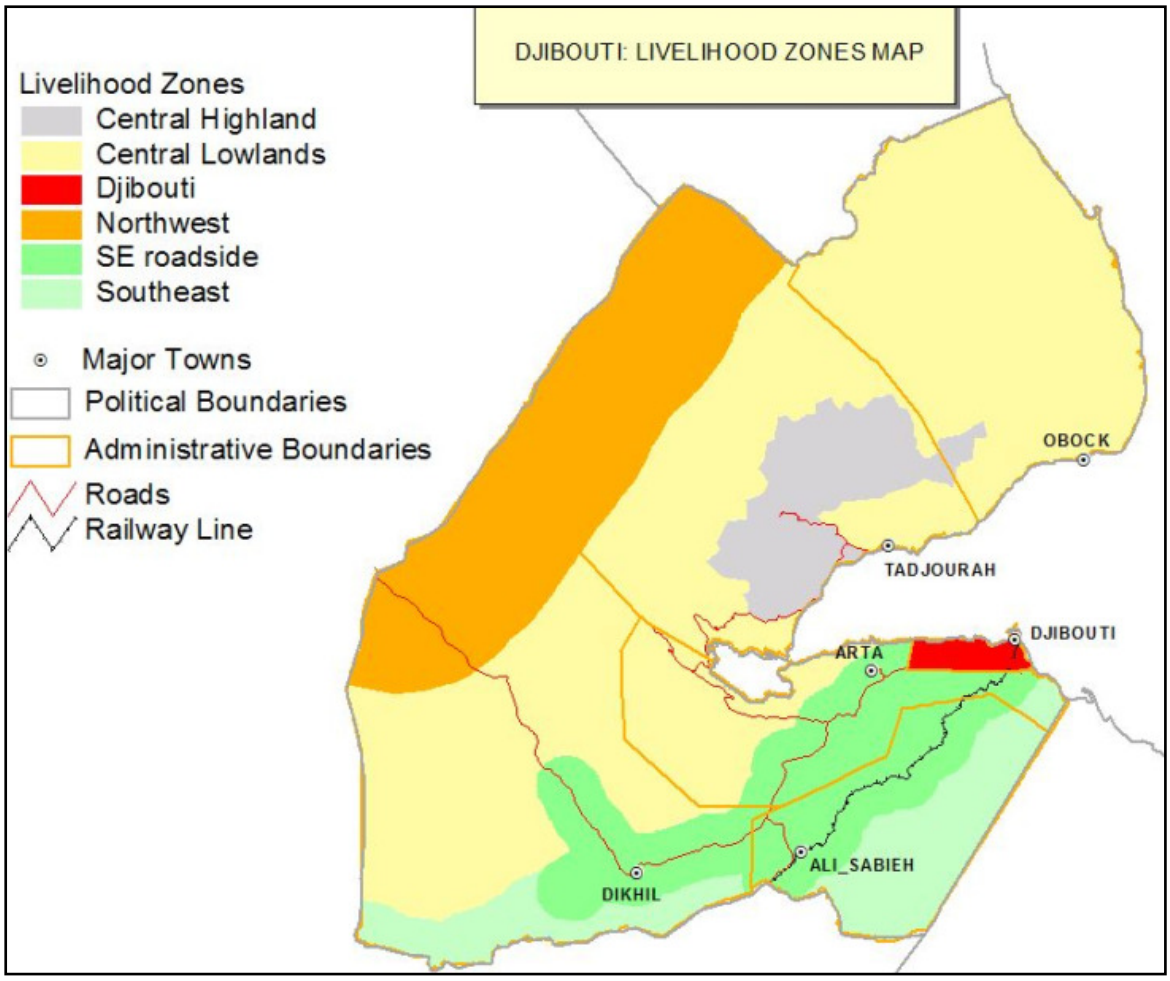
REPUBLIC OF DJIBOUTI

National Program of Immunization Comprehensive Plan (CMYP) 2011- 2015 Djibouti

April 2011


DJIBOUTI: LIVELIHOOD ZONES MAP
Livelihood Zones
Central Highland
Central Lowlands
Djibouti
Northwest
SE roadside
Southeast
Major Towns
Political Boundaries
Administrative Boundaries
Roads
Railway Line
OBOCK
TADJOURAH
DJIBOUTI
ARTA
ALI_SABIEH
DIKHIL

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Acronyms

AD----------Auto Disable Syringes
AEFI----------Adverse Events Following Immunization
AFP----------Acute Flaccid Paralysis

ANC----------Ante Natal Care
BCG----------Bacillus Calumet Guiriens
CBAW----------Child Bearing Age Women
CMYP----------Comprehensive Multi-Year Plan
DPT---------- Diphtheria-Pertussis-Tetanus
DPT-Hep.B-Hib----------Diphtheria-Pertussis-Tetanus-Hepatitis B-Haemophilus influenza type B
DQS---------- Data Quality Self assessment
DSA---------- Daily Subsistence Allowance
EPI---------- Expanded Program on Immunization
GAVI----------Global Alliance for Vaccine and Immunization
GDP---------- Gross Domestic Product
GHE---------- Gross Health Expenditure
GIVS---------- Global Immunization Vission and Strategies
HC---------- Health Center
HF----------Health Facilities
ICC---------- Inter Agency Coordinating Committee
IEC---------- Information Education Communication
IMCI---------- Integrated Management of Child hood Illnesses
LB----------Live Birth
MCH----------Maternal and Child Health
MMR----------Measles-Mumps-Rubella
MNT---------- Maternal and Neonatal Tetanus
MOF---------- Ministry of Finance
MOH---------- Ministry of Health
ND---------- No data
NNT----------Neo Natal Tetanus
OPV----------Oral Polio Vaccine
PAB---------- Protected at Birth
PCV---------- Pneumococcal Conjugate Vaccine
SIAs---------- Supplemental Immunization Activities
THE---------- Total Health Expenditure
TT---------- Tetanus Toxoid
UNICEF----------United Nations Children's Fund
WHO---------- World Health Organization

1. Executive Summary

Djibouti is located in the horn of Africa with a population of 818,159 (2009), administratively divided into five districts including the capital and the capital is the residence of about 2/3rd of the population. The GDP of Djibouti is 1,280USD (2009) and 15% of GDP used for health and the government contributes 50% of the health budget.

Djibouti has a health policy since 1999 and a national health sector plan (2008-2012) and immunization CMYP 2007 to 2011, however because of new developments like the availability of new vaccines like pneumococcal and Rota virus vaccines the CMYP will be revised for the period of 2011 to 2015.

MOH of Djibouti has an EPI program managed by a program manager and has 9 other staff. According to the WHO/UNICEF estimate of immunization coverage the DPT3 and measles coverage for the year 2009 is 89% and 73% respectively, however the MOH report revealed DPT3 88% and measles 85% coverage. The PAB coverage was 79% for 2009 (WHO/UNICEF estimate).

The CMYP is prepared using the WHO UNICEF guidelines and GIVS as a reference document for the global targets; the regional targets were used for the diseases under elimination and eradication.

The goal of immunization service is to contribute to the reduction of child and maternal morbidity and mortality due to the vaccine preventable diseases by providing good quality immunization services. The program objectives are to increase DPT3-HepB-Hib/OPV3, Pneumococcal3 and measles coverage to 95% by 2015. The other goals are to be certified polio free, eliminate measles and neonatal tetanus. Djibouti planned to introduce pneumococcal and rotavirus vaccines in 2012 and 2013 respectively.

The costing and financing of the CMYP is prepared using the WHO/UNICEF tool for costing and reports and plans of the government and partners were used as sources of information.

The total cost of the CMYP for the five-year period is 17,129,538 USD and the vaccine cost (traditional, underused and new vaccines) costs 23% of the total cost. The Government, GAVI, UNICEF, WHO and the World Bank are the major funding sources of the program. 70.3% of the fund is considered to be secured and 27.1% provable and 2.6% funding gap.

2. Introduction

2.1. The Republic of Djibouti

Djibouti is located in the horn of Africa; it is the smallest country in the continent with a projected population of 818,159 (preliminary 2009 census result). Its surface area is 23,000 sq.km it shares border with Somalia in Southeast, Ethiopia in the west and south and in North with Eretria. The country is administratively divided into six districts including the capital. The town of Djibouti, capital of the country, experienced fast and uncontrolled urbanization in the last decade and currently is the residence for 2/3 of Djiboutian. More than 80% of the population is urban and the remaining population is nomads without fixed residence. Djibouti has also one of the highest rates of immigration in the world related to the context of recurring economic and political crises in the countries of the Horn of Africa. The "refuge" population is estimated at 7-10% of the whole population of the country. The rate of illiteracy is still very high, 72% among women and 49% among men.

The economic resources are limited, the international assistance and those of the friendly countries constitute a substantial share of the national resource. The GDP per capita is estimated at $ 1,280[1] (2009). Djibouti committed about 15% of its GDP for health and the total expenditure of health per capita of inhabitants exceeds $ 100.

2.2 The health policy and National health sector plan

Djibouti has a health policy since 1999 and the Ministry for Health has developed a multi-year national health sector plan for the period of 2002-2011 and a medium term 2008-2012, which has been updated in January 2011 for the remaining two years 2011 and 2012. In immunization, and considering the recommendations of the various reviews, Djibouti developed a multi-year strategic plan (CMYP) for immunization, covering the period 2007-2011. However, because of new developments in the previous three years like the availability of new vaccines like pneumococcal and Rota, the CMYP has been revised and to cover the period of 2011 to 2015.

2. 3. The health system

The structure of health system consists of three levels of care:

[1] http://data.worldbank.org

- The first level, constitutes the first contacts of the population with the health service and includes Community Health Centers (CHCs), peri-urban (13) and the rural health posts (24). In addition each district has a mobile team that provide a common health package including immunization to rural population.
- The second level of the structure is the hospital services with the basic specialties such as medicine, pediatrics, obstetrics or sometimes basic surgery. It consists of the district hospitals at the district capitals.
- The third level includes the specialized Referral centers at the central level with the hospitals Peltier Balbala, and Paul Faure, Dar El Hanan maternity as well as the national reference center of HIV/AIDS Younis Toussaint.

2.4. Global Immunization Vision and Strategy (GIVS) 2006-2015

At the beginning of 2004, WHO and UNICEF took the initiative to develop a new strategic framework to guide the partners in the field of immunization: Global Immunization Vision and Strategy 2006-2015 (GIVS). Among other innovative ideas, GIVS proposes to improve the link between immunization and other health interventions by overcoming the obstacles of the program to go beyond vaccinations and relates to the entire health system. GIVS includes the new vaccines development and proposes a ten-year vision, which will not only contribute to the child survival but also aim to Reduce Mortality in the higher age categories.

2.4.1 The GIVS Vision by 2015:

- Immunization is highly valued;
- Every child, adolescent and adult has equal access to immunization as provided for in their national schedule;
- More people are protected against more diseases;
- Immunization and related interventions are sustained in conditions of diverse social values, changing demographics and economies, and evolving diseases;
- Immunization is seen as crucial for the wider strengthening of health systems and a major element of efforts to attain the Millennium Development Goals;
- Vaccines are put to best use in improving health and security globally; and
- Solidarity among the global community guarantees equitable access for all people to the vaccines they need.

2.4.2 GIVS Goals:

Between 2006 and 2015, all those working on immunization and related product development should strive to prevent morbidity and mortality by achieving the following goals and targets.

2.4.3 GIVS Objectives

By 2010 or earlier

- **Increase coverage.** Countries will reach at least 90% national vaccination coverage and at least 80% vaccination coverage in every district or equivalent administrative unit.
- **Reduce measles mortality.** Globally, mortality due to measles will have been reduced by 90% compared to the 2000 level.

By 2015 or earlier (as the case may be)

- **Sustain coverage.** The vaccination coverage goal reached in 2010 will have been sustained.
- **Reduce morbidity and mortality.** Global child-hood morbidity and mortality due to vaccine-preventable diseases will have been reduced by at least two thirds compared to 2000 levels.

2.4.4. The four strategic areas of GIVS are:

1. To protect more people in a changing world
2. To introduce new vaccines and new technologies
3. To integrate immunization, the related interventions of health and the monitoring within the systems of health.
4. To vaccinate in an Interdependent World

2.5. The National Immunization Program

The national immunization program was initiated in Djibouti Republic in 1984 and the immunization coverage between 1984 and 1990 was excellent with a continuous increase in immunization coverage for all antigens. However, between 1991 and 1994 the coverage has gone down, because of the civil war, during this period 2/3 of the country's children did not have access to immunization service, the coverage had slightly improved from 1995 onwards due to the campaigns conducted. However the cold chain and electric city problem has limited the service. It is from year 2000 that the national authorities decided to revitalize all components of the program and the coverage improved.

2.5.1 The program management

At central level, EPI is under the Director of Priority Health Programs (DPHP), MOH. It is managed by a program coordinator and has the following positions under the manager, an officer responsible for planning, training and monitoring, a logistician responsible for central cold store, AFP surveillance officer and IEC officer. There are also secretary and drivers in the unit and three cold chain technicians for

maintenance. The unit provides overall support to district hospitals. At district level, the chief medical officer is in charge supported by the nurse conducting vaccination.

There are also mobile teams in each district to conduct integrated primary health care services, among the team, the vaccinator provides EPI for children and the midwife provides TT vaccination for child bearing age women and BCG for newborns. The mobile team has also an IEC officer for mobilization of the community.

2.5.2. immunization schedule

The National Program of Immunization Djibouti proposes to ensure the vaccination of the children according to the following vaccine schedule

Table 1. The National Immunization Program of Djibouti.

Antigen	Birth	6 weeks	10 weeks	14 weeks	9 month	15 month
BCG	x					
DPT-Hep.B-Hib		x	x	x		
OPV	x	x	x	x		
Measles					x	
DPT						X

In addition, the multi-year plan 2002-2006 of the EPI recommends the systematic antitetanus vaccination of the pregnant women and the widening of this vaccination to the women of child bearing age.

Table 2. The immunization schedule for childbearing age women

Antigen	Date	Antigen	Date
TT1	At the first contact	TT4	1 year after TT3
TT2	4 weeks after TT1	TT5	1 year after TT4
TT3	6 months after TT2		

2.5.3. The vaccination program Strategies

The routine vaccination is delivered by the fixed sites at health facility level and mobile teams cover the rural areas.

Accelerated campaigns targeting children under five years old.

- National immunization days related to polio eradication and accelerated measles control.

The medical services of other public sectors and certain parastatal structures also offer services of vaccination to their staff. One of them is the health services of the army and the services of the social security.

2.5.4. Accessibility of immunization services

The Republic of Djibouti is divided into 6 districts: Djibouti, Arta, Ali Sabieh, Dikhil, Obock and Tadjoura. Generally, access to the health service runs up against the relatively broken terrain especially in the central and the northern part of the country and the existence of the mountains, which constitutes a difficult physical barrier. The road infrastructure, which is limited to Djibouti city and the district capitals, is another obstacle for accessibility. In addition, the electrical supply network, which covers only the city of Djibouti and the major towns of the country, makes difficult the installation and the maintenance of a functional cold chain equipment.

To address these challenges the MOH and partners have installed solar refrigerators in the rural health centers out of the electric city supply areas and established mobile teams to reach the difficult to reach communities.

3. SITUATION ANALYSIS OF THE NATIONAL IMMUNIZATION PROGRAM

3.1. The progress of immunization coverage in Djibouti between 1980 and 2009, according to the annual WHO/UNICEF joint review.

The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) recently (July 2010) updated the national vaccination coverage by country over the period 1980-2009 based on the country Joint Report submitted annually and surveys conducted. Before finalization of the WHO/UNICEF estimate countries are requested to review the draft report and submit their comments. For Djibouti, the WHO/UNICEF estimate is shown below:

3.1.1. BCG Coverage

The coverage increased significantly around the middle years of the 1980s (around 40%) and towards the end of the 1980s. The officially reported data suggested a coverage rate of 87% in 1988, confirmed by survey (Immunization, Diarrheal Disease, Maternal and Infant Mortality, 1989). The coverage has fallen after 1990 (conflict in the northern part of the country) and remained stagnant around 51% between 1992 and 1996. The coverage dropped in 1997 and 1998 due to problem of cold chain and then significantly improved from 34% in 2000 to 90% in 2008 and 2009.

3.1.2. DTP3 Coverage

The DPT3/OPV3 coverage increased significantly from 25% in 1987 to 85% in 1990, figure 1. The coverage declined from 1991 to 1999 due to conflict, however it started to increase slowly from 2000 and reached 68% in 2003 and 89% in 2008 and 2009, in all years the government report and the WHO/UNICEF estimates are the same, pentavalent was introduced in 2007.

3.1.3. Measles coverage

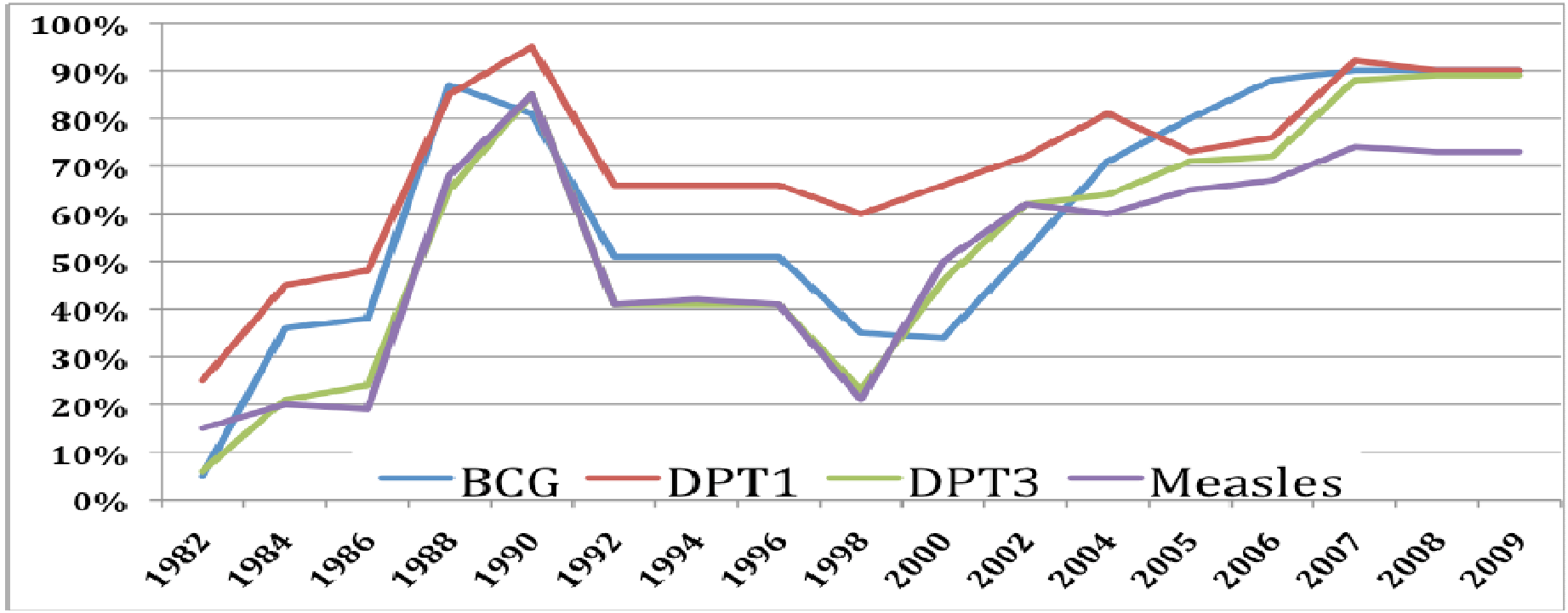
The measles coverage was also similar to the other antigens coverage increased in the last years of 1980s, decreased in the 1990s, and increased significantly from 50% in 2001 to 73% in 2008 and 2009. The MOH report indicates the measles coverage as 85% at the end of 2010.

3.1.4 Protected at birth

Tetanus toxoid vaccine is given to pregnant and childbearing age women to protect neonates from neonatal tetanus. There are two ways to estimate the level of protection; the first one is the TT2+ coverage, which is the administrative coverage of the TT2 and other doses given. The other method is the protected at birth. This is recommended in countries with DPT3 coverage of 80% and above, it is a method of collecting information for each infant from the mother during DPT1 vaccination by asking whether the infant was born during the protection period or not. In

Djibouti, the protected at birth coverage estimated by WHO/UNICEF has similar trend like other antigens for infants; the 2008 and 2009 estimates were 79% and 77% respectively.

Figure 1. BCG, DPT1, DPT3 and measles immunization Coverage 1980-2009, Djibouti (source: WHO/UNICEF Estimate)



3.2. The result of the 2008 EPI coverage survey, Djibouti 2008

Djibouti conducted EPI coverage survey for children 12 to 23 months to estimate the immunization coverage of children and 0-11 months to estimate the coverage of TT.

Table 3. EPI coverage survey result, 2008

Antigen	Djibouti city (%)	Other districts (%)	Average (%)
BCG	95.1%	86.5%	93.2**%**
DPT1/OPV1	94.6%	82.5%	**91.1%**
DTP3/OPV3	88.7%	67.6%	83.1**%**
MEASLES	78.3%	60.4%	72.9**%**
Fully Vaccinated	60.1%	39.8%	54.5**%**

Source: MOH report

3.2.1 Vaccination coverage at the district level

The Republic of Djibouti is subdivided into six districts: Djibouti, Arta, Ali Sabieh, Dikhil, Obock and Tadjoura. Table 4 presents the vaccination coverage by district according to the EPI coverage survey conducted in 2008.

Table 4: EPI coverage survey result (12-23 months) conducted in 2008, by district

District	BCG (%)	DTP1 (%)	DTP3 (%)	Measles (%)
Djibouti	95.8	95.3	89.7	78.9
Ali Sabieh	91.0	88.2	77.5	70.8
Dikhil	88.2	88.7	75.6	67.2
Tadjourah	79.5	73.1	53.1	50.3
Obock	80.3	71.5	49.6	40.9
Arta	100.0	95.6	81.5	70.5
Total	93.2	91.1	83.1	72.9

(source: MOH report)

The coverage survey result is very close to the administrative coverage reported in all antigens. The commonest reasons for failure to complete vaccination based on the coverage survey result were:

- Lack of awareness of the importance of vaccination
- The immunization service is far from their house
- Long waiting hours at the immunization site
- Absence of vaccinator at vaccination sites
- Parents were very busy

3.3. The current status of implementation of the CMYP 2007 to 2011

Table 5 below indicates the objectives of the comprehensive multiyear plan 2007-2011 and indicates the overall implementation status of each objective by the end of 2010.

Table 5. Implementation status of CMYP 2007 -2011 (Source: MOH report)

Objectives of the CMYP 2007-2011	**Status of implementation by the end of 2010**
1. To reach a vaccination coverage of 90% for DPT3, OPV3 and first dose of measles	88%
2. To achieve DPT3 coverage of 80% in every district	2/6
3. To achieve 80% coverage for booster dose DPT and MMR2	ND
4. To achieve TT2+ 60% in pregnant women and 30% in non pregnant women in hard to reach areas by 2011	PAB 79%
5. To achieve 95% dT and OPV coverage in school children by 2011	ND
6. To vaccinate 90% of all children under five with OPV in 2007, 2008, 2009 and 2010 during three rounds of vaccination campaign	Achieved
7. To vaccinate 90% of 6 months to 15 years old children with measles vaccine during vaccination campaign in 2009	Achieved
8. To eliminate measles from Djibouti by 2010	Not yet
9. To ensure the prevention of the deficiencies in Vitamin A	90% coverage in

	2010
10. Eradication of poliomyelitis by 2010	not certified
11.To eliminate neonatal tetanus by 2010 (<1NNT/1,000 live birth	not yet
12. To ensure injection safety and proper waste disposal between 2007 and 2011	All vaccinations are given with AD syringes and there is proper disposal at all levels
13.To introduce Hep.B and Hib.B vaccine into routine immunization by 2008	pentavalent introduced in 2007
14.To reduce vaccine wastage OPV to 15%, penta to 5%, measles to 25% by 2010	Not achieved

3.4. Surveillance of vaccine preventable diseases

The epidemiologic surveillance system of Djibouti depends on the weekly reporting of 13 diseases by district focal persons. Among the 13 diseases under reporting measles, AFP, whooping cough and tetanus are targeted vaccine preventable diseases. There is also a plan to conduct surveillance of rotavirus and Hib.

3.4.1. AFP surveillance

The last indigenous case of Poliomyelitis was reported in 2000. The AFP surveillance was started in 1999 and on average two cases were reported per year.

Table 6. Indicators of AFP surveillance performance by year (Source: MOH report)

Year	Pop. < 15 yrs	AFP Cases	Détection rate	% of stool adequacy
2003	201,650	2	0.99	0%
2004	203,500	2	0.98	0%
2005	211,761	2	0.92	50%
2006	218,027	2	0.91	50%
2007	226,547	3	1.32	100%
2008	236,497	6	3.04	50%
2009		5		

2010		3		

Staring from 2008, the number of expected AFP cases has changed from 1/100.000 to 2/100.000.

In 2008 the AFP surveillance system was able to detect an AFP case from Ethiopia that was positive for P1+P3 vaccine virus; the public health response was adequately conducted. In 2009, the system has also been able to detect an AFP case coming from a neighboring country. In 2010 a total of 3 AFP cases were detected, 1 in Djibouti town and 2 in Dikhili.

The AFP detection rate has been less than one from 2003 to 2006 and achieved the minimum 1/100,000 children in 2007 and in 2008 it was 3.04 by detecting 6 AFP cases. The stool adequacy was 100% in 2007 and 50% in 2005, 2006 and 2008, which is a challenge.

3.4.2. Case Based Measles surveillance

According to available data, measles became rare at the beginning of the 1990s. However, following the fall of the vaccination coverage there were epidemics in 1996, 1998 and 2000. The case based measles surveillance is being implemented and detected 7 cases in 2010.

3.4.3. Tetanus

In spite of the efforts made, the surveillance of neonatal tetanus remains inadequate. In 2008, a suspected case was reported, but no case detected in 2010.

Table 7. Surveillance of vaccine preventable diseases in 2010, Djibouti

	Number of AFP	Number of Measles cases	Number of NT	Number of Meningitis
Djibouti	1	6	0	5
Ali sabieh	0	0	0	0
Arta	0	0	0	0
Dikhil	2	0	0	0
Obock	0	0	0	0
Tadjourah	0	1	0	0
Total	**3**	**7**	**0**	**5**

3.5. The immunization system components

3.5.1: Service delivery

The routine vaccination program is conducted in a network of 45 health centers; 12 health centers in Djibouti city (5 structures parapublic), 6 in the district of Ali Sabieh, 6 in the district of Dikhil, 7 in the district of Tadjourah, 5 in Obock and 3 centers in Arta. In addition to these fixed centers, 5 mobile teams, one per district, except Djibouti and Arta, undertakes vaccination services for rural villages far from the health facilities. The participation of the private sector in immunization is very limited.

The central capital and the district capitals conduct 1 to 5 vaccination sessions per week. The rural health centers conduct a minimum of one vaccination session per month and the villages very far from the health centers are covered by mobile teams. The mobile strategy is very useful and addresses the sparsely populated communities in many districts of the country.

Some of the reasons for no vaccination from the coverage survey were physical inaccessibility of the service, absence of the vaccinator during planned vaccination sessions and long waiting hours at the vaccination sessions. If proper action is not taken on time these obstacles can hinder the service to reach the unreached children and may even compromise the already achieved coverage.

3.5.2: Advocacy and communication

The major reasons identified during the EPI coverage survey conducted in 2008 why parents did not bring their children for vaccination were lack of information about the vaccination program at all and lack of information to return for subsequent vaccination dose. These indicate that the communication between the service providers and the community is not adequate and the interpersonal communication during vaccination sessions when, where and for what type of vaccination to return to the vaccination program for subsequent doses is not properly communicated. The other reason for failure of vaccination was the parents were very busy to return for vaccination session, this is also an indication that the parents were not fully convinced about the importance of the vaccination program and indicates the communication gap.

3.5.3: Community participation

In Djibouti, there are district and village chiefs with reasonable audience around them, these chiefs are used during the polio campaign and for AIDS, malaria and tuberculosis control, but they are not fully utilized for immunization.

3.5.4: Monitoring and data management

The various tools for monitoring and data management like vaccination registration book, the tally sheets and the monthly reporting form exist in the health system. However, proper utilization of the tools and use of the data for action is very limited. In addition, the target population, the target coverage to be reached, the monitoring chart, the coverage rates, the dropout rate and wastage rates are not properly documented and monitored.

3.5.5: Immunization logistics and vaccine management

In April and May 2011, an effective vaccine management (EVM) assessment has been conducted with the support from WHO. The preliminary results are presented by level on the figure below. These results have confirmed significant progress made since the 2009 vaccine management assessment (VMA). Efforts will be maintained for the implementation of the EVM improvement plan that has been developed during the assessment to address the remaining gaps.

	Vaccine supply chain levels		
EVM Criteria	**National**	**District**	**Service**
E1: Vaccine arrival	54%		
E2: Temperature	52%	**94%**	66%
E3: Storage capacity	**89%**	70%	67%
E4: Buildings, equipment, transport	75%	51%	70%
E5: Maintenance	61%	**49%**	61%
E6: Stock management	54%	63%	54%
E7: Distribution	61%	57%	63%
E8: Vaccine management	**39%**	50%	74%
E9: IMS, supportive functions	**41%**	**16%**	
EVM Categories			
Buildings	**95%**	**84%**	69%
Capacity	**100%**	**80%**	78%
Equipment	72%	46%	71%
Management	44%	54%	53%
Repairs/maintenance	61%	49%	61%
Training	**89%**	79%	**83%**
Vehicles	**17%**	**33%**	

Djibouti has one cold room and one freezer room at central level and one ice-lined refrigerator and one freezer in each district, the health facilities at peripheral level have solar refrigerators. UNICEF procures vaccines and distributed by the central EPI office to the districts based on the request from the districts and the district hospitals distribute to the health centers using cold boxes.

3.5.5.1 Storage capacity

At central level, there is one positive cold room and one freezer room, Djibouti ships vaccines once per year and OPV, BCG and measles are stored at the freezer room and penta, DPT and TT are stored at positive cold room and seven ice lined

refrigerators. The positive cold room has a capacity of 4,140 lit and the seven ice lined refrigerators have a capacity of 645 lit and the total positive cold storage capacity is 4,785 lit. The required positive storage space for the existing vaccines is 2,081 lit and with pneumococcal vaccine to be introduced in 2012 the requirement will increase to 3,410 lit, in the same year Djibouti will procure and install one additional cold room with net storage capacity of 4,054 lit which will accommodate the Rotavirus vaccine which will be introduced in 2013. Similar analysis for the district and health facility levels indicates that there is adequate storage space at all levels.

Table 8. Existing and future vaccine storage needs at central level

Year	Vaccine	Storage space required	Existing net storage space (Lit)	Additional storage space
2011	OPV + BCG + Measles	610 Lit	4,900 Lit (Freezer Room 3,750 lit + 09 freezers 1,150 lit)	No
2011	PENTA + TT	1,492 Lit	4,785 Lit (Cold Room of 4,140 lit + 07 ILRs of 645 lit)	No
2012	Existing vaccine + PCV	3,410 lit	4,785 Lit (Cold Room of 4,140 lit + 07 ILRs of 645 lit)	4,054 lit new cold room
2013	Existing vaccine + PCV + ROTA	4,705 lit	4,785 Lit (as above)	

There are some challenges in the cold chain and vaccine management:

- Vaccine and diluents quantities do not match in some health facilities
- Vaccine stock cards do not have diluents batch numbers
- Inventory of the Cold Chain Equipment not available

3.5.5.2 Waste management

EPI uses AD syringes for all EPI injections and safety boxes are used at all levels, in addition, all health centers have incinerators for disposal.

3.5.6 The integration of EPI with other priority programs

In principle the maternal and child health activities are integrated at the service delivery level, however in practice integration is not fully achieved. At health centers in Djibouti city and other urban areas, the EPI unit is separate and not integrated with other services, however, the different service providers' screen and refers clients from one unit to the other. In rural areas, the same person provides all the maternal and child health services and it is integrated. In mobile teams, there is a vaccinator as a member of the team who handles the vaccination activities.

3.5.7. Additional immunization activities

3.5.7.1: Eradication of poliomyelitis

The Republic of Djibouti conducted the first polio campaign in 1997 and then conducted annually until 2003 and stopped after that. However, with the occurrence of wild poliovirus in neighboring countries like Ethiopia and Yemen three rounds of polio NIDs conducted in 2005 and 2006, similar rounds conducted in 2007, 2008, 2009 and 2010. The coverage of all these SIAs was satisfactory.

2010 polio and vit A campaigns

Djibouti conducted two rounds of national polio and vitamin A campaigns in 2010 with the objectives of vaccinating all children 0-59 months with tOPV, administering vit A to all children 6-59 months, strengthening routine immunization in hard to reach areas and detecting AFP cases.

The campaign was conduced successfully and a total of 825 personnel participated in the campaign to vaccinate 93,270 children and 92,021(99%) children were vaccinated with tOPV.

Table 9. Polio campaign coverage for children under five in 2010, Djibouti

Region	Target	Vaccinated	%
Tadjourah	9884	8,772	89
Alisabieh	9,912	8,847	89
Arta	4,831	3,865	80
Dikihi	10,140	8,363	82
Obok	4,316	3,702	86
Djibouti	54,187	58,472	108
Total	**93,270**	**92,021**	**99**

Similarly 96% of children 6 to 59 months received vitamin A during the campaign.

National Expert Group: Since 2002, MoH has established the National Expert Group (NEG), the NEG meets periodically to review the AFP cases pending of classification.

Regional certification of poliomyelitis eradication: The National Certification Committee was established in 2002, its members and chairman were updated in 2009. The 2008 version of the National certification report was presented to the regional certification committee; the report was accepted by the RCC with comments which consists meanly in improving stool sample adequacy and routine immunization coverage.

3.5.7.2 Elimination of Measles

The Ministry of Health of Djibouti organized a mass measles vaccination campaign targeting children 9-months to 15 years and in 2003 and 2008.The measles campaigns were integrated with polio campaign.

3.5.7.3 New vaccines introduction

Djibouti had been providing only the six traditional vaccines till 2006 and in the year 2007 hepatitis B and *Haemophilus influenzae* type b vaccines were introduced as pentavalent vaccines with DPT. These vaccines were introduced as two-dose vial.

The expanded program on immunization of Djibouti aims at reducing mortality and morbidity due to vaccine preventable diseases by the introduction of new vaccines like *streptococcus pneumoniae* and rotavirus vaccines.

Globally, about 9.7 million children die annually before their fifth birthday and daily over 26,000 children die from preventable causes (UNICEF 2008 progress report) and Pneumonia is responsible for approximately 19% of deaths among these children. In the Eastern Mediterranean region (EMRO), diarrhea and pneumonia kill 17% and 14% of children respectively (Count-down report OMS, Selon Count-Down to 2015 (WHO/CHERG 2010), diarrhea and pneumonia kill 18% and 16% of children respectively in Djibouti.

Introduction of PCV is believed to substantially contribute to the achievements of the MDG4. It will also reduce the burden of pneumococcal disease in adults by reducing the nasopharyngeal carriage of streptococcal bacteria and hence by reducing the spread of the disease though herd immunity. From the model analysis done by Johns Hopkins university with GAVI support, In Djibouti invasive Pneumoccoal diseases are responsible for the 2,178[2] cases of pneumonia, meningitis and other invasive diseases annually and with case fatality rates of 15% for pneumonia and 66% for meningitis about 332 children die annually and with planned coverage of 90% and vaccine efficacy of 85%, about 76% of the deaths or about 254 children could be saved annually by introducing the pneumococcal vaccine.

In Djibouti, the child mortality rate is 94 per 1,000 live births (EDIM 2006) and infant mortality rate 67 per 1,000 live births.

[2] http://pneumodel.simpal.com/_/PneuModel.html

Pneumonia and diarrhoeal diseases are the two leading causes of hospitalization and death among children under five in the country. According to the 2009 Annual Reports of the Health Information system of the Ministry of Health, pneumonia and diarrhea are reasons for 57% of seeking consultation among children under 5 years in Djibouti city and districts. Recognizing this reality, the Ministry of Health with the support of WHO and UNICEF has implemented a strategy for management of acute respiratory infections with antibiotics at the community level. To implement this strategy the Ministry of Health has recruited hundreds of community health workers that were trained for one year. These community health workers, in addition to this activity they provide promotion of rural community health services by mobilization of the community for vaccination. Cold chain storage space was assessed at all levels to ensure that the PCV will be accommodated at all levels.

The Ministry of Health intends to introduce pneumococcus vaccine in January 2012 and rotavirus vaccine in January 2013. The new vaccines will be introduced into the immunization schedule of the Expanded Program on Immunization as recommended by WHO ie for the pneumococcal vaccine at 6,10 and 14 weeks.

Similarly, the Ministry of health of Djibouti considering the burden of disease and current cold chain storage space decided to introduce rotavirus vaccine by 2013 and will be administered at 6 and 10 weeks. The government will co-finance both vaccines based on the GAVI guidelines.

3.5.7.4 Adverse Events Following Immunization (AEFI) surveillance and monitoring

Like any medicine, vaccines have many minor and very few adverse events following immunization and these adverse events should be detected, monitored and appropriate action should be taken at all levels. To address this, Djibouti EPI has trained all health workers on AEFI surveillance and health workers have started surveillance of adverse events following immunization and reports submitted weekly to the central level. During supervision AEFI is monitored as one of the indicators.

3.5.7.5 Financing

Currently, the government covers the salaries of the health workers at all levels of the health system and the operational costs. Development partners cover the vaccines and injection materials, cold chain and spare parts purchases and other EPI expenses like training of health workers and IEC activities. Currently the

pentavalent vaccine cost is covered by GAVI, but starting from January 2012 the government of Djibouti will contribute the co financing component of both underutilized and new vaccines.

3.6 Summary

The immunization program of Djibouti has documented significant improvement in coverage the DPT3 coverage has increased from 68% in 2003 to 89% in 2008 and 2009. The dropout rate between DPT1 and DPT3 is also within acceptable limit of <10%, however the dropout rate between DPT1 and measles is 18.9%. The program has adequate cold storage space at all levels even to introduce the new pneumococcal and Rota vaccines.

The following challenges should be addressed

- From the coverage survey result four of the six districts have less than 80% DPT3 coverage
- Significant difference in coverage between Djibouti and other districts.
- Weak data management and poor timeliness of reports
- Insufficient supervision, monitoring and evaluation
- No regular update of cold chain inventory
- Shortage of spare parts
- Inadequate advocacy and communication

3.6.1 Summary of the situation analysis of the various components of routine EPI, 2010 (source: MOH Djibouti)

Table 10: Major indicators and implementation status

Components	Indicators	2010
Service delivery/Routine Coverage	National level DPT3 coverage >= 90% by 2011	88%
	% Districts with DPT3 > 80%	2/6
	% population covered by the fixed strategy	88%
	% population covered by outreach strategy	ND
	% population covered by mobile teams	12%
	% population living in inaccessible areas	15%
	DPT1-DPT3 dropout rate at national level	1%
	% Districts with DPT1-DPT3 dropout rate of > 10%	5/6
Monitoring of Routine	Completeness of report at national level (%)	89%
	Timeliness of report at national level (%)	70%
	Use of monitoring chart at District level	yes

Cold chain and vaccine management	Existence of cold chain rehabilitation plan	Yes
	% Districts with standard cold chain equipment	100%
	% Districts without vaccine stock out	100%
Immunization safety and waste management	% Districts with an adequate number of AD syringes for all routine vaccinations.	100%
	AEFI monitoring	Yes
	Availability of safety boxes	100%
	% Districts applying proper waste management (incinerator)	100%
Supply Vaccines	% contribution of the government to the cost of the vaccines	0%
	Out-of-stock conditions at the national level.	No
	% Districts with stock card for vaccines	100%
	% Districts with vaccine wastage rate for BCG < 50%	0
Communication	Existence of a communication and social mobilization plan as part of the micro plan	Yes
	% budget allocated for social mobilization and communication	20%
Financial sustainability	Contribution of the Government to the total cost of EPI	60%
Management and planning	% Districts with micro plans	0%
	Immunization coverage regularly monitored at central level.	yes
Operational research	Numbers the operational researches conducted on vaccination	EPI coverage survey
Coordination	A number of ICC meetings conducted	12
Availability of Human resources	% of health facility with at least a vaccinator	100%
	Health worker/vaccinator by 10,000 population	1
Transport /Mobility	% Districts with an adequate transport (a vehicle)	100%
Integration with other Interventions	Vaccination services systematically integrated with other health services (Malaria, Nutrition, IMCI etc)	IMCI
Effectiveness of the Program	Timeliness of distribution of funds to the districts (%)	100%
	% Districts visited at least once per year	100%

Table 11: Situation analysis of the accelerated diseases control activities

Initiative	**Indicators**	**20**10
Polio eradication	Non polio AFP cases and detection rate/100,000 <15	3 cases
	Polio campaigns: (no. rounds) and coverage	99%
NNT elimination	Coverage TT (pregnant women)	65 %

	Coverage TT2 + (CBAW)	ND
	% Districts reporting > 1 case of NNT by 1000 LB	0
	TT SIAs in zones at the high risk (O/N)	No
Elimination of Measles	Routine EPI overage of Measles	85%
	A number of outbreaks detected	0
	Measles campaigns conducted (Y/N): Coverage Age group	Yes 83% 9 months-15 years
Supplementation of Vitamin A	Vitamin A coverage	90%

4. THE FIVE YEARS (2011-2015) EPI STRATEGIC PLAN

4.1 Programmed Goal

The goal of immunization service is to contribute to the reduction of child and maternal morbidity and mortality due to vaccine preventable diseases by providing good quality immunization services.

4.2 Program Objectives

4.2.1 To achieve a coverage of 95% DTP-HepB-Hib3/OPV3 and 1st dose of measles at national level by 2015

4.2.2. To achieve 85% DPT-Hep.B-Hib3/OPV3 coverage in all districts by 2015

4.2.3. To fully integrate immunization service with other child survival interventions by 2015

4.2.4 To achieve a national level coverage of 90% for the booster dose of DPT and 2nd dose of measles at 15 months of age.

4.2.5 Measles elimination

4.2.5.1. To eliminate measles by 2012 (EMRO target)

4.2.5.2. To vaccinate 95% of 9 months to 59 months old in 2011, at the time of measles vaccination campaign.

4.2.6 NNT elimination

4.2.6.1. To eliminate NNT by 2012 and maintain beyond

4.2.6.2. To achieve a protected at birth coverage rate of 90% by 2015

4.2.7. Polio eradication

4.2.7.1. To achieve and maintain certification standard AFP surveillance by 2011 and beyond

4.2.7.2. To be certified polio free by 2012

4.2.7.3 To vaccinate 100% of the children of less than 5 years of age at the time of the mass vaccination campaigns in the rounds with OPV in 2011 to 2015

4.2.8. New vaccines introduction

4.2.8.1. To introduce pneumococcal vaccine by 2012 and Rotavirus vaccine by 2013 into routine immunization program.

4.2.8.2. To achieve a national level coverage of 95% of PCV3 and 90% for Rota2 coverage by 2015

4.2.9. To ensure supplementation of Vitamin A to 95% of children by 2012

4.2.10. Cold chain and vaccine management

4.2.10.1. To reduce vaccine wastage by 2015, the rate of vaccine wastage of Pentavalent will not exceed 5%; measles will fall to 25% and OPV to 15%.

4.2.10.2. To expand the cold storage space and improve cold chain management at all levels by 2012 and beyond

4.2.10.3. To strengthen surveillance and monitoring of Adverse events following immunization (AEFI)

Table 12. The revised National Immunization Schedule of Djibouti.

Antigen	Birth	6 weeks	10 weeks	14 weeks	9 month	15 month
BCG	x					
Hepatitis B	x					
DPT-Hep.B-Hib		x	x	x		
DPT						X
OPV	x	x	X	X		
PCV		x	X	X		

Rota		x	X			
Measles					X	x

5. Target population of the CMYP 2011 to 2015

	Base year	Planned				
Number	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Total population	818,159	867,985	894,025	920,845	948,471	976,925
Births	26,181	27,776	28,609	29,467	30,351	31,262
Infants' deaths	1,754	1,861	1,917	1,974	2,034	2,095
Surviving infants	24,427	25,915	26,692	27,493	28,318	29,167
Pregnant women	26,181	27,776	28,609	29,467	30,351	31,262
Target population vaccinated with BCG	23,563	25,276	26,320	27,404	28,530	29,699
BCG coverage	90%	91%	92%	93%	94%	95%
Target population vaccinated with OPV3	21,495	23,064	24,023	25,018	26,335	27,709
OPV3 coverage	88%	89%	90%	91%	93%	95%
Target population vaccinated with penta3	21,495	23,064	24,023	25,018	26,335	27,709
Penta3 coverage*	88%	89%	90%	91%	93%	95%
Target population vaccinated with penta1	21,984	23,582	24,557	25,568	26,618	27,709
Penta1 Coverage	89%	91%	92%	93%	94%	95%
Penta wastage rate		10%	9%	8%	7%	5%
Target population vaccinated with 3rd dose of PCV 13			24,023	25,018	26,335	27,709
3rd dose PCV 13 Coverage			90%	91%	93%	95%
Target population vaccinated with 1st dose of PCV13			24,557	25,568	26,618	27,709
PCV1 coverage			92%	93%	94%	95%
Wastage rate in base-year and planned thereafter		5%	5%	5%	5%	5%
Wastage factor in base-year and planned thereafter		1.05	1.05	1.05	1.05	1.05
Target pop vaccinated with 2nd dose of Rota vaccine				$21,994	$24,070	$26,250
Target pop vaccinated with 1st dose of Rota vaccine				$22,544	$24,637	$26,834
Target population vaccinated with 1st dose of Measles	20,763	22,287	23,489	24,743	26,052	27,709
Measles coverage	85%	86%	88%	90%	92%	95%
Pregnant women vaccinated with TT2+	18,065	18,065	20,598	22,100	24,281	26,572
TT2+ coverage	69%	70%	72%	75%	80%	85%

Annual penta Dropout rate		1%	1%	1%	1%	1
Annual Penta1-Measles Drop out rate		10%	9%	7%	3%	3%

6. Strategic Areas

The 2011-2015 Comprehensive EPI Plan shall be implemented within the framework of Global Immunization Vision and Strategies (GIVS) in the four main strategic areas namely:

- **Protecting more people in a changing world**
  - Reaching every children and achieving 95% penta3 and PCV3 coverage in all of districts
- **Introducing new vaccines and technologies**
  - Introduction of new vaccines (pneumococcal and Rotavirus vaccines)
- **Integrating immunization, other linked health interventions, and surveillance in the health systems cont**ext
  - Integration of EPI with other maternal and child health interventions like IMCI, malaria control and nutrition
- **Immunizing in a context of global interdependence**
  - cross border coordination of immunization activities

Activities for the above strategic areas have been outlined within the immunization system components summarized as:

- Service Delivery
- Vaccine supply and quality
- Disease surveillance and accelerated disease control
- Advocacy, Social Mobilization and program Communication
- Programme Management

7. NATIONAL PRIORITIES, OBJECTIVES AND MILESTONES: 2011-2015

National priorities	EPI objectives	EPI Milestones	Global and regional goals:2006-2015	Order Of priority
1. National penta3/OPV 3 coverage is 88% and measles coverage 85%	To reach penta3/OPV3 and measles coverage 95% by 2015.	**2011:** Penta3/OPV3 89% and measles 86% **2012:** Penta3/OPV3 90%, measles 88% **2013:** Penta3/OPV3 91%, measles 90% **2014:** Penta3/OPV3 93%, measles 92% **2015:** Penta3/OPV3 and measles 95%	By 2010, all countries will achieve 90% DPT3 coverage at national level	1
2. Not all districts achieved Penta3/OPV3 coverage of 80%	To reach penta3 vaccination coverage of 85% in each district by 2012	**2011:** 4 of the 6 districts achieve 80% penta3 coverage **2012:** 6 of the 6 districts achieve Penta3 coverage of 80% **2013 to 2015:**Maintain the 85% and above penta3 coverage	By 2010, all countries will achieve at least 80% of coverage in every district.	1
3. Immunizatio n service not fully integrated with other priority MCH services	To fully integrated immunization service with other MCH services by 2015	**2011:** 50% integration of EPI and IMCI services in mobile teams **2012**: in 60% of HCs and HPs EPI is integrated with IMCI and ANC **2013**: in 70% of the HCs and HPs EPI is integrated with IMCI and ANC **2014**: in 90% of HCs and HPs EPI is integrated with IMCI and ANC **2015**: in 100% of HCs and HPs EPI is integrated with IMCI and ANC		2
4. Pneumonia and diarrheal diseases are the commonest causes of morbidity and mortality among	To introduce Pneumococcal and rotavirus vaccines in 2012 and 2013 respectively and achieve 95% PCV3 and 90% rota2 vaccination coverage by 2015	**2011: submit application for PCV and rotavirus vaccines introduction** **2012:** Introduction of PCV vaccine 2013: Introduction of rotavirus vaccine. And achieve 80% rota2 coverage by 2013, 85% by 2014 and 90% by 2015		2

National priorities	EPI objectives	EPI Milestones	Global and regional goals:2006-2015	Order Of priority
children under five and pneumococcal and Rota vaccines not introduced				
5. Low awareness of the community about importance of immunization	To Conduct community mobilization using multiple strategies and reach all villages by 2013	**2011:** Community mobilization using electronic media, posters and local leaders in all villages of districts with <80% penta3 coverage **2012**: Community mobilization using electronic media, posters and local leaders in 80% of districts **2013**: Community mobilization using electronic media, posters and local leaders in 100% of districts		3
6. The dropout rate between penta1 and measles is 18.9%	To reduce the dropout rate between penta11 and measles to < 5% by 2015	**R**educe penta1-measles dropout rate to: 13% by 2011 10% by 2012 9% by 2013 7% by 2014 <5% by 2015		2
7. High vaccine wastage rate	To reduce wastage rate of vaccines: BCG to 50%, measles to 25%, OPV and TT to 15% and to penta to 7% by 2015	Reduce wastage rate of vaccines: **2011**: BCG 70%, measles 30%, OPV and TT 25%, penta 10% **2012**: BCG 65%, OPV 20%, TT 20%, measles 27% **2013**: BCG 60%, TT 15%, measles 25% and penta 9% **2014**: BCG 55%, penta 8% **2015**: BCG 50%, penta 7%		3

National priorities, Objectives and milestones of the EPI (continued)

Accelerated diseases control

National priorities	EPI objectives	Milestones	Global and regional goals 2006-2015	Order Of priority
8. Djibouti is not certified polio free	To be certified polio free by 2012 and maintain the population immunity level by conducting polio SIAs and reaching 100% of children under five from 2011 to 2015.	**2011:** Achieve certification standard AFP surveillance and stool adequacy and conduct 2 rounds of polio SIAs **2012:** Request for certification and conduct 2 rounds of polio SIAs. **2013:** Certification and conduct 2 rounds of polio SIAs **2014 and 2015**: conduct 2 rounds of polio SIAs/year	By 2005, the transmission of the polio will be stopped	2
9. Measles not Eliminated	To eliminate measles from Djibouti by 2012 and maintain the population immunity level achieved.	**2011**: conduct mass measles campaign to maintain the population immunity level.	By 2010, measles will be eliminated (not of detected indigenous case).	2
10. Neonatal tetanus not eliminated	To Eliminate NNT by 2012 (< 1 case for 1,000LB)	**In 2012**, the elimination of the TNM will be certified	Elimination of the NNT in each district by the end of 2007.	2
11. Fight against hypovitaminosis A	To supply vit.A to 95% of children by2013	**2011**: 90% of children under five supplied vit.A 2 times/year **2012**: 93% of children supplied with Vit.A **2013**:95% of children supplied with vit.A		3

8. PLANNING BY IMMUNIZATION SYSTEM COMPONENT: 2011 TO 2015

Objectives	Strategies	Major activities
8.1 Services delivery: Strategies and major activities		
1. To reach penta3/OPV3 and measles coverage of 95% 2. To reach penta3 vaccination coverage of 85% in each district by 2012 3. To fully integrate immunization service with other MCH services by 2015 4. To reduce the dropout rate between Penta1 and measles to <5% by 2015 5. To supply vit.A to 95% of children by2012 6. To establish sentinel site surveillance for	1. Conduct micro planning annually in all districts and update it every quarter	1. Provide immunization service integrated with other MCH services in all health facilities regularly. 2. Conduct integrated district level micro planning and update quarterly. 3. Provide resources (vaccine, syringes, transport/fuel, fund, recording and reporting formats, etc) on time based on the micro plan.
	2. Conduct outreach immunization services	4. Conduct integrated outreach immunization service for villages 5 to 15 kms from the health facilities 5. Monitor regularly the outcome of the outreach services 6. Revise the outreach plan quarterly 7. Ensure availability of resources (transport and other) for all outreach sites 8. Ensure the community is informed about the objective, target population, date and time of outreach sessions
	3. Establish mobile teams in all districts	9. Conduct integrated mobile team services regularly based on the micro plan. 10. Allocate resources (transport, DSA, etc) for mobile teams Based on the micro plan 11. Identify hard to reach villages and plan a regular mobile team to reach them
	4. Monitor immunization activities monthly	12. Monitor monthly immunization coverage at central level and provide monthly written feedback 13. conduct quarterly review meetings with the responsible personnel from districts and health facilities 14. Keep record of target population in each village and update regularly vaccinated and unvaccinated children. 15. Establish defaulter tracing system in all districts

Objectives	Strategies	Major activities
Hib and Rota	5. Refresher training of health workers	16. Facilitate refresher training of health workers a minimum of annually to every health worker.
	6. Integrated supportive supervision to all districts using check list	17. Conduct regular monthly-integrated supportive supervision and visit each district and health facility.
	7. Conduct DQS regularly	18. conduct DQS quarterly in all districts 19. Disseminate the DQS report to all districts 20. Use the DQS data for planning
	8. Sentinel site surveillance of Hib and Rota	21. Establish sentinel site surveillance of Hib and Rota
7. To introduce Pneumococcal vaccine in 2012 and rotavirus vaccine in 2013 and achieve 95% pneumococcal3 and 90% for rota2 vaccination coverage by 2015	9. Submit new vaccines application 10. Conduct cold chain assessment 11. Train of health workers on new vaccine 12. Advocacy and social mobilization about the new vaccines 13. Revise the recording and reporting formats	22. Submit application for PCV and rotavirus vaccines introduction 23. Conduct training of all health workers on new vaccines 24. Conduct advocacy to the decision makers, social mobilization including media to the community about new vaccines. 25. Revise the recoding and reporting formats to include the new vaccines 26. Make budget available for co-financing 27. Introduce pneumococcal and rotavirus vaccines 28. Monitor the introduction of new vaccines regularly 29. Conduct post-introduction evaluation six months to one year after introduction 30. Conduct impact assessment of the new vaccines three years after introduction
8. To introduce booster dose for DPT and measles at 15 months of age and hepatitis B foe newborns	14. Introduce measles and DPT vaccination at 15 months of age and hepatitis B for newborns	31. Conduct DPT and measles vaccination activities for 15 months old children 32. Introduce hepatitis B vaccination for new born 33. Sensitize the care takers to bring their children for the booster dose 34. Monitor the coverage with other immunization services
8.2 Advocacy and communication		
9. To improve awareness of the community by conducting mobilization using	15. Advocacy meetings and visits to the decision makers including the traditional and religious leaders Use electronic and print media for community mobilization	35. Conduct advocacy meetings with the traditional and religious leaders in each district. 36. Facilitate training of health workers on interpersonal communication skills. 37. Prepare radio and TV messages and transmit regularly.

Objectives	Strategies	Major activities
multiple strategies and reach all villages by 2012 10. To increase political commitment and financial contribution of the government for vaccination 10% annually starting 2011	16. Training of health workers on interpersonal communication skills 17. Advocacy meeting with Ministry of Finance	38. Prepare posters and leaflets to promote immunization 39. Conduct advocacy visit to ministry of finance for better commitment and financial contribution for immunization
8.3 Logistics and vaccine management		
11. To reduce wastage rate of vaccines: BCG to 50%, measles to 25%, OPV and TT to 15% and penta to 5% by 2015	18. Introduce stock card of vaccine in all health facilities 19. Mobilize the community to utilize the service 20. Implement multi-dose vial policy for TT and OPV in all health facilities	40. Implement stock card and monitor its utilization regularly 41. Implement multi dose open vial policy for OPV and TT in all health facilities 42. Implement first expiry first out policy for all vaccines 43. Prepare emergency contingency plan in case of refrigerator failure
12. To expand the cold storage space to accommodate the new vaccines by 2012 13. To replace old cold chain equipments based on inventory by 2011 and beyond 14. To strengthen AEFI surveillance	21. Expand cold storage space 22. Replace old cold chain equipment 23. Facilitate refresher training of health workers on AEFI surveillance and monitoring	44. Procure two cold rooms 45. Replace old cold chain equipment 46. Regular maintenance of cold chain equipment 47. Procure spare parts for cold chain equipment 48. Facilitate training of health workers for regular maintenance of cold chain equipment 49. Update inventory of cold chain equipment monthly 50. Facilitate training of health workers on AEFI 51. Include AEFI in the regular supervision checklists and review meeting.

Objectives	Strategies	Major activities
8.4 Accelerated Disease control		
15. To be certified polio free by 2012 and maintain the population immunity level by conducting polio SIAs and reaching 90% of children under five from 2011 to 2015.	24. Polio SIAs annually 25. AFP surveillance 26. Proper documentation of all polio activities	52. Conduct polio SIAs targeting children under five annually, when possible synchronized with neighboring countries 53. Use every opportunity to give polio vaccine to children 54. Strengthen AFP surveillance system 55. Training of health workers on AFP surveillance 56. Regular monitoring of the AFP surveillance 57. Strengthen the national polio technical and certification committee 58. Prepare and disseminate the guidelines and posters for integrated surveillance 59. Conduct community sensitization for early reporting of AFP cases 60. Exchange information on the status of polio eradication with neighboring countries and take appropriate action like strengthening AFP surveillance, polio campaigns, etc
16. To eliminate measles from Djibouti by 2012 and maintain the population immunity level achieved.	27. Measles SIAs 28. Case based measles surveillance	61. Conduct measles SIAs to maintain the level of immunity achieved 62. Facilitate training of health workers on case based measles surveillance 63. Use every opportunity to give measles dose to children under five 64. Conduct case based measles surveillance integrated with AFP 65. Introduce 2nd dose of measles 66. Sensitize community leaders early reporting of suspected cases 67. Monitor the case based surveillance regularly
17. To Eliminate NNT by 2012 (< 1 case for 1,000LB)	29. NNT case based surveillance including zero reporting 30. Training of health workers on NNT surveillance	68. Introduce case based MNT surveillance in all health facilities 69. Sensitize all health workers on MNT surveillance 70. Conduct active case search in health facility records 71. Sensitize community for community surveillance and early reporting of cases 72. Conduct integrated surveillance with AFP and measles surveillance

9. Major activities and year of implementation

Major Activity	Year of implementation				
	2011	2012	2013	2014	2015
9.1 Service delivery					
1. Conduct integrated district level micro planning and update quarterly.	x	X	x	x	X
2. Provide resources (vaccine, syringes, transport/fuel, fund, recording and reporting formats, etc) on time based on the micro plan.	x	X	x	x	X
3. Provide immunization service integrated with other MCH services in all health facilities regularly.	x	X	x	x	X
4. Conduct integrated outreach immunization service for villages 5 to 15 kms from the health facilities	x	X	x	x	X
5. Monitor regularly the outcome of the outreach services	x	X	x	x	X
6. Revise the outreach plan quarterly	x	X	x	x	X
7. Ensure availability of resources (transport and other) for all outreach sites	x	X	x	x	X
8. Ensure the community is informed about the objective, target population, date and time of outreach sessions	x	X	x	x	X
9. Identify hard to reach villages and plan a regular mobile team to reach them	x	X	x	x	X
10. Conduct integrated mobile team services regularly based on the micro plan.	x	X	x	x	x
11. Allocate resources (transport, DSA, etc) for mobile teams based on the micro plan	x	x	x	x	x
12. Monitor monthly immunization coverage at central level and provide monthly written feedback	x	X	x	x	X

Major Activity	Year of implementation				
	2011	2012	2013	2014	2015
13. Conduct quarterly review meetings with the responsible personnel from districts and health facilities	x	X	x	x	X
14. Keep record of target population in each village and update regularly vaccinated and unvaccinated children.	x	X	x	x	X
15. Establish defaulter tracing system in all districts	x	X	x	x	X
16. Facilitate refresher training of health workers (a minimum annually) to every health worker.	x	X	x	x	X
17. Conduct regular monthly-integrated supportive supervision and visit each district and health facility.	x	X	x	x	X
18. Conduct DQS quarterly in all districts	x	X	x	x	X
19. Disseminate the DQS report to all districts	x	X	x	x	X
20. Use the DQS data for planning	x	X	x	x	X
21. Establish sentinel surveillance sites for Hib and Rota		X	x	x	X
22. Submit application for PCV and rotavirus vaccines introduction	x				
23. Conduct training of all health workers on new vaccines	x	X			
24. Conduct advocacy to the decision makers, social mobilization including media to the community.	x	X	x	x	X
25. Revise the recoding and reporting formats to include the new vaccines	x				
26. Make budget available for co-financing for new and under utilized vaccines	X	X	x	x	X
27. Introduce pneumococcal and rotavirus vaccines		X	x	x	X
28. Monitor the introduction of new vaccines regularly		X	X		

Major Activity	Year of implementation				
	2011	2012	2013	2014	2015
29. Conduct post-introduction evaluation six months to one year after introduction		X	X		
30. Conduct impact assessment of the new vaccines three years after introduction				x	x
31. Conduct DPT and measles vaccination activities for 15 months old children	x	X	X	x	X
32. Introduce hepatitis B vaccination for newborns	x	x	x	x	x
33. Sensitize the care takers to bring their children for the booster dose(DPT and Measles)	x	X	x	x	X
34. Monitor the coverage with other immunization services	x	X	x	x	X
9.2 Advocacy and communication					
35. Conduct advocacy meetings with the traditional and religious leaders in each district.	x	x	X	X	X
36. Facilitate training of health workers on interpersonal communication skills.	X	X	X	X	X
37. Prepare radio and TV messages and transmit regularly.	X	X	X	X	X
38. Prepare posters and leaflets to promote immunization	X	x	x	x	X
39. Conduct advocacy visit to ministry of finance for better commitment and financial contribution for co-financing new vaccine	x	x			
9.3 Logistics and vaccine management					
40. Implement stock card and monitor its utilization regularly	x	x	x	x	X

Major Activity	Year of implementation				
	2011	2012	2013	2014	2015
41. Implement multi dose open vial policy for OPV and TT in all health facilities	x	x	x	x	x
42. Implement first expiry first out policy for all vaccines	x	x	x	x	X
43. Prepare emergency contingency plan in case of refrigerator failure	x	x	x	x	X
44. To procure two cold rooms		X			
45. Replace old cold chain equipment	X	x	x	X	X
46. Regular maintenance of cold chain equipment	X	x	x	x	X
47. Procure spare parts for cold chain equipment	x	x	x	x	X
48. Facilitate training of health workers for regular maintenance of cold chain equipment	x	x	x	x	X
49. Update inventory of cold chain equipment monthly	x	x	x	x	X
50. Facilitate training of health workers on AEFI surveillance and monitoring	x	x	x	x	X
51. Include AEFI in the regular supervision checklist and review meetings	x	x	x	x	X
9.4 Accelerated Diseases Control					
52. Conduct polio SIAs targeting children under five annually, when possible synchronized with neighboring countries	x	x	x	x	X
53. Use every opportunity to give polio vaccine to children	x	x	x	x	X
54. Strengthen AFP surveillance system	x	x	x	x	X
55. Training of health workers on AFP surveillance	x	x	x	x	X
56. Regular monitoring of the AFP surveillance	x	x	x	x	X

Major Activity	Year of implementation				
	2011	2012	2013	2014	2015
57. Strengthen the national polio technical and certification committee	x	x	x	x	X
58. Prepare and disseminate the guidelines and posters for integrated surveillance	x	x	x	x	X
59. Conduct community sensitization for early reporting of AFP cases	x	x	x	x	X
60. Exchange information on the status of polio eradication with neighboring countries and take appropriate action like strengthening AFP surveillance, polio campaigns, etc	x	x	x	x	X
61. Conduct measles SIAs to maintain the level of immunity achieved	X				
62. Facilitate training of health workers on case based measles surveillance	X	x	x	x	x
63. Use every opportunity to give measles dose to children under five	X	x	x	x	X
64. Conduct case based measles surveillance integrated with AFP	X	x	x	x	X
65. Introduce 2nd dose of measles to children 15 months old	X				
66. Sensitize community leaders early reporting of suspected cases	X	x	x	x	X
67. Monitor the case based surveillance regularly	X	x	x	x	X
68. Introduce case based MNT surveillance in all health facilities	X	x	x	x	X
69. Sensitize all health workers on MNT surveillance	X	x	x	x	X
70. Conduct active case search in health facility records	X	x	x	x	X
71. Sensitize community leaders for community surveillance and early reporting of cases	X	x	x	X	X
72. Conduct integrated surveillance with AFP and measles surveillance	x	x	x	x	X

10. MONITORING AND EVALUATION

The MOH with the support of partners will monitor the plan regularly and monitoring will be done at all levels. There is an annual EPI Review Meeting conducted with districts and partners. The ICC members will be involved in the monitoring of the plan. A mid-term review will be conducted after two years and at the end of the plan year, a programme review will be conducted. The cMYP will be updated in order to be aligned with the background information of the health system, targets and period of the next health sector plan. Both routine administrative reports and coverage survey reports will be used as sources of data to verify the achievements of the EPI program during monitoring and evaluation of the cMYP.

11. COSTING AND FINANCING

11.1. Macroeconomic information

The macroeconomic information was included for purposes of placing the costing and financing information. The 2010 GDP per capita is around 1,280 USD.

Table 13. Macroeconomic information, current and projected

_	2010	2011	2012	2013	2014	2015
GDP per capita ($)	1,280[3]	1,280	1,280	1,280	1,280	1,280
Total health expenditures per capita (THE per capita)($)	100.0	100.0	100.0	100.0	100.0	100.0
Government health expenditures (GHE%THE)	54%	54%	54%	54%	54%	54%

11.2 Methodology for costing the cMYP

For the planned activities to successfully take place during the planned period, it is key to have adequate financing for all the proposed activities. To ensure the financing is secured, it is the responsibility of the Government of Djibouti supported by partners to ensure the availability of the required financial and material support from both local and international sources.

[3] http://data.worldbank.org

The cost implications for the proposed program activities and how they are related to the available financing for respective categories of the program is highlighted in this section. Strategies are proposed to improve financial viability. Implementing this multi-year plan will require increasing costs over the 2011-2015 periods. There is a major increase in the total budget in 2012 and 2013; this is because of the introduction of the pneumococcal and Rota vaccines.

The activities and inputs of the different EPI system components are costed. The costs are derived in different ways based on the interventions planned activities. Considering the product of unit prices, and quantities needed each year along with proportion of time used for immunization was used for costing inputs like vaccines, personnel, vehicles, cold chain equipment, etc.

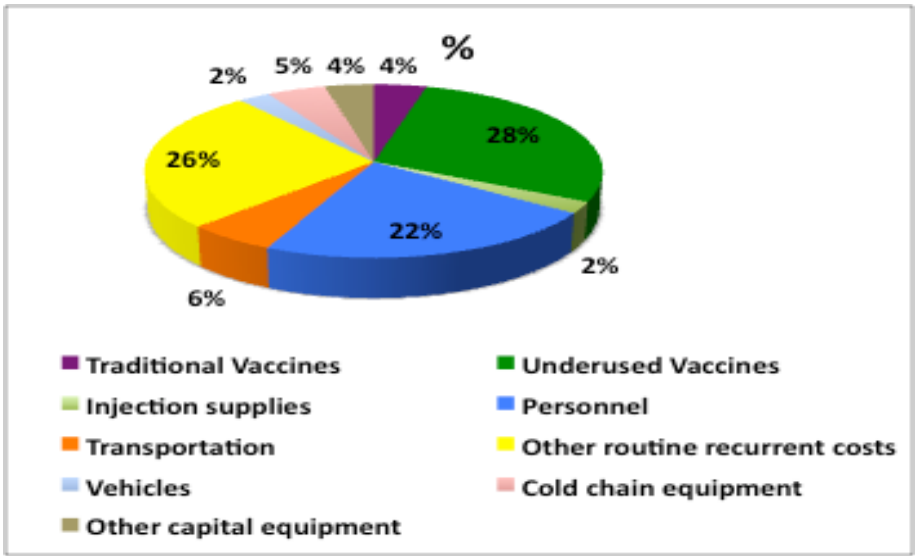
Based on past spending, where past expenditure of lump sum was used to estimate future expenditure. E.g. Cost per child for specific campaign or training activities. All these different approaches are brought together in a WHO and UNICEF pre-designed and updated in March 2011 cMYP Excel costing tool. These derived costs are based on the following components:

- Vaccines and injection supplies including new vaccines
- Personnel costs (EPI specific and shared)
- Vehicles, and transport cost
- Cold chain equipment, maintenance and overheads
- Operation cost for campaigns
- Program activities, other recurrent costs and surveillance

11.2.1 The cost profile of baseline year (2010)

The cost profile of routine immunization was analyzed for 2010 as a baseline, and 28% of all the costs were spent on Under used vaccines (DPT-HepB-Hib), 27% on other routine recurrent costs (training, social mobilization, surveillance, maintenance, etc) and 23% of all the cost was spent on personnel. The details are illustrated in figure 2 below.

Figure 2. Costing of the baseline year 2010 (source: MOH report)



11.3 Costing of cMYP 2011-2015

Over the period of 2011-2015, the total programme cost including the shared costs is 17,129,538 USD (15, 077,240 USD for routine immunization and 2,052,298 USD for polio and measles campaigns).

11.3.1 Vaccines and injection equipment

The costs are function of the unit prices for individual vaccines, with quantities determined by the target population, which is adjusted for by coverage and wastage objectives. The prices are based on information provided in the version 2.5 CMYP costing tool. For the period of five years (2011-2015), 3,965,729 USD will be needed for the traditional, under used and new vaccines, which is 23% of the total cost of the program for five years. Majority of this cost is for new vaccines (pneumococcal and Rotavirus vaccines 62% of total vaccine cost) followed by underused vaccines (DPT-HepB-Hib 31%). The Pneumococcal and Rotavirus vaccines will be introduced by 2012 and 2013 respectively.

11.3.2. Personnel costs (EPI specific and shared)

The cost estimates as with vaccines is based on unit expenditure on different personnel cadres working in EPI at the different levels of the system and the numbers of personnel, adjusted by time spent on EPI related activities. The cost and time spent on supervision, and outreach activities were included for the different cadres of staff at the different level of the system. The unit expenditures are based on Government gross wages. The quantities available and needed for the duration of the cMYP were included. Time spent on EPI was estimated by input of the different level of staff at different levels. The total cost (salary and allowance during supervision of routine immunization activities) for personnel working in EPI related activities is about 1,511,829 USD.

11.3.3 Operational costs for campaigns

Djibouti has been free of polio for many years however, the risk of importation from neighboring countries is very high and there is a need to conduct two rounds of polio SIAs annually. Similarly, Djibouti has not eliminated measles and there is a need to keep the immunity level high to prevent any outbreak and achieve the

regional elimination target, however Djibouti planned to introduce the 2nd dose of measles in 2011 and measles SIAs is planned only for 2011. The two activities cost 2,052,298 USD, which is 12% of the total cost.

Table 13. Cost for the different cMYP components (shared and EPI specific)

Cost Category	2011	2012	2013	2014	2015	Total 2011 – 2015
Routine Recurrent Costs	**US$**	**US$**	**US$**	**US$**	**US$**	**US$**
Routine Vaccines						
Traditional	52,607	50,078	49,434	51,871	54,309	258,299
Underused	232,573	237,886	248,221	258,431	268,965	1,246,076
New		331,894	713,366	682,958	733,135	2,461,353
Routine vaccines (subtotal)	**285,180**	**619,858**	**1,011,021**	**993,260**	**1,056,410**	**3,965,728**
Injection supplies	21,721	30,552	30,640	32,433	34,318	149,664
Personnel costs						
Salaries of full-time NIP health workers (immunization specific)	179,561	266,426	329,059	335,641	342,353	1,453,040
Per-diems for supervision and monitoring	7,956	11,861	12,734	12,989	13,249	58,789
Personnel (Subtotal)	**187,517**	**278,287**	**341,793**	**348,630**	**355,602**	**1,511,829**
Transportation cost						
Fix site strategy (incl. vaccine	36,082	38,841	39,818	40,818	37,654	193,213

Cost Category	2011	2012	2013	2014	2015	Total 2011 – 2015
distribution)						
Outreach strategy	21,649	23,305	23,891	24,491	22,593	**115,929**
Mobile strategy	7,216	7,768	7,964	8,164	7,531	**38,643**
Transportation cost (Subtotal)	64,948	69,914	71,672	73,473	67,778	**347,785**
Maintenance and overhead						
Cold chain maintenance and overheads	73,759	122,364	134,182	146,424	89,288	566,017
Maintenance of other capital equipment	10,149	15,502	18,359	20,241	21,419	85,671
Building overheads (electricity, water…)	48,960	49,939	50,938	51,957	52,996	254,790
Maintenance and overhead (subtotal)	**132,868**	**187,805**	**203,479**	**218,622**	**163,703**	**906,478**
Other Recurrent costs						
Short-term training	45,900	95,457	106,121	54,122	87,222	388,822
IEC/social mobilization	35,700	74,909	82,827	44,921	53,769	292,126
Disease surveillance	67,320	78,654	87,985	98,876	110,883	443,718
Programme management	42,840	81,463	92,426	68,690	81,126	366,545
Other routine recurrent costs	0	0	0	0	0	0
Other routine recurrent costs	**191,760**	**330,483**	**369,359**	**266,609**	**333,000**	**1,491,211**

Cost Category	2011	2012	2013	2014	2015	Total 2011 – 2015
(subtotal)						
Routine Recurrent costs (Subtotal)	**883,994**	**1,516,899**	**2,027,965**	**1,933,026**	**2,010,812**	**8,372,696**
Routine Capital Costs						
Vehicles	28,356	40,784	45,844	51,091	29,589	195,664
Cold chain equipment	48,925	88,825	115,573	143,127	129,734	526,184
Other capital equipment	40,596	40,596	40,596	40,596	40,596	202,980
Subtotal	**117,877**	**170,205**	**202,013**	**234,814**	**199,919**	**924,828**
Campaign Costs						
Polio						
Vaccines	29,389	30,270	31,178	32,114	33,077	156,028
Operational costs	300,724	315,941	331,927	348,723	366,368	1,663,683
Polio sub total	330,113	346,211	363,105	380,837	399,445	1,819,711
Measles						
Vaccines and Injection Supplies	31,784	0	0	0	0	31,784
Operational costs	200,803	0	0	0	0	200,803
Measles sub total	232,587					232,587
Subtotal	**562,700**	**346,211**	**363,106**	**380,837**	**399,445**	**2,052,299**
Shared Health Systems Costs						
Shared personnel costs	733,237	954,681	1,072,849	1,157,953	1,219,535	5,138,256

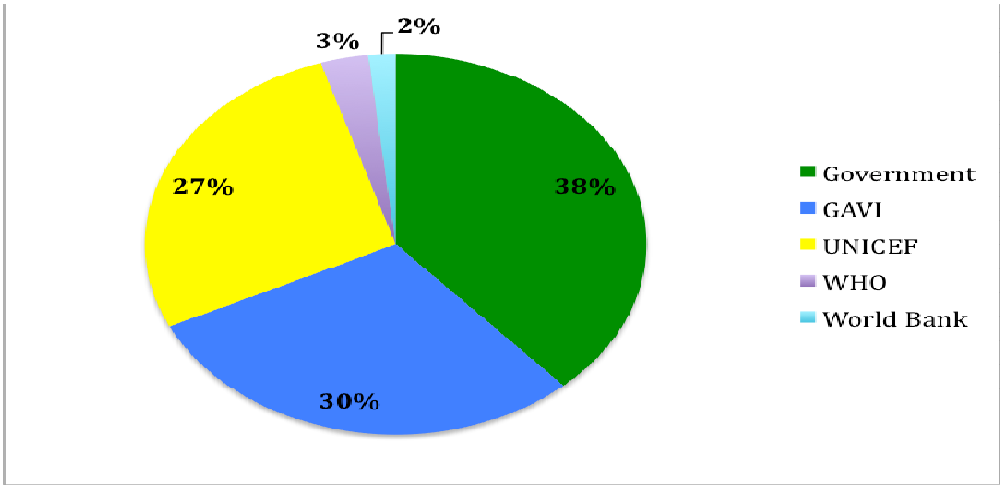
Cost Category	2011	2012	2013	2014	2015	Total 2011 – 2015
Shared Transportation cost	7,390	7,538	7,688	7,842	7,999	38,457
Construction of new buildings	115,872	118,189	120,553	122,964	125,424	603,003
Subtotal	**856,499**	**1,080,408**	**1,201,090**	**1,288,759**	**1,352,958**	**5,779,716**
GRAND TOTAL	**2,421,070**	**3,113,723**	**3,794,175**	**3,837,437**	**3,963,134**	**17,129,539**
Routine Immunization	**1,858,370**	**2,767,512**	**3,431,069**	**3,456,600**	**3,563,689**	**15,077,240**
Supplemental Immunization Activities	**562,700**	**346,211**	**363,106**	**380,837**	**399,445**	**2,052,299**

11.4 Financing of the CMYP

11.4.1 Financing of the program in 2010 (baseline year)

Based on the program cost categories, the past and future financing available for the respective cost areas were derived from partners. The recognized partners supporting the program in 2010 were Government (38%), UNICEF (27%), WHO (3%) and GAVI (30%) figure 3.

Figure 3. The breakdown of financing for the routine program expenditure in 2010 (Source: MOH Djibouti)



11.4.2. Financing the CMYP (2011-2015)

The government contributes for salary and other recurrent and capital costs, which is 45.5% of the total cost, it will also start co-financing for pneumococcal and pentavalent vaccines in 2012 and Rotavirus vaccine in 2013, the co-financing of the underutilized and new vaccines will be about 1.2% of the total cost for the next five years which starts with 0.2USD and increases by 15% annually. GAVI funds 23.3% of all the five years cost, this is because of the pentavalent vaccine introduced in 2007 and pneumococcal and Rota vaccines to be introduced in 2012 and 2013 respectively. The other partners with significant contribution are UNICEF (16.4%), WHO (8.6%) and World Bank (2.4%). About 2.6% of the cost has not been allocated to any of the partners up to now, table 14. Only 70.3% of the funds have been considered as secured, this is with the assumption that the government and partners will finance the areas they have been financing in the previous years. 26.9% of the total cost is with probable financing and 2.6% not funded at all. The government of Djibouti has been increasing the budget for immunization service in the previous years and committed for the co-financing of the GAVI supported

vaccines from 2012 and this will increase by 15% annually. In addition to this, MOH and partners will conduct resource mobilization activities using the ICC forum to cover the gap and ensure the timely mobilization of the secured funds.

Table 14.Financing of the cMYP, 2011-2015 (Source: MOH and partners' plans and projection based on the previous years supports)

	2011	2012	2013	2014	2015	total	%
Government	1,086,503	1,458,061	1,656,919	1,757,447	1,842,852	7,801,782	45.5%
Gov. Co-Financing of GAVI Vaccine	0	34,920	49,087	57,117	69,321	210,445	1.2%
GAVI	396,166	665,412	1,043,141	916,705	967,098	3,988,522	23.3%
UNICEF	458,704	589,787	581,378	590,274	581,877	2,802,020	16.4%
WHO	418,485	236,625	253,948	273,237	294,068	1,476,363	8.6%
World Bank	77,281	80,784	86,440	91,687	70,185	406,377	2.4%
Total secured and probable funds	2,437,140	3,065,589	3,670,914	3,686,467	3,825,401	16,685,511	97.4%
Total secured funds	2,061,332	2,548,306	2,946,315	2,799,037	1,684,183	12,039,173	70.3%
FUNDING GAP	-16,070	48,134	123,261	150,970	137,733	444,028	2.6%
Grand total	2,421,070	3,113,723	3,794,175	3,837,437	3,963,134	17,129,539	100%

nual Plan of Action

	Month of implementation												Responsible
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	
trict nd				X	X	x	x	X					EPI, WHO and UNICEF
cine, l, fund, g based	x	X	x	X	X	X	x	x	x	x	x	x	EPI,UNICEF
service MCH cilities	x	X	x	X	x	X	x	x	x	x	x	x	Districts, HFs
treach or om the	x	x	x	X	x	X	x	x	x	x	x	x	Districts
utcome es	x	x	x	X	x	X	x	x	x	x	x	x	EPI
an	x			X			x			x			EPI
nd sites	x	x	x	X	x	X	x	x	x	x	x	x	EPI
is jective, e and ons	x	x	x	X	x	X	x	x	x	x	x	x	Districts and HFs
villages bile	x	x	x	X	x	X	x	x	x	x	x	x	Districts
bile y based	x	x	x	X	x	x	x	x	x	x	x	x	Districts

Major Activity	Month of implementation												Responsible
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
11. Allocate resources (transport, DSA, etc) for mobile teams based on the micro plan	x	x	x	X	x	x	x	x	x	x	x	x	EPI
12. Monitor monthly immunization coverage at central level and provide monthly written feedback	x	x	x	X	x	X	x	x	x	x	x	x	EPI
13. Conduct quarterly review meetings with the responsible personnel from districts and health facilities			x			X			x			x	EPI
14. Keep record of target population in each village and update regularly vaccinated and unvaccinated children.	x	x	x	X	x	X	x	x	x	x	x	x	Districts, HFs
15. Establish defaulter tracing system in all districts	x	x	x	X	x	X	x	x	x	x	x	x	Districts, HFs
16. Facilitate refresher training of health workers (a minimum annually) to every health worker.	x	x		X	x	X							
17. Conduct regular monthly-integrated supportive supervision and visit each district and health facility.	x	x	x	X	x	X	x	x	x	x	x	x	EPI
18. Conduct DQS quarterly in all districts						X			x			x	EPI
19. Disseminate the DQS report to all districts				X			x			x			EPI
20. Use the DQS data for planning					x	X	x	x	x	x	x	x	All levels
21. Conduct inventory of cold chain equipment and maintain if there are non functional refrigerators			x			X			x			x	All levels
22. Submit application for PCV and rotavirus vaccines introduction				x	x								

Major Activity	Month of implementation												Responsible
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
23. Conduct training of all health workers On cold chain maintenance				X						X			EPI, UNICEF, WHO
24. Conduct advocacy to the decision makers, social mobilization including media to the community.	X	x	x	X	X	X							EPI
25. Revise the recording and reporting formats to include the new vaccines									x	x	x	x	EPI
26. Conduct DPT and measles vaccination activities for 15 months old children	x	x	x	X	X	X	x	x	x	x	x	x	All levels
27. Sensitize the care takers to bring their children for the booster dose	x	x	x	X	X	X	x	x	x	x	x	x	District, HFs
28. Introduce hepatitis B to newborns				x	x	x	x	x	x	x	x	x	MOH
29. Monitor the coverage of booster doses with other immunization services	x	x	x	X	X	X	x	x	x	x	x	x	Districts, HFs
12.2 Advocacy and communication													
30. Conduct advocacy meetings with the traditional and religious leaders in each district.				x	x	X	x	x	x	x	x	x	EPI
31. Facilitate training of health workers on interpersonal communication skills.				x	x	x							EPI, UNICEF
32. Prepare radio and TV messages and transmit regularly.	x	x	x	x	x	X	x	x	x	x	x	x	EPI
33. Prepare posters and leaflets to promote immunization	x	x	x	x	x	X							EPI, UNICEF
34. Conduct advocacy visit to ministry of finance for better commitment and financial contribution for immunization	x	x		x	x	X							MOH
12.3 Logistics and vaccine management													
35. Implement stock card	X	x	x	x	x	X	x	x	x	x	x	x	District, HF

Major Activity	Month of implementation												Responsible
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
and monitor its utilization regularly													
36. Implement multi dose open vial policy for OPV and TT in all health facilities	X	x	x	x	x	x	x	x	x	x	x	x	District, HF
37. Implement first expiry first out policy for all vaccines	X	x	x	x	x	X	x	x	x	x	x	x	District, HF
38. Prepare emergency contingency plan in case of refrigerator failure	X	x	x	x	x	X	x	x	x	x	x	x	EPI, district, HF
39. Replace old cold chain equipment	X	x	x	x	x	X							EPI, UNICEF
40. Regular maintenance of cold chain equipment	X	x	x	x	x	X	x	x	x	x	x	x	EPI, districts
41. Facilitate training of health workers for regular maintenance of cold chain equipment							x						EPI, UNICEF
42. Update inventory of cold chain equipment monthly	X	x	x	x	x	X	x	x	x	x	x	x	Districts, HF
12.4 Accelerated Diseases Control													
43. Conduct polio SIAs targeting children under five annually, when possible synchronized with neighboring countries										x	x		EPI, partners
44. Use every opportunity to give polio vaccine to children	X	x	x	x	x	X	x	x	x	x	x	x	All
45. Strengthen AFP surveillance system	X	x	x	x	x	X	x	x	x	x	x	x	MOH, WHO
46. Training of health workers on AFP surveillance								x					EPI, WHO
47. Regular monitoring of the AFP surveillance	x	x	x	x	x	X	x	x	x	x	x	x	EPI, WHO
48. Strengthen the national polio technical and certification committee					x	X							MOH, WHO

Major Activity	Month of implementation												Responsible
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
49. Prepare and disseminate the guidelines and posters for integrated surveillance	x	x	x	x	x	X							MOH, WHO
50. Conduct community sensitization for early reporting of AFP cases	x	x	X	x	x	X	x	x	X	x	x	x	All levels
51. Exchange information on the status of polio eradication with neighboring countries and take appropriate action like strengthening AFP surveillance, polio campaigns, etc	x	x		x	x	X	x	x	x	x	x	x	MOH, WHO
52. Facilitate training of health workers on case based measles surveillance								x	x	x			MOH, WHO
53. Conduct measles SIAs for children 9 to 59 months										x	x		All partners
54. Use every opportunity to give measles dose to children under five	X	x	x	x	x	X	x	x	x	x	x	x	All levels
55. Conduct case based measles surveillance integrated with AFP	X	x	x	x	x	X	x	x	x	x	x	x	All levels
56. Sensitize community leaders early reporting of suspected cases	X	x	x	x	x	X	x	x	x	x	x	x	All levels
57. Monitor the case based surveillance regularly	X	x	x	x	x	X	x	x	x	x	x	x	All levels
58. Introduce case based MNT surveillance in all health facilities	x	x	x	x	x	X	x	x	x	x	x	X	MOH, WHO
59. Sensitize all health workers on MNT surveillance								x	x				MOH, WHO
60. Conduct active case search in health facility records	x	x		x	x	X	x	x	x	x	x	X	MOH
61. Sensitize community leaders for community	x	x		x	X	X	x	x	x	x	x	X	All levels

Major Activity	Month of implementation												Responsible
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
surveillance and early reporting of cases													
62. Conduct integrated surveillance with AFP and measles surveillance	x	x		x	x	X	x	x	x	x	x	X	All levels

13. Sources of information

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