THE REPUBLIC OF UGANDA

UGANDA NATIONAL EXPANDED PROGRAMME ON IMMUNIZATION MULTI YEAR PLAN 2006 – 2010

August~~February 28~~ 2006

Foreword

Immunization is a key priority of the Uganda Minimum Health Care Package of the health sector. Over the past five years, implementation of the EPI revitalization plan has accelerated government efforts to achieve better health for the children and women of Uganda, thereby contributing to the enhancement of the quality of life and productivity.

A comprehensive review of the programme conducted in 2005 provided vast information on good practices, gaps and lessons learned over the past 5 years that formed the basis for development the new multiyear plan. The review highlighted several achievements since 2000. The programme managed to reverse the decline of immunization coverage and achieved high coverage surpassing previously set targets. The introduction of additional vaccines (hepatitis B and *Haemophilus influenzae* type b) and improvement of injection safety contributed to increased utilization of services. The impact of these efforts is visible at the community level with significant reductions in measles and neonatal tetanus morbidity and mortality, and no wild poliovirus cases for the past 10 years.

There are a number of challenges and threats to the programme that include sustaining availability of current vaccines offered by the programme, planning for future introduction of new vaccines, maintaining a high immunization coverage in a rapidly growing population, reaching all un-immunized children particularly with imminent threats to polio importation and measles outbreaks among the most vulnerable groups, and maintaining a high quality and sensitive disease surveillance system at all levels.

The process of development of the new multiyear plan has accorded the programme and partners an opportunity to rethink approaches to address the challenges foreseen in the coming years and to devise strategies conforming to the global vision for immunization (GIVS) as we strive to achieve the Millennium Development Goal of reduction of childhood morbidity and mortality by 2015, and the national goals as articulated in the Health Sector Strategic Plan II. Focus will be placed on supporting poorly performing districts and sub counties to improve performance through integrated efforts, achieving and maintaining polio eradication status, vaccination of wider age groups to ensure control of vaccine preventable diseases such as measles and tetanus, sustaining availability of vaccines and expanding the disease surveillance system as the prospect for introduction of new vaccines prevails.

I wish to express my appreciation to all those who have contributed to development of this strategic plan including the technical support provided by our partners. We pledge full government support in implementation of the plan and look forward to attainment of the objectives set.

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Executive Summary

The Uganda EPI multiyear plan for 2006-2010 highlights the areas of focus for the immunization programme over the next 5 years based on previous programme performance, priorities for the health sector as stipulated in the Health Sector Strategic Plan 2 (2005/06 – 2010/11) and the global and regional goals set for child survival. The Global and Immunization Vision and Strategy (GIVS), Millennium development Goals on mortality and morbidity reduction and the WHO Regional Strategic Plan for 2006-2009 provided the over all strategic framework for development of the plan.

EPI performance on the whole in Uganda has shown a progressive improvement in routine immunization and surveillance indicators since 2000, with DPT3 coverage increasing from 56% in 2000 to 84% in 2005. Several investments in to the programme over the years such as GAVI, Sustainable Outreach Services (SOS) and the Reaching Every District (RED) approach have contributed to the successes attained. The impact of the immunization programme is evident: there have been no confirmed cases of wild polio virus since 1996; morbidity due to measles has declined by over 90% compared to 2000 with no confirmed deaths in 2004 and 2005; the number of meningitis cases due to *Heamophilus influenzae* type b (Hib) has declined by 95% at sentinel sites for Hib surveillance since introduction of Hib vaccine in 2002; the number of reported neonatal tetanus cases has declined by 100% in the first 5 high-risk districts that conducted supplemental immunization activities.

However district variability in performance exists with the proportion of districts achieving the set targets for routine immunization and surveillance not yet up to the required levels. Sustaining availability of current vaccines offered by the programme, planning for the possible future introduction of new vaccines in the pipeline, maintaining a high immunization coverage in a rapidly growing population, reaching all un-immunized children particularly with imminent threats to polio importation and measles outbreaks among the most vulnerable groups, and maintaining a high quality and sensitive disease surveillance system at all levels are some of the challenges that the programme is faced with.

Over the next 5 years the programme will focus on the district level to improve routine immunization and surveillance performance using an integrated approach; strengthen logistics management at all levels; capacity building for mid level managers, operational level health workers and pre service trainees; advocacy for sustainable financing of the programme; achievement of regional targets set for accelerated disease control with documentation of polio eradication and neonatal tetanus elimination; expansion of the disease surveillance system with the prospect of introduction of new vaccines. Strategies such as RED, integration of activities (outreaches, child days, supplemental immunization activities), and advocacy for the programme using evidence-based data will be used to achieve the targets set.

The programme cost for the 5 years is US$ 223,607,769. 73% of the costs are for vaccines and supplies. The programme intends to construct new offices and stores at the national level, which contributes significantly to the capital costs in 2006. The programme is faced with a substantial funding gap. By the 2010, the apparent funding gap is expected to be US$ 53,034,603, which is 26% of the total resource needs, excluding shared costs for personnel and transport.

1. Introduction

1.1 Country profile

Uganda is located on the equator and covers an area of 241,039 km^2, of which 18% consists of Lake Victoria and other lakes, with the rest being made up of plateau with numerous small hills, valleys and extensive savannah plains. It receives abundant rainfall and is rich in tillable land.

Administratively, by the end of Financial Year 2004/05, Uganda was divided into 56 districts; however they are expected to increase to 76 by the end of FY 2006/07. The districts are further divided into 167 counties, 962 sub-counties, 5,191 parishes and 40,330 LC1s/villages. The village forms the smallest politico-administrative unit.

According to a census carried out in September 2002, the population of Uganda was 24,748,977, with 51.0% females and 49.0% males. The annual population growth rate of 3.4% is fuelled by a high fertility rate of 6.9 births per woman. Given a Crude Birth Rate of 47.3 births per 1000 inhabitants per year, 1,237,449 births were expected in 2002[1], a figure expected to rise annually, to 1,475,512 births by 2007. The national literacy rate is estimated to be 71% for males and 51% for females. The majority (88%) of the population lives in rural areas. However, some of the districts in north and northeast of Uganda have been affected by a prolonged period of conflict resulting in widespread insecurity and large-scale population displacement. This has had an effect on health service delivery and most of these districts have not been able to achieve the national targets for the health indicators.

The Poverty Eradication Action Plan (PEAP) is Uganda's Comprehensive Development Framework and it has guided the formulation of government policy since its inception in 1997. Increasing the quality of life of the poor is one of the goals of the PEAP because it is acknowledged that poor health leads to poverty and poverty leads to poor health. Poor health was the most frequently mentioned cause of poverty in the first and second Uganda Participatory Poverty Assessment[2]. Out of the 18 indicators for monitoring of the Health Sector Strategic Plan, five indicators were selected as specific PEAP monitoring indicators, of which DPT3 coverage is one.

1.2 The National Health System

The National Health System comprises all the institutions, structures and actors whose actions have the primary purpose of achieving and sustaining good health. The boundaries of Uganda's National Health System encompass the public sector including the health services of the army, police and prisons; the private health delivery system comprising of the private-not-for-profit organizations (PNFP), private health practitioners (PHP), the traditional and complementary medicine practitioners (TCMP); and the communities.

The core functions of a national health system are:

i) Stewardship of the sector including policy appraisal and development; oversight of health sector activities; assuring quality, health equity and fairness in

[1] Uganda Bureau of Statistics, Uganda Population and Housing Census, September 2002
[2] MoFPED. Second Uganda Participatory Poverty Assessment. Deepening the Understanding of Poverty. 2002

contribution towards the cost of health care; harnessing the contribution of other health-related sectors; ensuring that the sector is responsive to expectations of the population; and to be accountable for the performance of the wider health sector.

ii) Provision of preventive, promotive, curative and rehabilitative services.

iii) Policy and planning, monitoring and evaluation.

iv) Mobilization of resources including human resources, health infrastructure, medicines and other health supplies, data and information, etc

The Government of Uganda, through the Ministry of Health, has the lead role and responsibility for delivering the outputs of HSSP. Various other partners have defined roles to play and contributions to make. The Ministry of Health initiates policy and coordinates overall sector activities and brings together stakeholders at the central, district and community level. The stewardship function extends to the district level where by the district leadership is responsible for coordinating all the stakeholders within the district.

Far reaching restructuring of the National Health System (NHS) was achieved through implementing the National Health Policy (1999) and HSSP I that are within the framework of the Constitution (1995), Local Government Act (1997) and the PEAP.

Uganda is governed through a decentralized system. The districts are autonomous and responsible for the health needs of the populations under their jurisdiction. The health services are also decentralized with Primary Health Care (PHC) concept as the main strategy for service delivery. Districts receive grants directly from the center without an intervening regional tier.

The Health Sector Strategic Plan (HSSP) II covering the period 2005/06 – 2009/10 has been developed based on the experiences of HSSPI. The Uganda National Minimum Health Care Package (UNMHCP) that consists of interventions that are demonstrably cost-effective and have the largest impact on reducing mortality and morbidity will be the basis of implementation of HSSP II with immunization placed in the Maternal and Child Health Cluster.

The HSSP is implemented through a Sector-Wide Approach (SWAp). A Memorandum of Understanding (MoU) establishing the Health SWAp outlines and contains the modalities for financing the sector plan as well as common working arrangements for managing programmes.

The coordinating structures established under the SWAp include: the Health Policy Advisory Committee (HPAC) that advises both government and partners on the implementation of the NHP and the HSSP; Working Groups for translating the various HSSP outputs into guidelines, plans and implementation activities; bi-annual GoU/HDP Health Sector Joint Review Missions held to review the implementation of the plan; Health Sector Working Group - a forum for discussion of sector priorities, drafting of the Health Sector Budget Framework Paper and discussion and approval of new donor funded projects.

1.3 EPI within the National Health System

The Uganda National Expanded Programme on Immunization (UNEPI) is located in the Department of National Communicable Disease Control within the Directorate of Clinical and Community Services. An organogram of the UNEPI structure is illustrated in Figure 1.

The **vision** of UNEPI is to ensure that the Ugandan population is free of vaccine-preventable diseases.

The **mission** is to contribute to the overall objective of the HSSP in reducing morbidity, mortality and disability due to vaccine preventable diseases, so that they are no longer of public health importance.

The **goal** of the programme is to ensure that every child and high-risk group is fully vaccinated with high quality and effective vaccines against the target diseases according to recommended strategies.

The targeted diseases, as of 2005, are tuberculosis, poliomyelitis, diphtheria, pertussis, tetanus, measles, hepatitis B and *Haemophilus influenzae* type b (Hib), the last two diseases having been introduced into the programme in June 2002. The immunization schedule is as shown in Table 1.

The programme has 3 major areas of focus:

1. Strengthening routine immunization;
2. Conducting supplemental immunization activities to achieve global targets of polio eradication, elimination of maternal and neonatal tetanus, and accelerated measles control;
3. Sustaining a sensitive disease surveillance system within the Integrated Disease Surveillance and Response framework.

Immunization is a countrywide programme covering all districts of Uganda. Ministry of Health/UNEPI is responsible for policy, standards and priority setting, capacity building, coordinating with other stakeholders and partners, resource mobilisation, procurement of inputs such as vaccines and injection safety materials, monitoring and technical support supervision to the districts. The districts and health sub-districts are responsible for planning, management and delivery of EPI services through the implementation of the overall district health plan. The community is involved in mobilization and bringing the children for immunization. Immunization is part of the PHC and is integrated into the child survival activities at the district and health facility levels.

Figure 1: Functional organizational structure of UNEPI

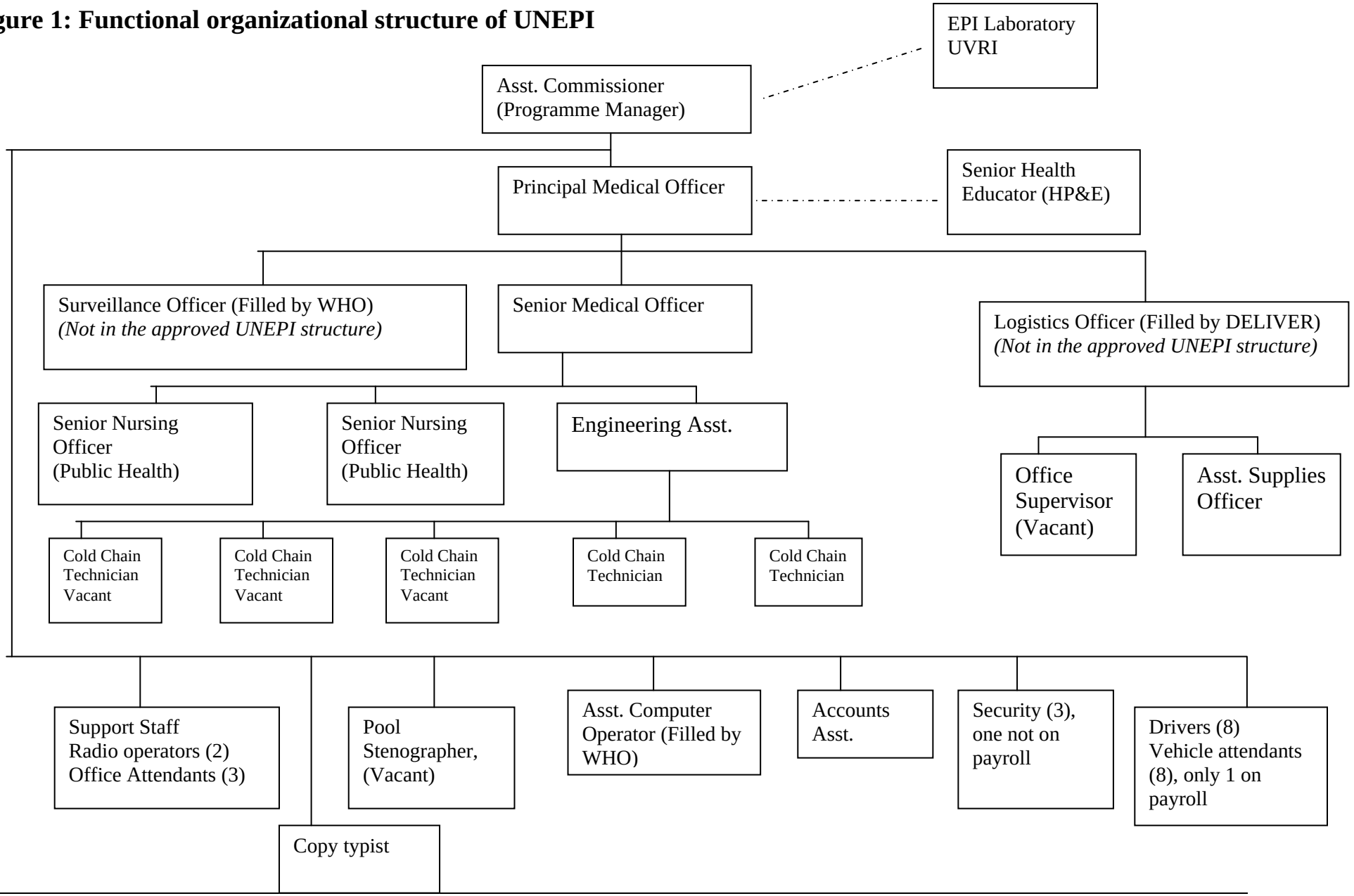

Table 1: Uganda Immunization Schedule

Vaccine/ Antigen	Dosage	Doses Required	Minimum Interval Between Doses	Minimum Age to Start	Mode of Administration	Site of Administration
BCG	0.05ml up to 11 months, 0.10ml after 11 months	1	None	At birth (or first contact)	Intra-dermal	Right Upper Arm
DPT-HepB+Hib	0.5 ml	3	One month (4 weeks)	At 6 weeks (or first contact after that age)	Intra-muscularly	Outer Upper Aspect of Left Thigh
Polio	2 drops	0+3	One month (4 weeks)	At birth or within the first 2 weeks (Polio 0) and six weeks or first contact after 6 weeks (Polio 1)	Orally	Mouth
Measles	0.5 ml	1	None	At 9 months (or first contact after that age)	Sub-cutaneuosly	Left Upper Arm
Tetanus Toxoid	0.5 ml	5	TT1 & TT2; 4 weeks TT2 & TT3; Six months TT3 & TT4; One year TT4 & TT5; One year	At first contact with a pregnant woman or women of child bearing age (15-45 years)	Intra-muscularly	Upper Arm

2. Situation Analysis

Routine immunization coverage in Uganda suffered a downward trend between 1996 and 2000, with DPT 3 coverage decreasing from 72% in 1996 to 56% in 2000. Several studies were carried out to identify the causes of the decline. The studies attributed the decline to factors that included the following:

- Inadequate community awareness on the benefits of immunization coupled with circulation of rumors and misconceptions about immunization spread on local radios with some people making allegations that the vaccines contain HIV.
- Poor accessibility to immunization services
- Inadequate capacity for management and delivery of immunization services
- Poor cold chain maintenance and injection safety practices
- Inadequate logistics
- Weak community involvement and initiatives.
- The war in the north that had displaced many people and mobilization for priority interventions including immunization was very difficult.

The EPI revitalization plan was initiated in 2000 and then a strategic plan 2001 – 2005 was developed to address the weaknesses identified. The key areas addressed in the revitalization plan were;

- Ensuring availability of potent and safe vaccines and other related supplies
- Improving infrastructure
- Expansion of service delivery points
- Capacity building at all levels
- Monitoring and evaluation including giving feedback
- Strengthening management capacity
- Support supervision
- High level advocacy and social mobilization with a multi-sectoral approach
- Disease surveillance and response

During the period of implementation of the UNEPI 2001 – 2005 multi-year plan, significant investments and strategies were put into place for the revitalization of EPI including the Global Alliance for Vaccines and Immunization (GAVI) support, Sustainable Outreach Services (SOS), Community Problem Solving and Strategy Development (CPSSD), Community Dialogue, the Reaching Every District (RED) approach, among others. In addition a number of studies and assessments were carried out in this period that provided useful information to the programme. Review of EPI performance at all levels was carried out in August – September 2005 that assessed the programme's strengths, weaknesses and lessons learnt over the past five years.

Based on UNEPI's annual performance reports, findings of the studies and the EPI review 2005, EPI performance on the whole has shown a progressive improvement in performance in routine immunization and surveillance from 2000 to 2005 at the national level, with DPT3 coverage increasing from 56% in 2000 to 84% in 2005. However the proportion of districts achieving the set targets is still not up to the required levels.

The impact of the immunization programme is evident over the past 5 years: there have been no confirmed cases of wild polio virus since 1996; the morbidity due to measles has declined

by over 90% compared to 2000 with no confirmed deaths in 2004 and 2005; the number of meningitis cases due to Hib has declined by 95% at sentinel sites for Hib surveillance since introduction of Hib vaccine in 2002; the number of reported NNT cases has declined by 100% in the first 5 high-risk districts that implemented 3 rounds of TT SIAs.

The comprehensive EPI review of 2005 recommended further improvement in coverage at district level using strategies like the RED approach in order to meet targets for accelerated disease control; addressing mid level managers' and operational level workers' training needs particularly in interpersonal communication skills and logistics management; undertaking further assessments of disease burden in view of the wide array of vaccines in pipeline such as rotavirus, pneumococcal and human papilloma vaccines; and further strengthening of surveillance activities at district level to meet standard indicators especially with the risks of outbreaks and importation of diseases of epidemic potential.

Tables 2 – 4 summarize the situation analysis by system components and accelerated disease control initiatives.

Baseline and annual targets for EPI, 2005-2010

	2005	**2006**	**2007**	**2008**	**2009**	**2010**
Births	1,319,569	1,362,572	1,407,332	1,453,937	1,502,483	1,553,069
Surviving infants	1,169,927	1,208,053	1,247,737	1,289,058	1,332,098	1,376,948
Pregnant women	1,360,380	1,460,902	1,508,892	1,558,860	1,610,909	1,665,147
BCG coverage	92%	100%	100%	100%	100%	100%
OPV3	84%	89%	90%	91%	92%	93%
DPT-HepB+Hib3	84%	89%	90%	91%	92%	93%
Measles	86%	93%	94%	95%	96%	97%
TT2+ (Pregnant)	55%	74%	75%	76%	77%	78%

Table 2: Situation analysis of routine EPI by system components, Uganda, 2000-2005

Component	Suggested indicators	National					
		2000	**2001**	**2002**	**2003**	**2004**	**2005**
Service delivery	National DPT3 coverage[3] National DPT3 coverage[4]	58% 56% (1999)	61%	72%	81%	87%	85% 77%
	Proportion of districts with DPT3 coverage ≥ 80%	7/45 (15.6%)	11/56 (19.6%)	18/56 (32.1%)	30/56 (53.6%)	38/56 (67.9%)	32/56 (57.1%)
	National DPT1-3 drop out rate	26%	27%	20%	16%	14%	11%
	Proportion of districts with DPT1-3 dropout rate ≤ 10%	5/45 (11.1%)	5/56 (8.9%)	7/56 (12.5%)	16/56 (28.6%)	17/56 (30.4%)	30/56 (53.6%)
Vaccine supply, quality and logistics	National stock out of vaccines reported during the last year	-	-	-	DPT-HepB+Hib stock out for 4 months	-	-
	Number of districts using AD syringes for immunization	-	-	All	All	All	All
Advocacy and communication	Availability of a communication plan at national level	-	-	Yes	Yes	Yes	Yes
Surveillance	Completeness of district reporting to national level	77%	86%	86%	97%	99%	98%
	Timeliness of district reporting to national level	18%	55%	60%	79%	88%	82%
Programme Management	Number of ICC meetings held	3	4	4	4	4	3

[3] Source of data: MOH Health Management Information System
[4] Source of data: National coverage survey

Component	Suggested indicators	National					
		2000	2001	2002	2003	2004	2005
	Percentage of total routine vaccine spending financed using government funds	70% (BCG, Measles, OPV, TT, DPT)	75% (BCG, Measles, OPV, TT, DPT)	100% (BCG, Measles, OPV, TT); 0% DPT-HepB +Hib vaccine	100% (BCG, Measles, OPV, TT); 0% DPT-HepB +Hib vaccine	100% (BCG, Measles, OPV, TT); 0% DPT-HepB +Hib vaccine	100% (BCG, Measles, OPV, TT); 0% DPT-HepB +Hib vaccine

Table 3: Situation analysis by accelerated disease control initiatives, Uganda, 2000-2005

Component	Suggested indicators	National					
		2000	2001	2002	2003	2004	2005
Polio Eradication	National OPV3 coverage	57%	62%	73%	82%	86%	84%
	Proportion of districts with OPV3 coverage ≥ 80%	7/45 (15.6%)	11/56 (19.6%)	20/56 (35.7%)	32/56 (57.1%)	37/56 (66.1%)	31/56 (55.4%)
	Non polio AFP rate per 100,000 children under 15 years of age	1.69	1.89	2.38	1.80	1.63	2.11
	Proportion of districts with non polio AFP rate > 1 per 100,000		34/45 (75%)	48/56 (86%)	39/56 (70%)	42/56 (75%)	45/56 (80%)
	Number of confirmed wild polio virus cases	0	0	0	0	0	0
	NIDS/ SNIDS conducted	SNIDs in 21 districts Rd 1 92% Rd 2 101%	SNIDs in 26 districts Rd 1 112% Rd 2 115%	SNIDS in 18 districts Rd 1 92% Rd 2 92%			SNIDS in 15 districts Rd 1: 93% Rd 2: 93%
Maternal and Neonatal	TT2+ pregnant women coverage	45%	47%	50%	48%	57%	56%

Component	Suggested indicators	National					
		2000	**2001**	**2002**	**2003**	**2004**	**2005**
Tetanus Elimination	Number of districts reporting > 1 case per 1,000 live births		7/56 (12.5%)	8/56 (14.3%)	3/56 (5.4%)	1/56 (1.8%)	0/56 (0%)
	SIAs conducted			2 rounds of TT campaigns in 5 districts	3rd round of TT campaigns in 5 districts	2 rounds of TT campaigns in 6 districts	3rd round in 6 districts; 2 rounds campaigns in 9 districts
Measles Control	Measles coverage	61%	63%	77%	83%	91%	86%
	Proportion of districts with measles coverage ≥ 90%	4/45 (8.9%)	8/56 (14.3%)	11/56 (19.6%)	13/56 (23.2%)	21/56 (37.5%)	17/56 (30.4%)
	Reported suspected measles cases (HMIS)	45,512	48,543	50,967	29,492	4,506	1,551
	Proportion of suspected measles cases with serum investigation	Not applicable	Not applicable	Not applicable	Not applicable	1,486 (33%)	1,006 (64.9%)
	Proportion of districts that have investigated at least 1 measles case	Not applicable	Not applicable	Not applicable	Not applicable	54/56 (96.4%)	51/56 (91.1%)
	NIDS/ SNIDS conducted; Coverage attained	SNIDs in 16 districts Target 6 – 59 months 84.6%	SNIDs in 10 districts Target 6 – 59 months 113.7%		Under 15 NIDs 103%		SNIDS in 15 districts Target 9 – 23 months 150%

N.B. The number of districts increased from 45 in 2000 to 56 in 2001

Table 4: Strengths and weaknesses of EPI by system components, Uganda, 2005

System component	Strengths	Weaknesses
Vaccine supply and quality	**Procurement and distribution** - Timely forecast and procurement for vaccines and injection safety materials through UNICEF - GOU paying 100% for the BCG, OPV, Measles and TT vaccines, and injection safety materials - Vaccine stabilization fund has been put in place - Distribution plan for monthly delivery of vaccines and other EPI logistics from center to districts available ~~- Monthly delivery of vaccines and other EPI logistics from the center to all districts~~ **Vaccine management** - Tools for stock control available at all levels - VVM on most vaccines; Multi Dose Vial Policy (MDVP) introduced in 2002 and is practiced at service delivery level. - Vaccine utilization monitoring initiated in sentinel districts. - Inclusion of vaccine wastage monitoring for DPT-HepB + Hib vaccine in the recently revised HMIS.	- Stock control system for vaccines and other EPI logistics not fully functional - District level data not used for forecasting vaccines and other logistics. - Bundling concept not adequately practiced at all levels. ~~- Varying systems for delivery of vaccines within the districts and they are not documented~~ - Constrained transport situation with varying systems for delivery of vaccines especially at district and service delivery levels. - Limited capacity for vaccine regulation by NDA. - Vaccine potency testing for different levels not being carried out. - Vaccine wastage monitoring not implemented nation-wide. - Vaccine utilization / wastage monitoring data from some sentinel sites is inaccurate due to poor/ irregular recording of data
Logistics	**Cold Chain** - Increase in logistics base through support from JICA and~~&~~ other partners. - Existence of cold chain corrective and maintenance teams at all levels - GOU provides fuel for the cold chain system through the PHC conditional grant **Injection safety and waste management** - Policy, standards and guidelines on injection safety and waste management available and being implemented	- Irregular cold chain maintenance at all levels. - Irregular power and gas supply at district and lower levels - Inadequate supply of spare parts especially for solar powered refrigerators. - Not all fridges are not CFC free. - Bulkiness of ADs has created shortage of storage space at all levels

System component	Strengths	Weaknesses
	- Committee in place to coordinate injection safety within MOH (UNISTAF) - Almost all health facilities (96%) are using ADs for immunization[5] - Introduction ADs improved injection safety and confidence of the clients in EPI. Based on EPI experience, ADs are being adopted by MOH for the entire curative services. - At least 1 De Montfort Mark 8a type incinerator in each of the 56 districts. - Incinerator operators have been trained and provided with protective gear	- Inadequate use of safety boxes and pits at the health facilities. - The available incinerators are not sufficient for the service delivery areas (HSDs).
Service delivery	- Decline in immunization coverage has been arrested - Dropout rate declining but has not reached the acceptable level of less than 10%. - Reduction in morbidity and mortality due to VPDs especially measles, polio, neonatal tetanus and Hib - Additional vaccines introduced into EPI without interruption of services. - System for establishing burden of disease for vaccines planned for introduction has been initiated (e.g. pneumoccocal) - Integration of EPI with other Child survival strategies e.g. Vit A supplementation, deworming, growth monitoring through strategies such as SOS, SIAs, CPSSD, child days, etc.	- 43% (24/56) of the districts have DPT3 coverage less than 80%. - High Dropout Rates (DOR) in many districts – Only 53.6% (30/56) of the districts have DOR of < 10% - High attrition rate and inadequate skills among health workers at service delivery level - Minimal involvement of the private sector and community in planning and implementation of services especially outreaches. - Poor utilization of data for decision making at point of collection - Catchment area for some h/facilities not clearly defined. - Lack of updated inventory of operational static units and outreaches carrying out immunization. - Disruption of donor-funded projects after project funding ceases. ~~Some of the integration was carried out in donor-funded projects. The districts did not include them in their work-plans causing disruption of services when the project funding ceased.~~
Advocacy and communication	- High community awareness about immunization which has resulted in increased demand for services - Involvement of ~~H~~high level political and cultural leaders ~~involvement~~ - Communication strategic plan in place - Assigned p~~P~~ersonnel for communication at central ~~er~~ and district	- Inadequate interpersonal communication (IPC) skills among health workers - Lack of IEC materials for routine immunization - Some of the existing IEC materials are not in local languages - Inadequate audio-visual equipment including film vans - Most districts do not have EPI communication included in their

[5] Source – EPI review 2005

System component	Strengths	Weaknesses
	levels ~~Involvement of cultural leaders in advocacy~~ - Launching of the immunization revitalization plan and additional vaccines by the President of Uganda in 2002. - Parish mobilizers being used to mobilize for outreaches	district work plans. - Not all the CORPS are ~~not~~ being utilized to plan and mobilize for routine EPI - Misconceptions about EPI still exist in some communities.
Surveillance	- Surveillance for AFP, measles, NNT, Pediatric Bacterial meningitis (PBM), yellow fever and pneumococcal disease is being implemented within the Integrated Disease Surveillance (IDSR) framework. - Attained AFP (Polio) certification standard indicators for surveillance at national level - Case based measles surveillance introduced in all districts - Functional national polio certification committee (NCC), national polio expert committee (NPEC) and National Polio Laboratory Containment Task Force (NTF) - Standard OPD registers available in 98% of health ~~/~~facilities - Case definition guidelines for MOH priority diseases have been developed	- Decline in the non polio AFP detection rates - Diphtheria and pertussis not on MOH priority diseases list for surveillance - No community based surveillance system at present - Only 33% of the reported suspected measles cases through the HMIS had serum investigation carried out through case-based surveillance. - Less than 50% of the districts are carrying out case based NNT surveillance - Only 1 measles diagnostic lab based in Entebbe leading to high costs of transportation of specimens to the laboratory. - 57% of the districts were not monitoring immunization and dropout rate data - 39% of the registers not correctly filled - Incomplete compilation of HMIS data at district level - 60% of the health facilities do not have case definition guidelines.
Programme management	**Policy, planning and management** - Presence of EPI policy, standards, guidelines and work plans at all levels - Structures for partner coordination are in place: ICC, NCC, technical committees with strong collaboration between UNEPI and the partners - Integrated bottom up planning within the districts - Review meetings held at district and health ~~/~~facilities - Strong managerial skills at the district level in majority of the districts **Supervision** - Integrated supervision plan and checklist at national and~~&~~ district	- EPI policy still in draft form - EPI documents not widely circulated to lower levels. - Irregular technical meetings at national and district levels. - Adhoc activities disrupt planned activities at national level. - Poor coordination of partners at district level. - Districts not implementing all the planned activities - Irregular technical support supervision especially from center to

System component	Strengths	Weaknesses
	level - Regional supervision operational in 5 regions - Visits by the ~~m~~Minister of Health and top management to poorly performing districts - Feedback provided to the districts on a regular basis - Technical assistance provided by partners for specific areas. **Operational Research** - Operational research on-going at the center	districts and from HSD to health ~~/~~facilities - Follow up of recommendations from studies not fully implemented
Strengthening human and institutional resources	- Human Resource structure/ staffing norms at all levels available with skilled manpower at the implementation level (HSD) - Training needs assessment was conducted and a comprehensive training plan was developed - 9 ~~trained~~ trainers for MLM trained - OPL t~~T~~raining manuals available and OPL training carried out mainly for targeted areas e.g. SIAs, new vaccine introduction	- Staffing norms not attained at national, district and health ~~/~~facility levels - Surveillance and logistics officer posts filled by partners (not in UNEPI structure) - Districts currently under going restructuring leaving the structure for EPI delivery obscure. - Training component not included in EPI policy and guidelines. - More emphasis on on-job training versus pre-service training - OPL training does not include all the components of EPI - Insufficient and outdated EPI content in the pre-service training curriculum. - MLM trainings have not been conducted in-country
Sustainable financing	- A Financial Sustainability Plan (FSP) was developed at national level with involvement of all stakeholders. - Funds available at district level for implementation of EPI activities through the Primary Health Care (PHC) conditional grant	- Contribution to the programme costs by GOU has been declining despite the increase in target population and coverage - GOU has not been able to meet its contribution to the DPT-HepB+Hib vaccine as outlined in the FSP, this has created uncertainty of sustainability of the DPT-HepB+Hib vaccines - Implementation of Fiscal Decentralization Strategy (FDS) in the districts was not well stream lined; some districts have lost money for operations to other sectors. - Delays in disbursement of funds to the districts - Currently the districts have minimal local revenue and they are not contributing much to immunization. - Delayed accountability of funds advanced for implementation of

System component	Strengths	Weaknesses
		activities at all levels.
Accelerated Disease Control	**Polio Eradication** - Increasing trends in OPV3 coverage at national level with current coverage above 80% - No case of w~~W~~ild p~~P~~oliovirus has been detected since 1996. - Certification standard indicators of surveillance have been attained at national level **Maternal and~~&~~ Neonatal Tetanus Elimination** - Gradual increase in TT2+ coverage among pregnant women - Phased implementation of TT SIAs targeting women 13-49 years in 20 high-risk districts **Measles Control** - Measles coverage at national level above 85%. - Following the under-15 campaigns, there has been 95% and 100% reduction in measles morbidity and mortality respectively. - Case based measles surveillance rolled out nationwide.	- 45% (25/56) of the districts have OPV3 coverage less than 80%. - Declining trends of the non-polio AFP rate. - National TT2+ coverage among pregnant women still below 80%. - Not all districts attained 80% coverage in all the 3 rounds of TT SIAs. - 62.5% (35/56) have routine measles coverage of < 90%. - Only 33% of the reported suspected measles cases had serum investigation carried out

3. Programme Objectives and Milestones, Uganda Multi Year Plan, 2006-2010

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
Service delivery 1. Large proportion of districts have not achieved the set target of OPV3 and DPT3 coverage of 80% 2. Poor utilization of EPI services (high drop out rates) 3. National TT2+ coverage among pregnant women at 57% 4. Integration of child survival activities	▪ To achieve at least 90 % of districts with 80% coverage for all routine childhood antigens (using DPT3 as a measure) ▪ To achieve at least 90% of districts with a drop out rate of less than 10%. ▪ To achieve at least 80% of districts with 80% TT 2+coverage for pregnant women ▪ To promote integration of child survival initiatives within the minimum health care package. ▪ To support vaccination of wider age groups and new target populations as the need arises and resources become available	**2006**: - DPT3/OPV3 coverage at 89% nationally with 70% districts above 80% coverage; - 40% districts with DOR <10% - 25% of districts with 80% TT2+ coverage; - 50% districts with measles coverage >90% - Health worker vaccination policy finalized - HPV pilot initiated **2007**: - DPT3/OPV3 coverage at 90%; 75% districts with above 80% coverage; - 55% districts with DOR <10% - 40% of districts with 80% TT2+ coverage; - 60% districts with measles coverage >90% **2008**: - DPT3/OPV3 coverage at 91%; 80% districts with above 80% coverage;	By 2010 or sooner, all countries will have routine immunization coverage at 90% nationally with at least 80% coverage in every district (GIVS 2005) By 2009, at least 80% of countries will attain at least 80% DPT3 coverage in all districts (AFRO) Reduce child mortality by two-thirds between 1990 and 2015 (MDG4) By 2009, at least 80% of countries will attain a minimum of 80% TT2+ coverage among women of child bearing age	1 2 3 4

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
		- 55% districts with DOR <10% - 70% % of districts with 80% TT2+ coverage; - 70% districts with measles coverage >90% **2009:** - DPT3/OPV3 coverage at 92%; 85% districts with above 80% coverage; - 75% districts with DOR <10%; - 70% of districts with TT2+ coverage above 80%; - 80% districts with measles coverage >90% **2010**: - DPT3/OPV3 coverage at 93%; -90% districts with above 80% DPT3/OPV3 coverage; - 90% districts with DOR <10% - 80% of districts with TT2+ coverage above 80%; TT2+ coverage; - 90% districts with measles coverage >90%.		
Logistics 1. Inadequate inventory control system at all	▪ To ensure availability of logistics data and information	**2006:** - Review and design a	By 2009, all countries will adopt and implement	2

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
levels. 2. Inadequate transport for supplies and vaccine delivery, monitoring and supportive supervision at all levels. 3. Not all health facilities are using ADs for routine immunization **4.** Inadequate waste management at health facility level	at all levels ▪ To strengthen the transport fleet for delivery of EPI services ▪ To review and develop a new strategy for distribution of vaccines and supplies from national level to districts and within districts in view of decentralization ▪ To attain universal usage of ADs for routine immunization ▪ To attain 100% safe disposal of used needles and syringes	Logistics Management Information System (LMIS) - 100% of the health facilities using ADs for routine immunization - Review and develop a strategy on bundling - Resources to implement a transport replacement plan in place - Distribution system reviewed **2007**:LMIS and bundling strategy implemented - Distribution strategy adapted and implemented **2008**: LMIS available at all levels	technologies for safe disposal and destruction of injection materials and other sharps	3 2 1 1
<u>Vaccine supply and quality</u> 1. Need for regulatory structures to ensure vaccine quality 2. Inadequate cold chain management 3. A proportion of health facilities stocked out of	▪ To strengthen the existing national capacity for vaccine regulation and quality control ▪ To ensure that 100% of static units have functional cold chain equipment (including newly established static units)	**2007:** 100% of static units[6] with functional cold chain equipment (2006 and beyond); - Program policy for energy utilization in place **2009**: national vaccine regulatory mechanism fully	By 2007, all countries will adopt the multi dose vial policy	2 3

[6] A static unit is defined as a health facility with immunization cold chain equipment.

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
vaccines and related supplies.	▪ To develop and implement a cost effective cold chain energy utilization source. ▪ To maintain zero tolerance of stock outs for all vaccines and related supplies	functional - 100% of static units implementing policy on energy utilization		4 1
Advocacy and communication 1. Lack of EPI communication plans at district level 2. Inadequate IPC skills among health workers 3. Low community participation in planning for EPI services 4. Low immunization card retention (50%, 2004) 5. Lack of IEC materials for routine immunization	▪ To ensure all districts have EPI communication integrated within the district plans ▪ To achieve at least 80% of districts with health workers who are trained in IPC.	**2006**: - All districts with EPI communication integrated within district plans (2006 and beyond) - Health workers in 20% of districts trained in IPC and disseminate the 5 key messages on EPI during immunization sessions; - 40% of districts with IEC materials and local media to promote EPI; **2007**: Health workers in 40% of districts trained in IPC and disseminate the 5 key messages on EPI during immunization sessions;; - 80% districts with IEC materials and local media to promote EPI **2008**: Health workers in 60%		1 2

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
		of districts trained in IPC and disseminate the 5 key messages on EPI during immunization sessions;; - 90% districts with IEC materials and using local media to promote EPI; **2009:** Health workers in 80% of districts trained in IPC and disseminate the 5 key messages on EPI during immunization sessions;		
Surveillance 1. Declining non polio AFP rate 2. Only thirty three percent (33%) of reported measles cases are investigated for laboratory confirmation 3. Forty five percent (45%) of reported suspected NNT cases are investigated 4. High cost of measles cased based	▪ To attain and maintain at least 80% of surveillance performance indicators for target Vaccine Preventable Diseases (VPDs) in all districts by 2010 ▪ To conduct HMIS data validation ▪ To integrate AEFI surveillance with pharmacovigilance	**2006:** 100% of districts with non-polio AFP rate of 2/100,0000 (2006 and beyond) - 50% of suspected measles cases serum investigated; - 55% of reported NNT cases investigated; - 20% of districts reporting at least 1 AEFI, including zero reporting - One regional storage and shipment site for measles case investigation established; - Laboratory diagnostic accreditation status maintained for EPI targeted diseases (2006 and beyond)	By 2007, all countries will achieve at least 2 cases of AFP notification per 100,000 By 2009, all countries will have established case based surveillance for neonatal tetanus By 2009, all countries will report cases of AEFI from all districts By 2009, all at-risk countries will have capacity for lab diagnosis of yellow fever	1

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
surveillance 5. Increasing scope of VPD surveillance requiring laboratory support 6. Inadequate and unreliable HMIS data 7. Only 2 districts reported AEFIs in 2005		- Data quality self assessment conducted **2007:** 60% suspected measles cases serum investigated - 65% of reported NNT cases investigated - 40% of districts reporting on AEFI, including zero reporting - Two regional storage and shipment sites established - **2008:** 70% suspected measles cases serum investigated; - 70% of reported NNT cases investigated - 60% of districts reporting on AEFI, including zero reporting - Three regional storage and shipment sites established **2009:** 80% suspected measles cases serum investigated; - 80% of reported NNT cases investigated - 100% of districts reporting on AEFI, including zero reporting - Four regional storage and shipment site established		

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
<u>Programme Management</u> **A) Policy, Planning and Management** 1. EPI policy not finalized 2. Inadequate infrastructure at central level 3. Inadequate partner coordination at district level **B) Monitoring and supervision** 1. Irregular technical support supervision at all levels **C) Operational research** 2. Research data not fully utilized **3.** Capacity for research at district level not adequate	▪ To finalize and disseminate the EPI policy ▪ To improve the storage facilities at the national level. ▪ To enhance partner coordination at district level ▪ To conduct supportive supervision at district level on a quarterly basis and provide feedback on coverage, dropout rates and vaccine wastage ▪ To strengthen operational research capacity at national and district levels, and promote use of research findings	**2006/2007:** - Policy finalized, approved, printed and disseminated; - Planning guidelines reviewed to include partner coordination; - Construction of central offices and stores completed **2007/2008:** Move to new central offices completed **2006/2007**: All regional hospitals implementing EPI/IDSR support supervision strategy **2006:** - Develop operational research plan involving national and district levels - Mobilize resources **2007:** Initiate implementation of research plan		1 2 3

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
Strengthening human and institutional resources 1. Outdated EPI component in the pre-service curriculum 2. MLM and OPL training not done 3. Absence of logistics manager and surveillance officer posts in GOU structure	▪ To build capacity for pre and in-service health workers at national and district levels ▪ To advocate for establishment of key EPI positions within the MOH structure at national and district levels	**2006:** - MLM training carried out in 10% of districts - OPL training carried out in 20% of the districts - Dialogue with MOH on establishment of key positions initiated - Pre service curriculum review done **2007:** - MLM training carried out in 75% of districts. - OPL training carried out in 40% of the districts **2008:** - MLM training carried out in 100% of districts - OPL training carried out in 60% of the districts **2009:** - OPL training carried out in 80% of the districts **2010:** OPL training carried out in 100% of the districts		1 2
Sustainable Financing 1. Declining GOU per capita contribution to EPI costs	▪ To increase GOU contribution for vaccines and operational costs (programme 9) to 4% of the health sector budget. ▪ To determine and negotiate the	**2006: P**rogramme budget support by GOU of 2.0% - Negotiation with GAVI on bridge financing **2007: P**rogramme budget support by GOU of 2.5%	By 2009, countries will be contributing at least 30% of annual vaccines purchase costs	

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
	most affordable option for sustainability of pentavalent vaccine	- Initiate GOU contribution to pentavalent vaccine **2008: P**rogramme budget support by GOU of 3.0% **2009: P**rogramme budget support by GOU of 3.5% **2010**: **P**rogramme budget support by GOU of 4.0%		
<u>Introduction of new vaccines and technologies</u> Sustainability of new vaccines	▪ To provide evidence-based information to support introduction of new vaccines ▪ To document the impact of new vaccines ▪ To introduce measles second dose vaccination by 2007	**2006**: - Finalize national hepatitis B serosurvey (adult and pediatric) - Establish hepatitis B (acute jaundice) sentinel surveillance in two sites - Develop and submit proposal for measles 2nd dose to GAVI - Rotavirus surveillance initiated **2007:** - Established hepatitis B (acute jaundice) sentinel surveillance in three sites - Introduce measles 2nd dose in routine immunization schedule **2008:** Programmatic	By 2009, 50% of countries will report trends in hepatocellular carcinoma based on cancer registries By 2009, 50% of countries will report results of hepatitis B sero epidemiological studies	1 2

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
		evaluation for HPV initiated; Established hepatitis B (acute jaundice) sentinel surveillance in four sites **2010:** National sero survey on hepatitis B conducted		
Accelerated disease control activities	▪ To attain polio eradication status by 2006 ▪ To eliminate NNT by 2009 ▪ To attain measles elimination by 2010	**2006:** - 100% districts with AFP certification level indicators. - Documentation of polio-free certification - Available inventory of laboratories with polio virus and other potentially infectious materials **2009**: Certification of NNT elimination **2010:** Measles elimination status attained	By 2006 there will be no case of paralytic polio caused by circulating polio virus in the region By 2009, the process of independent certification of polio-free status will lead to full regional certification By 2010 or earlier, mortality due to measles will have been reduced by 90% compared to the 2000 level (GIVS) By 2009, countries with high routine measles coverage (> 75%) and presumed low mortality will eliminate indigenous transmission of measles virus By 2009, at least 80% of	1 3 2

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
			countries will achieve NNT incidence rate of less than 1 case per 1,000 live births in all districts	

4. Strategies, Key Activities and Timeline, Uganda Multi Year Plan, 2006-2010

Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
Service delivery 1. To achieve at least 90 % of districts with 80% coverage for all routine childhood antigens (using DPT3 as a measure) 2. To achieve at least 90% of districts with a drop out rate of less than 10%. 3. To achieve at least 80% of districts with 80% TT 2+ for pregnant women 4. To promote integration of child survival activities within the minimum health care package 5. To support vaccination of wider age groups and new target populations as the need arises and resources become available	**Infant vaccination** • Build capacity at district level to implement RED/ REC strategies • Strengthening delivery of outreaches with emphasis on integrated outreaches **Defaulter tracing** • Drop out monitoring • Strengthen integration of ANC with TT immunization • Nationwide introduction of school based TT immunization • Support integrated service delivery through routine immunization or SIAs • Advocate for vaccination of wider age groups based on scientific evidence such as adolescent age groups, health workers	- Conduct joint/ integrated micro planning with involvement of the community	X	X	X	X	X
		- Provide and distribute relevant documents / charts for RED implementation.	X	X			
		- Carry out Pulse (mop-up) immunization in poorly performing sub counties in every district	X	X	X	X	X
		- Conduct registration and defaulter tracing of target children	X	X	X	X	X
		- Develop guidelines for micro planning/ mapping to ensure all ANC services provide TT immunization		X			
		- Work with RH to review strategies for improved ANC attendance	X	X			
		- Set up a coordinating committee with Ministry of Education & develop an implementation strategy for school based TT immunization	X				
		- Continue to integrate services with immunization activities such as Vitamin A supplementation,	X	X	X	X	X

Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
		deworming, ITN distribution during SIAs, etc - Dissemination of information on basis for vaccination of wider age groups such as burden of disease assessments, surveys, etc	X	X	X	X	X
Logistics 1. To ensure availability of logistics data and information at all levels	• Establish an effective and efficient logistics management information system to maintain full supply of standard EPI commodities at all levels.	- Design, implement and maintain LMIS at all levels - Conduct a comprehensive inventory for all EPI equipment at all levels	X X	X X	X X	X X	X X
2. To strengthen the transport fleet for delivery of EPI services	• To expand and maintain an efficient transport fleet for EPI operations at national level	- Procure and maintain field vehicles, trucks, and motorcycles and bicycles inline with expanding administrative levels and transport replacement plan	X	X	X	X	X
3. To review and develop a new strategy for distribution of vaccines and supplies from national level to districts and within districts in view of decentralization	• Establish a vaccine and supplies distribution system from central level to districts and within districts	- Implement vaccine and supplies distribution system from central level to districts and within districts - Construct and expand storage space at the national and district level	X X	X X	X X	X X	X X
4. To attain universal usage of ADs for routine immunization	• To implement a revised bundling system strategy	- Avail adequate safe injection related materials	X	X	X	X	X

Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
5. To attain 100% safe disposal of used needles and syringes	• To collaborate with MOH infrastructure and clinical divisions, and partners to ensure adequate injection safety and waste management	on a regular basis - Work with infrastructure to construct incinerators and disposal pits	X	X			
Vaccine supply and quality							
1. To strengthen the existing national capacity for vaccine regulation and quality control	• Collaborate with NDA to develop standard guidelines to ensure vaccine quality	- Work with NDA to build capacity for vaccine regulation	X	X	X	X	X
		- Support UVRI EPI lab to conduct regular vaccine potency testing at the lower levels	X	X	X	X	X
2. To ensure that 100% of static units have functional cold chain equipment (including newly established static units)	• To establish a cold chain equipment inventory monitoring system	- Conduct and maintain physical inventory for all cold chain equipment countrywide	X	X	X	X	X
		- Procure cold chain equipment, spare parts and workshop consumables	X	X	X	X	X
		- Support central and district teams to carry out routine and timely maintenance and repair of equipment	X	X	X	X	X
3. To develop and implement a cost effective cold chain energy utilization source.	• To establish a cost effective cold chain energy source	- Conduct studies on the cost effective energy source for EPI cold chain		X			
		- Implement use of the cost		X	X	X	X

Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
4. To maintain zero tolerance of stock outs for all vaccines and related supplies	• Build capacity for vaccine management at all levels	effective cold chain energy source - Implement the gas cylinder tracking system	X	X	X	X	X
		- Forecast and procure adequate vaccines in a timely manner	X	X	X	X	X
		- Timely delivery of EPI vaccines and other logistics at all levels	X	X	X	X	X
		- Expand vaccine utilization monitoring for all antigens at all levels in all districts.		X			
		- Conduct vaccine management assessment in selected districts			X		

Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
Advocacy and communication							
1. To ensure all districts have EPI communication integrated within the district plans	• Participate in annual district planning	- Attend annual regional planning workshops	X	X	X	X	X
2. To achieve at least 80% of districts with health workers who are trained in IPC	• Capacity building for communication for EPI • Institutionalize health worker - community dialogue meetings	- Training of health workers in IPC	X	X	X	X	X
3. To strengthen advocacy for EPI at all levels	• Communication for behavior change • Involvement of religious and cultural leaders and civil societies in advocating for EPI • Building partnerships with the media for EPI activities • Enhance school involvement in EPI activities	- Sensitization of parish mobilisers, Community Development Assistants, religious, cultural and civil societies in EPI	X	X	X	X	X
		- Development of IEC materials and messages	X	X	X	X	X
		- Scale up Community Problem Solving and Strategy development	X	X	X	X	X
		- Monitoring of communication activities at all levels and providing feedback	X	X	X	X	X
		- Feedback meetings	X	X	X	X	X
		- Orientation/sensitization of broadcasters, reporters and managers	X	X	X	X	X
		- Develop guidelines on EPI for essay competition and drama in schools	X	X	X	X	X

Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
Surveillance 1. To attain and maintain at least 80% of surveillance performance indicators for VPDs in all districts 2. To conduct HMIS data validation periodically 3. To integrate AEFI surveillance with pharmacovigilance	• Provide focused support to districts to achieve/maintain AFP certification level indicators.	- Support surveillance activities (Field case search, specimen shipment and STOMP team missions) in districts.	X	X	X	X	X
	• Documentation of polio-free certification	- Support NCC, NPEC and NTF	X	X	X	X	X
		- Support to the laboratory to maintain accreditation	X	X	X	X	X
	• Capacity building for surveillance of EPI target diseases within the IDSR framework	- Training and sensitization of pre-service training tutors lecturers and in-service health workers in disease surveillance	X		X		X
		- Print and disseminate relevant documents for surveillance of EPI target diseases	X		X		X
		- Build and maintain capacity for ITD	X	X	X	X	X
	• Monitor for action using reliable data	- Validation of HMIS data including DQS	X		X		X
		- Maintain support for Hib, pneumococcus, Yellow Fever, hepatitis B and rotavirus surveillance sites	X	X	X	X	X
	• Initiate community	- Training of VHT members in events-based reporting of	X	X	X	X	X

Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
	surveillance system	priority diseases and conditions in low AFP detection districts					
	• Strengthen collaboration with the National Drug Authority	- Initiate regular technical meetings involving the NDA	X	X	X	X	X
<u>Programme Management</u> **Policy, planning and management** 1. To disseminate the EPI policy	• To avail the EPI policy to all service points	- To finalize, print and disseminate the EPI policy to all service points	X				
2. To improve storage facilities at national level	• To expand storage facilities at central level	- Construct EPI offices and stores in Kampala	X	X	X		
3. To enhance partner coordination at district level	• To strengthen partner coordination at district level	- To develop guidelines for partner coordination at district level (with planning dept)	X	X			
Monitoring and supervision 4. To conduct supportive supervision at district level on a quarterly basis and provide feedback on coverage, dropout rates and vaccine wastage	• Use evidence-based decision making to improve programme performance	- Monitor district performance and provide feedback	X	X	X	X	X
	• Expand regional surveillance system to all regional hospitals	- Quarterly technical support supervision to every district using the whole site strategy.	X	X	X	X	X
		- Initiate regional surveillance and monitoring at all regional hospitals	X	X	X	X	X

Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
Operational research 5. To strengthen operational research capacity at national and district levels, and use of research findings	• Identify critical programme areas that require research • Advocate for development of research protocols • Resource mobilization for research • Publication of findings	- Development of research protocols by national and district personnel - Conduct operational research and disseminate findings	X X	X X	X X	X X	X X
<u>Strengthening human resource and institutional capacity</u> 1. To build capacity for pre and in-service health workers at national and district levels	• Equip pre- and in-service health workers and mid-level managers with knowledge, skills and competencies in EPI service delivery.	- Review and update the EPI training manuals and reference materials - Work with the Ministry of Education to update the pre-service health-training curriculum. - Training health tutors in EPI. - Conduct EPI MLM training. - Conduct EPI OPL training - Work with HRD to streamline/ mainstream EPI training with the MOH training policy	X X X	 X X X X	 X X	 X	
2. To advocate for establishment of key EPI positions at national and district levels	Dialogue with the relevant key stakeholders at MOH and Ministry of public Service	- Determine key unfilled positions at national and district level, develop terms of reference and hold discussions with relevant	X	X			

Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
		stakeholders					
Sustainable Financing 1. To increase GOU contribution for vaccines and operational costs (programme 9) to 4% of the health sector budget. 2. To determine and negotiate the most affordable option for sustainability of pentavalent vaccine	• Advocacy and continuous lobbying with key GOU stakeholders for increasing government budget for the programme • Ensure regular, adequate and timely financial flows to the programme (Financial sustainability)	- Use evidence-based advocacy for resource mobilization from government and partners at national and district levels. - Explore and implement more efficient strategies.	X X	X X	X X	X X	X X
Introduction of new vaccines and technologies 1. To provide evidence-based information to support introduction of new vaccines 2. To document the impact of new vaccines 3. To introduce measles second dose vaccination by 2007	• Conduct operational research including burden of disease assessments • Initiate surveillance and reporting systems for the diseases targeted with the new vaccines. • Plan to introduce new vaccines based on burden of disease, capacity, sustainability, etc • Advocacy and orientation of health workers on measles 2nd dose introduction	- Conduct disease burden assessment before introduction of new vaccines: pneumococcal, rotavirus and human papilloma virus vaccines - Establish a surveillance system for new and under-utilized vaccines (Rotavirus, H. Influenzae type b, Hepatitis B, HPV) - To initiate reporting and review of data on hepatocelluar carcinoma in cancer registries - To conduct sero epidemiological studies on hepatitis B every 5 years - Introduce AD reconstitution syringes - Plan to introduce new	X X X	X X X X	X X	X	X X

Programme objective	Strategy	Strategic activities	Time line				
			2006	2007	2008	2009	2010
		vaccines - Orientation of health workers on measles 2nd dose - Social mobilization through IPC and radio messages on measles 2nd dose - Review of monitoring tools for inclusion of measles 2nd dose		X X X			
Accelerated disease control 1. To attain polio eradication status by 2006 2. To attain measles elimination by 2010 3. To eliminate NNT by 2009	• Achieve and maintain high routine immunization coverage for OPV, measles and TT vaccines • Conduct supplemental immunization activities • Strengthen disease surveillance for AFP, measles and NNT • Involvement of other sectors e.g. Reproductive Health, Ministry of Education	- Implement nation wide under 5 campaigns for measles and polio integrated with other child survival interventions. - Evaluate measles control plan, 2002-2006 - Develop and implement measles control plan 07-2010 - Conduct national documentation of polio free status. - Conduct NNT risk assessment - Implement TT campaigns in high risk districts. - Introduce TT in lower primary schools to sustain elimination - LQA for MNT elimination	X X X X X X	X X	X X	X X	X X

5. Costing And Financing, Uganda Multi Year Plan, 2006-2010

5.1 Macro economic background

Uganda has experienced strong economic growth averaging 6.5% per annum since 1991/92. Inflation fell from 150% per annum in 1985/86 to an annual average of 4.8% over the past decade. However the percentage of the population living below the poverty line, which had been on the decline from 52% in 1992/93 to 44% in 1997/98 and to 35% in 2000, has risen slightly to 38% in 2003[7]. With the rising population, the total number of people living in poverty has increased.

The Health Sector Strategic Plan is implemented though Sector Wides Approaches (SWAPs) where both government and donor funds (including project funds) are pooled together to constitute budget support for the public health services. Other sources of financing for the health sector include local government and parastatal contributions, private not for profit agencies, private firms and households through insurance and out of pocket contributions.

Inadequate financing remains the primary constraint inhibiting the development of the health sector in Uganda. The current level of funding of US$9 per capita falls far below the estimated requirements; in effect only 30% of HSSP I was funded. Attempts have been made to mobilize additional funds for the sector but these have been constrained by macroeconomic concerns and the rigid sector ceilings.

5.2 Costing of the EPI Multiyear plan

This section outlines the costing of the strategic plan over the next five years. Interventions and inputs into the programme have been costed using the WHO tool for costing of multiyear plans[8]. The data used in the costing tool was gathered at national level, mostly from documents of the Ministry of Health and from other line Ministries and from interviews with key personnel in the Ministries and partners such as WHO and UNICEF.

Procurement of vaccines and injection supplies is done through UNICEF and so UNICEF standard price projections were adapted from the tool. Personnel costs were based on available data from current government salary scales. Interventions at all levels of service delivery have been costed. Operational costs for routine and supplementary activities were based on past expenditures with some adjustments.

The programme costs may be classified as routine recurrent costs, routine capital costs, supplemental immunization activities and other costs.

- **Routine recurrent costs**
  a) Vaccines
     i. Traditional
     ii. New and underused vaccines
  b) Injection supplies
  c) Personnel

[7] Poverty Eradication Action Plan 2001-2003 and Uganda National Household Survey 2003.
[8] Comprehensive Multi-Year Planning (cMYP). A tool and user guide for cMYP costing and financing. Draft version 1.3, March 2006. WHO in partnership with the GAVI Alliance.

d) Transport
e) Maintenance and overhead
f) Training
g) Social mobilization
h) Disease surveillance
i) Programme management
j) Other routine recurrent costs

- **Routine capital costs**
  a) Vehicles
  b) Cold chain equipment
  c) Other capital equipment

- **Supplemental immunization activities**
  a) Polio
  b) Measles
  c) Maternal and neonatal tetanus

- **Other costs**
  a) Shared personnel costs
  b) Shared transportation costs
  c) Construction of new buildings

The main cost drivers of the routine programme (excluding shared costs and campaigns) in the baseline year of the plan (2004) were vaccines (new and underused vaccines): 59% and personnel (16%).

Figure 2: Baseline cost profile (routine immunization) Uganda, 2004

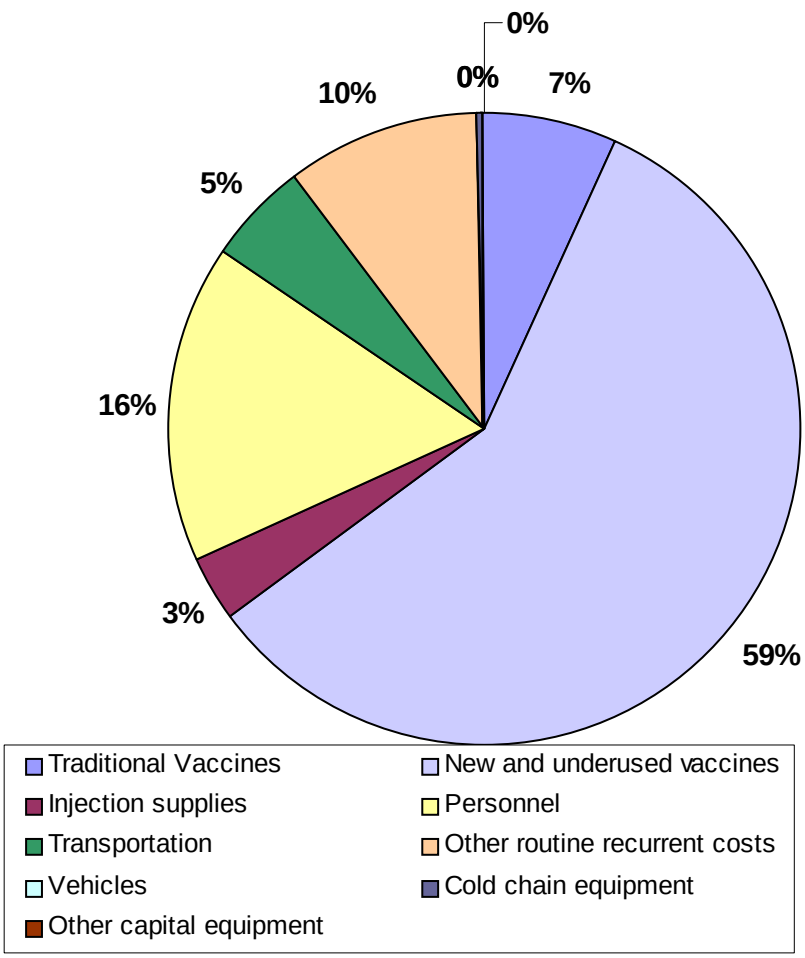

Figure 3 shows the projection of future resource requirements for the next five years, which are further summarized in tables 5 and 6. The total budget for the programme ranges from **USD 64,113,602** in 2006 to **USD 36,855,824** in 2010.

The programme costs for the future budgets are largely driven by:
- The costs for the DPT-Hep B-Hib vaccine, at 54% of total programme costs in 2010.
- The planned integrated supplemental immunization activities for measles and polio every 3 years and tetanus elimination campaigns in 2006.
- Construction of central EPI offices and stores in 2006 and 2007.
- The increasing vaccine coverage targets over the years, from 87% in 2004 for DPT-HepB-Hib3 to 92% in 2010.
- The high population growth rate of 3.4% resulting in annual increases in the cohort of children requiring immunization.

Figure 3: Projection of Future Resource Requirements

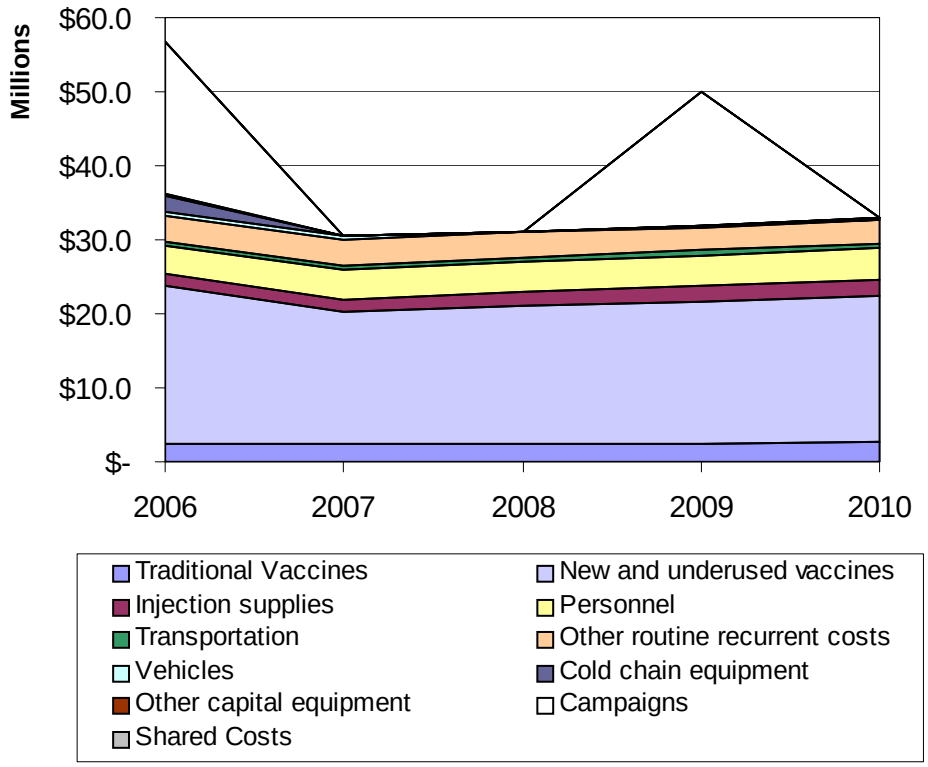

Table 5: Multiyear Plan costing, Uganda, 2006-2010

		Expenditures	Future Resource Requirements					
Cost Category		**2004**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total 2006 - 2010**
Routine Recurrent Cost		**US$**	**US$**	**US$**	**US$**	**US$**	**US$**	**US$**
	Vaccines (routine vaccines only)	14,336,326	23,859,776	20,336,200	20,959,402	21,645,798	22,359,992	109,161,167
	Traditional vaccines	1,509,460	2,454,076	2,470,337	2,486,100	2,544,404	2,609,150	12,564,068
	New and underused vaccines	12,826,867	21,405,699	17,865,863	18,473,302	19,101,394	19,750,842	96,597,100
	Injection supplies	694,778	1,533,754	1,676,929	1,904,938	2,083,049	2,271,301	9,469,971
	Personnel	3,637,404	3,897,608	3,982,801	4,066,150	4,147,473	4,230,423	20,324,454
	Salaries of full-time NIP health workers (immunization specific)	134,004	163,306	168,570	172,960	176,419	179,948	861,202
	Per-diems for supervision and monitoring	3,503,400	3,734,302	3,814,231	3,893,190	3,971,054	4,050,475	19,463,252
	Transportation	1,196,653	549,289	612,500	624,750	671,751	685,186	3,143,476
	Fixed site and vaccine delivery	954,630	236,684	272,229	277,762	303,593	309,665	1,399,933
	Outreach activities	242,023	312,605	340,272	346,988	368,158	375,521	1,743,543
	Maintenance and overhead	914,958	1,195,021	1,218,743	1,244,520	823,179	841,521	5,322,985
	Cold chain maintenance and overheads	847,110	1,054,658	1,074,644	1,096,137	701,555	715,586	4,642,580
	Maintenance of other capital equipment	28,825	85,002	87,631	90,785	62,874	66,010	392,302
	Building overheads (electricity, water…)	39,024	55,362	56,469	57,598	58,750	59,925	288,104
	Short-term training	81,455	369,116	416,160	424,483	432,973	441,632	2,084,364
	IEC/social mobilization	374,014	458,474	467,643	476,996	486,536	496,267	2,385,915
	Disease surveillance	507,887	962,540	981,791	968,326	987,692	1,007,446	4,907,796
	Programme management	277,021	282,561	296,848	302,785	308,841	315,017	1,506,052
	Other routine recurrent costs	54,836	88,550	90,321	92,128	93,970	95,850	460,819
	Subtotal Recurrent Costs	**22,075,333**	**33,196,689**	**30,079,937**	**31,064,478**	**31,681,261**	**32,744,635**	**158,767,001**
Routine Capital Cost								
	Vehicles	0	591,600	395,352	0	194,838	0	1,181,790
	Cold chain equipment	25,000	2,211,615	8,323	0	0	231,857	2,451,795
	Other capital equipment	28,084	328,659	16,570	28,044	29,471	37,568	440,312
	Subtotal Capital Costs	**53,084**	**3,131,874**	**420,245**	**28,044**	**224,309**	**269,425**	**4,073,897**
Campaigns								
	Polio		11,122,949			11,662,754		22,785,703
	Measles		5,515,375			6,398,110		11,913,485
	MNT campaigns	1,256,714	3,738,059					3,738,059
	Subtotal Campaign Costs	**1,256,714**	**20,376,383**			**18,060,864**		**38,437,247**
Other Costs								
	Shared personnel costs	3,460,920	3,572,122	3,643,564	3,716,435	3,790,764	3,866,579	18,589,464
	Shared transportation costs	16,548	16,879	17,217	17,561	17,912	18,271	87,841
	Construction of new buildings	0	3,859,460	0	0	0	0	3,859,460
	Subtotal Other Costs	3,477,468	7,448,461	3,660,781	3,733,997	3,808,676	3,884,850	22,536,765
GRAND TOTAL		**26,823,576**	**64,113,602**	**34,120,362**	**34,785,106**	**53,732,874**	**36,855,824**	**223,607,769**

Table 6: Multi year plan costing for Uganda by Program Components, 2006-2010

	Future Resource Requirements					
MYP components	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
	US$	**US$**	**US$**	**US$**	**US$**	**US$**
Vaccine supply and logistics	33,272,881	22,433,374	22,892,384	26,510,518	24,900,718	130,009,876
Service delivery	25,262,129	9,924,838	10,128,430	25,442,778	10,119,536	80,857,711
Advocacy and communication	458,474	467,643	476,996	486,536	496,267	2,385,915
Monitoring and disease surveillance	962,540	981,791	968,326	987,692	1,007,446	4,907,796
Program management	4,157,578	312,716	318,970	325,350	331,857	5,446,472
Grand total	**64,113,602**	**34,120,362**	**34,785,106**	**53,732,874**	**36,855,824**	**223,607,769**

5.3 Financing of the EPI Multi year plan 2006-2010

The sources of financing of the program include central government budget and donors. Donor agencies that have supported the program include UNICEF, WHO, DFID, USAID, JICA and Development Cooperation of Ireland. It is expected that support from these agencies will continue during the next five years, although most of the funding can only be regarded as probable funding. Funding classified as secure only represents estimates from government and the 'traditional' donors to the programme based on their past contributions.

The majority of funding during the baseline year (2004) was from GAVI (63%) for the pentavalent vaccine (Figure 3). This trend is reflected over the next 5 years even after considering probable funding from the government for co financing of the vaccine costs during the bridging phase expected to begin in 2007/08.

Funding from the government is classified as secure based on historical funding patterns. The government has been funding the traditional four antigens (polio, measles, BCG, TT), injection supplies, personnel, transport, maintenance for vehicles, gas for the cold chain and overheads. Funds for these items have therefore been classified as secure.

In addition to the government funds, some donor funds are also classified as secure such as funds from GAVI for the 2nd dose of measles in routine immunization, and some resources for specific activities from WHO, UNICEF and JICA. Some resources for the 2006 supplemental immunization activities are also classified as secure because they have been mobilized from partners.

Of the USD 162,840,898 required for the programme from 2006-2010 (excluding shared costs), 91% is classified as secure funding, 5% as probable funding and 4% as unsecured funds. The funding gap is largely for the programme recurrent costs and for supplemental immunization activities in 2006 and 2009 (Tables 7-9).

The funding gap reflects the difficulty in projecting available resources from donors and government far into the future. However, there is new funding policy from GAVI that is evolving and could change the funding scenarios for the future. These include Bridge Financing and Health Systems Strengthening (HSS).

Figure 4: Baseline Financing Profile (Routine Only)

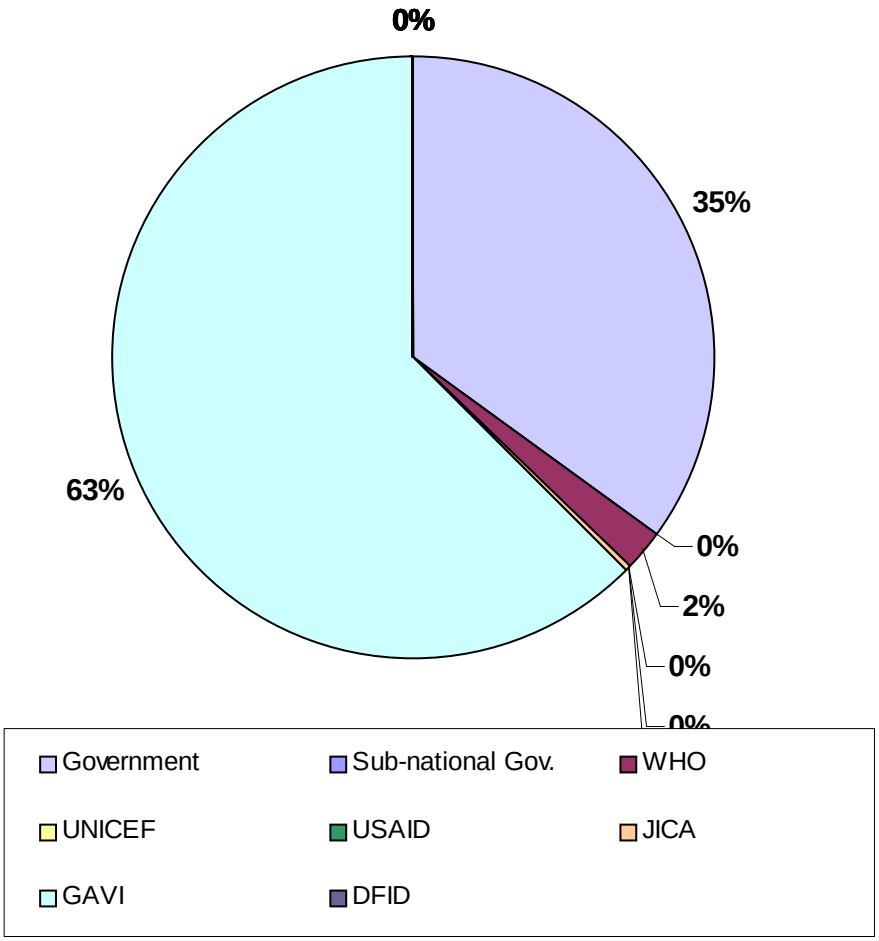

Figure 5: Future Secure + Probable Financing and Gaps

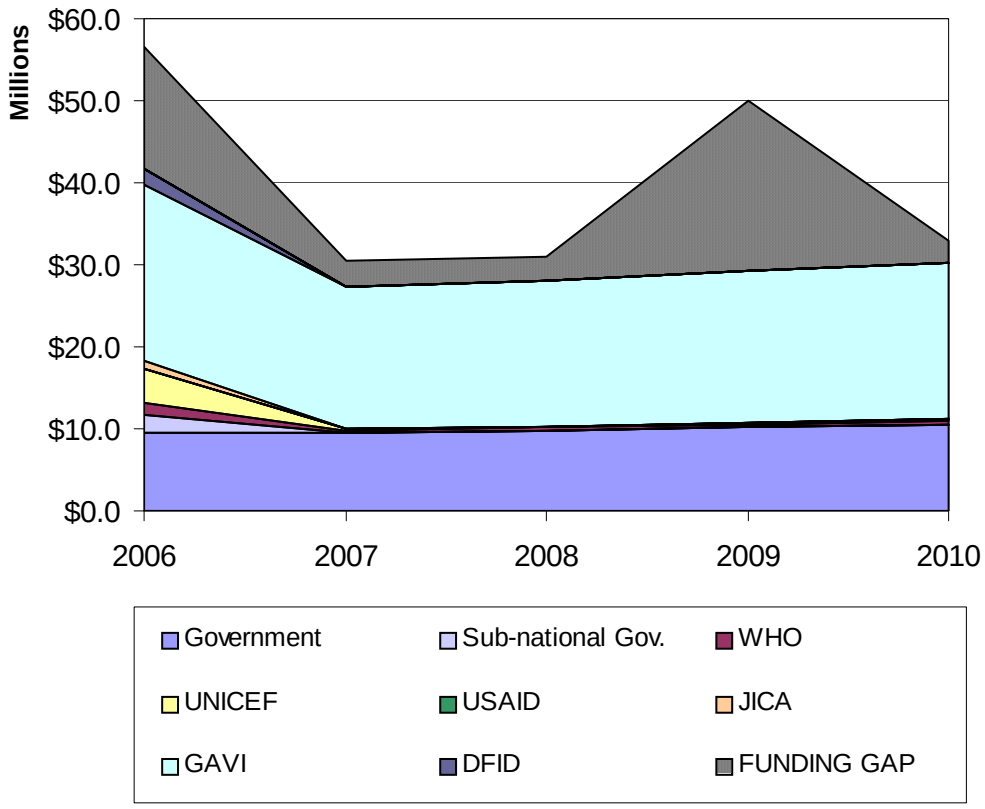

Table 7: Resource requirements, Financing and Financial Gaps, EPI Multiyear Plan 2006-2010[9]

Resource Requirements, Financing and Gaps		2006	2007	2008	2009	2010	2006 - 2010
Total Resource Requirements		56,665,141	30,459,581	31,051,110	49,924,198	32,970,974	201,071,004
Total Resource Requirements (Routine only)		36,288,759	30,459,581	31,051,110	31,863,329	32,970,974	162,633,754
	per capita	1.3	1.0	1.0	1.0	1.0	1.1
	per DTP targeted child	31.3	24.3	23.7	23.3	23.1	24.9
	% Vaccines and supplies	70%	72%	74%	74%	75%	73%
Total Financing (Secured)		38703817	25912592	26844556.6	27805187.7	28770248.08	148036402
Government		8,450,284	8,742,567	9,098,124	9,463,185	9,812,899	45,567,060
Sub-national Gov.		1,994,808	0	0	0	0	1,994,808
WHO		1,078,000	0	0	0	0	1,078,000
UNICEF		4,016,493	0	0	0	0	4,016,493
USAID		0	0	0	0	0	0
JICA		0	0	0	0	0	0
GAVI		21,169,424	17,170,025	17,746,433	18,342,002	18,957,349	93,385,233
DFID		1,994,808	0	0	0	0	1,994,808
		0	0	0	0	0	0
Funding Gap		17,961,324	4,546,989	4,206,553	22,119,010	4,200,726	53,034,603
	% of Total Needs	32%	15%	14%	44%	13%	26%
Total Financing (Not Secured / Probable)		3,039,608	1,424,161	1,246,869	1,454,230	1,525,350	8,690,218
Government		1,169,608	695,838	726,869	759,392	793,493	4,145,200
Sub-national Gov.		0	0	0	0	0	0
WHO		420,000	370,000	370,000	350,000	350,000	1,860,000
UNICEF		150,000	150,000	150,000	150,000	150,000	750,000
USAID		100,000	0	0	0	0	100,000
JICA		1,000,000	8,323	0	0	231,857	1,240,180
GAVI		200,000	200,000	0	194,838	0	594,838
DFID		0	0	0	0	0	0
Funding Gap		14,921,716	3,122,828	2,959,684	20,664,780	2,675,376	44,344,385
	% of Total Needs	26%	10%	10%	41%	8%	22%

[9] Immunization specific resource requirements, financing and gaps. Shared costs not included.

Table 8: Funding gap with secure funds

Composition of the funding gap	2006	2007	2008	2009	2010	2006 - 2010
Vaccines and injection equipment	636,275	695,838	726,869	759,392	793,493	3,611,867
Personnel	0	0	0	0	0	0
Transport	0	0	0	0	0	0
Activities and other recurrent costs	3,300,901	3,430,906	3,451,640	3,074,441	3,137,808	16,395,696
Logistics (Vehicles, cold chain and other equipment)	3,131,874	420,245	28,044	224,309	269,425	4,073,897
Campaigns	12,887,082	0	0	18,060,868	0	30,947,950
Total Funding Gap*	**19,956,132**	**4,546,989**	**4,206,553**	**22,119,010**	**4,200,726**	**55,029,411**
% Of total needs	**35**	**15**	**14**	**44**	**13**	**27**

* Immunization specific resource requirements, financing and gaps. Shared costs are not included.

Table 9: Funding gap with secure and probable funds

Composition of the funding gap	2006	2007	2008	2009	2010	2006 - 2010
Vaccines and injection equipment	0	0	0	0	0	0
Personnel	0	0	0	0	0	0
Transport	0	0	0	0	0	0
Activities and other recurrent costs	2,630,901	2,910,906	2,931,640	2,574,441	2,637,808	13,685,696
Logistics (Vehicles, cold chain and other equipment)	1,931,874	211,922	28,044	29,471	37,568	2,238,879
Campaigns	12,887,082	0	0	18,060,868	0	30,414,617
Total Funding Gap*	**16,916,524**	**3,122,828**	**2,959,684**	**20,664,780**	**2,675,376**	**46,339,193**
% Of total needs	**30**	**10**	**10**	**41**	**8**	**23**

* Immunization specific resource requirements, financing and gaps. Shared costs are not included.

6. UNEPI Annual Work Plan 2006

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
A	**MANAGEMENT**					**GOU**	**UNICEF**	**WHO**	**GAVI**	**OTHER**
	Objective: Strengthening EPI management at central level									
A1	Finalize, print and distribute 10,000 copies of EPI policy	Copies distributed	March	MGT	20,000			20,000		
A2	Conduct focused technical support supervision to 21 poor performing districts	21 districts supported	Mar, June, Sept, Nov	MGT	42,000			42,000		
A3	Support for focused support supervision to poor performing sub counties in poor performing districts	21 districts supported	Mar, June, Sept, Nov	MGT	27,084			27,084		
A4	Participate in quarterly area team activities including supervision	69 districts supervised	Quarterly	All EPI						
A6	Monitor utilization of GAVI funds in 16 districts	Report	May	MGT	32,000					
A7	Conduct coordination meetings:	Coordination meetings held	Jan-Dec	MGT						
	a) Quarterly ICC meetings				1,500	1,500				
	b) Monthly NCC meetings				1,500	1,500				
	c) Monthly technical coordination meetings				1,000	1,000				
	d) Monthly internal meetings				1,000	1,000				
A8	Continue dropout rate study (phase 2)	Study report	Feb-Mar	MGT	20,000			20,000		
A9	Continue process of constructing EPI stores	PBQs ready	Jan - Dec	MGT	10,000				10,000	
A10	Follow up/ supervise HSD EPI Focal Persons	10 district reports	July-Sept	MGT/ T	20,000					
A11	Implement accelerated disease control activities	SIAs conducted		MGT						
	- Under 5 mass measles and OPV	Feb – Aug			15,326,054	3,620,000	5,853,027	5,853,027		
	- 3rd round MNTE in 9 districts	Feb – Aug	Oct	MGT						

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
						GOU	UNICEF	WHO	GAVI	OTHER
A12	Finalize development of 5 year strategic plan (2006-2010), print and disseminate	Finalized MYP	Jan-Feb	MGT	5,000			5,000		
	Sub-Total				**15,507,138**	**3,625,000**	5,853,027	5,967,111	10,000	
B	**OPERATIONS**									
	Objective: Forecast and procure adequate vaccine and supplies in a timely manner									
B1	**Office equipment**	Office equipment procured	Jan-Sept	O/O (P)						
	Office stationery, computer accessories and sundries				50,000					
	6 laptops (Operations, Cold chain, Training and management)				18,000					
	1 LCD projector				9,000					
	Protective wear for staff in stores, operations, cold chain and logistics				10,000					
B2	**Consumables**	Consumables procured	Jan-Dec	O/O (P)						
	Immunization TT cards: 1,800,000				90,000					
	Tally sheets: 1,000,000				25,000					
	UNEPI Supervision books: 2,500				3,000					
	VIMCB: 1,000				30,000					
	Child registers: 1,500				1,500					
	Plastic sheeting (14,000)				3,000					
	Cotton wool: 30,000 rolls (SIAs)				105,000					
	Purchase of 500 gas cylinders from Caltex	Cylinders purchased			46,000					
						GOU	UNICEF	WHO	GAVI	OTHER

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
	Servicing of 40 fire extinguishers	Extinguishers serviced			3,000					
	Orienting staff on use of fire extinguishers	Staff oriented			500					
	Refill of gas cylinders- 1,400 cylinders monthly	Cylinders refilled			528,000					
	Procure supplies for modified immunization kit	Supplies procured			166,022					
B3	**Vaccines**	Vaccines procured	Jan-Sept	O/O (P)						
	BCG: 4,204,200				791,235	791,235				
	Measles: 1,823,250				929,493	929,493				
	OPV: 6,048,900				1,758,416	1,758,416				
	DPT-HEPB+Hib: 4,032,600				34,736,817				34,736,817	
	TT (routine): 4,068,866				354,806	354,806				
	TT (SIAs): 1,792,354				156,294					
	Measles SIAs: 5,837,400 doses				3,054,595,255					
	OPV (SIAs): 5,837,396 doses				2,008,140,961					
B4	**ADs, disposable needles and syringes and other supplies**	Supplies procured	Jan-Dec	O/O (P)						
	Ads 0.5 mls (routine): 8,634,300				1,350,405	1,350,405				
	Ads 0.5 mls (TTSIAs)				264,489		264,489			
	BCG: 0.05 Mls/0.1 mls: 1,750,000				269,675	269,675				
	Mixing 2mls: 2,486,900				228,795	228,795				
						GOU	**UNICEF**	**WHO**	**GAVI**	**OTHER**

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
	Mixing 5mls and for measles campaign Dilution needles 21gx1.5			O/O	1,422,200	812,300				
	Safety boxes (Routine)				130,741	130,741				
B5	**Other activities**									
	Handling of vaccines and supplies including Vitamin A	Logistics well handled	Jan-Dec	O/O (P)	3,000					
	Timely monthly delivery of vaccines and supplies at all levels	Monthly deliveries done	Jan-Dec	O/O (P)	144,000					
	Delivery of emergency supplies to districts	Supplied delivered	Jan-Dec	O/O (P)	25,000					
	Conduct stock taking and inventory for EPI equipment and supplies	Stock taking done	April, Oct	O/O (P)	7,184					
	Disposal of old, used, obsolete programme equipment	Disposal of equipment done	June	O/O (P)	35,000					
	Design and implement the Logistics Management Information System (LMIS) at all levels	LMIS designed and implemented	Jan-Dec	O/O (P)	40,000					
	Implement gas cylinder tracking system	Tracking initiated	Jan-Dec	O/O (P)	2,000					
	Follow up visits on proper injection waste disposal at all levels	Support supervision done	Jan-Dec	O/O (P)	30,000					
	Operational study on the use of safety boxes at all levels	Study conducted	March	O/O (P)	10,000					
	Initiate TT vaccination in upper primary, secondary and tertiary institutions in 15 elimination districts	TT vaccination initiated in schools and institutions	March-April	O/O (P)	30,000					
	Sub-Total				**5,106,543,513**	**6,625,596**	264,489		34,736,817	
C	**Cold Chain and Vaccine management**					**GOU**	**UNICEF**	**WHO**	**GAVI**	**OTHER**
	Objective 1: To ensure availability of potent vaccines at all service delivery points									
C1	Procure cold chain equipment (refrigerators and spares) and tools	Equipment procured	Jan-Feb	MGT (C/C)	740,000					

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
C2	Procure workshop spares and consumables	Procurement done	Jan-Dec	MGT (C/C)	6,700					
C3	Distribution and installation of new gas/electric and ordinary electric refrigerators	Distribution done	Jan-Dec	MGT (C/C)	5,200					
C4	Installation of 6 radio calls	Installation done	Mar-April	MGT (C/C)	7,271					
C5	Bi-annual cold chain equipment preventive maintenance	Cold chain maintenance done	Jan-Dec	MGT (C/C)	35,200					
C6	Receive, repair and deliver repaired equipment to districts	Equipment delivered to districts	Jan-Dec	MGT (C/C)	5,200					
C7	Provide technical support to districts for emergency repair of cold chain equipment	Emergency repairs done	Jan-Dec	MGT (C/C)	3,400					
C8	Servicing and maintenance of the 2 Standby generators and cold rooms	Servicing and maintenance done	Jan-Dec	MGT (C/C)	2,000					
C9	Purchase of fuel and lubricants for the standby generator	Purchases done	Jan-Dec	MGT (C/C)	12,120					
C10	Conduct 2 regional workshops (Mbale, & Mbarara) to disseminate information on vaccine utilization/ wastage monitoring and plans to roll out.	Regional workshops held	Oct-Nov	MGT (C/C)	30,400					
C11	Conduct an assessment on appropriate (reliable, economically viable, efficient) energy supply for vaccine storage equipment	Assessment done	Oct-Dec	MGT (C/C)	100,000					
C12	Orientation of 32 district focal persons on computer vaccine management soft ware	Orientation of focal persons done	Jan-Dec	MGT (C/C)	1,600					
C13	Conduct quarterly follow-up visits to sentinel sites for vaccine wastage monitoring/feedback meetings	Quarterly visits done	Jan-Dec	MGT (C/C)	50,700			50,700		
C14	Introduce and distribute vaccine management posters to districts/health facilities.	Posters distributed	Mar -Dec	MGT (C/C)	5,000			5,000		

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
						GOU	UNICEF	WHO	GAVI	OTHER
C15	Introduce and distribute refrigerator vaccine packing trays in 5 districts - Mukono, Kayunga, Jinja, Kamuli and Iganga.	Vaccine packing trays introduced and distributed	Feb-Jun	MGT (C/C)	50,000					50,000
C16	Support UVRI to conduct regular vaccine potency in selected h/ facilities	Vaccine potency testing done	Apr-June	MGT (C/C)	12,000					
C17	Conduct needs assessment of the newly created districts	Needs assessment done	Jan-Feb	MGT (C/C)	18,000					
C18	Conduct training of the 25 DCCAs for the new districts	25 DCCAs trained	March	MGT (C/C)	21,894					
	Sub-Total				**1,106,685**			55,700		50,000
D	**Transport**									
	Objective 1: To ensure smooth running of programme activities									
D1	Preventive maintenance and servicing and repair of vehicles	Vehicles maintained	Jan-Dec	MGT (TR)	126,000	126,000				
D2	Purchase of fuel and lubricants for programme running	Fuel purchased	Jan-Dec	MGT (TR)	72,000	72,000				
D3	Purchase of tyres for replacement	Tyres purchased	Jan-Dec	MGT (TR)	114,000	114,000				
D4	Purchase of 30 batteries for replacement	Receipts and reports	Jan-Dec	MGT (TR)	5,000	5,000				
D5	Procurement of new vehicles to strengthen the existing fleet (one trailer, 6 field vehicles, 10 motorcycles)	Vehicles procured	Jan-Sept	MGT (TR)	513,350					513,350
D6	Training of 20 drivers	Drivers trained	April	MGT (TR)	10,000					
	Sub-Total				**840,350**	317,000				513,350
						GOU	UNICEF	WHO	GAVI	OTHER

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
E	**TRAINING AND CAPACITY BUILDING**									
E1	Finalise, print and disseminate the OPL manual - the Uganda version	Manual revised and printed	Jan-Mar	O/O (T)	30,000		20,000	10,000		
E2	Adapt and print MLM modules	Modules adapted	Feb - Apr	O/O (T)	13,510			13,510		
E3	Initiate the updating of the EPI content in the curriculum of health training institutions in collaboration with MOE&S	Curriculum reviewed	Feb - Dec	O/O (T)	12,000			12,000		
E4	Training of trainers for MLM and OPL	Training conducted	Apr-Oct	O/O (T)	25,000			25,000		
E5	Orientation of tutors of health training institutions	No of institutions oriented	May	O/O (T)	102,000		50,000	52,000		
E6	Conduct MLM courses in 15 districts	No of MLMs trained	Apr-Dec	O/O (T)	202,650		100,000	102,000		
E7	Conduct OPL courses in 20 districts	No. of HWs trained	April - Dec.	O/O (T)	270,200		170,000	100,200		
	Sub-total				**655,360**		340,000	314,710		
F	**ADVOCACY AND SOCIAL MOBILIZATION**									
	Objective: To increase and sustain demand for EPI services									
F1	Workshop to review IEC materials and messages	Reports	Jan-Feb	HP&E	7,000					
F2	Pre-testing and translating the materials in local language	Updated IEC materials	Jan-Feb	HP&E	12,000					
F3	Printing and distribution of IEC materials	No. of materials printed & distributed	Mar	HP&E	55,000					
F4	Planning regional workshops and preparing of training materials for health workers	Plan and training materials in place, Training report	Mar	HP&E	2,000					
F5	Develop sensitization materials for health educators			HP&E	5,000					
F6	Orientation of health educators on EPI social mobilization	Materials in place; Report		HP&E	58,000					
F7	Orientation of broadcasters and reporters	Reports		HP&E	10,000					
						GOU	**UNICEF**	**WHO**	**GAVI**	**OTHER**

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding					
F8	Develop EPI promotional spots - Ads for newspapers	No. of articles produced in newspapers	Jan- Dec	HP&E	35,000						
F9	Conduct talk shows fortnightly	No talk shows	Jan-Dec	HP&E	10,000						
F10	Disseminate EPI messages on billboards	No of billboards	Jan-Dec	HP&E	40,000						
F11	Develop guidelines on EPI essay writing competition in schools	Essay produced	March	HP&E	5,500						
F12	Development and dissemination of EPI messages on exercise books		Mar, June, Sept, Dec	HP&E							
F13	Develop documentary on EPI activities	EPI documentary	Feb	HP&E	10,000						
F14	Conducting community film shows in districts	No. of districts	Feb - Dec	HP&E	30,000						
F15	Workshop to develop communication monitoring for central level	Communication monitoring tools in place			5,000						
F16	Publish bi-annual EPI supplement		June, Dec	HP&E							
F17	Facilitate and monitor the districts in the implementation of VHT strategy	No. of monitoring visits	Feb- Dec	HP&E							
F18	Develop guidelines on EPI social mobilization activities for VHTs		Aug, Sept	HP&E	7,500						
F19	Introduce/expansion of advocacy & communication indicators to other districts	No. of districts brought on board	Oct - Nov	HP&E	20,000						
F20	Conduct monitoring and evaluation of social mobilization activities	Activities monitored and evaluated	Nov - Dec	HP&E	15000						
	Sub-Total				**317,000**						
G	**SURVEILLANCE**										
G1	Senstisation of heads of pre service training institutions	3 training institutions trained			20,000						
G2	Health worker senstisation through print	AFP, measles, NNT, AEFI posters and flip charts									

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
G3	Hands on training of district and HSD surveillance focal persons	35 district and HSD surveillance focal persons trained in new, poorly performing districts	Jan-Dec		8,000			-		
G4	Training of newly recruited health workers on IDSR	25 new recruits in at least 10 districts								
	Surveillance logistics support									
G5	Purchase at least 10 motorcycles	Motorcycles purchased	April	O/O (TR)	30,000			30,000		
G6	Purchase specimen carriers	Specimen carriers purchased	Jan- Dec		10,000					
G7	Provide reagents and supplies for PBM/netSPEAR surveillance sites	Lab regents supplied	Jan-Dec		53,419			53,419		
	Strengthen community surveillance									
G8	Develop a community surveillance chapter for VHT manual	an IDSR chapter developed								
G9	Develop, print and disseminate a community surveillance poster	An IDSR poster with AFP, measles, NNT, cholera community surveillance messages			10,000			10,000		
G10	Sensitisation of science teachers	Science teachers senstised in 10 districts								
G11	Training of VHT in community surveillance in conflict affected districts	15 insecure districts								
	Surveillance reviews									
G12	Conduct district quarterly surveillance review meetings	Surveillance review meetings held			30,000			30,000		
G13	Conduct an annual regional surveillance review meeting	10 regional meetings held	Feb, Aug	UNEPI / UVRI, ESD	98,000			98,000		
G14	Conduct a National and quarterly DQS in selected districts	DQS conducted	Feb-Mar		30,000	30,000			-	
G15	Record review for VPD in regional referral hospitals	Data audit in at least 5 hospitals			2,000					
G16	Participate in district HMIS training	Districts focal persons trained in revised HMIS								

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
G17	Review meeting with PBM sentinel sites	Meeting conducted	Nov	UNEPI, Mulago site, CPHL	6,000			6,000		
G18	Conduct 20-person meeting every 2 months at the centre	Meetings conducted	Jan-Dec	Working committee	1,800			1,800		
G19	Polio Eradication Expert Committee meetings including field activities	Meetings held	Jan - Dec	UNEPI	34,308			34,308		
G20	National Certification Committee meetings and activities	Meetings held	Jan - Dec	UNEPI	18,272			18,272		
G21	Support National task force for Laboratory Containment of WPV	Field visits conducted/supported	Jan-Mar	UNEPI / NCC	5,000			5,000		
	Focused technical support supervision									
G22	Technical support supervision of surveillance focal persons and active search.	2 STOMP teams to poorly performing districts	June, Nov	UNEPI & good performing DSFPs	35,000			35,000		
G23	Set up Regional EPI/IDSR supervisors	3 EPI/IDSR regional supervisors	Jan-Dec	UNEPI	319,501			319,501		
G24	Conduct technical support supervision of regional supervisors	Technical supervision conducted	Jan, Jul	UNEPI, ESD, WHO	20,000			20,000		
G25	Conduct an annual STOMP team mission	STOMP mission conducted	July,	UNEPI, ESD, WHO						
G26	Support supervision of Hepatitis B sentinel sites	Technical support supervision conducted	July, Nov	UNEPI, UVRI	10,000			10,000		
G27	Technical support supervision of PBM sentinel surveillance sites	Technical support supervision conducted	June, Oct	UNEPI, Mulago PBM site, CPHL	5,000			5,000		
	Onsite technical support to major private clinics	Visit to 2 major urban centers								
	Strengthen and support active case search (detection and reporting)									

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
						GOU	UNICEF	WHO	GAVI	OTHER
G28	Support districts to conduct active search in hospitals, HC on a regular basis in 56 districts & report timely both through HMIS reports, 60 day follow up	Active search conducted	Jan-Dec	District surveillance focal Persons	217,884			217,884		
G29	Reimbursement of transport refund and per diem to District officers after shipment of stool specimens from district to center	District officers reimbursed	Jan - Dec	H/facility staff & DHMT members	16,800	16,800				
G30	Reimbursement of transport refund and per diem after shipment of blood specimens from districts to UVRI for case-based measles surveillance and suspected measles outbreak confirmation	District officers reimbursed	Jan-Dec	SFP	84,000	84,000				
G31	Support severe AEFI case investigation	AEFI case-investigation supported	Jan-Dec	District AEFI task force/ Regional AEFI coordinator	26,000			26,000		
G32	Establishment of Hepatitis B sentinel sites	1 additional site established			2,000			2,000		
G33	Establishment of Rotavirus surveillance	Mulago hospital staff sensitised			5,000			5,000		
G35	Provide biannual feedback through EPI newsletter	EPI newsletter pdced twice a yr	June, Dec	UNEPI	4,500			4,500		
G36	Media feedback on EPI disease surveillance indicators and routine immunization	Indicator tables produced	Jan-Dec	UNEPI	8,400			8,400		
	Sub-Total				**1,103,884**	130,800		931,284		
H	**EPI LABORATORY**									
	Objective 1: Provide lab backed diagnostic support for surveillance of VPDs									
H1	Support UVRI for virus isolation from AFP specimens from Great Lakes	EPI lab supported	Jan - Dec	All Lab. Staff	42,500				42,500	

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
	Region									
H2	Shipment of polio isolates to S. Africa for intra-typic differentiation	Polio isolates shipped within 7 days of results out	Jan - Dec	UVRI	1,700				1,700	
H3	Follow up AFP cases with Sabin isolates for clinical and immune evaluation	Follow up of all sabin cases within 60 days of identification	Jan-Dec	UVRI	6,000				6,000	
H4	Procure measles supplies for specimen Collection	Measles supplies procured	Nov	UNEPI, UVRI	20,000				20,000	
H5	Carry out Measles IgM testing on suspected measles specimens	All measles specimen tested for Measles and Rubella IgM	Jan-Dec	UVRI	23,500				23,500	
H6	Conduct virus isolation on throat swabs from confirmed sporadic and outbreaks measles cases	All confirmed measles cases attempted for virus isolation	Jan-Dec	UVRI	3,400				3,400	
H7	Establish one regional storage and shipment site of measles specimens	Specimens well preserved in sub-stores and shipped to UVRI and cost reduction for cases based	Feb-Jul	UVRI, UNEPI, WHO	5,130					
H8	Follow up of unclear reports of measles and AFP cases for verification	Unclear AFP and measles cases followed up	Jan - Dec	UVRI / UNEPI	5,000				5,000	
H9	Expansion of Hepatitis B Surveillance in sentinel sites	Two more sites established	May-Jun	UVRI/UNEPI/ WHO	6,800				6,800	
H10	Support supervision of Hepatitis B Sentinel sites	Technical support supervision conducted	Fed-Mar	UVRI / UNEPI	8,950				8,950	
H11	Procure reagents/kits and supplies for the EPI laboratory for Hepatitis	Reagents and supplies procured	Jan-Apr	UVRI, WHO, UNEPI	37,940			37,940		

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
	Surveillance									
H12	Sending result to EPI in a timely manner	Send all results within 7days of receipt of measles specimens/28 days of receipt of stool specimens	Jan-Dec	Lab Data Manager	-					
H13	Timely sending of lab database to WHO	Send database by Friday of each week and the 30th of each month	Jan-Dec	Lab Data Manager						
H14	Attend meeting of IDSR/EPI managers	Annual	Mar	UNICEF						
H15	Attend Annual meeting for Polio Lab Director's and Technical Supervisors	Annual	Jul	WHO, UNICEF	3,400			3,400		
H16	Attend Regional meeting for Directors of Measles Laboratories	Annual	Aug	WHO, UVRI						
H17	Procure reagents and supplies for the EPI laboratory	Reagents and supplies procured	Apr, Oct	UVRI, WHO	7,672			7,672		
H18	Acquire extra Lab space	Additional Lab space acquired	Jan-Dec	Director UVRI						
H19	Erect a see-through barrier at lab entrances	See through barriers erected at lab entrances	Jan-March	Director UVRI						
H20	Maintain SSA contracts of two Lab Technicians	Salaries paid	Jan-Dec	WHO, UVRI	30,200			30,200		
H21	Maintain SSA contracts of two Lab Assistants	Salaries paid	Jan-Dec	WHO, UVRI	22,500			22,500		
H22	Maintain APW contracts of 5 officers	Allowances paid	Jan-Dec	WHO, UVRI	21,420			21,420		
H23	Have the present staff on contracts recruited into formal Ministry of Health	Staff formally recruited into Ministry of Health	Jan-Dec	UNEPI, UVRI, MOH						

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
						GOU	UNICEF	WHO	GAVI	OTHER
H24	Recruit a Laboratory Technologist	Lab Technologist Recruited	Jan-Feb	WHO/UVRI	15,390			15,390		
H25	Identify Post-graduate training opportunities that will enable concerned staff study as they work	Post-graduate training opportunities identified	Jan-Dec	Director UVRI, WHO	26,505					
H26	Train 2 staff in tissue culture from NIBS, UK	Technicians trained	Feb/Mar	WHO						
H27	Purchase of vehicle for the lab	Vehicle Purchased	Mar	UVRI, WHO	59,500					
H28	Fuel for the vehicle		Jan-Dec	UVRI, GOU	7,260	7,260				
H29	Running of the Office	Monthly	Jan-Dec	UVRI, GOU	1,800	1,800				
	Objective 4: Maintaining and monitoring the surveillance system									
H30	Conduct integrated technical support supervision of surveillance focal persons and active search	Support supervision of surveillance officers carried out	Jun, Nov	UNEPI, UVRI, IDS, HMIS	35,000					
H31	Have progress surveillance review meetings	Meetings conducted	Jan-Dec	UNEPI, UVRI, IDSR, ESD						
H32	Feedback meeting with SFPs and HMIS officers	Jan, Jul	UNEPI, UVRI, IDS, HMIS	98,000						
H33	Conduct technical support supervision of Regional Supervisors	Technical supervision Conducted	Jan, Jul	UNEPI, UVRI, ESD, WHO	15,000					
H34	Implement quality control lab procedures	Jan-Dec	Technical Supervisor							
H35	Conduct Self Accreditation	Implementation of previous recommendations	April, Aug, Dec	Head of Lab, Technical Supervisor, NPEC						
H36	Annual Accreditation of Polio Lab	Previous recommendations addressed	May/Jun	WHO-AFRO, UVRI						
H37	Training of two lab staff in QC of both viral and bacterial vaccines	Staff trained	Feb-Jun	WHO, UVRI						

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
						GOU	UNICEF	WHO	GAVI	OTHER
H38	Implement vaccine potency of virus vaccines and initiate potency tests for bacterial vaccines at central and lower levels to ensure continued use of good quality vaccines	Potency testing for all vaccine types conducted quarterly at centre, and after every nationwide immunization campaign at field level	Sept/Oct	UVRI	33,000					
	Objective 6: To carry out research									
H39	Field testing of a Measles-specific IgM-Immunoassay: comparison of filter paper, oral fluid and serum samples for Measles diagnosis	Report available on completion of study	Jan-Dec	UVRI, CDC Atlanta	111,800					
H40	Molecular epidemiology of non-polio enteroviruses (NPEVs) associated with childhood polio-like paralysis in Uganda	Provide data of the current disease burden of acute flaccid paralysis attributable to NPEVs	Jan-Apr	UVRI, Collaborating specialized laboratory	34,750					
H41	Alternative differential diagnosis and testing for children investigated with fever and rash.	Provide data on the differential diagnosis of fever and rash	Jan-Dec	UVRI, WHO	34,000					
H42	**Objective 7: To carry out Measles Regional Laboratory activities**									
H43	Receive, review and analyse monthly data from national labs	Data received and reviewed reports		UVRI, AFRO, ICP						
H44	Receive and review monthly reports of kit management from National Labs	Reports received and reviewed	Jan-Dec	UVRI, AFRO						
	7.1 To coordinate quality assurance procedures for laboratories within the Region									
H45	Distribute measles proficiency panels to national labs	No. of panels distributed	Oct	UVRI	1,190					
H46	Assess accuracy of national labs testing by retesting a selected 10% of their spec	No. of labs assessed quarterly	Jan, Apr, Jul, Oct	UVRI						

No	Activity Description	Output	Time Frame	Responsible Person	Budget (x '000') Ushs	Proposed Source of Funding				
						GOU	UNICEF	WHO	GAVI	OTHER
H47	Perform accreditation of national laboratories at request of WHO Country Office or WHO HQ	No. of labs assessed	UVRI, WHO-AFRO							
H48	Perform confirmatory tests on serum samples from the National labs	Samples with confirmation results	Jan, Apr, Jul, Oct	UVRI						
H49	Isolation of measles virus from specimens from the national labs	No. Isolates	Jan-Dec	UVRI	850					
H50	Procurement of dry ice	Dry ice procured	May, Nov	UVRI	850					
H51	Shipment of measles virus isolates to specialised labs	No. Isolates shipped	Jun, Dec	UVRI	3,400					
	A. Regional Lab									
H52	Payment of a Scientific Officer	Salary paid	Jan-Dec	UVRI, WHO	25,500			25,500		
H53	Payment of Data Manager	Salary paid	Jan-Dec	UVRI, WHO	9,180			9,180		
H54	Procure stationary and supplies for RRL	Procured	Mar	WHO	1,700			1,700		
H55	Communication	Receipts	Jan-Dec	UVRI	3,060					
H56	Preventive maintenance of equipment	Equipment maintained	Jan-Dec	UVRI	3,400					
	B. National Laboratories									
H57	Distribution of diagnostic kits to national labs	No. of kits distributed	Jan-Dec	UVRI	4,250					
H58	Distribution of cells for virus isolation	No. labs with cells for virus isolation	Feb-Nov	UVRI	850					
H59	Regular feedback of results to the national labs	80% of results sent within 14 days from receipt of specimen	Jan-Dec							
	Sub-Total				**772,347**	9,060		292,752		
	GRAND TOTAL (Ug Shs x '000')				**5,126,846,286**	**10,707,456**	6,457,516	7,561,557	34,746,817	563,350
	GRAND TOTAL (USD x '000')				**2,771,268**	**5,788**	3,491	4,087	18,782	305