THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH AND SOCIAL WELFARE– TANZANIA MAINLAND

EXPANDED PROGRAMME ON IMMUNIZATION
2010 - 2015 COMPREHENSIVE MULTI YEAR PLAN

Version: April 2011

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ACRONYMS AND ABBREVIATIONS

AD ----------Auto disable syringes
AEFI----------Adverse Event Following Immunization
AFP----------Acute Flaccid Paralysis
BCG ----------Bacillus Calmette Guerin
CCOs ----------Cold Chain Operators
CHMT----------Council Health Management Team
CVS----------Central Vaccines Store
DCCO ----------District Cold Chain Officer
DHO----------District Health Officer
DMO ----------District Medical Officer
DTP – HB ----------Diphtheria, Pertussis, Tetanus and Hepatitis B
DRCHCO----------District Reproductive and Child Health Coordinator.
DVS ----------District Vaccine Stores
DQA----------Data Quality Audit
DQSA ----------Data Quality Self Assessment
EPI----------Expanded Programme on Immunization
HMIS ----------Health Management Information System
LPG----------Liquified Petroleum Gas
MCH----------Maternal and Child Health
MTEF---------- Medium Term Expenditure Framework
MNT----------Maternal and Neonatal Tetanus
NBS----------National Bureau of Statistics
NIDs----------National Immunization Days
OPV ----------Oral Polio Vaccine
PHCC----------Primary Health Care Committee
PIE----------Post Introduction Evaluation
RCCO----------Regional Cold Chain Officer
RAS----------Regional Administrative Secretary
RCHS----------Reproductive and Child Health Services
RED ----------Reaching Every District
RMO----------Regional Medical Officer
RVS----------Regional Vaccines Store
SIAs ----------Supplemental Immunization Activities.
SNIDs ----------Sub National Immunization Days
TDHS----------Tanzania Demographic Health Survey
UNICEF ----------United Nations Children's Fund
VVM ----------Vaccine Vial Monitor
WHA ----------World Health Assembly
WHO ----------World Health Organisation
WICR----------Walk-in Cold Room

1. COUNTRY BACKGROUND AND INFORMATION

1.1 Background information

The United Republic of Tanzania is a union between Tanzania Mainland and Zanzibar. Health is not a Union Government matter; Zanzibar has its own Ministry of Health. Tanzania Mainland covers an area of approximately 945,050 Km^2 including 59,050 Km^2 on inland waters. The Country is bordered by Kenya and Uganda on the northern part, the Democratic Republic of Congo, Rwanda and Burundi on the Western part, Zambia, Malawi and Mozambique on the Southern part, and the Indian Ocean on the Eastern part. .

The average national income (GNI) per capita was US$ 373.1 in 2005, making Tanzania one of the least developed countries. At least 25% of Tanzanians were living below the poverty line in 2007. In the period 2006-2007, real GDP growth was 6.4%. The enrolment in primary schools is close to universal. However, attendance rates are lower than enrolment, with little gender differential, though boys tend to be in school at an older age than girls. Table 1 shows the 2010 demographic indicators. The Tanzania Mainland has an estimated population of 41.6 million for the year 2010 as projected from the 2002 population Census.

Table 1: Demographic indicators, 2010

Total Population	41,945,664
Under-1 year population	1,628,417
Under-5 years population	7,566,302
Pregnant women	1,770,234
Girls who are 10 years old	394,838
Infant Mortality Rate (per 1,000 live births)	51
Under five Mortality Rate (per 1,000 live births)	81
Maternal Mortality Ratio (per 100,000 live births)	454
Crude birth rate (per 1,000)	42
Life expectancy (years)	58
Annual Growth rate (%)	2.9
Rural population (%)	77

Source TDHS 2010 report

The distribution of population for 2010 to 2015 is shown in table 2a using the Tanzania National Bureau of Statistics projections.

Table 2a: Distribution of population by age group 2010-2015 using TNBS

Age Group	2010	2011	2012	2013	2014	2015
Total population	41,945,664	43,850,520	45,122,185	46,430,728	47,037,241	48,366,270
0 – 11 Months	1,628,417	1,652,288	1,700,204	1,749,510	1,751,245	1,782,739
CBAW	10,069,413	10,655,776	10,964,691	11,282,667	11,609,864	11,937,061

Source – National Bureau of Statistics – Population Census results (2002) and National projections (2006)

Population figures for 2011 to 2015 as shown in table 2b used in the cMYP costing tool and EPI forecasting are calculated using the projected population of 2010 as baseline. The figures in the tools differ with those from Tanzania National Bureau of Statistics.

Table 2b: Distribution of population by age group 2010-2015 using EPI Forecasting Tools

	2010	2011	2012	2013	2014	2015
Population	41,945,664	43,162,088	44,413,789	45,701,789	47,027,141	48,390,928
Births	1,677,827	1,726,484	1,776,552	1,828,072	1,881,086	1,935,637
Surviving Infants	1,592,257	1,638,433	1,685,947	1,738,496	1,790,794	1,842,727
CBAW	10,066,959	10,358,901	10,659,309	10,968,429	11,286,514	11,613,823

Tanzania Mainland has 25 regions and 131 districts with 151 councils. Each council is divided into divisions, which in turn are composed, of 3-4 wards (5-7 villages form a ward). The council is the most important administrative and implementation unit for public services. For this reason the Ministry of Health and Social Welfare (MOHSW) in collaboration with the Prime Minister's Office Regional Administration and Local Government (PMORALG) through the Health Sector and Local Government reforms are currently strengthening the Council's health services, making the councils the focus for health development.

1.2 Overview of the Health System

The Tanzania Development Vision 2025 identifies health as one of the priority sectors. Among its objectives is the achievement of a high quality of life for all Tanzanians. The National Strategy for Growth and Poverty Reduction in Tanzania Mainland (MKUKUTA) provides the global direction for achievement of the Millennium Development Goals (MDGs). Tanzania is among the 10 countries that have signed up to collectively address the MDGs 4, 5 and 6 within a Joint Action Plan (JAP). A national Health Policy is in place and was updated in 2007, providing the Government's vision on long-term developments in the health sector. Tanzania Mainland is currently implementing its 3rd Health Sector Strategic Plan (HSSP 3) for 2009-2015. Immunization services are provided countrywide and are free of charge in both public and private health facilities. Routine immunization services are integrated with other child survival interventions such as IMCI, Vitamin A, Deworming, PMTCT, ITNs, and Focused Antenatal Care. 5,500 facilities (87% of the total number of facilities) provide immunization services and about 90% of the population lives within five kilometres of a primary health facility.

Table 3: Health Facilities in number by ownership, 2010

Type	Govt/DDH	FBO/VA	Parastatal	Private	Total
Hospital	112	83	12	33	240
Health Center	457	125	10	95	687
Dispensary	4,105	614	123	552	5,394
Grand Total	**4,674**	**822**	**145**	**680**	**6,321**

1.3 Overview of the Expanded Programme on Immunization in Tanzania

The Expanded Programme on Immunization in Tanzania was established in 1975. After introduction of the Health Sector Reform in 1996, EPI was made a subsection under the Reproductive and Child Health (RCH) Section, which is one of the four sections of the Preventive Services Department under the Directorate of Preventive Services of the Ministry of Health and Social Welfare (MOHSW). See organogram annex 1.

The health system reform transformed the EPI Programme from the vertical programme. The clearing, storage at national level and distribution of vaccines and other supplies to the regional level were shifted to Medical Stores Department (MSD). Management and monitoring of the Regional and District EPI transport was taken over by the Central Transport Unit and monitoring and evaluation of EPI data was done by the Health Management Information System (HMIS). The EPI Unit continued with the responsibilities of formulating policies, guidelines and standards for strategic planning and budgeting, facilitating procurement of vaccines, equipment's and related supplies, specific training and supervision to ensure services are of quality, and accelerated diseases control activities (Polio Eradication, Measles Control and Neonatal Tetanus (NNT) Elimination).

The EPI Programme Manager is the overall in charge of the Programme. The Programme comprises of five main sections: administration, monitoring and evaluation including operational research, cold chain and logistics, Routine immunization and training.

1.4 EPI Human Resources

The EPI Programme Manager is responsible for immunization at the national level. At regional level, there is a Regional Cold Chain Officer (RCCO) and Regional Reproductive and Child Health Coordinator (RRCHCO) answerable to the Regional Medical Officer (RMO). At District/Council level, there is a District Cold Chain Officer (DCCO) and District Reproductive and Child Health Coordinator (DRCHCO)

answerable to the District Medical Officer (DMO). After health sector reform, their support for immunization program management and supervision reduced (e.g. to 10% of their time). The RCCOs continue to manage Regional Vaccine Stores; however distribution of vaccines is no longer done by the regions. At the district level, distribution of vaccines and supportive supervision are to be conducted monthly to each facility; however, cancellation is common due also to lack of transport and funds.

At health facility level, implementation of immunization activities is done by a Public Health Nurse (PHNB) responsible for immunization, social mobilization, outreach activities and record keeping. The human resource crisis in the health sector has resulted in the MCH Aide/Medical Attendant running all activities in some health facilities. Staffs have high moral obligation and commitment towards immunization but they lack motivation due to scarcity of funds, training and transport.

Shortage of adequate human resources, especially in remote areas, is a concern of the MOHSW. Only 35% of positions are filled with qualified health workers in the country1.

1 Health Sector Strategic Plan 3 2009-2015

2. IMMUNISATION AND VACCINES PROGRAMME

2.1 Routine Immunization

Table 4 shows the vaccination schedule in Tanzania. This is currently being revised in line with WHO WHO-recommendations. The new schedule is to be implemented by the beginning of 2012 and will provide OPV/Penta at 6, 10, and 14 weeks.

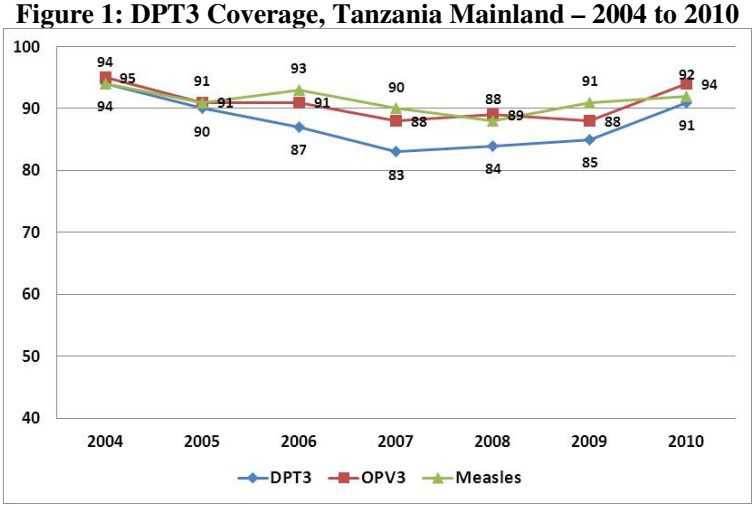
Table 4: Routine Immunization schedule, Tanzania, 2010

S/n	Antigen	Age
1	OPV0	At birth up to 14 days
2	BCG	At birth or first contact
3	OPV1, DTP-HepB-Hib1	4 Weeks of age
4	OPV2, DTP-HepB-Hib 2	8 Weeks of age
5	OPV3, DTP-HepB-Hib 3	12 Weeks of age
6	Measles	9 Months of age
7	Vitamin A – 1st dose	9 Months of age
8	Vitamin A – 2nd dose	15 Months of age
9	Vitamin A – 3rd dose	21 Months of age
10	TT 1	First contact
11	TT 2	1 Month after the 1st dose
12	TT 3	6 Months after the 2nd dose
13	TT 4	1 Year after the 3rd dose
14	TT 5	1 Year after the 4th dose

With Universal Child Immunization (UCI) – a multi-sectoral approach to boost immunization – Tanzania's DPT3 coverage increased from 67% in 1985 to 85% in 1988. Coverage averaged around 80% in the 1990s, with additional support for immunization from DANIDA and other partners; however it dropped after the implementation of Health Sector Reform in 1996 and the creation of the SWAp. In 2001, the country began receiving GAVI support which contributed to increasing coverage from 79% in 2000 to 94% in 2004. However, due to challenges in ensuring dedicated funding for immunization, notably recurrent operational costs, coverage has not reached 90%.

Figure 1. shows the national administrative routine immunization coverage of DPT-Hep-Hib3, OPV3 and measles since 2004 to 2010.

Figure 1: DPT3 Coverage, Tanzania Mainland – 2004 to 2010



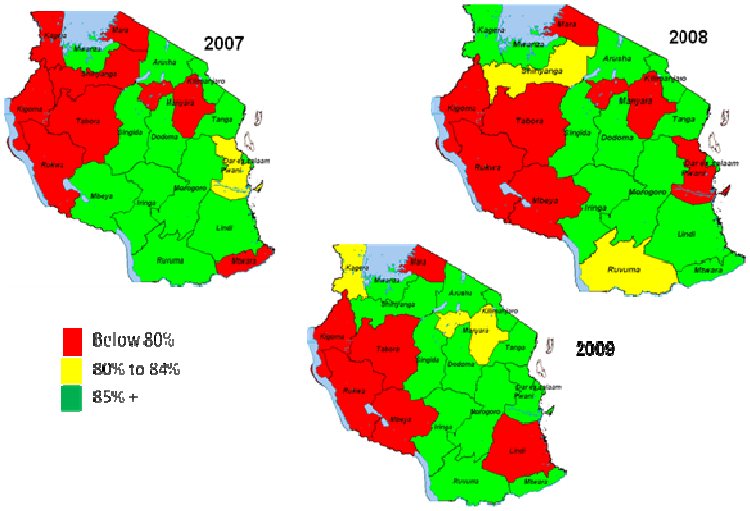
The most recent immunization coverage survey was conducted September 2008 and results indicate that routine immunization by crude coverage (card and history) by antigen showed that the coverage for BCG

was 98.4%, DTP-HepB3 were 94.7% and measles were 84.8%. Valid coverage based on the card only BCG was 96.7%, DPT-HepB3 80.6% and measles 71.3%.

Tanzania Demographic and Health Survey 2010 results indicates that routine immunization coverage by the time of the survey (according to vaccination card and history) by antigen showed that the coverage for BCG was 95.4%, DTP-HepB3 were 87.8% and measles were 84.5%.

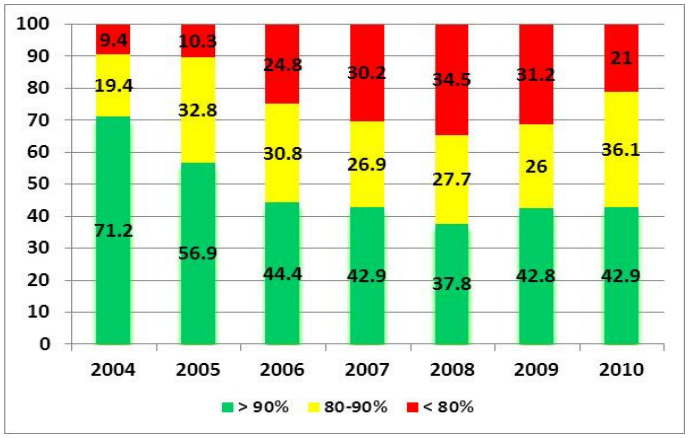
There is a regional performance variation in coverage. The regions of Kigoma, Rukwa, Mbeya, Tabora and Mara have persistently achieved less than 80% coverage since 2007. However the denominators has remain a one of challenges in most the regions.

Figure 2: EPI Coverage Performance by Region, Tanzania, 2007-2009



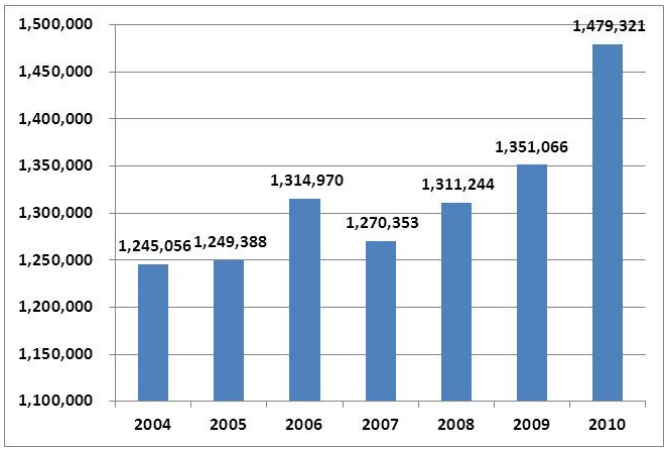
The proportion of districts with DPT3 coverage less than 80% increased from 9.4% in 2004 to 21% in 2010 (Figure 3).

Figure 3: District Performance, Tanzania Mainland, 2004-2010



However, in spite of the decline in coverage in Tanzania Mainland, the number of children vaccinated indicates an upward trend (Figure 4).

Figure 4: Children Vaccinated, Tanzania Mainland, 2004-2010



In 2009, the country introduced the Reaching Every Child (REC) approach to address the large numbers of unvaccinated children. 51 districts in 16 regions were selected for focused support using 2008 data. The 51 districts had 83.4% (216,185) of the unvaccinated children in the country. Cascaded trainings were conducted on the REC approach up the health facility level, following which implementation of planned activities was done in 510 health facilities. All 51 districts included EPI activities in their Comprehensive Council Health Plans (CCHP).

Other districts still have a high number of unvaccinated children and health facilities do not have microplans to reach the unreached children in the community. Lesson learnt in the 51 councils need to be transferred to other councils in the country on the REC approach.
In addition to REC strategy country will be participating in African Immunization week aiming to boost our immunization coverage (see Table 10).

2.2 New Vaccines Introduction

With GAVI support Hepatitis B vaccine was introduced in January 2002 in the DPT-HepB vaccine formulation and April 2009 Hib vaccine was introduced in the DPT-HepB-Hib (pentavalent) vaccine formulation. The main challenge experienced with the new vaccine introduction was inadequate cold storage capacity, particularly at national and sub national vaccine stores. Due to the inadequate capacity, there was no space for buffer stock at all stores; and the number of vaccine shipments at national level increased from 3 to 8 shipments a year. Expansion of cold chain capacity has been elaborated in section 2.4.2 below.

The country submitted a plan for introduction of pneumococcal vaccines and rotavirus vaccines to GAVI in September 2009. Conditional approval was granted for pneumococcal and rotavirus vaccine introduction. The country is in the process of addressing the conditional approval questions and re-apply for pneumococcal vaccine (PVC13). Pneumococcal vaccine (PCV13) is expected to be introduced by June 2012 and rotavirus (RotaRix) of 2 doses schedule by January 2013.

Other under-used vaccines currently provided in the country outside the EPI schedule are Yellow Fever and meningococcal vaccines to international travellers, anti rabies and TT to injured persons. These vaccines also occupy the cold chain storage space and same staffs are used to administer the vaccines. In November 2009, the GoT got an offer of donation from Merck of 2,000,000 doses of Human Papilloma Virus (HPV) vaccine to be given to girls age 10 years (targeting grade 4) which is anticipated to begin in 2011 and be phased in regionally through 2013 (see new vaccine section of Table 9). This donation has brought forward the original plans to introduce HPV vaccine in 2014 and is currently under discussion by the GoT.

Based on the current vaccines given outside the EPI schedule and new vaccines in the pipeline to be provided in Tanzania, it is evident that the EPI Tanzania will no longer target only infants but also wider age groups, which is in line with the Global Immunization Vision Strategy (GIVS).

2.3 Surveillance

2.3.1 Measles pre elimination

Tanzania is committed to reach the measles pre elimination goals set by the end 2012. Goal of achieving 98% mortality reduction by 2012 as compared to estimates for 2000, Measles incidence <5 cases/10^6 population/year at national level, attaining 90% routine immunization coverage in all districts, conducting supplemental mass immunization and carrying out surveillance to monitor the impact of these interventions.

Supplemental measles campaigns for children less than 59 months are also planned for 2011 and co-funding from the Measles Initiative is available; however additional resources are needed to fully cover the campaign costs. Given a recent increase in measles cases and the experiences from recent outbreaks in other countries in the region (e.g. Malawi, South Africa, Botswana), delaying these campaigns is not advised, as a significant outbreak could result.

2.3.2 Neonatal Tetanus elimination

MNTE validation was conducted in 2007 and indicated that the country had not attained the elimination goal. Three rounds vaccination were conducted in 14 high risk councils in 2009-2010. Currently in 2011 is planning a MNTE validation by mid-2011.

2.3.3 EPI Disease Surveillance

Vaccine Preventable Diseases (VPD) surveillance activities started in January 1995 and are currently conducted throughout the country. A VPD surveillance structure exists with the National EPI level supervising regional EPI Surveillance focal persons. The regional EPI surveillance officers supervise councils EPI Surveillance focal persons who eventually supervise health workers at facility level. In high priority health facilities (hospitals and health centres) there are appointed focal persons for surveillance. In all other health facilities the clinician in-charge takes the responsibility of VPD surveillance among other health care activities/functions. In addition, there are three WHO-deployed surveillance officers to support the three formulated zones covering the whole country. These officers work hand- in-hand with regional and district VPD focal persons in their respective areas by providing technical support for all EPI activities including surveillance and routine immunization. There is a system in place for monitoring Adverse Events Following Immunization (AEFI). No cases of AEFI have been reported during 2007-2010 in Tanzania Mainland.

2.3.4 AFP Surveillance

Last case of indigenous wild poliovirus was reported in 1996. Since 2008 non polio AFP rate of at least 2 per 100,000 populations below 15 years and stool adequacy rate of at least 80% has been maintained. In line with the Polio Eradication Initiatives four committees have been formed and are active to support the eradication activities. 2009 the country was called for submission the certification documentation but the ARCC postponed the planned meeting. Because of the risk of importation from the circulating WPV in neighbouring countries Tanzania is conducting preventive SNIDs in 4 regions in May 2011.

2.3.5 Measles Case-Based Surveillance

Measles case based surveillance started countrywide at the end of 2002. Measles surveillance guidelines are available and have been disseminated at all levels, however need to be updated, particularly to include the new standard case definitions and new indicator on non measles febrile rash illness introduced in 2008. The performance of case based measles surveillance was a concern at national and sub national level in 2009. However 2010 the country managed to reach the required two indicators.

Table 5. Performance of measles case based surveillance indicators; Tanzania 2007-2010

Indicator	2007	2008	2009	2010
Annualized non measles febrile rash illness rate (target >2.0 per 100,000)	1.4	0.2	0.3	2.2
Proportion of districts investigating > suspected case of measles per year (target >80%	67%	32%	36%	92%

The Virology Laboratory at Muhimbili Hospital handles the testing of all specimens from suspected measles cases in the country. Main challenges include heavy work load, irregular communication and meetings with the EPI team, and lack of funds for running costs.

2.3.6 PBM and Rotavirus Surveillance

Haemophilus influenza type B (Hib) surveillance in Tanzania was initiated in 2001 at Muhimbili National Hospital in Dar es Salaam. There are currently three functioning PBM sentinel sites: Bugando Referral Hospital (Mwanza), Hydom (Manyara Region) and Muheza Hospital (Tanga Region). Muhimbili Hospital experienced challenges in the process for collection and testing of CSF samples and has therefore not been providing data since 2008.

Rotavirus surveillance was initiated in 2006. There are currently 4 rotavirus surveillance sentinel sites: Bombo Hospital (Tanga Region), Bugando (Mwanza), Mbeya Referral Hospital (Mbeya Region) and Mnazi Mmoja (Zanzibar). A total of 914 specimens were tested from these sites.

Table 6. Percentage of rotavirus positive cases per sentinel site; Tanzania 2007-2010

Site	Number of Specimens tested in the lab	Number of Elisa Positive cases	% of positive cases
Tanga	280	79	28.2%
Mwanza	490	205	41.8%
Zanzibar	244	101	41.4%
Tanzania	**1014**	**385**	**38.0%**

2.4 Logistics, Vaccine Supply and Quality

2.4.1 Forecasting, procurement and distribution of vaccines

The Government pays for the procurement of the traditional EPI vaccines (BCG, OPV, Measles and TT) and their related injection devices and cold chain equipment. DPT-HepB-Hib vaccine is co-financed by the Government and GAVI. Procurement of all vaccines, injection materials and cold chain equipment is done through the UNICEF procurement channel. The target population for annual vaccines and supplies forecasting is based on the UNICEF forecasting tool. Ordering and allocation of supplies to regions is done by the EPI Logistics Unit based on requests from the regions.

Vaccines, injection materials, and cold chain equipment and related spare parts and supplies are cleared, stored and distributed by Medical Stores Department (MSD) in Dar es Salaam. A fast-track mechanism is in place for clearance of the vaccines at the airport within 1-2 days after arrival. Injection supplies and cold chain equipment are delivered by sea. EPI dry supplies are not on the priority list for fast clearance; this can result in shipments remaining at the port of entry up to three months. MSD is currently negotiating for the dry supplies to receive the same clearance priority as vaccines.

MSD delivers the vaccine and related supplies to the Regional Vaccine Stores (RVS), except for Dar es Salaam - where the delivery is done directly to the councils, and Zanzibar - which picks up its vaccines and supplies. Regions are required to deliver vaccine and related supplies to the councils. However, some regions face operational logistics problem. Councils distribute the bundled vaccines to the health facilities. Most of the councils do not have reliable transport for distribution of bundled vaccines. With the introduction of all of the new vaccines planned through 2015, the current transport at region and some council levels may not be adequate to distribute all of the bundled vaccines together. This will result in increased delivery schedules or the need to change transport means with bigger storage capacity. At regional levels, 3 ton vehicles will be procured (planned through the GAVI HSS).

A vaccine management assessment (VMA) was conducted in December 2009. The overall score was 79%, which indicated some improvement since the previous VMA in 2007 in which the national score was 76%.

Table 7 shows the results of the 2009 VMA. The recommendations from this assessment as well as the 2010 EPI review (see section 3.1) are being addressed as outlined in Tables 10 and 11.

Table 7: Summary of Vaccine Management Performance by levels, December 2009

Level	1	2	3	4	5	6	7	8	9	10	11	Total
	VAP	Storage Temp	Storage Capacity	Equip.	Maint.	Stock mgt	Delivery	Diluents	VVMs	MDVP	Wastage	
National	94%	61%	83%	90%	100%	89%	61%	100%	100%	100%	96%	89%
Sub-national (RVS/ DVS)		73%	66%	77%	81%	60%	62%	48%	96%	98%	82%	74%
Service		67%	100%	86%	82%	59%	58%	67%	79%	92%	58%	75%
Average:	94%	67%	83%	84%	88%	69%	60%	72%	92%	97%	79%	79%

2.4.2 Vaccine Storage

Tanzania has four levels of vaccine storage:

First level: Central vaccine stores (CVS) are located at MSD and are currently sufficient for the primary vaccine storage, including pentavalent (which has been converted from single dose vials to 10 dose vials as of March 2011). Two (2) additional WICR (with capacity of 40 cubic m each) have been installed, making available positive storage capacity at MSD to 40,000 litres as of April 2011. Procurement is underway for six (6) more WICR which are expected to be installed by the end of December 2011. This will increase the positive cold storage capacity to 97,144 litres which is adequate to enable quarterly shipments of all vaccines by the end of 2012 (and will accommodate Pneumococcal (PCV13) and the two million doses of HPV vaccines). Plans are being developed to procure additional cold rooms to accommodate anticipated rotavirus vaccine (RotaRix) introduction through UNDAP and GAVI HSS funds by mid 2012,to accommodate other vaccine including measles vaccine second dose.

Second level: There are 26 Regional vaccine stores (RVS). To ensure that each region has enough storage capacity by March 2012, each is to have a WICR installed and standby water cooled generator of a capacity of 40 kVA. 7 regions will be installed with 40cbm and 19 regions will be installed 30cbm. The current Ice Lined Refrigerators will be transferred to councils to increase their storage capacities. Regional vaccine stores will have a storage capacity for up to three months stock with 25% buffer stock.

Third level: Council Vaccine Stores: 151 councils - among them 133 (88.1%) - have council vaccine stores. The remaining 18 council's vaccine stores are yet to be established. Storage capacity at this level can last three months. Additional positive storage capacity at this level will be increased through the UNDAP and GAVI HSS funds.

Fourth level: Of the total of 6,321 health facilities (public and private), 5,500 (87%) facilities are conducting immunization activities. Each immunizing facility has a functional LPG or solar refrigerator. Facilities can be equipped with vaccine storage capacity of six weeks with a buffer stock of 25% of its target population.

The MOHSW is responsible for funding the procurement of cold chain equipment for regions, councils and health facilities; however this depends on the availability of funds in the national budget. Although councils through their CCHP allocate fund for procurement of LPG gas

A computerized stock management tool (SMT) was introduced at central and regional level for vaccines and supplies. However, there is still a problem with use of the tool at national and regional level, which is being addressed through refresher training. The tool is expected to be introduced at council levels by 2012.

2.4.3 Cold chain Management

A cold chain inventory tool (CCIT) was introduced to all regions in 2007 to monitor the status of cold chain equipment to the health facility level. The regions are expected to submit updates to the national level twice a year (January and July). However, timely and regular submission of the inventory data from the regions is

a challenge, as not all of the regions have been able to submit the required information. This is being addressed through refresher training and supportive supervision.

No funding is provided in the national budget for maintenance or repairs of equipment. Repairs are expected to be budgeted for in the Council budgets; however technical assistance can be requested by the regions and districts from the national level. Maintenance of solar refrigerators is usually a challenge for the national level; given that the refrigerators are placed in several locations around the country and that the RCCOs do not have the capacity to conduct the maintenance. EPI plan to stepwise replace solar fridges by LPG countrywide and it is included in MTEF each year.

2.4.4 Injection Safety

The Tanzania EPI has been using AD syringes, needles and safety boxes in routine immunization services since 2002. Ensuring that all immunization injections and the disposal of used needles and syringes are safe to the recipient, health worker, community and the environment is a priority for the country. The MOHSW has a Health Care Waste Management Plan and Policy Guidelines (September 2006), which includes handling and disposal of all injectable, including those of the vaccination program. The following strategies are part of the policy implementation:

- Established and monitoring procedures set up at each level of the health care waste management streams;
- Awareness and training programmes for medical and ancillary staff in health-care establishments and health training institutions;
- Administrative procedures defined and adequate resources allocated at all levels to ensure proper management of health-care waste;
- Appropriate environmental-friendly and affordable technologies for the treatment and the disposal of health-care waste, taking into consideration the resources of each health-care facility.

In applying this policy, the following strategies are used by the Tanzania EPI:

- Adequate supply of auto-disable syringes and safe vaccines, with receipt at MSD and distribution as noted above. Syringes, needles and safety boxes are bundled with vaccines.
- Surveillance and management of AEFI
- Safe injection practices
- Proper waste management and safety box disposal
- Communication and advocacy.

2.5 Programme management and coordination

2.5.1 Strategic plans and guidelines

The HSSP3 of the MOHSW provides the strategic direction of the health sector for 2009-2015. The HSSP3 is a guide for strategic planning at the sub national level and for development of annual plans. Within the HSSP3, Immunization falls within the Maternal, Newborn and Child Health section. DPT-HepB-Hib 3 is mentioned as an indicator for performance of the sector and General Budget support, however, the plan does not include the strategic objectives of the Immunization Program. The current cMYP 2010-2015 has been aligned with HSSP3. An annual plan is available for 2011 based on the strategic plans in the cMYP.

Policy guidelines were developed for Reproductive and Child Health in March 2003, within which EPI is included in one-page in very broad terms, with outdated information focused immunization for under one. There are no Immunization specific policy guidelines. Operational guidelines have been developed for logistics, cold chain and vaccine management. A routine immunization field guide is currently in draft form and which is planned to be updated in 2011.

2.5.2 Partner Coordination

An Inter Agency Coordination Committee (ICC) was established in 1995 to provide a partner forum to discuss EPI-related issues. However, since 1999, key health decisions on financing and planning – including MoHSW policies and the HSSP - have been made through the SWAp collaboration (e.g. MoHSW, PMO-RALG, Ministry of Finance, civil society, private sector and development partners including UN agencies active in health). There is also a Development Partners Group for Health (DPG Health), which is a collection

of 20+ bilateral and multi-lateral agencies supporting the health sector in Tanzania, with WHO as the Secretariat. EPI Technical Coordination meetings as observed during EPI review have been irregular, and there is no formalized coordination mechanism for EPI with the MSD and Tanzania Food and Drug Authority (mandated to regulate vaccines in Tanzania).

Current main partners supporting EPI in Tanzania are WHO and UNICEF. CIDA is providing support in 2011 for cold chain equipment (through a contract with UNICEF), and USAID has expressed interest in supporting new vaccine introduction, notably through proposed short-term technical assistance by its global Maternal and Child Health Integrated Program. Several other partners or sectors support EPI during SIAs such as Red Cross Society, Faith Based Organizations, and the Ministry of Education.

2.5.3 Supportive Supervision

The national level plans to conduct supportive supervision to the regional and council level once per quarter. However, regular supportive supervision has been a major challenge in the past five years and has been done on an ad hoc basis. In 2010, the program was able to conduct one supportive supervision visit to 8 poorly performing regions. The rationale for selection of the regions was based on failure to improve coverage after REC implementation in 2009. The main challenges with conducting regular supportive supervision from the national level are staff, lack of transport and funding.

The country is vast with big number of councils. In order to ensure that all regions and councils are supervised as planned, there is need to decentralize the supportive supervision to zonal level. Equipping the zones with additional staff, transport and funding will enable all councils supervised at least once per quarter.

At regional and district levels, supervision plans are available with the integrated checklist however most of the planned supervision visits are not conducted and the available integrated checklist does not contain the core EPI components. National level has a focused EPI supportive supervision check list which adequately covers the EPI components.

2.5.4 Monitoring and Evaluation

The EPI program uses HMIS (MTUHA) data collection tools for immunization and a mixed processing system (electronic i.e. DVDMT, CCIT, SMT, Epi info and manual). At sub-national level, there is a shortage of personnel to handle the data, with management delegated to RCCO and DCCOs, who have limited skills and other duties. Data quality self assessment training was conducted in 2007 and cascaded to regional and district level; however, there has been inadequate follow up of DQS at sub-national level. Other challenges include: inconsistencies in demographic target data between different levels and national targets (National Bureau of Statistics); high (>10%) or negative dropout rates in some districts and health facilities; and some incorrect data transcription. There is limited feedback on performance (routine EPI and surveillance) from the national to the sub national level, and the last annual EPI evaluation meeting was conducted in 2008 due to lack of fund to organize the meetings. As noted in the 2009 EPI review, data management is a major challenge especially with regards to timeliness, accuracy, analysis and feedback at all levels.

2.6 Financing

2.6.1 Health Sector Financing

There has been an overall increase in funding for the health sector over the past 3 financial years, 2007/09-2009/10. In 2009/10, the health sector allocation was 11.2% of Government budget. Sources of financing for the health sector include: On-budget sources: Central Government Funds, General Budget support, Health sector basket fund and foreign funded projects and programmes and Off-budget sources: Health services fund (user fees), Community Health Fund/ TIKA, Council own-sources and foreign funded projects and programs.

The Health Basket Fund (HBF) was created in June 1999 and is part of the SWAp approach. The basket consists of two elements; the central basket and the district basket.

2.6.2 EPI Financing

The Government funds cover fully the cost of BCG, Measles, OPV and TT vaccines as well the required injection materials. Funds for these vaccines are protected to ensure their constant availability. In addition, the Government co-finances the cost for DPT-HepB-Hib vaccine; in 2009, the Government contributed 5.4% of the total cost of the vaccines, amounting to USD 1,076,477.89.

However, the funds available for operations at the central level are inadequate. It is observed that allocation of funding to EPI at central level has been declining over the past 3 Financial Years: 2007/08 – 2009/10, despite the increasing allocation to the health sector.

2.7 Human Resources

2.7.1 Staffing

There is a great shortage of staff at national level. There are 8 Zonal Reproductive and Child Health Coordinators (ZRCHC); one of their responsibilities is to provide supportive supervision to the councils in their zones. However these ZRCHC are overwhelmed with other activities such as maternal health, family planning, PMCT and Child Health Care. EPI activities are allocated only less than 10% of their time.

Only 35% of positions are filled with qualified health workers in the country2. Shortage of adequate human resource especially in remote areas is an area of concern of the MOHSW. The MOHSW and PMORALG in collaboration with the Public Service Management Office are responsible for recruitment and distribution of health staff throughout the country.

2.7.2 Capacity Building for EPI

In-service Training

A new comer's course is provided for newly appointed RCCO, DCCO and Zonal Officers on entry. There is no systematic EPI training schedule in place for refresher training for EPI. There are no standardized training materials for operational level training; in addition no mid-level management (MLM) modules have been adapted nor MLM training conducted.

Pre-service Training

There are 8 Zonal Health Training centers in Tanzania Mainland. However, EPI has had minimal interaction with pre-service training institutions. EPI prototype training curricula available to countries in the African region are not available in the country and hence have not been adapted. As such review of training curricula is not standardized.

2 Health Sector Strategic Plan 3 2009-2015

3. EPI REVIEW AND SITUATIONAL ANALYSIS

3.1 EPI Review 2010

An EPI review was conducted in May 2010, with the following conclusions. The recommendations of EPI review are attached as annex 2.

i. The strong foundation and visibility of the Immunization program has weakened over the years, particularly at national level.
ii. There is a variation in the Tanzania Mainland current immunization schedule compared with Zanzibar and the rest of the countries in the region.
iii. The positioning of the programme in the current MOHSW Organogram creates some ambiguity in the delivery of services to wider age groups and the uptake of new global innovations and changes.
iv. Weak coordination mechanisms exist at national level for the Program with key stakeholders for high-level advocacy and policy decisions (ICC) as well as technical coordination.
v. The main factors affecting performance of the program include;
    a. inadequate focused supportive supervision particularly from national, zonal and regional levels for routine EPI and surveillance due to lack of transport and funding
    b. limited prioritization of EPI activities at district level translating into limited funds allocation for EPI activities
    c. human resource constraints resulting in inadequate time allocated for EPI at regional and district level.
vi. Efforts to improve EPI performance (REC approach) have demonstrated that coverage can be improved with focused support to districts.
vii. Although EPI Focal Persons exist at Zonal, regional, district and health facility levels for routine EPI they are not dedicated solely for EPI activities and are in most circumstances overwhelmed with several other responsibilities, resulting in inadequate focus on EPI activities. Zonal Reproductive and Child Health Coordinators (ZRCHC) are overwhelmed with other activities giving EPI activities only less than 10% of their time on average. In addition, there is a shortage of staff at national level.
viii. Efforts to build capacity of EPI Focal Persons are in place on entry; however no refresher training and MLM courses are conducted once in service. There are no standardized training materials for OPL and MLM training.
ix. The integration of management of EPI supplies with other medical supplies at the MSD has weakened the direct oversight of EPI logistics storage, bundling with injection supplies and distribution creating a situation where vaccines are available while syringes are out of stock at district and health facility levels.
x. The cold storage capacity at national and regional level is grossly inadequate for the vaccine requirements of the country, more evident after introduction of the DPT-HepB-Hib vaccine in 2009, resulting in increased annual shipments of vaccine, inability to store a buffer stock of vaccines and frequent stock outs at the regional, district and health facility levels.
xi. The distribution of vaccines from the regions to the districts is not as recommended; the districts have to collect the vaccines from regional level and distribution to health facilities has been affected by lack of reliable transport at district level; most available vehicles are more than 10 years old; this further contributes to shortage of vaccines at health facility level.
xii. IVD surveillance at Regional and District levels is not adequate as appointed staffs have other responsibilities and there is high turnover.
xiii. An improvement in AFP surveillance performance has been observed over the past 2 years; however sub national performance is still a concern with several districts remaining silent. Active search at sub national level is limited by lack of prioritization of surveillance activities at regional and district levels, with no funding allocated for surveillance activities.
xiv. Measles surveillance performance is inadequate with failure to achieve the surveillance performance indicators at national and sub national level. The lack of knowledge by health workers (particularly on the new measles surveillance indicators) as well as lack of supportive supervision to health facilities by Surveillance Focal Persons to follow up is the main challenges affecting measles surveillance performance.

xv. Data management is a major challenge especially with regards to timeliness, accuracy, analysis and feedback at all levels. The EPI Unit has only one Data Manager who is overwhelmed with the requirements.

xvi. There has been sustained commitment of the Government of Tanzania (GoT) to maintain a protected budget line for EPI vaccines; however the operational budget is a major constraint to conducting the planned activities at national level.

3.2 Situational analysis

Table 8 and 9 shows the situation analysis of routine immunization by system components and accelerated disease control respectively

Table 8: Situational analysis of routine EPI by system components (2006– 2010)

INDICATORS	2006	2007	2008	2009	2010
Routine Coverage					
DTP-HepB-Hib3 coverage	87%	83%	85%	85%	91%
% of districts with > 80% coverage	75.2%	63%	76%	70.5%	79%
National DTP-HepB-Hib1 - DTP-HepB-Hib3 dropout rate	5%	7%	4.1%	5.3%	7%
Percentage of districts with dropout rate DTP-HepB-Hib1 – DTP-HepB-Hib3 >10	12.8%	23%	19.3%	20%	28%
% of planned outreaches cancelled	N/A	11%	10%	13%	22%
Routine Surveillance					
% of surveillance reports received at national level from districts compared to number of reports expected	100%	100%	100%	100%	100%
Vaccine supply, Quality and Cold chain/Logistics					
Percentage of districts with adequate number of functional cold chain equipment	100%	100%	100%	100%	-
Percentage of health facilities with adequate functional cold chain equipment	76.8%	91%	100%	95%	-
% of districts not allocating funds for LP gas	N/A	100%	100%	100%	-
% of districts with adequate capacity to accommodate new vaccine (Pneumo/Rota)	N/A	100%	100%	100%	100%
Immunization safety					
Percentage of districts supplied with adequate (equal or more) number of AD syringes for all routine immunizations	100%	100%	100%	100%	100%
Vaccines supply					
Was there a stock out at national level during last year	No	Yes	NO	Yes	NO
If yes specify duration in months	NA	BCG-1m DTP-HB-1.5m OPV-1 wk Measles- 1m TT-1m	NA	November and December	NA
If yes specify which antigen	NA	DTP-HepB, BCG, Measles, TT & OPV	NA	DTP-HepB-Hib	NA
Communication					
Availability of a communication plan	Yes	YES	YES	No	NO
Financial sustainability					
What % of total routine vaccines spending	36 %	79.5%	67.9%	20.8%	?

INDICATORS	2006	2007	2008	2009	2010
was financed using government funds (*Including loans and excluding external public financing*)					
Linking to other health interventions					
Were immunization services systematically linked with delivery of other interventions (malaria*, nutrition, child health*) established	Yes	Yes	Yes	Yes	YES
Human resources availability					
Number of health workers/vaccinators per 10,000 population	Not available	Not available	Not available	Not available	Not available
Management planning					
Are a series of district indicators collected regularly at the national level? Y/N	Yes	Yes	Yes	Yes	Yes
Number of ICC meetings held last year(one per quarter)	10	4	2	4	3
Waste management					
Availability of waste management plan	Yes	Yes	Yes	Yes	Yes
Vaccine wastage monitoring at national level for all vaccines	Yes	Yes	Yes	Yes	Yes
Operation research/researcher					
No of operational researches conducted	Yes	Yes	Yes	No	No

Table 9: Situational analysis by accelerated disease control initiatives 2006 to 2010

COMPONENTS	INDICATORS	NATIONAL				
		2006	2007	2008	2009	2010
Polio	OPV3 coverage	89%	88%	89%	88	94%
	Non polio AFP rate per 100, 000 children under 15 yrs. of age	1.62	1.60	2.0	2.7	2.6
MNT	TT2+ coverage	78%	73%	73%	74%	74%
	Number of districts reporting > 1case per 1,000 live births	0	0	0	0	0
	Was there an SIA (Y/N)	N/A	NO	NO	YES	Yes
Measles	Measles coverage	89%	90%	88%	91%	92%
	No: of suspected measles cases	760	7,726	3,413	982	1084
	No. Suspected measles cases investigated by blood specimen	1,517	589	253	381	75
	Extent: SIAs to children aged less than five years coverage	N/A	NA	95%	N/A	NA
	Measles second dose	NO	NO	NO	NO	NO
Accelerated disease control	No of reported measles outbreaks	5	9	8	11	17
	No of measles deaths	3	16	6	22	0
	Possibility of AFP importation	NO	YES	NO	NO	YES
	No of high risk districts for NNT	12	12	12	12	14
PBM/Rota surveillance	No of functional PBM/Rota surveillance sentinel sites	3	4	4	6	6

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4. PRIORITIES, OBJECTIVES AND MILESTONES

Based on situation analysis and national priorities, objectives, milestone strategies to achieve the objectives and activities were developed as elaborated in table 10 and 11 below

Table 10*:* National Priorities, Objectives and Milestones, Regional and global goals and order of priority, Tanzania Mainland; 2010-2015

System component	Description of problems and other national priorities	Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
Service Delivery	Low immunisation coverage below 90% in 47% of councils in 2010	To increase immunization coverage to equal or above 90% in all councils by 2015	2011: Increase to 90% vaccination coverage to 65% of the councils. 2012: Increase vaccination to 90% coverage to 75% of the councils. 2013: Increase vaccination to 90% coverage to 80% of the councils. 2014: Increase vaccination to 90% coverage to 90% of the councils. 2015: Maintain vaccination to 90% coverage to 90% of the councils.	Reduce child mortality by two thirds between 1990 and 2015 Measles Mortality Reduction by 98% by 2012	1
	To change the existing immunization schedule to be in line with EPI Review recommendation	To review and update the IVD guideline by the end 2013	2011: To review and update IVD guideline 2011.Guieline to be approved by MOH higher management levels 2011: To disseminate guidelines 2012: Adopt the new schedule		
	Inadequate transport for distribution of vaccines, supportive supervision and surveillance activities	To facilitate 26 regions and 142 councils to have functional vehicles for distribution, supervision and IVD surveillance activities by 2015	2011: Solicit funds through GAVI HSS to support councils functional transport 2012: 30% of councils with functional transport 2013: 60% of councils with functional transport 2014: 100% availability of functional transport 2015. Transport situation analysis conducted		

System component	Description of problems and other national priorities	Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
	Inadequate and low quality supportive supervision at all levels	To improve quality supportive supervision at all levels by 2015	2011: Solicit funds from GAVI HSS to support 2011:60% of councils supervision quarterly 2012: 80% of council supervised quarterly 2013: 90% councils supervised quarterly 2014: 95 % of Council supervised to councils quarterly 2015: 100% supervision at council quarterly		1
	Inadequate outreach and mobile sessions	To improve access of immunization services to 95% at facility level by 2015	2011. 60% of outreach /mobile services conducted 2012:70 % of outreach/ mobile services implemented 2013: 80% of outreach/mobile services implemented 2014: 80% of planned outreach /mobile services implemented 2015: Maintain implementation of Outreach services at 80%		
Vaccines supply, Quality and Logistics	Inadequate cold storage capacity at all levels.	To increase cold storage capacity to 100% at all levels by 2015.	2011:Solicit funds for expansion of cold chain at all levels 2011: Increase cold storage capacity at National level to 90% and 25% at Regional level 2012: To increase cold chain storage capacity at Regional level to 80%. 2013: To increase cold chain storage capacity at Council level to 80%. 2014: To increase cold chain storage capacity at all levels to 100%.		

System component	Description of problems and other national priorities	Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
	Inadequate capacity for Vaccine and cold chain management.	To improve and maintain vaccine and cold chain management to 90% at all levels By 2015	2011: 80% of vaccine and cold chain management performance at all levels 2012: 85% of vaccine and cold chain management performance at all levels 2013: 90% of vaccine and cold chain management performance at all levels 2014: 90% of vaccine and cold chain management performance at all levels 2015: Maintain 90% of vaccine and cold chain management performance at all levels	By 2010 or sooner all countries will attain at least 90% nationally with at least 80% coverage in every council.	
Advocacy and Communication	Lack of advocacy and communication on immunization (National and sub national level)	To ensure availability of advocacy and communication strategies at all level by 2015	2011: KABP study proposal developed 2011: KABP study on immunization conducted 2011: National Advocacy and communication strategy developed 2012: Sub national Advocacy and communication plans developed 2012: Advocacy and communication plans implemented		3
	Insufficient correct information on immunization leading to frequent negative rumours and poor participation in immunization services	To ensure correct information on immunization to community is available to all council by 2015	2011: Communities in 20% of the councils have correct information and participate in immunization activities 2012: Communities in 50% of the councils have correct information and participate in immunization activities 2013: Communities in 70% of the councils have correct information and participate in immunization activities 2014: Communities in 90% of the councils have correct information and participate in immunization activities		

System component	Description of problems and other national priorities	Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
Capacity building	Inadequate Knowledge and skills on immunization among health workers and managers at all levels	To enhance skills and knowledge on immunization services to 100% of health facility service providers and managers from regional/councils by 2015	2011: Training guidelines developed 2012: 25% of health care provide received refresher training 2012: 30% of National and zone staff received MLM training 2013: 30 % of sub nation manager trained on MLM course and 40%of health care provide received refresher training 2013:50% of sub nation manager trained on MLM course and 60% of health care provide received refresher training 2014: 70% of sub nation manager trained on MLM course and 75% of health care provide received refresher received refresher training 2015; Maintain 95 % of sub nation manager trained on MLM course and 80% of health care provide received refresher training	By 2010 countries will reach at least 90%national vaccination coverage and at least 80% vaccination coverage in every council	**1**
VPD surveillance	Inadequate performance of VPD surveillance indicators in some regions and councils	To strengthen VPD surveillance and achieve at least 80% in all standard indicators by 2015	2011: Achieve 80% performance in all VPD surveillance indicators 2012: Maintain 80% performance in all VPD surveillance indicators 2013: : Maintain 80% performance in all VPD surveillance indicators 2014: : Maintain 80% performance in all VPD surveillance indicators 2015: : Maintain 80% performance in all VPD surveillance indicators	All countries will have developed capacity at all levels to conduct case-based surveillance of VPDs supported by lab confirmation where necessary, to measure vaccine cover-age accurately and use data appropriately.	

System component	Description of problems and other national priorities	Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
	Inadequate supporting evidence for disease burden prevented by the new and under used vaccines	To provide local evidence on the burden of rotavirus diarrhoea and PBM in <5 children and impact of the new vaccine introduced by 2015	2011: Maintain the PBM and Rotavirus sentinel surveillance sites 2012: Ensure availability of operational research for Rubella virus 2012: Maintain the PBM and Rotavirus sentinel surveillance sites 2013: Maintain the PBM and Rotavirus sentinel surveillance sites 2014: Maintain the PBM and Rotavirus sentinel surveillance sites 2015: Maintain the PBM and Rotavirus sentinel surveillance sites	Access to current new and underutilized vaccines, maximized and disease control efforts accelerated in countries and areas by provisional of technical and policy support that effectively contributes to build capacity from district level upwards.	
	Country not certified polio free	To maintain polio free status by 2015	2011: Update polio certification document 2012: Update polio certification document 2012: Update laboratory inventory 2013: Update Polio Importation Preparedness plan	By 2009, independent certification of polio free status will lead to full regional certification	
Programme Management	Inadequate capacity and organization of EPI National office to perform its core functions	To improve the infrastructure of IVD office by 2015	2011: Resource mobilization for rehabilitation of National EPI office 2012:Rehabilitate of National EPI office complete by 50% 2013: National EPI office rehabilitation completed at 90% 2014: EPI office equipped and functional		
		To enhance capacity and organization of IVD central office to implement its core functions by 2015	2011: Organization structures revised and implemented 2012: 100% staff as per organogram in place		
	Inadequate coordination with programmes and partners	To strengthen collaboration within government and IVD stakeholders by 2015	2011: ICC terms of reference adapted and committee established 2011: Coordination strategies developed and implemented 2012: 80% quarterly coordination meeting conducted 2013-15: ICC and programme coordinating meetings maintained		**1**

System component	Description of problems and other national priorities	Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
	Emerging of new vaccine targeting beyond age group targeted by EPI	To ensure all vaccine in the country are managed under one programme by 2015	2011: Develop immunization and Vaccine guideline 2012: Disseminate and implement policy guidelines at all levels	scope of vaccination services is widening beyond infancy to promote protection of more people in a changing environment (GIVS 2006-2015);	
	Inadequate resources for IVD activities	To increase advocacy with Government and partners to support IVD and new vaccine introduction activities in the country by 2013.	2011: Aligning cMYP with HSSPIII 2011: Develop advocacy package and disseminate the cMYP to partners 2013: Review the partners support to IVD activities		
	Inadequate motivation mechanism and exposure to new technology to IVD staff at all level	To provide opportunity to 90% of IVD staff to attend professional forums and tailor made courses by 2015	2011: 20% Programme staff updated on new development and technology 2012:50%Programme staff updated on new development and technology 2014: 60% Programme staff updated on new development and technology 2015 90% Programme staff updated on new development and technology		
	Shortage of human resources at all levels	To support the HRH Strategic plan by 2015	2011: To include HRH strategic plan in the GAVI HSS application		
			2012: Implement the HRH strategic plans using GAVI HSS funds		

System component	Description of problems and other national priorities	Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
Immunisation safety and waste/sharps management	Inadequate adherence of service providers to immunisation safety practices	To ensure 100% of service providers adhere to immunization safety practices by 2015	2011: Improve immunization safety practices to 80 % of service provides 2012: Improve immunization safety practices to 85 % of service provides 2013: Improve immunization safety practices to 90 % of service provides 2014: Improve immunization safety practices to 95 % of service provides 2015: Improve immunization safety practices to 100 % of service provides	Inadequate adherence of service providers to immunisation safety practices	
		To increase immunization safety and waste disposal facilities to 60% by 2015	2011: Advocate for funding for construction of incinerator 2012:30% of facility with functional incinerator 2013:40% of facility with functional incinerator 2014:50% of facility with functional incinerator 2015:60% of facility with functional incinerator		
Financial Sustainability	Inadequate resources for immunization program and unclear future reliability of EPI funds	To increase funding for EPI activities to 8% of total health expenditure by 2015	2011: Solicit funds for IVD activities 2012: Attain EPI expenditure as proportion of total health expenditure 4 % 2013: Attain EPI expenditure as proportion of total health expenditure 6% 2015: Attain EPI expenditure as proportion of total health expenditure 8%		
New vaccines introduction	Continue providing DTP-HepB-Hib	To continue with provision DTP-HepB-Hib to eligible children	2011: Apply for the extension of DTP-HepB-Hib vaccine support from GAVI 2012 - 2014: Ensure the availability of DPT-HepB-Hib in the immunization schedule	Access to current new and underutilised vaccines, maximized and disease control efforts accelerated in	

System component	Description of problems and other national priorities	Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
	Relatively high child mortality and morbidity following Rotavirus and Hib pneumonia and meningitis	To introduce Pneumococcal and rotavirus vaccine to 100% of councils by 2015	2011: Re-submission of application for pneumococcal and application of Rotavirus vaccine to GAVI. 2012: Procurement of pneumococcal vaccine 2012: Introduction of pneumococcal vaccine 2012: Procurement of rotavirus vaccine 2013: Introduction of rotavirus vaccine 2013: Post introduction evaluation of pneumococcal Vaccine 2014: Post introduction evaluation of Rotavirus Vaccine	countries and areas by provisional of technical and policy support that effectively contributes to build capacity from council level upwards.	
	High morbidity and mortality due to cervical cancer	To introduce HPV vaccine to 100% of the councils by 2015	2011: Establish necessary information for HPV introduction 2011: procurement and distribution of vaccine and introduce HPV vaccine into 3 regions 2012: Post introduction evaluation 2012: Vaccine introduced in 7 regions 2013: Vaccine introduced into the whole country. 2014: Post introduction evaluation conducted and recommendations implemented		
Accelerated disease control	Measles outbreaks in some of the councils	To reduce child mortality due to measles by 98% by 2015	2011: Develop Measles SIA plan and resource mobilization 2011: Implementation of Measles SIA campaign 2013: Develop Measles SIA plan 2014: Implementation of Measles SIA campaign	Measles pre-elimination regional goal by 2012: >98% mortality reduction by 2012 as compared to estimates for 2000	
	Presence of Neonatal tetanus Cases	To Eliminate NNT by 2015	2011: Maternal Neonatal Tetanus Elimination LQA Survey		
	Threat of WPV from neighbouring countries	To respond to the threat of WPV importation by 2015	2011: High risk analysis conducted 2012:Conduct NIDs to children under five		

System component	Description of problems and other national priorities	Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
Programme Monitoring and Evaluation	Inadequate monitoring and evaluation programme activity at all level	To improve quality of data management in 100% of all councils by 2015	2011: Availability and use of data reporting tools in all regions. 2012: Availability and use of data reporting tools in all councils 2013:Linkage of data from region and national level 2014: Linkage of data from council and national level		
Operational Research					
	Inadequate operational research to guide the program	To facilitate evidence based decisions by conducting at least 2 operational researches per year by 2015	2011: Areas of operational research identified 2012: Conduct two operational research 2013: Conduct two operational research 2014: Conduct two operational research 2015: Conduct two operational research		

5. STRATEGIES, KEY ACTIVITIES AND TIMELINE

Table 11*:* National Objectives, Strategies, Key activities and Timeline, Tanzania Mainland 2006 – 2010

Objective	Strategies	Key activities	Time line				
			2011	2012	2013	2014	2015
Service Delivery							
To increase immunization coverage to equal or above 90% in all councils by 2015	Implementation of RED/REC approach in all councils	Implement RED/REC activities					
		Follow-up and evaluation of implementation					
	Intensify routine immunization activities	Conduct immunization weeks once per year					
To review and update the IVD guideline by the end of 2013	To review IVD guideline to be in line with WHO guideline	Recruit consultant for IVD guideline desk review					
		Revise and produce guideline					
		Disseminate and distribute revised guideline					
	To adapt and implement WHO immunization schedule	To revise and implement immunization schedule in line with WHO recommendations					
To facilitate 142 councils to have functional vehicles for distribution, supervision and IVD surveillance activities by 2015	Resource mobilization and procurement of vehicles	Application of resources under GAVI HSS Phase 2					
		Procurement and distribution of vehicles					
		Service and maintenance the vehicles by region and council					
To improve quality supportive supervision at all levels by 2015	Improve capacity of Zonal supervisors on supportive supervision	Establish and appoint zonal immunization and vaccine officers post					
		Equip zonal teams with implementation resources					
	Improve quality and frequency of supportive supervision to regions and councils	Provide supervision tools and resources					
		Conduct supportive supervision to region quarterly and once per month to councils by region					
To improve access of immunization services to 95% at facility level by 2015	Strengthen outreach and mobile services	Resource mobilization for Outreach resources					
		Provide appropriate transport for outreach services					
		Advocacy and sensitization to councils and community to support outreach and mobile services					

Objective	Strategies	Key activities	Time line				
			2011	2012	2013	2014	2015
	Increase vaccination sessions at health facilities	To provide refresher training to health providers on multi dose open vial policy (MDVP)					
To increase cold storage capacity to 100% at all levels by 2015	Ensure adequate cold chain storage capacity at all levels	Conduct cold chain assessment at all levels					
		Resource mobilization for cold chain expansion and improvement at all levels					
		Application of additional cold chain equipments under GAVI HSS					
		Procure additional cold rooms for national storage					
		Procure and install required cold rooms at national and regional					
		Procure and distribute required refrigerators to all eligible councils					
To improve and maintain vaccine and cold chain management to 90% at all levels by 2015	Ensure adequate and reliable supply of energy in all vaccine stores and health facilities	Situation analysis of energy resources at all level					
		Resource mobilization for source of energy					
		Procurement of standby generators for RVS and DVS.					
		Advocacy and sensitization of DMOs to allocate funds for reliable source of energy to maintain cold chain					
	Strengthen vaccine management and ensure availability vaccines and related supplies	Build capacity to health workers on vaccine management.					
		Procurement and distribution of cold chain equipments and related supplies					
		Procurement of vaccines and related supplies.					
	Strengthen permanent preventive maintenance/services of vaccines refrigerators at all levels	Procurement of cold chain spare parts and supplies					
		Cold chain and vaccine management training for cold chain operators on maintenances					
		Supportive supervision for cold chain services					
Advocacy and Communication							
To ensure Availability of advocacy and communication strategies at all level by 2015	To enhance advocacy , communication and social mobilization	To conduct KABP study					
		Develop advocacy and communication strategy					

Objective	Strategies	Key activities	Time line				
			2011	2012	2013	2014	2015
To ensure correct information on immunization to community is available to all council by 2015	Capacity building to health workers at different levels	Develop immunization communication materials to health workers					
		Printing and distribution of immunization communication materials					
		Train health workers on immunization and communication skills					
	Awareness creation on immunization services to decision makers and community leaders	Develop, print and distribute fact sheets on key immunization messages for decision makers and community leaders					
		Conduct advocacy and sensitization meetings to decision makers and community leaders					
	Provide correct immunization information to the public to counteract immunization rumours	Orient media people on correct immunization information					
		Engage media in providing continuous immunization messages					
		Involve community and religious leaders in community sensitisation					
		Facilitate Community owned Resource Persons (CORPs) in all councils to communicate immunization information to the community					
		Conduct public meetings					
		Integrate immunization communication activities in bi-annual vitamin A and de-worming child health days					
Capacity Building							
To enhance skills and knowledge on immunization services to 100% of health facility service providers and managers from regional/councils by 2015	Enhance knowledge and skills on immunization services among health managers and providers	Identify immunization skills gap at all levels					
		To review/update/formulate training package on immunization services including MLM					
		To develop training implementation plan					
		To conduct TOT training based on immunization package to immunization resource persons					
		Implement training to immunization health providers and managers at all levels to address identified gaps					

Objective	Strategies	Key activities	Time line				
			2011	2012	2013	2014	2015
		To conduct impact assessment of immunization training package					
	Strengthen IVD knowledge in the pre-service institutions	Sensitize Higher Education Council to incorporate immunization topics in health institutions curricula					
		Review/update/formulate training manuals/guidelines on immunization services that will be incorporated in health institutions curricula					
		Conduct TOT orientation sessions to tutors/ lecturers on immunization guidelines /manuals					
		Monitoring and evaluation of pre services training					
	Improve availability of human resource for health at all levels	Support human resource for health (HRH) strategic plan activities.					
		Identifying councils with severe shortage of staff and fill vacant posts in collaboration with Human resource development section in MOHSW and PO-PSM					
VPD surveillance							
To strengthen VPD surveillance and achieve at least 80% in all standard indicators by 2015	Strengthening VPD surveillance system	Review and disseminate of AFP, Measles and NNT surveillance guidelines and case investigation forms					
		Support bi-annual performance review meetings at national, regional and council levels					
		Support out break case investigations and responses					
		Support active search, case investigation and community sensitization of AFP, Measles and NNT					
	Strengthen and maintain PBM/Rota sentinel sites	Support sentinel sites with materials and reagents					
		Installation of internet services and settlement of annual subscription costs					
		Build capacity for sentinel teams					
		Support bi annual performance review meetings					
		To conduct supportive supervision					
To maintain polio free status by 2015	Implement polio eradication strategies	Review and update Polio Importation Preparedness and response plan					
		Update laboratory inventory					
		Update country polio certification document					

Objective	Strategies	Key activities	Time line				
			2011	2012	2013	2014	2015
Programme Management							
To improve the infrastructure of IVD office by 2015	Rehabilitate and furnish National IVD office	Rehabilitate IVD office using GAVI HSS					
		Furnish maintain office with equipment and communication facilities using GAVI HSS					
To enhance capacity and organization of IVD central office to implement its core functions by 2015	To ensure new organization structure is approved and implemented	Review existing organogram					
		Recruit staff as per new organogram					
To strengthen collaboration within Government and IVD stakeholders	To strengthen coordination with programmes	Develop coordination strategy					
		Conduct Quarterly ICC meetings					
		Conduct Quarterly programmes coordination meetings					
To increase advocacy with Government and partners to support IVD and new vaccines introduction activities in the country by 2013	To develop the advocacy package to increase government and partners support to IVD	Aligning the cMYP with HSSP 111					
		Develop advocacy package and dissemination cMYP					
		Review the partners support to IVD activities					
To ensure all vaccines provided (yellow fever, meningitis) in the country are managed under one programme by 2015	To manage all vaccines used by programme/project.	Revise and update programme guideline and policy of IVD to incorporate all the vaccines used in the country					
		Disseminate and implement programme guideline at all levels					
To provide opportunity to 90% of IVD staff to attend professional forums and tailor made courses by 2015	To ensure IVD staff updated on new technology and development	Support EPI central office staff to attend national, regional and international technical/professional forums.					
		Facilitate senior staff at EPI central to undertake tailor-made course on good governance, ethics and program management including information technology.					
		Support middle level personnel to acquire customer care, office management and advanced computer skills					
Immunisation safety and waste/sharps management							
To ensure 100% of service providers adhere to	Improve knowledge and practices of Health	To review, print and distribute immunization safety guidelines					

Objective	Strategies	Key activities	Time line				
			2011	2012	2013	2014	2015
immunization safety practices by 2015	Workers on Immunization safety	Training of Health Workers on immunization safety and waste disposal					
To increase immunization safety and waste disposal facilities to 60% by 2015	Ensure availability of funding for immunization safety and waste/sharps disposal	To support construction of low cost incinerators.					
Financial sustainability							
To increase funding for IVD activities to 8% of total health expenditure by 2015	Ensure Funds for procurement of vaccine and related supply are protected	To plan in MTF all requirement for Vaccine and related supply					
	Solicit funding for IVD operational activities	Advocate for increase of fund allocation for IVD activities					
		Solicit regions and district to include IVD operational activities in their plans					
New vaccines introduction							
To continue with provision DTP-HepB-Hib to eligible children	Ensure DTP-HepB-Hib vaccine availability	To budget for co- financing					
		Ensure yearly application to GAVI for support					
To introduce Pneumococcal and rotavirus vaccine to 100% of councils by 2015	Ensure Pneumococcal vaccine (PCV13) is introduced in routine immunization by June 2012	Follow up application of pneumococcal vaccine					
		Advocacy and resources mobilization for introduction of vaccines					
		Procurement and distribution of pneumococcal vaccines					
		Training of health worker					
		Development of IEC materials, Immunization schedule, training materials, printing and distribution					
		Inauguration of pneumococcal vaccine introduction					
		Post introduction evaluation					
	Ensure Rotavirus vaccine (RotaRix) is introduced in routine immunization by Jan 2013	Follow up application of rotavirus vaccine					
		Advocacy and resources mobilization for introduction of vaccines					
		Procurement and distribution of rotavirus vaccines					

Objective	Strategies	Key activities	Time line				
			2011	2012	2013	2014	2015
		Development of IEC materials, Immunization schedule, training materials, printing and distribution					
		Training of health workers					
		Inauguration of rotavirus vaccine introduction					
		Post introduction evaluation					
To introduce HPV vaccine to 100% of the councils by 2015	Ensure HPV is introduced in the EPI schedule by 2015	Application of HPV by signing MOU with Merck company					
		Advocacy and resources mobilization for introduction of vaccines					
		Procurement and distribution of HPV					
		Development of IEC materials, immunization schedule, training materials, printing and distribution					
		Training of health workers					
		Inauguration of HPV introduction					
		Post introduction evaluation					
Accelerated disease control							
To reduce child mortality due to measles by 98% by 2015	Conduct measles supplemental immunization activities	Develop Measles SIA Plan					
		Advocacy and resource mobilization					
		Procurement and distribution of bundled vaccines					
		Implementation of the campaign					
	Ensure 2nd dose of Measles is introduced in the EPI schedule by 2014	Application of MCV 2					
		Facilitate introduction process					
		Post introduction evaluation					
To Eliminate NNT by 2015	Strengthen Maternal Neonatal Tetanus Elimination strategies	Data Review and Selection of Highest-Risk Council for LQA-CS Assessment					
		Implement Lot Quality Assurance – Cluster Assessment					
To respond to the threat of WPV importation	To increase herd immunity of polio	To conduct regular high risk analysis					
		Conduct SNID activities in high risk areas					

Objective	Strategies	Key activities	Time line				
			2011	2012	2013	2014	2015
Programme Monitoring and Evaluation							
To improve quality of data management in 100% at all levels by 2015	Improve data management	Regular data quality audits at regional, council and health facility levels					
		To procure and distribute immunization data tools, equipment for processing and transmission of data using GAVI HSS					
		Introduction of electronic data processing from council level to national					
		Harmonize data between EPI, Lab, HMIS, and Epidemiology unit through institution of monthly data harmonization meetings.					
		Train health workers on data management					
		Provide feedback to stakeholders					
Operational Research							
To facilitate evidence based decisions by conducting at least 2 operational researches per year by 2015	Strengthen EPI capacity to conduct operational research	Train EPI staff on research methodology					
		Identify research problems					
	Conduct 2 operational researches per year	Develop research proposals					
		Conduct operational researches i.e on effectiveness on RED/REC approach ,Local cold chain procurement , vaccination sites etc					
		Disseminate results					
		Implement recommendations					

6. COSTING, FINANCING AND FINANCIAL SUSTAINABILITY

6.1 Methodology

This section of the cMYP reviews the cost implications and relates them to secured and probable financing to derive information on financing gaps. By knowing the magnitude of the gap, one can devise strategies to improve financial sustainability. The broad areas of intervention for the cMYP are Service Delivery, Advocacy and Communication, Vaccine Supply, Quality and Logistics, New Vaccine and Research and Programme Management.

The costing of the Tanzanian cMYP was based on the priorities set out in the programmatic section of the plan and used the standard cMYP costing tool version 2.5.

Standard programme inputs such as vaccines, injection materials and cold chain equipment were costed using mostly UNICEF prices in the costing tool. This is because virtually all the vaccines and other EPI supplies in Tanzania are purchased through UNICEF. Coverage and wastage targets for 2011-2015 came from GAVI Annual Progress Report (APR), WHO-UNICEF Joint Reporting Forms (JRF) and estimates by the EPI Team. Operational costs for routine and supplementary immunization activities were based on past expenditure and future needs. SIAs costs for measles in 2011 were based on information provided on previous measles SIAs. The staff cost was derived from the government pay scale and time spent for immunization activities. The financing information on EPI was obtained from past expenditures on EPI by GoT and partners. The future costing and financing for the EPI programme (2011-2015) are in line with the National Health Strategic Plan of Tanzania and are aligned with the health sector plan and budget within the five year Development Plan Framework (2011/12 – 2015/16) and National Strategy for Economic Growth and Poverty Reduction (MKUKUTA).

The costs are derived using a combination of costing methodologies such as:

- The ingredient approach, based on the product of unit prices and quantities needed each year, adjusted for the proportion of time used for immunization. This is used for costing inputs such as vaccines, personnel, vehicles, cold chain equipment, etc.
- Rules of thumb, based on immunization practices, such as a percentage of fuel costs as representative of maintenance costs for vehicles. This is used for deriving costs for injection supplies and maintenance of equipment, and vehicles.
- Past spending, where lump sum past expenditure is used to estimate future expenditure. For example, cost per child for specific campaigns, training activities etc.
-

The future cMYP costing is based on the following assumptions:

- Increase coverage for traditional vaccines
- Reduction of dropout rate
- Reduction of vaccine wastage
- Introduction of pneumococcal and rota virus vaccines in 2012 and 2013 respectively
- Introduction of measles second dose in 2014
- Introduction of HPV vaccine in 2011
- Improve advocacy and communication
- Conduct operational/research on EPI
- Increase vaccine storage capacity to accommodate new vaccines
- Improve cold chain, vaccine management, and transport capacity
- Improve EPI capacity to manage the program

6.2 Cost profile

The total immunization specific expenditure in 2010 (the base year) was around US$66 million, where all the funds were spent on routine immunization. There was no campaign in 2010. The breakdown of the expenditure for the routine immunization programme is further illustrated in the table 11

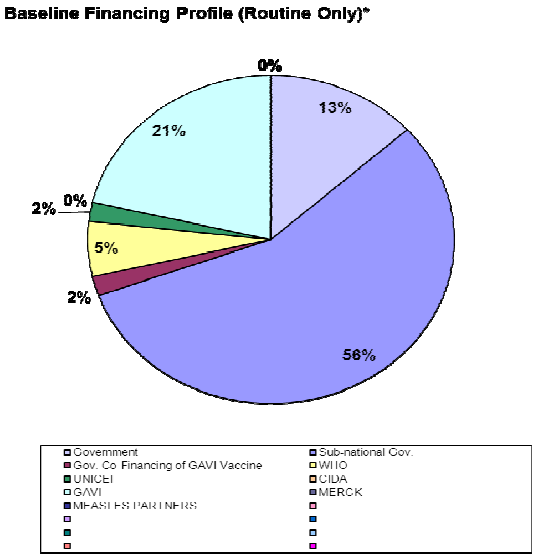
Table 11: Baseline Expenditure for immunization programme

Baseline Indicators	2010
Total Immunization Expenditures	$66,067,563
Campaigns	
Routine Immunization only	$66,067,563
per capita	$1.6
per DTP3 child	$43.4
% Vaccines and supplies	26.6%
% Government funding	69.4%
% Total health expenditures	29.7%
% Gov. health expenditures	99.1%
% GDP	0.27%
Total Shared Costs	$68,161,753
% Shared health systems cost	51%
TOTAL	$134,229,316

6.3 Baseline Financing

In terms of baseline financing, the bulk of the funding came from the sub national government (councils) (56%), followed by GAVI (21%) and the national GoT (13%). The high cost in sub national is due to operational cost at service delivery while national is for procurement, distribution and programme supervision and monitoring. The details are shown in Figure 6.

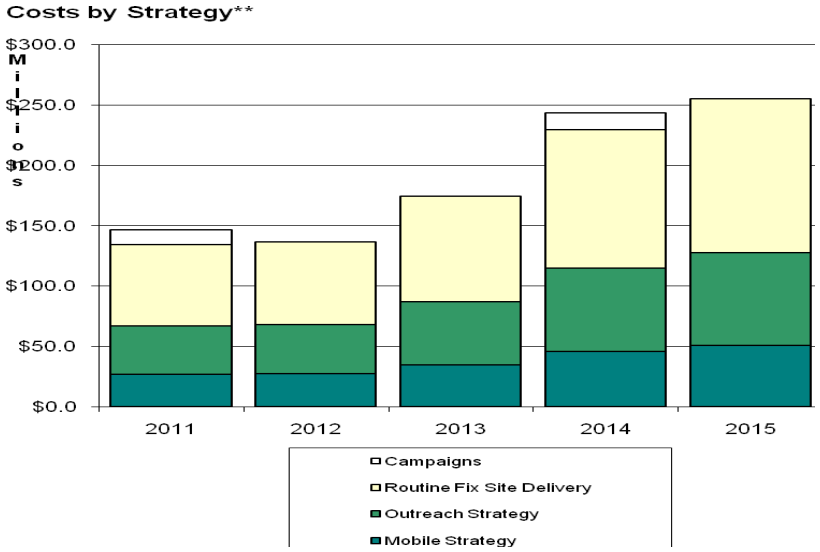
Figure 6. Baseline Financing Profile



6.4 Cost by immunization strategy

As shown in Figure 7, the main immunization strategy in Tanzania is routine fixed delivery which will account for over half of the total immunization budget. This is followed by outreach strategy which will increase to account to at least 30% of the budget. Mobile strategies to reach nomadic and difficult to access communities will also increase slightly each year. It is anticipated that follow-up Integrated Measles Campaigns targeting children aged 6-59 months will be conducted again in 2011 and 2014 to prevent outbreaks among susceptible populations.

Figure 7:



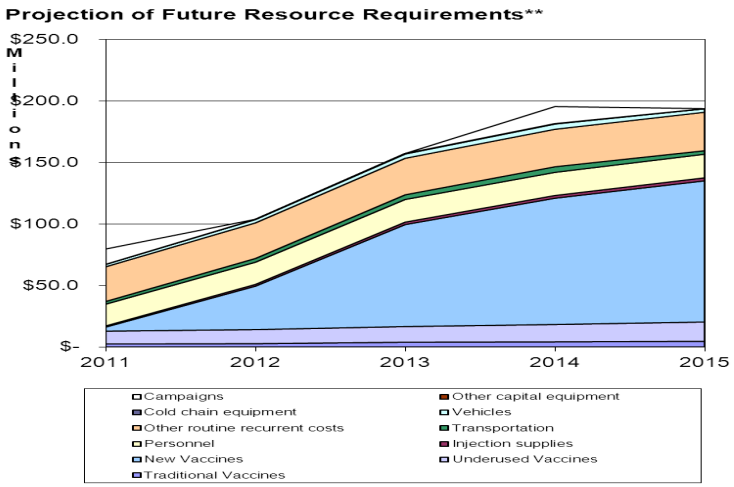
6.5 Programme cost requirement for 2010-2015

The projected cost of the immunization programme in the planning period (2011-2015) is approximately $730 million (see Table 12). The cost sharply increases from 2011 to 2012, reflecting the introduction of Pneumococcal vaccine in 2012 and again from 2012 to 2013, with the introduction of Rotavirus vaccine. Additional costs above routine requirements in 2011 and 2014 primarily reflect the proposed measles follow-up campaigns. In addition, the total estimated cost (approximately $55.6 million) for the proposed Merck donation of 2 million doses of HPV (and injection supplies) is also included in the 2011-2013 resource requirements3.

6.5.1 Projected Financing from all sources from 2010-2015.

The financing trends and resource requirements for the years covered in the cMYP are further elaborated in Figures 8 & 9 and Table 12. In terms of cost drivers (seee Figure 8), these new vaccines dominate all other costs of the programme in the planned years of the cMYP, followed by personnel and other recurrent operational costs (e.g. cold chain, transport, personnel, etc).

Figure 8:



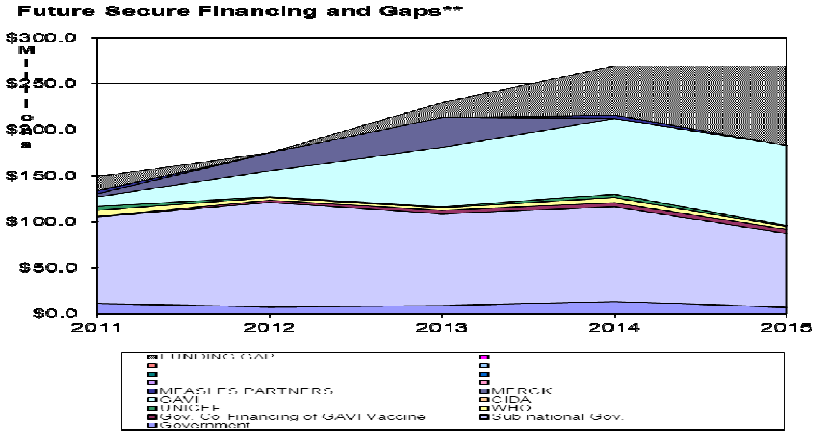
3 Refer to New Vaccine Introduction section 2.2 for additional details.

Financing is either classified as secured, or probable. Secured funding refers to those funds already mobilised to support the implementation of the cMYP. Probable funds are those potentially available but may require additional efforts such as proposal development or negotiations to secure them. From the total projected cost of approximately $730 million from 2011-2015, approximately $611.3 million is expected to be secured primarily from the GoT and other partners, thus leading to a cumulative funding gap of an estimated $118,985,985million (See Figure 9 and Table 12). The major provider of secured funding is the GoT. The total secured financing represents primarily the new vaccine costs and approximately 50% of the total programme cost.

Table 12: Resource Requirements, Financing and Gaps

Resource Requirements, Financing and Gaps*	2011	2012	2013	2014	2015	Avg. 2011 - 2015
Total Resource Requirements	**$149,222,135**	**$174,788,115**	**$229,717,668**	**$269,328,625**	**$269,118,016**	**$1,092,174,559**
Total Resource Requirements (Routine only)	**$136,799,250**	**$174,788,115**	**$229,717,668**	**$255,494,657**	**$269,118,016**	**$1,065,917,706**
per capita	$3.2	$3.9	$5.0	$5.4	$5.6	$4.7
per DTP targeted child	$86.4	$107.3	$135.3	$146.1	$149.6	$126.0
Total Secured Financing	**$133,352,809**	**$174,788,117**	**$213,207,222**	**$215,716,290**	**$182,879,578**	**$919,944,016**
Government	$10,478,305	$7,487,630	$8,570,421	$12,582,333	$7,035,438	$46,154,127
Sub-national Gov.	$94,479,595	$113,406,780	$99,775,718	$103,597,815	$79,968,563	$491,228,471
Gov. Co-Financing of GAVI Vaccine	$630,875	$2,266,555	$3,929,906	$4,388,902	$4,477,199	$15,693,437
WHO	$6,685,848	$2,679,232	$2,755,277	$5,364,195	$3,040,942	$20,525,494
UNICEF	$4,215,244	$937,858	$984,676	$3,794,526	$1,085,300	$11,017,604
CIDA						
GAVI	$10,222,002	$28,384,910	$64,545,979	$82,116,595	$87,272,136	$272,541,622
MERCK	$3,299,310	$19,625,152	$32,645,245			$55,569,707
MEASLES PARTNERS	$3,341,631			$3,871,924		$7,213,555
Funding Gap (with secured funds only)	**$15,869,326**	**-$2**	**$16,510,446**	**$53,612,335**	**$86,238,438**	**$172,230,543**
% of Total Needs	11%	0%	7%	20%	32%	16%

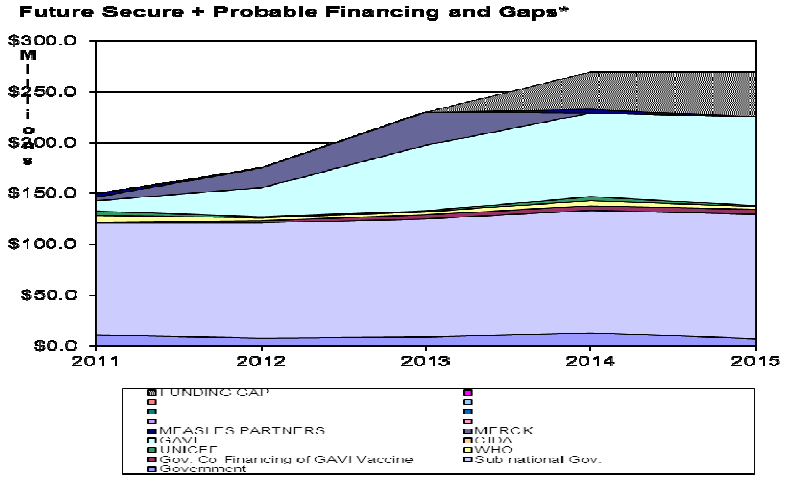
Figure 9.



When both secured and probable funding was taken into account, the funding gap reduced to approximately $24 million for the five years (2011-2015) of the cMYP (see Figure 10). The majority of the probable funds are expected from GAVI (as well as an estimation of additional donation of HPV from Merck, costed at approximately $80.6 million). The GoT probable funding is mainly in relation to co-payment for the new vaccines and sub-national funding in 2015 for additional logistics and facility running/rehabilitation costs.

Other partner funding is not expected to rapidly increase over the planned period. However, turning such probable funds to secure ones is part of advocacy plans to engage the ICC and partners well in advance of the implementation timeline for the activities concerned. This is ideal at the time of their respective annual programme development periods.

Figure 10:



6.6 Financial sustainability strategies, actions and indicators

6.6.1 Financial sustainability strategies, actions and indicators

The success of the immunization programme in United Republic of Tanzania is dependent, to a great extent, on the mobilization of adequate financing for the implementation of the plan from 2011-2015. It is the responsibility of the EPI through the MOHSW and partners to ensure that the programme secures adequate financial and material support. The financial challenges of the EPI in Tanzania have been highlighted in previous sections. From the analysis of costs and available funding, it is clear that additional resources are needed to ensure smooth implementation of the stated objectives of the cMYP.

Opportunities

There is strong political and financial support by the GoT for EPI in Tanzania, demonstrated by the approximately 68% funding of baseline costs in 2011. This commitment is likely to continue due to the positive economic growth of 6.2% in 2006 and above 6% growth thereafter, and should be enough for the GoT to continue paying its contribution to GAVI at the highest level of co-financing while maintaining the operations of the EPI programme. Tanzania has plan and budget for the next three years, which guarantees EPI funding at the same level at least in the medium-term. The country has a broad donor base with opportunity for basket funding for the combined development programme. The Government of Tanzania has created a budget line for vaccines, which "ring-fenced" any funding allocated to the programme. The health system strengthening window (with anticipated GAVI support)4 is another opportunity for addressing part of

4 GAVI has proposed Tanzania as a recipient of GAVI HSS Phase 2 funding within a "common proposal form" to link GAVI and Global Fund financing. This is estimated at US$16 million and expected to be launched by August 2011 for a four year period.

the financial gap as well as growing of private sector is a potential chance for supporting immunization activities

Threats

Despite the opportunities and commitments in Tanzania for improved EPI financing and efficient service delivery, resource mobilisation can be constrained by health sector reforms and basket funding whose preference is more on improvement of horizontal health delivery than vertical programmes such as immunization or other programmes. In addition, the proliferation of Global Health Initiatives targeting other interventions outside of immunization limits the government's ability to secure budgetary support from traditional donors who prefer to channel their funds through these also cost-effective initiatives (e.g. HIV/AIDS, Tuberculosis, malaria, etc). With the current per capita expenditure of $12 in the government is faced with too much competing priority including immunization. Finally, additional financial support is needed to strengthen the overall health system in which EPI operates.

6.6.2, Strategies and actions for financial sustainability

Given the opportunities and threats outlined above, the three main strategies GoT intends to pursue to improve the financial sustainability of the EPI include:

(i) Mobilising additional resources
(ii) Improving resource reliability
(iii) Improving programme efficiency

Mobilising additional resources

The resources required for the co-payment for pentavalent, pneumococcal and rotavirus vaccines have already been planned in the government budget, because the allocation has already been made in the five year plan. Since Tanzania is one of the few countries that have paid above their own share of GAVI co-payment in the past, the trend is likely to continue. The GoT had already paid for tetravalent (DPT-HepB) vaccine at the highest level under the previous bridge financing arrangement, which enabled the country to co-pay for the additional antigen (Hib) and switch from tetravalent to pentavalent. It is anticipated that the government will also be able to co-pay for pneumococcal and rotavirus vaccine by maintaining payment at the same level.

Furthermore, negotiations have already started with between Ministry of Health and the Ministry of Finance for the GoT to eventually takeover the full financing of pentavalent and other new vaccines after the expiry of GAVI. This is likely, should the new vaccines costs reduce as expected in the coming years. Tanzania has a budget line for procurement of vaccines and the MOHSW will request this amount to increase on an annual basis in preparation for the GoT takeover of the full cost of the new vaccines. The step increase in the co-financing level by the government in 2011 is a step in that direction. Vaccine preventable diseases are estimated to contribute up to 8% of the total disease burden in the country (World Health Report, 2004). In line with that, the programme shall target 8% of health sector funds to be utilised for immunization activities.

Assistance in addressing the gap in funding shall also be sought through resource mobilisation from traditional bi-lateral and multi-lateral partners for the EPI programme. Past cMYPs have been presented to ICC and the SWAP Technical Committee (SWAP TC) members. The programme shall encourage the SWAP TC to hold discussions with partners that could support this cMYP – notably additional targeting of non-traditional EPI partners. Furthermore, of the presence of other donors in country provides the opportunity for resource mobilisation domestically. Some of these donors have supported routine and supplementary immunization activities (SIAs), cold chain, training etc. To ensure that a wider group of partners is aware of the cMYP objectives, advocacy will be intensified by the EPI to promote the programme achievements and build awareness of the financial situation.

Improving reliability of resources

The 68% of 2011 EPI funds coming from the GoT budget (in alignment with the national health strategic plan) demonstrates the reliability of funding. However, the global economic situation and the lack of reliable

funding commitments from partners beyond one year are major challenges. For example, with the exception of GAVI, most donors have only provided annual funding estimates, making long term planning difficult.

Improving programme efficiency

The EPI programme started integrating some of its activities with other health initiatives to take advantage of synergy in cost-sharing (e.g. for operational and management costs). For example, a combine SWAP TC oversees implementation of several health initiatives, including immunization, which potentially saves financial and human resources that would otherwise would have not been possible within ICC. In addition, the SWAP basket for donor funds enables ease of transfer and use of such funds while maintaining stringent accountability processes.

Within the EPI programme, low wastage rates shall be maintained through strengthening vaccine management, cold chain improvement and proper monitoring and supervision. Standardised cold chain equipment is used at various levels of the EPI delivery system. The cold chain inventory will also be continuously updated and a detailed maintenance plan implemented to improve efficiency. At the various levels, staff will also receive refresher training and health system strengthening efforts will increase (e.g. with GAVI and Global Fund) to strengthen management and implementation.

6.7 Implementation and follow-up of financial sustainability strategies

This section presents the action plan to implement the financial sustainability activities outlined in the previous sections. The activities, persons or organisations responsible, and monitoring indicators for the different strategies of achieving financial sustainability are outlined in Table 12. The responsibility for monitoring implementation rests with the EPI through the SWAP TC. Joint Reviews and other stakeholders' meetings on financial sustainability strategies are among things discussed. EPI and EPI financing are discussed as a priority program. The SWAP TC also monitors the performance of programmes and expenditures. The following includes financial sustainability monitoring indicators set by the program.

Table 13: Activities and indicators for follow up of financial sustainability strategies

Target	Activity for which resources needed	Person/ Organisation for follow -up	Indicators for follow-up			
			Indicator	Frequency of follow-up	Value	
					Baseline	Target
Mobilise additional resources for EPI	Increase GoT EPI expenditure through MoHSW five years plan from the current level through inter-ministerial discussions	EPI	% of government expenditure on EPI	Annually	68%	95%
			EPI expenditure as proportion of total health expenditure	Annually	-	8%
	Target additional support for EPI from MoHSW five years and when possibly SWAP TC.	HPU/EPI	% of EPI funds funded from Health Basket Fund	Annually	-	-
	Conduct target resource mobilisation from local corporations, individuals and communities	SWAP Tech. Committee	Number of local corporations and individuals presented with the cMYP for funding	Bi-Annually	-	%
	Present the contents of the cMYP to traditional and non-traditional partners such as UNICEF, WHO, JICA, DFID, USAID as an advocacy tool for resource mobilisation.	SWAP Tech. Committee	Number of forums utilised to present the cMYP	Bi-Annually	1 (SWAp TC)	4
Improve Reliability of resources	Negotiations with specific partners such as WHO, UNICEF and JICA for funding pledges beyond one year for routine and SIAs	SWAP Tech. Committee	Proportion of funds mobilised one year in advance.	Annually	%	%
	Include EPI priorities in the next MTEF well in advance	EPI/HPU	EPI needs included in the MTEF	Every 3 years	-	By end 2011
Improve Programme efficiency	Improve the capacity of the health and EPI staff at facility level for efficient management and delivery of immunization services	MoH/EPI	% of health care personnel trained in various aspects of immunization delivery	Quarterly	-	80%
	Increase the capacity to monitor vaccine wastage rate every level	EPI/ Provinces/ District/ Health facilities	Wastage data available at each facility	Monthly	Health facilities and Districts.	EPI, Province, Districts and HFs
	Improve monitoring and evaluation of the programme	EPI	Number of Health facilities with monitoring and evaluation in place	Quarterly	-	100%
	Update cMYP	EPI Manager	Annual update of cMYP annual plan	Annually	0	Once annually

The following table indicates performance of some the financial sustainability indicators over years.

Table 14: financial sustainability performance indicators

YEAR	PERFORMANCE INDICATORS				
	% of EPI expenditures funded by government	EPI expenditure as proportion of total health expenditure	EPI needs included in the MTEF	Wastage data available at each facility	Annual update of cMYP annual plan
2007	92%	8%	Yes	Yes	0
2008	89%	5%	Yes	Yes	0
2009	92%	5%	Yes	Yes	0
2010	89%	5%	Yes	Yes	1

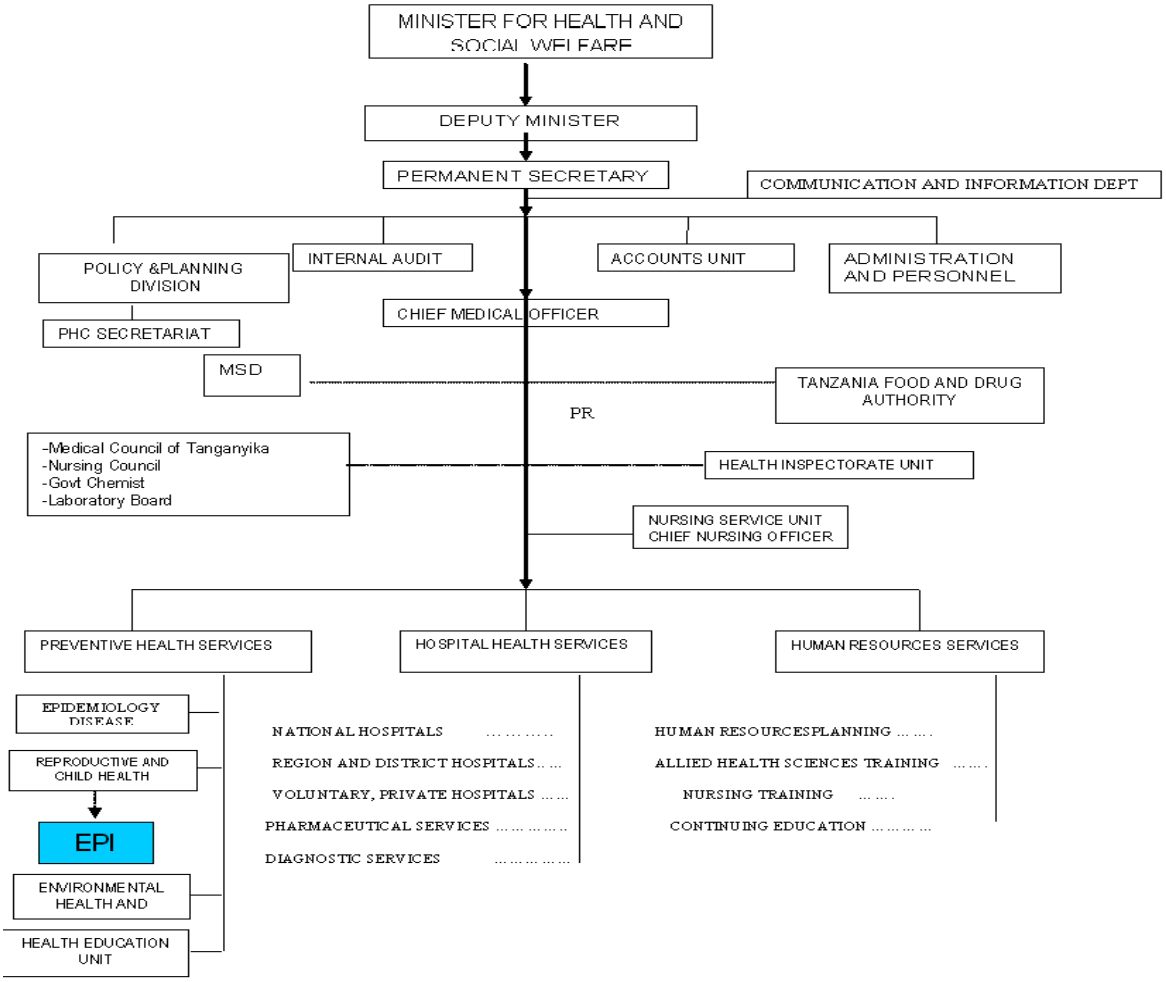
Note: pentavalent vaccine introduced in 2009, through co-funding with GAVI. Therefore, although government contribution to EPI is increasing, the percentage appears to be reducing as GAVI's contribution to the vaccine cost-share is showing a larger proportion.

Challenges

As noted previously under threats, although the EPI programme is accorded high priority and supported by government, other competing health priorities (e.g. malaria, tuberculosis, HIV/AIDS, and disease outbreaks) might be a challenge in future resource mobilization from the Government and other donors.

In the last several years, many of the traditional stakeholders that used to support immunization (e.g. DANIDA, JICA, WHO, UNICEF, USAID, KFW, IRELAND AID, DFID, Rotary International, World Bank, GSK, NGOs and other private sector donors have changed their focus. They had been involved in funding various activities such as training, procurement of supplies and equipment, providing technical support, and/ore allowing temporary use of their equipment and provision of infrastructure. However, this support has declined from a majority of partners, while the few remaining channel their funds through the basket fund or directly as unspecified budget support. Timely disbursement of these funds is also a major problem. This is being addressed, to the extent possible, as noted in section 4.6.2.

Annex 1: ORGANOGRAM OF MOHSW



Annex 2: EPI Review Recommendations

Taking into account that, child health (MDG4) is reflected in the MKUKUTA; that DPT-HepB-Hib 3 is one of the key national indicators for measuring government performance and General Budget Support-Performance Assessment Framework (GBS-PAF); and that immunization is a key component of poverty eradication through prevention of diseases, the following recommendations need to be addressed to improve performance:

1. Program Management and Coordination

Recognizing that the scope of vaccination services globally is widening beyond infancy to promote protection of more people in a changing environment (as stipulated in the Global Immunization Vision and Strategy, GIVS 2006-2015); that the country plans to introduce vaccines such as Human Papilloma Virus (HPV) vaccine against cervical cancer and HINI vaccine against pandemic influenza, among others, that target wider age groups beyond infancy; that future vaccines under development such as Malaria and HIV vaccines will target wider age groups:

The MoHSW should:

In the short term:

1. Re-position EPI as a section within the Directorate of Preventive Services and NOT a sub section within the Reproductive and Child Health Section and rename the programme as Immunization and Vaccines Unit (IVU).
2. Revise the immunization schedule for OPV/ DPT-HepB+Hib vaccinations from 4, 8 and 12 week intervals to 6, 10 and 14 week intervals, taking into account the future introduction of vaccines and the need to reduce on missed opportunities.

Recognizing the important role of Inter Agency Coordination Committee (ICC) in resource mobilization and making policy decisions on immunization and vaccines related issues, and taking into account the recommended chairmanship and membership of the ICC, where the Minister for Health is Chairperson and the Heads of Agencies are the members:

The MoHSW should:

In the short term:

3. Re-establish the ICC with the recommended chair and membership to strengthen coordination mechanisms of the program with all relevant stakeholders including the private sector; and to define the link of the ICC with other existing stakeholder coordination structures, such as the SWAp Technical Coordination Committee.
4. Institutionalize EPI Technical Working Group to function as the Secretariat of the ICC and ensure regular meetings with all relevant technical partners and sections of the MoH&SW.

Recognizing that most of the current EPI focal persons are not dedicated solely for immunization activities and are in most circumstances overwhelmed with several other responsibilities, resulting in inadequate focus on immunization activities:

The MOHSW should:

In the short-term:

5. Establish the Zonal Immunization and Vaccines Officer post and fully equip them with vehicles and other resources to facilitate them to conduct support supervision.
6. Appoint the Zonal Immunization and Vaccines Officers to provide supportive supervision to the district at least once per quarter.
7. Designate Focal Persons at regional and district level (Immunization and Vaccines Officers) who will be dedicated solely for Immunization and Vaccines activities and given clear ToR to ensure adequate time is allocated for quality immunization services.

Recognizing the importance of improving the immunization services, IVD surveillance and vaccines management performance to achieve the required indicators, the quarterly focused supportive supervision

from the national and zonal level to regions, districts and health facilities are mandatory to address all factors hindering the performance:

The MOHSW should:

In the medium term:

8. Procure 6 additional vehicles for the EPI central team to effectively implement the planned activities, particularly supportive supervision at sub national level.
9. Review the EPI Unit organogram at national level and recruit the requested additional staff (Monitoring and Evaluation; Operations Research) to strengthen the capacity of the unit to provide technical support to the regions.
10. Institutionalize EPI new comers and regular refresher training for in-service operational level health workers, mid level managers (MLM) and tutors through adaptation of standardized EPI training materials and pre-service prototype curricula.

2. <u>Financing for Immunization</u>

Recognizing that DPT-HepB-Hib3 is among the four indicators for General Budget Support to the health sector; that there's strong Government commitment to achieving the MDG 4 on Child Health as reflected in the MKUKUTA and Joint Action Plan (JAP for MDGs 4, 5 and 6):

The MoHSW should:

1. Ensure sustained and adequate funding of the program through maintaining of the protected budget line for vaccines.
2. Increase the allocation of operational funds to ensure that the core functions of technical support to regions, guidelines and standards, capacity building of health workers at sub national level and monitoring of program activities are maintained.
3. Undertake resource mobilization efforts locally through exploring of external funding sources through proposal development for grants.
4. Enhance utilization of available funds through reducing of transaction time by submission of quarterly activity plans in advance for fund releases.

Recognizing that with the Decentralization by Devolution reform, Local Government Authorities are responsible for delivering public services in local health with the direct over-sight by the Prime Minister's Office for Regional Administration and Local Government (PMO-RALG); prioritization of funding allocations to programs at district level is done by the CHMT:

The PMO-RALG in close collaboration with the MoHSW should:

5. Institute DPT-HepB-Hib3 coverage as an indicator of district performance and routinely monitor the achievement of progress in achieving the set target of 90% in all districts, with feedback to national and district levels on performance.
6. Sensitize CHMTs on the need to prioritize EPI in the CCHP, including surveillance activities, with the prioritization reflecting in the budget allocation of activities and facilitation of EPI Focal Persons to conduct the planned EPI activities.
7. Advocate and ensure adequate allocation of Regional and CCHP budgets of not less than 15% of the budget to IVD activities.

3. <u>Logistics, Vaccine Supply and Quality</u>

Recognizing that the current cold storage capacity is grossly inadequate at national and regional level and that resources have been identified from partners such as CIDA and UNICEF to address the shortage; direct oversight of the management of vaccines and supplies by the National EPI Logistics Unit has been weakened over time creating shortage of vaccines and other supplies; and that distribution of vaccines is being disrupted at regional level due to lack of reliable transport in most of the councils:

The MoHSW/EPI in collaboration with ICC should:

In the short term:

1. Quantify the cold chain storage needs at all levels and develop a cold chain rehabilitation and replacement plan for advocacy with potential donors for support.

2. Urgently assess the infrastructure available at national and regional level for the installation of cold rooms and generator sets.
3. Proceed with the procurement and installation of cold chain equipment and generator set where the infrastructure exist.
4. Urgently improve the over-sight role of the National EPI Logistics unit to properly manage vaccines and other related supplies in the country, including bundling of supplies.
5. Include EPI injection materials in the list of priority supplies for fast track clearance.
6. Instruct the regions to distribute vaccines and related supplies to the districts.

In the medium term:

7. Identify premises for installation of the new cold rooms to be procured and initiate installation of shelters at national and regional level.
8. Advocate for councils to procure reliable vehicles to be used in the distribution vaccines and other related supplies.

4. Immunization Services Delivery

Recognizing that DPT-HepB-Hib3 coverage has been decreasing for the past four years consecutively; that the number of districts acheiveing 90% coverage is decreasing with an increase in the number of unvaccinated children; and that most EPI focal persons have not received refresher training for more than two years:

The MoHSW should in the short-medium term:

1. Introduce the REC approach in all districts.
2. Standardize training materials for OPL and MLM training.
3. Conduct refresher training for all Immunization Focal Persons at all levels at least every two years, with inclusion of this activity in the Council Health Plans.
4. Conduct the MLM courses for CHMT and Institutions and

5. Disease Surveillance

Recognizing that a sensitive disease surveillance system at all levels is critical to ensure the early detection of diseases of epidemic potential for timely response; that sub national level performance has not met the surveillance performance indicators:

The MoHSW should:

1. Advocate for establishment of a permanent post of Surveillance Officer/Epidemiologist at Regional and District level.
2. Advocate for prioritization of surveillance activities at regional and district level and ensure the proposed Surveillance Focal Persons (Clinician and Public Health Specialist) are appointed and given clear ToR.
3. Re-train Surveillance Focal Persons at all levels in order to strengthen active surveillance at hospitals, health centers and community level.
4. Institutionalize feedback to districts on routine and surveillance performance through a monthly feedback bulletin or quarterly newsletter.
5. Appoint one officer at national level to specifically to deal with handling of specimens.

6. Data Management

Recognizing that the country has data management problems especially with timeliness, completeness, accuracy, analysis and feedback at all levels; and that the Unit has only one Data Manager overwhelmed with the tasks:

The MOHSW/ EPI should in the short to medium term:

1. Develop and integrate the data verification and validation protocols to address issues of data errors and inconsistency in supportive supervision.
2. Institute regular data quality audits at regional, district and health facility levels and follow up on implementation during supervision.

3. Ensure availability of immunization data tools and equipment for processing, analysis, transmission of data and introduction of electronic data processing from district to national level.
4. Consider reducing the number of registers and forms that are generated at health facility level by integrating all sources of data in one consolidated register and reporting forms that include core components of programs.
5. Strengthen the data management unit at the national EPI Unit by appointing more staff.
6. Harmonize data between EPI, Laboratory, HMIS, and Epidemiology units through institution of monthly data harmonization meetings.
7. Recruit and build capacity among the HMIS cadres to be able to deal with all data issues across the health sector. Capacity building should also target health personnel on immunization data collection, processing, analysis, interpretation and use.
8. HMIS to respond favourably to the needs of user departments in terms of frequency of reporting, and inclusion of core indicators of the programme.
9. Review and further develop the MTUHA (software used in HMIS) to make it more robust and address issues/demands from the users.