many PHDs and ODs
- Many HCs not yet accredited for MPA
- Updated guidelines for specific immunisation services activities were not generally available at HC level.
- Inconsistent use of population proportions in the formulae for the calculations of target population
- Limited knowledge of calculation of coverage rates, dropout rates and wastage rates
- Very high wastage rates for DPT and BCG were evident on examination of stock release records and records of immunisations actually carried out
- There was a lack of clarity regarding the respective provincial and OD monitoring and supervision roles, including for Vitamin A supplementation
- Social mobilisation initiatives require further development and coordination
- Missed vaccination opportunities appeared to exist at referral hospital and HC levels

Recommendation: The NIP should review, update, expand and disseminate to all levels an immunization operations manual, which includes current guidelines.

Recommendation: Given the high cost of new vaccines (eg Hepatitis B), NIP should explore all available means to dramatically reduce wastage rates of all vaccines without adversely affecting coverage rates, including vial size optimisation, water-proofing of labels, frequency of outreach, refinement of the 'open vial' policy, etc.

Recommendation: The National Maternal and Child Health Centre (NMCHC) should strengthen the coordination between immunization services and vitamin A supplementation at all levels.

Recommendation: The MOH should create a comprehensive plan for social mobilization and health promotion to maximize outreach performance and quality and to make better use of outreach for all programmes.

Recommendation: The NIP should explore ways to take advantage of missed vaccination opportunities and to determine action to be taken.

Immunization in the Context of Health Sector Reform

Immunisation services, as with other national programs, are currently in a transitional phase to an integrated services delivery mode. It will be of critical importance to the achievement of national goals that immunisation priorities are adequately represented in the reform process.

Supporting Observations

Current health sector reforms have implemented service delivery based on population and accessibility criteria, together with new approaches to the funding of health services. However, consideration of program priorities need to be made in addition to demographic and financing criteria. The range of issues encountered by the Assessment teams throughout the field activities included the following:

- An apparent initial focus in the reform process on curative services provision
- A facility-based approach to service provision, resulting in a recognition of the need for a complementary outreach strategy
- Significant numbers of new, effectively untrained staff involved in immunization at OD and HC levels need additional skills development in immunization practice.
- Lack of management and planning capacities for service delivery at OD and HC levels

Recommendation: The MOH should ensure that adequate resources are available for immunization activities.

Recommendation: The MOH, through the NIP should re-train and support Provincial Health Department (PHD) Technical Bureau and OD Technical Bureau staff to collect, analyse and use data for immunisation planning and budgeting, using appropriate training approaches.

Recommendation: Planning and budgeting procedures for immunisation should include “bottom up” processes, starting at health centres.

Recommendation: The NIP should assist PHD and OD level immunisation management staff to develop a technical guidance plan for response to problems identified through integrated supervision.

III.3 Immunization Financing Findings

Macroeconomic Situation and National Health Budget¹

Enhanced Structural Adjustment Facility

In October 1999, the IMF approved a new Enhanced Structural Adjustment Facility (ESAF) worth \$81.6 million. Under the economic framework of the ESAF, the government aims for 6% annual GDP growth for 2000-2002. Inflation, which declined to approximately 5% in 1999, is targeted to decline further to 4%. The riel is expected to remain stable. The key fiscal reform measures under the ESAF focus on generating additional revenue and reorienting expenditures away from defence toward social and basic services. Government revenues are programmed to increase from 11.2% of GDP in 1999 to 12.9% of GDP by 2002. At the same time, overall expenditures are programmed to increase from 15.5% to 18.0% of GDP. The government has also specifically targeted increasing the health budget to 2% of GDP (from the 1999 level of 0.6%).

GDP and Population Growth

Although the current economic outlook is optimistic, Cambodia is still a low income country. GDP per capita in 1999 was \$272. Annual GDP growth from 1993-1998 was 6.6%, despite a sharp slowdown in 1997-98 due to the political climate. Real GDP growth was 4.3% in 1999, the first year of an upturn. The population growth rate is 2.49%. Under this economic and population growth rate scenario, per capita income is expected to increase by approximately 3% per year.

Government Budget and Debt Service

The Cambodian government operated at a budget deficit of 4.32% of GDP in 1999. Based on current anticipated revenue and expenditures, a similar deficit is projected for 2000. Cambodia's outstanding creditors are primarily the United States and Russia. Cambodia currently is not servicing this debt and arrears have been accumulating. Cambodia intends to renegotiate the loans outstanding with its creditors.

Implications for National Health Budget

Assuming 6% GDP growth is met, the targets for the national health budget imply an increase from CR 75 billion to CR 284 billion, or from \$20 million to \$75 million. The Ministry of Economy and Finance (MEF) has proposed an increase in the 2001 MOH budget of 19%, to approximately CR144 billion, or nearly \$38 million. Such increases would continue over the next several years.

Funding of National Immunization Program (NIP)

Sources and Uses of Funds for National Immunization Program

Funding for the immunization program has been very donor-dependent. While the MOH contributes two key operating costs – staffing and ice for the cold chain, its contribution represents a small portion of the overall program costs.

¹ Source: Ministry of Finance

Expenditure in 1999 from Different Sources (\$US)						
Category	Central Govt	UNICEF*	WHO	AusAID	JICA	Total***
Vaccines		458,015			118,680	576,695
Operational Cost		265,762				265,762
Cold Chain & Injection	41,360	126,730			152,691	320,781
Disease Surveillance			62,062****			62,062
Social Mobilization	****					
Supplemental Immunizations				269,600	116,000	385,600
Health Staff Salaries	338,649					338,649*****
Technical Assistance		**	**			
TOTAL	380,010	850,507	62,062	269,600	387,371	1,949,550*****

* Includes UNICEF-managed funding from AusAID and CIDA.

** Both UNICEF and WHO provide long- and short-term technical assistance.

*** Technical, financial, and logistical contributions by NGOs in specific provinces not included.

**** Includes Rotary International contributions totalling approx. \$45,000

***** In 1999, the cost of social mobilization activities was included in operational costs.

***** Calculated using Chee formula (Annexe 2)

***** Does not include contributions to immunisation through ADB

National budget funding will increase for the current year. In addition to funding ice and personnel costs, the MOH has agreed to purchase \$212,000 of vaccines through VII in 2000. Funding for routine operational costs will also increase under the Priority Action Program (PAP), described in a later section. The above table also shows that limited funding was available for the NIP

Disbursement and Use of Funds at All Levels

Guidelines for use of national budget are not clear and are subject to very different interpretation throughout the country. Provincial Health Departments (PHDs) and Operational Districts (ODs) in 1999 received funding fairly sporadically. At the facility level, there is even less knowledge about what is budgeted for operational costs, and the amount of funds that should be expected. In some cases, HC staff did not know that there was national budget funding allocated for ice costs. The general consensus is that disbursement of the national budget funding was much improved during the first half of 2000. Nonetheless, more improvements are required in disseminating information on the amount of budgeted funds and disbursing funds on a regular basis to all levels of the health system. Like funding from the national budget, donor funding for the national immunization program is also not very transparent. At the province, district, and facility level, there are many different sources and channels of funding for NIP activities (UNICEF, WHO, other local NGOs). There is little coordination between the various funders, and health planning staff interpret guidelines differently throughout the country.

Increasing Budget Support for Outreach Activities

While the NIP certainly wants to encourage financial contributions from donors, efforts should be made to organize and manage such contributions. One of the reasons for the disparate sources of funding is because of inadequate national budget funding for outreach -- the primary mode of service delivery for immunizations. Often a donor will cover a temporary budget shortfall or immediate need in one or two districts.

Under the currently developed guidelines for outreach activities (per diem of CR 8,000 per outreach session per person), and assuming the current outreach approach (visiting every village for one day per month), the total funds required for outreach in 2001 would be approximately \$710,000. Such a commitment from the MOH not only ensures ongoing service delivery, but also simplifies the currently complex and inefficient system of funding from multiple sources. This level of additional funding should be manageable given the planned increases in the MOH budget.

There are many planning and budgeting issues that are beyond the scope of the NIP. In 1999, all the districts and provinces undertook an annual planning exercise. However, the health budgets then allocated to each district and province were calculated based on national formulas, and not in accordance with the workplans created. Almost no integrated budget and activity planning and monitoring is done at the facility level. As a result, the NIP often does its own activity planning and secures its own funding. This mode of operation ensures funding for immunization, but does not promote integration of immunization into overall health services or into the national budget planning process. As the planning and budgeting processes improve as part of the health sector reforms, and if the national budget funding can cover operational costs of outreach, the NIP should seek to work within the district and provincial planning mechanisms.

While there is strong technical focus and support of immunization activities and programming, it is somewhat disengaged from the financing issues. Staff at all levels were not very focused on managing funds for immunization activities. Often the EPI Officer would have little information on program funding, referring questions to Finance Officers. Working in collaboration with the planning and finance departments, the NIP should work to improve planning and financial management capacity at all levels.

National Funding Mechanisms

National Budget

The MOH mechanisms in place for funding immunization activities, and the health system overall, has had mixed results. Funding for staff salaries is separated from other operational expenses, and appears to be disbursed on time, although staff salaries are far below living wages. Many issues were found related to funding for operational costs at the provincial, district, and facility level. Funding is not disbursed on time, is only a portion of the budgeted funding, and the level of funding is often not transparent.

Districts included in the Accelerated District Development (ADD) program were able to access 100% of their allocated funding in 1999. The timing of funding releases, however, did not support smooth implementation of all planned activities, since nearly one-half the funding was not released until the fourth quarter. Nonetheless, the ADDs have fared much better than non-ADD districts, and the number of ADDs was increased to 34 (of 73) in 2000 in order to improve funding flows to the operational levels.

Priority Action Program (including management procedures)

The Ministry of Economy and Finance is introducing a new funding mechanism called the Priority Action Program (PAP) in July 2000. The PAP is being piloted through MOH and the Ministry of Education. Under PAP, an “account” will be established at the Provincial Treasury of seven participating provinces that is dedicated to the Provincial Health Department. In addition, certain national projects (such as the Maternal Child Health Center) will also receive PAP funding. Funds will be automatically transferred from the MOEF to the Treasury accounts each quarter. Thus, the PHD will bypass the Provincial administrative system in accessing funds.

While PAP was created as part of an overall effort to ensure that funds are disbursed on a timely basis and reaches the health delivery levels, it is unclear whether these goals will actually be accomplished. For the first quarter under the PAP, PHDs will make requests for funds, based on approved activity plans for the quarter. After the first quarter, PHDs will submit expenditure reports to the Provincial Governors. Once the Governor reviews and approves the reports, then the Provincial Treasury will disburse funds for the next quarter. Under PAP, PHDs have spending authority up to 10,000,000r (\$2,500), so there is a significant financial devolution component. A Budget Strategy and Enforcement Center (BSEC) will monitor the expenditures.

There are clearly some advantages under this new system. The PHD will not have to obtain Governor approval on every single expenditure, but only on a quarterly basis. Further, PAP funds for health will clearly be identified within the Provincial Treasury in a transparent manner. Lastly, the PAP budget for July-December 2000 (CR13 billion or \$3.4 million) includes full funding for outreach activities in the seven pilot provinces.

The management procedures introduced prevent PAP from meeting the original intent of the PAP – ensuring greater control of funding within Budget Management Centers. The Provincial Governors, who reportedly delay disbursements of the national health budget, continue to play a key role in authorizing disbursement (by signing off on the expenditure reports). The process is still very centralized, and the MOH, which is responsible for health outcomes, does not control the budget required to support its activities.

Vaccine Independence Initiative

Cambodia has just begun to participate in the Vaccine Independence Initiative (VII). In 2000, Cambodia is purchasing vaccines worth \$212,000 through this mechanism. While the VII is a useful mechanism for purchasing vaccines, ensuring access to operational costs should also be a high priority for use of the national budget.

Using the national budget to cover routine operational costs would eliminate the lack of transparency caused by multiple and irregular funding sources. Unlike funding vaccines through the VII, allocating additional funds for routine operations requires no additional administrative costs and reinforces integration of immunization within the overall health system. Given the significant planned increases for the national health budget, there should be sufficient funding for Cambodia to cover both routine operational costs as well as vaccine costs, if desired.

External Funding of Immunizations 2001-2005

Discussions were held with major donors regarding their likely commitments for the next five years. None of the donors are able to make funding commitments more than one year in advance (with the exception of AusAID, which has committed funding through 2001). Often such commitments require

approvals from headquarters offices. For this reason, projections of donor funding were not included in this assessment.

The most important new external source of funding is the Global Fund for Children’s Vaccines. The Government of Cambodia will apply to the Fund for vaccines and supplies to support the introduction of combination DPT/Hepatitis B vaccine, and to strengthen the overall immunization program.

Options for Increasing Financial Sustainability

National Budget

The most promising option for increasing financial sustainability is through increasing national budget support for immunization. It is anticipated that the health budget will triple in the coming years, and support for the national immunization program represents an effective use of funds. Targeting these new funds toward operational costs for the routine program ensures greater integration of immunization into the overall health system, and avoids any additional costs associated with administering the funds. The following table analyses the percentage of MOH budget required to fund various components of the NIP:

NIP Costs as Percent of MOH Budget and Percent of GDP					
US dollars	2001	2002	2003	2004	2005
Projected GDP	3,635,000,000	3,853,000,000	4,084,000,000	4,329,000,000	4,589,000,000
Projected MOH Budget*	37,892,000	45,092,000	53,659,000	63,854,000	75,987,000
Outreach Costs	709,352	751,913	797,028	844,849	895,540
As % of MOH Budget	1.87%	1.67%	1.49%	1.32%	1.18%
Outreach + in-country cost**	1,306,161	1,322,784	1,301,310	1,334,199	1,387,635
As % of MOH Budget	3.45%	2.93%	2.43%	2.09%	1.83%
Total NIP Costs	3,344,123	4,286,284	3,496,462	4,187,617	5,219,337
As % of MOH Budget	8.83%	9.51%	6.52%	6.56%	6.87%
As % of GDP	0.09%	0.11%	0.09%	0.10%	0.11%

* Assumes 19% annual increases.

** Includes costs for outreach, monitoring/meetings, local cold chain, training development and TOT, training logistics, printing, disease surveillance, and social mobilization.

Funding significant portions of the NIP represents only a small portion of the MOH budget. For example, full funding of all outreach costs represents 1.87% of the MOH budget for 2001, and approximately 1.18% of the projected MOH budget for 2005. Similarly, full funding for all in-country activities represents only 1.83% of the projected 2005 MOH budget. Even full funding of the entire

NIP would only require 6.87% of the projected 2005 MOH budget, or approximately 0.11% of projected GDP.

User Fees

Another potential new source of funds is user fees. A small percent of HCs currently use user fees to support immunization activities. Fifty percent of the user fees are targeted toward operational costs, but it is up to the discretion of the HC with its Feedback Committee to decide on the use of funds. Many facilities use the funds for outreach per diems and ice to support immunization activities. The national immunization program may wish to recommend a percentage of user fees that should be used on EPI activities.

Reducing Program Costs

Increased efficiency in the delivery of immunization services can also contribute to financial sustainability. Three main areas include improving outreach services, reducing vaccine wastage, and reducing the dropout rate. Implementing strategies to increase the efficiency of outreach services, specifically, increasing the number of children vaccinated at each session will reduce the cost of service delivery.

There is room for significant reductions in vaccine wastage, which will increase the efficiency and financial sustainability of the NIP. In 1999, the vaccine wastage rates for routine services ranged from 46% to 81%, depending on the vaccine. An effective plan to reduce wastage can have a significant effect on vaccine costs. This plan must include measures for better storage of vaccines, prevention of vaccine wastage due to lost labels, establishment and enforcement of an efficient open vial policy, etc. The assessment also found that many staff require better training in vaccine stocking and handling practices to lower vaccine wastage.

Reducing the dropout rate for DPT/Hep B (ensuring that every child receives three doses) will not only contribute to improved efficiency of vaccine usage, but also better health outcomes.

Immunisation Financing Recommendation Summary

Recommendation 1: That the NIP coordinate with the ICSC regarding the various sources of funding available for immunisation.

Recommendation 2: That the Department of Finance undertake awareness-raising activities at all levels of health service delivery regarding the policies determining the use of the different sources of funding.

Recommendation 3: The NIP work closely within the MOH to ensure that additional funding is used in ways that strengthen immunization activities.

Recommendation 4: Funding for outreach activities be increased, as the assessment found funding in many facilities to be insufficient.

Recommendation 5: The NIP identify the principal causes of vaccine wastage and undertake actions to reduce or eliminate as many of these causes as possible.

Recommendation 6: Without setting a target of the contribution from MOH budget, it is recommended that the MOH fully fund all outreach activities at a minimum, both for financial sustainability and management efficiency reasons.

IV Conclusion

The 2000 Cambodia NIP Assessment has concluded that basic immunization services are being carried out in most areas of the country.

Specifically, at the central level, the Assessment found that current activities toward the restructuring of the existing EPI Unit and the Polio Eradication Unit into an integrated National Immunisation Program is both timely and critical to the achievement of national health goals. In the context of immunisation financing, the Assessment found that the most appropriate and effective use of National Budget in support of immunisation was the full funding of outreach activities. At provincial and lower levels of service delivery, the assessment found significant problems related to cold chain management and with the implementation of Injection Safety policy.

The Assessment recommended that the restructure process be completely implemented as soon as possible and that the national budget fully fund the cost of outreach activities. At the service delivery level, the Assessment recommended strategic reviews of cold chain management and the implementation of plans for more efficient deployment, management and maintenance of cold chain equipment and resources. Similar strategic reviews were recommended for injection safety and improvement to immunisation service delivery.

The Assessment team noted that the reform context within the health sector presents opportunities for significantly advancing the national immunisation program effectiveness. However, as with the management of all wide-ranging change, response to these opportunities frequently presents many new challenges.

These findings and recommendations will be reflected in the preparation of the updated Five Year Strategic Plan and associated Annual Action Plans.

References

UNICEF, 1999. WHO/UNICEF Joint Progress Report 1999 to the Government of Australia – Cambodia Expanded Program of Immunisation. Phnom Penh.

Joint WHO/UNICEF/UNFPA Policy Recommendations for Safe Injections, 2000.

Guidelines for Outreach Services from Health Centres – Draft 7, May 2000

Annexe 1. Locations for field level assessment

Technical Assessment

Province	Operational District	Teams
		<i>MOH Representative</i> <i>PHD Representative</i> <i>NGO Representative</i>
Phnom Penh	Kandal Choeung	Chhin Lan, NMCHC Chuop Vutha, Sihanouk Ville Hara Srimuangboon, PATH/CVP
Kampong Chhnang	Kampong Chhnang Kampong Tralach	Leng Pothika, NCHP Chum Sophoan, Pursat Alan Crouch, CVP
Pursat	Bakan Sampov Meas	Ung Thol, Human Resources Phan Chandra, Kg. Chhnang Nagi Shafik, WHO
Banteay Mean Chey	Mong Kulborey	Cheng Doran, CDC Mao Sambo, Siemreap Keith Feldon, WHO
Siemreap	Siemreap	Tol Chin Sideth, Finance Te Sorya, Banteay Mean Chey Chea . Kim . Ly, EPI
Kampong Cham	Krauch Chhma O Reaing Ov	Sun Cham Roeun, HSR Chet Chiva, Koh Kong Yogi Thami, WHO Ty Chettra, NIP Eang Vuthy, Prey Veng Wayne Murray, AusAID
Prey Veng	Kampong Trabek	Iv Eknorpul, NIPH Kong Kry, NIP Gerry Pais, UNICEF
Svay Rieng	Romeas Hek	But Saben, HIS Mak Huon, Phnom Penh Chum Aun, UNICEF
Kratie	Kratie	Chheng Mon, NIP Lun Chanrasmey, Kg. Cham David Bassett, WHO
Koh Kong Sihanouk Ville	Sre Ambel Sihanouk Ville	Thach . Varoeun, PM Chan Sokhum Kanha, Kratie Robert Steinglass, CVP/BASICS Chheng Phalkun, RACHA

Financial Assessment

Kandal	Takhmau	Financial Assessment
Kampong Speu	Oudong Kampong Speu	Financial Assessment

Annexe 2

CALCULATION OF SALARY INPUTS BY MOH

Calculation of Average Salaries and Benefits -- 1999

	Total MOH Salaries/Bene	Total Number of Staff	Per Staff	in Dollars
Central Level	2,900,000,000	4,319	671,452	\$177
Province & OD	7,886,600,000	15,070	523,331	\$138

I. Central Level	Central
Number of Staff	37
Average Salary	\$177
Estimated Salary Costs	\$6,538

II. OD Level	
Number of Staff	234
Average Salary	\$138
Estimated Salary Costs	\$32,226

II. Facility Level	
Number of MPA HCs	388
Number of Khum Clinics	878
Total Number of Facilities	1266
FTE Staff on EPI per facility	1.72
Total FTE Staff	2177.52
Average Salary	\$138
Estimated Salary Costs	\$299,885

Total Estimated Salary Costs	\$338,649
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