Federal Ministry of Health
Nigeria

COMPREHENSIVE EPI MULTI-YEAR PLAN

2011 - 2015

National Primary Health Care Development Agency

May, 2011

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List of Abbreviations & Acronyms

ADS:	Auto-disable syringes
AEFI:	Adverse Events Following Immunization
AFP:	Acute Flaccid Paralysis
ALGON:	Association of Local Governments of Nigeria
AMC:	Accelerated Measles Campaign
BCG:	Bacillus Calmette-Guérin
BGSP:	Basic Guide for Service Providers
CBO:	Community-based Organization
cMYP:	Comprehensive Multi-Year Plan
COMPASS:	Community Participation in the Social Sector
CSM:	Cerebrospinal meningitis
CSO:	Civil Society Organization
DHMT:	District (LGA) Health Management Team
DPHC:	Director of Primary Health Care.
DPT3:	Third dose of Diphtheria, Pertussis (whooping cough) and Tetanus vaccine
DQS:	Data Quality Self-Assessment
DSNO:	Disease Surveillance and Notification Officers
DVD-MT:	District (LGA) Vaccine Data Management Tool
EPI:	Expanded Programme on Immunization
EU-PRIME:	European Union Partnership to Re-Enforce Immunization Efficiency
FAQs:	Frequently Asked Questions
FCT:	Federal Capital Territory
FGN:	Federal Government of Nigeria
FIC:	Fully Immunized Children
FMOH:	Federal Ministry of Health
FOMWAN:	Federation of Muslim Women Association in Nigeria
FRCN:	Federal Radio Corporation of Nigeria
GAVI:	Global Alliance for Vaccines and Immunization
GIVS:	Global Immunization Vision and Strategy
Hep.B:	Hepatitis B Vaccine
HFs:	Health Facilities
Hib:	Haemophilus Influenza type b
HWs:	Health Workers
ICC:	Interagency Coordination Committee
IDSR:	Integrated Disease Surveillance and Response
IMNCH:	Integrated Maternal, Neonatal & Child Health
IMR:	Infant Mortality Rate
IPDs:	Immunization Plus Days
ITN:	Insecticide Treated Nets
LGA:	Local Government Area
LIDs:	Local Immunization Days

LUTH:	Lagos University Teaching Hospital
M&E:	Monitoring and Evaluation
MDGs:	Millennium Development Goals
MMR:	Maternal Mortality Ratio
MNTE:	Maternal and Neonatal Tetanus Elimination
MOE:	Ministry of Education
MOLG:	Ministry of Local Government
NAN:	News Agency of Nigeria
NCH:	National Council of Health
NCWS:	National Council of Women Societies
NDHS:	National Demographic and Health Survey
NEEDS:	Nigeria Economic Empowerment and Development Strategy
NGO:	Non-Government Organization
NHA:	National Health Accounts
NHMIS:	National Health Management Information System
NICS:	National Immunization Coverage Survey
NIDs:	National Immunization Days
NIPDs:	National Immunization Plus Days
NNT:	Neonatal Tetanus
NPC:	National Population Commission
NPHCDA:	National Primary Health Care Development Agency
OPV:	Oral Polio Vaccine
PATHS:	Partnership for Transforming Health Systems
PBM:	Paediatric Bacterial Meningitis
PHC:	Primary Health Care
PHCDC:	Primary Health Care Development Committee
PoA:	Plan of Action
PSAs:	Public Slots & Announcements
RBM:	Roll Back Malaria
RED:	Reaching Every District (LGA)
REW:	Reaching Every Ward
RI:	Routine Immunization
SIAs:	Supplementary Immunization Activities
SIPDs:	Sub-national Immunization Plus Days
SMOH:	State Ministry of Health
SMT:	Stock Management Tool
TBAs:	Traditional Birth Attendants
TT:	Tetanus Toxoid
U5MR:	Under Five Mortality Rate
UNICEF:	United Nations Children's Fund
VAD:	Vitamin A Deficiency
VDC:	Village development Committee
VHC:	Village Health Committee.
VPD:	Vaccine Preventable Diseases
VVM:	Vaccine Vial Monitor
WCBA:	Women of child-bearing age
WDC:	Ward Development Committee
WHA:	World Health Assembly
WHC:	Ward Health Committee

WHO:	World Health Organization
WICR:	Walk in Cold Room
WPV:	Wild Polio Virus
YF:	Yellow Fever

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[1]NDHS 2003 & 2008, SOCW 2009

[2]Source NPI

[3]Other new vaccines such as Rotavirus and HPV vaccines will be added to the schedule as they are introduced

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Rationale for Update of the comprehensive Multi Year Plan (cMYP)

This document is an update of the 2009-2014 cMYP. It has been modified to cover the period from 2011-2015 to align it with the National Strategic Health Development Plan 2010-2015 and also to reflect the current status of New Vaccine Introduction in Nigeria. It accommodates activities for phased meningitis campaigns starting in 2011; timeline revisions for the phased introduction of new vaccines starting in 2012; outstanding activities within the 2006 – 2010 rehabilitation plan for revamping cold chain; and revisions in the global vaccine prices effective from 2011.

Executive Summary

The Expanded Programme on Immunization (EPI), initiated in 1979, has the objective to provide immunization services to reduce the burden from vaccine-preventable diseases and often creates the entry point for primary health care delivery in communities in Nigeria.

There have been significant variations in EPI performance with DPT3 coverage peaking at 81.5% between 1988 and 1990 followed by a drop in coverage to less than 25% in the late nineties. This decline, a result of several factors, led to the establishment of the National Programme on Immunization (NPI) in 1996 to foster national commitment and ownership of the EPI. The NPI was merged with the National Primary Health Care Development Agency (NPHCDA) in 2007 where its functions are now being discharged by the Department of Disease Control & Immunization.

The Federal Government and Development Partners, through more efficient partner coordination, have instituted a multifaceted approach to sustainably strengthen the EPI resulting in improved cold chain system; increased community awareness and participation; and capacity building for immunization service delivery personnel. Substantial gaps still persist and findings from several health/immunization system analyses, including the Health Sector Reform Programme; Expert Review Committee (ERC) on Polio Eradication Initiative (PEI) of Nigeria; National Immunization Coverage Survey (NICS) 2003, 2006 and 2008; Demographic and Health Survey; amongst others, identify the following as priority areas - (1) improving immunization coverage; (2) continuing bundled vaccines supplies; (3) interruption of the transmission of the wild poliovirus; (4) introduction of new vaccines; (5) building capacity of staff at all levels; (6) cold chain management; (7) data and information management; (8) Integration.

Based on the foregoing, this Comprehensive Multi Year Plan articulates a long-term, strategic approach for redressing challenges in the immunization system in a holistic manner. The plan covers the 5-year period from 2010-2015 and was developed within the context of the Global Immunization Vision and Strategies (GIVS) to align with national health priorities as contained in the National Strategic Health Development Plan 2010-2015.

In particular, this plan outlines processes for phased introduction of penta-valent and pneumococcal vaccines starting in 2012 and 2013 respectively and for guaranteeing financial sustainability of immunization services in the planned 5-year period. The plan is estimated to cost US$2.4 billion over the 5-year period of which 25% of the cost is contributed by vaccines and injection supplies and one-third of cost is due to SIAs. The funding gap based on secured funds averages 63% over the 5-year period while that based on secured and probable funds, including potential GAVI support, averages 21% over the same periods. Using secured funds only, there is an almost 10-fold increase with significant variations in the cost components of the funding gap between 2011 and 2015. In 2011, less than 10% of the funding gap is contributed by vaccines and injection supplies while an estimated 70% is due to SIAs. The situation is reversed by 2015 with about 50% of the funding gap being contributed by vaccines and supplies while SIAs contribute less than 25%. Mechanisms for mobilizing resources from government, development partners,

extra-budgetary sources, the private sector, etc, to bridge the funding gap are clearly defined in the plan.

Government at all levels and immunization stakeholders have a shared responsibility to ensure the successful execution of this plan so as to improve child health outcomes and accelerate Nigeria's progress towards achieving its Millennium Development Goal (MDG) 4.

1 Background

Geography: Nigeria is one of the largest countries in Africa, covering an area of 923,678 square kilometers. It is located within the tropics along the Gulf of Guinea on the West Coast of Africa and lies between the latitudes of $4^0$16' and $13^0$53' N and longitudes $2^0$40' and $14^0$41' E. It is bordered to the west by the Republic of Benin, to the east by the Republic of Cameroon, to the north by Republic of Niger and Chad, and the Atlantic Ocean and Gulf of Guinea to the south. The country has two major types of climate namely dry and rainy seasons which divide the country into mangrove swamps and rain forest in the south, savannah region in the middle belt and desert in the far north. The rainy and dry seasons span from April-September and October-March respectively. There is however a varying period of cold dry harmattan dusts weather mainly in the northern parts of the country between November and January. Furthermore, the country is criss-crossed by several streams and large rivers mainly River Niger and River Benue.

Socio-Demography: Nigeria has a population of 164,385,656 in 2011 according to projections from the 2006 census. At the current growth rate of 3.2% per annum, the population is projected to double in about 30 years. The population is predominantly young with approximately 45% under 15 years of age and 20% under 5yrs. Women of child bearing age (15-49 years) account for 22% of the total population and children less than 1yr accounts for 4% of total population.

Settlement pattern: There are over 300 ethnic groups in Nigeria and the major languages are *Yoruba*, *Hausa* and *Igbo.* Majority of the people (50-60%) live in the rural areas[4]. However, there is evidence of rapid urbanization with several cities having population in excess of 1 million. Scattered settlements are found in many rural areas and many nomadic populations are found in the northern part of the country. The rural populations engage in agricultural, livestock and fishing activities.

Socio-economic Status: Nigeria is a developing country with one of the fastest growing economies **i**n Africa with a GDP per capita of US$1452[5]. It is estimated that 64.4% [6]of the population lives below the poverty line[7]. The nation's main source of revenue is crude oil which is shared between the Federal, State and Local Governments according to an allocation formula.

Literacy rate is 72%[8]. The predominant religions are Christianity and Islam. Traditional religious practices still exist in many parts of the country. Traditional medical practices also flourish in Nigerian communities.

Transport system: The country has a massive road network. The major highways are maintained by the Federal Government while the various States construct and maintain roads within their States. The Local Government Authorities construct and maintain feeder roads in the communities. The country has a network of local and international airports with rising passenger

[4] NDHS 2003
[5]www.who.int/nha/country
[6] 2010 World Development Report

[8] WDR 2010

traffic. Transportation over water is mainly in the riverine areas and the rail transportation it is not well developed.

Communication: Nigeria has witnessed a telecommunications revolution in the past five years resulting in the availability of mobile phone services in most parts of the country. There has also been a massive growth in access to and utilization of Information and Communication Technology (ICT) across all sectors of the economy and the three tiers of government.

Electricity: Electricity is supplied to most parts of the country by the Power Holding Company of Nigeria (PHCN) PLC. However this supply is erratic and unreliable. Consequently, most commercial outfits and private homes have to supplement with power generating sets, with its high attendant pollution and hazards.

Water Supply: Water supply in urban areas is primarily through public water works which are usually supplemented with the sinking of boreholes by private individuals to provide water for private use and sale to the public. In the rural areas, public water supply is limited to hand pumps and some privately owned boreholes. Most residents of the rural communities get their drinking water from the streams. It must however be appreciated that there is growing understanding of the importance of portable water supply to sanitation and health and therefore the States and Local Governments are making efforts to improve on the capacity of public water works in cities as well as increase the provision of boreholes in the rural communities.

Also, the Federal Government is engaged in the construction of dams for water supply, irrigation and sometimes hydropower provision. In summary however, it is estimated that less than 50%[9]of the population have access to portable water.

1.1 Health Care Delivery System

The national health care delivery system is based on the three tier system of primary, secondary and tertiary care. The Federal Government provides mainly tertiary health care services (teaching and specialist hospitals). Federal Ministry of Health has the responsibility to develop policies, strategies, guidelines, plans and programmes that provide the overall direction for the national health care delivery system in the country. State Governments are responsible for secondary health care while Local Governments are responsible for primary health care. The private sector (including multi-national companies and institutions) provide mainly secondary and primary health care services. Recent efforts by the National Primary Health Care Development Agency(NPHCDA) to get these private institutions to include immunization as part of their services is yielding good result but immunization data returns is still a challenge.

1.1.1 Primary Health Care

The provision of Primary Health Care (PHC) in Nigeria is the responsibility of Local Governments supported by the Federal Government (NPHCDA) and States. Primary Health Care System was adopted following the Alma-Ata declaration in 1978. This led to a vibrant functional system which reflected in the gradual improvement in the Routine Immunization (RI) coverage to about 80% in

[9]State of the World's Children 2008

1990. However, the system has deteriorated due to poor funding and management and institutional rearrangement. Currently the PHC is providing care to only 5-15% of its potential clientele. There is poor linkage between the PHC, secondary and tertiary health care delivery systems.

Table 1: Some Vital Statistics for Nigeria[10]

Statistic (Indicator)	NDHS 2003	NDHS 2008	State of The World's Children 2009
Annual Growth Rate	3.2% (2006)	3.2% (2006)	2.7%
Total Fertility Rate	5.7 per woman	5.7 per woman	5.5 per woman
Infant Mortality Rate	100/1000 live births	75/1000 live births	86/1000 live births
Under-five Mortality Rate	201/1000 live births	157/1000 live births	138/1000 live births
Maternal Mortality Ratio	948/100000 live births	545/100000 live births	1339/100000 live births
Life Expectancy	-		47years

1.1.2 Health Sector Reform Programme (HSRP)

The weak health system necessitated the need to provide strategic directions and investments in key areas of National Health System. This was done within the context of the overall Government macro-economic framework embedded within the National Economic Empowerment and Development Strategy (NEEDS) of the Federal Government and from the Millennium Development Goals (MDG). Consequently, the FMOH embarked on the HSRP and plan of action 2004-2007.[11]

The major thrusts of the Health Reform Programme are:

- Improving the stewardship role of Government,
- Strengthening national health systems and its management,
- Reducing the burden of disease,
- Improving availability of health resources and their management
- Improving access to and quality of health services
- Promoting effective collaboration and partnership within and without the health sector.

In order to legalize the national health system as well as really establish the functions of each level of government, a National Health Bill is before the National Assembly.

The bill is proposing that 2% of the national budget should contribute towards a PHC Fund, to finance PHC activities through the National Primary Health Care Development Agency (NPHCDA) and State PHC boards. When signed into law this will not only strengthen the health system but

[10]NDHS 2003 & 2008, SOCW 2009
[11]Document on Health Reform programme

will streamline the responsibilities of the different levels of care and enhance health care financing, especially at the PHC level.

1.1.3 Health Policy

In 1988, Nigeria developed its first National Health Policy, adopting a PHC approach for its health care delivery system. The goal of the National Health Policy is to increase the proportion of Nigerians with access to adequate and affordable health care and establish a health care support system adaptable to local needs and technology.

This policy was reviewed and revised in 2004 within the context of the health strategy of the New Partnership for Africa's Development (NEPAD), the MDGs, and the National Economic Empowerment and Development Strategy (NEEDS). The Revised National Health Policy's overall objective is to strengthen the national health system such that it is able to provide efficient, effective, accessible and affordable health services that will improve the health status of Nigerians through the achievement of the health-related MDGs. This policy lists several national health interventions that are supported by additional other policies. The policy sets the momentum for Implementation of Health services in the Country in ensuring the survival and healthy growth and development of the Nigerian child, including newborns, under-five and school age children. One of the policy objectives in line with the MDGs is to reduce the neonatal mortality rate by half of the 1990 rate by 2015.

The major focus of the revised policy includes amongst others, National Health Systems and Management; National Health Care Resources; National Health Information System and Partnership for Health Development. The policy sets guidelines for the establishment of Primary Health Care Management Board or Agency in the States/FCT and local government areas as a major step towards improved management and financing of Primary Health Care. A few States have started implementation based on these guidelines.

Specifically on immunization, the Policy provides for free vaccines to all eligible age groups; support to States and LGAs on Immunizations and also to establish standards and guidelines for Safe Injection and waste disposal, Cold Chain and Logistics management.

1.1.4 Human Resources

The Nigerian health system suffers from inadequate number of skilled personnel, as large numbers of qualified health personnel continue to leave the country due to poor service conditions and poor human capital development plans. There is also inequity in the distribution of health human resources between urban and rural areas. This has further adversely affected the development of primary health care facilities and delivery of services. To address this situation, Government created a special programme in the schools of Health Technologies and Nursing to train Primary Health Care workers. These categories of workers form part of the core personnel responsible for provision of immunization services.

1.1.5 Health Care Financing

The National Health Accounts 2003-2005 indicates that total government expenditure as a percentage of total health expenditure during the period was 24.1%, an increase from 20.65%

observed during the period 1998-2002. In absolute terms, there was a threefold increase in federal government allocation to health from N47.02billion in 2003 to N130.76billion in 2005, while the proportion of the federal budget devoted to health showed a decrease. The country is yet to meet the 15% budgetary allocation to health as stipulated in the 2001 Abuja Declaration by the African Union. Nigeria's total health expenditure (THE) as a proportion of GDP decreased from 12.25% in 2003 to 8.56% in 2005. Generally, health spending in Nigeria is dominated by out of pocket expenses which accounted for 69% of health expenditure in 2003-2005. The contribution of states and LGAs is very low averaging 10% and 7%, respectively.

NHA estimation for the years 1998-2005 projected to 2010 as shown in the table below indicates a linear increase in the share of government to total health expenditure from 14.96% in 1998 to 28.50% with a corresponding per capita expenditure of $2.54 and $25.65, respectively.

Table 2: Estimated public expenditure on health (USD per capita) NHA 1998-2005 including projections to 2010

Years	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Total Health Expenditure (USD)/capita	16.96	17.01	18.00	19.60	21.26	39.76	44.67	54.61
Share of Govt (%)	14.96	16.61	18.77	27.22	21.60	18.69	26.40	26.02
Government ($)/capita	2.54	2.83	3.38	5.34	4.59	7.43	11.79	14.21
DPs	5.2	5.51	6.45	2.21	2.44	1.67	2.05	2.02
			2006	**2007**	**2008**	**2009**	**2010**	
			Projections					
Share of Govt (%)			26.50	27.00	27.50	28.00	28.50	
Government ($)/capita			16.53	18.81	21.09	23.37	**25.65**	
DPs			1.99	1.96	1.93	1.9	1.87	

Source: NSHDP 2010 pg: 69

From the foregoing, government plays a critical role in providing resources for implementing health interventions in the country. However, the poor performance of the Nigerian health system may be attributable to a number of factors especially limited resource base.

To redress these lapses, the National Strategic Health Development Plan with inputs from the draft National Health Financing Policy adopted three core principles for leveraging funds within and outside the Nigerian Health System namely:

1. Optimizing the effectiveness of existing investments in the health sector spending by Federal, State and Local Governments

2. Ensuring all additional investments in the health sector – from governments and development partners have a strong result focus and support the achievement of NSHDP results'
3. Ensuring better value for expenditures being incurred by households by promoting effective social health insurance and risk pooling mechanisms.

1.2 Expanded Programme on Immunization (EPI)

The Expanded Programme on Immunization (EPI) was initiated in 1979. It has witnessed varying stages of implementation with a high thrust for Universal Child Immunization (UCI), achieving coverage of 81.5% of all antigens between 1988 and 1990. The 1990s then witnessed a major decline in the coverage due to low political will and social support, inadequate funding, poor community involvement and participation amongst others.

1.2.1 Programme Structure

Nigeria is a signatory to the declaration of the survival, protection and development of children, which was articulated at the 49th World Health Assembly in 1988. This was reinforced by the World Summit for Children held in New York in 1990. This declaration established objectives for global immunization and vaccine preventable diseases including poliomyelitis.

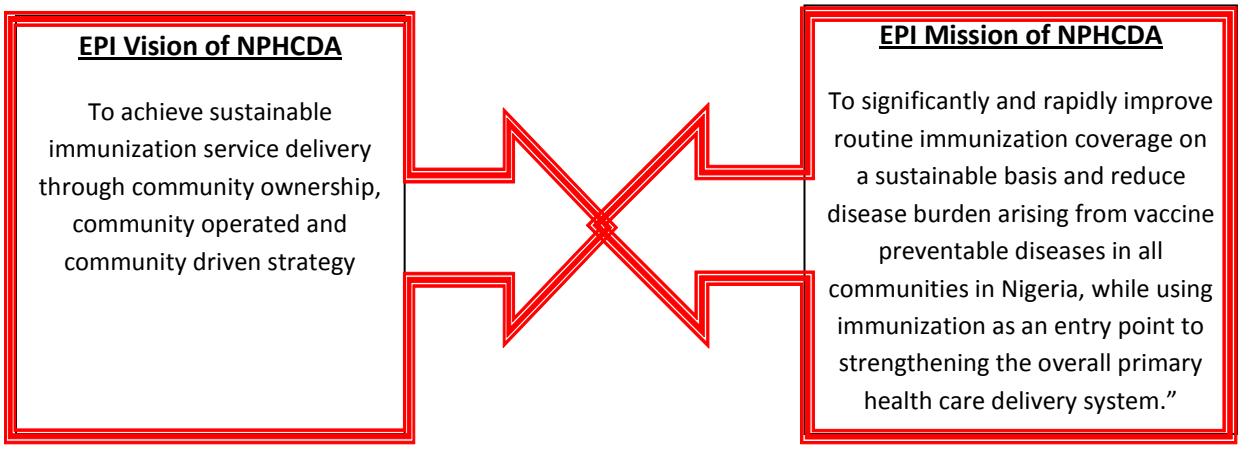


Figure 1: EPI Vision and Mission of NPHCDA

1.2.3 Interagency Coordinating Committee (ICC)

Coordination of partners in immunization activities is done through the Inter-agency Coordinating Committee (ICC). The ICC is chaired by Federal Minister of Health and comprises NPHCDA, WHO, UNICEF, United States Agency for International Development (USAID), Rotary International (Polio Plus), UK Department for International Development (DFID), European Union (EU), Association of Local Governments of Nigeria (ALGON), Embassy of Japan, Embassy of Canada, Embassy of Norway, World Bank, Christian Health Association of Nigeria (CHAN), Medicens Sans Frontiers (MSF), Red Cross, Coca Cola Nig. and recently the MDG Office and Planning Department of the FMOH. The mandate of the ICC covers polio eradication and routine immunization. The CORE Group is the technical body of the ICC and has technical working groups with clear terms of

reference for their mandate. While the ICC meets monthly, the working groups however meet regularly to plan and monitor the implementation of the immunization activities.

1.3 The National Health Plan and the cMYP

The National Programme on Immunization, through a stake holder consultative meeting held in 2005, developed a blue print[12] for immunization strengthening. The blue print outlines the strategic direction for improvement in all aspects of routine immunization programme management.

Subsequently the then National Programme on Immunization (NPI) and partners developed a five year Strategic Plan for Routine Immunization sustainability 2006-2010. This plan catalogues the various strategic activities for routine immunization strengthening in the country and the plan was designed to align with the last part of the National Health Plan 1998-2010[13]. However the National Health Plan has been replaced with the National Strategic Health Development Plan (2009-2015).

The Comprehensive Multi-year Plan (cMYP) is a reformatting of this 5 year strategic activity plan for improving immunization programmes and reducing morbidity and mortality from vaccine preventable diseases (VPDs). The plan was developed as a result of evidence and recommendations from various EPI assessments in addition to the situation analysis of the immunization programme in the country. It also draws from the report of the blueprint on RI strengthening as well as the strategic plans for the Health care delivery.

The cMYP which was initially from 2006-2010 focused on the main components of the immunization/PHC systems with key strategies and activities directed to the main national priorities for the immunization programme. The restructuring of the Five year Strategic activity plan into Comprehensive Multi-Year Plan (cMYP) is meant for the country plan to be in line with the WHO/UNICEF Global Immunization Vision and Strategies (GIVS).

The cMYP provides information on the resource implications for the activities as well as sources of financing of the various interventions. The cMYP has thus been enriched by a financial analysis and costing of the plan to apportion available funds and highlighting the probable funding sources as well as the funding gaps.

1.4 Programme Goals

The programme goals is as enunciated in the EPI vision and mission of the NPHCDA, which is to significantly and rapidly improve routine immunization coverage on a sustainable basis and reduce disease burden arising from vaccine preventable diseases in all communities in Nigeria, while using immunization as an entry point to strengthening the overall primary health care delivery system"

1.5 Programme Objectives

1. To ensure that 87% of infants are fully immunized against vaccine preventable diseases before attaining the age of 12 months by 2015
2. To sustain high community awareness on the importance of completing the immunization schedule

[12]NPI Blue print on Immunization
[13]National Health Plan 1998-2010

3. Ensure that the routine immunization components of bundled vaccines, cold chain and logistics, human resource development with the operational finances are in place.
4. Develop a strategic framework which delineates the roles and responsibilities of the federal, state, LGA and wards, as well as the private sector and development partners.
5. Develop a comprehensive, timely and complete reporting system with necessary feedback mechanisms.
6. Ensure the introduction of new vaccines and technologies.

1.6 Governance and Partnerships

The country operates a three-tier federal system of Government comprising the Federal, States and Local Government Areas (LGAs). There are six geo-political Zones, 36 States and the Federal Capital Territory, and 774 LGAs. The LGAs are further divided into 9555 political wards.

The development of the Immunization blueprint was under the direction of the ICC. The body also provided direction for the development of the 5 year strategic plan which was subsequently approved by the National Council of Health.

The process of reformatting the strategic plan to develop a cMYP for the period 2006-2010 was under the direct supervision of the ICC which also provided guidance and direction for this review of the cMYP 2009-2015. As referenced in the forward to this document, the duration of the cMYP has been extended for the purpose of meeting the GAVI requirements for approval of funding for the introduction of new vaccines and aligning it with National Strategic Health Development Plan 2010-2015.

2 Situation Analysis

2.1 Primary Health Care

The Constitution of the Federal Republic of Nigeria has not clearly defined roles and responsibilities of each tier in PHC service delivery. The weak and fragile nature of the national health system in Nigeria, and most especially the PHC, can be attributed to inadequate capacity of health care staff, infrastructure, lack of coordinated procurement and logistics system, and quality assurance, weak health information management system, poor integration of health service delivery and almost none or weak referral system[14], and these have contributed to the sub-optimal delivery of immunization in Nigeria.

However, there is a favorable policy framework and strong political will to revitalize PHC in Nigeria through the Blue Print for Revitalizing PHC. In November 2007, the 51st National Council on Health adopted a number of resolutions aimed at strengthening PHC in Nigeria. In April 2008, Nigeria was one of the member states from the African Region of the WHO that signed the Ouagadougou Declaration on strengthening PHC and national health systems. The National Health Bill is before the National Assembly.

2.2 Routine Immunization

In 1996, the Government set up the National Programme on Immunization (NPI) as part of a revitalization strategy for ownership and sustainability of EPI. In early 2007, following Health Sector Reforms, the NPI was merged with the National Primary Health Care Development Agency (NPHCDA) and its functions are now being carried out by the Department of Disease Control & Immunization of the NPHCDA.

Routine immunization (RI) is provided at the health facilities in Nigeria through the public health system (mainly in LGA health facilities) and the private sector which is a key player in health care delivery service in most states in Nigeria. The current antigens administered for children 0-11 months old and women of child bearing age are BCG, OPV, DPT, MV, YF, HepB and TT. However, the Government of Nigeria plans to introduce a Penta-valent vaccine (DPT+HBV+Hib) to replace the traditional DPT and HBV by 2012, Pneumococcal vaccine by 2013 and Rotavirus vaccine in subsequent years.

The decline in the RI coverage occurred as a result of various reasons, mainly due to the collapse of the Primary Health Care system in Nigeria in the 1990s, as a result of poor funding by governments and lack of political commitment and ownership at all levels. As a result, many health facilities—either ceased to function or stopped providing RI services. Vaccine stock outs became common place. The few facilities providing RI services were not able to reach distant communities, as minimal or no outreach/mobile immunization activities were conducted. Furthermore, there were no activities to sustain community demands. Some of these problems persist to this day. Other significant reasons for the continuing low coverage include lack of awareness of immunization schedule, time and place, poor attitude of the health worker, apparent stock out of vaccines at service delivery points. These have resulted in high dropout rates.

[14] Federal Ministry of Health. Report of the 51st National Council on Health held at Planet One Entertainment Centre, Ikeja, Lagos State, 21-23 November 2007.

The DPT3 coverage, as reported in the NICS (2003, 2006 and 2010) shows an upward trend across all geopolitical zones in the country and at national level. Although there are some slight differences from one source of survey to another, there is consistent increase in coverage over time in the NDHS and NICS. This reported improvement can be linked to the significant progress made in raising awareness, improved service delivery and vaccine supply & bundling.

Table 3: Findings on immunization coverage for DPT3 and fully immunized for the zones (card + history)

DPT3 Coverage	NDHS (2003)	NDHS (2008)	NICS 2003	NICS (2006)	NICS (2010)
South West	67.8	66.5	47.8	63.5	76.37
South East	58.5	66.9	65.5	53.7	91.18
South South	32.5	54.2	36.5	57.9	72.15
North Central	23.8	43.4	31.9	25.4	67.10
North East	9.1	12.4	17.6	46.8	46.16
North West	5.8	9.1	19.6	19.6	59.86
National Level	21.4	35.4	24.8	36.3	67.73

3 Source: NDHS 2003 and 2008 reports and NICS 2003, 2006 and 2010 reports

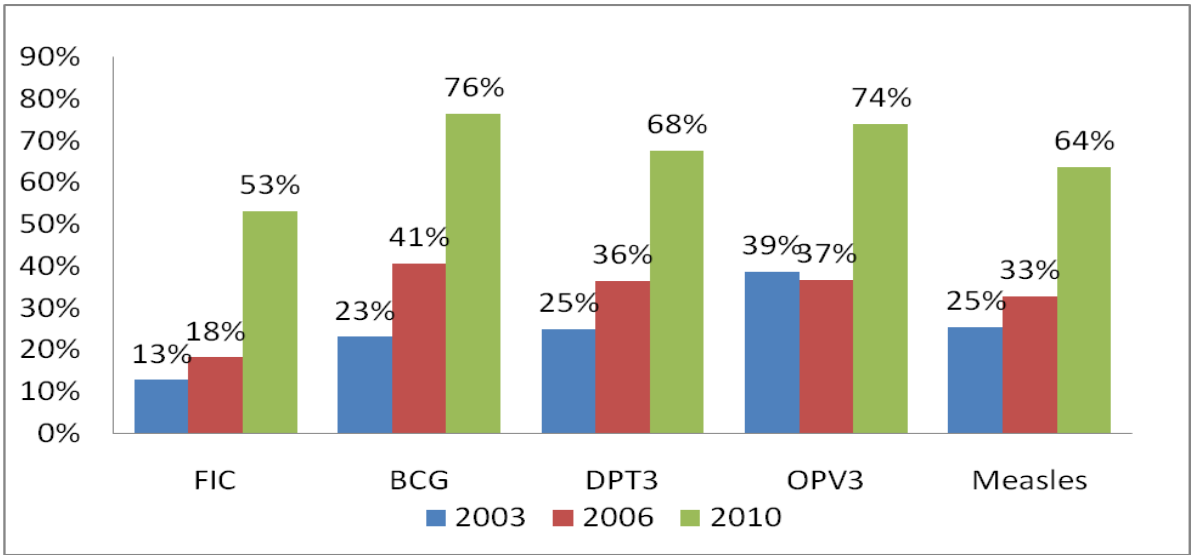


Figure 2: Trend in National Immunization Coverage NICS 2003, NICS 2006 and NICS 2010

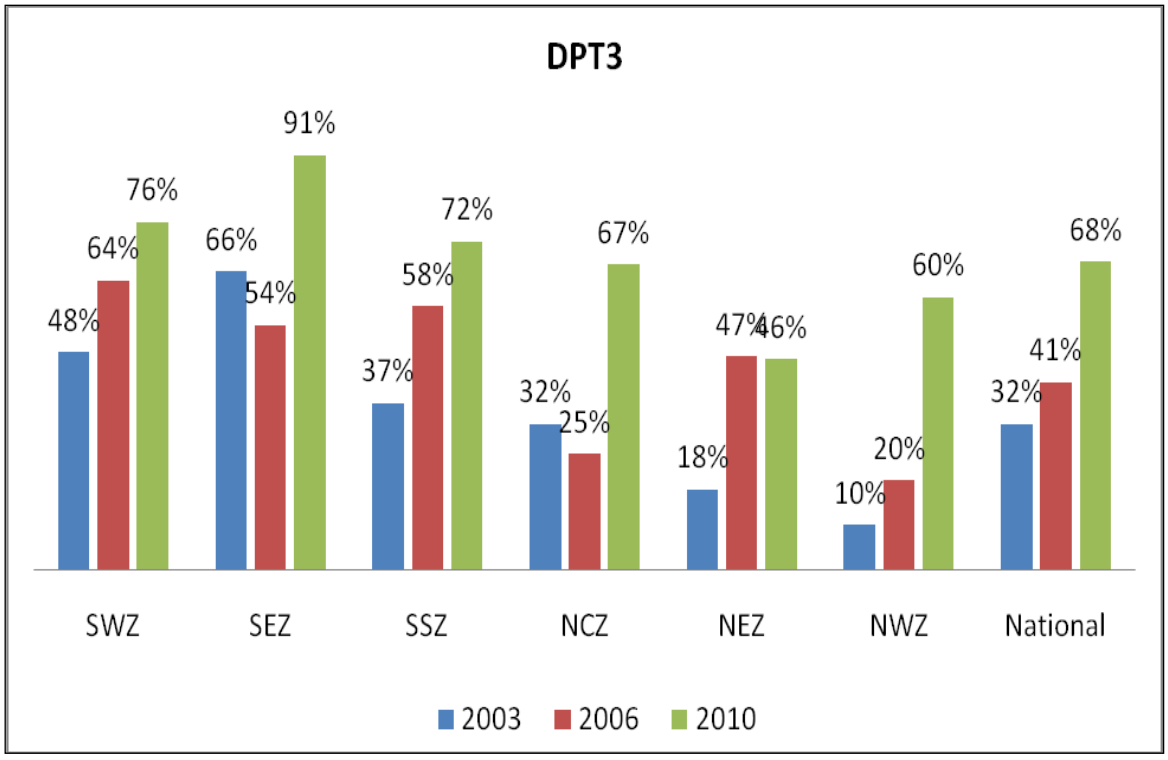


Figure 3: DPT3 Coverage NICS 2003, 2006& 2010 by Zone.

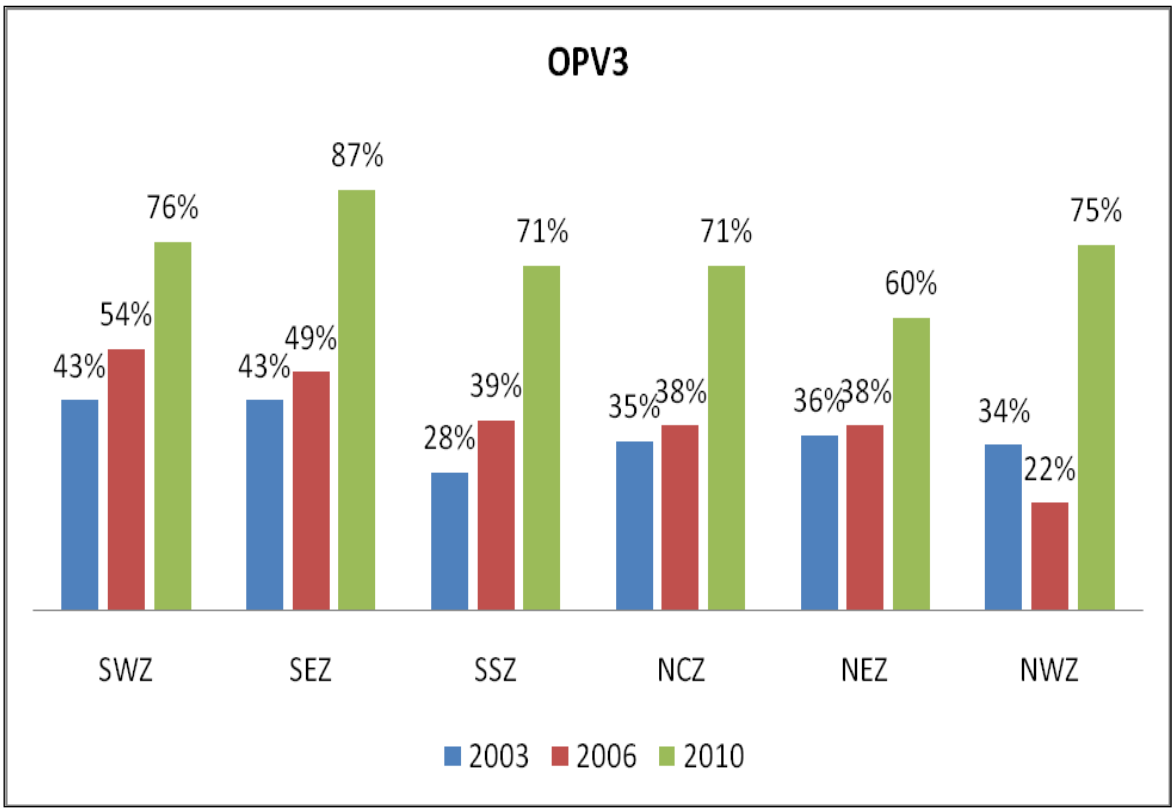


Figure 4: Trend in OPV3 Coverage NICS, 2003, 2006 & 2010 by Zone.

Table 4: WHO/UNICEF Coverage Estimates 2002-2009

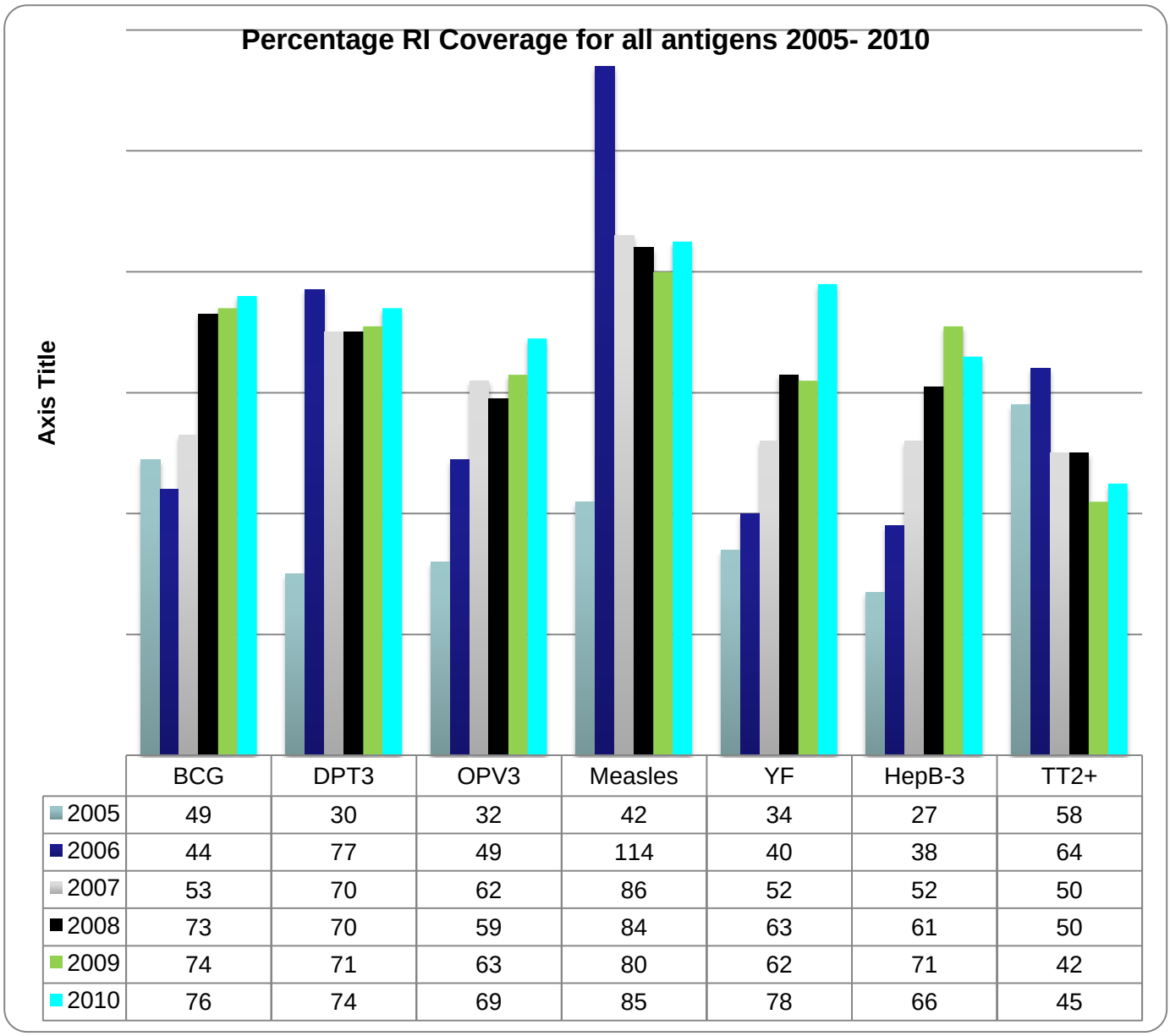
Antigen	2002	2003	2004	2005	2006	2007	2008	2009
BCG	38	42	45	49	52	53	53	53
DPT3	24	28	32	36	40	42	42	42
OPV3	40	42	43	45	46	54	54	54
Measles	30	34	37	41	44	41	41	41
YF	NA	NA	21	NA	37	51	50	50
Hep B3	NA	NA	NA	18	27	42	41	41

Following the results of the 2003 NICS and NDHS, activities for Routine Immunization Strengthening were further scaled up in 2005/2006 with implementation of some Rounds of LIDs and the introduction of Immunization Plus days (IPDs) as a strategy for Polio Eradication, as well as providing opportunities to administer Routine Vaccines and other child survival interventions.

The country adopted and adapted the WHO-AFRO Reaching Every District (RED) strategy for RI improvement to "Reaching Every Ward" or REW in 2004. By the end of 2007, all states, including the FCT, had adopted the REW strategy.

Currently there is a remarkable improvement in political commitments at all levels to improve routine immunization services and various activities are being put in place. These include the completion of a REW field guide, training in all states and the FCT on the REW approach as well as on basic knowledge and skills on routine immunization service provision.

The efforts have yielded some improvement in RI administrative performance, with DPT3 coverage rising from 30 percent in 2005, 77 percent in 2006, through 70 percent in 2008 to 74 percent in 2010.



	BCG	DPT3	OPV3	Measles	YF	HepB-3	TT2+
2005	49	30	32	42	34	27	58
2006	44	77	49	114	40	38	64
2007	53	70	62	86	52	52	50
2008	73	70	59	84	63	61	50
2009	74	71	63	80	62	71	42
2010	76	74	69	85	78	66	45

Source: Administrative reports, NPHCDA

Figure 5: Trend in Reported Immunization Coverage, Jan-Dec 2005-2010

2.2.1 Immunization Schedule and Strategies

Currently traditional antigens BCG, OPV, DPT, HepB and MV, are given to children under one year of age. This will also apply to pentavalent vaccine when introduced in 2012. For BCG, OPV and HepB, a birth dose is currently administered. TT is administered to pregnant women and other women of child bearing age. In 2003 the Country introduced Yellow Fever and Hepatitis B Vaccines into its Routine Immunization schedule for children less than 1 year.

Table 5: Nigerian Immunization Schedule[15] (current)

Vaccines / Supplements	No. of Doses	Age	Minimum interval between doses	Route of Administration	Dose	Vaccination Site
BCG	1	At birth or as soon as possible		Intra-dermal	0.05ml	Upper arm
OPV	4	At birth, 6,10 and 14 weeks of age	4weeks	Oral	2 drops	Mouth
DPT	3	At 6,10 and 14 weeks of age	4weeks	Intramuscular	0.5ml	Outer part of Left thigh
Hepatitis B	3	At birth, 6 and 14 weeks of age	4weeks	Intramuscular	0.5ml	Outer part of Right thigh
Measles	1	At 9 months of age		Subcutaneous	0.5ml	Upper left arm
Yellow Fever	1	At 9 months of age		Subcutaneous	0.5ml	Right upper arm
Vitamin A	2	At 6months and 12 months of age	6 months	Oral	100.000IU 200,000IU	Mouth
Tetanus Toxoid	5	Women of Child bearing Age/ early Pregnancy	TT1 @ 1st Contact TT2 at least 4wks after TT1, TT3 at least 6mths after TT2 TT4 at least 1yr after TT3, TT5 at least 1yr after TT4	Intramuscular	0.5ml	Upper arm

Based on further discussions with Pediatrics Association of Nigeria and carriage rate of Hepatitis surface antigen (10.3%[16]), HB birth dose is still relevant and included in the schedule as amended below.

[15]Source NPI

[16]Carriage rate of Hepatitis B surface antigen in an urban community in Jos Plateau state Nigeria- Sirisena ND, et al. Niger Postgrad Med J 2002 Mar.9(1) :7-10

Table 6: Proposed vaccination schedule with Penta-valent and PCV introductions [17]

Vaccines / supplements	No. of Doses	Age	Minimum interval between doses	Route of Administration	Dose	Vaccination Site
BCG	1	At birth or as soon as possible		Intra-dermal	0.05ml	Upper arm
HBV0	1	At birth or soon after birth		Intra muscular	0.5ml	Outer part of thigh
OPV	4	At birth, 6,10 and 14 weeks of age	4weeks	Oral	2 drops	Mouth
DPT-Hep.B-Hib (Pentavalent)	3	At 6,10 and 14 weeks of age	4weeks	Intramuscular	0.5ml	Outer part of Left thigh
Pneumococcal Conjugate Vaccine (PCV)	3	At 6,10 and 14 weeks of age	4weeks	Intramuscular	0.5ml	Outer part of Right thigh
Measles	1	At 9 months of age		Subcutaneous	0.5ml	Upper left arm
Yellow Fever	1	At 9 months of age		Subcutaneous	0.5ml	Right upper arm
Vitamin A	2	At 6months and 12 months of age	6 months	Oral	100.000IU 200,000IU	Mouth
Tetanus Toxoid	5	Women of Child bearing Age/ early Pregnancy	TT1 @ 1st Contact TT2 at least 4wks after TT1, TT3 at least 6mths after TT2 TT4 at least 1yr after TT3, TT5 at least 1yr after TT4	Intramuscular	0.5ml	Upper arm

[17] Other new vaccines such as Rotavirus and HPV vaccines will be added to the schedule as they are introduced

Other vaccination outside the Routine schedule

A) Yellow fever vaccine -for those traveling outside the country irrespective of age given as 0.5ml subcutaneously every 10 years
B) CSM vaccines – administered for preventive campaigns, during outbreaks or when visiting endemic countries.
C) Meningitis A vaccines, to be administered in a preventive mass campaign for 1-29 year olds in a total of 25 states phased over three years, starting with the first phase in November 2011.

2.3 Reaching Every Ward (REW)

2.3.1 Background

The REW approach emerged as an adaptation of the RED approach by Nigeria as a strategy towards ameliorating declining immunization program performance as well as facilitating the twin goals of the Global Immunization Vision and Strategy (GIVS) and the Millennium Development Goals (MDG) 4.

REW focuses on the Ward as the operational level and includes the following 5 objectives;

1) Planning and management of resources 2) Improving access to immunization service delivery 3) Supportive supervision 4) Linking services with Community 5) Monitoring for action. REW introductory trainings were carried out in the 17 southern states in 2006 and in the 19 northern States and FCT in 2007. This was followed a year later by more standardized, coordinated trainings cascaded from the National to the HF level conducted in all the states.

2.3.2 REW Assessment

In 2008, an evaluation was embarked upon in the country to determine extent and quality of REW implementation. The assessment was conducted in all the 36 States of the country including the Federal Capital Territory (FCT) and the results were used to further strengthen REW implementation at the operational level towards improving RI and sustaining past coverage gains.

Key Findings[18]

Planning: Majority of health workers were trained during the cascaded REW trainings although important reference materials were not readily available at the health facility level.

LGA and Catchment area maps were available in 50 percent of the LGAs/Heath facilities assessed but many are lacking in essential details.

Work plans/Schedule or session plans important for good quality planning and monitoring were in-sufficiently available at both levels particularly at the HF level (37%). Fixed sessions were more likely to be planned for and conducted than outreach sessions.

Most HFs conducted over 80% of planned fixed sessions. On the other hand less than two third of the respondents (61%) planned for outreach sessions but only a little over half of them (52%) actually carried any form of outreach sessions.

[18] 2008 national DQS report

Supportive Supervision: Only 52% of LGAs had supervisory schedules and where these available they were often not updated with all the HFs in the LGA.

Linking services with Communities: Although a good number of HFs had VDC attached to their HFs, only about one third could show the existence of a community mobilization plan and over one quarter (27%) indicated not having held meetings in the last 3months questioning the functionality of these committees.

Monitoring for action: Most LGAs and HFs had readily available immunization summary registers as well as immunization records and tally sheets. Likewise, monitoring charts were available in majority of sampled locations. DPT1-DPT3 was the indicator most frequently monitored compared to TT2. However, interpretation of RI performance using these charts was poor particularly at the HF level (46%) at the HF level. Analysis tables were less often found in the HF compared to the LGA level and its understanding and interpretation was poor amongst HWs at both levels (29%-LGA; 24%-HF).

Less than half (45%) of LGAs conducted monthly review meetings missing out on an invaluable opportunity for training and updating staff. Similarly only a little over one third of the LGAs had timeliness and completeness charts to monitor reports received at the LGA level.

Recommendations included the call on states to encourage LGAs and HFs to develop microplans which should be closely monitored and reviewed quarterly. These plans which should be developed with the full participation of the communities should be closely monitored by higher levels and used to advocate for resources. Supportive supervision should be strengthened and LGAs clustered together to aid the process. Joint supervisory visits with state and partners are encouraged. LGAs and HF should also be strengthened in the area of data monitoring and analysis for action.

In the 2011 EPI workplan REW assessment has been planned to reassess the status of implementation of REW

2.4 Local Immunization Day (LIDs)/Child Health Week

In the late 90s, LIDs were introduced in identified Wards/LGAs with relatively low routine immunization coverage and underserved population in order to reduce burden of vaccine preventable diseases. Local Immunization Days (LIDs) are basically multi-antigen catch up campaigns conducted to reduce missed opportunities and dropout rates by immunizing all eligible children below the age of one. LIDs are conducted at least three times a year with at least four weeks intervals between each round using the fixed posts, temporary fixed posts as well as mobile posts in order to complete the schedule for multi-dose antigens (DPT, OPV HepB) and improve routine immunization coverage. Children under 5 years are also targeted with polio vaccine as part of the polio eradication strategy.

Child Health week is synonymous with LIDs but with broader integration of other PHC components. The country in 2010 commenced annual Maternal Newborn and Child Health Weeks (MNCHW), which take place each May and November, as a way of improving routine immunization in the country.

2.5 Data Management / Quality and EPI Reporting/ Monitoring System

Data management and reporting has been very poor in the past. However, attempts have been made to improve data quality and management system by capacity building of service providers and provision of data tools to all levels. In 2007, RI Data Management training was cascaded up to Health facility level as a result of which timeliness, completeness of reporting has improved. Furthermore the immunization programme started the monthly data quality checks (DQC) to support improvement in data quality in addition to the commencement of regular data quality self-Assessment (DQS) at national and sub-national levels.

DQS is an in-country self assessment to validate the administrative Routine immunization data reported in order to determine actual performance for programme planning.

The DQS conducted in 2011 evaluated the 2010 reported data. Following the DQS 2011, a correction factor was obtained which was used to correct the administrative data for 2010. See chart below.

Table 7: 2007 – 2010 Routine EPI Coverage: Comparison of Reported and DQS Corrected Coverage

Antigens	2007		2008		2009		2010	
	Admin	DQS Corrected	Admin	DQS Corrected	Admin	DQS Corrected	Admin	DQS Corrected
BCG	56%	41.6%	78%	61.9%	75%	68%	76%	67%
DPT3	70%	52.0%	71%	57.1%	79%	71%	85%	75%
OPV3	62%	46.1%	63%	50%	70%	63%	79%	69%
Measles	82%	60.9%	86%	68.2%	90%	81%	97%	61%
Yellow Fever	53%	39.4%	63%	50%	69%	62%	89%	78%
TT2+	50%	37.2%	47%	37.3%	47%	43%	45%	39%
Heb3	53%	39.4%	63%	65%	72%	65%	75%	66%

Source: Administrative data using surviving Infants & DQS corrected coverage.

The summary findings of the data quality self assessment of monitoring system at some health facilities showed there were many key challenges in all components of the monitoring system. This range from lack of data tools at health facility levels to poor recording and reporting practices.

Other areas with serious challenges included archiving of reports particularly at the LGA level as well as the use of analyzed data to address identified problems.

Currently, RI and IDSR[19] reports are collected monthly from the health facilities to the LGA. The LGAs compile and submit these to the State. The States then collates and sends the reports through the zones to the National level.

2.6 Vaccine Supply and Quality

2.6.1. National Regulatory Authority (NRA):

The country has a well established and functional NRA called National Agency for Food Drugs Administration and Control (NAFDAC). This agency is well staffed and equipped to carry out its full functions. In relation to Vaccines entering the Country, vaccine manufacturing companies whether WHO pre-qualified or not have to be registered with NAFDAC before their products are received into the country. The agency does quality tests for all vaccines before use in the country and furthermore, visits States and LGA cold stores regularly to test samples to ensure quality of vaccines in the field.

2.6.2. Procurement

Nigeria is one of the few countries in Africa that fully funds its procurement of traditional vaccines for routine immunization. In May 2003, the FGN and UNICEF signed a Memorandum of Understanding for the procurement of routine vaccines, which aims at ensuring vaccine security in the country based on issues of stock outs experienced in the past.

Vaccine forecasting for the New Year is done in the last quarter of the previous year. The quarterly vaccines needs are shipped to Nigeria four times each year.

2.6.3. Distribution

The Federal Government is responsible for distribution of Vaccines to the States, from where LGAs collect their vaccines. The health facilities collect their vaccines from the LGAs depending on their session plans and storage capacity. This is the “push and pull” system of vaccine distribution practiced in the country.

A joint report from the WHO/UNICEF 2nd mission on vaccine security in Nigeria[20]in 2005 indicated that the “push and pull” method of vaccine distribution was facing serious challenges due to:

- Poor financing of transportation cost of vaccines at the State
- LGAs not involved in the ‘pull’ component
- Poor information management between states and LGAs
- Poor cold chain capacity at LGAs and health facility levels.

Activities to address challenges in the vaccine distribution system include training of cold store personnel and procurement of cold chain and transport equipment for the LGA and health facility levels described in depth in the appropriate sections (see section 2.6.6).

[19]IDSR: Integrated Disease Surveillance and Response
[20]Report of Joint WHO-UNICEF mission on Vaccine security in Nigeria 2005

2.6.4. Vaccine Management

In 2004 the Effective Vaccine Stock Management (EVSM) assessment was conducted at the National Strategic Cold Store. The findings from this assessment highlighted areas for improvement especially in capacity building. Vaccine management trainings were conducted to strengthen vaccines management practices at all levels from 2006 to 2010. In addition the District Vaccine Data Management Tool (DVD-MT) and Stock Management Tool (SMT) have been introduced and are currently being used. Vaccine Management Tools (VMTs) were developed to capture primary data at peripheral level for input into the DVD-MT.

The Effective Vaccine Management (EVM) assessment was conducted in 2010 and included regional and national trainings which were conducted with the support of WHO and UNICEF. The findings of the nine criteria based EVM assessment found both strengths and weaknesses based on which an improvement plan has been developed (see annex 7.4c). [21]

Strengths

- Good infrastructure including buildings and cold chain equipment at most vaccine storage facilities
- Strong vaccine management knowledge at all levels
- Satisfactory temperature monitoring systems at State and LGA levels

Weaknesses:

- Inadequate temperature monitoring systems at national and zonal levels
- Insufficient storage and transport capacity at national, zonal and state levels
- Inadequate supportive supervision at zonal, state and LGA levels
- Weak distribution management at state and LGA levels.

2.6.5. Injection safety

The country immunization programme has a policy for 100percent bundling of all vaccines with auto disable syringes and safety boxes. There is also an injection safety policy in place. “Burn and bury” method of waste disposal is mostly in use for immunization waste with incineration used in some states where this technology exists.

Immunization waste management however is a subset of the wider Health Care Waste Management process which currently has a draft policy, plan and guidelines awaiting ministerial endorsement.

2.6.6. The cold chain system

The country continues to make significant progress in the expansion of cold chain capacity at all levels and the Polio Eradication Initiative has been a contributing factor in this process.

The cold chain system consists of the National Strategic Cold Store (NSCS) in Abuja, the Federal capital, six zonal cold stores located in each of the six geo-political zones, 36 States vaccine cold stores plus the federal Capital territory (FCT) and 774 Local Government Area (LGA) vaccine stores.

[21] Nigeria EVM Report 2010

As part of the on-going cold chain expansion, 1.06 Billion Naira has been released by Government in 2010 and orders have been placed for 15 cold rooms, 644 solar refrigerators and 8 cold vans/trucks.

National Strategic Cold Store (NSCS) and zonal stores

The National Strategic Cold Store is located in Abuja and receives all vaccine deliveries for the country from overseas suppliers. The NSCS has extended capacity for vaccine storage and dry materials stores located in the six geopolitical zones. These stores operate directly under the NSCS and are therefore considered as part of the NSCS. Vaccines and dry materials are distributed to the thirty-six States plus the Federal Capital Territory from the NSCS or from any of the other stores as coordinated by the NSCS. The NSCS holds routine immunization buffer stock and handles campaign vaccines and strategic vaccine stock for emergencies and disease outbreaks.

Table 8: Cold chain capacity of National Strategic Cold Store (Positive and Negative), 2011

Cold Chain capacity at the National Strategic Cold Store **Cold Store**	**Net storage Litres (+2°C to +8°C)**	**Net storage Litres (-15°C to -25°C)**
NSCS, Abuja	28,571	9,524
SW Zone, Lagos	29,762	17,857
NC Zone, Minna	14,286	4,762
SS Zone, Warri	14,286	4,762
NE Zone, Bauchi	14,286	4,762
SE Zone, Enugu	14,286	4,762
NW Zone, Kano	0	0
TOTAL	**115,477**	**46,429**

Source of data on storage Capacity: EPI Logistics Forecasting Tool

The zonal stores in Lagos and Minna are fully operational while those in Warri, Bauchi and Enugu (table 8) are currently not fully functional due to preventive maintenance practices not in place, poor electricity supply, non-operationalization of the premises, some minor repairs, etc. These capacities are not optimally utilized. All three are in the process of being upgraded and should be functional by June 2011 when minor operational issues hindering performance would have been addressed.

Figure 6: Map of Nigeria with locations of National Strategic and Zonal Cold Stores

State Cold Stores

Each State and the FCT in Nigeria has a functional cold store which is run and maintained by the State Ministry of Health. Cold chain equipment in state cold stores is provided by the State government, NPHCDA and some partner agencies. The cumulative total capacity of the cold chain system in all the 36 states plus FCT is 273,204 and 205,324 litres for the positive and negative volumes respectively.

Table 9 shows vaccine storage capacities for cold rooms, refrigerators and freezers available in the states based on the April 2010 cold chain inventory replacement plan database. Each state cold store has the capacity to hold the state's 3-month routine vaccines requirement.

LGA Cold Stores

The LGAs have adequate cold chain capacity to store one-month's routine and supplemental vaccines requirements for the LGA. The predominant cold chain equipment in the LGAs are refrigerators and deep freezers. Each LGA has at least 2 solar refrigerators providing additional 40 litres to the cold storage capacity and greatly improving vaccine management at the LGA and health facility levels where frequent power outage is major challenge. There is progress in addressing this challenge where state governments, with the support from the Federal Government, are providing funds to run back-up electric power generators.

Health facility stores

Government policy specifies that at least 1 HF in each of the 9,555 political wards nationwide must be fully equipped to provide regular routine immunization services. Ward health facilities usually have cold boxes but plans are underway to equip all HFs with solar refrigerators. Presently, government at all levels with support from development partners provides funding for this expansion: GAVI Health Systems Support (HSS) grant funded the provision of 485 solar

refrigerators; the Federal Government procured 644; and UNICEF an additional 400 solar refrigerators.

Table 9: Storage capacities by States as at April 2011

			COLD ROOMS		WICRs & Fridges	
Sn	**Zone**	**State**	**+2 to +8 C**	**-15 C to – 25C**	**+2 to +8 C**	**-15 C** to -25C
1	NC	Benue	-	-	773	1,179
2	NC	FCT	-	-	607	2,062
3	NC	Kogi	5,952	3,333	6,801	5,112
4	NC	Kwara	5,952	3,333	6,568	5,501
5	NC	Nasarawa	-	-	1,148	1,877
6	NC	Niger	-	-	1,608	1,081
7	NC	Plateau	5,952	3,333	6,695	5,384
		Total (NCZ)	**17,857**	**10,000**	**24,201**	**22,197**
Sn	**Zone**	**State**	**+2 to +8 C**	**-15 C** to -25C	**+2 to +8 C**	**-15 C** to -25C
1	NE	Adamawa	-	-	1,226	2,246
2	NE	Borno	11,905	7,143	13,456	12,655
3	NE	Gombe	5,952	3,333	7,242	6,864
4	NE	Taraba	5,952	3,571	7,324	6,709
5	NE	Yobe	-	-	540	566
6	NE	Bauch i	5,952	3,571	5,952	3,571
		Total (NE Zone)	**29,762**	**17,619**	**35,741**	**32,612**
Sn	**Zone**	**State**	**+2 to +8 C**	**-15 C to -25C**	**+2 to +8 C**	**-15 C to -25C**
1	NW	Jigawa	5,952	3,571	7,262	5,814
	NW	Kaduna	5,952	3,571	7,689	5,718
2	NW	Kano	9,524	1,320	9,748	3,168
3	NW	Katsina	11,905	7,143	12,891	9,015
4	NW	Kebbi	5,952	3,571	6,722	4,155
5	NW	Sokoto	5,952	3,571	6,830	5,851
6	NW	Zamfara	5,952	3,571	7,839	5,884
		Total (NW)	**51,190**	**26,320**	**58,982**	**39,607**
Sn	**Zone**	**State**	**+2 to +8 C**	**-15 C to -25C**	**+2 to +8 C**	**-15 C to -25C**
1	SW	Ekiti	5,952	3,571	12,276	9,698
2	SW	Lagos	11,905	7,143	19,889	14,175
	SW	Ogun	5,952	3,571	5,952	3,571
3	SW	Ondo	-	-	1,577	1,056
4	SW	Osun	5,952	3,571	11,665	8,439
5	SW	Oyo	11,905	7,143	22,222	13,891
		Total (NW)	**41,667**	**25,000**	**73,582**	**50,831**
Sn	**Zone**	**State**	**+2 to +8 C**	**-15 C to -25C**	**+2 to +8 C**	**-15 C to -25C**
1	SS	Akwa Ibom	5,952	3,571	5,952	3,571
2	SS	Bayelsa	-	-	1,867	3,523
3	SS	Cross River	5,952	3,571	8,031	8,294
4	SS	Delta	-	-	3,453	1,941
5	SS	Edo	11,905	7,143	13,868	11,112
6	SS	Rivers	15,476	3,571	17,738	6,240
		Total (NW)	**39,286**	**17,857**	**50,910**	**34,682**
Sn	**Zone**	**State**	**+2 to +8 C**	**-15 C to -25C**	**+2 to +8 C**	**-15 C** To -25C
1	SE	Abia	5952	3571	8,037	5,419
2	SE	Anambra	5952	3571	7,741	6,850
3	SE	Ebonyi	5952	3571	6,833	5,465
4	SE	Enugu	5952	3571	6,960	5,903
5	SE	Imo	222	1764	222	1,764
		Total (NW)	**24,032**	**16,050**	**29,795**	**25,403**

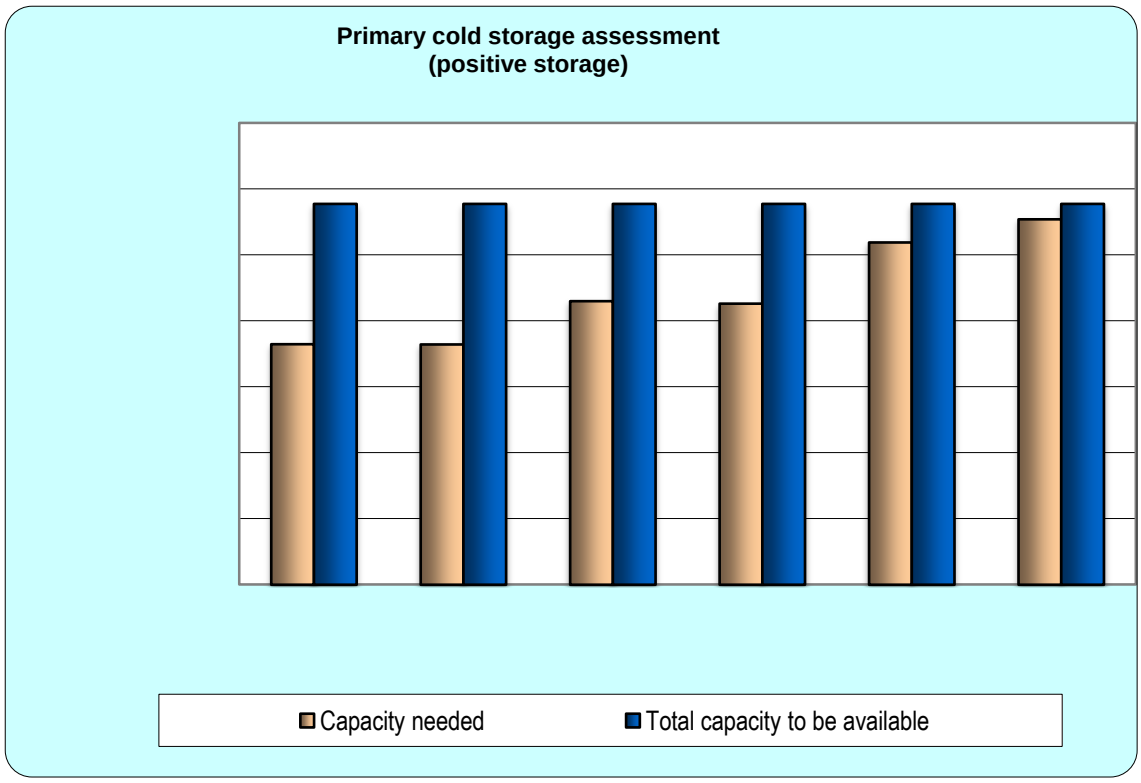
Source: Inventory replacement plan database

EVM Assessment

In December 2010, Nigeria concluded an Effective Vaccine Management Assessment (EVMA) which comprehensively reviewed its vaccine supply chain from vaccine arrival into the country to service delivery points. Seventy five facilities at National, State, LGA and Health facility levels were assessed. Overall, the assessment revealed several positive results: at the federal and state levels good infrastructure including buildings and cold chain equipment; good knowledge of vaccine management; and satisfactory knowledge of temperature monitoring at most national and state storage facilities. However, the LGAs and HFs did not fare as well. At these levels, the assessment revealed inadequacies in transport and comprehensive temperature monitoring systems; and operational and management issues. As a result of these EVMA findings, an improvement plan was developed and is being implemented to mitigate the challenges. The plan emphasizes supportive supervision of personnel at lower level stores focussed on training and creating a culture which prioritizes preventative maintenance of cold chain equipment. Where gaps exist in the availability of cold chain equipment, steps have been taken to hasten the delivery of relevant equipment, temperature monitoring devices and refrigerator trucks as part of the cold chain revamping plan (see annex).

Storage capacities available compared to needs

National positive and negative cold storage capacity is adequate to accommodate the introduction of planned new vaccines (Penta, MenAfriVac, Pneumo) and traditional vaccines for routine and supplemental activities until the end of the revised cMYP 2011-2015. The adequacy in national storage capacity has been achieved through integration of the six zonal stores with the National Strategic Cold Store using a highly responsive, effective mechanism for re-distributing vaccines at this level to optimize capacity utilization. With the award for the construction of the zonal store in Kano, an additional 14,286 litres positive capacity will be available at the national level by 2012. More expansion in national capacity is anticipated with the installation of fifteen $40m^3$-cold rooms; three at the NSCS and two each in the six zonal stores. This is an additional 142,857 litres positive storage capacity that will be added to the national capacity by 2012. In addition this will preposition the country's readiness for accepting future new vaccine introduction like HPV, Rota etc.



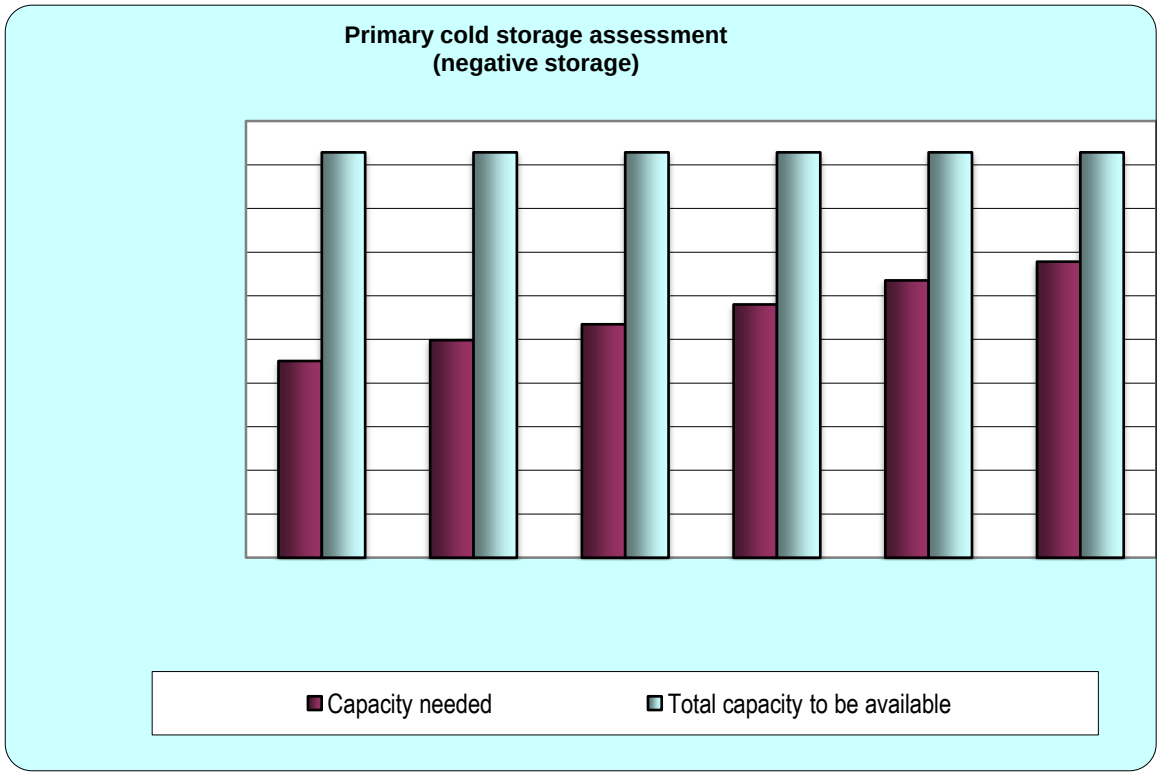


Figure 7a & 7b: Positive and negative storage needed versus available at National level

Table 10: Cold chain capacities required for all antigens at National level with ongoing revamping

		Formula	2011	2012	2013	2014	2015
A	Annual positive volume requirement, including new vaccine (DPT, HBV, TT, Penta, Pneumo, MenAfriVac in litres)	*Sum-product of total vaccine doses multiplied by packed volume per dose*	206,692 litr	217,509 litr	258,044 litr	301,388 litr	371,870 litr
B	Existing net positive cold chain capacity (litres)	#	115,477 litr	115,477 litr	115,477 litr	115,477 litr	115,477 litr
C	Estimated minimum number of shipments per year required for the actual cold chain capacity	*A/B*	1.78	1.88	2.23	2.61	3.22
D	Number of consignments / shipments per year	*Based on national vaccine shipment plan*	4	4	4	4	4
E	Gap in litres	*((A/D) - B)*	**- 64,054 litr**	**- 61,100 litr**	**- 50,966 litr**	**- 40,130 litr**	**- 22,510 litr**
F	Estimated additional cost of cold chain	*US $*	$0	$0	$0	$0	$0

Source of data: NSCS, EPI Logistics Forecasting Tool (updated April 2011).

Table 10 above shows that the storage capacity is adequate to cater for all RI vaccines, Penta, Pneumo and MenAfriVac planned. The surplus (row E) in addition to the planned 142, 487 litres expansion in 2012 guarantees accommodation for future new vaccines introduction.

An analysis of capacity to store vaccine requiring positive temperature is presented below by states[22]. The Federal Government and development partners have allocated additional cold rooms to address inadequacies in positive cold storage capacity in six states; Benue, FCT, Niger, Adamawa, Imo, Ondo; in the 2011 cold chain revamping plan. All states in the country have adequate capacity for negative temperature storage. The figure 8 and 10 below show that all the states in Phase 1 introduction of Penta vaccines in 2012, the same states for pneumococcal vaccine introduction in 2013, except the FCT, have adequate positive capacity. The gap in the FCT will be bridged by the NSCS which is located within the FCT.

[22]See annex below for detailed breakdown of Nigeria cold chain analysis

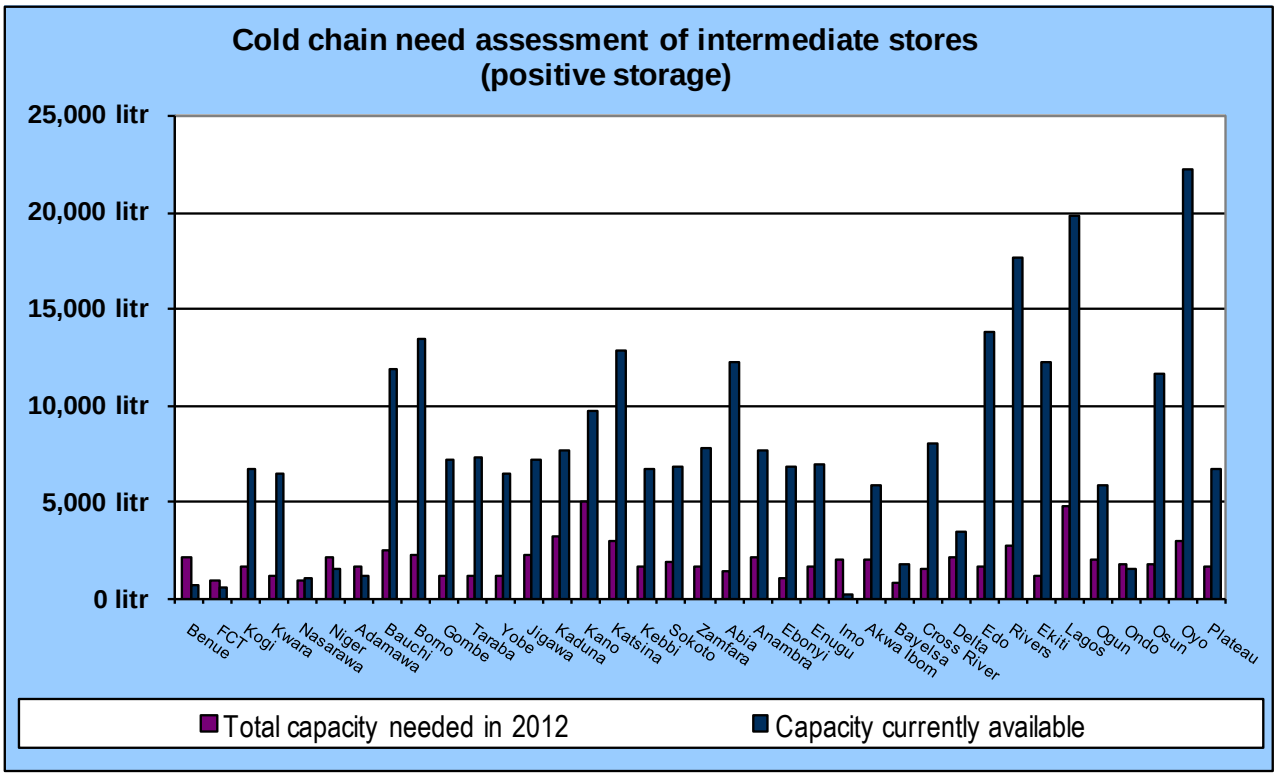


Figure 8: Positive Cold chain Assessment in 2012

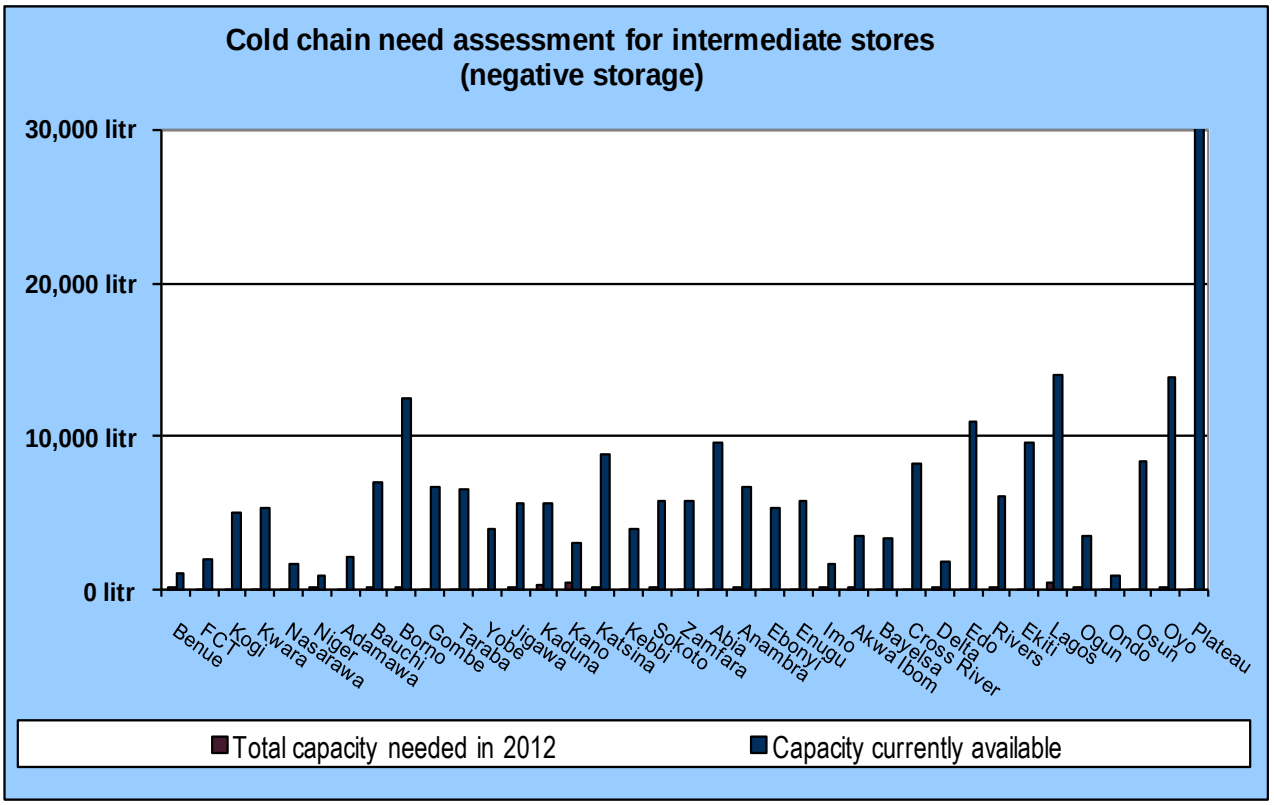


Figure 9: Negative Cold chain Assessment in 2012

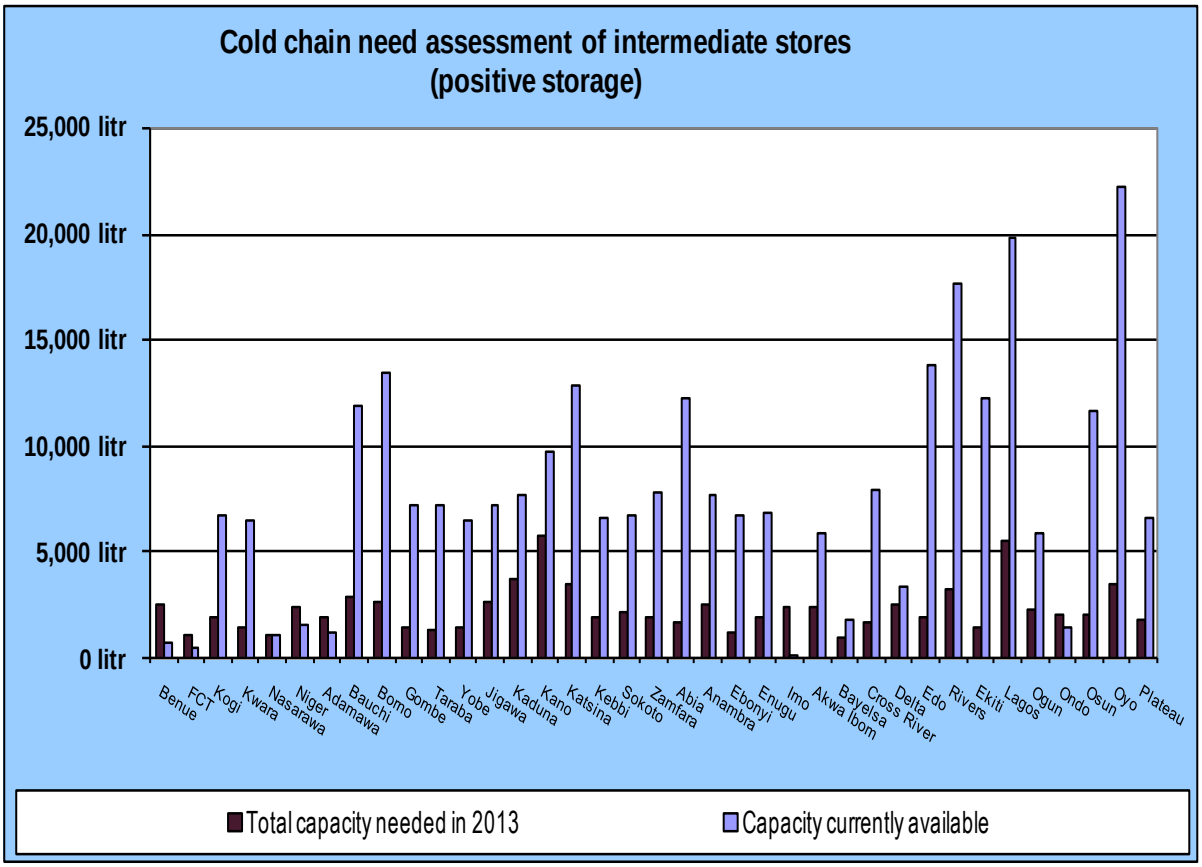


Figure 10: Positive Cold chain Assessment in 2013

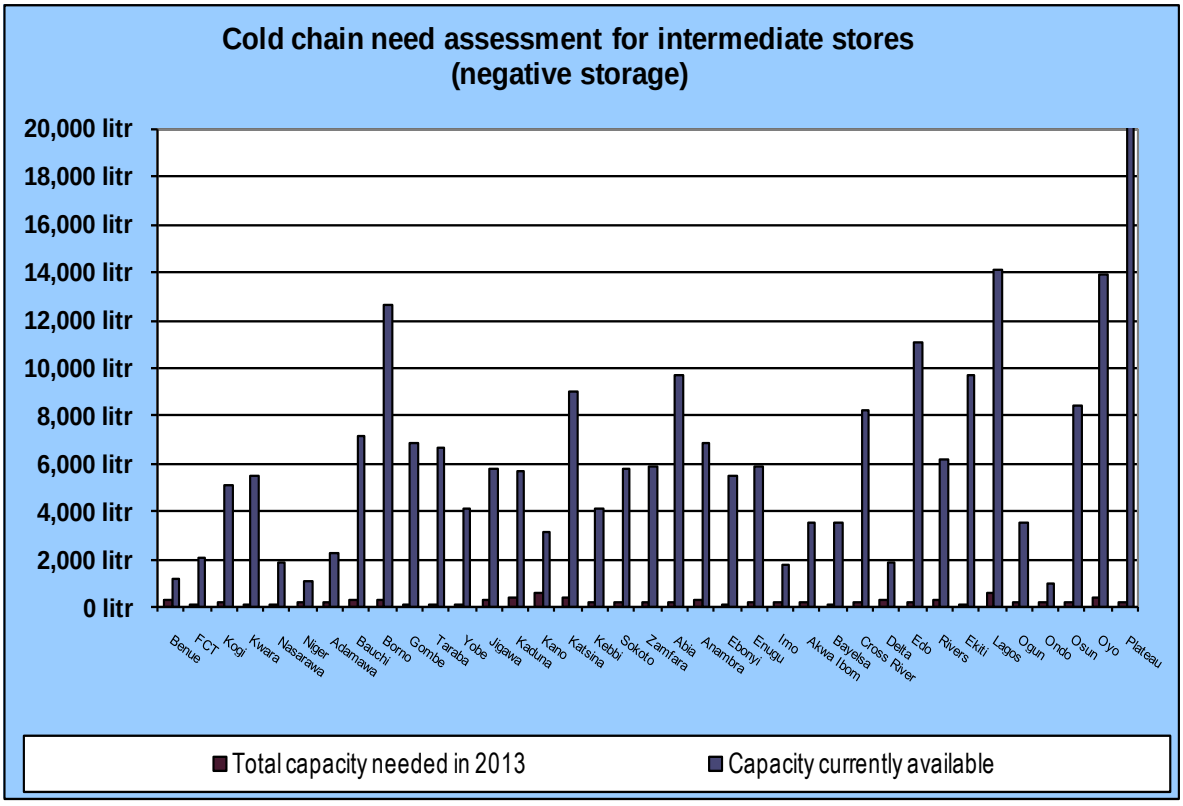


Figure 11: Negative Cold chain Assessment in 2013

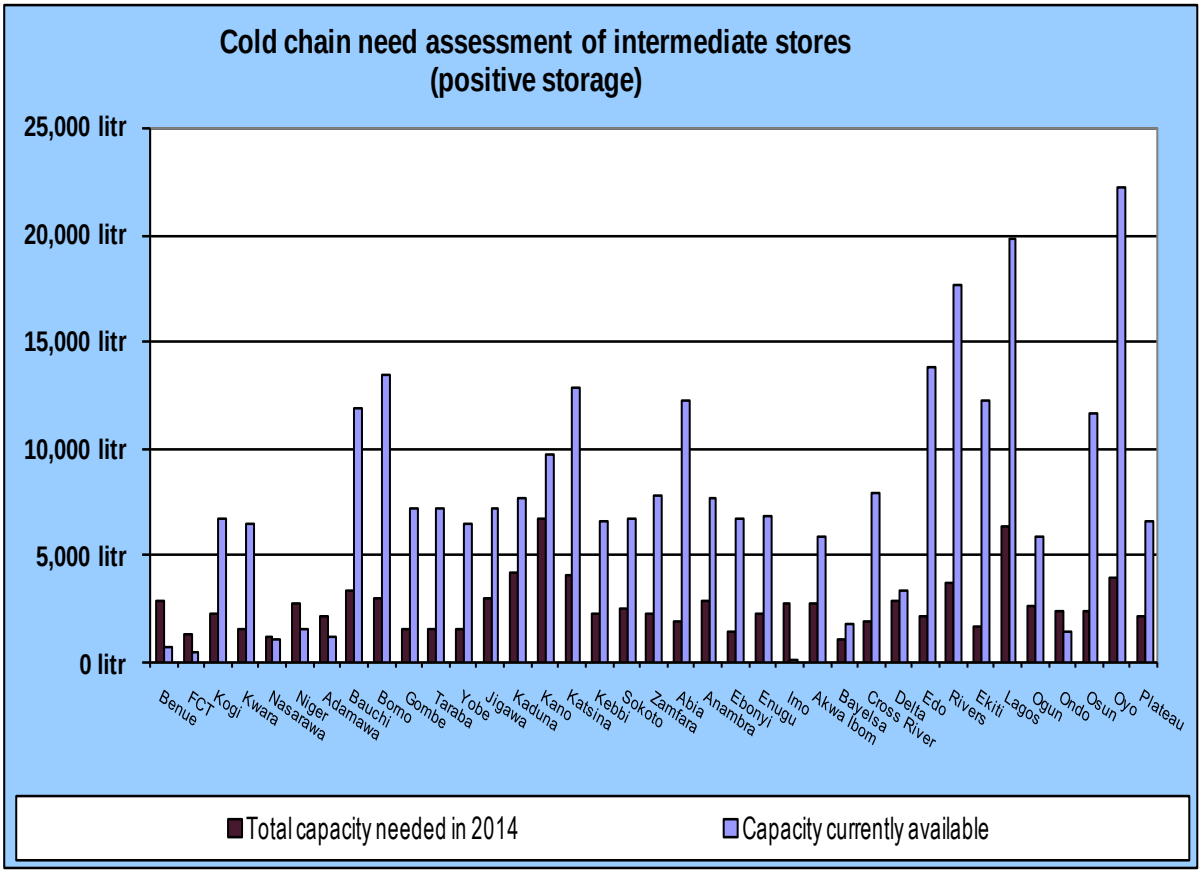


Figure 12: Positive Storage Cold chain Assessment in 2014

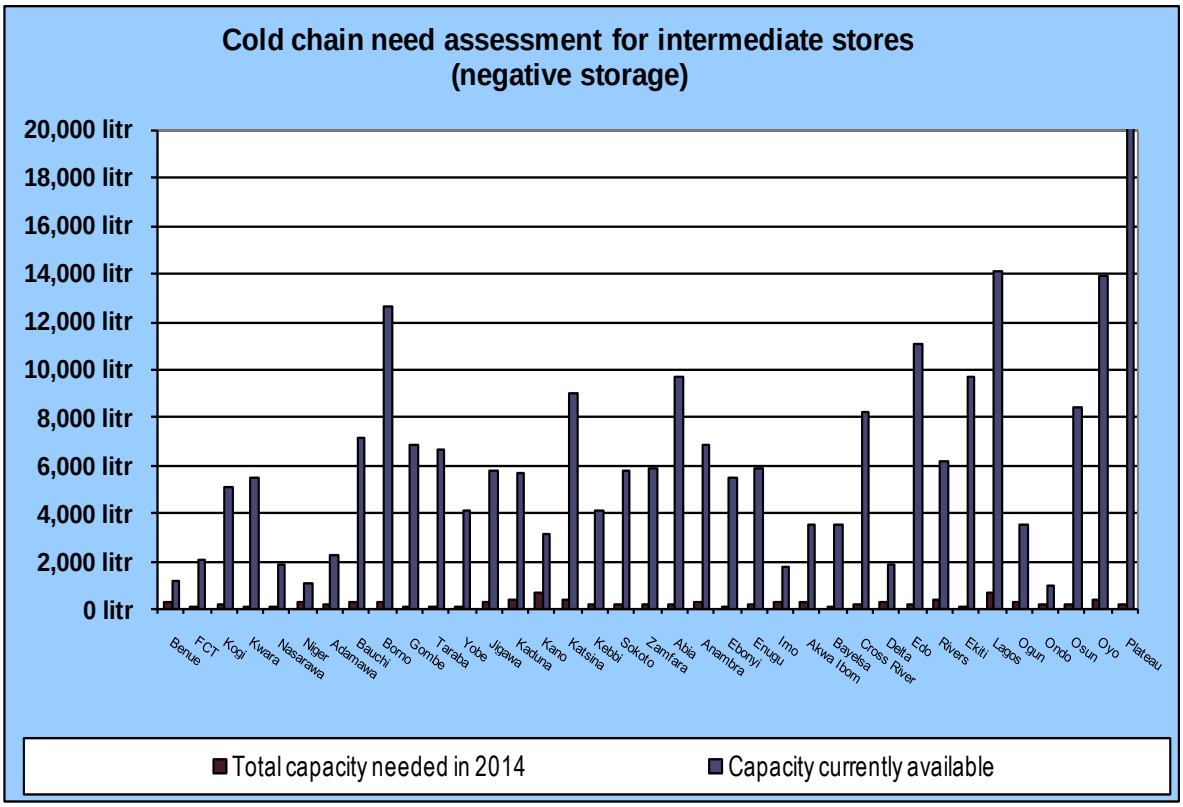


Figure 13: Negative Storage Cold chain Assessment in 2014

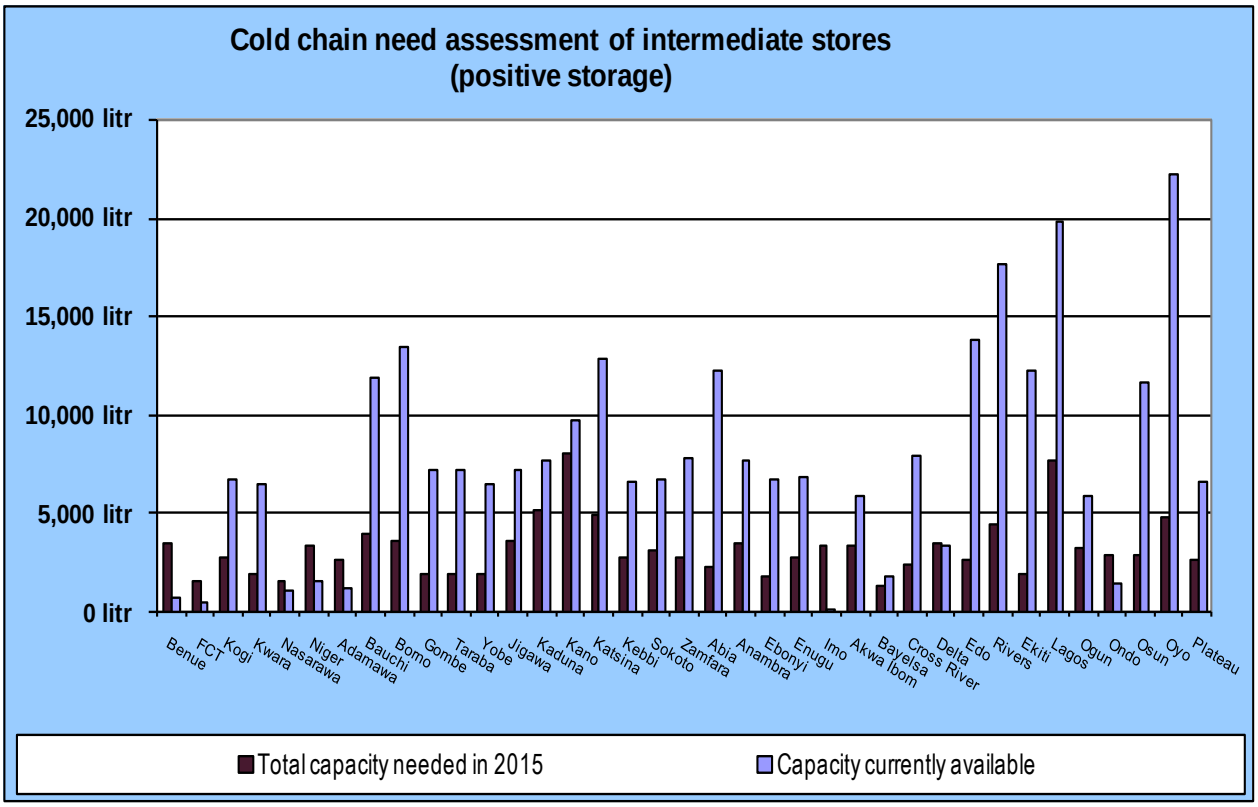


Figure 14: Positive Storage Cold chain Assessment in 2015

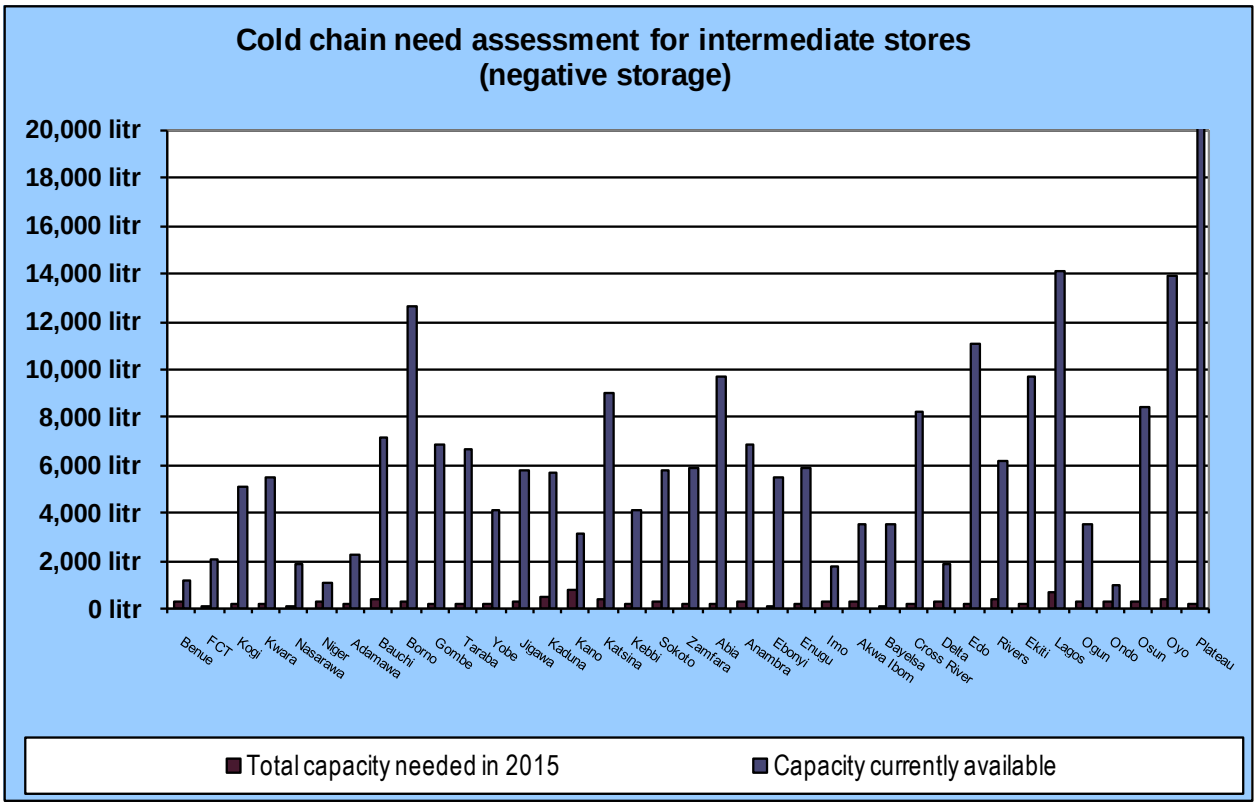


Figure 15: Negative Cold chain Assessment in 2015

Dry Store Capacity

Sufficient dry store capacity of 10,720 m^3 is available at all levels for the NVI plan up to 2013 when an additional capacity of 292 m^3 will be required to accommodate ambient storage needs and at the end of cMYP by 2015 a total of 3,828 will be required for ambient storage. The Government is working to address the gap by acquiring space for construction of additional dry stores by 2012.

Transport Logistics

There are four refrigerated trucks for vaccines movements from the NSCS and zonal cold stores to the States. This is complemented by standing contractual arrangement with the private sector to distribute vaccines from the National to the State stores when the need arises.

Four wheel drive vehicles are employed for distribution of vaccines and supplies at state, LGA and HF levels. As part of the cMYP 2006-2009, the Federal government provided a four-wheel drive vehicle for each of the 37 states of the federation for vaccine distribution and supervision. In support of the Government's plan to improve transport logistics, the European Union (EU) Delegation working through the EU-PRIME project provided vehicles for all the LGAs in the first 6 EU-Prime supported states; Abia, Cross River, Gombe, Kebbi, Osun and Plateau; and 1 vehicle per state in 17 other EU focus states; Anambra, AkwaIbom, Bauchi, Ebonyi, Edo, FCT, Jigawa, Kaduna, Katsina, Kwara, Kogi, Lagos, Ogun, Sokoto, Yobe and Zamfara. An additional five hundred and seventy (570) motorcycles[23] were procured and distributed to support transport logistics at the LGA level in these 23 EU-PRIME States.

Waste Management

Nigeria has a health care waste management policy whose implementation by the government and stakeholders is expected to commence in 2011. Meanwhile, NPHCDA has plans to map all existing incinerators and improve collaboration with brick and cement factories to provide incineration for the health system. In the meantime procurement of waste disposal units for all LGA is under consideration.

The condition for MenAfriVac campaign stipulates that in each senatorial zone of the states conducting the campaign, at least one standard Waste Disposal Unit (WDU) would be provided by the State government while LGAs within the senatorial zone will provide one WDU in the LGA headquarter. This infrastructure being put in place will serve the purpose of managing the waste from traditional and new vaccines.

The mechanism to be used in the disposal of injection materials during subsequent vaccination sessions would be by incineration at the designated sites. Injection wastes would be collected using the safety boxes which would be transported for incineration under supervision. The prototype incinerator (De Montfort) is still under consideration. However the final decision on choice depends on the Local Governments and the States that have agreed to shoulder this responsibility. Each unit is estimated to cost around $7000.00 with a lot of local inputs being considered in the production. The country would however welcome any assistance and further guidance on this especially in ensuring technological transfer and not just procuring and installing.

[23]This is part of the logistic upgrade by EU to 23 states by providing WICR in each state and vehicles for LGAs in those states

2.7 Accelerated Disease Control

2.7.1 Polio Eradication Initiative

Nigeria has been an endemic country for polio and efforts from the government led to a reduction in the number of WPV cases from 803 cases in 26 states (in 244 LGAs) as at 31st December 2008 to 388 cases in 27 states (in 198 LGAs) as of the end of 2009 and 21 cases in 8 states (21 LGAs) as of the end of 2010.

Supplemental immunization activities began in Nigeria in 1996. They form the mainstay of the Polio Eradication Initiative in Nigeria.

The country has been carrying out an average of 4-6 polio SIAs annually, with more emphasis placed on the polio high risk states since 2002. Mono-valent OPV (mOPV1 and mOPV3) and bOPV were introduced in 2006, 2007 and 2010 respectively to tackle specific strains of the polio virus. tOPV is also used during some rounds of SIAs based on the epidemiology of the existing viruses.

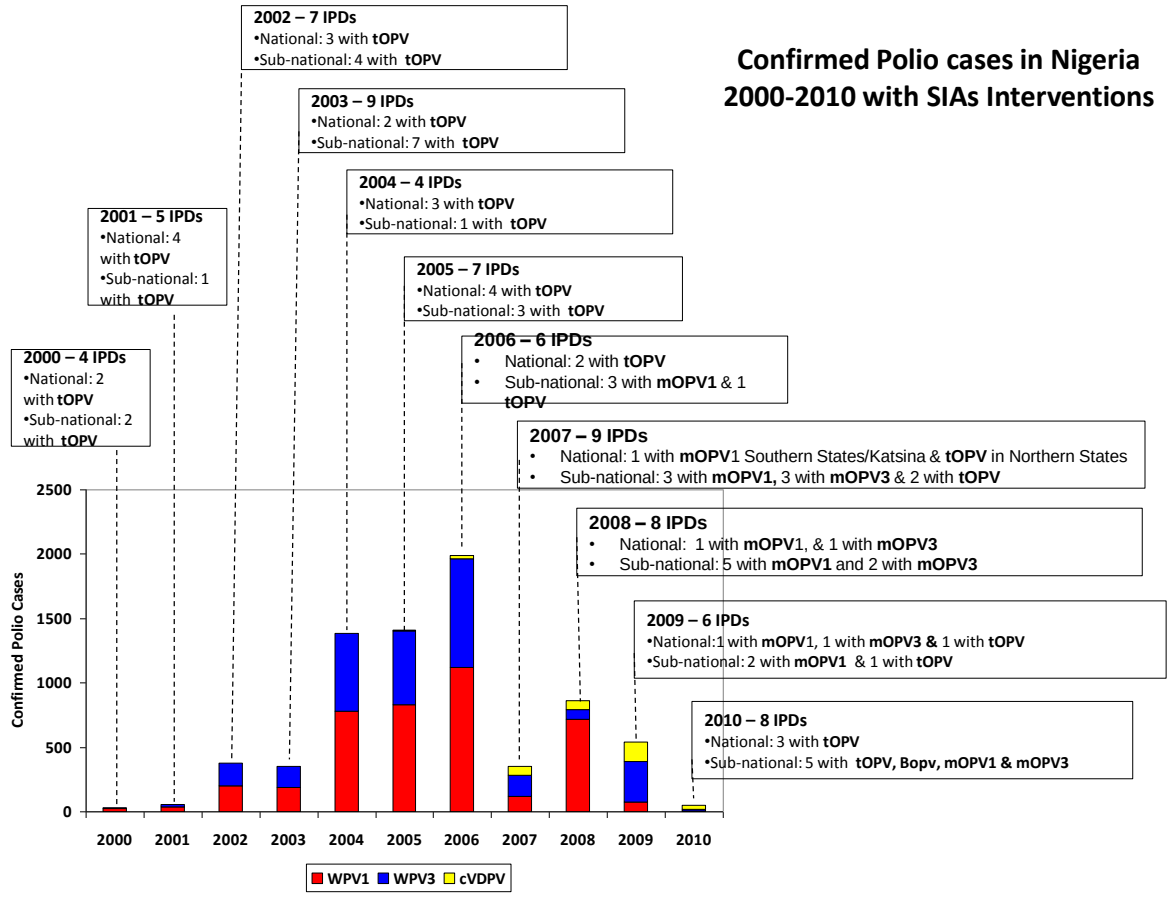


Figure 16: Confirmed Polio cases in Nigeria with SIAs interventions (2000 – 2010)

The strategy used for the polio SIAs was initially a 'fixed post' strategy, but this was replaced with the 'house-to-house' strategy in 1999 due to low coverage results. This house-to-house strategy was further reviewed in 2006 to Immunization Plus Days (IPDs), as a response to the communities requesting additional vaccines to OPV and other felt needs and also to rapidly assist in scaling up low RI coverage.

2.7.1 Immunization Plus Days (IPDs)

Immunization Plus Days (IPDs) are a modification of the National Immunization Days (NIDs) in which routine vaccines and other health interventions are delivered to communities during polio vaccinations. The Strategy delivers a range of routine antigens administered with the oral polio vaccines, plus other child survival interventions such as anti-helminthics, Vitamin A, distribution of insecticide treated nets, etc.

The concept was introduced in 2006 to respond to community needs, in addition to improve routine immunization coverage as well as deliver other integrated interventions as required to meet the MDG4 target

The strategy, which emphasizes the use of child health cards, has shown increased eagerness from communities in bringing their children to the health facilities for immunization and other benefits offered. Political, traditional and religious leaders are increasingly identifying with the benefits of immunization.

The greatest increase in coverage is noted for those antigens that have been regularly included in IPDs and LIDs i.e. DPT and Measles. During the IPDs, only OPV is considered a supplemental dose and is given to all children aged 0-59 months irrespective of previous immunization status. All other vaccines are administered in accordance with the national routine vaccination schedule and taking into account previous vaccine doses received by the child. These "routine doses" are recorded both in the RI tally sheets as well as in the child's vaccination card.

2.7.2 Measles SIAs

Pre 2005, one of the leading causes of under-5 mortality was measles. This was made more serious by the low level of routine measles vaccination. In 2005 the country started the process of providing a second opportunity for measles vaccination though measles catch-up campaigns.

This was conducted in two phases. The first accelerated measles catch-up campaign was conducted in 19 States of the north plus FCT in December 2005. This was for children 9 months to 15 years, and a total of 29,877,057 were targeted out of which 28,538,974 were vaccinated (representing 95.5percent coverage).

The second phase of accelerated catch-up campaign was an integrated exercise with OPV and LLINs and took place in the 17 southern states in October 2006 in the same age group of 9months – 15years.

The total number of children vaccinated in the southern measles catch up campaign was 26,353,790 out of a target of 31,478,681 representing coverage of 83.7 percent. It should be noted, however, that in both campaigns, performance variations occurred at the sub-national levels.

Following these campaigns, 2006 and early 2007 witnessed a remarkable drop in morbidity and mortality related to measles. This reduction in measles cases in Nigeria contributed significantly to the success of the African region in achieving the global targets for measles mortality reduction. However, by 2008 a noticeable increase in number of measles cases with outbreaks and fatalities

were observed especially in the northern part and thus a plan put in place for a follow up campaign.

In November/December 2008 another round of bi-phasic (North & South) integrated measles follow-up campaign were conducted for children 9-59 months.

The total number of children immunized in the Country was 28,275,228, out of a target population of 25245739 (2006 census projection) representing 112 percent coverage.

A second follow-up campaign was conducted in the first quarter of 2011 which was integrated with IPDs in the northern states in January and the southern states in February.

2.7.3 Maternal and Neonatal Tetanus Elimination

In June 2000, WHO classified the 57 countries that had not yet achieved elimination of NT, using the following three criteria:
Class A: Twenty two countries with ≤10% of the Districts (LGAs) at high risk, i.e. > 70% DPT3. Given their performance then and their operational capabilities, these countries were able to meet the elimination goal in one year, but LGA assessments to validate elimination had to be done.
Class B: Eighteen countries with 11-50% of their District (LGAs) at high risk. These countries had limited health infrastructures and were advised to implement elimination activities in stages over a three year period
Class C: Seventeen countries with > 50% of their District (LGAs) at high risk. These countries had limited health infrastructures, manpower and logistical constraints and in some cases, war, as indicated by DPT3 coverage of <50%. They were advised to phase in elimination activities over three to four years. All the 'Big Four' countries fell into this category, i.e. Angola, DRC, Ethiopia and Nigeria.

Nigeria's routine immunization schedule provides TT for women of child bearing age (WCBA) and pregnant women although the national coverage over the last four years has been less than 50%. A Neonatal Tetanus Baseline Survey[24] conducted in Kano State in April 2006 showed a mortality rate of 5.9 per 1000 live births as compared to a similar study done in 1999 in the same State that reported 20.6 per 1000 live births. Furthermore a rapid assessment in 3 States (Rivers, Abia and Ogun) was conducted in January 2008 and reported high risk status for all the LGAs in the three States. These reports support the categorization of Nigeria in the Class C risk group.

However, Nigeria has since 2008 developed a national plan for MNT elimination which was revised in 2009. The goal of this plan is to eliminate maternal and neonatal tetanus as a public health problem by the year 2014 in Nigeria.

The strategy in PoA was to be a Phased implementation activity starting from 2009 to 2012 to meet the global and regional goal for MNTE.

The POA adopted three main strategies for this elimination:

1. Rapidly scaling up the routine uptake of TT antigen

[24]Report on NT Baseline Study 2006

2. Supplemental TT administration with IPDs or stand alone campaign for women of childbearing age.
3. Propagation of clean delivery practices at both orthodox and other midwives during delivery and neonatal care.

However, this POA has not been fully implemented mainly due to other competing priorities in the immunization programme, particularly polio eradication activities. In 2010, as part of Phase 1, TT SIAs campaign took place in 60 high risk LGAs of Abia, Ogun, and Rivers state achieving an average coverage of 62% for TT2+ amongst women of child bearing age

NPHCDA and Partners are planning for the second phase of MNTE implementation which will cover 25 high-risk LGAs in Akwa Ibom, Cross Rivers, Borno and Yobe States and will commence in 2012.

2.7.4 Yellow fever

Nigeria is among the twelve very high risk countries in the yellow fever belt.[25] While yellow fever vaccine is currently part of the country's RI schedule, the coverage like other RI vaccines is low and as such there is potential danger of large outbreaks of yellow fever.

A yellow fever risk assessment covering all states in the country and comprising entomological and clinical risk assessment was carried out in Nigeria in 2008[26]. Following this assessment and a consensus meeting, 506 out of the 774 LGAs (65.4%) were classified as high-risk for yellow fever transmission and recommended for preventive campaigns. Plans for yellow fever preventive campaign have been made but implementation will depend on the availability of funds from national and co-financing from GAVI.

2.7.5 Invasive Bacterial Diseases

2.7.5.1. Haemophilus Influenzae type B (Hib)

Haemophillus Influenza is a gram negative encapsulated bacterium that causes severe infections in humans. Many serotypes (a – f) exist but infection by type b is the most prevalent. In Nigeria 98% of infections in children are caused by type b[27]. The infection manifests as pneumonia, meningitis, septicaemia, epiglottitis, septic arthritis, osteomyelitis, cellulitis, and pericarditis, mostly among children 1-59months of age (WHO/GPV 1998). The most at risk population include children with Sickle Cell disease, HIV infection, splenectomy, those on chemotherapy and other immuno-suppressants like corticosteroids. Children often carry Hib bacteria in the nose and throat without showing any signs of illness, and spread the bacteria to others through close contact, coughing, or sneezing. There is no seasonal variation.

Worldwide, Hib is a major source of morbidity and mortality accounting for 8.13 million cases with 371,000 deaths in children aged 1-59 months. Hib bacterial meningitis is fatal in approximately 43% of cases worldwide, and in approximately 67% of cases in the African Region. Ten countries,

[25]Yellow Fever Stockpile Investment Case: Submitted by Yellow Fever Task Force to GAVI.
[26]Report of yellow fever risk assessment
[27]Onyemelukwe N F, East African Medical Journal, 1994.

all in Asia and Africa, account for an estimated 61% of childhood Hib deaths of which Nigeria ranks 6th.

The WHO disease burden estimates for the year 2000 reports the incidence of Hib disease was that 1,775 per 100, 000 children under five years of age compared to our immediate neighbour Niger Republic with an incidence of 2450/100,000 (See figure 6). The report further indicates that in Nigeria, Hib caused 391,724 illnesses in children under-five years of which pneumonia and meningitis accounted for 379,408 and 16,677 cases, respectively (WHO 2009). The Hib organism is estimated to have caused 33,912 deaths in Nigeria, making the country second only to India with the highest fatality at 72,000 deaths. Of these deaths, 26,455 (78%) are due to pneumonia, and 7,431 (22%) due to meningitis[28].

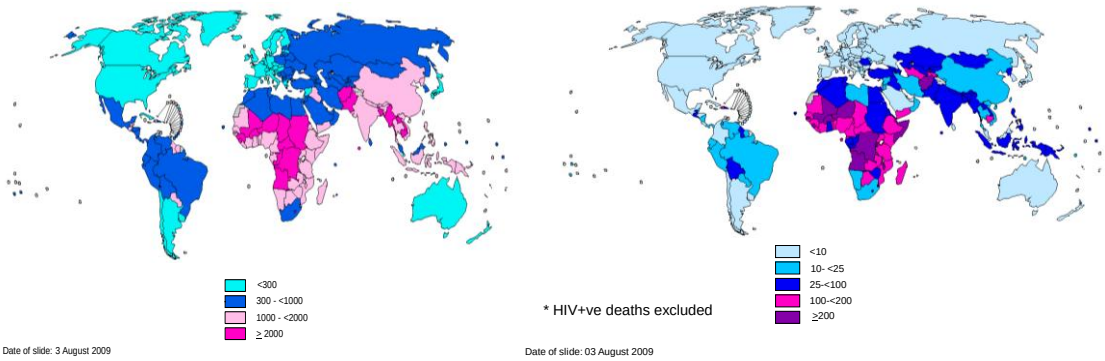
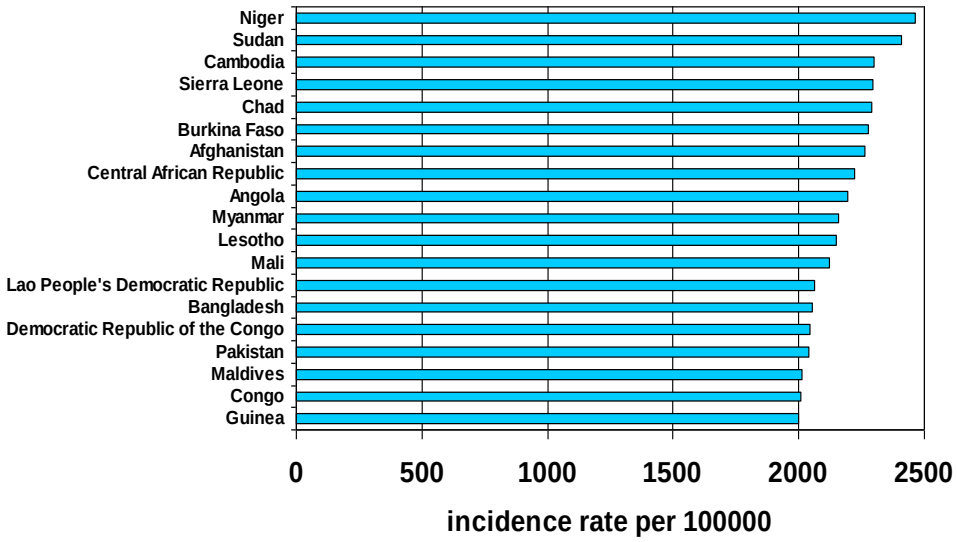


Figure 17: Hib incidence and fatality rates per 100,000 children under five years of age, 2000



Data Source: WHO/IVB, December 2009

Figure 18: Countries with highest Hib incidence rate in children under five years of age , 2000

[28]The Lancet: Burden of disease caused by haemophilus influenzae type b in children less than 5 years-global estimates; James P Wat et al;vol 374 September 12, 2009.

2.7.5.2. Pneumococcal infection

Streptococuss pneumoniae infection, a leading cause of morbidity and mortality in adults and children, is responsible for 1.6 million annual global deaths from pneumonia, meningitis and sepsis (Lancet 2009). In 2000, it caused an estimated 14.5 million illnesses and 735,000 deaths in children less than five years globally (WHO 2011). The majority of these children are from developing countries in Africa, Asia and Latin America. In general, the actual disease burden is difficult to measure and often underestimated especially in developing countries where challenges exist with establishing the bacterial etiology of pneumonia and other infections due to sub-optimal laboratory capacity, prior antibiotic misuse, etc. At risk populations include children with sickle cell disease, splenectomy, HIV infection, those on chemotherapy and other immuno-suppressants like corticosteroids.

In Nigeria, there were an estimated 756,796 cases of pneumococcal disease in children less than five years in 2000; of these, 696,861 cases were pneumonia (3157 per 100,000) and 10,062 cases were meningitis (46 per 100,000). In the same year, there were 85,717 estimated deaths from pneumococcal disease in these children. Respectively, 10.8% and 78.1% of children who had pneumonia and meningitis die. Overall, there were 49,873 cases of non-pneumonia, non-meningitis invasive disease with 2221 deaths.

In response to the enormous burden from the disease, the WHO position paper on pneumococcal infection and vaccines, recommends pneumococcal vaccines a priority for national immunization programmes especially in countries where under-five mortality rate is higher than 50/1000 live births or more than 50,000 children die annually.

In The Gambia and South Africa, the pneumococcal conjugate vaccine (PCV) demonstrated good safety, immunogenicity and non-interference with other routine EPI vaccinations. The Gambian study showed an overall 15 percent reduction in hospital admissions from pneumococcal disease from 2000 to 2004[29].

Based on WHO-UNICEF Global Disease Burden estimates and the Kenya and Gambia Hib vaccine efficacy studies, a cumulative estimate of 80,000 deaths from 2012 to 2015 will be averted from introducing the Hib component of the penta-valent vaccine in a phased manner from 2012 (see annex). By 2015, Hib vaccine would be averting around 30,000 deaths per year. Similarly, a cumulative estimate of 76,000 deaths will be averted from introducing pneumococcal vaccines in 2013. Penta-valent and pneumococcal vaccines will jointly avert more than 150,000 deaths by 2015, with significant impact on the under-5 mortality rate.

A cost effectiveness study of PCV vaccination in Pakistan showed the average cost of outpatient treatment of childhood pneumonia is US$13.44. For hospitalized care, the average cost rises to US$71 per episode; S$235 for severe pneumonia; and US$2,043 for meningitis.

[29] Cutts FT, Zaman SM, Enwere G, et al. Efficacy of nine-valent pneumococcal conjugate vaccine against pneumonia and invasive pneumococcal disease Gambia: Randomised, double blind, placebo controlled trial lancet 2005:365(9465):1139-1146

2.8 Disease Surveillance

2.8.1 IDSR in Nigeria

Nigeria, along with other member nations at the regional committee meeting in Harare in 1998 endorsed the Integrated Disease Surveillance and Response strategy (IDSR) as a means of strengthening communicable disease surveillance and making it more sensitive at all levels. IDSR implementation started in June 2000 with an orientation workshop held to sensitize National Programme Managers of vertical programmes and partners on IDSR. This was followed by an assessment of the surveillance system by a steering committee in 2001, with the aim of obtaining baseline information on existing disease surveillance system in the country. This was done with a view to secure consensus on a list of priority diseases. It was also aimed at identifying the strengths, weaknesses and opportunities for the integration of surveillance activities at all levels.

IDSR is an integral part of the overall National Health Management Information System (NHMIS). Currently NHMIS expects bi-annual returns from states, whereas disease surveillance returns are rendered monthly and weekly for epidemic-prone diseases. Data on disease surveillance is fed back into the NHMIS system for effective health planning.

The IDSR guidelines have been adapted for use in Nigeria and training was conducted in some States in 2003 and completed in others by 2005. Subsequent rounds of IDSR training for surveillance officers and immunization program managers were conducted nationally in March 2009 and May 2011.

The initial IDSR guidelines listed twenty-one diseases for reporting under the integrated surveillance system. In 2008 a comprehensive review of the integrated reporting system for diseases was done and the list was increased to forty diseases for reporting under the IDSR. This list includes communicable diseases, non-communicable diseases and accidents. Implementation of the IDSR will utilize case-based and laboratory-based surveillance strategies that are highly capital intensive. Transport costs will be incurred on active disease surveillance and for transportation of laboratory samples. These are significantly contributory to the 12-fold increase in disease surveillance costs from US$1.4 million in the baseline year (2008) to an estimated US$17 million in 2011.

2.8.2 AFP Surveillance

Nigeria has maintained highly sensitive surveillance systems for acute flaccid paralysis (AFP) with detection rates above 2 per 100,000 nationally and stool adequacy of over 80% since 2001. Thus AFP surveillance has remained above certification level for the past ten years. The AFP surveillance network is made up of Disease Surveillance and Notification Officers (DSNOs) in all the 774 LGAs in the country with State Epidemiologists at the State level. The Epidemiologists and DSNOs are supported by WHO Surveillance Officers. The network has laboratory support from two national laboratories at the University College Hospital (UCH), Ibadan and the University of Maiduguri Teaching Hospital (UMTH), Maiduguri; one reference laboratory (UCH, Ibadan) in the country and a specialized laboratory in Atlanta USA.

The AFP surveillance system enjoys a lot of support from WHO in Nigeria as part of the support for the Polio Eradication Initiative in Nigeria.

Table 11: AFP Surveillance Indicators 2000-2010

AFP Surveillance Indicators 2000 – 2010				
Year	**AFP**	**% of AFP Adequate Stool**	**Non-Polio AFP Rate**	**Non-Polio Entero-virus Rate**
2000	981	97	2	4
2001	1942	96	3.9	9
2002	3005	98	6.1	15
2003	3322	98	6.7	13
2004	4814	91	6.72	15
2005	4836	85	6.08	15
2006	5165	87	6.71	16
2007	4277	92	4.79	20
2008	5537	92	6.7	20
2009	5501	93	7.1	24
2010	5999	94	7.7	14

2.8.3 Measles Surveillance

Measles surveillance is part of the IDSR system, however following the Accelerated Measles Control (AMC) campaign in Nigeria, measles case-based surveillance with laboratory support was introduced. The measles case-based surveillance uses the same surveillance structure as the AFP surveillance with support of 4 national laboratories located in Kaduna, Gombe, FCT and Lagos.

The performance of the case-based surveillance has improved rapidly since its commencement in 2006 and most of the indicators for measles case-based surveillance are met both at national and sub-national levels.

2.8.4 Yellow Fever Surveillance

In 2008, a risk assessment survey was conducted in 26 States of the country to obtain information on Yellow fever disease burden using exposure and susceptibility indicators.[12] Epidemiological and laboratory records as well entomological survey records were employed to select the States/LGAs.

The result of the findings classified the LGAs assessed into 5 levels of YF vulnerability. Based on this 506 LGAs were classified as high risk for YF involving a targeted 101,298,992 Nigerians at risks. Since then, YF became one of the important diseases for case-based surveillance and the indicators for surveillance have been improving gradually.

2.8.5 Neonatal Tetanus (NNT) surveillance

One of the key strategies for the elimination of maternal and neonatal tetanus is strong case-based surveillance for neonatal tetanus. The country commenced serious efforts towards case-based surveillance for neonatal tetanus in 2008 using the AFP and Measles surveillance structure. However there is still a high level of under-reporting of cases.

2.8.6 Invasive Bacterial Diseases Surveillance

Following the indication by Nigeria of her intention to introduce new vaccines into the national schedule, a rapid survey was commissioned to identify key institutions with capacity to carry out surveillance for invasive bacterial diseases. This survey identified several institutions and prioritized four as suitable for sentinel surveillance for Childhood Bacterial Meningitis (CBM). Subsequently a team of WHO laboratory experts from the regional and global offices conducted in-depth assessment of three of these laboratories in 2008. The team proposed a comprehensive training for all laboratory personnel involved in these institutions. The training was conducted in Lagos University Teaching Hospital (LUTH) in 2010 and surveillance activities has since commenced.

2.9 Advocacy and Communication

A National Integrated Communication and Social Mobilization Strategy for Immunization is in place to serve as an operational reference material for Program Officers and training institutions at all levels. This evidence-based, community oriented and user-friendly document harmonizes the various policies, strategies and guidelines governing the implementation of social mobilization and communication programmes for Routine and Supplemental Immunization at the different levels. Responsibilities for mobilization and communication are discharged at the national level by the Social Mobilization Working Group (NSMWG) under the ICC and at state and LGA levels by the respective social mobilization committees. At the Ward/Village level, responsibilities for mobilization and communication lie with the Ward/Village Development Committees (W/VDC) and efforts are underway to reactivate their involvement in PHC activities.

2.10. Integration of Immunization programme

The concept of linking immunization with other health interventions is the third strategic area of the Global Immunization and Vision Strategy (GIVS) that has been adopted into the immunization programme in Nigeria. In 2006 a broad-based committee of the then NPI and partners studied the issue of integrating immunization with other childhood survival interventions. Recommendations from this committee informed the decision to integrate other routine vaccines; Vitamin A and other nutritional supplementation; LLIN and intermittent preventive treatment (IPT) of malaria in pregnancy; and de-worming drugs into the polio eradication campaigns. These additional interventions make up the 'PLUS' in the immunization plus days (IPDs) strategy which aims to accelerate routine immunization coverage and deliver relevant interventions to meet felt health needs towards achieving the MDG4.

2.10.1. Vitamin A Supplementation

Vitamin A deficiency (VAD) is a public health problem in 95 countries throughout Asia, Africa and Latin America (WHO 2001). About 140 million pre-school children and more than 7 million pregnant women suffer from VAD disorders and over a million children and a significant number of women die needlessly each year from it. In a meta-analysis by Beaton et al (1993) it was estimated that improving vitamin A status reduces U5MR by an average of 23% and reduces

diarrhea and measles morbidity.[30] Sustained elimination of VAD as a public health problem must be a principal element of child survival interventions where the problem exists. Research also suggests that VAD may be an important factor in increasing the risk of maternal morbidity and mortality.[31]

Vitamin A supplementation is incorporated in the Country's RI schedule although coverage figures are not properly monitored. Vitamin A supplementation was introduced in the Polio Eradication Initiative in 2000 and is conducted with Polio IPDs twice a year for children 6 to 59 months of age. Biannual Vitamin A supplementation during the MNCH week scheduled for May and November every year was adopted as a policy by the National Council of Health (NCH) in 2010.

2.10.2. Distribution of Long-lasting Insecticide-treated Nets (LLINs)

The National Malaria Control programme (NMCP) has a target to distribute at least 2 LLINs in 60% of households across the country. The NMCP and EPI programmes coordinate to ensure efficient distribution of LLINs during IPDs. This coordination is increasingly devolved at State level during vaccination campaigns. In addition, LLINs are also given to children who have completed their DPT3 schedule during routine immunization in some states in the country.

[30]Meta-analysis, Beaton et-al 1993.Effective of VAS in control of young Children morbidity and mortality in Developing countries, WHO Geneva ACC/SSN Nutrition policy discussion paper P 13.
[31]Sommer et-al 25 years of progress in controlling VAD: Looking to the Future. J. Nutr. 132: 9S Sept. 2002

Table 12: Strengths and weaknesses of EPI by system components

SYSTEM COMPONENT	STRENGTHS	WEAKNESSES
Vaccine supply and quality	**<u>Procurement and distribution</u>** ▪ Timely forecast and procurement of vaccines and injection safety materials through UNICEF ▪ Government of Nigeria paying 100% for traditional vaccines as well as HBV. ▪ Release of funds for 1st quarter of subsequent year together with fund for 4h quarter vaccine of current year to prevent stock out due to budget delays ▪ Inclusion of vaccine procurement budget in the recurrent expenditure budget line to facilitate release. ▪ Quarterly distribution plan from national to Zones established ▪ Bundling concept for vaccine adequately practiced in the country ▪ Stock control system for vaccines and other EPI logistics fully functional at national level and zonal level. **<u>Vaccine management</u>** ▪ Tools for stock control available at all levels. ▪ Vaccine wastage monitoring for all vaccines included in the monthly returns form. - National Regulatory Authority (NRA) in place and functioning. - Manufacturer certification and vaccine testing before distribution to the periphery - Vaccine potency testing for different levels is regularly carried out. - Regular training of cold chain officers to improve capacity	- LGA level data not used for forecasting vaccines and other logistics. - Poor documentation on vaccine usage at the LGA and sub-LGA levels - Constrained transport situation especially at LGA and service delivery levels. - Inconsistent monitoring of temperature at LGA levels - AEFI monitoring not done by NAFDAC - Capacity of CC officers at Periphery quite low
Logistics	**<u>Cold Chain</u>** - Good network of cold chain system from National through the zone to States and LGA level - Massive improvement of cold chain equipment between 2006 -2010 by both government and partners.	- Lack of maintenance plan for CC equipment at all levels - Irregular cold chain maintenance at all levels. - Irregular power at LGA and lower levels - Inadequate supply of spare parts especially for

SYSTEM COMPONENT	STRENGTHS	WEAKNESSES
	- On-going plan to improve cold chain to meet new vaccines introduction - Logistic teams available at all levels **<u>Injection safety and waste management</u>** ▪ Policy, standards and guidelines on injection safety and waste management ▪ All health facilities (100%) are using AD syringes for immunizations ▪ Plans are advanced to use AD syringes in all health care service delivery in the country	solar powered refrigerators. - Inadequate number of solar for all Health facilities - Poor use of safety boxes and pits at the health facilities. - Poor implementation of injection safety and waste management at service delivery level - The available incinerators are not sufficient for the service delivery areas. - Inadequate monitoring of safe injection practices
Service delivery	▪ Improving number of fixed and outreach immunization sites ▪ Steady increase in the coverage performance since 2005. ▪ Massive training of service providers in many states ▪ Reduction in morbidity and mortality due to VPDs especially measles, ▪ Integration of EPI with other child survival strategies e.g. Vit A supplementation, deworming, growth monitoring through strategies during RI sessions, CHW and IPDs	- National coverage still low (74%) - 37% (290/774) of the LGAs have DPT3 coverage less than 80% in 2010. - High attrition rate and inadequate skills among health workers at service delivery level - Minimal involvement of the private sector and community in planning and implementation of services especially outreaches. - Poor quality of data - Poor utilization of data for decision making
Advocacy and communication	- Development of integrated communication strategic plan - Involvement of traditional leaders forum in community mobilization - Formation of mobilization committees SMC, WDC and VDC - High level of political involvement - Assigned Personnel for communication at national and state levels - Mass media activities to promote immunization - Production and distribution of IEC materials	- Inadequate interpersonal communication (IPC) skills among health workers - Inadequate use audio-visual equipment including film vans. - Poor community involvement in planning immunization services.

SYSTEM COMPONENT	STRENGTHS	WEAKNESSES
Surveillance	- Good surveillance network country-wide with laboratory support - Case-based Surveillance for AFP, measles, NNT and yellow fever in place - Paediatric Bacterial Meningitis (PBM), surveillance has started in readiness for the new vaccines introduction. - Integrated Disease Surveillance and response (IDSR) framework in place - Very good performance indicators for AFP and Measles case based surveillance at all levels - Availability of all guidelines for IDSR and case-based surveillance for AFP, Measles. - Case definitions for all IDSR diseases available	- Case-based surveillance indicators for NNT and YF need to improve. - Active Case search weak in some LGAs and States. - Community surveillance is still weak.
Programme management	***Policy, planning and management*** - EPI policy updated - Structures for partner coordination are in place: ERC, ICC, NCC, technical committees with strong collaboration with partners - Review meetings held at State and LGA levels - Availability of many partners supporting RI in the State REW guide available at all levels ***Supervision and Monitoring*** - Supervision plan and checklist at national State& LGA levels - Availability of supervision guidelines - Availability of document to guide data management and monitoring. - Feedback provided to all levels on a regular basis - Technical assistance provided by partners for specific areas.	- Strong managerial skills at the LGA level lacking - REW implementation still weak in many LGAs - Copies of EPI policy, standards, guidelines and work plans are not available at all levels - Poor coordination of partners at LGA level. - LGAs not implementing all planned activities - Irregular technical support supervision especially from State to LGAs and from LGAs to health facilities
Strengthening human and institutional resources	- Basic Human Resource structureat the implementation level - National level trainers for MLM trained - Zonal level MLM training done	- Required staff not attained at LGA and health facility levels - Staff capacity quite deficient in many states - Regular update training plan at peripheral level absent

SYSTEM COMPONENT	STRENGTHS	WEAKNESSES
Sustainable financing	- Contribution to the programme costs by GoN has been increased steadily in last few years - Funds available for programme costs to further improve with passage of Health bill that provide 2% of national budget for PHC - Government consistent funding for vaccines	- Delays in disbursement of funds to the LGAs. - Delayed accountability of funds advanced for implementation of activities at all levels.
Accelerated Disease Control	***Polio Eradication*** - Increasing trends in OPV3 coverage at national level **<u>Measles Control</u>** - Measles coverage at national level is below 90%. - Following the under-15 campaigns measles catch up campaign in 2005/6 ,follow up in 2008 and 2011confirmed cases of measles have reduced drasticallyCase based measles surveillance is very sensitive nationwide.	- OPV3 coverage although increasing is stilllow (69% in 2010) - Sporadic outbreaks of measles still be reported especially in the northern zones - Declining trends of the non-polio AFP rate in some Zones. - National TT2+ coverage among pregnant women still much less than 80%. - Documentation of TT coverage results still a challenge

3. National Priorities

After a thorough situation analysis the FGN supported by Partners have identified the following priority areas :

- Improving Immunization coverage.
- To interrupt wild polio virus transmission
- Sustaining availability of bundled vaccines at service delivery sites
- Sustaining and expanding Cold chain system at all levels
- Strengthening Health Management Information System (HMIS)
- To introduce new vaccines into the national immunization schedule
- Measles Morbidity and Mortality Reduction
- Strengthening PHC System
- Maternal and Neonatal tetanus elimination
- Introduction of MenAfriVacPHC
- Roles and responsibilities for Federal, State, LGA and ward levels
- Improving resources at Federal, State, LGA and Ward levels.

The objectives, milestones and goals for the above listed priority areas have been elaborated in the appendix to this document.

4 Planning Strategies and Activities for System Components

4.1. The Immunization System

4.1.1. Immunization operations

The immunization system consists of five key operational components as follows:

- **Service delivery** – covers the strategies and procedures in giving vaccinations
- **Logistics** – include delivery of vaccines and equipment to the place of use, required transportation, management of cold chain and waste disposal
- **Vaccine supply and quality** – consists of forecasting vaccine needs, procurement of vaccines, monitoring of vaccine utilization and safety procedures
- **Disease surveillance** – includes monitoring of disease incidence, laboratory testing, record keeping and reporting with the necessary feedback
- **Advocacy and communication** – covers social mobilization, advocacy, community education on immunization and programme promotion.

4.1.2. Supportive components of immunization services

The immunization operations are sustained through the following supportive components: management, sustainable financing, human and institutional resources. .

- Management includes policymaking and standard setting, planning, co-ordination, information collection and sharing, collaboration with other partners, quality assurance, monitoring and evaluation.
- Sustainable financing comprises budgeting, identifying long-term funding sources, actions leading to increased allocation of financial resources for immunization programmes.
- Strengthening human and institutional resources includes staffing, training, supervision and institutional support (including supply of technical information, support to research projects etc.).

The strategies and activities for each of these components have also been elaborated in the annexure.

5 Cost, Budget and Financing for cMYP

The period of the reviewed cMYP is 2011-2015. The implementation of any plan is dependent on adequate funding. Some of the initial steps to a successful funding of any programme lie in proper costing and cost analysis of the programme. The government at various levels working through their ministries and departments of Health bear most of the responsibilities for funding the EPI programme. However many development partners collaborate effectively in the funding of various aspects of the EPI programme.

4.1. Methodology for costing cMYP

The cMYP is a comprehensive strategic multi-year plan that seeks to include all immunization related interventions as well as those other health interventions that can be integrated with immunization activities.

Immunization operations	Supportive components of immunization Services
Service delivery	Programme management
Logistics	Sustainable financing
Vaccine supply and quality	Strengthening human and institutional resources
Disease surveillance	
Advocacy and communications	

The costing of these system components was done for inputs for each components; human resources overhead costs, vaccines, cold chain equipments, computers, office supplies, buildings and building maintenance, etc and for activities within each system components; training, fixed and outreach activities, disease Surveillance, etc.

Various methodologies were used to cost the cMYP depending on the inputs or activities:

- **Ingredient Approach:** This is based on unit cost and quantities of items to be costed for the year. Thus items like personnel emoluments, vehicles cold chain equipments etc were costed using the 'ingredient approach'.
- **Rule of Thumb:** This costing method used is based on previous practice, for instance setting aside a particular percentage of capital equipment for its maintenance.
- **Past Spending:** Here lump sum based on past expenditure for the same or similar activities for instance in the area of using cost/child in calculation of campaign costs or in building structures using past costs of similar structures.

4.2. Macro-economic Information

To appropriately situate the costing and financing of the cMYP in its proper financing framework, some basic macroeconomic information about Nigeria is presented. See table 16.

In this reviewed cMYP the country's GDP per capital is projected to grow from its current 1,452 to 1,800 in 2015. Similarly Total Health Expenditure (THE) per capital is expected to get to 95.0 from its present 85.0 while a marginal increase in Government Health Expenditure as a percentage of THE is expected from the current 22.5% to 26% by 2015[32].

The per capita cost of routine immunization (including shared health costs) is expected to increase from the projected US$1.20 in 2011 to US$2.7 in 2015. The cost of immunizing a child through

[32] WHO National Health Account

routine immunization will increase from a projected US$44.50 in 2011 to US$79.70 in 2015 with the introduction of the penta-valent and pneumococcal vaccines into the National EPI schedule.

Table 13: Basic Macroeconomic information on Nigeria

	2008	2011	2012	2013	2014	2015
	$	$	$	$	$	$
GDP per capita	675	1,452	1,547	1,645	1,722	1,800
Total health expenditures (THE) per capita	4.2	85.0	88.0	90.0	92.0	95.0
	%	%	%	%	%	%
Government health expenditures (GHE) as a % of THE	21.3%	22.5%	23.2%	24.0%	25.0%	26.0%

Source: cMYP 2011 – 2015 Costing tool

4.3. Cost of Implementing Immunization Activities

Costing of various input and activities of the system components of the cMYP were done using the various methodologies outlined above. These costs were then entered into the pre-designed cMYP excel based costing tool. Below are some of the components included in the costs::

Personnel Costs (EPI/Shared Cost)

Cold Chain equipment maintenance and overhead

Vaccines and injection materials.

Operational cost of campaign

Programme management activities,

other recurrent costs and surveillance

Other equipment needs and capital costs (See table 19 for details of costs)

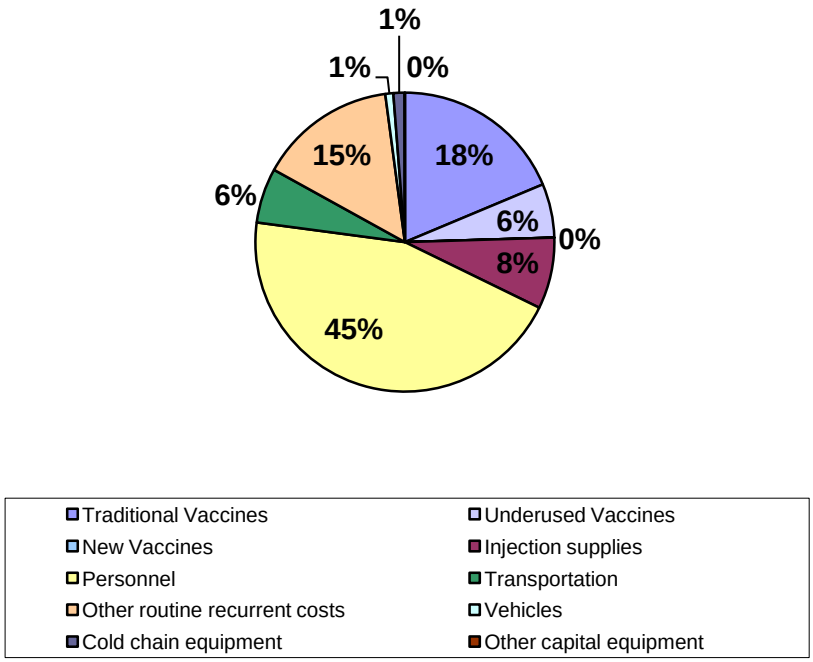


Figure 19: Baseline Cost Profile (Routine Only)

Figure 19 shows the baseline cost profile for routine immunization using 2008 expenditure profile. The main cost drivers for RI in Nigeria are the cost of personnel and other recurrent costs. The personnel cost is high due to the large population size of the country with a huge number of Health facilities and fairly good salary and conditions of service for health personnel.

4.3.1. Costs of Implementing Immunization activities during period of cMYP

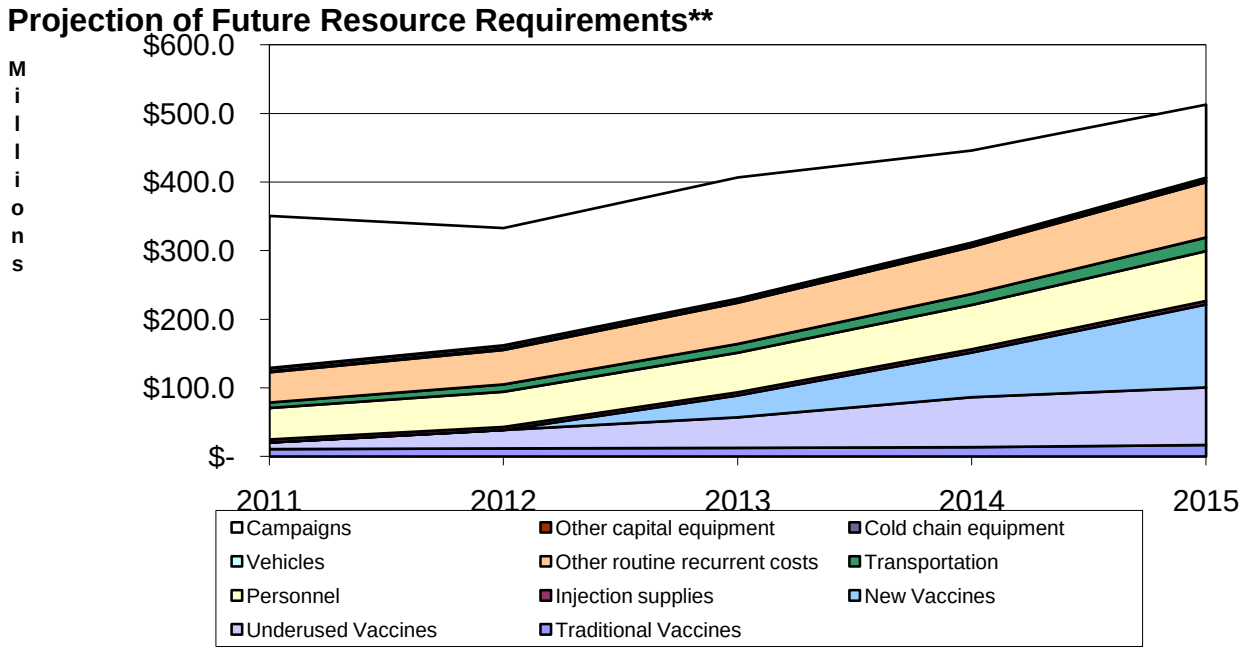


Figure 20: Projection of Future resource requirement cMYP 2011-2015

The total cost of the Immunization programme for five years (2011 – 2015) is $2,429,726,961. Vaccines and injection supplies are expected to cost USD 604,440,223 representing about 25% of total projected expenditure.

Table 14: Summary of 2008 Baseline expenditure and Future Resource Requirements for the cMYP 2011-2015 by components

		Costs	Future Cost Projections					
cMYP Component		2008	2011	2012	2013	2014	2015	Total 2011 - 2015
		US$	US$	US$	US$	US$	US$	US$
	Vaccine Supply and Logistics	$32,281,029	$34,330,142	$54,510,507	$106,022,623	$169,024,385	$240,552,566	$604,440,223
	Service Delivery	$46,212,812	$53,823,970	$62,008,572	$70,529,312	$80,703,687	$92,480,454	$359,545,995
	Advocacy and Communication	$4,668,356	$5,008,176	$5,346,394	$5,283,805	$5,688,946	$6,455,653	$27,782,974
	Monitoring and Disease Surveillance	$1,477,464	$17,298,999	$19,289,423	$23,215,964	$26,721,972	$31,607,980	$118,134,338
	Programme Management	$6,320,909	$18,686,868	$21,041,436	$25,129,140	$29,841,460	$35,478,453	$130,177,356
	Supplemental Immunization Activities	$132,069,229	$221,694,381	$170,925,906	$176,745,091	$134,211,818	$106,494,321	$810,071,517
	Shared Health Systems Costs	$55,311,082	$61,216,561	$67,715,841	$75,082,805	$83,181,892	$92,377,457	$379,574,556
GRAND TOTAL		$278,340,882	$412,059,097	$400,838,080	$482,008,740	$529,374,159	$605,446,884	$2,429,726,961

Campaign cost (SIA cost) represents about a third of the total budget (33.3%). This component is high because of the multiple polio SIAs organized in Nigeria annually that are expected to continue for some time. In addition, Measles SIAs are conducted every 2 – 3 years. Other planned campaigns during the period are a TT campaign towards MNTE and MenAfrivac campaigns commencing at the last quarter of 2011 for a three year period.

An emerging major cost component which starts in 2012 is the costs of new and under-utilized vaccines. This follows the countries intention to introduce new and under-utilized vaccines in a phased manner from 2012, and the cost of purchase of vaccines will form a major part of immunization costs in an increasing manner in Nigeria.

As part of the country's push to fully implement the Reach Every ward (REW) approach, the number and frequency of fixed and outreach sessions is going to increase and this contributes significantly to the service delivery component of the immunization cost in Nigeria.

The EPI programme is integrated with other PHC activities especially at the service delivery level where the health worker conducting immunization activities is also be responsible for carrying out all other activities in PHC. Personnel costs and allowances will therefore constitute shared health costs that will not be unilaterally borne by the EPI programme. Other shared health costs include those for equipments, vehicles and PHC buildings. This integration, notwithstanding, the EPI contribution to shared health cost is expected to increase steadily between 2011 and 2015 in anticipation of the introduction of new vaccines and other significant investments in cold chain replacement and rehabilitation.

Based on the costing of the various inputs and activities, a summary table of the costs for each Immunization system component is reproduced below.

Table 15: Summary of 2008 Baseline expenditure and Future Resource Requirements for the cMYP 2011-2015

		Costs	Future Cost Projections					
Routine Recurrent Costs		US$	US$	US$	US$	US$	US$	US$
	Vaccines (routine vaccines only)	$22,300,000	$20,492,533	$38,730,096	$89,089,394	$151,714,226	$221,788,754	$521,815,003
	Traditional	$17,000,000	$10,857,910	$11,864,624	$12,640,756	$13,693,712	$16,827,305	$65,884,307
	Underused	$5,300,000	$9,634,623	$26,865,472	$44,565,992	$72,831,279	$83,929,385	$237,826,751
	New				$31,882,646	$65,189,235	$121,032,064	$218,103,945
	Injection supplies	$7,014,302	$4,424,806	$4,424,806	$4,583,914	$4,767,954	$5,135,521	$23,337,001
	Personnel	$40,820,643	$45,875,777	$51,364,048	$57,726,880	$64,630,791	$72,636,670	$292,234,167
	Salaries of full-time NIP health workers (immun	$8,763,514	$9,854,731	$11,064,924	$12,441,428	$13,968,134	$15,704,231	$63,033,449
	Per-diems for outreach vaccinators/mobile tear	$18,433,846	$20,616,927	$23,008,490	$25,739,345	$28,725,109	$32,139,071	$130,228,942
	Per-diems for supervision and monitoring	$13,623,282	$15,404,119	$17,290,634	$19,546,107	$21,937,548	$24,793,368	$98,971,776
	Transportation	$5,392,169	$7,948,193	$10,644,524	$12,802,432	$16,072,896	$19,843,784	$67,311,828
	Fix site strategy (incl. vaccine distribution)	$2,995,650	$4,415,663	$5,913,624	$7,112,462	$8,929,387	$11,024,324	$37,395,460
	Outreach strategy	$1,797,390	$2,649,398	$3,548,175	$4,267,477	$5,357,632	$6,614,595	$22,437,276
	Mobile strategy	$599,130	$883,133	$1,182,725	$1,422,492	$1,785,877	$2,204,865	$7,479,092
	Maintenance and overhead	$5,086,227	$7,615,098	$9,630,595	$12,099,675	$12,704,403	$14,123,701	$56,173,472
	Cold chain maintenance and overheads	$1,002,947	$1,323,814	$1,301,565	$1,438,989	$776,601	$779,833	$5,620,802
	Maintenance of other capital equipment	$51,280	$1,775,444	$3,271,290	$4,996,016	$5,583,372	$6,238,106	$21,864,228
	Building overheads (electricity, water…)	$4,032,000	$4,515,840	$5,057,741	$5,664,670	$6,344,430	$7,105,762	$28,688,442
	Short-term training	$1,675,310	$1,930,870	$2,270,906	$2,642,734	$3,017,214	$3,608,182	$13,469,905
	IEC/social mobilization	$4,668,356	$5,008,176	$5,346,394	$5,283,805	$5,688,946	$6,455,653	$27,782,974
	Disease surveillance	$1,477,464	$17,298,999	$19,289,423	$23,215,964	$26,721,972	$31,607,980	$118,134,338
	Programme management	$613,599	$12,240,158	$13,712,789	$16,821,737	$20,479,816	$24,764,509	$88,019,009
	Other routine recurrent costs							
	Subtotal	**$89,048,071**	**$122,834,610**	**$155,413,582**	**$224,266,535**	**$305,798,217**	**$399,964,755**	**$1,208,277,698**
Routine Capital Costs								
	Vehicles	$788,900	$1,350,472	$1,866,067	$1,208,793	$1,569,495	$1,997,615	$7,992,442
	Cold chain equipment	$1,112,400	$4,516,048	$4,469,659	$4,258,492	$4,165,712	$4,165,712	$21,575,623
	Other capital equipment	$11,200	$447,025	$447,025	$447,025	$447,025	$447,025	$2,235,125
	Subtotal	**$1,912,500**	**$6,313,545**	**$6,782,751**	**$5,914,310**	**$6,182,232**	**$6,610,352**	**$31,803,190**
Campaign Costs								
	Ex: Polio (Specify Campaign in Table 0.0)	$102,600,970	$128,048,255	$139,228,775	$151,070,010	$100,929,721	$106,494,321	$625,771,082
	Vaccines and Injection Supplies	$36,170,763	$41,898,245	$48,427,587	$55,974,569	$3,195,131	$3,692,868	$153,188,400
	Operational costs	$66,430,207	$86,150,010	$90,801,188	$95,095,441	$97,734,590	$102,801,453	$472,582,682
	Ex: Measles (Specify Campaign in Table 0.0)	$29,468,260	$43,297,814			$33,282,097		$76,579,911
	Vaccines and Injection Supplies	$12,534,799	$14,060,000			$16,348,636		$30,408,636
	Operational costs	$16,933,461	$29,237,814			$16,933,461		$46,171,275
	Ex: TT Campaign (Specify Campaign in Table 1.0)		$2,935,836	$3,433,087				$6,368,923
	Vaccines and Injection Supplies		$152,119	$231,812				$383,931
	Operational costs		$2,783,717	$3,201,275				$5,984,992
	Ex: Meningitis A Campaign (Campaign in Table 1.0		$47,412,476	$28,264,044	$25,675,081			$101,351,601
	Vaccines and Injection Supplies		$31,605,951	$17,315,341	$15,693,938			$64,615,230
	Operational costs		$15,806,525	$10,948,703	$9,981,143			$36,736,371
	Specify Campaign in Table 0.0							
	Vaccines and Injection Supplies							
	Operational costs							
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	Vaccines and Injection Supplies							
	Operational costs							
	Subtotal	**$132,069,229**	**$221,694,381**	**$170,925,906**	**$176,745,091**	**$134,211,818**	**$106,494,321**	**$810,071,517**
Shared Health Systems Costs								
	Shared personnel costs	$44,681,719	$50,003,438	$55,862,741	$62,527,042	$69,853,542	$78,198,492	$316,445,256
	Shared transportation costs	$6,917,629	$7,055,981	$7,197,101	$7,341,043	$7,487,864	$7,637,621	$36,719,611
	Construction of new buildings	$3,711,734	$4,157,142	$4,655,999	$5,214,719	$5,840,485	$6,541,344	$26,409,689
	Subtotal	**$55,311,082**	**$61,216,561**	**$67,715,841**	**$75,082,805**	**$83,181,892**	**$92,377,457**	**$379,574,556**
GRAND TOTAL		**$278,340,882**	**$412,059,097**	**$400,838,080**	**$482,008,740**	**$529,374,159**	**$605,446,884**	**$2,429,726,961**
	Routine Immunization	**$146,271,652**	**$190,364,716**	**$229,912,174**	**$305,263,649**	**$395,162,341**	**$498,952,563**	**$1,619,655,444**
	Supplemental Immunization Activities	**$132,069,229**	**$221,694,381**	**$170,925,906**	**$176,745,091**	**$134,211,818**	**$106,494,321**	**$810,071,517**

The total routine immunization cost for vaccines and injection supplies for the five-year period is 604,440,223. As expected, a significant increase in vaccine cost is expected from 2012 when the phased introduction of penta-valent vaccine is commenced. The cost of vaccines in 2011 is 8.337%, which increases to about 40% in 2015 when the two new vaccines have been introduced into the schedule.

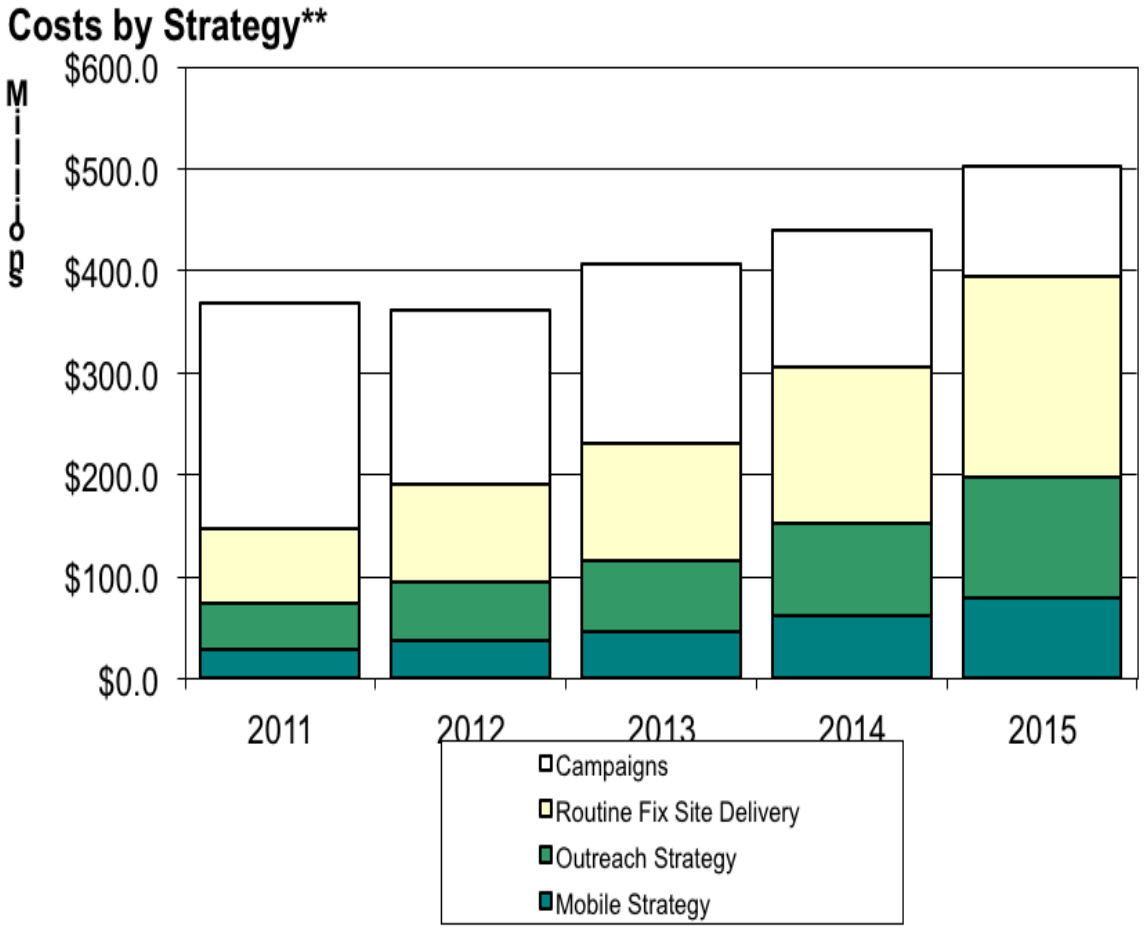

Figure 21: Cost by Immunization Strategy

The main delivery strategy for routine immunization in Nigeria is the fixed site strategy which is complemented by outreach and mobile strategy. Supplemental campaigns are used to drive the polio programme. The cost for these campaigns is expected to decrease as the polio eradication efforts achieve successful results.

5.4 Financing the cMYP

In Nigeria, the Health sector is mainly financed by the three tiers of government. The same applies to the routine immunization programme, where the major cost drivers are personnel and capital costs. Development partners (GAVI, EU, UNICEF, WHO, and bilateral partners) and to a small extent the private sector are contributing additional funding for strategic investments in activities that help the immunization program in Nigeria improve and grow.

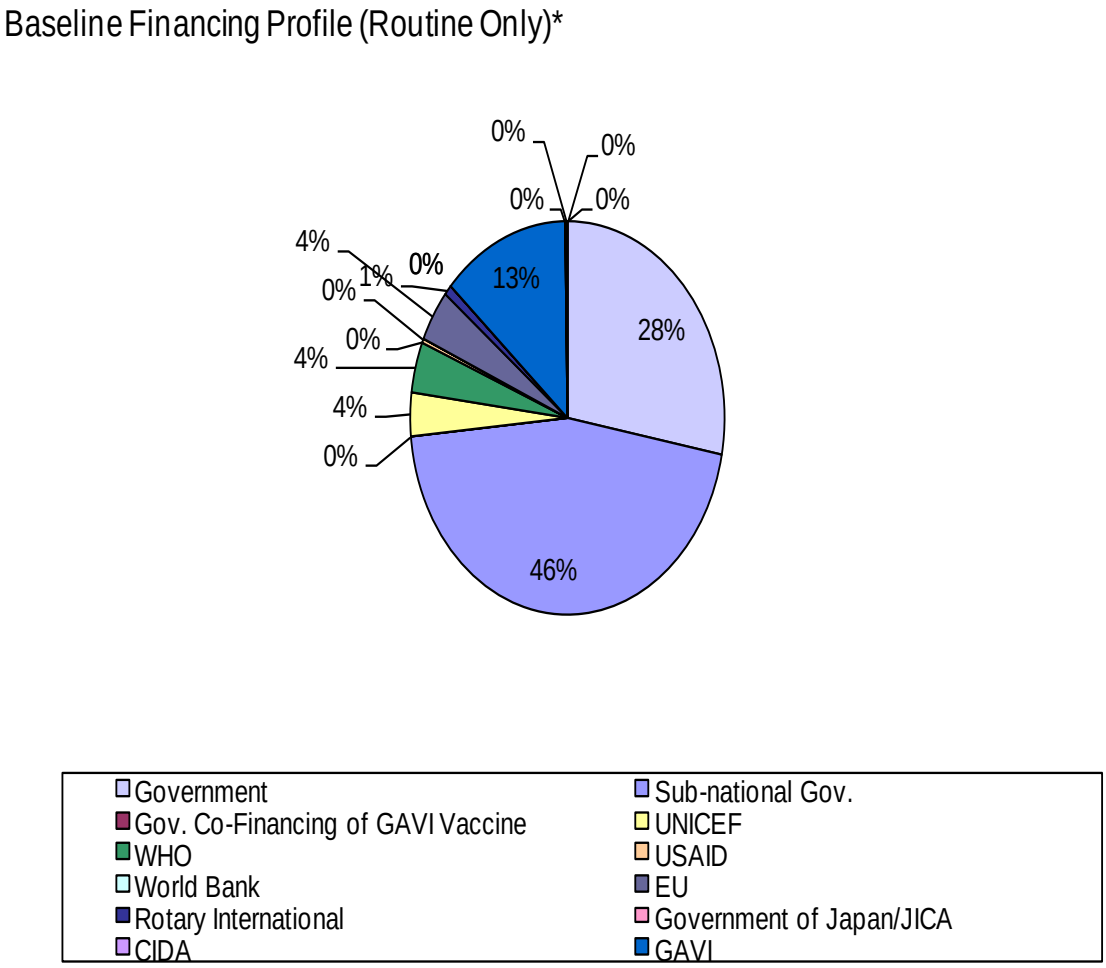

Figure 22: Summary of base line financing of Nigeria Immunization programme 2008

Financing of the programme in 2011-2015 will continue to depend on the government at national and sub national level. If GAVI agrees to co-finance new vaccines for Nigeria allowing the country to introduce penta-valent and pneumococcal vaccines into the routine immunization schedule, GAVI will begin to occupy a more prominent role in funding Immunization activities in Nigeria. Other development partners (traditional and new) are expected to continue to provide significant resources especially for actual service delivery in the immunization sector as they have showed a strong commitment to continue the funding assistance for the country's immunization programme.

Future Secure + Probable Financing and Gaps*

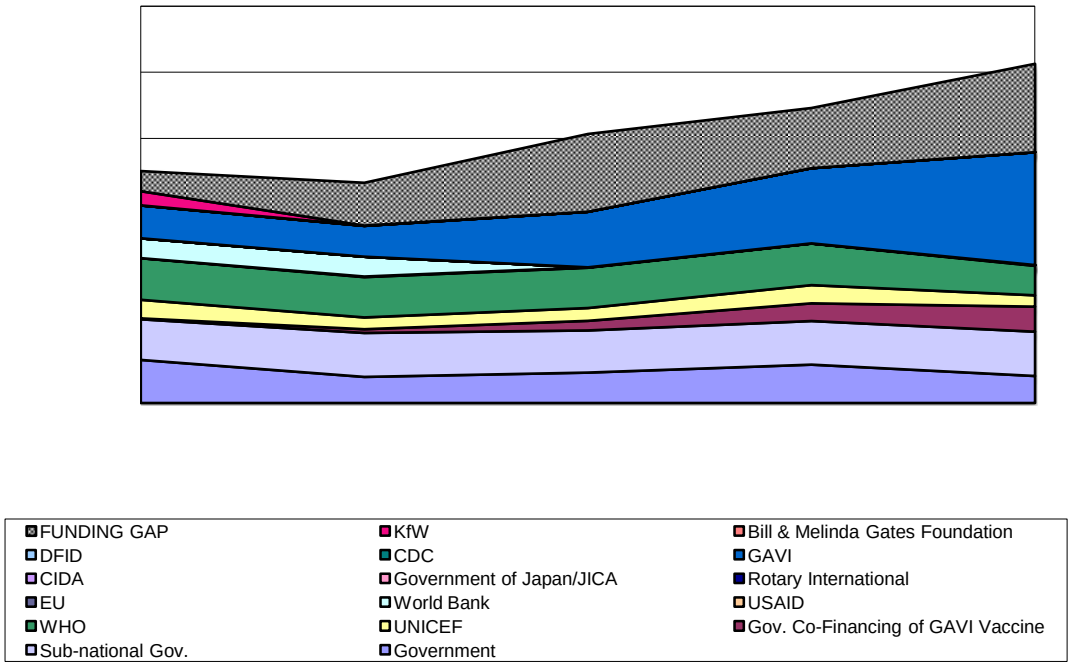

Figure 23: Future secured plus Probable Financing and Gaps

Future Secure Financing and Gaps**

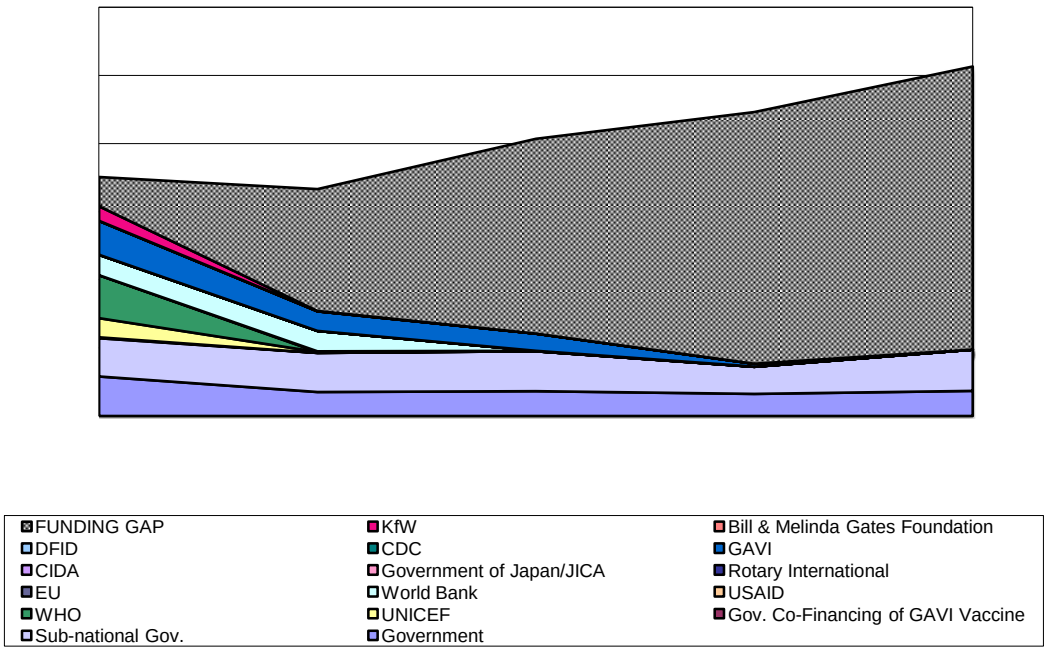

Figure 24: Secured Financing and Gaps

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Table 16: Profile of the funding sources for Routine Immunization programme in Nigeria

c	2011	2012	2013	2014	2015	Avg. 2011 - 2015
Total Resource Requirements	**$350,842,536**	**$333,122,238**	**$406,925,936**	**$446,192,267**	**$513,069,427**	**$2,050,152,405**
Total Resource Requirements (Routine only)	**$129,148,155**	**$162,196,332**	**$230,180,845**	**$311,980,450**	**$406,575,106**	**$1,240,080,888**
per capita	$0.8	$1.0	$1.3	$1.7	$2.2	$1.4
per DTP targeted child	$30.2	$34.1	$44.8	$55.4	$64.9	$47.6
Total Secured Financing	**$307,897,699**	**$154,184,087**	**$120,988,665**	**$76,740,880**	**$97,521,469**	**$757,332,799**
Government	$58,024,484	$35,238,507	$36,450,077	$32,468,358	$36,859,346	$199,040,772
Sub-national Gov.	$56,180,741	$57,408,942	$58,638,103	$39,788,873	$60,662,123	$272,678,782
Gov. Co-Financing of GAVI Vaccine	$1,348,763					$1,348,763
UNICEF	$28,118,621	$1,416,907				$29,535,528
WHO	$62,933,403					$62,933,403
USAID	$79,677	$896,884	$623,690	$273,194		$1,873,445
World Bank	$30,000,000	$30,000,000				$60,000,000
EU						
Rotary International						
Government of Japan/JICA						
CIDA						
GAVI	$49,712,894	$28,770,377	$25,276,795	$4,210,455		$107,970,521
CDC						
DFID	$141,499					$141,499
Bill & Melinda Gates Foundation		$452,471				$452,471
KfW	$21,357,615					$21,357,615
Funding Gap (with secured funds only)	**$42,944,837**	**$178,938,152**	**$285,937,271**	**$369,451,388**	**$415,547,958**	**$1,292,819,606**
% of Total Needs	12%	54%	70%	83%	81%	63%
Total Probable Financing	**$12,469,290**	**$114,244,490**	**$168,307,815**	**$278,507,323**	**$281,883,849**	**$855,412,768**
Government	$7,165,623	$4,262,455	$9,597,230	$25,581,981	$4,000,000	$50,607,289
Sub-national Gov.	$5,303,667	$9,063,707	$5,103,929	$26,178,719	$6,379,309	$52,029,331
Gov. Co-Financing of GAVI Vaccine		$5,681,910	$14,524,240	$26,735,923	$37,859,205	$84,801,278
UNICEF		$16,411,081	$19,368,449	$27,555,937	$17,166,956	$80,502,422
WHO		$60,933,403	$60,933,403	$62,861,983	$44,585,691	$229,314,480
USAID					$896,884	$896,884
World Bank						
EU					$238,994	$238,994
Rotary International						
Government of Japan/JICA						
CIDA						
GAVI		$17,891,934	$58,780,564	$109,592,781	$170,756,810	$357,022,089
CDC						
DFID						
Bill & Melinda Gates Foundation						
KfW						
Funding Gap (with secured & probable funds)	**$30,475,547**	**$64,693,662**	**$117,629,456**	**$90,944,064**	**$133,664,109**	**$437,406,838**
% of Total Needs	9%	19%	29%	20%	26%	21%

5.5 FUNDING GAPS

Table 20 shows there are still gaps in the funding requirements for the immunization programme, mainly driven by campaigns and vaccine procurement, although logistics and personnel cost (supervision/outreach allowances) also contribute to the funding gap in the cMYP.

Nigeria's continuing conduct of several supplemental activities for Polio eradication requires a lot of funding as well as the planned MNTE and preventive yellow fever campaigns. The measles follow up campaigns are part of the un-funded activities leading to the funding gap.

The vaccine costs are mainly driven by the under-utilized and new vaccines to be introduced by Nigeria in 2012 and 2013. The funding gap that exists here will be bridged upon GAVI granting approval for the country's application for pentavalent and pneumococcal vaccine introduction.

The logistics gap is driven by the necessity to strengthen cold chain capacity in Nigeria as the country prepares for the introduction of new vaccines.

Personnel running costs for supervision and outreach is not always adequately budgeted for by governments at the periphery and the source of funds for these activities, especially in long term periods, is difficult to predict. This is also true for other recurrent costs in the immunization programme.

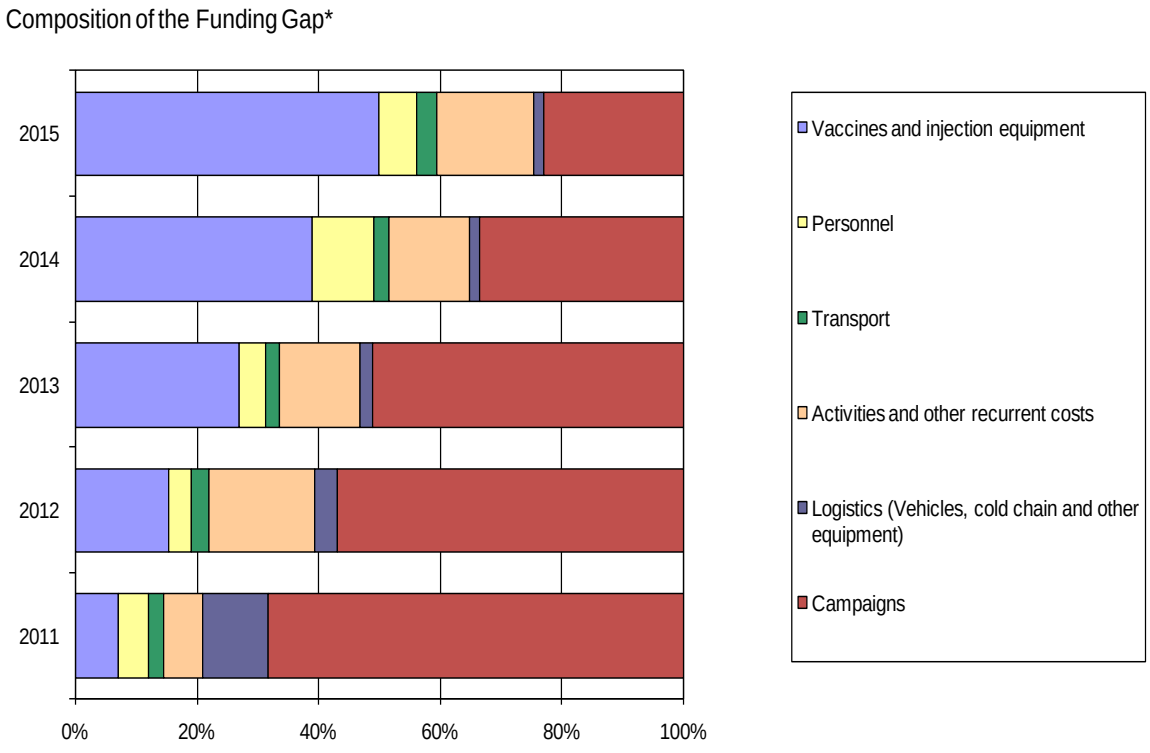


Figure 25: Composition of Funding Gap Nigeria cMYP 2011-2015

Table 17: Composition of Funding Gap (showing only Secured Funds)

Composition of the funding gap	2011	2012	2013	2014	2015	Avg. 2011 - 2015
Vaccines and injection equipment	$3,056,548	$27,490,056	$77,016,526	$144,173,762	$207,869,028	$459,605,920
Personnel	$2,179,785	$6,824,664	$12,564,333	$37,651,754	$25,961,321	$85,181,857
Transport	$1,056,396	$4,987,841	$6,837,318	$9,181,099	$13,878,670	$35,941,323
Activities and other recurrent costs	$2,696,960	$31,341,957	$37,663,601	$48,801,526	$66,042,425	$186,546,470
Logistics (Vehicles, cold chain and other equipment)	$4,673,415	$6,685,219	$5,914,310	$6,182,232	$6,610,352	$30,065,528
Campaigns	$29,281,733	$101,608,415	$145,941,183	$123,461,014	$95,186,162	$495,478,507
Total Funding Gap*	**$42,944,837**	**$178,938,152**	**$285,937,271**	**$369,451,388**	**$415,547,958**	**$1,292,819,606**

5.6 BRIDGING THE FUNDING GAP IN FINANCING

The main cost drivers in the EPI programme in Nigeria as shown in the cMYP are personnel costs, vaccine and supply costs, campaign costs and the costs for cold chain expansion/revamping.

The personnel costs are of two main categories; the personal emoluments and statutory allowances as well as the per-diems for outreach and supervision.

The personal emoluments and statutory allowances are invariably paid by Government at all levels and these funds are firmly secured for the immunization programme. In addition, per-diems for outreach and supervision are usually provided for in the government budget, although the country has in the past seen problems with adequate budgeting and timely release of these funds by the government. Fortunately, various partners' involvement in EPI in Nigeria is focused in funding this section of the budget. Thus PRRINN, IMMUNIZATIONbasics (which became TSHIP in 2009), SRIK, WHO and UNICEF have provided resources to fill these gaps in the past. In addition, part of the ISS reward funds from GAVI (approximately $32m) have been allocated to support this area for 2011-2015.

Importantly, with the passage of the National Health bill, which provides for 2% of the nation's budget to be committed to PHC, additional resources will become available to the PHC department to invest in this area.

Polio SIAs are largely responsible for the gap in campaign funding. Resource mobilization for polio eradication activities is usually done at the Global level and related figures are not currently available. This mobilization effort at global levels complements Nigeria's own funding of the Polio SIAs, which has been steady since 1999. Thus the gap contributed by Polio campaign is most likely to be filled as the campaign approaches.

Similarly measles SIAs are in part sponsored by Nigeria (50% operation cost) while the Global Measles partnership provides the remainder of funds. The Nigerian government has always met its obligations when it is time for such campaigns. Consequently the gap contributed by Measles SIA will most probably be met.

The Government is providing 50% of operational costs of the planned MenAfricVac campaign which amounts to approximately $18million.

As regards Tetanus toxoid campaigns the funds for 2009 have been fully paid for by the federal government and partners and it is expected that this will continue in subsequent years until the country is fully covered.

The government is planning to conduct a preventive campaign for Yellow fever and hopes to secure GAVI co-funding of operational cost and vaccines procurement in the next window for application provided by GAVI .

A major funding gap in the cMYP is vaccines and injection supply from 2012. This coincides with the period for new vaccine introduction by Nigeria. The costs for traditional vaccines are fully borne by the country. The country intends to use the GAVI window of opportunity to co-finance the purchase of the new and under-utilized vaccines, with a commitment of the Government of Nigeria to co-finance the new vaccines above the minimum required levels. The country's commitment to regular funding for vaccines is un-shaken and a provision has been made in the 2010 budget for the traditional vaccines as well as the country's share of co-funding of the new vaccines. Thus for all intents as purposes, government funds for vaccine procurement (traditional vaccines as well as co-financing of the new vaccines) is secured and will continue to be secured barring unforeseen circumstances. Hence, the funding gap for vaccine and supplies will be fully met when GAVI approves Nigeria's application for co-financing for the new and under-utilized vaccines.

It is envisaged that the country will be in a position to move towards full vaccine funding at the end of the co-financing arrangement with GAVI.

Nigeria plans to expand and strengthen the capacity of the cold chain at all levels to improve vaccine delivery overall and to be prepared for the introduction of new vaccines. The funding gap due to this increased investment in the cold chain will be bridged from several sources. In 2009, the EU, through its project EU-PRIME has provided funds for upgrading the cold chain in 23 States that have cold chain gaps. In addition UNICEF, with funding from the Government of Japan will meet gaps in three additional states as well as two zonal cold stores. Resource mobilization is ongoing to bridge the remaining gaps in cold chain at National, zonal, and state cold stores.

Most of the funds to complete the expansion of the cold chain at LGA and HF levels are expected from the Government at State and LGA levels. The new health bill should greatly facilitate the release of the needed funds for these upgrades. Furthermore, Governments at the peripheral levels are usually more inclined to fund cold chain equipment as it provides them political advantage with the communities and the citizens. In addition to government funding for cold chain upgrades at LGA and HF levels, the EU through its SRIK programme will upgrade LGAs and facilities in selected states and further funding is expected from UNICEF and the Government of Japan.

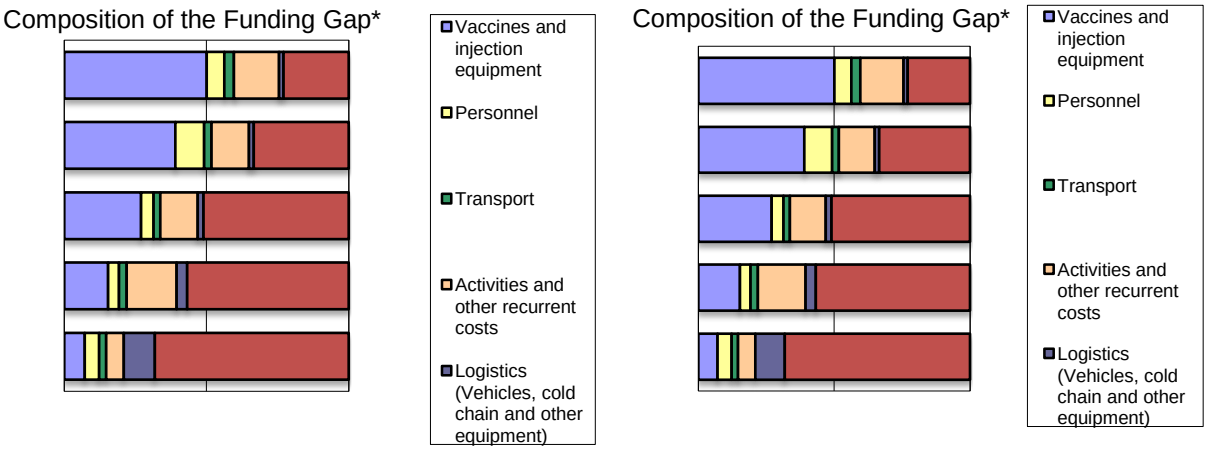


Figure 26a and 26b: Comparison of composition of Funding Gap with secured fund only and when probable fund are added

The program has an average funding gap of 21% for the period 2011-2015, mainly driven by campaigns, vaccines and personnel costs. When only secured funding is considered this increases to 64%. However, a gap of this size is unlikely based on the experience that pledged funds for the immunization program have always been committed by government and partners. In addition, the Office of the Senior Special Assistant to The President on the MDGs is a strong partner to the Immunization Program, in recognition that this intervention will contribute directly to the attainment of MDG4. In 2010, this office has provided significant funds for immunization; e.g. measles control efforts were funded to the tune of 2.2 Billion Naira, polio eradication efforts supported with -2.7 Billion Naira, cold chain expansion supported with 1.035 Billion Naira and other immunization related activites recieved 3.6 Billion Naira.

In order to address the 21% funding gap, at the federal level, additional funds will be leveraged from the debt relief grant from the MDG office in country.

Another important source of additional funding will be the proposed Primary Health Care (PHC) fund outlined in the National health bill that is currently before the National Assembly and envisaged to be passed by this year's end. The PHC fund when created will be financed from the "consolidated fund of the Federation, an amount not less than two per cent of its value"; this translates to about 600 billion naira (4 billion USD) annually. "Fifty percent of the fund shall be used for the provision of basic minimum package of health services to all citizens, in primary health care facilities" while the remaining fifty percent will be channeled through the NPHCDA to provide essential drugs; provision and maintenance of facilities, equipment and transport; and the development of Human Resources for Primary Health Care.

In addition, the country intends to explore extra budgetary mechanisms (e.g supplementary budgetting), mobilization of the private sector through the Public-Private Partnership (PPP) programme, intensified advocacy for the speedy passage of the National Health Bill,

engaging more partners , and collaborating with the national health insurance scheme in order to leverage capitation funds to finance immmunization in the long run.

In the medium term, it is expected that the government immunization budget line will be reclassified from a capital expenditure item to a recurrent expenditure item, which would further increase the security of funds for immunization activities. This reclassification becomes more crucial in the third year of the planning period as requirements for vaccines become a greater proportion of the funding gap shown in figure 25.

At state level, each State has been supported to develop a State Strategic Health Development plans akin to the National SHDP. Functional state task forces on PHC and Immunization exist in all states and the FCT and they have the important mandate to facilitate the release of operational funds for immunization activities as outlined in their respective state plans.

Finally, the 10th European Development Fund has approved 50 million Euros for RI strengthening in Nigeria.

5.7 RESOURCE MOBILIZATION

To address the funding gaps identified in the financial analysis, a number of resource mobilization activities will commence in 2011. The table 13 below itemizes these activities with timelines and milestones.

Table 18: Resource mobilization schedule of activity

S/N	Activity	Timeline	Indicator
1	Advocacy to Mr President to assent to the passed Health Bill and re-categorize vaccine budget line	Q2 of 2011	Health Bill signed into Law
2	Negotiation with NHIS for part of Capitation funds to be used for vaccine procurement	Q2 of 2011	MOU agreed upon
3	Advocacy to Governors' Forum and ALGON for continued and increased funding	Q3 of 2011	Proportion of sub-national Government contribution to the immunization budget
4	Negotiate with the Private-Public Partnership (PPP) for Immunization services package	Q2 of 2011	Number of immunization components funded
5	Pursue the release of the European Development Fund (EDF)	Immediate	EDF Funds released

6 Monitoring & Evaluation

The cMYP provides a comprehensive overview of the Immunization Programme and also provides guidance to national and sub-national levels for incorporation into their annual plans. It informs national policies in setting national targets for all immunization indicators. The monitoring for the cMYP will be done through an annual joint review by NPHCDA, partners and other stake holders. The monitoring framework will be developed with a set of relevant indicators to measure the performance of the cMYP. These indicators will be monitored and feedback will be provided to policy and programme managers. Data for measuring these indicators is collected routinely and supplemented with periodic reviews and surveys. The plan will also be assessed by the NIP through collation and analysis of routine reports from the peripheral levels.

The cMYP will also be monitored indirectly with data from periodic Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS).

In 2013, a mid-term evaluation will be organized to evaluate progress and performance in the implementation of programmes and plans and the progress towards achieving set targets and objectives.

Final evaluation of the cMYP will be done in 2015 in collaboration with key stakeholder, partners and civil society organizations.

6.1 Indicators for monitoring the cMYP

Macroeconomic Indicators

The Nigerian Government is committed to the introduction of the new vaccines to prevent suffering and death of her citizens from VPDs. The intention of the Government is to steadily include all relevant new vaccines into the routine schedule as soon as practicable. Thus the introduction of Hib in the pentavalent vaccine and PCV will act as a stepping stone to rapidly include the Rota virus vaccine as well as the HPV into the country schedule.

The country commitment to this process is demonstrated by the fact that the cost for co-financing is already in the 2011 budget under the recurrent expenditure head. The government of Nigeria is commitment to health and the EPI programme will be monitored using a set of macro-economic indicators. These indicators will also help in monitoring and predicting how well the cMYP will perform.

Table 19: Macro-economic Indicators for monitoring cMYP 2011-2015

Macroeconomic and Sustainability Indicators	2008	2011	2012	2013	2014	2015
Reference						
Per capita GDP ($)	$675	$1,452	$1,547	$1,645	$1,722	$1,800
Total health expenditures per capita (THE per capita $)	$4.2	$85.0	$88.0	$90.0	$92.0	$95.0
Population	149,563,227	164,385,656	169,645,997	175,074,668	180,677,058	186,458,724
GDP ($)	$100,955,178,031	$238,687,971,928	$262,442,356,704	$287,997,829,629	$311,125,893,632	$335,625,702,677
Total Health Expenditures (THE $)	$628,165,552	$13,972,780,726	$14,928,847,699	$15,756,720,162	$16,622,289,323	$17,713,578,752
Government Health Expenditures (GHE $)	$133,799,263	$3,143,875,663	$3,463,492,666	$3,781,612,839	$4,155,572,331	$4,605,530,476
Resource Requirements for Immunization						
Routine and Campaigns ($)	$221,537,564	$361,703,755	$341,351,394	$418,349,971	$456,035,761	$508,228,774
Routine Only ($)	$89,468,335	$140,009,374	$170,425,488	$241,604,880	$321,823,944	$401,734,453
per DTP3 child ($)	$21.6	$32.7	$35.8	$47.1	$57.2	$64.2
% Total Health Expenditures						
Resource Requirements for Immunization						
Routine and Campaigns	35.3%	2.6%	2.3%	2.7%	2.7%	2.9%
Routine Only	14.2%	1.0%	1.1%	1.5%	1.9%	2.3%
Funding Gap						
With Secure Funds Only		0.4%	1.3%	1.9%	2.3%	2.3%
With Secure and Probable Funds		0.3%	0.5%	0.8%	0.6%	0.7%
% Government Health Expenditures						
Resource Requirements for Immunization						
Routine and Campaigns	165.6%	11.5%	9.9%	11.1%	11.0%	11.0%
Routine Only	66.9%	4.5%	4.9%	6.4%	7.7%	8.7%
Funding Gap						
With Secure Funds Only		1.7%	5.4%	7.9%	9.1%	8.9%
With Secure and Probable Funds		1.3%	2.1%	3.4%	2.4%	2.8%

% GDP						
Resource Requirements for Immunization						
Routine and Campaigns	0.22%	0.15%	0.13%	0.15%	0.15%	0.15%
Routine Only	0.09%	0.06%	0.06%	0.08%	0.10%	0.12%
Per Capita						
Resource Requirements for Immunization						
Routine and Campaigns	$1.48	$2.20	$2.01	$2.39	$2.52	$2.73
Routine Only	$0.60	$0.85	$1.00	$1.38	$1.78	$2.15

Programme Indicators

The National EPI will continue to monitor and report on the coverage of all antigens through the routine reporting system. The cMYP provides targets for coverage and wastage rates for routine immunization.

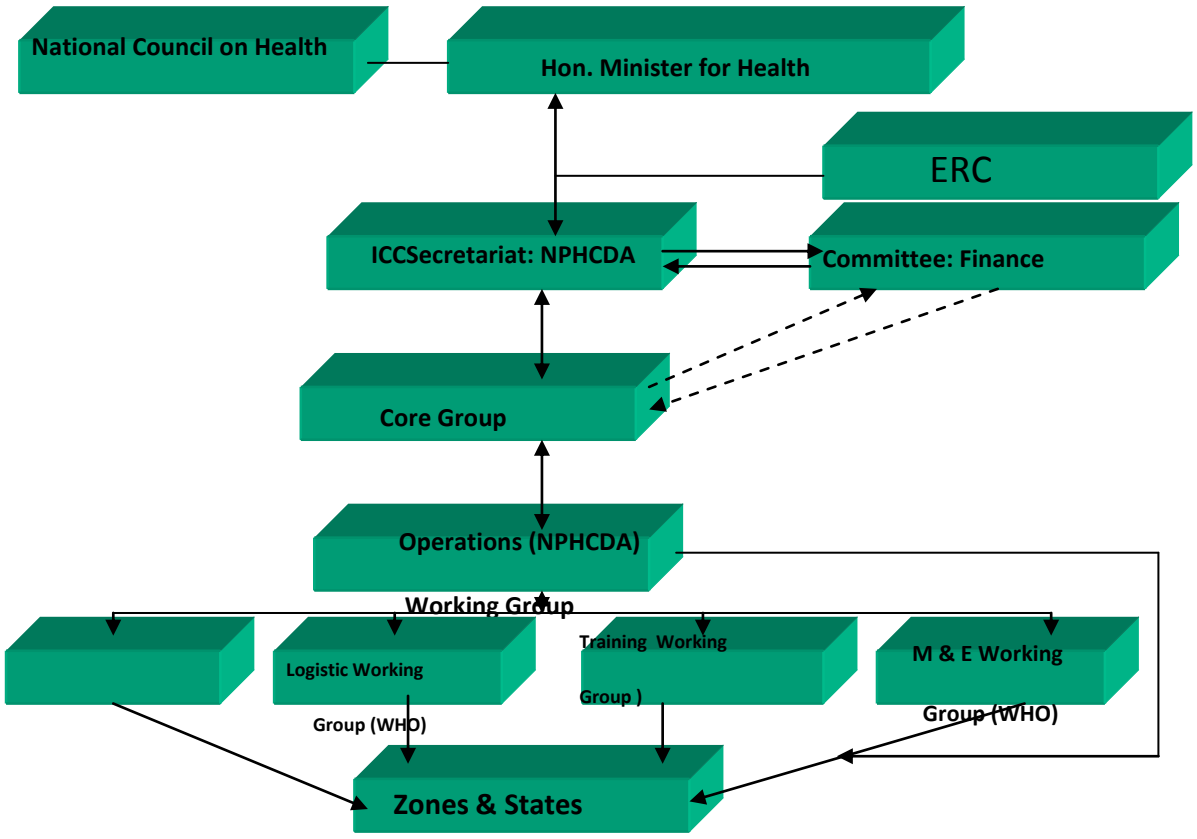
Table 20: Monitoring of Programme Indicators

	Baseline	Coverage Targets					Wastage Targets				
Type of Vaccine	**2008**	**2011**	**2012**	**2013**	**2014**	**2015**	**2011**	**2012**	**2013**	**2014**	**2015**
Routine Immunization	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Ex: BCG	74%	70%	75%	78%	82%	87%	50%	50%	50%	50%	50%
OPV	61%	70%	75%	78%	82%	87%	25%	25%	25%	25%	25%
DPT	71%	70%	49%	27%	0%	0%	25%	25%	25%	0%	0%
Measles	86%	70%	75%	78%	82%	87%	30%	30%	30%	30%	30%
HepB	62%	70%	49%	27%	0%	0%	30%	25%	25%	0%	0%
YF	64%	70%	75%	78%	82%	87%	30%	30%	30%	30%	30%
Pentavalent (DPT-HepB-Hib)	0%	0%	26%	51%	82%	87%	25%	25%	25%	25%	25%
Pneumo Conjugate Vaccine 10-valent (PCV-10)	0%	0%	0%	27%	53%	87%	0%	0%	10%	10%	10%
TT-Pregnant women	47%	70%	75%	78%	82%	87%	25%	25%	25%	25%	25%
TT-Child bearing age women											
HepB Birth Dose	62%	70%	75%	78%	82%	87%	30%	25%	25%	25%	25%

Surveillance System will be monitored by the NPHCDA (Disease Control unit) in collaboration with the surveillance units in State/LGAs to closely monitor post introduction activities.

7 ANNEXURE

7.1: Structure of ICC Governance for Immunization in Nigeria



7.2: Nigeria Cold Chain Annalysis.xls

Zone	State Name	Gap 2009		Requirements to fill the Need 2009		Gap 2010		Requirements to fill the Need 2010		Gap 2011		Requirements to fill the Need 2011		Gap 2012		Requirements to fill the Need 2012		Gap 2013		Requirements to fill the Need 2013		Gap 2014		Requirements to fill the Need 2014		Gap Total		Requirements to fill the Need +Ve				Requirements to fill the Need -Ve				Filling the Gap +Ve				Filling the Gap -Ve		
		+Ve	-Ve	+Ve	-Ve	+Ve	-Ve	+Ve	-Ve	+Ve	-Ve	+Ve	-Ve	+Ve	-Ve	+Ve	-Ve	+Ve	-Ve	+Ve	-Ve	+Ve	-Ve	+Ve	-Ve	+Ve	-Ve	WICR (total capacity)	Refr. (No)	WCFR	Freezers (No)	-Ve				WICR (total capacity)	Refr. (No)	WCFR	Freezers	-Ve			
NC	Benue	2,063.20	(1,513.00)	10	0	2,512.66	(1,506.22)	10	0	3,922.24	(1,514.47)	10	0	4,359.19	(1,491.72)	10.00	-	4,960.86	(1,483.13)	20	0	5,274.11	(1,474.28)	20	0	23,092.26	(8,982.81)	80	-	0	0					40							
	FCT	(35.40)	(1,840.69)	0	0	143.58	(1,838.00)	1	0	704.33	(1,841.28)	7	0	878.30	(1,832.22)	8.00	-	1,117.86	(1,828.81)	10	0	1,242.28	(1,825.28)	12	0	4,050.94	(11,006.28)	-	38	0	0					40							
	Kogi	1,005.91	(1,104.09)	9	0	1,354.72	(1,098.81)	13	0	2,450.62	(1,105.22)	10	0	2,789.93	(1,087.53)	10.00	-	3,257.27	(1,080.88)	10	0	3,500.18	(1,074.00)	10	0	14,358.61	(6,550.53)	40	22	0	0					40	22						
	Kwara	880.72	(973.19)	8	0	1,132.98	(969.38)	10	0	1,925.35	(974.00)	10	0	2,170.94	(961.22)	10.00	-	2,509.25	(956.41)	10	0	2,684.71	(951.41)	10	0	11,303.95	(5,785.59)	40	18	0	0					40	18						
	Nasarawa	617.58	(1,474.91)	6	0	815.89	(1,471.91)	8	0	1,438.69	(1,475.56)	13	0	1,631.55	(1,465.50)	15.00	-	1,897.27	(1,461.72)	10	0	2,035.55	(1,457.81)	10	0	8,436.52	(8,807.41)	20	42	0	0					40	42						
	Niger	1,494.66	233.97	14	1	1,920.00	240.38	10	1	3,255.35	232.56	10	1	3,669.04	254.13	10.00	1.00	4,238.90	262.25	10	1	4,536.04	270.66	10	1	19,113.99	1,493.94	50	14	0	6												
	Plateau	(15,448.24)	(10,603.53)	0	0	(15,112.52)	(10,598.47)	0	0	(14,059.94)	(10,604.63)	0	0	(13,733.43)	(10,587.63)	-	-	(13,284.53)	(10,581.22)	0	0	(13,050.24)	(10,574.59)	0	0	(84,688.91)	(63,550.06)	-	0	0	0												
	NCZ	(16,498.00)	(26,796.50)	-	-	(6,731.12)	(26,763.50)	-	-	(7,439.16)	(26,803.50)	-	-	(5,311.21)	(26,692.75)	-	-	(2,377.43)	(26,650.75)	-	-	(855.67)	(26,607.75)	-	-	(39,212.59)	(160,314.75)	-	-	-	-												
NE	Adamawa	559.26	(3,050.06)	5.00	-	895.33	(3,045.00)	8.00	-	1,950.75	(3,051.19)	10.00	-	2,278.20	(3,034.13)	10.00	-	2,728.80	(3,027.72)	10.00	-	2,963.23	(3,021.06)	10.00	-	11,375.57	(18,229.16)	40	13	0	0					40	13						
	Bauchi	1,525.79	(3,767.03)	14.00	-	2,029.07	(3,759.44)	10.00	-	3,609.98	(3,768.69)	10.00	-	4,099.62	(3,743.16)	10.00	-	4,774.58	(3,733.53)	20.00	-	5,125.84	(3,723.59)	20.00	-	21,164.88	(22,495.44)	70	14	0	0						14						
	Borno	(15,357.03)	(12,816.22)	-	-	(14,899.53)	(12,809.31)	-	-	(13,461.88)	(12,817.72)	-	-	(13,016.41)	(12,794.53)	-	-	(12,403.29)	(12,785.78)	-	-	(12,084.27)	(12,776.75)	-	-	(81,222.42)	(76,800.31)	-	-	0	0						-						
	Gombe	(16,579.29)	(11,405.38)	-	-	(16,327.37)	(11,401.59)	-	-	(15,536.10)	(11,406.22)	-	-	(15,290.70)	(11,393.44)	-	-	(14,953.20)	(11,388.63)	-	-	(14,777.84)	(11,383.66)	-	-	(93,464.51)	(68,378.91)	-	-	0	0						-						
	Taraba	329.23	(1,522.88)	3.00	-	571.33	(1,519.22)	5.00	-	1,331.49	(1,523.66)	12.00	-	1,566.56	(1,511.41)	15.00	-	1,890.54	(1,506.78)	10.00	-	2,059.44	(1,502.00)	10.00	-	7,748.58	(9,085.94)	20	35	0	0					40	35						
	Yobe	329.94	(841.09)	3.00	-	580.77	(837.31)	5.00	-	1,368.06	(841.91)	13.00	-	1,611.68	(829.22)	15.00	-	1,947.78	(824.41)	10.00	-	2,122.75	(819.47)	10.00	-	7,960.98	(4,993.41)	20	36	0	0					40	36						
	NEZ	(31,264.85)	(12,876.75)	-	-	(22,149.63)	(12,845.75)	-	-	(22,811.25)	(12,883.25)	-	-	(20,824.03)	(12,779.75)	-	-	(18,087.43)	(12,740.75)	-	-	(16,663.37)	(12,700.50)	-	-	(131,800.56)	(76,826.75)	-	-	0	0						-						
NW	Jigawa	1,201.52	(1,382.16)	11.00	-	1,662.98	(1,375.19)	15.00	-	3,112.40	(1,383.69)	10.00	-	3,560.87	(1,360.28)	10.00	-	4,179.06	(1,351.47)	10.00	-	4,501.13	(1,342.38)	10.00	-	18,217.96	(8,195.16)	40	26	0	0					40	26						
	Kaduna	(606.00)	(1,152.84)	-	-	39.00	(1,143.13)	-	-	2,066.00	(1,154.97)	10.00	-	2,694.00	(1,122.25)	10.00	-	3,559.00	(1,109.91)	10.00	-	4,010.00	(1,097.16)	10.00	-	11,762.00	(6,780.25)	40	-	0						40	-						
	Kano	(12,500.86)	(11,457.88)	-	-	(11,493.78)	(11,442.66)	-	-	(8,330.19)	(11,461.19)	-	-	(7,350.44)	(11,410.09)	-	-	(6,000.70)	(11,390.84)	-	-	(5,298.40)	(11,370.97)	-	-	(50,974.37)	(68,533.63)	-		0							-						
	Katsina	(14,053.73)	(11,432.91)	-	-	(13,437.33)	(11,423.59)	-	-	(11,501.28)	(11,434.91)	-	-	(10,902.01)	(11,403.69)	-	-	(10,075.83)	(11,391.88)	-	-	(9,645.66)	(11,379.72)	-	-	(69,615.84)	(68,466.69)	-		0							-						
	Kebbi	(15,236.97)	(11,009.84)	-	-	(14,891.06)	(11,004.63)	-	-	(13,805.58)	(11,010.97)	-	-	(13,469.45)	(10,993.47)	-	-	(13,006.23)	(10,986.84)	-	-	(12,765.16)	(10,980.03)	-	-	(83,174.45)	(65,985.78)	-		0							-						
	Sokoto	1,345.28	(1,071.56)	12.00	-	1,738.55	(1,065.63)	10.00	-	2,974.09	(1,072.88)	10.00	-	3,357.14	(1,052.91)	10.00	-	3,884.07	(1,045.41)	10.00	-	4,158.62	(1,037.63)	10.00	-	17,457.74	(6,346.00)	50	12	0						40	12						
	Zamfara	891.31	(1,464.03)	8.00	-	1,240.44	(1,458.78)	11.00	-	2,336.12	(1,465.19)	10.00	-	2,675.44	(1,447.50)	10.00	-	3,143.39	(1,440.84)	10.00	-	3,386.26	(1,433.94)	10.00	-	13,672.97	(8,710.28)	40	19	0						40	19						
	NWZ	(84,024.45)	(59,899.25)			**(77,779.88)**	**(59,841.50)**	-	-	(79,011.44)	(59,911.75)	-	-	(75,299.94)	(59,718.25)	-	-	(70,183.55)	(59,645.25)	-	-	(67,517.73)	(59,569.75)	-	-	(464,616.99)	(358,585.75)				0					160	-						
SE	Abia	(15,637.33)	(11,059.53)	-	-	(15,338.08)	(11,051.03)	-	-	(14,399.61)	(11,056.50)	-	-	(14,108.49)	(11,041.34)	-	-	(13,708.25)	(11,035.66)	-	-	(13,499.60)	(11,029.75)	-	0	(86,691.36)	(66,269.81)	-	-	0							-						
	Anambra	1,236.79	(768.59)	11.00	-	1,679.40	(761.94)	16.00	-	3,068.75	(770.06)	10.00	-	3,499.07	(747.63)	10.00	-	4,092.16	(739.16)	10.00	-	4,400.55	(730.44)	10.00	0	17,976.71	(4,517.81)	40	27	0						40	27						
	Ebonyi	(219.05)	(3,905.50)	-	-	10.86	(3,902.03)	-	-	733.22	(3,906.25)	7.00	-	957.11	(3,894.59)	9.00	-	1,264.98	(3,890.19)	12.00	-	1,425.40	(3,885.66)	13.00	0	4,172.52	(23,384.22)	-	41	0						40	41						
	Enugu	814.38	(2,141.31)	11.00	-	1,160.82	(2,136.09)	11.00	-	2,249.62	(2,142.44)	10.00	-	2,586.57	(2,124.88)	10.00	-	3,050.74	(2,118.25)	10.00	-	3,292.80	(2,111.41)	10.00	0	13,154.94	(12,774.38)	40	22	0							22						
	Imo	1,992.03	(1,532.28)	10.00	-	2,413.29	(1,525.94)	10.00	-	3,736.00	(1,533.69)	10.00	-	4,145.50	(1,512.34)	10.00	-	4,709.84	(1,504.28)	20.00	-	5,004.19	(1,495.97)	20.00	0	22,000.85	(9,104.50)	80	-	0						40	-						
	SEZ	(18,856.25)	(27,043.25)			(11,894.72)	(27,017.00)			(11,655.88)	(27,049.00)			(9,960.84)	(26,960.75)	-		(7,631.65)	(26,927.50)	-		(6,421.23)	(26,893.25)			(65,620.59)	(161,890.75)	-	-	-							-						
SS	Akwa-Ibom	(25,781.24)	(27,767.81)	0	0	(25,362.33)	(27,761.72)	0	0	(24,043.12)	(27,769.75)	0	0	(23,638.67)	(27,748.69)	0	0	(23,080.71)	(27,740.94)	0	0	(22,793.68)	(27,732.97)	0	0	(144,699.75)	(166,521.88)	-	-	0	0						-						
	Bayelsa	(41,049.73)	(13,900.56)	0	0	(40,870.37)	(13,897.97)	0	0	(40,305.39)	(13,901.38)	0	0	(40,132.02)	(13,892.38)	0	0	(39,893.07)	(13,889.06)	0	0	(39,770.36)	(13,885.63)	0	0	(242,020.93)	(83,366.97)	-	-	0	0						-						
	Cross River	(38,388.48)	(4,831.38)	0	0	(38,084.03)	(4,826.94)	0	0	(37,126.08)	(4,832.75)	0	0	(36,831.90)	(4,817.47)	0	0	(36,426.90)	(4,811.84)	0	0	(36,218.70)	(4,806.06)	0	0	(223,076.09)	(28,926.44)	-	-	0	0						-						
	Delta	(39,693.98)	(13,758.66)	0	0	(39,258.31)	(13,752.34)	0	0	(37,887.42)	(13,760.66)	0	0	(37,466.44)	(13,738.78)	0	0	(36,887.14)	(13,730.75)	0	0	(36,588.77)	(13,722.44)	0	0	(227,782.06)	(82,463.63)	-	-	0	0						-						
	Edo	(26,215.14)	(27,813.22)	0	0	(25,877.92)	(27,808.34)	0	0	(24,816.72)	(27,814.78)	0	0	(24,491.29)	(27,797.84)	0	0	(24,042.70)	(27,791.63)	0	0	(23,811.87)	(27,785.19)	0	0	(149,255.64)	(166,811.00)	-	-	0	0						-						
	Rivers	(37,065.28)	(4,692.88)	0	0	(36,511.35)	(4,684.84)	0	0	(34,766.05)	(4,695.44)	0	0	(34,230.88)	(4,667.59)	0	0	(33,493.14)	(4,657.34)	0	0	(33,113.62)	(4,646.78)	0	0	(209,180.32)	(28,044.88)	-	-	0	0						-						
	SSZ	(16,193.50)	(26,764.50)	0	0	(6,196.21)	(26,732.00)			(6,942.64)	(26,774.75)			(4,790.80)	(26,662.75)			(1,823.83)	(26,621.50)			(294.63)	(26,579.00)			(36,241.63)	(160,134.50)	-	-	0	0						-						
SW	Ekiti	1,337.80	(1,496.00)	12	0	1,592.19	(1,492.16)	15	0	2,391.86	(1,496.84)	10	0	2,639.17	(1,483.94)	10	0	2,980.08	(1,479.09)	10	0	3,157.55	(1,474.06)	10	0	14,098.63	(8,922.09)	40	27	0	0					40	27						
	Lagos	(12,306.41)	(12,507.25)	0	0	(11,341.89)	(12,492.72)	0	0	(8,312.16)	(12,510.44)	0	0	(7,374.17)	(12,461.53)	0	0	(6,081.25)	(12,443.09)	0	0	(5,408.09)	(12,424.03)	0	0	(50,823.98)	(74,839.06)	-	-	0	0						-						
	Ogun	1,399.85	(2,485.84)	13	0	1,800.25	(2,479.81)	10	0	3,056.70	(2,487.16)	10	0	3,446.18	(2,466.88)	10	0	3,982.52	(2,459.22)	10	0	4,261.48	(2,451.31)	10	0	17,946.97	(14,830.22)	50	13	0	0					40	13						
	Ondo	487.95	(590.56)	5	0	854.19	(585.03)	8	0	2,004.04	(591.75)	10	0	2,360.48	(573.19)	10	0	2,851.05	(566.19)	10	0	3,106.67	(558.97)	10	0	11,664.39	(3,465.69)	40	13	0	0					40	13						
	Osun	(15,432.58)	(12,846.41)	0	0	(15,065.84)	(12,840.88)	0	0	(13,915.49)	(12,847.63)	0	0	(13,559.00)	(12,829.03)	0	0	(13,067.49)	(12,822.03)	0	0	(12,811.97)	(12,814.78)	0	0	(83,852.36)	(77,000.75)	-	-	0	0						-						
	Oyo	1,839.59	(340.84)	10	0	2,441.45	(331.75)	10	0	4,331.71	(342.81)	10	0	4,917.51	(312.28)	20	0	5,724.21	(300.78)	20	0	6,144.22	(288.91)	20	0	25,398.69	(1,917.38)	90	-	0	0					40	-						
	SWZ	15,531.05	1,625.25	160	6	28,714.51	1,669.75	**0**	**1**	27,761.72	1,615.50	0	0	30,635.84	1,765.25	0	0	34,592.93	1,821.75	0	0	36,651.81	1,880.00	0	1	173,887.86	10,377.50	160	-	0	8					160	-		40				
	National Gap	**6,772.30**	**(15,756.50)**			**73,643.85**	**(15,530.50)**			**68,813.95**	**(15,805.75)**			**83,386.70**	**(15,046.00)**			**103,465.97**	**(14,759.50)**			**133,919.96**	**(14,463.75)**			**450,002.72**	**(91,362.00)**	**480.00**	-	-	-					420	-						
	Zonal total Gap																											160.00														
	States total Gap																											1,185.00		45												

Notes

MF 314 264 litres Freezers

MK 304 108 litres Refrigerators

to be provided by GoN

to be provided by EU

To be provided by UNICEF

To Be supported by Zonal Cold Store

7.3a: Effective Vaccine Management Improvement Plan for National Level

EVM improvement plan	12 December 2010					Date: 12 December 2010		
Item no.	EVM code	Task description	Priority	Responsibilty	Budget	Target start	Target completion	Completion indicator	Sign off date
1	E1	E1_11a: Develop and make use of a standardized arrival form for consumables (syringes, safety boxes, etc)	Medium	NPHCDA/Partners	$200	Apr-2011	Jul-2011	The use of standard arrival form for syringes and safety boxes	
2	E1	E1_17&18: Develop a written contingency plan in case of unexpected arrival delays due to flight delays, transport failure, etc.	Medium	NPHCDA/Partners	$200	Apr-2011	Jun-2011	Availability of written contingency plan and staff know what to do in case of emergencies	
3	E1	Establish a standard record keeping and filing system for the vaccine pre-shipment and arrival procedures (box files, forms, shelves)	Medium	NPHCDA	$500	Apr-2011		Availability and use of a good record keeping and filing system	
4	E2	E2_01a: Conduct a cold chain monitoring study in accordance with WHO/IVB/05.01 study protocol at the NVS and other levels following the vaccine supply chain (24 data loggers, two days training, follow-up cost, data	High	NPHCDA/Partners	$20,000	Jun-2011	Sep-2011	Systematic temperature monitoring study conducted and recommendation implemented	
5	E2	E2_02a: Conduct a temperature map for all freezer rooms and cold rooms used for storing vaccines.(12 temperature data loggers, analysis and report)	High	NPHCDA/Partners	$10,000	Apr-2011	Jul-2011	Temperature mapping carried out for all freezer rooms and cold rooms and recommendations implemented	
6	E2	E2_08a: Fitting the vaccine cold and freezer rooms with a continuous temperature monitoring device linked with the computers (Multi channel device with computers,	High	NPHCDA/Partners	$20,000	Jun-2011	Aug-2011	Availability and use of continuous temperature monitoring device	
7	E2	E2_09a: fitting the refrigerated vehicle with a set of temperature recorder tracer, If the NVS is planning to use the refrigerated vehicles to transport vaccines.	Medium	NPHCDA/Partners	$5,000	Jun-2011	Aug-2011	Availability and use of temperature recorder tracer the refrigerated vehicle	
8	E2	E2_12a: Establish a formal system to review temperature records on a monthly basis and to use this review as a management tool	High	NPHCDA	$0	Mar-2011	May-2011	A formal temperature records review process in place	
9	E2	Establish a standard record keeping and filing system for the vaccine storage temperature record and review	High	NPHCDA	$500	Mar-2011	May-2011	Availability and use of a good record keeping and filing system	
10	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 +2°C to + 8°C net vaccine storage capacity.	
11	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 -15°C to -25°C net vaccine storage capacity	
12	E3	E3_03a: Expansion of the dry storage capacity need to store consumables: syringes, safety boxes) to meet the immunization programme need for 2011	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 net dry storage capacity	
13	E3	E3_08a:Expansion of the transport capacity to meet the immunization programme need for 2011.	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 +transport capacity for vaccines, syringes and safety boxes	

7.3b: Effective Vaccine Management Improvement Plan for National Level

EVM improvement plan	12 December 2010					Date: 12 December 2010		
Item no.	EVM code	Task description	Priority	Responsibilty	Budget	Target start	Target completion	Completion indicator	Sign off date
14	E3	E3_09a:Expansion of passive containers requirement to meet the immunization programme need in 2011.	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 net passive container capacity	
15	E3	E3_10a:Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2011	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 net icepacks/chilled water pack capacity	
16	E3	E3_11: Develop an SOP which sets out a contingency plan in the event of equipment failure or other emergency	High	NPHCDA	$200	Apr-2011	Jul-2011	Availability and use of an SOP which sets out a contingency plan in the event of equipment failure or other emergency	
17	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 +2°C to + 8°C net vaccine storage capacity	
18	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need for 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 -15°C to -25°C net vaccine storage capacity	
19	E3	E3_03a: Expansion of the dry storage capacity need to store consumables: syringes, safety boxes) to meet the immunization programme need for 2011(+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 net dry storage capacity	
20	E3	E3_08a:Expansion of the transport capacity to meet the immunization programme need for 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 +transport capacity for vaccines, syringes and safety boxes	
21	E3	E3_09a:Expansion of passive containers requirement to meet the immunization programme need in 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 net passive container capacity	
22	E3	E3_10a:Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2011 (+	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 net icepacks/chilled water pack capacity	
23	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 +2°C to + 8°C net vaccine storage capacity	
24	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need for 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 -15°C to -25°C net vaccine storage capacity	
25	E3	E3_03a: Expansion of the dry storage capacity need to store consumables: syringes, safety boxes) to meet the immunization programme need for 2012(+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 net dry storage capacity	
26	E3	E3_08a:Expansion of the transport capacity to meet the immunization programme need for 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 +transport capacity for vaccines, syringes and safety boxes	

7.3c: Effective Vaccine Management Improvement Plan for National Level

EVM improvement plan	12 December 2010					Date: 12 December 2010		
Item no.	EVM code	Task description	Priority	Responsibilty	Budget	Target start	Target completion	Completion indicator	Sign off date
27	E3	E3_09a: Expansion of passive containers requirement to meet the immunization programme need in 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 net passive container capacity	
28	E3	E3_10a: Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2012 (+	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 net icepacks/chilled water pack capacity	
29	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of 800m3 +2°C to + 8°C net vaccine storage capacity	
30	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need for 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of 800m3 -15°C to -25°C net vaccine storage capacity	
31	E3	E3_03a: Expansion of the dry storage capacity need to store consumables: syringes, safety boxes) to meet the immunization programme need for 2013(+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of 800m3 net dry storage capacity	
32	E3	E3_08a: Expansion of the transport capacity to meet the immunization programme need for 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of 800m3 +transport capacity for vaccines, syringes and safety boxes	
33	E3	E3_09a: Expansion of passive containers requirement to meet the immunization programme need in 2013(+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of 800m3 net passive container capacity	
34	E3	E3_10a: Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of 800m3 net icepacks/chilled water pack capacity	
35	E4	E4_10a: Rehabilitation of the existing dry store fitting with well organized shelving and safe and stable step ladders as a minimum. (shelves and steps to be designed and re-estimated)	High	NPHCDA/Partners	$50000	Apr-2011	Jul-2011	Existing dry storage capacity rehabilitated	
36	E4	E4_12a: Procurement of warm clothing for cold store workers. (four set cloths)	High	NPHCDA	$2000	Apr-2011	Jul-2011	Availability and use of warm cloth in the cold store	
37	E4	E4_12a: Rehabilitation of the existing 4 refrigerated vehicles for appropriate use. refrigeration unit	Medium	NPHCDA	$10000	Jun-2011	Dec-2011	All four refrigerated vehicles used appropriately for transportation of vaccines	
38	E5	E5:01a & 03a: Establish a planned preventive maintenance programme for building and vehicle and provide evidence that this plan is being followed.	Medium	NPHCDA	$200	Jun-2011	Dec-2011	A planned preventive maintenance programme for building and vehicle developed and implemented.	
39	E5	E5_02a: Reviewthe existing cold chain equipment maintenance schedule to reflect the details PPM checklist that specifies the tasks to be carried out and	Medium	NPHCDA	$200	Jun-2011	Dec-2011	A planned preventive maintenance programme for equipment reviewed and implemented.	

7.3d: Effective Vaccine Management Improvement Plan for National Level

EVM improvement plan	12 December 2010					Date: 12 December 2010		
Item no.	EVM code	Task description	Priority	Responsibilty	Budget	Target start	Target completion	Completion indicator	Sign off date
40	E5	E5:02a & 04a: Repair the panel joint for leak-free, door lock and defrosting system for all cold and freezer rooms.	High	NPHCDA	$4000	Apr-2011	Jul-2011	Cold room and freezer room enclosure are free of leak and all door lock works perfectly from inside	
41	E5	E5: Develop an SOPs on planned preventive maintenance for cold chain equipment and make use of it.	Medium	NPHCDA/Partners	$200	Jun-2011	Dec-2011	Availability and use of SOPs for planned preventive maintenance on cold chain equipment.	
42	E5	E5: Establish a standard maintenance recording form, standard record keeping and filing system for building, cold chain equipment and vehicles.	Medium	NPHCDA	$200	Jun-2011	Dec-2011	Availability and use of a good record keeping and filing system for maintenance	
43	E6	E6_03a: Record all vaccines arrivals, dispatches and stock balance within one working day of the transaction.	High	NPHCDA	$0	Mar-2011	Jun-2011	All records of vaccines arrivals, dispatches and stock balance are updated within one working day of the transaction.	
44	E6	E6_06a: Prepare a monthly and or quarterly routine reports on internal vaccine distributions.	High	NPHCDA	$0	Mar-2011	Jun-2011	Routine report prepared	
45	E6	E6_15a & 19a: Establish a records of damaged vaccines and an internal review of the vaccine loss/ damages	High	NPHCDA	$0	Mar-2011	Jun-2011	A system established to record damaged vaccines and an internal review process.	
46	E6	E6_21a: Establish a vaccine arrival and distribution schedules review process to ensure that vaccine stocks remain between the maximum and safety (reserve) stock	High	NPHCDA/Partners	$0	Mar-2011	Jun-2011	A system established to review a vaccine arrival and distribution schedules.	
47	E6	E6_22a: Carry regular physical stock counts a minimum of four times a year, the stock count should include diluents, syringes and safety boxes. The stock records should be adjusted to match the physical count.	High	NPHCDA	$0	Mar-2011	Jun-2011	Physical stock counts takes place in a regular established intervals.	
48	E6	E6:Q15 to 17 – Develop an SOP on the recording and subsequent management of damaged and expired	Medium	NPHCDA	$200	Jun-2011	Dec-2011	An SOP developed and implemented	
49	E6	E6: Stock control principles – Introduce policies and practices aimed at eliminating stock outs and	High	NPHCDA/Partners	$0	Mar-2011	Jun-2011	Stock level policy introduced and implemented	
50	E7	E7_01a: Establish annual programme for the distribution of vaccine and share with the receiving stores. The information should include the time, and the principles that sets the quantity to be distributed.	High	NPHCDA	$0	Mar-2011	Jun-2011	Annual programme for the distribution of vaccine prepared and shared with the receiving stores.	
51	E7	E7_01a:Establish a system enabling the NVS to regularly receive the stock balance of each receiving store two weeks prior distribution of supplies to them.	High	NPHCDA	$0	Mar-2011	Jun-2011	The receiving stores send regularly their stock balance prior receiving the supplies.	
52	E7	E7_04a:Establish a reporting system which monitored actual vaccine distributions and compared these with planned distributions	High	NPHCDA	$0	Mar-2011	Jun-2011	A reporting system established form monitoring actual vaccine distributions with planned distributions.	
53	E7	E7_13a: Establish a written transport contingency plan which describes how to deal with emergencies such as vehicle breakdown, refrigerator units' failure, lack of fuel, etc. during vaccine collection from the airport.	High	NPHCDA	$200	Mar-2011	Aug-2011	A transport contingency plan in place	

7.3e: Effective Vaccine Management Improvement Plan for National Level

EVM improvement plan	12 December 2010					Date: 12 December 2010		
Item no.	EVM code	Task description	Priority	Responsibilty	Budget	Target start	Target completion	Completion indicator	Sign off date
53	E7	E7_13a: Establish a written transport contingency plan which describes how to deal with emergencies such as vehicle breakdown, refrigerator units' failure, lack of fuel, etc. during vaccine collection from the	High	NPHCDA	$200	Mar-2011	Aug-2011	A transport contingency plan in place	
54	E7	E7_07a:Develop an SOP showing how the refrigerated vehicle or passive containers should be	High	NPHCDA	$200	Mar-2011	Aug-2011	An SOP on how the refrigerated vehicle or passive containers to be packed is in use.	
55	E8	E8_13a:Establish a means for recording wasted vaccines and vaccine wastage calculation at the NVS to monitor the compliance of wastage rate being	Medium	NPHCDA		Jun-2011	Aug-2011	Vaccine wastage at the NVS level calculated and compliance monitored.	
56	E8	E8_05a: Provide a written instructions on the use of VVM availability (posters)	Medium	NPHCDA	$30	Mar-2011	Aug-2011	VVM posters available	
57	E8	E8: Develop a plan and associated training materials and supervisory activities to ensure that all storekeepers and health workers receive basic training in vaccine store management. (10 NVS workers 4 days training on vaccine store	Medium	NPHCDA/Partners	$10,000	Jun-2011	Aug-2011	Training materials prepared and training for 10 NVS workers conducted	
58	E9	E9_10a % 11a: Establish inventory recording system for cold chain equipment, and vehicles at NVS, Zonal, states and LGA levels and keep up-to-date.	Medium	NPHCDA/Partners	$50,000	Jun-2011	May-2012	Up-to-date inventory data available	
59	E9	E9_01a to 04a:Review the existing SOPs for further updates and inclusion of new SOPs and produce copies for dissemination	Medium	NPHCDA/Partners	$15,000	Aug-2011	Jun-2012	Updated SOPs document developed and is in use	
		SUB TOTAL			$199,030				
		Infrastructure investment in			$1,885,456				
		Infrastructure investment in			$835,195				
		Infrastructure investment in			$724,490				
		Infrastructure investment in			$1,374,676				
		GRAND TOTAL			**$5,018,847**				

7.4a :Effective Vaccine Management Improvement Plan for Zonal Level (Infrastructure Cost not included)

EVM improvement plan	Sunday, December 12, 2010					Date: Sunday, December 12, 2010	
Item no.	EVM code	Task description	Priority	Responsibilty	Budget	Target start	Target completion	Completion indicator
1	E2	E2_01a: Conduct a cold chain monitoring study in accordance with WHO/IVB/05.01 study protocol at the NVS and other levels following the vaccine supply chain (24 data loggers, two days training, follow-up cost, data analysis and report)	High	NPHCDA/Partners	$120,000	Jun-2011	Sep-2011	Systematic temperature monitoring study conducted and recommendation implemented
2	E2	E2_02a: Conduct a temperature map for all freezer rooms and cold rooms used for storing vaccines.(12 temperature data loggers, analysis and report)	High	NPHCDA/Partners	$60,000	Apr-2011	Jul-2011	Temperature mapping carried out for all freezer rooms and cold rooms and recommendations implemented
3	E2	Calibration of temperature monitoring equipment	Medium	NPHCDA/Partners	$30,000.00	Jun-2011		
4	E2	E2_08a: Fitting the vaccine cold and freezer rooms with a continuous temperature monitoring device linked with the computers (Multi channel device with computers, installation)	High	NPHCDA/Partners	$120,000	Jun-2011	Aug-2011	Availability and use of continuous temperature monitoring device
5	E2	E2_11a: Establish a standard record keeping and filing system for the vaccine storage temperature record and review process.	High	NPHCDA	$3,000	Mar-2011	May-2011	Availability and use of a good record keeping and filing system
6	E2	E2_12a: Establish a formal system to review temperature records on a monthly basis and to use this review as a management tool	High	NPHCDA	$0	Mar-2011	May-2011	A formal temperature records review process in place
7	E3	E3_01a: Repair of WIC/F room in SW zonal cold store	High	NPHCDA/Partners	$1,000.00	Feb-2011	Feb-2011	
8	E3	E3_01a: Procure additional WICRs for SW zonal cold store	High	NPHCDA/Partners	$34,000.00	Dec-2010	Mar-2011	
9	E3	E3_03a: Expansion of the dry storage capacity in SW zonal cold store	High	NPHCDA	$500,000.00	Apr-2011	Dec-2011	
10	E3	E3_03a: Completion of the construction work on the NW zonal cold store	High	NPHCDA	$600,000.00	Dec-2010	Jul-2011	
11	E3	E3_03a: Provide a refrigerated vehicle for each zonal cold store	Low	NPHCDA	$400,000.00	Mar-2011	Dec-2012	
12	E3	E3_09a: Provide each zonal cold store with 2 ice pack freezers	Medium	NPHCDA	$12,000.00	Mar-2011	Jul-2011	
13	E3	E3_10a: Procure cold boxes for the zonal cold stores for vaccine transport	Medium	NPHCDA	$90,000.00	Mar-2011	Jul-2011	
14	E3	E3_11a: All ZCSs to develop contingency plans	High	ZCCOs	$0.00	Feb-2011	Jan-2011	
15	E4	E4_03a: Provision of fire extinguishers in all zonal cold stores	High	NPHCDA	$7,200.00	Feb-2011	Mar-2011	
16	E4	E4_04a: Repair of the dry store at the NE zonal cold store	High	NPHCDA	$10,000.00	Apr-2011	Aug-2011	
17	E4	E4_06a: Provide hand washing facilities in the packing areas of all ZCSs	Medium	NPHCDA	$2,000.00	Mar-2011	Dec-2011	
18	E4	Provision of funds for fuel procurement to all ZCSs	High	NPHCDA	$48,000.00	Jan-2011	Ongoing (Quarterly)	
19	E5	E5_01a: ZCSs should develop multiyear planned preventive maintenance in conjunction with the appropriate unit or government agency responsible for maintaining government buildings and equipment	High	NPHCDA/Partners	$0.00	Jan-2011	Mar-2011	
20	E5	E5_02a: Provision of log books for all vehicles in the zonal fleet for distribution	Medium	NPHCDA	$200.00	Jan-2011	Jan-2011	

7.4b: Effective Vaccine Management Improvement Plan for Zonal Level (Infrastructure Cost not included)

E4_06a: Provide hand washing facilities in the packing areas of all ZCSs	Medium	NPHCDA	$2,000.00	Mar-2011	Dec-2011	
Provision of funds for fuel procurement to all ZCSs	High	NPHCDA	$48,000.00	Jan-2011	Ongoing (Quarterly)	
E5_01a: ZCSs should develop multiyear planned preventive maintenance in conjunction with the appropriate unit or government agency responsible for maintaining government buildings and equipment	High	NPHCDA/Partners	$0.00	Jan-2011	Mar-2011	
E5_02a: Provision of log books for all vehicles in the zonal fleet for distribution	Medium	NPHCDA	$200.00	Jan-2011	Jan-2011	
E5_02a: Provision of maintenance log books for buildings, equipment and vehicles in the zone	High	NPHCDA	$200.00	Jan-2011	Jan-2011	
E6_01a: Provision of computers and back up systems for the computerized stock control system	High	ZCCOs/NLWG/NPHCDA/Partners	$20,000.00	Mar-2011	Jul-2011	
E6_01a: Installation of the SMT at all ZCSs	High	ZCCOs/NLWG	$0.00	Mar-2011	Jul-2011	
E6_03a: Update records after movements within 24 hours in all ZCSs	High	ZCCOs	$0.00	Jan-2011	Ongoing	
E6_12a: Conduct periodic physical counts by all ZCSs when vaccines are stored at this level	High	ZCCOs	$600.00	Dec-2010	Ongoing (Quarterly)	
E6_16a: Maintain and cross check proper records of movements	High	ZCCOs	$0.00	Dec-2010	Ongoing (Quarterly)	
E6_19a: Zones to report damage to vaccines due to freezing or heat exposure on monthly basis including zero reporting using the SMT	High	ZCCOs	$0.00	Jan-2011	Ongoing (Monthly)	
E6_19a: Zones to also provide reports of any damaged vaccines and the disposal procedure employed for the damaged vaccines	High	ZCCOs	$0.00	Jan-2011	Ongoing (Monthly)	
E6_20a: ZCSs to establish and set critical stock levels and use same for vaccine management	High	ZCCOs	$0.00	Jan-2011	Ongoing (Annual)	
E6_23a: ZCSs to ensure bundling of vaccines supplies for both diluents and dry goods	High	ZCCOs	$0.00	Jan-2011	Ongoing	
E6_23a: Review, print and disseminate standard ledgers for vaccines and devices to all levels	High	ZCCOs	$82,000.00	Jan-2011	Apr-2011	
E6_23a: ZCSs to ensure hard copies of vaccines,diluents and dry goods supplies Ledgers are correctly filled (all detials provided)	High	ZCCOs	$0.00	Jan-2011	Ongoing	
E6: Review and printing of stores issue/receipt vouchers and distribution to all levels	High	NLWG	$200,000.00	Jan-2011	Mar-2011	
E7_01a: Zonal cold stores to develop distribution plans and disseminate to states within their zones	High	ZCCOs	$0.00	Jan-2011	Ongoing	
E7_06a: ZCCOs to be trained on vaccines handling for transportation	High	NLWG	$7,500.00	Jan-2011	Apr-2011	
E7_06a: ZCSs should use recommended guidelines for conditioning icepacks and packing vaccines for transport	High	ZCCOs	$0.00	Jan-2011	Ongoing	
E7_13a: ZCSs to develop contingency plans for transport stating details of routes	High	ZCCOs	$0.00	Jan-2011	Ongoing	
E7_13a: Training of all drivers involved in vaccine transportation on emergency procedures during transport	High	ZCCOs/ZLWGs/NCCO/NLWG	$600.00	Jan-2011	Ongoing	
E7_13a: Provision of communication equipment for all drivers/escorts during transport	Medium	NPHCDA	$200.00	Feb-2011	Jul-2011	
E8_06a: Provision of posters and job aids in all ZCSs	High	ZCCOs/ZLWGs	$600.00	Jan-2011	Jun-2011	

7.4c: Effective Vaccine Management Improvement Plan for Zonal Level (Infrastructure Cost not included)

E7_06a: ZCSs should use recommended guidelines for conditioning icepacks and packing vaccines for transport	High	ZCCOs	$0.00	Jan-2011	Ongoing	
E7_13a: ZCSs to develop contingency plans for transport stating details of routes	High	ZCCOs	$0.00	Jan-2011	Ongoing	
E7_13a: Training of all drivers involved in vaccine transportation on emergency procedures during transport	High	ZCCOs/ZLWGs/NCCO/NLWG	$600.00	Jan-2011	Ongoing	
E7_13a: Provision of communication equipment for all drivers/escorts during transport	Medium	NPHCDA	$200.00	Feb-2011	Jul-2011	
E8_06a: Provision of posters and job aids in all ZCSs	High	ZCCOs/ZLWGs	$600.00	Jan-2011	Jun-2011	
E8_13a: Monthly documentation, review and reporting of wastage (closed and open) by the zones	High	ZCCOs/ZLWGs	$0.00	Jan-2011	Ongoing	
E8_13a: Conduct a wastage rate survey in all zones	Low	NPHCDA/Partners	$10,000.00	Jan-2011	Dec-2011	
E8_14a: Conduct quarterly planned supportive supervision to the zones with focus on logistics	High	NLWG/NPHCDA/Partners	$20,000.00	Mar-2011	Ongoing)Quarterly)	
E9_01a: Review, printing and distribution of the standard operating procedures manual for vaccine stores	Medium	NLWG/NPHCDA/Partners	$17,000.00	Jan-2011	Apr-2011	
E9_07a: ZCSs to estimate requirements for the zones based on national guidelines	High	ZCCOs	$0.00	Jan-2011	Ongoing (Annual)	
E9_07a: Provision of telephone and internet facilities at the ZCSs for ease of communication and information timely sharing	Medium	NPHCDA/Partners	$5,020.00	Feb-2011	Jul-2011	
			$2,401,120.00			

7.5a: Effective Vaccine Management Improvement Plan for State Vaccine Stores (Infrastructure Cost not included)

EVM improvement plan			Sunday, December 12, 2010				Date: Sunday, December 12, 2010		
Item no.	EVM code	Task description	Priority	Responsibilty	Budget	Target start	Target completion	Completion indicator	Sign off date
1	E2	E2_01a: Conduct a cold chain monitoring study in accordance with WHO/IVB/05.01 study protocol at the state cold chain stores and other levels following the vaccine supply chain (24 data loggers, two days training, follow-up cost, data analysis and report)	High	NPHCDA/Partners	$15,000	Jun-2011	Sep-2011	Systematic temperature monitoring study conducted and recommendation implemented	
2	E2	E2_02a: Conduct a temperature map for all freezer rooms and cold rooms used for storing vaccines.(40 temperature data loggers, analysis and report)	High	NPHCDA/Partners	$10,000	Apr-2011	Jul-2011	Temperature mapping carried out for all freezer rooms and cold rooms and recommendations implemented	
3	E2	E2_08a: Fitting the vaccine cold and freezer rooms with a continuous temperature monitoring device linked with the computers (Multi channel device with computers, installation)	High	NPHCDA/Partners	$20,000	Jun-2011	Aug-2011	Availability and use of continuous temperature monitoring device	
4	E2		Medium	NPHCDA/Partners	$5,000	Jun-2011	Aug-2011	Availability and use of temperature recorder tracer the refrigerated vehicle	
5	E2	E2_12a: Establish a formal system to review temperature records on a monthly basis and to use this review as a management tool	High	NPHCDA	$0	Mar-2011	May-2011	A formal temperature records review process in place	
6	E2	Establish a standard record keeping and filing system for the vaccine storage temperature record and review process.	High	NPHCDA	$500	Mar-2011	May-2011	Availability and use of a good record keeping and filing system	
7	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2011	High	NPHCDA/Partners	$495,000	Mar-2011	Dec-2011	Availability of 800m3 +2°C to + 8°C net vaccine storage capacity.	
8	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need for 2011	High	NPHCDA/Partners	$74,000	Mar-2011	Dec-2011	Availability of 800m3 -15°C to -25°C net vaccine storage capacity	
9	E3	E3_03a: Expansion of the dry storage capacity need to store consumables: syringes, safety boxes) to meet the immunization programme need for 2011	High	NPHCDA/Partners	$1,466,667	Mar-2011	Dec-2011	Availability of 800m3 net dry storage capacity	
10	E3	E3_08a:Expansion of the transport capacity to meet the immunization programme need for 2011.	High	NPHCDA/Partners	$1,973,333	Mar-2011	Dec-2011	Availability of 800m3 +transport capacity for vaccines, syringes and safety boxes	
11	E3	E3_09a:Expansion of passive containers requirement to meet the immunization programme need in 2011.	High	NPHCDA/Partners	$301,920	Mar-2011	Dec-2011	Availability of 800m3 net passive container capacity	
12	E3	E3_10a:Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2011	High	NPHCDA/Partners	$222,000	Mar-2011	Dec-2011	Availability of 800m3 net icepacks/chilled water pack capacity	
13	E3	E3_11: Develop an SOP which sets out a contingency plan in the event of equipment failure or other emergency	High	NPHCDA	$200	Apr-2011	Jul-2011	Availability and use of an SOP which sets out a contingency plan in the event of equipment failure or other emergency	
14	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 +2°C to + 8°C net vaccine storage capacity	
15	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need for 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 -15°C to -25°C net vaccine storage capacity	
16	E3	E3_03a: Expansion of the dry storage capacity need to store consumables: syringes, safety boxes) to meet the immunization programme need for 2011(+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 net dry storage capacity	
17	E3	E3_08a:Expansion of the transport capacity to meet the immunization programme need for 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 +transport capacity for vaccines, syringes and safety boxes	
18	E3	E3_09a:Expansion of passive containers requirement to meet the immunization programme need in 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 net passive container capacity	
19	E3	E3_10a:Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 net icepacks/chilled water pack capacity	
20	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 +2°C to + 8°C net vaccine storage capacity	

7.5b: Effective Vaccine Management Improvement Plan for State Vaccine Stores (Infrastructure Cost not included)

17	E3	E3_08a:Expansion of the transport capacity to meet the immunization programme need for 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 +transport capacity for vaccines, syringes and safety boxes
18	E3	E3_09a:Expansion of passive containers requirement to meet the immunization programme need in 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 net passive container capacity
19	E3	E3_10a:Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of 800m3 net icepacks/chilled water pack capacity
20	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 +2°C to + 8°C net vaccine storage capacity
21	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need for 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 -15°C to -25°C net vaccine storage capacity
22	E3	E3_03a: Expansion of the dry storage capacity need to store consumables: syringes, safety boxes) to meet the immunization programme need for 2012(+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 net dry storage capacity
23	E3	E3_08a:Expansion of the transport capacity to meet the immunization programme need for 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 +transport capacity for vaccines, syringes and safety boxes
24	E3	E3_09a:Expansion of passive containers requirement to meet the immunization programme need in 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 net passive container capacity
25	E3	E3_10a:Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of 800m3 net icepacks/chilled water pack capacity
26	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of 800m3 +2°C to + 8°C net vaccine storage capacity
27	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need for 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of 800m3 -15°C to -25°C net vaccine storage capacity
28	E3	E3_03a: Expansion of the dry storage capacity need to store consumables: syringes, safety boxes) to meet the immunization programme need for 2013(+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of 800m3 net dry storage capacity
29	E3	E3_08a:Expansion of the transport capacity to meet the immunization programme need for 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of 800m3 +transport capacity for vaccines, syringes and safety boxes
30	E3	E3_09a:Expansion of passive containers requirement to meet the immunization programme need in 2013(+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of 800m3 net passive container capacity
31	E3	E3_10a:Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of 800m3 net icepacks/chilled water pack capacity
32	E4	E4_10a: Rehabilitation of the existing dry store fitting with well organized shelving and safe and stable step ladders as a minimum. (shelves and steps to be designed and re-estimated)	High	NPHCDA/Partners	$50000	Apr-2011	Jul-2011	Existing dry storage capacity rehabilitated
33	E4	E4_12a: Procurement of warm clothing for cold store workers. (four set cloths)	High	NPHCDA	$2000	Apr-2011	Jul-2011	Availability and use of warm cloth in the cold store
34			Medium	NPHCDA	$10000	Jun-2011	Dec-2011	All four refrigerated vehicles used appropriately for transportation of vaccines
35	E5	E5:01a & 03a: Establish a planned preventive maintenance programme for building and vehicle and provide evidence that this plan is being followed.	Medium	NPHCDA	$200	Jun-2011	Dec-2011	A planned preventive maintenance programme for building and vehicle developed and implemented.

7.5c: Effective Vaccine Management Improvement Plan for State Vaccine Stores (Infrastructure Cost not included)

34			Medium	NPHCDA	$10000	Jun-2011	Dec-2011	All four refrigerated vehicles used appropriately for transportation of vaccines	
35	E5	E5:01a & 03a: Establish a planned preventive maintenance programme for building and vehicle and provide evidence that this plan is being followed.	Medium	NPHCDA	$200	Jun-2011	Dec-2011	A planned preventive maintenance programme for building and vehicle developed and implemented.	
36	E5		Medium	NPHCDA	$200	Jun-2011	Dec-2011	A planned preventive maintenance programme for equipment reviewed and implemented.	
37	E5		High	NPHCDA	$4000	Apr-2011	Jul-2011	Cold room and freezer room enclosure are free of leak and all door lock works perfectly from inside	
38	E5	E5: Develop an SOPs on planned preventive maintenance for cold chain equipment and make use of it.	Medium	NPHCDA/Partners	$200	Jun-2011	Dec-2011	Availability and use of SOPs for planned preventive maintenance on cold chain equipment.	
39	E5	E5: Establish a standard maintenance recording form, standard record keeping and filing system for building and cold chain equipment .	Medium	NPHCDA	$200	Jun-2011	Dec-2011	Availability and use of a good record keeping and filing system for maintenance	
40	E6	E6_03a: Record all vaccines arrivals, dispatches and stock balance within one working day of the transaction.	High	NPHCDA	$0	Mar-2011	Jun-2011	All records of vaccines arrivals, dispatches and stock balance are updated within one working day of the transaction.	
41	E6	E6_06a: Prepare a monthly and or quarterly routine reports on internal vaccine distributions.	High	NPHCDA	$0	Mar-2011	Jun-2011	Routine report prepared	
42	E6	E6_15a & 19a: Establish a records of damaged vaccines and an internal review of the vaccine loss/ damages records.	High	NPHCDA	$0	Mar-2011	Jun-2011	A system established to record damaged vaccines and an internal review process.	
43	E6	E6_21a: Establish a vaccine arrival and distribution schedules review process to ensure that vaccine stocks remain between the maximum and safety (reserve) stock levels.	High	NPHCDA/Partners	$0	Mar-2011	Jun-2011	A system established to review a vaccine arrival and distribution schedules.	
44	E6	E6_22a: Carry regular physical stock counts a minimum of four times a year; the stock count should include diluents, syringes and safety boxes. The stock records should be adjusted to match the physical count.	High	NPHCDA	$0	Mar-2011	Jun-2011	Physical stock counts takes place in a regular established intervals.	
45	E6	E6:Q15 to 17 – Develop an SOP on the recording and subsequent management of damaged and expired vaccines.	Medium	NPHCDA	$200	Jun-2011	Dec-2011	An SOP developed and implemented	
46	E6		High	NPHCDA/Partners	$0	Mar-2011	Jun-2011	Stock level policy introduced and implemented	
47	E7	E7_01a: Establish annual programme for the distribution of vaccine and share with LGA stores. The information should include the time, and the principles that sets the quantity to be distributed.	High	NPHCDA	$0	Mar-2011	Jun-2011	Annual programme for the distribution of vaccine prepared and shared with the receiving stores.	
48	E7	E7_01a:Establish a system enabling the State store to receive stock balances from LGAs prior distribution of supplies to them.	High	NPHCDA	$0	Mar-2011	Jun-2011	The receiving stores send regularly their stock balance prior receiving the supplies.	
49	E7	E7_04a:Establish a reporting system which monitored actual vaccine distributions and compared these with planned distributions	High	NPHCDA	$0	Mar-2011	Jun-2011	A reporting system established form monitoring actual vaccine distributions with planned distributions.	
50	E7		High	NPHCDA	$200	Mar-2011	Aug-2011	A transport contingency plan in place	
51	E7	E7_07a:Develop an SOP showing how passive containers should be packed and make use of it.	High	NPHCDA	$200	Mar-2011	Aug-2011	An SOP on how the refrigerated vehicle or passive containers to be packed is in use.	
52	E8	E8_13a:Establish a means for recording wasted vaccines and vaccine wastage calculation at the States' stores.	Medium	NPHCDA		Jun-2011	Aug-2011	Vaccine wastage at the NVS level calculated and compliance monitored.	
53	E8	E8_05a: Provide a written instructions on the use of VVM and make available in all stores.(posters)	Medium	NPHCDA	$30	Mar-2011	Aug-2011	VVM posters available	
54	E8	E8: Develop a plan and associated training materials and supervisory activities to ensure that all storekeepers and health workers receive basic training in vaccine store management. (74 States' cold chain store workers 4 days training on vaccine store management)	Medium	NPHCDA/Partners	$10,000	Jun-2011	Aug-2011	Training materials prepared and training for 10 NVS workers conducted	
55	E9	E9_10a % 11a: Maintain inventory recording system for cold chain equipment , validate at least once a year , and ensure it is kept up-to-date.	Medium	NPHCDA/Partners	$50,000	Jun-2011	May-2012	Up-to-date inventory data available	
56	E9	E9_01a to 04a:Review the existing SOPs for further updates and inclusion of new SOPs and produce copies for dissemination	Medium	NPHCDA/Partners	$15,000	Aug-2011	Jun-2012	Updated SOPs document developed and is in use	
					$4,634,850				

7.6a: Effective Vaccine Management Improvement Plan for LGA Vaccine Stores (Infrastructure Cost not included)

EVM improvement plan	Sunday, December 12, 2010					Date: Sunday, December 12, 2010		
Item no.	EVM code	Task description	Priority	Responsibilty	Budget	Target start	Target completion	Completion indicator	Sign off date
1	E2	E2_12a: Establish a formal system to review temperature records on a monthly basis and to use this review as a management tool .	High	NPHCDA	$0	Mar-2011	May-2011	A formal temperature records review process in place	
2	E2	Conduct Supportive Supervision to the LGAs cold chain store and use this to strnghten capacity,	High	NPHCDA	$500	Mar-2011	May-2011	Availability of supportive supervision reports indicating improvements being made by staff at this level.	
3	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2011	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of +2°C to + 8°C net vaccine storage capacity.	
4	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need for 2011	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of required -15°C to -25°C net vaccine storage capacity	
5	E3	E3_03a: Expansion of the dry storage capacity need to store consumables: syringes, safety boxes) to meet the immunization programme need for 2011	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of required net dry storage capacity	
6	E3	E3_09a:Expansion of passive containers requirement to meet the immunization programme need in 2011.	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of requirednet passive container capacity	
7	E3	E3_10a:Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2011	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of required net icepacks/chilled water pack capacity	
8	E3	E3_11: Develop an SOP which sets out a contingency plan in the event of equipment failure or other emergency	High	NPHCDA	$200	Apr-2011	Jul-2011	Availability and use of an SOP which sets out a contingency plan in the event of equipment failure or other emergency	
9	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of required +2°C to + 8°C net vaccine storage capacity	
10	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need for 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of required-15°C to -25°C net vaccine storage capacity	
11	E3	E3_03a: Expansion of the dry storage capacity need to store consumables: syringes, safety boxes) to meet the immunization programme need for 2011(+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of required net dry storage capacity	
12	E3	E3_09a:Expansion of passive containers requirement to meet the immunization programme need in 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of required net passive container capacity	
13	E3	E3_10a:Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2011 (+ Pentavalent vaccine)	High	NPHCDA/Partners		Mar-2011	Dec-2011	Availability of requirednet icepacks/chilled water pack capacity	
14	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of required +2°C to + 8°C net vaccine storage capacity	
15	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need for 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of required -15°C to -25°C net vaccine storage capacity	
16	E3	E3_03a: Expansion of the dry storage capacity need to store consumables: syringes, safety boxes) to meet the immunization programme need for 2012(+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of required net dry storage capacity	
17	E3	E3_09a:Expansion of passive containers requirement to meet the immunization programme need in 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of required net passive container capacity	
18	E3	E3_10a:Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of required net icepacks/chilled water pack capacity	
19	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of reqiured +2°C to + 8°C net vaccine storage capacity	
20	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need for 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of required -15°C to -25°C net vaccine storage capacity	

7.6b: Effective Vaccine Management Improvement Plan for LGA Vaccine Stores (Infrastructure Cost not included)

18	E3	E3_10a:Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2012 (+ Pentavalent + PCV)	Medium	NPHCDA/Partners		Mar-2011	Jun-2012	Availability of required net icepacks/chilled water pack capacity
19	E3	E3_01a: Expansion of the vaccine storage capacity of the +2°C to + 8°C to meet the immunization programme need for 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of reqiured +2°C to + 8°C net vaccine storage capacity
20	E3	E3_02a: Expansion of the vaccine storage capacity of the -15°C to -25°C to meet the immunization programme need for 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of required -15°C to -25°C net vaccine storage capacity
21	E3	E3_03a: Expansion of the dry storage capacity need to store consumables: syringes, safety boxes) to meet the immunization programme need for 2013(+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of required net dry storage capacity
22	E3	E3_08a:Expansion of the transport capacity to meet the immunization programme need for 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of required +transport capacity for vaccines, syringes and safety boxes
23	E3	E3_09a:Expansion of passive containers requirement to meet the immunization programme need in 2013(+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of required net passive container capacity
24	E3	E3_10a:Expansion of icepacks/chilled water packs capacity to meet maximum demand in 2013 (+ Pentavalent + PCV+ Rota)	Medium	NPHCDA/Partners		Jun-2011	Jun-2013	Availability of required net icepacks/chilled water pack capacity
25	E4	E4_10a: Rehabilitation of the existing dry store fitting with well organized shelving and safe and stable step ladders as a minimum. (shelves and steps to be designed and re-estimated)	High	NPHCDA/Partners	$50000	Apr-2011	Jul-2011	Existing dry storage capacity rehabilitated
26	E5	E5_01and E5_02a: Develop a planned preventive maintenance for buildings, CCE and vehicles and discuss with the authorities for implementation	Medium	NPHCDA	$200	Jun-2011	Dec-2011	A planned preventive maintenance programme for building and vehicle developed and implemented.
27	E6	**E6_04a:** LGA stores to review stock control records to include required stock information.	High	NPHCDA	$0	Mar-2011	Jun-2011	All records of vaccines arrivals, dispatches and stock balance are updated within one working day of the transaction.
28	E6	**E6_05a:** LGA stores to immediately start recording movements for diluents .	High	NPHCDA	$0	Mar-2011	Jun-2011	Availability of records of movement of diluents in the LGAs' stores.
29	E6	E6_15a & 19a: Establish a records of damaged vaccines and an internal review of the vaccine loss/ damages records.	High	NPHCDA	$0	Mar-2011	Jun-2011	A system established to record damaged vaccines and an internal review process.
30	E6	**E6_20a:** LGA store to immediately establish their respective critical stock levels for estimation and distribution of supplies.	High	NPHCDA/Partners	$0	Mar-2011	Jun-2011	Availability of respective critical stock levels in all LGAs' stores.
31	E6	E6_22a: Carry regular physical stock counts a minimum of four times a year; the stock count should include diluents, syringes and safety boxes. The stock records should be adjusted to match the physical count.	High	NPHCDA	$0	Mar-2011	Jun-2011	Physical stock counts takes place in a regular established intervals and reported through the states, zones to National
32		**E6_23a**: Ensure timely recording of stock movements (within 24 hours) to reduce disparity in the quantities of freeze dried vaccines and their corresponding diluents.	High	NPHCDA		Jan-2011	Mar-2011	Evidence of recording of stock movements within 24 hours of receipts and issues from the LGAs stores.
33	E6	E6:Q15 to 17 – Develop an SOP on the recording and subsequent management of damaged and expired vaccines.	Medium	NPHCDA	$200	Jun-2011	Dec-2011	An SOP developed and implemented
34	E7	E7_01a: Establish annual programme for the distribution of vaccine and share with health care facilities. The information should include the time, and the principles that sets the quantity to be distributed.	High	NPHCDA	$0	Mar-2011	Jun-2011	Annual programme for the distribution of vaccine prepared and shared with the receiving health facilities.
35	E7	E7_06a:Supportive supervision to encourage staff and ensure passive containers are properly packed and make use of .	High	NPHCDA	$200	Mar-2011	Aug-2011	Specialised supportive supervision undertaken and reports available..
36	E8	E8_13a:Establish a means for recording wasted vaccines and vaccine wastage calculation at the LGAs' stores and discuss same with health facilities' staff.	Medium	NPHCDA		Jun-2011	Aug-2011	Vaccine wastage at the NVS level calculated,compliance monitored and discussed with health facilities.
37	E8	E8_06a: Provide a written instructions on the use of VVM and make available in all stores.(posters)	Medium	NPHCDA	$30	Mar-2011	Aug-2011	VVM posters available, distrubted to all LGAs' stores.
38	E8	E8: Develop a plan and associated training materials and supervisory activities to ensure that all storekeepers and health workers receive basic training in vaccine store management to include how to perform and interpret shake test. (74 States' cold chain store workers 4 days training on vaccine store management)	Medium	NPHCDA/Partners	$10,000	Jun-2011	Aug-2011	Training materials prepared and training organised for LGAs cold chain staff.
39	E9	E9_10a % 11a: Maintain inventory recording system for cold chain equipment , validate at least once a year , and ensure it is kept up-to-date.	Medium	NPHCDA/Partners	$50,000	Jun-2011	May-2012	Up-to-date , validated , inventory of cold chain equipment data available.
40	E9	E9_01a to 04a:Review the existing SOPs for further updates and inclusion of new SOPs and produce copies for dissemination	Medium	NPHCDA/Partners	$15,000	Aug-2011	Jun-2012	Updated SOPs document developed and is in use.
41	E9	**E9_ 07a and E9_ 08a:** All LGAs should forecast their needs using nationally approved tool(s).	Medium	NPHCDA/Partners	$75,030	Aug-2011	Jun-2012	Availabilty of forcasts from LGAs collaed by states.

7.7a: Effective Vaccine Management Improvement Plan for Health facility Vaccine Stores (Infrastructure Cost not included)

EVM improvement plan	Sunday, December 12, 2010					Date: Sunday, December 12, 2010		
Item no.	EVM code	Task description	Priority	Responsibilty	Budget	Target start	Target completion	Completion indicator	Sign off date
	E2	Training/retraining (mostly on the job) of HWs on appropriate storage temperature for vaccines in 50% 0f HFs providing RI services	Medium	NPHCDA/ PARTNERS					
	E2	Print and distribute standard temperature monitoring charts	Medium	NLWG/NPHCDA					
	E2	Provide files and cupboards for archving of monitoring charts and other reports generated at the HF level	High	LGA					
	E3	Conduct an inventory of CCE at this level and categorize HF according to needs	High	NPHCDA/Partners					
	E3	Repair broken down solar refrigerators	High	States/LGAs					
	E4	Renovate dilapidated HFs and Improve on the drainage system surrounding HFs.	Medium	NPHCDA/State/LGAs					
	E4	Liaise with the Fire service to assess appropriate type of fire extinguishers and provide same.	Medium	NPHCDA/State/LGAs					
	E5	Develop a multi-year planned preventive maintenance and implement it	Medium	LGA					
	E6	Review standardized recording tools (store receipt/issue vouchers and VM1 forms) to include more information.	High	NLWG					
	E6	Production and distribution of standardized recording tools (store receipt/issue vouchers and VM1 forms)	High	NPHCDA					
	E6	Provide separate ledger for diluents and record all movements of diluents	High	LGAs					
	E6	Ensure HFs submit the completed VM1 tool at the end of the month along with the RI data	High	States/LGAs					
	E7	Training on vaccine management - part of REW	High	LGAs					
	E8	Print and distribute VVM posters	Medium	NPHCDA					
	E8	Develop and produce management policy for safe disposal of used vaccine vial.	Medium	NPHCDA/Partners					
	E8	Construct appropriate waste disposal sites at the HF level.	High	LGAs/Community					
	E8	Include critical vaccine and dry material indicators in the existing monitoring and supervisory checklist used at the HF level.	High	NLWG and RI Committee					

7.8 : National Priorities, EPI Objectives, Milestones, Regional and Global Goals and Order of Priority

Description of problems and other national priorities	EPI Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
Improving immunization coverage.	The DPT3 coverage at the end of 2008 is 70%. However, this coverage reflects the lumping of IPDs data to that of routine data. Based on Nigeria's best estimates (NICS 2010 and trend of DQS corrected coverage the National target for the year 2011has now been revised To achieve 87% coverage of Pentavalent and other vaccines in 80% LGAs by 2015.	2011: Achieve 70% 2012: Achieve 75% 2013: Achieve 78% 2014: Achieve 82% 2015: Achieve 87% coverage	By 2010 or sooner all countries will have routine immunization coverage at 90% nationally with at least 80% coverage in every LGA	**1**
To interrupt wild polio virus transmission	- By 2009: Stop transmission of Type 1 virus - By 2010: Interrupt transmission of wild poliovirus in the country and commence the process of certification. - By 2013 Certification	By 2009: Cessation of all polio outbreaks with onset 2010: Cessation of all 're-established' poliovirus transmission 2011 – 2012: Cessation of all wild poliovirus transmission 2013: Certification	By 2012 Cessation of all wild poliovirus transmission.	**1**

Description of problems and other national priorities	EPI Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
Availability of bundled vaccines at service delivery sites	To continue to make bundled vaccines available at service delivery points	Sustain 100% vaccines bundled at service delivery points	By 2009 vaccines should be bundled at service delivery points and administered using AD syringes	1
Sustain and expand Cold chain system at all levels	- Establishment of Cold chain maintenance system at all levels. - To acquire needed cold chain equipments. - To fully operationalize the zonal cold chain system.	2009: Develop cold chain maintenance at all levels 2010: Establish effective maintenance in 50% of States 2011: 75% of all States to have effective cold chain maintenance system 2013: 100% of all States to have effective cold chain maintenance system 2010: 45% of expansion plan implemented. 2011: All zonal cold stores should become fully operational , including Kano and Lagos 2011: 100% expansion 2012: Maintain 100% expansion	All vaccines used in the field are potent at the time of administration.	1
Strengthening Health Management Information System (HMIS)	To Strengthened the existing HMIS for functionality and data reliance	2009: Improved HMIS system in place generating LGA level data , staff at all levels trained, system stable 2009: Review, field test existing data tools 2009: Refresher training to be implemented and empower	By 2010: At least 90% of countries will have an integrated HMIS for integrated delivery of child	**2**

Description of problems and other national priorities	EPI Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
		the Health Facilities with data tools and equipment -Acquire and install computers and software and provide training to all states and LGAs levels (at least 50% in 2009 and 80% in 2011) 2010: Generation of RI data from both public and private facilities.	survival interventions	
To introduce new vaccines into the national immunization schedule	Phased introduction of new vaccines in the form of Pentavalent (DPT+HepB+Hib) plus Pneumococcal and Rota virus vaccines	2011: Assessment of disease burden due to Hib and Pneumococcal infection 2012: Introduction of Pentavalent vaccines (first 13 States) 2013: Introduction of Pentavalent vaccines (second 12 States) and Introduction of pneumococcal conjugate vaccines (first 13 States) 2014: Introduction of Pentavalent vaccines (third 12 States) and Introduction of pneumococcal conjugate vaccines (second 12 States) 2015: Introduction of pneumococcal conjugate vaccines (third 12 States) completion of PCV introduction Coverage target for Pentavalent vaccine in states: 2012 – 75% , 2013-78%, 2014 -82% and 2015- 87%.	By 2009 or sooner: All countries will have introduced the Hib vaccines in their national EPI	**1**

Description of problems and other national priorities	EPI Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
		Coverage target for pneumococcal vaccine in states: 2013-78%, 2014-82% and 2015- 87%		
Measles morbidity and mortality reduction	To reduce measles morbidity by 90% and mortality by 95% by 2014.	2011: Expand Case-base and laboratory surveillance for measles to 6 functional laboratories 2011: Investigate all reported cases and outbreaks, strengthen rapid response and document epidemiology of transmission 2014: Implement follow up measles campaign in Nigeria with 95% coverage	By 2014, reduce measles morbidity by 90% and mortality by 95%.	**3**
Strengthening PHC System	- Use EPI as an important tool to develop a more comprehensive PHC approach - Building managerial capacities at the LGA and sub-ward levels - Evidence-based Human Resource for Health (HRH) policies for multi skilled, motivated, equitably distributed	2008-09: More concerted efforts towards integration and synergistic approach in PHC delivery 2010: At least 30% of all EPI supervision should be integrated by other PHC activities. 50% of outreaches should be integrated with at least one other PHC service. 2014: Immunization activities should have been fully integrated in accordance with the provision of the Ward		**4**

Description of problems and other national priorities	EPI Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
	human resources	Minimum Health Care Package.		
Maternal and Neonatal Tetanus Elimination (MNTE)	Eliminate maternal and neonatal tetanus by 2014	Review and updating of immunization policy and cMYP 2010: Protect at least 80% of women of child bearing age in high risk LGAs, with at least 3 doses of TT vaccine. 2011-2014: Strengthen and sustain at least 80% coverage (TT2+, DPT3) in all LGAs, particularly in those considered at high risk	By 2011,80% of countries to have: - <I case per 1,000 live births in every LGA - 80% TT2 coverage among WCBA - All countries to establish case-base surveillance and Clean Delivery & Cord Care	4
PHC roles and responsibilities for Federal, State, LGA and ward levels	To define the roles and responsibilities of federal, state LGA and ward levels, private sector and partners	By 2009: protocol and guideline developed for the implementation of the new Health Act. 2010: dissemination of guideline and protocol 2011: commence intense advocacy for full implementation of PHC component of Health Act. 2012: monitor implementation 2013: 50% implementation by States 2014-2015: 100% implementation		5

Description of problems and other national priorities	EPI Objectives	Milestones	Regional and global goals (until 2015)	Order of priority
Improve resources at State, LGA and Ward levels.	State and LGA - to deploy adequate resources for immunization, increase budget for immunization by 10% annually	2009: States and LGAs are in agreement to fill all vacant posts. 2010: adequate budgetary allocations at state and LGA 2011: Vacant posts identified and filled. 2011: Training completed in 50% states 2012: Training completed in all states		2
Yellow Fever control programme.	To control yellow fever infection in Nigeria	2011: Establishment of efficient case based surveillance 2012: Commencement of preventive campaigns 2014: Completion of campaigns.	By 2010 or sooner 80% of countries in every LGA - All countries to establish case-base surveillance	4
Meningitis Control Program	To control Meningitis in 26 States on Meningitic Belt in Nigeria in a Phased manner.	2011: Conduct Stakeholders meeting on MenAfriVac Introduction, Plan and Implement campaign in 10 States in last quarter 2012: Campaign in 9 States in last quarter 2013: Campaign in 7 States in last quarter Coverage Target; 95% in implementing States.		1

7.9 Strategies and activities

7.9a: Service delivery

Objective	Strategy	Activities
90% of LGAs to achieve 75% DPT3 coverage by 2012, similar for other antigens	Reaching Every Ward (REW) approach implemented in every LGA. A minimum of 2 health facilities to conduct weekly fixed immunization session per ward. 50% of health facilities to conduct a minimum of 2 outreach sessions per month.	1. Establishing database and performance indicators of LGA, Ward and HF by Dec 2011
		2. Conduct refresher REW Micro-planning workshops at States and LGAs by Dec 2012
		3. Review Health Facility catchment Area micro-plan by Dec 2012
		4. Supportive Supervisory follow-up at all levels as from 2011
		5. Monitoring for action: Monthly and quarterly review meetings; Data analysis and feedback Data quality self-assessment National immunization coverage survey
		6. Sustain monitoring of sessions planned and held
	Plan to reach all hard to reach (HTR) areas and low-performing Wards in RI at least 3 times a year	7. Conduct Multi-antigen immunization campaigns (LIDs) and mobile services to reach HTRs
		8. Add vitamin A to multi-antigen immunization campaigns at 6 monthly intervals
	Operationalize the integration of Vitamin A into the National Immunization Schedule	9. Ensure routine administration of Vitamin A with vaccination
	Long-lasting Insecticide - treated Nets (LLIN) distribution with routine immunization and SIAs	10. In collaboration with the relevant Agencies/Stakeholders, ensure the distribution of bed-nets with measles campaigns, IPDs and as an incentive in routine immunization for FICs.
	Develop annual training	11. Conduct Training needs assessment

	plan	12. Revise the "REW Guide" and "Basic Guide for Immunization Service Providers" (BGSP) to reflect New Vaccines
		13. Training of Health Workers using the revised documents (BGSP & REW Guide)
	AEFI monitoring	14. Training on AEFI for Health Workers
	Strategy	Activities
	Reaching Every Ward (REW) approach implemented in every LGA. A minimum of 2 health facilities to conduct weekly fixed immunization session per ward. 50% of health facilities to conduct a minimum of 2 outreach sessions per month.	1. Establishing database and performance indicators of LGA, Ward and HF by Dec 2011
		2. Conduct refresher REW Micro-planning workshops at States and LGAs by Dec 2012
		3. Review Health Facility catchment Area micro-plan by Dec 2012
		4. Supportive Supervisory follow-up at all levels as from 2011
		5. Monitoring for action: Monthly and quarterly review meetings; Data analysis and feedback Data quality self-assessment National immunization coverage survey
		6. Sustain monitoring of sessions planned and held
	Plan to reach all hard to reach (HTR) areas and low-performing Wards in RI at	7. Conduct Multi-antigen immunization campaigns (LIDs) and mobile services to reach HTRs

	least 3 times a year	
		8. Add vitamin A to multi-antigen immunization campaigns at 6 monthly intervals
	Operationalize the integration of Vitamin A into the National Immunization Schedule	9. Ensure routine administration of Vitamin A with vaccination
	Long-lasting Insecticide - treated Nets (LLIN) distribution with routine immunization and SIAs	10. In collaboration with the relevant Agencies/Stakeholders, ensure the distribution of bed-nets with measles campaigns, IPDs and as an incentive in routine immunization for FICs.
	Develop annual training plan	11. Conduct Training needs assessment
		12. Revise the "REW Guide" and "Basic Guide for Immunization Service Providers" (BGSP) to reflect New Vaccines
		13. Training of Health Workers using the revised documents (BGSP & REW Guide)
	AEFI monitoring	14. Training on AEFI for Health Workers

Objective	**Strategy**	**Activities**
Interruption of wild polio virus transmission by 2012	Immunization Plus Days (IPDs)	1. Conduct IPDs 7 to 8 times every year in high risk (HR) States and at least two National IPDs per year.
		2. Include Vitamin A, Albendazole, LLINs etc when possible
	Mop-up operation	3. Conduct at least 2 mop-up activities per year in hitherto polio-free LGAs/States, based on surveillance report
Reduce measles morbidity by	Measles SIAs	4. Conduct follow-up campaigns every 2 – 3 years b ased on surveillance report
	Integration with polio	5. Add OPV to measles SIAs

90% and mortality by 95% by 2014	eradication	
	Integration with Vitamin A	6. Include Vitamin A in measles SIAs
Eliminate maternal and neonatal tetanus by 2014	Provide TT register in every health facility for Routine TT	7. Include TT in Ward micoplans for routine immunization
	Include TT in IPDs	8. Microplans and budgets for IPDs to be modified to include TT
	TT campaign	9. Conduct TT campaigns targeting selected groups of women of child bearing age e.g. from secondary schools and post secondary institutions starting by 2012
Control of Yellow fever	SIA with Yellow Fever Vaccine (Preventive Vaccination)	10. Conduct Preventive Vaccination Campaigns with Yellow Fever Vaccine starting from 2012

Planning strategies and activities for System Components

Table 7.9b: Advocacy and Communication

Objective	Strategies	Key Activities
Creating a Platform for New Vaccines Introduction	Planning	1. Advocacy to Political, Traditional & Religious Leaders on the new vaccine introduction
		2. Orientation of Health Workers on the New Vaccines and Immunization schedule
		3. Orientation of National, Zonal, State & LGA Staff
		4. Mass media activities (Jingles, programmes)
		5. Develop messages for different stakeholders/target audience
Achieving ownership of the immunization programme	Advocacy	6. Advocacy meetings with the President, First Lady, National Assembly, Ministries of Finance, Information & Communication, Education, Women Affairs, Youth & Sports on roles and responsibilities 7. Advocacy meetings with State Governors, their Wives, Houses of Assembly, Ministries of Health, Local Government, Education, Women Affairs, Religious Affairs, Information, Youth, Paramount Traditional/Religious Leaders & other Stakeholders on roles and responsibilities 8. Advocacy meetings with LGA Chairmen, their Wives, Councilors, Traditional/Religious Leaders & other Stakeholders on roles and responsibilities 9. Advocacy meetings with National Orientation Agency, Nigeria Medical Association, Association of Local Government Of Nigeria, National Association of Nurses& Midwives of Nigeria, Association of General & Private Medical Practitioners of Nigeria, Guild of Medical Directors, Pharmaceutical Society of Nigeria, Shariah Commissions, Jama'atul Nasril Islam, Christian Association of Nigeria, Federation of Muslim Women Association of Nigeria, National Union of Road Transport Workers etc on roles and responsibilities 10. Advocacy meetings with Media Chief Executives (NTA, FRCN, NAN & other Govt./Private Media) on roles and responsibilities

Objective	Strategies	Key Activities
	Resource Mobilization	11. Advocate with all relevant ministries and departments (including the MDG Office) to budget for and release funds timely.
		12. Collaborate with Partners for support
		13. Advocate with Private Companies/Organizations/ NGOs for support.
Creating Awareness and Demand at the Community Level	Social/Community Mobilization	14. Cascaded Nationwide launching of the New vaccines
		15. Engage WDCs/VDCs to mobilize caregivers in their communities to access and utilize services
		16. Develop ward social mobilization plans
		17. Develop messages for town announcements
		18. Identify and Train town announcers
		19. Sensitization of Market Women, Women Groups, schools, Youth Groups, Churches, Mosques, CBOs/NGOs
		20. Conduct Street rallies, Dance/ Drama,
		21. Conduct evidence-based community dialogues
		22. Orientation of Private Health Service Providers
Build capacity of Health Workers and other stakeholders	Programme Communication	23. Development of training materials for Health educators, Health Workers, TBAs
		24. All training courses to include training on use of AD syringes
		25. Training of Health Educators as mobilizers.
		26. Orientation of TBAs on new immunization schedule
		27. Inter-personal communication training of health workers
Engage the Mass Media to create awareness and demand	Mass media Activities	28. Develop a comprehensive media plan
		29. Conduct a media mapping at National and State levels
		30. Develop media kit (FAQs, Factsheets)
		31. Develop spots messages, jingles and sms
		32. Negotiate rates and timings of broadcast of spots PSAs and jingles with National, State and Private print and electronic Media
		33. Negotiate for free inclusion of programme information in identified programmes/newspapers
		34. Engage telecommunications companies for free text messaging.
		35. Finalize telecast and broadcast schedule

7.9c: Surveillance

Objective *(1)*	**Strategy** *(2)*	**Key activities** *(3)*
Interruption of WPV transmission by 2012	AFP surveillance combined with other VPDs (initially with MNT and measles)	1. Active surveillance in all LGAs/Wards
	Measles and polio lab links	2. Strengthen measles/polio lab support, training and supplies
Reduce measles morbidity by 90% and mortality by 95% by 2014	Active measles surveillance combined with AFP surveillance	3. Active surveillance for AFP, measles and MNT in all LGAs/Wards
	Strengthen case-based and laboratory-based surveillance	4. Upgrade, expand and functionalize the laboratory network 5. provide laboratories with equipment, consumables and ensure regular funding
		6. Provide feedback on surveillance and performance data to State and LGA levels
Yellow Fever Control	Active surveillance for YF in all high-risk LGAs/Wards	7. Active surveillance for YF
Eliminate maternal and neonatal tetanus by 2014	Active surveillance in high-risk Wards	8. Active surveillance for AFP, measles and NNT in all LGAs/Wards
Monitor AEFI	Include AEFI reporting into integrated disease Surveillance	9. Surveillance for AEFI integrated with disease surveillance
Strengthen Epidemic Preparedness and Response		10. Detection, reporting and investigation of all outbreaks of VPDs

7.9d: Vaccine supply, quality and logistics

Objectives	Strategies	Key activities
Bundled vaccines to arrive at service delivery points	Implementation of Vaccine Management Plan and use of computerized software backed by timely reporting from all levels to monitor vaccine stocks, movement and re-ordering	1. Accurate and timely forecast as well as placement of orders for bundled vaccines
		2. Ensure bundling of all vaccines at all levels
		3. Include stock position in the monthly report at different levels
		4. All States to monitor and report compliance of bundling at all service points by 2011
No stock-out of bundled vaccines at State and LGA levels	Establish funding and timely ordering cycles	5. Timely ordering and distribution of bundled vaccines
		6. Monitoring of stocks and follow-up advocacy with Ministry of Finance for release of funds
	Vaccine demand monitoring linked with supply	7. Monitor stock management at State and LGA levels
		8. Monitor LGA stock in National database
Adequate cold chain capacity at all levels	Review cold chain inventory, replacement and rehabilitation plan	9. Conduct quarterly inventory of all cold chain equipment
		10. Ensure adequate funding in Federal, State and LGA budgets for procurement and maintenance of cold chain equipment
		11. Cary out training in: i. cold chain management and ii. cold chain maintenance in all States and LGAs
Sustain the use of AD Syringes in all Immunization Activities	Monitor safe injection practices	12. Disseminate safe Injection Policy by end of 2011
		13. Develop Action plan for safe injection practices in Immunization by end of 2011
All used immunization sharps disposed of safely by 2012	Mapping and Networking of incinerators and waste management system	14. Pilot the use of incinerators in 2011
		15. Establish safe injection waste management systems
		16. Buy and install incinerators for 25% of LGAs by 2013
	Training of health workers on correct injection technique and safe disposal of injection sharps.	17. Include injection technique and safe disposal training in all training sessions of health workers

7.9e: Programme management

Objectives	Strategies	Key activities
Develop a Comprehensive Multi Year Plan (cMYP) 2011-2015 available for sustainable immunization services in Nigeria	Review immunization policy	1. Adopt decision at ICC/NCH meeting
	Review 2006-2010 Five-year Strategic Plan in line with GIVS framework	2. Print and disseminate the revised cMYP
		3. Develop evaluation tools with indicators
Improved coordination and management of Immunization Programme	Expand ICC	4. Broaden participation at ICC to invite more stakeholders
	Strengthen ICC	5. Establish ICC in all States and strengthen PHC Management Committee in all LGAs.
	Greater NGO involvement	6. Conduct meetings with NGOs to discuss participation
	Formation/reactivation of Community Link Committees	7. Formation/Reactivation of LGA PHC Management Committees
		8. Formation/Reactivation of Ward & Village Development Committees
Regular provision of immunization in all Wards (REW Strategy)	Ensure REW Strategy is implemented in all LGAs and wards	9. Regular review meetings of programme staff at all levels
		10. Regular planned supportive supervisory visits to at least 10% of immunization sessions every month including session plan reviews.
Develop a HMIS system that is comprehensive, timely and complete	Obtain consensus from States and LGAs on using a common system	11. Develop the software, install computers and provide training to state and LGA levels
	Incorporate elements of session planned and held, surveillance of	12. Provide regular feedback to states, LGAs and partners on regular basis, continue training and improving the system

Objectives	Strategies	Key activities
	diseases, cold chain and logistics, programme management, immunization performance in the reporting and compilation system	13. Training of Staff at all levels
Adequate human resources for immunization activities	Advocate for the filling of all vacant LGA posts	14. Review total health service needs and human resources plan
		15. Develop recruitment plan with budget; prioritizing LGAs
		16. Cost priority LGA post vacancies
		17. Advocate for the filling of vacant positions
	Build consensus on State and LGA support to fill vacant posts	**18.** Hold consensus-building meetings with States and LGAs
		19. Identify and fill Vacant posts
		20. Training in immunization in all LGAs
Sustainable and adequate financing of Immunization Activities	Increase budgetary support at state and LGA levels for immunization	21. Monitor budget implementation for immunization at all levels
		22. Increase budgetary support at all levels by 10% every year
		23. Increase national funding for vaccines by 10% per year and ensure timely release of funds
Integration of Immunization with other Health Intervention	Integration of planning into national budgeting processes	24. Develop liaison processes to facilitate transfer of costing information to national budgeting decisions
		25. Building financial planning and management capacity