

**MINISTRY OF PUBLIC HEALTH AND POPULATION**

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**DEPARTMENT FOR THE EXPANDED PROGRAMME ON IMMUNISATION**

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**CENTRAL AFRICAN REPUBLIC**

**UNITY – DIGNITY – WORK**

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**MENAFRIVAC INTRODUCTION PLAN**

**IN THE CENTRAL AFRICAN REPUBLIC**

**Bangui, May 2011**

 

**Table of Contents**

List of Abbreviations and Acronyms 4

EXECUTIVE SUMMARY 6

I. CONTEXT AND RATIONALE 8

1.1. Geographical information 8

1.2. Demographic information 8

1.3. Economic information 9

1.4. Sociopolitical and security contexts 9

1.5. Organisation of the health system 10

1.5.1. Health sector transition plan (PTSS) 10

1.5.2. Outcomes, intervention areas and priority actions 10

1.6. Health sector funding 12

II. EPI SITUATION ANALYSIS 12

2.1. Program management 12

2.1.1. History of the EPI 12

2.1.2. General organisation of the EPI 13

2.1.3. EPI coordinating bodies 14

2.1.4. Resources 15

2.1.5. Support activities 17

Funding for the EPI is provided by the Government, WHO, UNICEF and Gavi. As part of implementing the roadmap, the transition government is pursuing the objective of allocating 15% of resources to health, despite the difficult context of the country, per the recommendations of the heads of state of WHO member countries in Abuja in 2003. 19

a. Funding from Government resources 19

b. Funding from non-Government resources 19

2.1.6. EPI service delivery 19

2.2. Surveillance of vaccine-preventable diseases 22

2.2.1. Timeliness and completeness of reports 23

2.2.2. Acute flaccid paralysis (AFP) 23

2.2.3. Measles 24

2.2.4. Yellow fever 25

2.2.5. Neonatal tetanus 25

2.2.6. Pertussis 25

2.2.7. Meningitis 26

1.1.1 Rotavirus diarrhoea 26

2.2.8. Adverse Events Following Immunisation (AEFI) 27

2.3. Logistics 27

2.3.1. Vaccine procurement 27

2.3.2. Cold chain 28

2.3.3. Effective vaccine management 28

2.3.4. Immunisation safety and waste management 29

2.3.5. Introduction of new vaccines into routine EPI 30

The EPI in the Central African Republic has significant experience in introducing new and under-used vaccines. 30

In fact, immunisation against yellow fever has existed since the major epidemics service was created in 1954. At that time, immunisation was given in mass campaigns using the mobile strategy, with a well-defined timeline. Note that the 17D yellow fever vaccine (Institut Pasteur in Dakar) was administered by scarification (scratch vaccine). Since 1986 it has been administered to children beginning at 12 months of age as an injection in the right forearm. 30

To broaden protection against vaccine-preventable diseases, the CAR has successfully introduced vaccines for viral hepatitis B and Haemophilus influenzae type B (2008), pneumococcal infections (PCV13 in 2011), and more recently the inactivated polio vaccine (IPV in 2015) into routine EPI. 30

The post-introduction evaluation for PCV13 that was conducted in September 2011 led to the following recommendations: 30

2.4. Communication to promote the EPI 31

III. HEALTH PRIORITIES 31

IV. GOAL AND OBJECTIVES 32

4.1 Goal 32

4.2 Objectives 32

4.2.1 General objective 32

4.2.2 Specific objectives 32

4.3 MenAfriVac® vaccine: licensure and characteristics 32

4.3.1. Product licensure 32

4.3.2. Characteristics of the vaccine 32

4.3.3. Storage duration 33

4.3.4. Packaging and secondary packaging 33

6.5. Route of administration 33

V. IMPLEMENTATION 33

5.1 Introduction into routine immunisation 33

5.1.1 Vaccine selection and timeframe 33

5.1.2 Administration schedule and targets 34

5.1.3 Annual immunisation coverage objectives 34

5.1.4 Wastage rate 34

5.1.5 Estimates of vaccine and consumable requirements 34

5.1.6 Current vaccination schedule, updated 35

5.1.7 Strategies 35

VI. ESTIMATED BUDGET FOR THE INTRODUCTION 37

VII. MASS PREVENTIVE IMMUNISATION CAMPAIGN 37

7.1. Targets and requirements 37

7.1.1. Target population 37

7.1.2. Human resource requirements 37

7.1.3. Input requirements 37

7.2. Estimated budget 38

7.3. Timeframe and duration 38

7.4. Coordination 38

7.5. Planning 38

7.6. Personnel capacity building 38

7.7. Communication and social mobilisation 39

7.8. Supply of inputs 39

7.9. Immunisation strategies 39

7.10. Immunisation safety 39

7.11. Supervision 40

VIII. LINKS WITH OTHER INTERVENTIONS 40

IX. MONITORING & EVALUATION 40

9.1 Before the campaign 40

9.2 During the campaign 40

9.3 After the campaign 40

X. ANNEXES 41

- Operational Action Plan 41

- Timeline for introduction into routine immunisation 41

- Timeline for the catch-up campaign 41

- Budget for introduction into routine immunisation 41

- Budget for the catch-up campaign

# **List of Abbreviations and Acronyms**

|  |  |
| --- | --- |
| **AEFI** | Adverse Events Following Immunisation |
| **AFP** | Acute Flaccid Paralysis |
| **AMP** | Agence de Médecine Préventive (Agency for Preventive Medicine) |
| **BPS** | Bureau for Health Promotion |
| **CAR** | Central African Republic |
| **CC**  | Cold Chain |
| **CEMAC**  | Central African Economic and Monetary Community |
| **cMYP** | comprehensive Multi-Year Plan |
| **COGES** | Management Committee |
| **CS** | Health Centre |
| **CTA/EPI** | Technical Support Committee for the Expanded Programme on Immunisation |
| **DCS** | Department of Communication for Health |
| **DHS** | Demographic and Health Survey |
| **DMT** | District Management Team |
| **DPEV/DEPI** | Department of the Expanded Programme on Immunisation |
| **DPM** | Department of Pharmacies and Medicines |
| **DQS** | Data Quality Self-assessment |
| **DRC** | Democratic Republic of the Congo |
| **DTS** | Total Health Expenditure (THE)  |
| **EPI**  | Expanded Programme on Immunisation |
| **EPIVAC** | Epidemiology and Vaccinology |
| **EU** | European Union |
| **EVM** | Effective Vaccine Management |
| **EVMA** | Effective Vaccine Management Assessment |
| **FOSA** | Health Facility |
| **GPHC** | General Population and Housing Census |
| **HDI** | Human Development Index |
| **HIPC** | Heavily Indebted Poor Countries |
| **HSS** | Health System Strengthening |
| **ICC** | Interagency Coordinating Committee |
| **ICP** | Integrated Communication Plan |
| **IDSR** | Integrated Disease Surveillance and Response |
| **IEC** | Information Education Communication |
| **IPP** | Immediate Post-Partum |
| **IPV** | Inactivated Polio Vaccine |
| **JNSE** | National Childhood Survival Days  |
| **LID** | Local Immunisation Days  |
| **LLIN** | Long-Lasting Insecticidal Nets  |
| **LMD**  | Combating Diarrhoeal Diseases |
| **MCH** | Maternal and Child Health |
| **MCV** | Measles-Containing Vaccine |
| **MDG** | Millennium Development Goals |
| **MEPCI** | Ministry of the Economy, Planning and International Cooperation |
| **MFB** | Ministry of Finance and Budget |
| **MICS** | Multiple Indicators Clusters Survey |
| **MNT** | Maternal and Neonatal Tetanus |
| **MoH** | Ministry of Health and Population |
| **MSF** | Doctors Without Borders |
| **NGO** | Non-Governmental Organisation |
| **NHIS** | National Health Information System |
| **NHP**  | National Health Plan |
| **NID** | National Immunisation Days |
| **NITAG** | National Immunisation Technical Advisory Group |
| **NRA** | National Regulatory Authority |
| **OPV** | Oral Polio Vaccine |
| **PHC** | Primary Health Care |
| **PODAPEV** | Operating Plan for the Accelerated Development of the Expanded Programme on Immunisation |
| **PS**  | Health Post |
| **PTSS** | Health Sector Transition Plan |
| **RED** | Reach Every District |
| **RS** | Health Region |
| **SASDE** | African Strategy for Child Survival and Development |
| **SGESU**  | Service for Managing Epidemics and Emergency Situations |
| **SIA** | Supplementary Immunisation Activities |
| **SMED** | Service for Maintaining Biomedical Equipment |
| **SPEV** | Expanded Programme on Immunisation Service |
| **SPS** | Health Promotion Service |
| **SURVAC**  | Surveillance in Central Africa |
| **TFP** | Technical and Financial Partners |
| **TT+** | Tetanus Toxoid vaccine |
| **UCM** | Drug Withdrawal Unit |
| **UNDP** | United Nations Development Program |
| **UNHAS** | United Nation Humanitarian Air Service |
| **UNICEF** | United Nations Children's Fund |
| **VVM** | Vaccine Vial Monitor |
| **WHO** | World Health Organization |
| **WPV** | Wild Poliovirus  |
| **YFV** | Yellow Fever Vaccine |

# **EXECUTIVE SUMMARY**

Vaccine-preventable diseases remain a major public health problem in several developing countries, including the Central African Republic (CAR). The CAR experiences seasonal epidemics of meningococcal A *(NmA)* meningitis, with a fatality rate between 12% and 19%.

To combat such epidemics, the CAR will organise a preventive MenAfriVac® campaign across the entire country in 2016. This campaign will target the population aged 1-29 years old.

After the campaign a case-based surveillance system for bacterial meningitis will be set up nation-wide.

To prevent recurring epidemics of meningococcal A meningitis, and with the support of its partners including Gavi, WHO and UNICEF, the CAR decided to introduce the MenAfriVac® vaccine into routine immunisation in February 2017.

The goal of this vaccine introduction is to help eliminate meningococcal A meningitis as a public health problem in the CAR.

The general objective is to strengthen the immunity of the population against meningococcal meningitis type A. More specifically, this will involve:

* organising a catch-up campaign to immunise at least 95% of the 1-29 year-old population in November 2016; and
* introducing MenAfrivac into routine immunisation in February 2017 and immunising at least 60% of children 9-11 months old. The target population for routine immunisation is children 9-11 months of age, ie a cohort of surviving infants (158,195).

The vaccine will be administered at the same time as the measles and yellow fever vaccines.

The programme is also aiming for 100% supplies of vaccines [available] at all levels during the scheduled period.

Before the vaccine is introduced, the EPI management materials were revised in August 2015, following introduction of the inactivated polio vaccine (IPV).

The official launch and introduction of MenAfriVac® into routine immunisation is scheduled for February 2017.

The CAR has good experience in introducing new vaccines. For example, as part of Gavi's support for the introduction of new vaccines in routine EPI, the CAR introduced the pentavalent vaccine (DTP-HepB-Hib) in 2008 and the pneumococcal vaccine (PCV-13) in 2011. The conclusions and recommendations of the external review of the EPI conducted in 2012, along with the various Post-Introduction Evaluations, will be taken into account for the MenAfrivac introduction.

Cold-chain capacity has been increased at the national level thanks to the purchase and installation of a new positive cold room with gross capacity of 30m3. Two hundred (200) solar refrigerators (150 from UNICEF and 50 from WHO) are currently being deployed at the Region and Health District levels. Absorption refrigerators are gradually being replaced with solar refrigerators with large capacity for vaccine storage, ahead of the introduction of new vaccines. Reprogramming of the Gavi-HSS 2014-2015 support plan towards the strengthening of the EPI will help improve the provision of immunisation services.

The following strategies were defined to achieve the objectives of this new vaccine introduction:

* improving the skills of health workers;
* strengthening EPI logistical capabilities;
* improving vaccine and supply management;
* improving waste management;
* revising the EPI management materials;
* improving communication to promote;
* strengthening AEFI surveillance;
* strengthening meningitis surveillance; and
* strengthening partnerships.

The MenAfriVac® introduction will be monitored and evaluated at all levels of the health system (central, regional and district), which will consist of monitoring immunisation coverage, monitoring the numbers of non-immunised children, and conducting a post-introduction evaluation.

The estimated budget for the immunisation campaign is **CFAF** 2,979,558,265, or **US$** 4,965,930.44. Of this, **US$** 2,342,948.50 is for operational costs and **US$**2,622,981.94 is for the costs of vaccines and injection materials.

The estimated budget for introducing the MenAfrivac vaccine into routine EPI is CFAF 287,703,077 i.e US$ 492,642.26. This is divided into CFAF 194,623,778 (US$ 333,259.89) for operation costs and CFAF 93,079,299 (US$ 159,382) for the costs of vaccines and injection materials.

The distribution of operational costs by funding sources is as follows:
- GAVI: $ 126,556
- Other partners: US$ 206,703.89

# **I. CONTEXT AND RATIONALE**

Cerebrospinal meningitis is a serious illness with high fatality (above 10%) if patients do not receive treatment in optimal conditions. It can also leave patients with neurological sequelae such as motor function or neurosensory (hearing and other) deficits.

The Central African Republic is one of the countries in the Lapeyssonnie meningitis belt and often faces seasonal epidemics of *Neisseria meningitidis A meningitis (NmA)*.

To combat these recurring epidemics, the country is planning to introduce the MenAfriVac® conjugate vaccine, with support from Gavi and other partners, initially as part of a national immunisation campaign targeting the 1-29 age group and then as part of routine immunisation targeting children 9-11 months old. The goal of this introduction is to prevent seasonal epidemics of meningococcal A meningitis.

## 1.1. Geographical information

Located in the heart of the African continent, the Central African Republic covers an estimated 623,000 km2. On its borders are Sudan and South Sudan to the east, Cameroon to the west, Chad to the North and the Republic of Congo and the Democratic Republic of Congo (DRC) to the South.



*Fig. 1: Health divisions of the CAR*



Fig. 1: Health divisions of the CAR



Fig. 1: Health divisions of the CAR

The climate is equatorial, with two seasons: a rainy season from May to October and a dry season from November to April. During the rainy season land communication is almost completely cut off between the capital city of Bangui and the Prefectures to the northeast, south and east. This makes some interventions difficult and sometimes even impossible.

The fact that the Central African Republic is landlocked is one of the most serious handicaps for its development, as the country has no sea access for its exports and imports except for the ports of Douala in Cameroon (1,470 km by land) and Pointe Noire in the Republic of Congo (1,710 km by river). It does however have several navigable waterways that can reach areas that are inaccessible by land.

## 1.2. Demographic information

The population of the CAR is estimated at 4,953,015 in 2015 (projection from the 2003 GPHC).

The country has experienced significant population movements since December 2012, both internally (430,000 IDP) and into neighbouring countries (Cameroon, Chad, Congo and the DRC), with estimates putting the refugee population at 423,000.

The intercensal growth rate between the 1988 GPHC and the 2003 GPHC was 2.5%, giving the 2015 figures for the CAR's total population and target groups for the EPI and other service packages integrated with immunisation that are shown in Table 1 below.

Table I: Projected demographic data for the CAR, 2015 to 2017

|  |  |  |  |
| --- | --- | --- | --- |
| Target groups | 2015 | 2016 | 2017 |
| Total population | 4,953,015 | 5,076,840 | 5,203,761 |
| Women of childbearing age | 1,193,677 | 1,223,519 | 1,254,107 |
| Pregnant women | 198,121 | 203,074 | 208,151 |
| Children 0-59 months | 856,872 | 878,294 | 900,251 |
| Children 6-59 months | 781,586 | 801,126 | 821,154 |
| Children < 1 year | 173,356 | 177,690 | 182,132 |
| Children 0-15 years | 2,015,878 | 2,066,275 | 2,117,932 |
| Surviving infants | 150,572 | 154,336 | 158,195 |
| Population 1-29 years | 3,516,642 | **3,604,558** | 3,694,672 |

## 1.3. Economic information

Recurring periods of instability and violence, exacerbated by the events of December 2013, have resulted in unprecedented levels of vulnerability for most of the population. This comes on top of an already high level of extreme poverty; prior to the crisis, the Central African Republic was ranked 179 out of 187 countries in the Human Development Index (HDI). At the end of 2013, per capita GDP was US$ 333.20, down 33% from 2010.

A look at the national economic situation shows: (i) gradual resumption of activities in various economic sectors; (ii) gradual resumption of raw material exports; (iii) continuing negotiations to lift the suspension of the Kimberley Process; and (iv) increasing retail prices, with inflation estimated at 13% in 2014, above the CEMAC convergence criteria of 3%.

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## 1.4. Sociopolitical and security contexts

Since December 2012 the CAR has been experiencing recurring military and political problems that have led to a deep crisis characterised by generalised insecurity.

During these events the country has reported nearly one million internally displaced persons and refugees in neighbouring countries (Cameroon, DRC and Chad).

International peace-keeping troops have been deployed in the country since September 2014 and are gradually restoring security to the city of Bangui and to some other cities in the country. However, a general level of insecurity persists in the CAR.

## 1.5. Organisation of the health system

### **1.5.1. Health sector transition plan (PTSS)**

In the current sociopolitical crisis in the CAR, which has led to a humanitarian crisis, the 2015-2016 health sector transition plan is a programme document that is both strategic and operational. It targets actions with an immediate impact, including immunisation, as well as the effective and sustainable re-establishment of the health sector. The plan directly connects the transition government's roadmap with the emergency programme for the sustainable recovery of the CAR.

The EPI's 2015-2017 cMYP also aligns with the strategic arms of this health sector transition plan.

### **1.5.2. Outcomes, intervention areas and priority actions**

The transition plan was organised around five main outcomes. The first two concern issues of governance and the gradual reconstruction of the health system, and the next three concern populations and/or priority health programmes. They are given below with the specifics for each component in relation to traditional multi-year plans under stable conditions.

(1) **Reinforcing the governance of the Ministry of Health**. The emphasis here is on strategic coordination between stakeholders (MoH, TFP, NGO) at all levels and on the need to adapt strategies and intervention methods to the local security conditions and operational service levels.

(2) **Availability of a high-quality minimum package of activities**. All pillars in the health system require massive reinforcement. The most pressing problems that need immediate attention are probably organising a high-quality procurement system and finding ways to reallocate staff and payments at the decentralised level.

(3) **Improving mother and child health**. All curative and preventive health services need to be strengthened urgently, including: immunisation; the response to major malnutrition problems that have been exacerbated by the crisis and displacement; making alternative strategies systematically available at the community level; and developing and implementing realistic programmes for the medical and psychosocial treatment of sexual violence.

(4) **Improving emergency and catastrophe response management**. Documents and procedures currently exist. Now they need to be made operational, by creating mobile teams within healthcare staff and pre-positioning inputs in case of emergencies.

(5) **Improving disease prevention and control**. This component needs to incorporate mental health activities within the packages of activities. Obviously we must continue to fight the main infectious diseases because of their heavy toll in terms of morbidity and mortality, but we must not forget the growing burden of non-communicable diseases that can arise from the current psychological situation for the population.

Priority actions have been defined that incorporate the EPI to implement these strategic components. The goal of these actions is to strengthen operational capacities and introduce new vaccines.

The 2015-2017 comprehensive Multi-Year Plan (cMYP) was developed in an emergency context, and is aligned with the 2015-2017 health transition plan. The analysis from the assessment of immunisation activities over the past two years (2013 and 2014) identified strengths, weaknesses, opportunities and threats and insufficiencies in the programme. This Plan will mobilise the necessary resources to implement activities for immunisation and other services packages that are essential for child survival and development in the 2015-2017 period.

The organisational structure of the health system is governed by provisions in Decree no. 05.121 of 6 June 2005 concerning the organisation and operations of the Ministry of Public Health, Population and AIDS Prevention and establishing its responsibilities.

Based on a three-phase health development scenario with the goal of providing healthcare for all Africans as adopted by the 35th Regional WHO Committee for Africa in Lusaka in 1985, CAR's health system is organised as a three-tier pyramid with central, intermediate and peripheral levels.

* The central level comprises the Ministry Cabinet and Central Departments, and is responsible for creating and coordinating the health policy defined by the Government and for providing strategic support to the other levels.
* The intermediate level corresponds to the Health Region. The country is divided into seven health regions in accordance with Order no. 0155/MSPP/CAB of 23 April 2002, in application of Law no. 96.013 of 13 January 1996 concerning regionalisation and decentralisation. The health region is the technical support level of the health system, and serves as the intermediary between the central and peripheral levels for the effective implementation of health policies and programmes.
* The peripheral level is made up of 12 health prefectures, 10 health districts and 8 health districts in Bangui, which correspond to the country's administrative divisions. These entities are managed by the District Management Teams (DMT).

#### The HeRAMS survey conducted in 2014 assessed the availability of health service offerings by health region, as well as the main reasons that coverage of such offerings was not optimal. The main results showed that only 55.3% of the 814 health facilities at the national level were functional, and that non-functional status ranged from 51.7% in health region 3 (RS3) to 17.9% in health region 5 (RS5). As we gradually return to secure conditions, new health facilities have been rehabilitated and made functional. A new HeRAMS survey is under way.

## 1.6. Health sector funding

Recurring periods of instability and violence, exacerbated by the events of December 2013, have resulted in unprecedented levels of vulnerability for most of the population. This comes on top of an already high level of extreme poverty; prior to the crisis, the Central African Republic was ranked 179 out of 187 countries in the Human Development Index (HDI). At the end of 2013, per capita GDP was US$ 333.20, down 33% from 2010.

Total health expenditures (THE) by the Government only account for about 10% of THE, which reveals the health sector’s very high dependence on outside funding.

More than half (54%) of health funding comes from private sources, while public sources represent slightly over one-third (37%) and other sources represent 9%.

# **II. EPI SITUATION ANALYSIS**

The situation analysis incorporated the various components of the EPI: programme management, logistics, surveillance of target diseases, communication and funding. Each of these analyses took into account the strategic components of the Global Vaccine Action Plan and the RED approach.

## 2.1. Program management

### **2.1.1. History of the EPI**

The CAR government has made the Expanded Programme on Immunisation (EPI) one of its priority health programmes to improve child survival, given continuing high infant mortality rate.

EPI was introduced into the country's health programmes in 1979. Because of the low immunisation coverage rates up to 1985, the Government decided to implement the Operating Plan for the Accelerated Development of the Expanded Programme on Immunisation (PODAPEV) during the 1986-1990 period, with the support of several multilateral, bilateral and non-governmental organisations. This plan helped significantly increase the vaccine coverage needed in children under one year old and in pregnant women. Its success was made possible thanks to available funding, the use of three immunisation strategies (fixed, mobile and outreach), the Government's focus on implementing PODAPEV, and the context of peace and security that facilitated activities in the field.

The increased immunisation coverage helped to gradually reduce the infant mortality rate, which went from 185 per 1000 in 1975 (GPHC) to 132 per 1000 in 1988 (GPHC) and then to 97 per 1000 in 1995 (1994-95 DHS).

### **2.1.2. General organisation of the EPI**

#### **2.1.2.1. Central level organisation**

#### The EPI Department is part of the General Directorate for Public Health (DGSP) in the Ministry of Health and Population. It is composed of two services: logistics and administrative support, and programming and data management. These services are themselves organised into six sections;

#### cold chain, transportation and communication;

#### vaccine and other consumable management;

#### programming, monitoring and evaluation;

#### data management;

#### resource management; and

#### secretariat.

#### **2.1.2.2. Regional level organisation of the EPI**

At this level there is a regional EPI supervisor and a regional focal point for the integrated surveillance of disease, under the aegis of the head of the Service for Coordinating and Monitoring Primary Health Care Services.

#### **2.1.2.3. District level organisation of the EPI**

At this level there is a prefecture EPI manager and a prefecture focal point for the integrated surveillance of disease, under the aegis of the Head of the Care and Supervision section. The EPI is integrated into the healthcare system.

#### **2.1.2.4. EPI organisation at the health centre level**

At this level, the programme is managed by the chief post nurse (ICP) together with the management committee (COGES). An EPI manager is designated to monitor the implementation of immunisation activities. This is the level where the various immunisation strategies are implemented.

### **2.1.3. EPI coordinating bodies**

#### **2.1.3.1. Interagency coordinating committee (ICC)**

The Interagency Coordinating Committee (ICC) of the EPI was created by ministerial decree no. 0044 MSPP/CAB/SG/DGSPP/SPEV of 7 February 2002. It is made up of officials from departments of the Health Ministry and related ministries (Finance and Budget, Economy, Planning and International Cooperation, Interior and Home Administration, National Defence, Communication), United Nations agencies, bilateral partners, and national and international non-governmental organisations (NGOs).

Chaired by the Minister of Public Health and Population, the ICC's missions are to:

1. Coordinate partner activities;
2. Help review and endorse plans for routine EPI, National/Local Immunisation Days, and the integrated surveillance of diseases;
3. Mobilise the domestic and foreign resources needed to conduct activities;
4. Ensure that resources are managed in a transparent and responsible manner, conducting regular checks of the use of programme resources with the EPI team;
5. Encourage and support the exchange of information, between the operational and national levels and with the rest of the world;
6. Ensure proper execution of the programme; and
7. Seek paths and methods of resolving constraints that could interfere with proper programme execution.

#### **2.1.3.2. Technical Support Committee for the EPI (CTA-EPI)**

The ICC receives support in making decisions from the Technical Support Committee for the EPI (CTA-EPI), which was created by Decree no. 113 MSPP/CAB/SG/DGSPP/DMPM of 11 March 2003. The CTA-EPI is a multi-sector, multi-discipline entity.

It is chaired by the General Director of Public Health, and its missions are to:

1. Review and endorse EPI operational plans of action;

#### Approve the budgets for implementing these plans;

#### Monitor the execution of activities in the plan of action;

#### Prepare technical dossiers for audits;

#### Produce periodic reports on the status of programme implementation; and

#### Propose measures to the ICC that could boost programme performance.

#### **2.1.3.3. National Immunisation Technical Advisory Group (NITAG)**

The CAR has not yet established a NITAG. It will be responsible for offering scientific and technical support to the health authorities in selecting and implementing national immunisation policies and strategies.

### **2.1.4. Resources**

#### **2.1.4.1. Human resources**

The CAR does not have a human resources policy or development plan at this time, but these documents are being developed.

In addition to problems of insufficient human resources and uneven geographic distribution of such resources according to international norms and standards, the human resources in the CAR are also not highly qualified in either technical care or system management (see the table below).

Table II: Personnel situation / norms (2014)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Professional category | Norm | Required no. | Actual no. | Gap to be filled |
| *Medical staff* |  |  |  |  |
| Physicians, pharmacists and dentists | 1/10,000 | 485 | 267 | 218 |
| Other medical specialists (TS) | 1/4,000 | 1,214 | 327 | 887 |
| Nurses (IDE (registered nurse) and similar) | 1/4,000 | 1,214 | 1,144 | 70 |
| Nurses (SFDE (registered midwife)/birth assistant) | 1/4,000 | 1,214 | 596 | 618 |
| *Administrative support staff* |  |  |  |  |
| Accounting manager | 1/hosp/diagnostic fac | 25 | 8 | 17 |
| Civil engineer | 1 central hub | 5 | 1 | 4 |
| Computer engineer/technician (GRH data manager) | 1 central hub | 4 | 1 | 3 |
| Maintenance technician | 1/hosp/diagnostic fac | 25 | 2 | 23 |
| TOTAL  |  | **4,186** | **2,346** | **1,860** |

The military and political problems and the ensuring insecurity have created unfavourable working conditions in some areas of the country; the displacement of staff has left the Department of Resources uncertain as to the current health personnel situation.

#### **2.1.4.2. Material resources**

* **Sites and equipment**
* The central EPI in the CAR has five cold rooms (three positive and two negative) that are all functional, with a total net capacity of 22.5 m3 of positive storage and 10 m3 of negative storage. This is sufficient to store routine EPI vaccines and is even enough for the IPV introduction in September 2015 and the rota vaccine introduction in 2016. The central level cold chain was returned to normal status in 2014, with sites housing the central cold rooms rehabilitated, four old cold room refrigerator units (installed in 2005) replaced, and two stabilisers installed for cold room security. A reliable cold room maintenance system is being set up. Temperatures are still recorded manually at the central level, but the country is planning to set up a remote temperature monitoring system for cold rooms and using freeze tags and fridge tags during transport to the intermediate and peripheral level depots.
* The 2014 inventory that was conducted in five health regions in the CAR showed that storage capacity was only sufficient in five health prefectures/districts in 2015. Out of 227 refrigerators inventoried, 69% work well, 10% work but need repair, and 21% are out of order. However, since May 2014, the EPI office has started reinforcing the storage capacity at the prefecture level, and the gradual replacement of cold chain equipment (refrigerators, freezers, vaccine carriers, coolers) that was pillaged during political and military crisis the country is currently under way. In 2014, 103 Sibir refrigerators (45 V170KE and 58 V110KE) and 102 coolers were made available to prefectures and health centres. Faced with problems of fuel supply (the main source of energy for refrigerators in the CAR), since the beginning of 2015 the EPI Department has started gradually replacing fuel-powered refrigerators with solar-powered (battery-free) refrigerators, with the help of partners. Thus far 121 solar battery-free refrigerators have been received and installed. With UNICEF support, four members of the MoH staff were trained in Ouidah on the installation and maintenance of solar equipment. In addition, 175 coolers and 1,100 vaccine carriers have been received and distributed.
* **Ground transportation**

At the central level the EPI has one new 4x4 and two refrigerated trucks, one of which does not run. The EPI department often must resort to renting vehicles and using UNHAS flights, and asking partners to resupply prefectures/districts with vaccines and other materials.

Most of the vehicles and motorbikes in prefectures/districts and health centres have been stolen in the crisis that has enveloped the country since 2013. Therefore most regions must rent vehicles and rely on partners to resupply health centres. However, in 2013 UNICEF provided 20 motorbikes for supervision as part of the SASDE project in health regions two and three (RS2 and RS3). UNICEF also purchased 20 motorbikes and 100 bicycles for the EPI in 2015. HSS funds were used to procure 13 motorbikes and 100 bicycles in 2013 and in 2015. All of this ground transportation is being made available to prefectures and health centres.

**2.1.4.3. Injection safety of injections and waste management**

The EPI in the CAR uses auto-disable syringes to administer vaccines and safety boxes to collect used syringes and needles. A waste management plan does exist, but it has not yet been disseminated or implemented. Most of the health centres that offer immunisation use "burning plus burial" to destroy waste. Some health facilities use De Monfort incinerators that were built by NGOs in the field.

### **2.1.5. Support activities**

#### **2.1.5.1. Training**

Programme capacity has been developed through several training sessions that were organised for teams from the central, regional and prefecture levels: EPIVAC, SURVAC, computerised data management and the DQS tool. However, capacity building for health facility workers remains insufficient.

#### **2.1.5.2. Supervision**

Although there are some weaknesses in supervision activities, they are conducted regularly at all levels of the health system.

There are EPI-specific supervision spreadsheets at all levels.

However, the 2009 in-depth review of the EPI found inadequacies in the supervision of field agents (83% of EPI district managers had not received a supervision visit), which are due to a lack of funding for EPI-specific supervision.

#### **2.1.5.3. Health information system**

The Ministry of Health developed a strategic plan for 2011-2020 to help improve the performance of the national health information system (NHIS). The goal of this plan is to have timely, high-quality health information available and accessible to all of those involved in health system planning and decision-making.

Immunisation data are collected, analysed and transmitted through monthly EPI reports and surveillance reports that come from health centres and posts.

Most health districts and regions have a system for sharing information, so that performance at the peripheral level can be improved.

#### **2.1.5.4. Monitoring of activities**

Immunisation data are monitored monthly at the central level (national committee for the review and harmonisation of immunisation, surveillance and laboratory data). However, such data are not monitored regularly at the regional and operational levels.

Meetings are held quarterly (in health regions) and twice-yearly (at the central level) as part of evaluating EPI target disease surveillance activities and routine EPI.

Supportive supervision visits are also conducted periodically using the data quality self-assessment tool (DQS).

#### **2.1.5.5. Planning and evaluation**

The CAR has a comprehensive multi-year plan (cMYP) for the EPI for 2015-2017. An annual plan of action is developed every year from the cMYP, per the intermediate objectives set in the cMYP.

At the prefecture/district level, management teams develop EPI micro-plans based on the "Reach Every District/Community" approach (RED/C).

#### **2.1.5.6. Partnership**

The EPI receives technical and financial support from local, national and international partners at all levels of the health pyramid.

These partners' intervention components/operations are summarised in the table below.

Table III: EPI Technical and Financial Partners

| **Partner** | **Components/operations** |
| --- | --- |
| WHO | Surveillance of AFP and other vaccine-preventable diseases, routine EPI, SIAs, technical support and mobilisation of financial resources |
| UNICEF | Routine EPI, SIA, communication/social mobilisation, logistics materials and technical and cold chain equipment, procurement of vaccines and supplies, infrastructure, community-based disease surveillance |
| Gavi | Procurement of vaccines and supplies, logistics and technical equipment, new vaccine introduction, training/research, supervision/evaluation, procurement of cold chain equipment, communication, two-wheeled and four-wheeled vehicles |
| CDC | Catalyst funding to boost routine EPI, implementation of RED, training Technical support: deployment of STOP consultants |
| AMP | Planning, training, supervision |
| European Union  | Health system strengthening |

Other partners help with health development, including international NGOs and international partners (UNFPA, World Bank).

#### **2.1.5.7. EPI funding**

## Funding for the EPI is provided by the Government, WHO, UNICEF and Gavi. As part of implementing the roadmap, the transition government is pursuing the objective of allocating 15% of resources to health, despite the difficult context of the country, per the recommendations of the heads of state of WHO member countries in Abuja in 2003.

Routine immunisation was estimated to cost $0.79 per person, equal to 0.24% of GDP for the year. The cost of three penta doses per child immunised was US$ 56.48.

## Funding from Government resources

The budget allocated to the MoH rose and fell during the 2000-2015 period, but has decreased regularly from 2003 to 2005. Other than in the year 2000, health expenditures have been devoted to operations (more than 50%). In spite of the Government's expressed desire to do more for the health sector, investment remains low.

## Funding from non-Government resources

The CAR receives significant outside support (Gavi, UNICEF and WHO) to fund immunisation activities, especially for introducing new and under-used vaccines.

### **2.1.6. EPI service delivery**

#### **2.1.6.1. Targets and immunisation schedule**

**a. Target diseases**

Routine immunisation is administered for the following nine diseases in the CAR: TB, diphtheria, tetanus, pertussis, polio, yellow fever, measles, viral hepatitis B, *Haemophilus influenzae* type B and pneumococcal infections.

1. **Target populations**

The target populations for routine immunisation and supplementary immunisation activities (SIA) are derived from the proportions of the total populations given in Table 3. The immunisation schedule is as follows:

Table IV: Proportion of target populations for immunisation and other immunisation-related interventions

|  |  |  |
| --- | --- | --- |
| **Group** | Proportion of the population | Immunisation strategy and other interventions |
| Children 0-11 months | 3.5% | Routine EPI |
| Surviving infants | 3.04% | Routine EPI |
| Children 0-59 months | 17.3% | NID and LLIN distribution |
| Children 6 months-14 years | 46% | Measles control, catch-up campaign  |
| Children 6-59 months | 15.55% | Measles control, follow-up campaign  |
| Children 6-59 months  | 15.55% | Prevention of vitamin A deficiency |
| Children 12-59 months  | 13.8% | Deworming with Albendazole |
| Pregnant women | 4% | Routine EPI, elimination of MNT and distribution of LLINs |
| Women of childbearing age | 49% | Elimination of MNT (campaigns) |
| Population 1-29 years | 71% | MenAfriVac catch-up campaign |

**c. Routine immunisation schedule**

The tables below summarise the current immunisation schedule in the Central African Republic and the schedule for other interventions integrated with immunisation.

Table V: Immunisation schedule for children 0-11 months

|  |  |  |
| --- | --- | --- |
| Contact | Age | Recommended antigens |
| 1 | Birth | BCG, OPV-0 |
| 2 | 6 weeks | DTP-**HepB+Hib-1, OPV-1,** PCV13-1, **Rota-1** |
| 3 | 10 weeks | DTP-**HepB+Hib-2, OPV-2, PCV13-2, Rota-2** |
| 4 | 14 weeks | DTP-**HepB+Hib-3, OPV3/IPV, PCV13-3** |
| 5 | 9 months | MCV/MR, YFV |
|

Table VI: Immunisation schedule for pregnant women, TT/Td

|  |  |  |  |
| --- | --- | --- | --- |
| Antigen  | Doses | Route of administration | Age when administered |
| TT/Td1 | 0.5 mL | Intramuscular  | At first contact |
| TT/Td2 | 0.5 mL | Intramuscular | 1 months after TT/Td1 |
| TT/Td3 | 0.5 mL | Intramuscular | 6 months after TT/Td2 or during subsequent pregnancy |
| TT/Td4 | 0.5 mL | Intramuscular | 1 year after TT/Td3 or during subsequent pregnancy |
| TT/Td5 | 0.5 mL | Intramuscular | 1 year after TT/Td4 or during subsequent pregnancy |

Table VII: Antigen administration routes and sites

|  |  |  |  |
| --- | --- | --- | --- |
| Vaccine | Doses | Age when administered | Administration site |
| BCG  | 0.05 mL |  Up to 15 days | ID left forearm |
| OPV-0 |  2 drops | Oral |
| OPV 1 |  2 drops |  6 weeks | Oral |
| DTP-HepB-Hib1,  | 0.5 mL | IM, right thigh |
| PCV13-1  | 0.5 mL | IM, left thigh |
| Rota1 | 1.5 mL | Oral |
| OPV-2 |  2 drops |  10 weeks | Oral |
| DTP-HepB+Hib2  | 0.5 mL | IM, right thigh |
| PCV13-2  | 0.5 mL | IM, left thigh |
| Rota2 | 1.5 mL | Oral |
| OPV-3 |  2 drops |  14 weeks | Oral |
| DTP-HepB+Hib3  | 0.5 mL | IM, right thigh |
| PCV13-3 | 0.5 mL | IM, left thigh |
| IPV | 0.5 mL | IM, left thigh  |
| MCV/MR | 0.5 mL |  9 months | SC, deltoid, left arm |
| YFV | 0.5 mL |  9 months | SC, deltoid, right arm |
| TT/Td | 0.5 mL |  See Table VII | IM, left deltoid |

Table VIII: Schedule for interventions integrated with EPI

|  |  |  |
| --- | --- | --- |
| Contact | Recommended targets | Recommended interventions |
| 1 | Women immediately post-partum | Vit A 200,000 IU |
| 2 | Children 6-11 months | Vit A 1st dose 100,000 IU |
| 3 | Children 12-18 months | Vit A 2nd dose 200,000 IU |
| 4 | Children 12-59 months | Albendazole |
| 5 | Pregnant women beginning in the 6th month of pregnancy | Iron-folic acid |
| 6 | Children 0-11 months (penta3) | LLIN |

#### **2.1.6.2. Routine immunisation coverage:**

The routine EPI is primarily based on the *"Reach Every District/Community" approach.*

The national level implements three immunisation strategies: fixed, outreach and mobile.

A comparative analysis of coverage trends over the past four years shows little progress.

Table IX: National immunisation coverage trends from 2012 to 2014

|  |  |  |  |
| --- | --- | --- | --- |
| Vaccine | 2012 | 2013 | 2014 |
| **Objectives** | **JRF** | **WHO/UNICEF estimates** | **Objectives** | **JRF** | **WHO/UNICEF estimates** | **Objectives** | **JRF** | **WHO/UNICEF estimates** |
|
|
| BCG | 85% | 63% | 74% | 85% | 32% | 35% | 85% | 50% | 59% |
| OPV-3 | 75% | 55% | 47% | 75% | 23% | 23% | 75% | 50% | 35% |
| DTP-HepB+Hib1 | 75% | 79% | 69% | 75% | 37% | 35% | 75% | 72% | 69% |
| DTP-HepB+Hib3 | 75% | 57% | 47% | 75% | 24% | 23% | 75% | 45% | 33% |
| PCV13-3 | 75% | 52% | 47% | 75% | 20% | 23%  | 75% | 38% | 38% |
| MCV | 75% | 64% | 48% | 75% | 25% | 25% | 75% | 59% | 47% |
| YFV | 75% | 63% | 48% | 75% | 25% | 24% | 75% | 44% | 32% |
| TT2+ | 65% | 76% | 66% | 65% | 32% | 66% | 65% | 53% | 60% |
| **Source: EPI** |  |  |  |  |  |  |  |  |  |

#### Table X: Categorisation of prefectures by access to and use of immunisation services

|  |  |  |  |
| --- | --- | --- | --- |
| Indicators | 2012 | 2013 | 2014 |
| IC, DTC-HepB-Hib3 | 58% | 27% |  46% |
| % of districts with DTP-HepB-Hib3 > 80% | 4% | 8% | 1%  |
| Dropout rate, DTP-HepB-Hib1 / DTP-HepB-Hib3 | 27% | 35% | 37%  |
| % districts with dropout rate >10% | 99% | 99% | 99%  |

## 2.2. Surveillance of vaccine-preventable diseases

The surveillance of vaccine-preventable diseases is included in the overall strategy for integrated disease surveillance and response (IDSR) per WHO recommendations.

The EPI target diseases that are monitored in the CAR are acute flaccid paralysis (AFP), measles, yellow fever, maternal and neonatal tetanus and pertussis. Paediatric meningitis and rotavirus diarrhoea have been included in surveillance since 2012 through the sentinel site at the Bangui paediatric complex.

Laboratory surveillance of polio, measles, yellow fever, paediatric meningitis and rotavirus infections is done by the Institut Pasteur in Bangui, which is the national reference laboratory for these diseases. The Institut Pasteur in Dakar is the regional reference laboratory for diagnosing yellow fever.

### **2.2.1. Timeliness and completeness of reports**

The table below shows the timeliness and completeness of routine immunisation and EPI target disease surveillance reports sent to the central level over the past three years.

Table XI: Change in timeliness and completeness of EPI reports sent from 2012 to 2015

|  |  |  |
| --- | --- | --- |
| **Indicators** | **Norms** | **Years** |
| **2012** | **2013** | **2014**  | **1st half of 2015** |
| 1. Timeliness
 | ≥ 80% | 38% | 29% | 29% | 37% |
| 1. Completeness
 | 100% | 95% | 86% | 81% | 89% |

The completeness of reports sent in the past three years was 100%. The on-time record has zigzagged up and down during that time.

### **2.2.2. Acute flaccid paralysis (AFP)**

The major performance indicators for AFP surveillance are within certification norms: Non-polio AFP rate > 3 p 100,000 children < 15 years and percentage of stool samples taken within 14 days > 80%. There are, however, disparities in health districts.

Table XII: AFP surveillance performance, 2012-2015\*

|  |  |  |
| --- | --- | --- |
| Indicators  |  Year |  |
| 2012 | 2013 | 2014 | 2015\* |
| Population < 15 years | 1,898,139 | 1 ,936,690 | 1 ,975,946 | 2,015,910 |
| Expected no. of AFP cases/year |  38 | 39 | 59 | 60 |
| No. of AFP cases investigated |  125 | 59 | 89 | 42 |
| Non-polio AFP / 100,000 < 15 years |  6.4 | 2,7 | 4,56 | 3,61 |
| No. of AFP cases with 2 stool samples in 14 days | 121 | 50 | 72 | 38 |
| % of AFP with stool samples within 14 days | 90% | 85% | 81% | 90% |
| % non-polio enterovirus | 29% | 29% | 28% | 24% |
| Wild poliovirus |  0 |  0 | 0 | 0 |
| Polio compatible |  4 | 7 | 7 | 0 |

*\*1st half of 2015*

### **2.2.3. Measles**

Surveillance of measles is operational and performance indicators are within the standard limits. In 2013, however, the CAR experienced several outbreaks of measles (especially in camps for displaced persons).

Table XIII: Performance indicators of measles surveillance from 2012 to 2015\*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Years | % of suspected cases sampled | % of districts that sampled ≥ 1 case | IgM measles+ | No. of +cases per epid link | IgM rubella + | Annualised investigation rate /100,000 pop. |
| 2012 | 257 | 85% | 63 | 120 | 7 | 5.51 |
| 2013 | 533 | 73% | 179 | 168 | 28 | 12.2 |
| 2014 | 629 | 87% | 161 | 1 | 91 | 12.96 |
| 2015 | 651 | 100% | 75 | 38 | 211 | 10.86 |

The CAR has experienced several outbreaks over the past year, recording them every year from 2013 to 2015. The maps below show that several hotspots of measles have been detected in the past two years (2013-2014) and in the 29th week of 2015. Also note that measles epidemics have occurred in the city of Bangui since 2014.



*Fig. 6: Centres of measles (IgM+) and rubella (IgM+), 27th week 2015*



*Fig. 4: Centres of measles (IgM+) and rubella (IgM+), 2013*



*Fig. 5: Centres of measles (IgM+) and rubella (IgM+), 2014? 2015IgM+)begele (IgM+) et de rubeet figures cidessous.013-2015organisées en RCAnfon riposte contre la rougeole ont été organis*

###

### **2.2.4. Yellow fever**

From 2012 to 2015, 991 suspected cases of yellow fever were reported, 2 of which were IgM+ for yellow fever. Performance indicators are within standard limits.

Table XIV: Change in performance indicators for yellow fever surveillance, 2012-2015 (1st half)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Years | % of suspected cases sampled | % of districts that sampled ≥ 1 case | Annualised investigation rate per 100,000 pop. | No. of IgM+ cases |
| 2012 | 508 | 100% | 10.89 | 0 |
| 2013 | 157 | 58% | 3.3 | 1 |
| 2014 | 326 | 80% | 6.11 | 1 |
| 2015 | 86 | 70% | 1.74 |  0 |

### **2.2.5. Neonatal tetanus**

There is a discrepancy between the case-based surveillance (CBS) data and the integrated data for MNT that persist in spite of efforts to harmonise them. This is due to under-reporting of MNT in active surveillance.

Table XV:Case reports of MNT, 2012-2015 (1st half)

|  |  |  |
| --- | --- | --- |
| Year | (IDSR) | CBS |
| **Cases** | **Deaths** | **Cases** | **Deaths** |
| 2012 | 31 | 24 | 12 | 6 |
| 2013 | 68 | 25 | 7 | 3 |
| 2014 | 16 | 2 | NA | NA |
| 2015 | 12 | 3 | NA | NA |

### **2.2.6. Pertussis**

Pertussis surveillance has revealed in increase in suspected cases beginning in 2013, especially in post-conflict zones where routine immunisation was discontinued due to the lack of safety. The table below shows the cases reported.

Table XVI: Suspected pertussis cases reported in CAR from 2012 to 2015 (1st half)

|  |  |
| --- | --- |
| Year | (IDSR) |
| **Cases** | **Deaths** |
| 2012 | 0 | 0 |
| 2013 | 124 | 1 |
| 2014 | 221 | 0 |
| 2015 | 241 | 0 |

### **2.2.7. Meningitis**

Other than weekly IDSR meningitis surveillance, surveillance of Hib and pneumococcal infections did not effectively start until September 2011, as part of sentinel surveillance following the introduction of new vaccines (pentavalent and PCV-13) into routine EPI.

Sentinel surveillance data are summarised in the table below.

Table XVII: Weekly surveillance data (IDSR) for meningitis, 2012-2015 (1st half)

|  |  |
| --- | --- |
| Year | (IDSR) |
| **Cases** | **Deaths** | **Fatality rate** |
| 2012 | 406 | 48 | 12% |
| 2013 | 258 | 35 | 14% |
| 2014 | 188 | 36 | 19% |
| 2015 | 25 | 3 | 12% |

Table XVIII: Laboratory surveillance of meningitis (national laboratory data), sentinel surveillance, 2012-2015 (1st half)

|  |  |  |
| --- | --- | --- |
| Year | Total CSF examined | Positive results |
| ***NmA*** | ***NmB*** | ***NmC*** | ***NmW135*** | ***NmX*** | ***NmY*** | ***Nm (ind)*** | ***Strept P*** | ***Hi (type b)*** | **Other bacteria** |
| 2012 | 958 | 51 | 5  | 0  | 0  |  1 | 0  | 0 | 1 | 40 | 4  |
| 2013 | 771 | 27 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 23 | 2 |
| 2014 | 195 | 9 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 6 | 0 |
| 2015 | 283 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 |

### ***Rotavirus diarrhoea***

Surveillance of rotavirus diarrhoea was started in 2011 from the sentinel site at the Bangui Paediatric Complex. The data from this surveillance from 2012 to 2015 are shown in the table below.

Table XIX: Sentinel surveillance data of rotavirus diarrhoea in CAR, 2012-2015 (1st half)

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Stool samples | QC-confirmed rotavirus positive | ELISA test(+) |
| 2012 | 149 | 53 | 54 |
| 2013 | 267 | 127 | 127 |
| 2014 | 115 | 42 | 38 |
| 2015 | 35 | 11 | 11 |

### **2.2.8. Adverse Events Following Immunisation (AEFI)**

Although the AEFI surveillance system was set up in 2008, it is no longer operational for routine EPI.

## 2.3. Logistics

### **2.3.1. Vaccine procurement**

The procurement process for immunisation inputs at the national level is based on a five-year plan (forecast) that is developed each year in collaboration with UNICEF. This plan is revised annually to adapt to immunisation input requirements.

Funding is provided from the Government budget through an assistance-procurement contract with UNICEF for vaccines and supplies, except for the pentavalent vaccine (DTP-HepB-Hib) and corresponding supplies, which are funded directly by Gavi. In 2011 the Government started participating in funding for the pentavalent (DTP-HepB-Hib), pneumo (PCV-13) and Rotarix vaccines and their associated supplies, through the co-financing system.

The procurement path in the CAR is as follows:

EPI department 🡪 regional health department 🡪 health district 🡪 health centre and health post.

Supplies are distributed as follows: twice yearly at the national level, quarterly at the decentralised level, twice-monthly to regional depots (from the central depot), bimonthly to districts (from regions) and monthly to health centres/health posts (from districts).

There have not been any stockouts of traditional vaccines in the past three years.

Vaccine quality control is done through the use of vaccine vial monitors (VVM), the open vial policy, and the twice-daily recording of storage device temperature. In addition to these, there are devices to monitor the cold chain and vaccine conservation and storage (Fridge-tag2, Q-tag, Multilog2).

Because of the lifespan of these monitoring devices and the opening of new health facilities, there is currently a need to renew and purchase more of these tools.

### **2.3.2. Cold chain**

#### The central level estimates annual requirements for vaccines and supplies using the "Forecast" and places orders through UNICEF. Inventory management is computerised (SMT). Vaccines and syringes are stocked by lot number in EPI cold rooms and depots. They are removed using the "first expired first out" principle, although some inadequacies still need to be addressed. Vouchers with automatic duplicates are used for the delivery of inputs, but these voucher slips are currently out of stock.

#### At the prefecture/district and health centre levels, stocks are managed manually with manual registers. There has been a stockout of management tools (manual registers, order and delivery slips, temperature logging sheets). These tools are scheduled to be revised with the IPV introduction in September 2015 and the rota vaccine introduction in January 2016.

#### The internal distribution system in the CAR works as follows:

#### the central level supplies the prefecture/district depots on a quarterly basis; and

#### health centres receive supplies from the prefecture/district level on a monthly basis.

#### A system for monitoring the wastage rate is in place. However, there is no plan to reduce wastage, and there have been difficulties collecting data to calculate the wastage rate.

#### An effective vaccine management (EVM) assessment was performed in 2011, which proposed an improvement plan. A follow-up assessment is scheduled in November 2015 to re-assess EVM performance.

### **2.3.3. Effective vaccine management**

An Effective Vaccine Management Assessment (EVMA) was conducted from 22 August to 18 September 2011 by external evaluators from UNICEF/WCARO and UNICEF/CAR and a survey team from the Ministry of Health.

Recommendations were created covering three categories:

1. Key recommendations for the central level (central depot):
2. Immediate repairs to one (+) cold room at the central depot (the two cooling units).
3. A maintenance contract should be set up for the central depot between the Ministry of Health (EPI) and an appropriate business.
4. A new 30 m3 (+) cold room should be installed in 2012 with the introduction of the rotavirus vaccine.
5. Each cold room should have a continuous temperature logging system with GSM alarm. The Multilog with GSM autodialer is recommended. Technical specifications are provided in the annex.
6. Only the OPV vaccine is stored in a (-) cold room per WHO recommendations.
7. Vaccine Arrival Reports (VAR) are filled out and submitted to UNICEF within 72 hours of arrival to ensure the validity of warranties.
8. The central depot makes monthly deliveries to the prefectures.
9. The central depot should ensure that complete sets of registers are provided to each prefecture, in sufficient quantities to meet the requirements of all health facilities and prefecture bases.
10. Health worker training is a priority requirement.
11. Recommendations for health prefectures
12. The immediate but temporary distribution and installation in prefecture bases of the 33 Sibir refrigerators stored at the UNICEF depots.
13. Increase vaccine storage capacity at the prefecture level.
14. Have prefectures make adequate space available for EPI activities.
15. UNICEF provides a monthly quota of fuel to the EPI to keep fuel-powered refrigerators operating.
16. Plan to report fuel shortages in the monthly report form.
17. An EPI guideline for health facilities stating the right for reimbursement of fuel purchase costs against the provision of temperature loggers, supporting documentation and statement of non-provision by the prefecture.
18. Set up a computerised management system in the prefectures.
19. Recommendations for the service delivery level (health facilities)
20. Supply (from the central level) of solar battery-free refrigerators with a capacity of 50 net litres or less.
21. Outreach strategies must be conducted much more frequently.
22. Optimisation study of vaccine storage points.

### **2.3.4. Immunisation safety and waste management**

The EPI in the CAR uses auto-disable syringes to administer vaccines and safety boxes to collect used syringes and needles. A waste management plan does exist, but it has not yet been disseminated or implemented. Most of the health centres that offer immunisation use "burning plus burial" to destroy waste. Some health facilities use De Monfort incinerators that were built by NGOs in the field.

### **2.3.5.**  **Introduction of new vaccines into routine EPI**

### The EPI in the Central African Republic has significant experience in introducing new and under-used vaccines.

### In fact, immunisation against yellow fever has existed since the major epidemics service was created in 1954. At that time, immunisation was given in mass campaigns using the mobile strategy, with a well-defined timeline. Note that the 17D yellow fever vaccine (Institut Pasteur in Dakar) was administered by scarification (scratch vaccine). Since 1986 it has been administered to children beginning at 12 months of age as an injection in the right forearm.

### To broaden protection against vaccine-preventable diseases, the CAR has successfully introduced vaccines for viral hepatitis B and Haemophilus influenzae type B (2008), pneumococcal infections (PCV13 in 2011), and more recently the inactivated polio vaccine (IPV in 2015) into routine EPI.

### The post-introduction evaluation for PCV13 that was conducted in September 2011 led to the following recommendations:

A. Central level

1. Develop documents for:
* national immunisation policy including new vaccines to be introduced
* immunisation safety and AEFI management
1. Develop a maintenance plan for the cold chain and transportation vehicles
2. Provide a secure connection to the urban electric network for cold rooms
3. Set up automatic temperature loggers in cold rooms
4. Implement the vaccine and input procurement plan
5. Develop a supervision plan and set up a mechanism for monitoring supervision visits
6. Distribute appropriate communications materials to all levels about new vaccines

B. Regional level

1. Provide training on new vaccines for regional and health centre staff
2. Strengthen routine EPI at this level: regional depots, data management, monitoring and supervision
3. Develop a regional introduction plan for each new vaccine

C. Operational level

1. Provide training to all stakeholders when each new vaccine is introduced: target disease, administration, AEFI, storage, etc.
2. Develop and archive a timeline of activities for each introduction
3. Set up an appropriate waste disposal system (incinerator, burning-burial) at each EPI centre
4. Document and report all cases of AEFI
5. Systematically conduct an IEC session during immunisation sessions
6. Develop local EPI communication to inform the community

## 2.4. Communication to promote the EPI

The national health sector transition plan for 2015-2017 selected communication as one of the important strategies for all health programmes, including the EPI.

The Department of Communication for Health (DCS) has an integrated communication plan taken from the comprehensive multi-year pan (2011-2015 cMYP). This communication plan emphasises the following main strategies: advocacy for adherence by decision-makers; social mobilisation/partnership targeting awareness and participation of social partners; and behaviour change communication to create awareness among target groups during routine immunisation and mass campaigns.

There is a regional health promotion service (SPS) and a district-level health promotion office (BPS)

Most health districts have local radios to spread awareness messages, and large cities have television and written press coverage.

The MenAfriVac® introduction will require a change to the immunisation schedule. Special communication strategies will be implemented so that parents adopt new behaviours.

In addition to the primary target (parents), communication should target authorities, organised groups, media at all levels and health workers to create a commitment to immunisation.

This will involve adapting the messages to obtain adherence by the various people involved to promote the introduction process.

An operational communication plan will be developed that incorporates communication strategies and activities at all levels (central, intermediate and peripheral).

# **HEALTH PRIORITIES**

One of the five pillars of the CAR's 2015-2016 health sector transition plan is to improvement the management of mother and child health. The improvements include all curative and preventive services, especially strengthening immunisation.

The priorities below were established.

Short term:

* prioritise routine immunisation activities in the minimum package of activities (see 5.2.2).
* assess and re-equip health facilities with cold chain equipment
* provide supplies of vaccines, vitamin A, Albendazole and immunisation consumables
* organise supplementary immunisation campaigns and activities

Medium term:

* monitor the progress of routine child immunisation coverage rates
* schedule new vaccine introductions
* schedule specific immunisation coverage studies as part of NHP III

# **GOAL AND OBJECTIVES**

## Goal

Work towards eliminating meningococcal A meningitis as a health problem in the CAR.

## Objectives

### **General objective**

Strengthen the immunity of target populations (1-29 years old during catch-up SIAs and children 9-11 months during routine immunisation) against meningococcal A meningitis.

### **Specific objectives**

* Immunise at least 95% of the 1-29 year-old population in the November 2016 catch-up campaign;
* Immunise at least 60% of children 9-11 months old during routine immunisation in February 2017;
* Ensure injection safety in 100% of the immunisation sites;
* Provide effective AEFI management;
* Provide effective vaccine and immunisation supply management;
* Strengthen community partnership and mobilisation;
* Strengthen case-based surveillance of meningitis.

## MenAfriVac® vaccine: licensure and characteristics

###

### **4.3.1. Product licensure**

The National Regulatory Authority (NRA) in the CAR is the Department of Pharmacy and Medicines (DPM), which licenses health products. Vaccine samples and all related documentation are required for the product to be registered in the country.

###

### **4.3.2. Characteristics of the vaccine**



There are two vaccines: the MenAfriVac® 5 µg and the MenAfriVac® 10 µg. The first is used in routine EPI and the second is for preventive campaigns.

The MenAfriVac® meningococcal A conjugate vaccine, manufactured by the Serum Institute of India (SII) Ltd, is a purified polysaccharide lyophilised vaccine covalently bound to tetanus toxoid (TT), which acts as a carrier protein.

The vaccine contains a bacterial polysaccharide specific to the *Neisseria meningitidis* serogroup A. The TT is prepared by extraction, ammonium sulfate purification, and formalin inactivation of the toxin from cultures of Clostridium tetani.

MenAfriVac® is provided in the form of ten doses per vial. Each vial contains a lyophilised powder of polysaccharide Group A meningococcus conjugated to the tetanus toxoid protein and excipients.

Each vial also contains the diluent with aluminium phosphate as adjuvant and thiomersal (0.01%) as preservative.

The diluent is a white slightly opaque homogeneous suspension presented in a 5-mL ampoule. The MenAfriVac® 5µg vial has a VVM, type 30. The vaccine can use the controlled temperature chain (CTC)

when it cannot be stored between +2°C and +8°C. The MenAfriVac® can be stored at ≤ 40°C for four days.

### **4.3.3. Storage duration**

The expiration date is shown on the label or packaging. Stored at a temperature between 2°C and 8°C, the MenAfriVac® vaccine can last 36 months. The diluent can last 42 months when stored at 25°C.

###

### **4.3.4. Packaging and secondary packaging**

The MenAfriVac® is packaged in cartons of 50 vials and the diluent in cartons of 50 ampoules. The packaged volume per dose is 2.6 cm3.

## 6.5. Route of administration

The vaccine is only given by intramuscular (IM) injection, to the left thigh in routine EPI and to the right shoulder during the campaign.

# **IMPLEMENTATION**

##  Introduction into routine immunisation

### **Vaccine selection and timeframe**

The meningococcal vaccine the CAR selected for the EPI is a lyophilised conjugate A vaccine in a ten-dose vial provided with diluent.

It will be introduced in all health districts in the country in the first quarter of 2017.

### **Administration schedule and targets**

The MenAfriVac® vaccine will be administered in a single dose to children 9-11 months during routine immunisation and to those 1-29 years during the catch-up campaign. The choice of the 1-29 year-old population as a target for the campaign was made based on the epidemiological profile of NmA meningitis cases in African countries in the meningitis belt.

### **Annual immunisation coverage objectives**

Several strategies will be used to achieve these objectives, including capacity building, actively seeking those lost-to-follow-up and pro-immunisation communication.

The 2016 annual target is 95% during the mass campaign and 60% at the end of 2017 for routine EPI.

### **Wastage rate**

Per WHO guidelines, a maximum wastage rate of 50% is used to estimate requirements. This rate will be applied to routine immunisation, and the country will try to minimise wastage.

 A 10% wastage rate will be used for the campaign.

### **Estimates of vaccine and consumable requirements**

Table XX: Requirements for the MenAfriVac® vaccine and consumables in 2016 and 2017

|  |  |  |
| --- | --- | --- |
| **Designation** | **2016** | **2017** |
| **Total population** | **5,076,840** | **5,203,761** |
| **Target population** | **3,604,558** | **158,195** |
| **IC objectives** | **95%** | **60%** |
| **Wastage rates** | **10%** | **50%** |
| **Wastage factors** | **1.11** | **2** |
| **MenAfriVac®® requirements** |  **4,001,060**  |  **189,840**  |
| **0.5-mL AD syringe requirements** |  **4,001,100**  |  **189,840**  |
| **5-mL syringe diluent requirements** |  **400,110**  |  **18,984**  |
| **SB requirements** |  **1,760**  |  **84**  |

### **Current vaccination schedule****, updated**

Table XXI: Routine immunisation schedule for children aged 0 to 11 months

|  |  |  |
| --- | --- | --- |
| Contact | Age | Vaccine |
| 1 | Birth | BCG, OPV 0 |
| 2 | 4 weeks | DTP-HepB+Hib1; pneumo1; OPV1 |
| 3 | 10 weeks | DTP-HepB+Hib2; pneumo2; rota2; OPV2 |
| 4 | 14 weeks | DTP-HepB+Hib3; pneumo3; rota3; OPV3; IPV |
| 5 | 9 months | MCV and YFV, MenAfriVac®5µg |

### **Strategies**

#### **Support for building health worker capacities**

The skills of all those involved will need to be updated for the introduction, especially those of the MenAfriVac® workers. Health workers at all levels will be trained in the MenAfrivac campaign in 2016 and prior to the vaccine's introduction into the routine schedule in 2017. After the introduction, cascade ("train the trainer") training will help to monitor implementation at all levels.

#### **Strengthening EPI logistical capabilities**

The introduction of the MenAfriVac® vaccine may require storage capacity to be strengthened at all levels. An EVM assessment is scheduled in 2015, the results of which will be implemented.

#### **Vaccine and consumable management**

Supplies must be made available on a regular basis for immunisation services to operate properly. MenAfriVac® will be integrated into the existing supply plan.

#### **Waste management**

This vaccine introduction will create additional waste that will need to be disposed of in accordance with the national waste management policy. This will require the waste disposal mechanism to be reinforced. It may be possible to contract with private smelting/foundry companies to use their facilities during the catch-up campaign.

#### **Revising EPI management materials**

Management materials will be revised to account for the new vaccine.

#### **Improving communication to promote the EPI**

A communication will be developed and implemented for the introduction and catch-up campaign. Messages will be adapted to boost compliance and bring various stakeholders on board to promote the MenAfriVac® introduction and the sustainability of the programme.

#### **AEFI monitoring**

Minor, major and severe cases of immunisation-related AEFIs will be reported and investigated. The country does not yet have a system of pharmacovigilance or a committee of AEFI experts. An Institutional Development Plan (IDP) was developed in 2011 but has not yet been implemented due to lack of funding. The expert committee on AEFI will be set up before the schedule and catch-up campaign are conducted.

A national notification form for adverse events has been adopted and will be used for AEFI reporting. AEFIs will also be reported during SIAs. The process and procedures of monitoring adverse events following the MenAfriVac introduction at both the district and local levels will include implementation of the IDP and setting up the pharmacovigilance system.

 A workshop will be held to develop and distribute case definitions, surveillance tools, and monitoring procedures for serious cases of AEFI and for AEFI monitoring indicators.

The personnel in charge of disease monitoring will be trained in AEFI management via cascade training.

#### **Meningitis surveillance**

Meningitis surveillance is incorporated into routine surveillance. It is case-based per the IDSR and the reference laboratory is involved. A plan to enhance surveillance will be set up and will involve training, equipment and technical support.

#### **Strengthening partnerships**

One indicator of the success of this introduction will be the involvement of technical and financial partners, other ministries, civil society, the private sector and the community.

# **ESTIMATED BUDGET FOR THE INTRODUCTION**

The estimated budget for introducing the MenAfrivac vaccine into routine EPI is CFAF 287,703,077 i.e US$ 492,642.26. This is divided into CFAF 194,623,778 (US$ 333,259.89) for operation costs and CFAF 93,079,299 (US$ 159,382) for the costs of vaccines and injection materials.

The distribution of operational costs by funding sources is as follows:
- GAVI: US$ 126.556
- Other partners: US$ 206,703.89

# **MASS PREVENTIVE IMMUNISATION CAMPAIGN**

## 7.1. Targets and requirements

### **7.1.1. Target population**

The mass preventive immunisation campaign will target the population aged 1-29 years, i.e 3,604,558 people (71% of the total population in 2016), including 1,369,732 in urban areas and 2,234,826 in rural areas.

###  **7.1.2. Human resource requirements**

To immunise this target population 2,800 teams will be required, including:

* 800 teams for the fixed strategy;
* 1,520 teams in temporary posts;
* 424 teams for the outreach strategy; and
* 56 mobile teams.

Each team is composed of two health workers, two volunteers and one mobiliser. This means total HR requirements will be 5,600 health workers, 5,600 volunteers and 2,800 mobilisers.

In addition, 863 supervisors will be needed: 156 in urban areas (1 supervisor for every 5 teams) and 707 in rural areas (1 supervisor for every 3 teams).

### **7.1.3. Input requirements**

The requirements estimate is based on a 10% wastage rate for vaccines and AD syringes (wastage factor = 1.11) and two vaccine carriers per immunisation team. Thus:

* 4,001,060 doses of MenAfriVac® 5ug vaccine
* 4,001,100 of the 0.5-mL AD syringes
* 400,110 of the 5-mL RUP dilution syringes
* 1,760 of the 5-L safety boxes
* 5,600 of the vaccine carriers.

## 7.2. Estimated budget

The estimated budget for the immunisation campaign is CFAF 2,979,558,265, or US$ 4,965,930.44. Of this, US$ 2,342,948.50 is for operational costs and US$ 2,622,981.94 is for vaccine and injection material costs.

## 7.3. Timeframe and duration

The campaign will take place over seven days in November 2016.

## 7.4. Coordination

A technical support committee for the EPI (CTA-EPI) will coordinate the organisation of the MenAfriVac introduction and the catch-up campaign.

This committee is responsible for organising the monitoring and supervision of both the introduction and the mini catch-up campaign.

It will be composed of technical commissions.

* At the central level:
* coordination unit: responsible for supervising and updating progress
* communication and social mobilisation commission: responsible for developing and implementing the communication plan
* resource mobilisation: assess resource needs and monitor budget execution at all levels
* M&E: responsible for developing tools, guidelines and drafting the ToRs for the post-introduction evaluation
* logistics: responsible for developing and implementing the logistics plan, vaccine and consumable supplies and waste management
* Local committees will be created at the decentralised level that will be responsible for organising and monitoring the MenAfriVac introduction and catch-up campaign.

## 7.5. Planning

The central level is responsible for developing the introduction plan and the operational plan of action for the catch-up campaign.

It will draw on lessons learned from past experience introducing new vaccines and from previous campaigns to support the intermediate and peripheral levels in developing operational plans.

## 7.6. Personnel capacity building

Informational and training sessions will be organised for the various stakeholders (national supervisors, health district directors, district management teams, immunisation team supervisors, vaccinators and volunteers). A training guide will be developed by the central level to ensure the quality of these sessions, which will be conducted under the supervision of the various levels.

## 7.7. Communication and social mobilisation

A communication plan will be developed for the catch-up campaign for MenAfriVac® before the campaign begins, which will be based on the main communication strategies and on lessons learned in previous experience.

Particular emphasis will be placed on:

* advocacy to administrative, traditional and religious authorities and other opinion leaders to involve them in the planning phase;
* interpersonal behaviour change communication;
* social mobilisation of populations to encourage them to comply with the campaign.

## 7.8. Supply of inputs

A logistics plan will be drawn up to lay out how districts will be supplied with inputs (vaccines, injection materials and immunisation cards). These inputs must be available at the health centres and posts at least one week before the start of the campaign.

## 7.9. Immunisation strategies

Three strategies will be used:

* fixed strategy: immunisation post at health facilities or temporary sites;
* outreach strategy: in health areas for the population living more than 5 km from the health facility;
* mobile strategy: reserved for river areas and zones that have low populations or are hard to reach.

The plan is to immunise 250 people with the fixed strategy, 150 with the outreach strategy and 100 with the mobile strategy. A team will consist of two health workers and two volunteers for both the fixed and outreach strategies.

## 7.10. Immunisation safety

Immunisation safety will be emphasised, especially in the following areas:

* vaccines will be administered using auto-disable syringes, which will be collected afterwards in safety boxes and taken to health centres, then to districts, per an established plan;
* full safety boxes stored at the districts will be collected by the central level, and will be destroyed in private smelting/foundries as part of a service contract;
* for proper AEFI surveillance and treatment, training tools and reporting materials will be revised. Health workers will be trained prior to the campaign and supervised during its implementation. A minimum of medicines for treating severe and major AEFIs will be available to the teams to manage emergency situations.

## 7.11. Supervision

Supervision will occur during both the pre-campaign phase and the campaign itself, for quality control and to ensure a successful campaign.

Supervisory tools will be developed by the central level and made available to supervisors at the various levels so they can conduct supervisory missions before, during and after the campaign.

# **LINKS WITH OTHER INTERVENTIONS**

In the CAR, several child survival interventions have been integrated with routine EPI for several years, including vitamin A supplementation, deworming with Albendazole/Mebendazole, hand washing and the distribution of LLINs.

# **MONITORING & EVALUATION**

## Before the campaign

Preparations will be monitored at the central level by the CTA-EPI. In the three months just prior to the start of the campaign, weekly technical meetings to monitor that status of preparations will be conducted at the central level. In regions and districts, coordination committees will monitor preparations.

## During the campaign

Monitoring will occur via:

* daily compilation and monitoring of data on immunisation coverage data, vaccine management and wastage rates;
* daily coordination meetings at the central level and in health prefectures/districts;
* rapid surveys in high-risk zones starting the third day of the campaign. These rapid surveys should be conducted by supervisors/independent survey takers, and will consist of home visits to identify pockets that have not been immunised and should be targeted for the mop-up.

## After the campaign

* External monitoring will be conducted by independent monitors.
* The campaign assessment meeting at the national level and in health prefectures/districts will be organised to assess administrative and independent immunisation coverage rates, injection safety, waste management and AEFI surveillance.
* A post-introduction evaluation will be conducted on the basis of a protocol endorsed by the CTA-EPI. This will allow us to assess the process and the impact.

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# **ANNEXES**

## Operational Action Plan

## Timeline for introduction into routine immunisation

## Timeline for the catch-up campaign

##  Budget for introduction into routine immunisation

1. **Table: Budget (costs and funding) for vaccine introduction in US$, 2017**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |   |  |  **Government funding**  |  **Partners' support\***  |  **Existing Gavi HSS funding**  |  **Requested Gavi VIG**  |
|  | **Cost category** |  **TOTAL COST**  |  **Amount**  |  **Name**  |  **Amount**  |  **Amount**  |  **Amount required**  |
|  **US$** |  **US$** |  **US$** |  **US$** |  **US$** |
| **1** | **Program management and coordination** |  11,558.22  |  -  |  WHO  |  6,558.22  |  -  |  5,000.00  |
| **2** | **Planning and preparations** |  2,054.79  |  -  |   |  -  |  -  |  2,054.79  |
| **3** | **Social mobilisation, IEC and advocacy** |  19,525.51  |  -  |  UNICEF  |  11,525.51  |  -  |  8,000.00  |
| **4** | **Other training and meetings** |  150,772.05  |  -  |  WHO/UNICEF  |  90,528.44  |  -  |  60,243.61  |
| **5** | **Document production** |  71,070.21  |  -  |  UNICEF  |  57,666.21  |  -  |  13,404.00  |
| **6** | **Human resources and incentives** |  -  |  -  |   |  -  |  -  |  -  |
| **7** | **Cold chain equipment** |  -  |  -  |   |  -  |  -  |  -  |
| **8** | **Transport for implementation and supervision** |  10,853.60  |  -  |   |  -  |  -  |  10,853.60  |
| **9** | **Immunisation session supplies** |  -  |  -  |   |  -  |  -  |  -  |
| **10** | **Waste management** |  -  |  -  |   |  -  |  -  |  -  |
| **11** | **Surveillance and monitoring** |  5,599.32  |  -  |  WHO  |  5,599.32  |  -  |  -  |
| **12** | **Assessment** |  61,826.20  |  -  |  WHO/UNICEF  |  34,826.20  |  -  |  27,000.00  |
| **13** | **Technical assistance** |  -  |  -  |   |  -  |  -  |  -  |
| **14** | **Data management** |  -  |  -  |   |  -  |  -  |  -  |
| **15** | **Other (please specify)** |  -  |  -  |   |  -  |  -  |  -  |
|  | **TOTAL** |  **333,259.89**  |  **-**  |  |  **206,703.89**  |  -  |  126,556.00  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TIMELINE FOR THE INTRODUCTION OF THE MenAfrivac VACCINE INTO ROUTINE EPI IN THE CAR** |  |  |  |  |  |  |  |  |
| **Activities** | **2015** | **2016** | **2017** |
| **July** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **June** | **July** | **Aug** | **Sept** | **Oct** | **Nov** | **Dec** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **June** | **July** | **Aug** |
| **Program management** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Set up the CNO and its branches |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Draft and disseminate orders setting up committees in regions, provinces  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Conduct CTA-EPI meetings |  |   |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Conduct ICC meetings |   |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Submit to Gavi online  |   |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Organise an informational meeting for authorities, opinion leaders, association/NGO leaders, etc. at the central level |  |  |  |   |  |   |   |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |   |   |   |
| Conduct CNO meetings for the MenA introduction |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |
| Conduct regional organisation committee meetings |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |
| Conduct prefecture organisation committee meetings |  |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |
| **Planning and preparations** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Conduct a workshop for developing the MenAfriVac vaccine introduction plan |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Organise a workshop to revise EPI management materials and the immunisation schedule |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Organise a workshop to develop training modules |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Get CTA-EPI endorsement of the new data collection materials |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Train the trainers on the MenAfrivac introduction process |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |
| Train immunisation centre workers on EPI management integrating MenAfrivac |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |
| Train/retrain members of CSOs and community liaisons in pro-EPI communication  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |
| **Social mobilisation, IEC and advocacy** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Develop the communication plan  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Develop communication tools related to the new MenafriVac vaccine |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|  Train members of the media |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Produce and diffuse microprogrammes on radio and TV stations to promote EPI (routine EPI, new vaccines, surveillance, SIAs, AEFI) |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Organise radio and TV discussions on EPI (routine EPI, new vaccines, surveillance, SIAs, AEFI) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Produce a radio advertisement  |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|  Use groups and different channels at the community level for social mobilisation (support groups, community liaisons, religious leaders, women's groups) |  |   |   |   |   |   |  |  |  |  |  |  |  |  |  |   |  |   |   |   |   |   |   |   |   |   |
| Hold informational and advocacy meetings with political administrative authorities, traditional and religious leaders, media, CSOs and others at the national, regional and prefecture levels |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |
| Broadcast radio programmes at the district level about the MenA introduction |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Organise an informational meeting for authorities, opinion leaders, association/NGO leaders, management committees (COGES), community health workers (CHW), etc. at health centres |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |   |   |
| Educate parents during consultation visits and immunisation sessions |  |  |  |  |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Reinforce information from CHWs, association members and others to families |  |  |  |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Organise the official launch of the MenAfrivac introduction |  |  |  |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| **Document production** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Copy and distribute revised materials |  |  |  |  |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |
| Copy training modules and technical guides |  |  |  |  |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |
| **Strengthen EPI logistical capabilities** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Assess the vaccine storage capacity in districts  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Order vaccines and consumables |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Receive vaccines and consumables at the central level |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Supply the Health Prefectures with vaccines and consumables |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |
| Supply immunisation centres on a regular basis with fuel and cold chain accessories |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |
| **AEFI monitoring** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Conduct surveillance and report AEFI cases |  |  |  |  |   |   |   |   |   |   |   |   |   |   |   |   |  |  |   |  |  |  |  |  |  |  |
| Investigate cases of severe and major AEFIs |  |  |  |  |   |   |   |   |   |   |   |   |   |   |   |   |  |  |   |  |  |  |  |  |  |  |
| **Supervision** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Supervise stakeholders and workers in districts in implementing the MenA vaccine introduction |  |  |  |  |   |   |   |   |   |   |   |  |  |   |  |  |   |  |  |  |   |   |   |   |   |   |
| Conduct supportive supervision visits at all levels |  |  |  |  |   |   |   |   |   |   |   |  |  |   |  |  |   |   |   |  |   |  |   |  |   |  |
| **Monitoring/Evaluation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   |   |   |   |   |   |   |   |
| Monitor the progress of MenA immunisation coverage |  |  |  |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Monitor the number of children not immunised with MenA |  |  |  |  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Conduct a post-introduction evaluation for MenAfriVac |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |