Comprehensive Multi Year Plan for Immunization System

2016-2020

Federal Government of Somalia

Comprehensive Multi-Year Plan 2016-2020

Immunization Program of Somalia

List of Tables

List of Figures

Acronyms

AD	Auto-destruct
AEFI	Adverse Events Following Immunization
AFP	Acute Flaccid Paralysis
ANC	Ante Natal Care
BCC	Behavior Change Communication
BCG	Bacillus Calmette-Guerin
cMYP	Comprehensive Multi-Year Plan
CSO	Central Statistics Organization
CSOs	Civil Society Organizations
CSR	Communicable Disease Surveillance and Response
DEWS	Disease Early Warning System
DPT	Diphtheria Tetanus Pertussis
DQS	Data Quality Self-Assessment
EDL	Essential Drug List
ENT	Ear Nose Throat
EPHS	Essential Package of Health Services
EPI	Expanded Program on Immunization
FHW	Female Health Worker
EVM	Effective Vaccine Management
GAVI	Global Alliance for Vaccines and Immunization
GAVI HSS	GAVI Health System Strengthening
GAVI ISS	GAVI Immunization Services Support
GAVI NVS	GAVI New Vaccine Support
GDP	Gross Domestic Product
GGHE	General Government Health Expenditure
GHE	Government Health Expenditure
GVAP	Global Vaccine Action Plan
HAB	Health Advisory Board
HDI	Human Development Index
Hep-B	Hepatitis-B
HIS	Health Information System
HMIS	Health Management Information System
HP	Health Post

HR	Human Resources
HSCC	Health Sector Coordination Committee
HSS	Health Systems Strengthening
HSSP	Health Sector Strategic Plan
ICC	Inter-agency Coordinating Committee
ICS	Immunization-system-component-specific
IEC	Information, Education and Communication
ILR	Ice-Lined Refrigerator
INGO	International Non-Governmental Organization
IP	Immunization Practices
IPV	Inactivated Polio Vaccine
JHNP	Joint Health and Nutrition Program
KAP	Knowledge, Attitude and Practice
KM	Kilometer
M&E	Monitoring and Evaluation
MGD	Millennium Development Goals
MHT	Mobile Health Teams
MICS	Multiple Indicator Cluster Survey
MMR	Maternal Mortality Ratio
MNCH	Maternal, Neonatal and Child Health
MNT	Maternal and Neonatal Tetanus
MoF	Ministry of Finance
MoH	Ministry of Health
MSDS	Minimum Service Delivery Standards
MTBF	Medium Term Budget Framework
NGO	Non-Governmental Organization
NITAG	National Immunization Technical Advisory Group
OOP	Out of Pocket
OPD	Out-Patient-Department
OPV	Oral Polio Vaccine
PCV-13	Pneumococcal Conjugate Vaccine – 13
PEI	Polio Eradication Initiative
Penta	Pentavalent (DPT-HepB-Hib)
PESS	Population Estimation Survey of Somalia

PHC	Primary Health Care
PIRI	Periodic Intensified Routine Immunization
PoA	Plan of Action
POL	Petrol Oil Lubricants
REC	Reaching Every Community
RED	Reaching Every District
RHO	Regional Health Officer
RI	Routine Immunization
RTMD	Remote Temperature Monitoring Device
SIA	Supplementary Immunization Activity
SIS	Skilled Immunization Staff
SOPs	Standard Operating Procedures
SWOT	Strengths, Weaknesses, Opportunities and Threats
TAG	Technical Advisory Group
THE	Total Health Expenditure
TOT	Training of Trainers
TT	Tetanus Toxoid
UNDP	United Nations Development Funds
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USD	United States Dollar
VPD	Vaccine Preventable Disease
VPVs	Number of Village Polio Volunteers
WHO	World Health Organization

Preface

The current document represents an inclusive strategic planning exercise for immunization carried out by the Government of Somalia and partners at national and zonal levels. Designated health authorities in each Somali entity conducted a series of consultations with key stakeholders and designed respective comprehensive multi-year plans for immunization (cMYP).

For the first time in the history of Somalia, sub-national cMYPs have also been developed for Somaliland, Puntland and South-Central zone with a key objective to translate the local policy-making process into respective budget planning and execution instruments. This document will also guide in-country development partners, donors and non-governmental organizations in providing targeted support to immunization. The Somali cMYP document consists of a National cMYP for Immunization System and three separate chapters of Sub-National cMYPs for Somaliland, Puntland and South-Central zones.

The Somali Government has initiated the development of 2nd Health Sector Strategic Plan for the 2017-20. By using WHO's framework of System Building Block, the cMYP for immunization system is developed in line with the technical structure of the zone-specific HSSPs. This alignment will enable the policy makers and health planners to nest cMYP objectives and strategies in the forthcoming HSSPs.

Somalia is at a critical stage of health development. The implementation phase of Health Sector Strategic Plans 2013-16 is about to complete its term by 2016. More significantly, the existing short-term funding opportunities (for example: JHNP, GAVI-HSS grant) are also coming to an end by 2016. The Government of Somalia is well aware of the complexities and difficulties associated with this situation. Therefore, the current cMYP is designed on the structural foundations laid down under HSSPs. Therefore, objectives and strategies of cMYP have already been aligned with the future requirement of the second round of HSSPs for 2017-2020.

The Government of Somalia also plans to utilize this cMYP for developing the forthcoming GAVI-Health System Strengthening Grant Application and GAVI Cold Chain Equipment (CCE) Optimization Platform for strengthening the cold chain system.

Executive Summary

Immunization Situation Analysis: Summary 2011-2015

Immunization Achievements

- No laboratory confirmed cases of Poliomyelitis since 2014
- Introduction of Penta and IPV vaccines
- EPI Policy developed and endorsed
- AFP detection rate: 4.0 cases per 100,000 population under 15 years
- National EPI Policy developed

Immunization Coverage

- Penta-3: 38.4% (2014 – Program data)
- Measles: 44.1% % (2014 – Program data)
- TT2+ coverage: 24.8% (2014 – Program data)
- % Drop Out Penta1 – Penta3: 8%
- % Gap for coverage for fully immunized children between low and high income groups: 14.7% (Survey Reports)

Immunization System Analysis

- Inadequate planning and target setting
- Poor coordination between Zonal EPI and EPHS implementing NGOs
- Outreach immunization services only in donor supported areas
- Lack of validation of data in field
- Training programs heavily dependent upon funding from donors
- Aging cold chain equipment

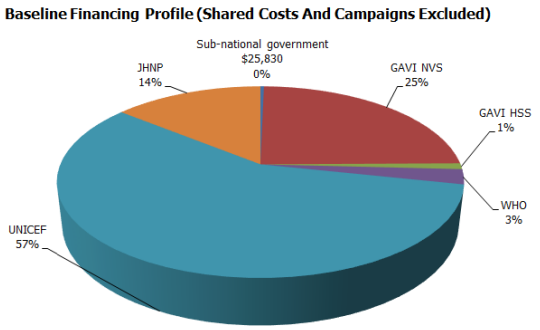
Health System Constraints

- High reliance on external funding
- Planning processes influenced by donors
- Availability of health workforce well below the threshold level
- Low utilization of public sector PHC services
- Entire population not covered under EPHS
- Unregulated private health sector
- Poor security conditions

Baseline Costing Profile

Baseline Indicators	2014
Total Immunization Expenditures	$28,582,943
Campaigns (SIAs)	$20,836,036
Routine Immunization (RI)	$7,746,907
Per Capita (RI only)	$0.63
Cost per Penta-3 child (RI only)	$45
% Vaccines & Supplies (RI)	45.4%
% Government Funding	0.3%
% THE	4.8%
% GHE	19.4%
% GDP	0.2%
Total Shared Costs	$195,758
% Shared Health Systems Cost	0.7%
Total Immunization System Costs	$28,778,700

Baseline Financing Profile



cMYP Summary: 2016-2020

National Immunization Priorities

- Increasing immunization coverage and reducing vaccine-preventable diseases
- Stopping wild poliovirus transmission and eradicating the disease
- Improving quality, efficiency and sustainability of immunization program
- Changing political and public awareness of and attitudes toward importance of immunization
- New vaccine introduction (IPV, Rota)

Immunization Priority Objectives

- Increase control of VPD diseases
- Increase coverage and equity of routine immunization
- Improve surveillance of VPD diseases and AEFI
- Improve effective vaccine management
- Improve monitoring and reporting of immunization services
- Increase sustainability of immunization financing

National Program Monitoring Framework

Indicator	2014	2020
BCG	31.4%	90%
Penta-3	38.4%	84%
OPV-3	38.6%	80%
IPV	n/a	84%
PCV-13	n/a	20%
Rota	n/a	20%
Measles-1	44.8%	83%
Tetanus Toxoid	24.8%	78%
Fully Immunized Children	4.4%	75%
Dropout Rate	8%	4%

Priority Immunization Program Strategies

- Streamline EPI management structures and clarity in roles and responsibilities
- Improve immunization delivery through:
  - Increasing skilled immunization staff
  - Ensuring micro-planning in health facilities
  - Use of polio staff in routine immunization
  - Periodic Intensified Routine Immunization (PIRI) for inaccessible districts
- Upgrade cold chain and logistic system
- Increase sustainability of immunization through improved planning and budgeting
- Increase political and public awareness of the importance of immunization through evidence based advocacy, communication and social mobilization activities

Major risks and challenges

- High dependency on donor funding
- Widespread poverty
- Insecurity and poor law and order
- Political instability
- Social and cultural barriers
- Illiteracy and poverty

Health and Development Impacts

- Reduced disability in the community associated with VPD (AFP)
- Contribution health expenditure savings through reduced hospital burden of VPD (pneumonia, diarrhea, measles)
- Use of immunization as a strategic component of poverty reduction initiatives through improved child survival

Cost and Financing projections

		2016	2017	2018	2019	2020	Total
Total Resources Required	**(US$ millions)**	**11.1**	**13.5**	**17.0**	**16.4**	**19.6**	**78.3**
Cost per capita	(in US$)	0.73	0.85	0.86	0.99	1.18	0.93
Total Secure Financing	**(US$ millions)**	**9.1**	**3.8**	**4.4**	**4.0**	**8.4**	**30.8**
Funding Gap (with secure)	(US$ millions)	2.4	9.7	12.6	11.4	11.2	47.4
Total secure + probable Financing	**(US$ millions)**	**10.8**	**7.3**	**7.2**	**9.1**	**1.6**	**46.2**
Gap (with secure + probable)	**(US$ millions)**	**0.7**	**6.1**	**9.7**	**7.3**	**8.0**	**32.0**
		6%	46%	57%	44%	41%	41%

1 Situational Analysis

1.1 Background information

1.1.1 Landscape and climate

The Federal Republic of Somalia is located in the Horn of Africa. It shares its borders with the Republic of Djibouti (Northwest), Federal Republic of Ethiopia (West) and Kenya (Southwest). Somalia has a long coastline stretched across the Gulf of Aden (North) and the Indian Ocean (East). Being 44th largest country in the world, the total land area is 627,337 square kilometers and Somali coastline is the longest of all African countries at 3,025 kilometers.[1] Only 1.8% of the land is arable whereas permanent pastures and forests constitute 68.5% and 10.6% of the area respectively.

Figure 1: Map of Somalia

Source[2]

Somalia is a semi-arid country with about 1.64% arable land.[3] Unlike the climates of most other countries at this latitude, conditions in Somalia range from arid in the north-eastern and central regions to semiarid in the northwest and south. In the northeast, annual rainfall is less than 100 mm (4 inches); in the central plateaus, it is about 200 to 300 mm (8 to 12 inches). The north-western and south-western parts of the nation, however, receive considerably more rain, with an average of 510 to 610 mm (20 to

[1] http://www.worldatlas.com/webimage/countrys/africa/somalia/solandst.htm#page
[2] https://www.cia.gov/library/publications/the-world-factbook/geos/so.html
[3] https://en.m.wikipedia.org/wiki/Somalia

24 in) falling per year. Although the coastal regions are hot and humid throughout the year, the hinterland is typically dry and hot.

The geographical and climatic characteristics are potential challenges that affect delivery of quality immunization services, especially supply of logistics and maintenance of cold chain.

1.1.2 Political and administrative structure

After decades of conflict and instability, in September 2012, the Federal Government of Somalia (FGS) was established which was unanimously recognized by the international community. However, Somalia remain divided with no clear path to reconciliation and unification. A large part of the country was controlled by the terrorists.[4] In September 2013, a new partnership was built between Somalia and its international partners under 'Somali New Deal Compact', which led to a paradigm shift in international policy rhetoric around Somalia.[5] Somaliland state, with the support of the FGS, secured its own Somaliland Special Arrangement within the Somali Compact, arguing that Somaliland had very different long-term development requirements from the rest of Somalia. Somaliland had already undertaken its own consultative process to produce its National Development Plan, which it used to form the basis under this Special Arrangement. The Compact provided an overarching strategic framework for coordinating political, security and development efforts for peace and state-building activities over the next three years (2014-2016).[6] One of the key milestones of the Compact Framework was implementation of the first phase of the Health Strategic Sector Plans (HSSP), including the expansion of 3 of the 5 core essential packages of health services.

Administratively, Somalia is divided into three zonal authorities: Somaliland (North-West Zone), Puntland (North-East Zone) and South-Central Zone. All the zonal authorities are governed their own elected governments which are quite independent in decision making and resource allocation and have their own Ministries of Health.

The zones are further subdivided into regions and districts (Table 1). The health system in all Somalia is also organized around the same administrative hierarchy.

Table 1: Details of Sub-zonal administrative units in Somalia

Sub-Zonal Administrative Unit	Somaliland	Puntland	South Central	Total
Regions	06	07	11	24
Districts	19	29	44	92

Source [7]

[4] Somali Compact Progress Report 2014

[5] Sarah Hearn and Thomas Zimmerman (2014) A New Deal for Somalia? The Somali Compact and its Implications for Peacebuilding, Center for International Cooperation, New York University

[6] The Somali Compact. The Federal Republic of Somalia

[7] Data from Zonal EPI Team presentations

1.1.3 Security

The overall security situation has improved in Somaliland and Puntland in the recent years. The overall security situation is a major concern in the South-Central zone. Nearly, 20 districts are inaccessible. The ongoing insurgency created security issues and posed serious threats to government administration and delivery of services (including immunization), especially in remote rural areas. In addition, a substantial amount of government expenditures is incurred upon strengthening the capability and effectiveness of security institutions.

1.1.4 Demography

The civil registration system in Somalia is very weak and only 3% births are registered.[8] The last general census was carried out in 1986/87. Therefore, lack of accurate information on the size of the population is a key problem in health planning and management. As sub-national cMYPs are being developed the time, the participants of the cMYP Workshop decided to use the population statistics reported by Population Estimation Survey of Somalia (PESS) 2014 for the planning purpose. According to PESS estimates, with a population growth rate of 2.8%, the total population of South Central Somalia was 12.3 million in 2014.

Table 2: Demographic profile of South Central Somalia for the year 2014 (baseline)

Demographic Profile	Urban	Rural	Total
Population	5,222,363	7,094,531	12,316,894
Surviving Infants	191,077	259,576	450,652
Pregnant Women	219,339	297,970	517,310
Women of Child Bearing Age (15-45 years)	1,222,033	1,660,120	2,882,153

Source: PESS 2014

The 2014 PESS report shows that the 50.7% population is male. The population aged 15-64 years comprises just above half (52.3%) of the total population. Nearly, 42.4% population lives in the urban areas. The rest of population is categorized under three groups: rural (22.8%), nomads (25.9%) and internally displaced population (IDPs-9%).

1.2 Health Sector Analysis

The Somali Government realizes that the health care coverage and quality care are limited, particularly in rural areas. Child and maternal mortality rates are still high and considered a high priority. The health sector-specific goal is to strengthen the institutional capacity of health sector.

Infant and child mortality rates in Somalia are among the highest in the world. According to the report of WHO's World Health Statistics Report 2015, one in every 11 children die before reaching age. The

[8] http://www.who.int/pmnch/media/news/2013/birth_registration/en/

infant mortality rate is 90 deaths per 1000 live births whereas the under-five mortality rate is 145.6 deaths per 1000 live births.

Table 3: Key health indicators

Indicators	Statistics	Year
Under 5 mortality rate (per 1000 live births)	145.6	2013[9]
Infant mortality rate (per 1000 live births)	90	2013[10]
Maternal Mortality Ratio (per 100,000 live births)	850	2013[11]

1.2.1 Governance and leadership

(a) Policy environment

All three zonal governments are signatory to the National Health Policy of Somalia approved in September 2014.[12] The focus on development of health sector strategic plans for strengthening the health sector is relatively a recent shift in the policy planning processes in Somalia. In 2013, for the first time, the Ministries of Health (MoH) developed their zone-specific Health Sector Strategic Plans (HSSP) 2013-16 which was an important step in building the government's capacity to improve access to health services for the people of Somalia.[13] The HSSP set context-specific health priorities appropriate to Somaliland, Puntland and South Central Somalia. Broadly, six strategic strategies were identified and prioritized in the following order:

1. Leadership and governance: Strengthen the MoH capacity in leadership and governance to better conduct the core functions of the MoH for the delivery of an effective quality health service
2. Human Resources for Health: Build an adequate, better skilled, well-managed and motivated workforce to provide the EPHS
3. Health Services: Improve the quality and increase the use of the EPHS with a focus on women and children
4. Health Financing: Develop a health financing system which relies more on national financing and local resources, that allocates budget to priorities, accounts for spending accurately and uses national and international funds more efficiently through a Sector Wide Approach (SWAp)
5. Medicines and consumables: Improve the availability, safety and rational use of medicines and health products
6. Health Information: Plan and manage the health system based on better quality up-to-date information, analysis and reporting

[9] World Health Statistics Report 2015

[10] Ibid

[11] Ibid

[12] Somali Health Policy: The way forward - prioritization of health policy actions in Somali health sector (Approved by the Health Advisory Board September 2014)

[13] Health Sector Strategic Plan (2013-2016), Ministry of Health, Federal Government Somalia

Despite the recent achievements made in steering the health sector towards a strategic direction, the overall capacity of the health ministries to provide leadership and governance remains limited. The overall policy processes are dominated by the donors, International Non-Governmental Organizations (INGOs) and United Nations (UN) agencies. There is some in-house capacity in developing policies but requires a significant support from external consultants. There is minimum capacity in strategic planning because there is lack of trained workforce with skills in planning.

The issues related to leadership and governance are not merely limited to the health sector but deeply rooted in the broader governance system. These systemic problems constitute a major impediment for the provision of adequate quality health services (including immunization).

cMYP in context of HSSP 2017-20

The HSSP 2013-16 provided a starting point for the government to develop its annual work plans and required budgets. The Somali Government is scheduled to develop 2nd HSSP for the period 2017-20. By using WHO's framework of System Building Block, the cMYP for immunization system is developed in line with the technical structure of the zone-specific HSSPs. This alignment will enable the policy makers and health planners to nest cMYP objectives and strategies in the forthcoming HSSPs.

(b) Organization and administration

The structure and organization of the health department is almost similar across zone. Under the political leadership of the Minister of Health, the MoH is headed by a Director General. The overall administration of the MoH at zonal level is organized into six departments each headed by a respective Director: Planning, policy and strategic information, Medical services and health facilities, Public health and disease control, Family health, Human resources, and Administration and finance. The Expanded Program on Immunization (EPI) is functioning under the department of Public Health and Disease Control.

At the regional level, a Regional Health Officer (RHO) is responsible for administration and implementation of health care services. However, according to the information provided by the EPI officials, in South-Central zone, the regional level is not functional. Some nominations have been made but the nominees are mostly working in a government hospital.

(c) Health sector coordination mechanism

The health sector coordination mechanism in Somalia is complex given the independent status of three zonal governments, and involvement of a large number of development partners, donor organizations and institutions and implementing partners. In order to deal with this complex situation, currently, a multi-layered coordination mechanism has been put in place that not only provides a forum to the zonal governments for interaction and collaboration but also facilitates the activities of development partners. In addition, this coordination mechanism fulfils the requirements of different financing institutions.[14]

[14] Xavier Modol (2015) Draft report on Somalia Health Public Expenditure Review

Table 4: Coordination bodies in the Somali health sector

Coordination Body	Constituency	Functions
Health Advisory Board (HAB)	• Level: Senior representatives • Include Health Ministers and Chiefs of Agencies from the following ○ Zonal Ministries of Health ○ UN Agencies ○ NGOs ○ Donors ○ Civil Society	• Policy and Planning endorsement
Health Sector Committee (HSC)	• Level: Director General • Representatives from the following: ○ Zonal Ministries of Health ○ UN Agencies ○ NGOs ○ Donors ○ Civil Society	• Discussion and development of strategies and policies • Development of technical components for service delivery • Assumes some functions of Country Coordination Mechanism of Global Fund grants, as well as JHNP
Zonal Health Coordination Forums	• Level: Director of Planning • Representatives from the following at zonal level: ○ Zonal Ministries of Health ○ UN Agencies ○ NGOs ○ Donors ○ Civil Society • Representative from Regional Health Office	• Establish procedures for planning, • Implementing, monitoring and evaluation of health programs • Coordinate planning and delivery of health sector projects at zonal level for specific zones: Somaliland, Puntland, South-Central
Technical Working Groups (TWG)	• Level: expert or head of program at Ministry of Health • Participation open and voluntary	• Deal with specific technical issues in the areas of Health Systems, Child Health & Immunization, Reproductive Health, Tuberculosis, Malaria, HIV/AIDS, and Gender-Based Violence
Health & Nutrition (humanitarian) Cluster	• Organizations active in the humanitarian health sector	• Mostly active in Mogadishu • Information sharing and planning among humanitarian actors

Source [15]

The Health Advisor Board (HAB) is the highest level of coordination mechanism because its members include Health Ministers and top officials of the development partners. However, Health Sector Committee is considered to be the most important coordination body because most of the operational decisions are made at this level.

[15] Ibid

1.2.2 Health workforce

Availability of skilled human resources is the driving factor behind a functional health system. However, Somalia is among the 57 countries experiencing human resource crisis at the global level.[16] The current level for Human Resources for Health (HRH) of available doctors, nurses and midwives is estimated at the ratio of 0.4 per 1,000 population or 4 for a population of 10,000. These HRH levels are extremely low when compared with the minimum threshold of 2.3 doctors, nurses and midwives per 1,000 population or 23 per 10,000 population, considered by the World Health Organization (WHO) to be the adequate required professional density ratio for these health workforce categories to support Universal Health Coverage and the attainment of Millennium Development Goals (MDGs).[17] Table 5 presents the details about availability of EPI related workforce.

Table 5: Availability of health workforce at PHC level in 2015

Type of Health Personnel	Total No. available	Total No. providing EPI services
Nurses	534	219
Auxiliary Nurses	486	296
Midwives	141	83
Community Midwives	231	-
Auxiliary Midwives	143	-
Female Health Workers	200	-
Total	**1,735**	**598**

Source: HMIS - Consolidated from Zonal CMYPs

1.2.3 Health service delivery

The health service delivery structure is organized on the basis of the EPHS developed in 2009. The EPHS comprises: four levels of service provision and ten health programs. The four levels of service provision provide the organizational hierarchy to the service delivery structure, including:

1. Primary health unit (health posts and PHC centers)
2. Health center (MCH centers)
3. Referral health center (District hospitals)
4. Hospital (Regional hospitals)

[16] Health Policy Framework 2012-17: Ministry of Health and Human Services, Transitional Federal Government Somalia

[17] Somali Human Resources for Health Development Policy 2016-2021

Table 6: Service delivery capacity by type of public healthcare facilities

Type	Total Available	Total Functional	Delivering EPI
Static			
Regional Hospitals[18]	57	41	-
District Hospitals	55	26	-
MCH Centers	504	420	291
Health Posts	785	421	-
Outreach			
Mobile Clinics	-	-	-

Source: HMIS - Consolidated from Zonal CMYPs

Out of the total 10 health programs, six core programs are being implemented at all four levels whereas four additional programs are found only at the referral levels. The six core programs include:

1. Maternal, reproductive and neonatal health (including EPI)
2. Child health (including EPI)
3. Communicable disease surveillance and control, including WATSAN (water and sanitation) promotion
4. First aid and care of critically ill and injured
5. Treatment of common illness
6. HIV, Sexually Transmitted Infections and Tuberculosis

The additional four programs include:

7. Management of chronic disease and other diseases, care of the elderly and palliative care
8. Mental health and mental disability
9. Dental health
10. Eye health

The EPHS is under implementation in regions supported by Joint Health and Nutrition Program (JHNP)[19] and Health Consortium Somalia Program[20]. In these regions, EPHS intervention shave been outsourced to INGOs and national NGOs.

1.2.4 Health financing

Health financing is mostly dependent on external funding and out-of-pocket payment with large contribution from Somali Diaspora. Government expenditure on health (GHE) is very low. An

[18] Also includes referral hospitals in South-Central Zone

[19] Somaliland (Awdal, Toghdeer, Sanaag regions) South-Central (Banadir, Galgadud, Lower Juba regions) Puntland (Nugal, Mudug, Bari)

[20] Somaliland (Sahil region)

additional source of funding is external support under Health System Strengthening (HSS). The main sources are:

1. Global Fund - USD112 million (July 2015 to December 2018)
2. Global Alliance for Vaccines and Immunization (GAVI) – USD11.5 (ending in Oct/2016)
3. Consortium of NGOs – USD43.3 million (ending in 3/2016)
4. Joint Health and Nutrition Program – USD99.7 (ending in 2016)

1.2.5 Medical products and technology

Insecurity, poor infrastructure, human resource shortages, poor capacity for supervision and monitoring have created significant challenges for procurement, supply chain and logistics management for medical and pharmaceutical products. UNICEF is playing a significant role in providing essential medicines and equipment to the MCH centers and Health Posts by operating a 'push' system of procurement and supply. In cases where hospital and MCH centers are being management by NGOs, the respective NGOs are responsible for supply and maintenance of medicines and equipment.

In the private sector, the pharmaceutical and health products are supplied through a large and unregulated import and retail business.

1.2.6 Health information management

The main sources of health management information in Somalia include:[21]

- The National Health Management Information System, HMIS
- The Disease Surveillance System
- The Nutrition Surveillance system
- The Tuberculosis Reporting system
- Smaller information reporting systems including those for HIV/AIDS, the Expanded Program of Immunization (EPI) and Reproductive Health
- The Human Resource Management Information System (HR-MIS).

The National HMIS Assessment Report 2013 indicates that there is a basic HMIS functioning in the three zones of Somalia. The data for HMIS is generated by the health facilities. However, due to weak district health management systems, data is collated and managed at the regional level. Based on the paper-based reports received from the regional level, HMIS data is consolidated at central level. There is limited or no physical verification and validation of the reported data.

[21] National HMIS Assessment Report (Final Draft) 2013

1.3 Immunization system

1.3.1 EPI in Somali health system

(a) Program Management

The overall management structure for EPI can be grouped under three major stakeholders:[22]

Somali Health Authorities

In all the three zones, under the political leadership of the Minister for Health and technical leadership of the Director General Health, the EPI Unit is organized under the Directorate of Public Health. The Central EPI Unit is responsible for coordination of all immunization activities in their respective zone. At the regional level, Regional Medical Officers are responsible for management and implementation of EPI activities.

UN Organizations

UNICEF - is the major financier and partner of EPI in Somalia. Its support to EPI includes: procurement and distribution of vaccines and injection equipment of assured quality, maintenance of cold chain in Nairobi and within Somalia, production and dissemination of management tools, production and dissemination of IEC materials, provision of support to regional offices, provision of financial assistance to partners for implementing outreach sessions and supervision with the Reaching Every District, support to HMIS for collection and analysis of data.

World Health Organization - provides technical assistance to Departments of Health and all partners; and is the second major financier of immunization activities in Somalia. It also supports the operations of Polio eradication and measles control activities at all levels, national to district, through its extensive network of WHO polio staff. Through its sub-offices in zonal headquarters and an extensive network of its Polio Program, it conducts disease surveillance, provides training to health workers and carries out supportive supervision.

Non-Governmental Organizations

There are a number of international and national NGOs supporting immunization activities in Somalia. These NGOs are primarily running MCH centers, and are involved in immunization service delivery, disease surveillance, social mobilization, training of health workers, supporting logistics and provision of technical and financial support to local health authorities.

Coordination among EPI Partners

At the country level, most immunization partners have a coordination mechanism at Nairobi level in an EPI Working Group organized under the umbrella of Somalia Support Secretariat. The Health Sector Coordination Committee (HSCC) has been established which took over the functions of Inter-Agency Coordination Committee (ICC).[23] The HSSC, which is responsible for oversight and coordination across Somalia, also oversees the investments under GAVI HSS Grant. Recommendations made by the HSCC are forwarded to the Health Advisory Board (HAB) which is composed of the three Health Ministers (Somaliland, Puntland and South-Central Zone), Heads of Agency, donor and NGO representatives for

[22] Somalia EPI Situation Analysis Report and Recommendations on Improving Immunization Coverage 2013
[23] GAVI Joint Appraisal Report 2015

decision making. The large number of actors also brings its own coordination challenges in an already fragmented system. The partners and donor organizations play a significant role in selection of EPHS implementing NGOs. Therefore, the contracting of EPHS roll out is often delayed; consequently, affecting immunization service delivery.

Table 7: Distribution of EPI activities by major partners

Partners	Major EPI Activities					
	Service Delivery	**Disease Surveillance**	**Vaccine supply**	**Logistic**	**Communication**	**Financing**
Local Health Authorities	• Leadership and guidance • Run some MCH facilities	• Supports data collection	• Provides leadership	• Provides security	• Support IEC activities	• Covers base salary of staff. Finances about 1% of RI cost.
UNICEF	• Provides essential medicines and supplies to MCHs including running costs and supports training	• Supports disease surveillance	• Procures, stores and distributes vaccine	• Runs and maintains Cold chain	• Produces IEC materials, training and funding for social mobilization	• Procurement of vaccines, injection equipment, cold chain etc.
WHO	• Management support to MOH • Technical assistance to partners • Provides Training	• Collects and analyses data • Conducts training	• Supports vaccine management	• Delivers vaccine to vaccination sites during campaigns	• Training and technical inputs	• Technical Assistance and other activities
NGOs	• Run MCH facilities • Conduct outreach	• Support surveillance	• Support request and management	• Supports transport	• Support IEC activities	• Service delivery and other activities.

At the zonal level, coordination of EPI activities is carried out under the leadership of EPI unit of MoH. However, current management, coordination and planning capacities are weak at all levels. There are also limited resources for supervision, monitoring and evaluation of immunization activities, which affect the performance EPI program, especially the development, execution and implementation of EPI micro plans.

ONE-EPI Plan 2015

In 2015, the zonal immunization programs, have developed One-EPI Plan in consultation and coordination with key strategic partners including: WHO, UNICEF and JHNP. This plan is also under implementation across Somalia.

Under this plan, the major priorities include: 1. maintaining polio-free status, 2. strengthening of routine immunization, and 3. taking benefit of IPV introduction. The key strategies and activities are grouped as under:

- Partnership among local health authorities and immunization partners will be strengthened with the support by UNICEF/WHO to strengthen zonal level coordination. The partnership strategy will set out the environment in which all immunization activities would operate. This component is very important in Somalia where zonal administration is stronger than the 'national' administration.
- Polio assets will be utilized to strengthen routine immunization through: developing integrated Micro-plans, outreach and mass campaign with special emphasis on newly recovered districts, monitoring of vaccine availability and cold chain functionality, communication and social mobilization, data management, M&E and surveillance, EPI training and capacity building
- Due to limitation in resources and insecurity, partners have agreed to focus on selected districts to improve immunization coverage. Across Somalia, 37 districts were selected in consultation with major partners for the first phase. Twenty-two of these are located in South Central Somalia. The criteria used to select priority districts were: population density, availability of health facilities, and accessibility status of the district. These focus districts cover about 60% of the population. In consideration of the vast polio staff presence in every district, district coverage is planned under three phases:
    - Phase I: 37 districts
    - Phase II: 40 districts
    - Phase III: 40 districts

The total estimated budget required for the ONE EPI Plan was USD31 million, out of which nearly 73% was expected to be spent on conducting Polio and Measles Campaigns. Nearly 66% of the projected funding was secured under which activities related with polio eradication, IPV and RI Microplanning and training activities are totally funded. The ONE-EPI Plan was scheduled for implementation in the beginning of 2015 but due to delays in release of funds, the actual implementation could start only in the last quarter of 2015. The present cMYP builds upon the strengths of the ONE-EPI Plan.

(b) Human Resource Management

There is a critical shortage of trained manpower among all the cadres of the health sector, a problem made worse by lack of incentives and a low pay result in high rates of absenteeism. In 2015, there are only 598 health care providers available who are skilled in immunization services (Table 4). On average, one skilled immunization staff (SIS) available for approximately 21,000 population. In addition, the available SIS are mainly limited to public health facilities.

Human resources are weak, both in numbers and quality: in turn insufficient and poorly skilled and aging human resources, leads to demotivation. Lack of incentives and frequent delay in salary payments

for health workers especially in MCHs run by local health authorities. In comparison, the JHNP/EPHS project areas are being supported to establish payroll and management of human resources.

There is a large workforce available under Polio Eradication Initiative (PEI). Under One-EPI Plan, the government and other key stakeholders plan to utilize this workforce for strengthening routine immunization.

The EPI-related trainings are dependent upon availability of funds that are usually provided by WHO and UNICEF.

(c) Costing and Financing;

Current Program Costing

In 2014, the total cost of immunization system was USD28.7 million 2014. Seventy-two percent of the total expenditure was allocated to SIAs (including both vaccines and operational costs). In comparison, 28% resources were spent on routine immunization out of which, 76% was spent on vaccine supplies and logistics for routine immunization. The remaining costs were allocated to service delivery (21%), monitoring and disease surveillance (2%) and program management (1%). The contribution of shared health system costs was less than 1%. Further details are given in Table 8.

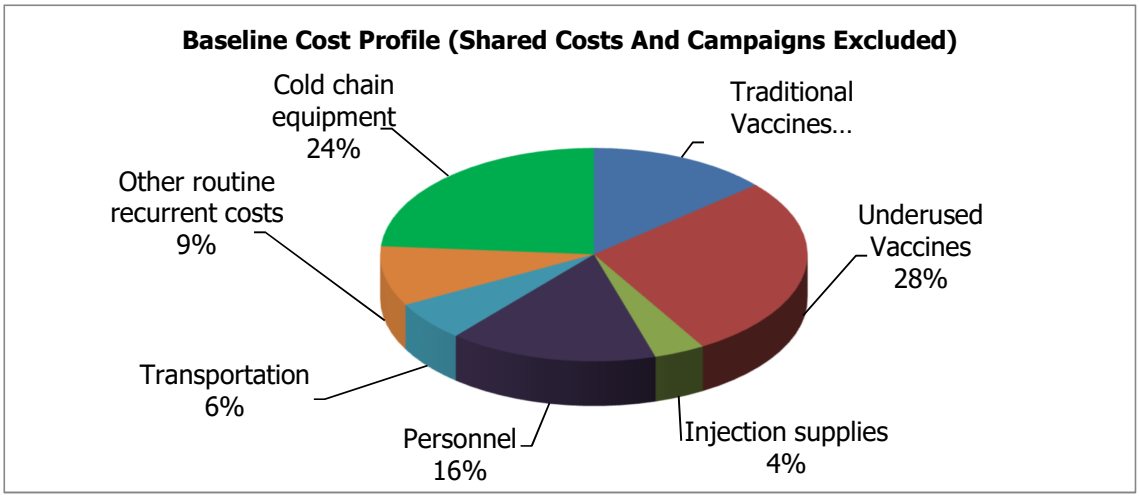
Table 8: Baseline Cost Profile of Immunization Program in 2014

Cost Category	Expenditure in 2014 (USD)
Vaccine Supply and Logistics (Routine Immunization Only)	5,893,434
Service Delivery	1,651,673
Advocacy and Communication	8,000
Monitoring and Disease Surveillance	124,200
Program Management	69,600
Supplemental Immunization Activities (SIAs) (includes vaccine and operation costs)	20,836,036
Shared Health Systems Costs	195,758
Total	28,778,700

ROUTINE IMMUNIZATION

The baseline cost profile for Routine Immunization in 2014 shows that vaccines and injection supplies (45%), cold chain equipment (24%) and Personnel (16%) were the major drivers for expenditure. Further analysis is grouped under 5 categories: Personnel, Vaccines and Injection Supplies, Cold Chain Equipment, Transportation and Other Routine Recurrent Costs (Figure 2).

Figure 2: Baseline Cost Profile for Routine Immunization in 2014



1. Personnel

The information pertaining to personnel consisted of three components: Salaries and allowance for full-time EPI staff, Per-diems for immunization staff and mobile teams and Per-diems for supervisory and monitoring staff.

The analysis of the baseline cost profiles (2014) shows that USD1.2 million was incurred on personnel cost which constituted to 16% of the total expenditure on routine immunization.[24] Further analysis shows that 80% of this cost was spent on payment of salaries and allowances. In comparison, 17% and 3% was spent on payment for per-diems for skilled immunization staff and mobile teams and per-diems for supervisory and monitoring staff respectively.

2. Vaccines and Injection Supplies

This category consists of: Traditional Vaccines, Underused and New Vaccines, and Injections and supplies. The traditional vaccines include BCG, OPV, Measles and Tetanus Toxoid. The Underused and New vaccines include Pentavalent (DPT-HepB-Hib) and IPV respectively. All vaccines were procured by UNICEF with support from different funding agencies at the national level and then supplied to Somalia.

In 2014, 45% of the total expenditure was incurred on vaccines and injections supplies.[25] In the coming years, this cost will further increase because the government plans to introduce new vaccines: PVC-13 and Rotavirus vaccine.

3. Cold Chain Equipment

In 2014-15, besides other cold chain equipment, 3 Walk-in-Cold Rooms, 41 MF314 Freezers, 41 ILRs, 54 Solar Refrigerators (SDD TCW2000) and 123 Refrigerator/Freezers (SDD TCW2043) were provided

[24] The baseline information for zonal, regional and district staff was compiled on basis of current payment rates that are used for payment of salaries, allowances and per-diems to the EPI staff at different levels. This information was provided by the Zonal EPI Office.

[25] The World Health Organization's forecasting tools was not used for estimating the expenditures made for procuring vaccines and injections. It was based on the information provided by the UNICEF Office, Nairobi on the number of doses per antigen supplied by UNICEF during 2014. The total expenditure was calculated by using the cost per dose per antigen provided UNICEF accounting for 30% freight charges.

to the immunization system. An amount of USD1.8 million, 24% of the total baseline expenses, was spent by UNICEF on procurement and supply of cold chain equipment.

4. Other routine recurrent costs

The other routine costs comprised expenditures for cold chain maintenance and overheads, maintenance of other capital equipment, short-term trainings, IEC/social mobilization, disease surveillance, program management and other routine recurrent costs.

The total expenditure against routine recurrent costs was estimated as USD0.7 million, 9% of the total baseline expenditure.[26] Out of which, 77% was spent on cold chain maintenance/overheads, 12% on surveillance and 9% on program management.

5. Transportation

UNICEF is responsible for in-country shipment of vaccines and injections supplies from vendors overseas. The in-country shipments from overseas also include freight charges that are included in the total cost of the vaccines and supplies (30% of the total cost). In addition, UNICEF is also responsible for transportation of vaccines and injection supplies from Nairobi Office to the zonal EPI stores. The transportation from zonal to regional level and onwards to health facility levels has been outsourced to a private contractor. All the expenditure on transportation from Nairobi down to the health facility level is borne by UNICEF. The analysis shows that the expenditure on transportation (USD0.46 million) contributed to 6% of the total expenditure in 2014.[27] In 2014, nearly USD0.2 million were spent on transportation of vaccines and injection supplies from Nairobi to three zonal EPI stores, which constituted almost 43% of the total expenditure on in-country transportation.

SUPPLEMENTARY IMMUNIZATION ACTIVITIES (SIAs)

Of the total immunization expenditure, 72% funds (USD20.8 million) were spent on Supplementary immunization activities (SIAs) under Polio Eradication Initiative (PEI) out of which USD15.3 million were operational costs (nearly 2 times higher than the entire routine immunization specific expenditures).

SHARED HEALTH SYSTEM COSTS

It is important to mention that USD0.19 million were spent under Shared Health System Costs. This expenditure was incurred primarily on shared personnel. Nearly 5% of these costs were contributed from the government health budget whereas 95% was borne by UNICEF, WHO, GAVI-HSS and JHNP.

---

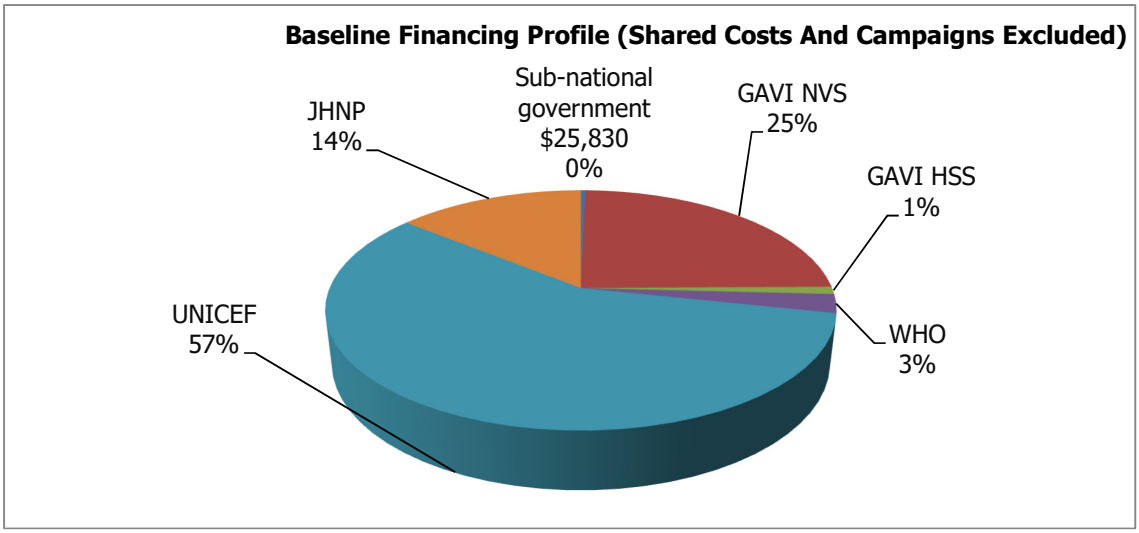
[26] The information on cold chain maintenance and overheads, and maintenance of other capital equipment was populated by cMYP costing tool based on the standard inputs provided by primarily from UNICEF. No such information, specific to EPI, is maintained and consolidated by the Zonal EPI office.

[27] The expenditure on transportation was based on the estimated number of supply trips/days per quarter and also number of supervisory visits and average rental paid for hiring private vehicles.

Current Program Financing

In 2014, the total spending on EPI in Somalia was shared among the Sub-national governments (Somaliland, Puntland and South-Central), GAVI grants (GAVI-NVS and GAVI-HSS), WHO, UNICEF and JHNP (Figure 3).

Figure 3: Baseline Financing Profile in 2014



In 2014, UNICEF was the largest financer of the EPI which provided 57% of the total resources. These were mainly spent on procurement of traditional vaccines, injection equipment, and cold chain equipment. In addition, UNICEF also financed transportation of vaccines and logistics. Procurement of underutilized vaccines (Penta) was financed under GAVI-NVS grant. The co-financing of GAVI supported vaccines (USD257,535) was channeled through JHNP. Somalia is currently not defaulting on its co-financing obligations, because the JNHP funding is being used to meet this requirement. In the event that the JHNP ends in 2016, there is not a single assured source of funding for this obligation. It is extremely unlikely though that the Somali government will be able to take over the co-financing obligations in short or medium term.

The contribution from the Sub-National Governments (USD25,830) is estimated to be spent on payment of salaries to the EPI staff including auxiliary nurses. The rest of the salary component including expenses on supervision and outreach immunization activities were financed by WHO, UNICEF and JHNP. This analysis highlights that salaries and allowances were mainly dependent upon the donor contribution in 2014. Similarly, program management, communication and advocacy and surveillance were financed through donor resources.

The funding under JHNP and GAVI-HSS will cease in 2016. This is a significant limitation in the context of a narrow fiscal space for the Ministry of Health in general and EPI in particular. Therefore, the Government, being highly dependent upon external donors, needs exploring further avenues including future grant applications; for example, GAVI-HSS etc.

Table 9 presents immunization program baseline indicators. In 2014, the cost per DPT3 child is estimated at USD44.7 dollars which forms 4.8% of the total health expenditure.

Table 9: Immunization program baseline indicators (2014)

Total Immunization Expenditures (USD)	28,582,943
Campaigns (USD)	20,836,036
Routine Immunization only (USD)	7,746,907
Per Capita (Routine Only) (USD)	0.63
Per DTP3 child (Routine Only) (USD)	44.7
% Vaccines and supplies (Routine)	45.4%
% Government funding	0.3%
% Total health expenditures	4.8%
% Government health expenditures	19.4%
% GDP	0.2%
Total Shared Costs (USD)	195,758
% Shared health systems cost	0.7%
TOTAL (USD)	28,778,700

(d) Vaccine, Cold Chain and Logistics

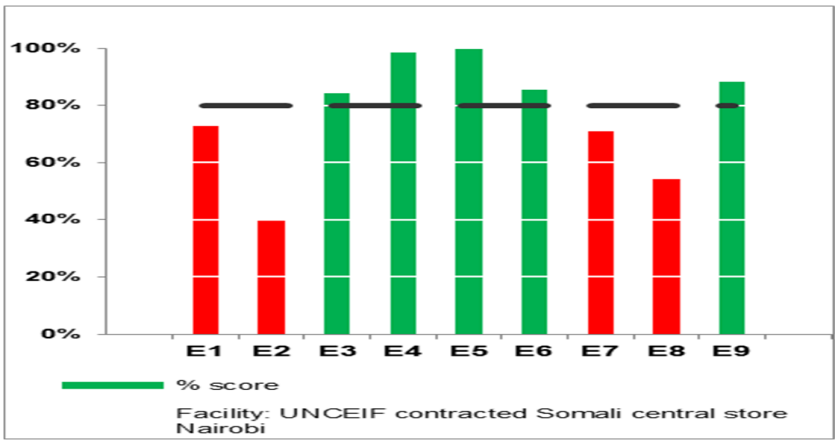
The vaccine supply chain in Somalia is comprised of four levels:

- **Central**: UNICEF procures all the vaccines and other supplies from international suppliers which are transported to Nairobi (Kenya) through air shipments. UNICEF receives vaccines and supplies to five zonal EPI Cold Rooms Somalia.
- **Zonal:** Hargeisa (Somaliland), Bosaso (Puntland) and Mogadishu, Galkayo and Baidoa (South-Central) receive vaccines and injections supplies from Nairobi and further supply to 24 Regional Health Offices. From Hargeisa onwards, vaccines and injection equipment is supplied by a 3rd party vendor with financial assistance from UNICEF.
- **Regional**: Regional Health Offices receive vaccines and injections supplies from three EPI cold rooms and supplies to Health Care Facilities at district level.
- **District**: Health Care Facilities receive vaccines and injections supplies from Regional Health Offices where these are stored for use at clinic-based and outreach immunization services. There is no vaccine storage facility at the district level.

At the central level, the recording and reporting systems of vaccine and consumable stock, is also controlled by UNICEF. A special computerized stock management system is updated frequently with any arrival or dispatch of shipments. An electronic alarming system for temperature monitoring is installed which is used to record temperature manually plus the computerized system. However, no printed copies are maintained.

Although the structure of vaccine supply chain covers entire Somalia, vaccine utilization monitoring and reporting is weak, making wastage monitoring and reduction initiatives difficult. An Effective Vaccine Management (EVM) assessment was conducted in 2013. The results indicated that the overall EVM score for the central store at Nairobi was 71%. Only five out of nine eligible criteria exceeded the 80%.

Figure 4: EVM assessment score of Central Cold room in Nairobi (2013)



E1	Vaccine arrival	E4	Building & equipment	E7	Distribution
E2	Temperature	E5	Maintenance	E8	Vaccine management
E3	Storage capacity	E6	Stock management	E9	MIS supportive functions

In comparison to the EVM assessment score of Nairobi cold stores, the findings from the zonal cold rooms indicated severe weaknesses in the overall management of cold chain system (Table 10).

Table 10: Comparison of EVM assessment score of zonal cold rooms in 2013

Zonal	Expected Score	Assessment Score	Findings
Somaliland	80%	54%	None out of nine eligible criteria exceeded 80%
Puntland	80%	54%	One out of nine eligible criteria exceeded 80%
South-Central	80%	76%	Three out of nine eligible criteria exceeded 80%

The EVM assessment was followed by development of an EVM improvement plan. The GAVI Joint Appraisal Report 2015 highlights that out of the 32 EVM improvement planned activities 26 (81%) were partially or fully implemented. However, there were major activities that have not been implemented on time, including:

1. Comprehensive cold chain inventory and development of a cold chain expansion/replacement plan
2. Establishment of vaccine utilization/wastage monitoring system
3. Development of guidelines for safe disposal of immunization waste
4. Conducting annual self-evaluation of EVM improvement plan implementation.

These pending EVM improvement activities are priority in the One-EPI plan of action (2015 to 2016).

It is pertinent to mention that the EPI is observing an open vial and multi-dose policy to increase the coverage rates and minimize wastage rates. However, there are no system in place to determine or monitor wastage of vaccines.

(e) Immunization Services Delivery

Immunization Schedule

Table 11: Immunization schedule for Routine Immunization among Children and Women

Vaccine Name	Target Population	Vaccine Classification	1st Dose	2nd Dose	3rd Dose	4th Dose	5th Dose
BCG;	Births	Traditional	Birth				
Oral Polio Vaccine (zero dose)	Births	Traditional	Birth				
Oral Polio Vaccine (OPV)	Surviving Infants	Traditional	6 weeks	10 weeks	14 weeks		
Pentavalent (DPT-HepB-Hib)	Surviving Infants	Underused	6 weeks	10 weeks	14 weeks		
Inactivated Polio Vaccine (IPV)	Surviving Infants	New			14 weeks		
Measles	Surviving Infants	Traditional	9 months	18 months[28]			
Tetanus Toxoid (TT)	Child Bearing Age Women	Traditional	First contact	+1 month	+6 month	+1 year	+1 year

Immunization Service Delivery

The immunization services are being provided by using a combination of approaches to reach everybody targeted for immunization:

- **Fixed sites services**: Immunization services are predominantly provided through a network of fixed EPI centers. All routine immunization antigens are available during the working days at a health facility. There are 291 EPI centers established in 487 functional health facilities (excluding Health Posts). Currently, fixed-EPI centers have been established in MCH Centers only. None of the Referral and District hospitals and Health Posts provide EPI service. However, some of Referral and District take benefit of immunization being provided by a MCH center established within or nearby their premises. In fixed-EPI centers, immunization services are provided primarily by nurses and auxiliary nurses. No EPI-fixed center has been established in any private health care facility.
- **Outreach services**: In JHNP and EPHS supported districts, routine immunization services, providing all routine antigens, conducted on fixed days in selected communities by the staff of the respective MCH Centers. In the rest of districts, outreach services are almost non-existent on account of non-availability of dedicated staff and resources for mobilization.

[28] According to National EPI Policy 2014, 2nd dose of Measles is yet to be introduced and the age for MCV2 will be reviewed by the government

- **Mobile services**: Some of the NGOs also provide immunization services through mobile services. Celebration of Child Health Days (CHDs) was one such initiative but discontinued in 2004 on account of limited resources.

- **Supplementary Immunization Activities (SIAs):** In addition to the routine immunization services, SIAs are conducted for eradication and elimination of Poliomyelitis and Measles respectively. Although the health facility staff is involved in delivery of SIAs, a large workforce has also been hired by WHO and UNICEF for management, supervision and service delivery for polio eradication activities. In 2014, 22 rounds of National/Sub-national Immunization Days were celebrated in different zones under PEI.[29] In 2015, under the ONE-EPI Plan, measles campaign has been conducted for children (9 months to 10 years).

Improvement of immunization coverage is affected by overall low coverage of services, especially for rural and nomadic populations resulting in hardly any service utilization by remote communities. In addition, due to absence of district health structures, EPI micro-plans are not systematically developed and implemented to ensure equitable distribution of immunization delivery points and design of outreach services.

(f) Surveillance, Monitoring and Reporting

Surveillance of Vaccine Preventable Diseases is currently conducted in collaboration with Communicable Disease Surveillance and Response (CSR), surveillance systems of WHO Somalia. AFP surveillance is well established. However, neonatal tetanus remains a neglected priority. Surveillance for measles cases is also in place but its performance is grossly inadequate.

There are 1,136 AFP sentinel sites in Somalia (Table 12). In addition, 451 village Polio volunteers have also been identified and involved in AFP surveillance activities.

Table 12: Availability of AFP Sentinel Sites in Somalia in 2015

Zone	AFP Sentinel (Reporting) Sites			Number of Village Polio Volunteers (VPVs)
	High Priority	Medium Priority	Low Priority	
Puntland	166	193	265	98
Somaliland	119	53	0	81
South Central	192	92	56	272
Total	**477**	**338**	**321**	**451**

The AFP surveillance system is reporting more than 4.0 AFP cases/per 100,000 population aged less than 15 years which is well above the minimum expected level of at least 2 AFP cases/100,000 population aged less than 15 years (Table 13).

[29] Somaliland (5 rounds), Puntland (9 rounds) South Central (8)

Table 13: Number of AFP cases reported in Somalia in 2012-2015

	2012	2013	2014	2015[30]
Total AFP cases reported	148	546	420	234
Lab Confirmed AFP cases	0	194	5	0
Total Non-Polio AFP cases	148	352	415	234

The functionality of the routine Health Information System (HIS) is constrained by data incompleteness, low data quality and delays in reporting.[31] Data quality audits were not conducted on facility reported data. Compliance with data quality assurance and surveys has been weak. No data quality self-assessment activities were implemented in the reporting period. There is no nationwide system to allow for equity analysis of immunization coverage. Although Adverse Events Following Immunization (AEFI) is given attention in the recently endorsed EPI policy and the newly developed vaccinators' manual; and injection safety practice is included in all training activities. Only during measles SIA, AEFI reporting taken place but no report is ever received from routine immunization services.

(g) Demand Generation, Communication and Advocacy

There is a recently developed national communication strategy that articulates the targets, channels and activities for generating demand health services, although it is yet to be fully implemented to benefit routine immunization.

UNICEF, WHO and NGOs support advocacy and communication activities, including training for health workers and religious leaders; and production of health education materials[32]. As part of the global and regional strategy, annual Vaccination Week is conducted annually. Despite these efforts, community involvement and utilization of immunization services remains very low.

The low demand for vaccination is not limited to immunization system but deeply rooted in the broader health system in which the overall demand for health services in Somalia is low due to a number of reasons. These include: a) lack of available and affordable health services near communities b) low quality of services and often stock out of essential drugs c) lack of health awareness d) cultural factors that affect demand and utilization of health services.

With support for the GAVI/HSS grant, a strategy for Behavior Change Communication was developed, based on findings from a formative research. In partnership with NGOs, Interpersonal Communication (IPC) training was conducted for the MCH health staff and FHWs and radio messages broadcasted. The Female Health Workers are expected to play an important role in improving demand for immunization services by conducting awareness sessions in their respective villages.

[30] Up to October 2015
[31] GAVI Joint Appraisal Report 2015
[32] One-EPI Plan Somalia

1.3.2 Immunization system performance

The overall performance of the immunization system remained below par.

1.3.3 Routine Immunization

Table 14: Situational analysis – routine immunization

Indicators	2013	2014
Official Coverage Estimates	%	%
Penta/DTP1	30.3	46.4
Penta/DTP3	25.4	38.4
Measles 1	30.0	44.8
OPV0	23.1	24.8
Most Recent Survey Coverage % DTP3[33]		17.7
% Fully Immunized Child		4.4
Access and demand	%	%
% Drop Out Penta/DTP1 – Penta/DTP3	5	8
% Drop Out Penta/DTP1 - Measles (1st dose)	0.3	1.6
Immunization Equity	%	%
% gap in coverage for fully immunized children between highest and lowest socio economic quintiles		14.7
Number and proportion of districts with Penta/DTP3 coverage > 80%		15 (17.2%)
New vaccines introduced into the routine schedule in the last plan period		
	Penta	

Source: Weighted averages populated from zonal statistics

Under routine immunization, the overall coverage remains very low. A higher percentage of Measles vaccine is attributed to CHDs and mobile health services. The data from the most recent surveys confirm for these statistics. An area of high concern is very low proportion of children who received complete package of vaccines as per their age. It clearly reflects that a large number of children are missed during the subsequent vaccine visits. The Annual Report on Immunization Performance 2014 (WHO/UNICEF Joint Reporting Form) highlights that in 2014, only 15 districts (17.2%) reported a Penta-3 coverage of 80% or more. Nearly half of the districts reported Penta-3 coverage less than 50%.

[33] MICS Somaliland 2011
MICS Puntland 2011
Baseline Survey in Central South Zone (2013-14) in Regions: Banadir, Galgadud and Lower Juba. World Health Organization and Ministry of Health, Somalia

1.3.4 Accelerated Disease Control Initiatives

Table 15: Situational Analysis - by accelerated disease control initiatives

Indicators	2012	2013	2014
Polio			%
OPV3 coverage			38.6
Number of rounds and sub-national rounds per year			22
Population covered during NIDs/SNIDs			95
MNT			%
TT2+ coverage			24.8
Number and proportion of districts reporting >1 case of neonatal tetanus per 1000 live birth			No data
Was there an SIA? (Y/N)			No
Neonatal deaths reported and investigated	No data	No data	No data
Institutional Delivery Rate (%)			
Measles & Rubella			%
Measles vaccination coverage (1st dose)			44.8
Number of lab confirmed measles/rubella outbreaks	No data	No data	No data
Geographic extent National Immunization Day			
Age Group (in months)			
Coverage			
Total Measles Cases (Lab/Clinical/epidemiological)	1728	705	702
Total Measles Cases (Lab confirmed)	81	250	103

Since the 2014 outbreak of Polio in Puntland, no laboratory confirmed case of Poliomyelitis has been reported in Somalia. Every year a substantial number of laboratory confirmed cases of Measles are reported which clearly highlights the vulnerability of children due to low coverage of Measles vaccine. In comparison, no data is also available for neonatal deaths. However, a large number of the of the participants of cMYP Workshop voiced that Neonatal Tetanus is a major problem in Somalia.

1.3.5 Evaluation of cMYP 2011-2015

This is the first time, separate cMYPs are being developed for Somaliland, Puntland and South-Central zone. Therefore, no zone-specific targets were available from the cMYP 2011-2015. For future planning, it was important to assess the level of achievements made by EPI in South Central Somalia against the overall national targets set while developing cMYP 2011-15. The following table presents this comparison.

Table 16: Performance of Somalia EPI against cMYP 2011-15 objectives

cMYP 2011-2015 Objectives (National Level)	Somali Achievement by the end of 2014	Status of Achievement
Vaccine Coverage: By the end of 2015 Somalia will have a national DTP3 coverage of 90%	Reported coverage for DPT3 – 38.6%	Not achieved.
Geographical Coverage: By the end of 2015 more than 80% of districts will have attained DPT coverage of > 80%	No data available	Not achieved
Polio Eradication: By the end of 2015 Somalia will have maintained polio-free status	No case laboratory confirmed case of AFP reported	Achieved.
Measles Elimination: By the end of 2015 measles elimination will have been achieved.	103 laboratory confirmed cases of Measles reported	Not achieved.
MNT Elimination: By the end of 2015 achieve elimination of MNT	Not achieved, but coverage of TT has increased	Not achieved.
Vaccine Management System: by the end of 2015 vaccine assessment will be completed and will have conducted training courses at all levels	EVM assessment completed	Partially achieved
EPI Management: By the end of 2015 the three ministries will have functional EPI units in place.	All ministries of health have functional EPI units	Achieved
Immunization Safety: By the end of 2012, AEFI surveillance system will be implemented in all regions	AEFI yet to be implemented	Not achieved
Advocacy and Communication: communication strategy will be drafted and implemented by the end of 2012.	Communication strategy is yet to be drafted	Not achieved
Disease Surveillance: Integrated Disease Surveillance system will be in place by the end of 2011	HMIS cells established but Disease Surveillance System yet to be integrated	Partially achieved
New Vaccine Introduction: Pentavalent DTP-HepB-Hib vaccines will be introduced by 2013	Pentavalent DTP-HepB-Hib vaccines introduced	Achieved

It is quite evident that majority of the objectives set under cMYP 2011-15 were either not achieved or partially achieved. The following section presents a critical analysis of the immunization system in Somalia in order to understand some of the underlying factors which led to under achievement.

1.3.6 Analysis of Immunization system performance

Domains	PROGRAM MANAGEMENT	2013	2014	2015
Law & Regulation	Is there legislation or other administrative order establishing a line item for vaccines?	No	No	No
	Is there legislation identifying the sources of public revenue for immunization financing?	No	No	No
	Is the line item for vaccines in regular / recurrent Budget?	No	No	No
Policy	Does the national EPI Policy require revision and updating?			No
	Is there any mismatch between National Health Policy/Strategy and National EPI Policy?		No	No
Planning	Does the zone have an annual work plan for immunization funded through MoH budgeting processes?	No	No	No
	What is the proportion of regions with an annual micro-plan for immunization?	None	None	None
	What is the proportion of districts with an annual micro-plan for immunization?	None	None	None
Coordination	What were the Number of HSCC meetings held last year at which routine immunization was discussed?	None	None	None

Domains	HUMAN RESOURCES MANAGEMENT	2013	2014	2015
Availability of qualified workforce	Number of healthcare skilled immunization staff per 10,000 population			0.47
	Percentage of vaccinator posts currently vacant		No data	No data
	Turnover rate of Skilled Immunization Staff (or vaccinators specifically)	No data		
	No. of regions with functional EPI Management Team		14	14
Capacity Building	No. of EPI managers trained in immunization services through MLM training	None	8	112
	No. & proportion of skilled immunization staff trained in immunization services through Immunization Practices training	No data	No data	

Domains	COSTING AND FINANING	2013	2014	2015
Financial sustainability	What is the % of total routine vaccine spending financed using government funds (including loans and excluding external public financing)?	Negligible	Negligible	Negligible
	Is the government providing resources for co-financing of GAVI-supported vaccines?	No	No	No
	What is the government expenditures on routine immunization per surviving infant?		0.3%	
	Are the regional immunization budgets and expenditures monitored and reported at zonal level?	No	No	No

DOMAINS	VACCINE SUPPLY, QUALITY AND LOGISTICS	2013	2014	2015
Transport / Mobility	What is the number regions with a sufficient number of supervisory/EPI field activity vehicles (based on their need) in working condition?[34]		6	3
	What is the number of districts with vaccinators using transportation means for outreach?			
Vaccine supply	What there any EPI Antigen stock-out at zonal or regional level?	No	Yes	Yes
	If yes, specify duration in months		2	1
	If yes, specify which antigen(s)		BCG	Measles
Cold chain / logistics	How many EPI Centres have adequate numbers of appropriate and functional cold chain equipment?[35]	No data	170/185	175/187
	Is a complete inventory of cold chain being maintained?	No	No	In process
	What is the number of regions with cold chain replacement plan?[36]			4
Waste disposal	Is a waste management policy/guidelines available?	Yes	Yes	Yes
	What is the number of districts implementing waste management policy?	None	None	None

[34] Vehicles are hired from the market
[35] Data available from Somaliland and Puntland only
[36] Ibid

DOMAINS	IMMUNIZATION SERVICE DELIVERY	2013	2014	2015
Performance	DPT/Penta-3 coverage (%)		32.3%	
	Dropout between DPT/Penta-1 and DPT/Penta-3		8%	
Geographical Access	Number of population per each EPI fixed sites			43,511
	What is the proportion of population covered by Fixed-site immunization services?			
	What is the proportion of population covered by outreach immunization services?			
	What is the proportion of population covered by mobile immunization services?			
Efficiency of service delivery	What is the proportion of districts not having EPI centres?[37]		21%	21%
	What is the proportion of districts not having Skilled Immunization Staff (SIS)?		21%	21%
	What share of immunization services is delivered by EPI centres?	No data	No data	No data
	What is the average time EPI Centres providing immunization service per day?	5 hours per day	5 hours per day	5 hours per day

Domains	Surveillance and Reporting	2013	2014	2015
Routine Surveillance	Percentage of integrated VPD surveillance reports received at zonal from districts compared to number of reports expected:			
	(a) Timeliness			No Data
	(b) Completeness			No Data
	AFP detection rate/100,000 population under 15 year of age		7.3	4.0

[37] 20 districts in South Central are inaccessible for security reasons

	What is the % of suspected measles cases for which a laboratory test was conducted?			No Data
	What is the number of neonatal deaths for which a follow up investigation was conducted?	No Data	No Data	No Data
	Is Sentinel Surveillance for Rotavirus established?	No	No	No
	Sentinel Surveillance for meningitis (Hib/PCV) established	No	No	No
	What is % of suspected meningitis cases tested for Hib/pneumococcal disease according to standard protocol?	No data	No data	No data
Coverage monitoring	What is % gap in match between Penta3 coverage in survey coverage compared to officially reported figures?		14.6%	
Immunization Safety	What is % of districts that have been supplied with adequate (equal or more) number of AD syringes for all routine immunizations?	100%	100%	100%
Adverse Events	Is Zonal AEFI System active with a designated zonal committee?	No	No	No
	What is the number of serious AEFI cases reported and investigated?	No data	No data	No data

Domains	Demand Generation and Communication	2013	2014	2015
Communication Strategy	Availability of a routine immunization communication plan	No	No	No
	KAP Study conducted in relation to immunization	Yes	No	No
Evidence based communication	Percentage of government funds on demand generation / communication: EPI and PEI			
	(1) EPI (without PEI)	0	0	0
	(2) PEI	0	0	0

1.4 Summary – SWOT Analysis

SWOT[38] Analysis was conducted separately for all the zones. The underlying problems highlighted were relevant to both national and zonal perspectives. The following tables present findings of the SWOT Analysis for each building block of the immunization system. On the whole, there were no significant differences between the three zones except serious security concerns and presence of inaccessible districts in Somalia. The issues related with weak inter-zonal coordination and lack of a strong national EPI team are deeply rooted in the existing political and administrative setup of Somalia.

Program Management	
Strengths	**Weaknesses**
• Immunization a recognized government responsibility • A nationally agreed upon immunization policy and schedule in place • High-level oversight bodies and structures for partner coordination are in place: Health Sector Coordination Committee (HSCC) and Zonal EPI working group • The structure of the Ministry of Health is defined and the EPI unit is established • Non-Government Sector formally involved in EPI service delivery under EPHS	• Existing EPI policy is generic in nature and does not include strategies introduction of new vaccines and does not take into account the other health sector strategic frameworks and plans • There are no National Standards for immunization services • There is no or limited coherence between cMYP and Health Sector Strategic Plan and JHNP • cMYP development is a standalone process and often not supported by operational planning • Fragmented coordination between zonal EPI offices and national EPI office • No inter-zonal meetings to assess EPI performance • Issues of conflicts in jurisdiction of roles and responsibility, and poor coordination between National EPI and NGOs in EPI service delivery • Absence of cMYP-based annual development plans • Lack of clarity in roles and responsibilities of different stakeholders • cMYP not used for as planning and advocacy tool • Weak planning and monitoring processes • EPI Progress reviews are not a regular practice and even when undertaken recommendations not fully implemented • Existing management structure of EPI insufficient at Zonal and district levels • Irregular coordination meetings
Opportunities	**Threats**
• Involvement of top political leadership in PEI • Government's focus on developing long-term health policies and strategies • Engagement of private sector in immunization services • GAVI support for Health System Strengthening • Integration of PEI structure in strengthening EPI activities • Support from external partners	• Insecurity and poor law and order situation • Natural disasters • Lack of involvement in broader policy processes can sideline immunization system

[38] Strengths, Weaknesses, Obstacles, Threats

Human Resource Management	
Strengths	**Weaknesses**
• The structure of the Ministry of Health is defined and the EPI unit is established • Availability of EPI-specific staff (nurses) in majority of PHC health facilities • Availability of training materials and guidelines	• In adequate fulltime dedicated managerial and supervisory EPI staff available at zonal, regional and district levels • Lack of clarity in roles and responsibilities among National EPI and EPHS/JHNP NGOs especially recruitment and training of skilled immunization staff • No national adaptation of the MLM training manuals and therefore, there are only limited trained EPI managers • Master trainers at zonal and regional levels are provided by WHO/UNICEF • Training programs heavily dependent upon funding from donors • No systemic process of periodic refresher trainings on immunization practices • Paramedical staff (nurses and community midwives) not trained in immunization protocols • Inadequate manpower for training team at national level • Lack of incentives and frequent delay in salary payments for health workers especially in MCHs run by local health authorities
Opportunities	**Threats**
• Training of nurses/midwives on immunization practices through GAVI HSS support • Presence of other female paramedical staff (nurses, and midwives) for involvement in vaccination activities • As a part of polio legacy initiative, polio funded staff will be involved in several EPI activities	• Inequitable distribution of health staff between urban and rural areas

Costing and Financing	
Strengths	**Weaknesses**
• Health sector long-term financing policy developed • EPI activities financed under EPHS	• No budget line item for vaccine procurement • Government does not contribute to procurement od traditional vaccines and injection equipment • Government does not contribute for procurement of vaccines through co-financing • EPI Managers are not trained on developing projections for resource requirement for EPI and cost efficiency
Opportunities	**Threats**
• GAVI HSS Grant is a substantial source of funding • Donor support • Potential synergies with PEI	• Limited fiscal space • Heavy dependence on donor funding may lead to donor fatigue

Vaccines, logistics and quality	
Strengths	**Weaknesses**
• All vaccines, injection safety materials and equipment used in the EPI program and at all levels in Somalia conform to WHO standards • SOPs for cold chain and vaccine management have been developed • Zonal Cold Room available in Mogadishu, Galkayo and Baidoa • Zonal and regional stores are equipped with adequate storage capacities for all their vaccine needs as per the current immunization schedule including at peak levels of multiple SIAs • Autodestruct syringes available for reducing injection harms at all levels • Availability of functional cold chain equipment in a large majority of regions and districts • Inventory of cold chain equipment near completion • Installation of Solar Refrigerators has been initiated • Waste management policy available	• Procurement and supply of vaccines is a UNICEF responsibility • Aging cold chain equipment • A substantial number of cold chain equipment needs replacement at health facility levels due to age, malfunction, inadequate storage capacity and cost of maintenance • Cold chain replacement plans not developed • Potential inadequate storage capacity for new vaccines and other logistics in future • Distribution of vaccines through non-refrigerated vehicles hired from private sector • Inadequate supply of spare parts and other equipment required for repair and maintenance • Improper vaccine management practices resulting in low EVM scores • Weak temperature record keeping and monitoring • Poor immunization waste management practices and practices at all levels • Irregular cold chain maintenance at all levels due to lack of technicians, funds and transport to reach all cold storage centers • No pre-approved scheduled supply periods are available • Occasional delays in distribution of vaccines due to dependency on the United Nations Humanitarian Air Service to the zones • Vaccines are not forecasted by the MCHs, as the health workers do not know their catchment population or their coverage and do not perform stock balancing regularly • Vaccine stock out and shortages especially BCG and measles • Irregular supply of data collection tools (Child health Cards, Summary sheets) causing stock out at regional and health facility levels • There is no vaccine utilization monitoring system and therefore no wastage estimations are known for any level
Opportunities	**Threats**
• Donor support available for installing cold rooms and other cold chain equipment • Use of innovative technologies for improving temperature and supply system monitoring and supervision • Pilot interventions of using Solar Refrigerators by UNICEF	• Poor security conditions threaten supply of vaccines and consumables through government or donor vehicles • Natural disasters / weak transport communication infrastructure

Immunization Service Delivery	
Strengths	**Weaknesses**
• Extensive network of fixed EPI centers across the accessible districts • Daily immunization clinics in a large of MCH centers with immunization cold chain, although the EPI	• EPI-Fixed centers not available is all Referral and District Hospitals • High proportion of population per fixed EPI center

service clinics are usually available for 2-3 hours in the morning • EPI an established part of PHC services • Engagement of NGOs in EPI service provision	• High dropout rates between successive vaccine doses not being monitored due to lack of validation of data in the field • Newborns are not easily reached for BCG and Polio zero because 71.8% of the deliveries occur at home • Inadequate mutual support between different humanitarian emergency response programs leading to 'missed opportunities' for vaccination. • Entire population not covered under EPHS • Skewed distribution of MCHs in and around urban areas and thus creating inequalities in access to EPI for the nomads and rural populations • Lack of a strategy for follow up of children and women who live nearby Fixed-EPI centers but are not covered through outreach services • Difficulty in target setting for districts due to difference in denominators • Poor micro planning at health facility level • Significant proportion of children not vaccinated
Opportunities	**Threats**
• Donor support for micro planning at local level	• Poor law and order in remote rural areas • Large nomadic and rural population • Scattered population in rural areas

Surveillance, Monitoring and Reporting	
Strengths	**Weaknesses**
• A weak but evolving HMIS system is in place that is able to estimate the monthly and annual vaccine preventable diseases incidence • Availability of up-to-date guidelines and standardized case definitions and reporting forms • Standard OPD morbidity registers and Child Immunization registers developed for all health facilities to use as the HMIS evolves • WHO funded AFP/Polio surveillance infrastructure, up to the district level • Strong community based surveillance system for AFP/Polio • 1,136 active surveillance sites for AFP established	• Lack of defined target populations by health facility • Although HMIS system is able to generate EPI performance data by month and district/region, no coverage monitoring/ validation is done at sub-zonal levels • EPI reporting forms have not been revised to allow reporting for new vaccines (IPV) • Child registers are not being used to track drop outs. • High percentage of discrepancy between survey and admin reported data • Active surveillance for EPI target diseases is limited to AFP surveillance with little or no active surveillance for Measles, NNT and AEFI. • Absence of feedback mechanism from zonal and regional levels • Data Quality Audits and self-assessment not being practiced as institutional activities for improving data management • No system for establishing burden of disease or impact of recently introduced vaccines namely (Haemophillus Influenzae type B) or yet to be introduced namely Rotavirus and Pneumococcal Pneumonia • Limited involvement of private health sector in VPD surveillance activities
Opportunities	**Threats**
• Donors are willing to support strengthening of surveillance system • Strengthening RI using existing polio assets	• Lack of trust in importance of surveillance if data is not used for decision making

Demand Generation, Communication and Advocacy	
Strengths	**Weaknesses**
• A national communication strategy has been developed and zonal communication strategy is under development • EPI communication activities are articulated in One-EPI Plan • Availability of media houses (local FM radios) and a long-term institutional contract for media management that is used for dissemination of health messages including immunization. • IEC materials (booklets, posters and brochures) are developed for dissemination at health care facilities	• Annual advocacy and communication plan not available • Immunization staff inadequately trained social mobilization and communication • Health education is not considered a priority intervention by the immunization services providers and therefore is commonly neglected • Lack of advocacy to policy makers and other stakeholders by generating annual progress reports • Limited presence and coverage of IEC materials mainly for routine compared to SIAs • Inadequate communication on awareness about outreach sessions
Opportunities	**Threats**
• Availability of multiple mechanism for communication (radio, TV, print media) • Involvement of NGOs in immunization • Development partner's expertise in communication	• Social and cultural barriers against immunization • Misconception against vaccination: "Vaccines make children sick" • Immunization not priority amongst the competing gender roles of women • Low female literacy

2 Immunization objectives and strategies

2.1 Program objectives and milestones

Goal of the Somalia Immunization Plan is to decrease VPD associated morbidity and mortality:

- Measles incidence reduced to less than 5 cases per million population by 2020 with optimally functioning surveillance system
- Polio-free status is sustained till global certification is obtained
- Neonatal death caused by neonatal tetanus reduced to less than 1 case per 1000 live births by 2020 with optimally functioning surveillance system

The objective of the Somali Immunization Plan is to improve performance of the immunization system that is measured in terms of coverage and equity as listed below:

Indicators	Baseline 2014	2016	2017	2018	2019	2020
1. Increase BCG coverage	31.4%	46%	61%	71%	82%	90%
2. Increase OPV3 coverage	38.6%	48%	59%	67%	74%	84%
3. Increase Penta3 coverage	38.4%	48%	59%	67%	74%	84%
4. Increase PCV13						20%
5. Increase Rota vaccine coverage						20%
6. Increase IPV coverage		37%	56%	66%	74%	84%
7. Increase Measles 1 coverage	44.8%	47%	56%	65%	73%	83%
8. Increase TT coverage	24.8%	32%	43%	55%	66%	78%
9. Increase the % of children fully immunized[39]	4.4%	20%	30%	45%	60%	75%
10. Improve geographical equity - % of districts that have at or above 80% Penta3 coverage	17.6%	35%	60%	70%	80%	80%
11. Improve socio-economic equity - Penta3 coverage in the lowest wealth quintile is less than % points of the coverage in the highest wealth quintile	14.7	14%	13%	11%	9%	7%
12. Decrease dropout rate - % point difference between	8%	6%	6%	5%	5%	4%

[39] Percentage of children aged 12-23 months who receive all basic vaccinations

Penta1 and Penta3 coverage						
13. Increased demand - % of children whose mothers intend to vaccinate children		Increased by 5% from the baseline	Increased by 10% from the baseline	Increased by 15% from the baseline	Increased by 20% from the baseline	Increased by 25% from the baseline

2.2 Strategies and main activities

2.2.1 Program Management

ISC Objective 1: **Increase program management performance by strengthening the leadership capacity of Ministry of Health in immunization service delivery**

It means that by 2020:

- Integrated EPI annual plans are developed and consistent with the zonal cMYP
- Program Proposals are Grant Applications are adjusted and aligned with the EPI annual plans
- One implementation annual progress report is produced and discussed with key stakeholders every year
- The cMYP is updated regularly reflecting either changes in the context (epidemiological, vaccine availability, etc.), resource availability or immunization system outcomes (achievements)
- At least 2 meetings demonstrating contribution of EPI partners to the decision-making are held every year

The strategies and activities to achieve the component objective are as follows:

Strategy 1.1: Development and institutionalization of performance management system through integration and alignment with Health Sector Strategic Plans

Activity 1.1.1: Mobilize Technical support for reviewing existing EPI policy guidelines and institutional framework and developing Minimum Service Delivery Standards for EPI

Activity 1.1.2: Clarify upon the institutional arrangement and roles and responsibilities of MoH, Zonal EPI Office, donors, and EPHS implementation partners

Activity 1.1.3: Establish new and strengthen existing EPI Management Teams at zonal, regional and districts levels

Activity 1.1.4: Set EPI-specific Minimum Service Delivery Standards (EPI-MSDS) for zonal, regional, and district levels

Activity 1.1.5: Develop criteria/methodology for competency assessment and performance appraisal of key EPI management staff (managers and supervisors) and skilled immunization staff (auxiliary nurses, other paramedics trained in vaccination)

Activity 1.1.6: Select indicators for measuring performance standards at zonal, regional, and district levels

Activity 1.1.7: Implement EPI Minimum Service Delivery Standards under EPHS

Strategy 1.2: Streamlining EPI planning processes

Activity 1.2.1: Develop integrated EPI annual implementation plans

Activity 1.2.2: Review and align cMYP with EPI annual implementation plan

Activity 1.2.3: Develop annual capacity building plan for managers, supervisors and skilled immunization staff

Activity 1.2.4: Develop annual HR recruitment plan

Activity 1.2.5: Develop EPI service delivery expansion and infrastructure development plan

Activity 1.2.6: Develop cold chain replacement plan and update on annual basis

Activity 1.2.7: Develop communication and advocacy plan

Activity 1.2.8: Develop emergency plan to deal with disaster like situations

Activity 1.2.9: Develop monitoring and evaluation plan

Activity 1.2.10: Develop zone-specific, region-specific, and district-specific EPI micro implementation plans with target setting

Activity 1.2.11: Develop National MNT Plan

Activity 1.2.12: Develop EPI strategy for nomadic and high transmission risk (HTR) population

Activity 1.2.13: Develop implementation plan for Intensified Routine Immunization activities (PIRI) for inaccessible districts in South Central zone

Strategy 1.3: Streamlining accountability mechanisms at program management levels (national, zonal and regional)

Activity 1.3.1: Conduct annual meetings for Health Advisory Board for routine immunization

Activity 1.3.2: Conduct biennial meetings of Health Sector Coordination Committee at zonal level

Activity 1.3.3: Conduct annual inter-zonal meetings for EPI performance review at national level

Activity 1.3.4: Conduct quarterly EPI performance reviews at zonal level

Activity 1.3.5: Conduct quarterly EPI performance reviews at regional level

Activity 1.3.6: Conduct monthly EPI performance reviews at district level

Activity 1.3.7: Conduct performance appraisal and competency assessment of all EPI management and supervisory staff and skilled immunization staff every two years

Strategy 1.4: Advocacy and partnership building

Activity 1.4.1: Publish and disseminate EPI annual progress report every year

Activity 1.4.2: Organize quarterly coordination meetings between Zonal EPI, donors, EPHS implementers (NGOs)

Activity 1.4.3: Produce regularly policy briefs/guidelines/advocacy materials to share with high level officials

Activity 1.4.4: Organize consultations meetings with EPI partners and follow up implementation of decisions and actions agreed in the past

2.2.2 Human Resource Management

ISC Objective 2: **Increase the availability of qualified and motivated human resources for the immunization program**

It means that by 2020:

- 95% of managerial and technical positions are staffed with qualified human resource
- Trained immunization staff is available in every fixed-immunization center

Strategies and activities to achieve the component objective are as follows:

Strategy 2.1: Increase number of managerial and supervisory staff at zonal and district levels

Activity 2.1.1: Advertise for and recruit national training manager, M&E manager and communication officer for every zone

Activity 2.1.2: Advertise for and recruit Regional Cold Chain Technicians (one per region)

Activity 2.1.3: Advertise for and recruit district EPI supervisors (one per district)

Strategy 2.2: Increase in number of Skilled Immunization Staff for vacant positions and newly established EPI-fixed centers

Activity 2.2.1: Advertise for recruitment against 290 auxiliary nurses as part of MoH staff

Activity 2.2.2: Select and contract new auxiliary nurses preferably from the areas where they will be appointed to

Strategy 2.3: Capacity building of EPI Managers, supervisors and skilled immunization staff

Activity 2.3.1: Implement a capacity building program including a TOT, and cascade of training for Mid-Level-Manager's (MLM) training for zonal and regional managers, District EPI coordinators and EPHS managerial

staff on: Results-based Planning, achieving results and team working skills, MLM, RED/REC, EVM, Surveillance and outbreak investigation every two years

Activity 2.3.2: Identify zonal and regional master trainers

Activity 2.3.3: Carry out refresher training for each skilled immunization staff in immunization practices, introduction of new vaccines, advocacy and awareness, surveillance and reporting mechanisms etc. at least once in 2 years

Activity 2.3.4: Carry out refresher trainings of cold chain technicians in cold chain repair and maintenance

Activity 2.3.5: Train vaccine management personnel in logistic management

Activity 2.3.6: Train zonal and regional EPI managers on orientation and implementation of cMYP

Activity 2.3.7: Carry out induction trainings for newly recruited auxiliary nurses/skilled immunization staff in immunization practices, introduction of new vaccines, micro-planning, advocacy and awareness, surveillance and reporting mechanisms etc.

Strategy 2.4: Increase in effectiveness of trainings of EPI managerial, supervisory and skilled immunization staff

Activity 2.4.1: Introduce training need assessment, and pre & post trainings assessment as a mandatory requirement of training programs

Activity 2.4.2: Revise training materials as and when required under training need assessment reports

Activity 2.4.3: Maintain database for training programs and compare training outcomes prior to conducting follow up trainings

Strategy 2.5: Training of polio staff in routine immunization activities

Activity 2.5.1: Conduct training on Immunization practice based on WHO guidelines

Activity 2.5.2: Training on VPD surveillance

Activity 2.5.3: Training on social mobilization and demand creation on Routine immunization

Activity 2.5.4: Refresher training of polio staff on RI micro-planning and supervision

Strategy 2.6: Increase motivation of key staff of the immunization program

Activity 2.6.1: Arrange overseas study tours for zonal and regional EPI managers

Activity 2.6.2: Develop a scheme on financial and non-financial incentives (carrier growth opportunities, performance based incentives etc.)

Activity 2.6.3: Explore possibilities for financing and implementation

2.2.3 Costing and Financing

ISC Objective 3: **Increase financial efficiency and sustainability of the immunization program**

It means that by 2020:

- Cost per Penta-3 child will be increased to USD38.3
- Minimum government contribution in running routine immunization cost will increase to more than 5%
- 90% of financial resources (secure + probable) mobilized vs. planned
- Coverage targets and objectives are revised/adjusted to the availability of funding

Strategies and activities to achieve the component objective are as follows:

Strategy 3.1: Enhance efficient utilization of human resources by developing synergies with other health initiatives

Activity 3.1.1: Train EPI program managers on program management and developing mechanisms for financial efficiency

Activity 3.1.2: Increase number of skilled immunization staff through integration of EPI with other PHC programs being implemented under EPHS

Activity 3.1.3: Develop synergies with PEI under ONE-EPI Plan

Strategy 3.2: Minimize wastage of resources under immunization program

Activity 3.2.1: Rationalize use of POL for monitoring and supervision by management staff at national, regional, and district level

Activity 3.2.2: Develop and introduce need-based supply of vaccines, syringes and other materials by incorporating bundling approach

Activity 3.2.3: Minimize vaccine wastages and drop-out rates for different antigens

Strategy 3.3: Advocacy for resource mobilization for ensuring financial sustainability of immunization program

Activity 3.3.1: Use cMYP for financial projections on the 'funding gap' between existing resources and future requirements

Activity 3.3.2: Utilize cMYP as the foundation document for developing program proposals and grant application for the government and donor community

Activity 3.3.3: Inform political and technical leadership about the importance of funding gap in terms of burden of morbidity and mortality due to vaccine preventable diseases

Activity 3.3.4: Mobilize political and technical leadership for increasing share for EPI-specific costs under regular government budget

Activity 3.3.5: Develop financial projections for mobilizing donors and development partners on yearly basis

2.2.4 Vaccine, Cold Chain and Logistics

ISC Objective 4: **Improve/sustain uninterrupted supply, safety and utilization of vaccines. Injection equipment and other logistics to immunization service delivery**

The objective of the immunization system component is to improve/sustain uninterrupted supply of vaccines to immunization service delivery. It means that by 2020:

- Stock out at facility level is decreased to zero
- 70% of regions/districts with average EVM score above 80%

Strategies and activities to achieve the component objective are as follows:

Strategy 4.1: Strengthening of Vaccine Logistic Management Information System

Activity 4.1.1: Regularly update inventory of exiting cold chain equipment and logistics (including date of installation/supply) by collecting data from zonal, regional, and health facility levels

Activity 4.1.2: Develop and install 'Dash Board' for real time data monitoring on vaccine distribution through mobile technology

Activity 4.1.3: Determine need for new supply and replacement of cold chain equipment and logistics

Activity 4.1.4: Develop specifications and procurement plan (aligned with the availability of funding)

Strategy 4.2: Expansion of existing cold chain and vaccine management for the introduction of new vaccines and opening of new service delivery facilities

Activity 4.2.1: Procure and install Ice-lined Refrigerators and Freezers for regional vaccine stores

Activity 4.2.2: Procure and install refrigerators for health care facilities with technology shift from electricity-operated to solar operated refrigerators/freezers

Activity 4.2.3: Procure and supply other cold chain equipment including spare parts, electricity generators and toolkits for repair and maintenance

Activity 4.2.4: Train vaccine management personnel in logistic management

Strategy 4.3: Improve transportation of vaccines, injection equipment and other logistics

Activity 4.3.1: Forecast requirement of vaccines, injection supplies and other logistics at zonal, regional and health facility levels

Activity 4.3.2: Develop distribution plans with a focus on bundling vaccines with injection equipment materials

Activity 4.3.3: Hire private sector vendors for distribution of vaccines in vehicles suitable for vaccine transport

Activity 4.3.4: Monitor temperature maintenance by using digital records

Strategy 4.4: Up gradation of cold chain temperature monitoring and tracking system by using innovative IT technologies

Activity 4.4.1: Install and maintain Remote Temperature Monitoring Device (RTMD) System at zonal level

Activity 4.4.2: Procure and install 30-day electronic temperature logger devices for installation at regional levels and EPI-fixed centers

Activity 4.4.3: Develop and install 'Dash Board' for temperature monitoring of cold rooms through mobile technology and integrate the system with online monitoring of vaccine stocks and distribution

Strategy 4.5: Improvement in vaccine management by implementing EVM Improvement Plan

Activity 4.5.1: Carry out EVM assessment every three years

Activity 4.5.2: Revise the annual work plan in accordance with the EVM improvement plan

Activity 4.5.3: Report on the progress of implementation of the EVM improvement Plan

2.2.5 Immunization Service Delivery

ISC Objective 5: **Strengthen and optimize capacity of immunization service delivery**

The objective of the immunization system component is to strengthen capacity of immunization service delivery. It means that by 2020:

- Proportion of health care facilities not having EPI centers decreased to zero
- Proportion of Fixed-EPI centers not having Skilled Immunization Staff (SIS) decreased to zero

Strategies and activities to achieve the component objective are as follows:

Strategy 5.1: Expansion in the existing coverage of EPI-fixed centers

Activity 5.1.1: Establish 67 new EPI-Fixed centers in all referral and district hospitals

Activity 5.1.2: Establish 129 new EPI-Fixed centers in MCH Centers which are operational without EPI services

Activity 5.1.3: Involve private health sector and NGOs for expansion in the network of EPI-Fixed centers in private health care facilities

Activity 5.1.4: Advocate for establishing new health facilities where no facilities are available

Strategy 5.2: Increase in performance/efficiency (effective coverage) of existing EPI Centers

Activity 5.2.1: Implement EPI MSDS

Activity 5.2.2: Mobilize additional qualified skilled immunization staff

Activity 5.2.3: Improve micro-planning by increasing use of household listing through regular supportive supervision of designated staff at EPI centers

Activity 5.2.4: Improve data validation through field monitoring

Activity 5.2.5: Regular use of integrated EPI/Polio micro-plan at health facility and district levels

Activity 5.2.6: Introduce outreach services in urban areas where existing health facilities have low coverage

Strategy 5.3: Expansion in vaccination coverage for remote areas and nomadic population through effective outreach and mobile services

Activity 5.3.1: Identify the geographical areas not covered under the curative health services provided under EPHS and non-EPHS districts

Activity 5.3.2: Identify and map geographical areas to be covered through outreach and mobile immunization services

Activity 5.3.3: Prepare area-specific outreach immunization micro plans based on RED/REC[40] Strategy in priority districts (37 districts in Phase-I)

Activity 5.3.4: Increase number of outreach and mobile vaccination teams as per requirement especially for nomadic population

Activity 5.3.5: Conduct Periodic Intensified Routine Immunization activities (PIRI) for hard to access population in inaccessible districts in South Central zone

Activity 5.3.6: Monitor and supervise outreach immunization services

Strategy 5.4: Implementation of Supplementary Immunization Activities (SIAs)

Activity 5.4.1: Conduct 4 rounds each for National and Sub-National Immunization Days under Polio Eradication Initiative every year with expected coverage of 95%

Activity 5.4.2: Conduct Measles campaign for children (9-59 months) in 2018 and with expected coverage of 95%

[40] RED/REC Strategy – Reaching Every District/Community Strategy

Activity 5.4.3: Conduct Maternal and Neonatal Tetanus (MNT) campaign for women of child bearing age (15-45 years) – three doses – with expected coverage of 15% per year for 5 years

Activity 5.4.4: Defaulter tracing and provision of routine immunization antigens in fixed centers during Polio SIAs

Strategy 5.5: Introduction of new vaccines in routine immunization schedule

Activity 5.5.1: Develop a national plan for an integrated Hepatitis B control and explore feasibility of Introduction of hepatitis B birth dose in RI

Activity 5.5.2: Develop application for introduction of new vaccines (Rotavirus vaccine and PCV-13) in 2019

Activity 5.5.3: Introduce Rotavirus vaccine and PCV-13 vaccine in 2020

2.2.6 Surveillance, Monitoring and Reporting

ISC Objective 6: **Performance of surveillance and routine monitoring/reporting improved**

It means that by 2020:

- Discrepancy ratio (between administrative and survey data) is less than 5%
- 80% of reporting units receiving satisfactory DQS score
- Drop-out rate between Penta-1 and Penta-3 remains below 4%
- At least 2 non-polio AFP cases per 100,000 population are detected and reported
- At least 2 discarded non-measles cases per 100,000 population are detected and reported

Strategies and activities to achieve the component objective are as follows:

Strategy 6.1: Expansion in surveillance network and coverage

Activity 6.1.1: Review map the existing active surveillance sites for further need assessment

Activity 6.1.2: Increase number of active surveillance sites involving both public and private sector

Activity 6.1.3: Integrate Measles and MNT surveillance in AFP surveillance

Activity 6.1.4: Use the existing community structure to establish community based surveillance for MNT

Activity 6.1.5: Develop synergies with PEI for strengthening of VPD surveillance through participation of PEI staff in outbreak investigation and responses

Strategy 6.2: Streamlining data collection and reporting practices

Activity 6.2.1: Assess main causes of data quality flaws

Activity 6.2.2: Revise HMIS tools to include new vaccines/antigens (IPV)

Activity 6.2.3: Introduce regular system of formal feedback mechanism on the administrative reports of subordinated entities

Activity 6.2.4: Conduct periodic EPI progress review at zonal, regional and district levels

Activity 6.2.5: Strengthen data recording, reporting and analysis of cases of Adverse events following immunization (AEFI)

Activity 6.2.6: Integrate EPI routine monitoring into mainstream data management

Strategy 6.3: Strengthening accuracy of reporting through validation in field

Activity 6.3.1: Conduct data validation through field monitoring visits

Activity 6.3.2: Conduct Data Quality Audit (DQA) and Data Quality Self-Assessment (DQS) at regular interval

Activity 6.3.3: Introduce Geo-location monitoring system for web-based tracking EPI supervisors and skilled immunization staff through android cell phones

2.2.7 Demand Generation, Communication and Advocacy

ISC Objective 7: **Knowledge and attitude toward immunization improved among target population**

It means that by 2020:

- % of children whose mothers intend to vaccinate children is increased by 25% from than the baseline
- % of parents with children under 1 year of age aware of at least two benefits of immunization is increased by 25% from the baseline
- % of parents with children under 1 year of age who can identify the nearest immunization center is increased by 25% from the baseline

Strategies and activities to achieve the component objective are as follows:

Strategy 7.1: Advocacy and partnership building

Activity 7.1.1: Conduct activities as per annual communication and advocacy plan

Activity 7.1.2: Organize two advocacy seminar for political leadership every year

Activity 7.1.3: Organize advocacy meetings with technical leadership of MoH, Ministry of Finance and Ministry of Education

Activity 7.1.4: Conduct advocacy meetings with political leadership and administration at zonal, regional and district levels

Activity 7.1.5: Conduct advocacy meetings with donors and philanthropists

Activity 7.1.6: Conduct one advocacy seminar for media/religious leaders etc. every year

Strategy 7.2: Behaviour change communication

Activity 7.2.1: Standardize immunization related information and content materials

Activity 7.2.2: Reinforce promotion of positive attitude towards immunization through creating synergies between multiple channels of communication

Activity 7.2.3: Increase effectiveness of interpersonal communication by using the existing network of human resources, especially female health workers, community midwives and village volunteers

Strategy 7.3: Community mobilization

Activity 7.3.1: Develop social mobilization plans at all levels

Activity 7.3.2: Activate social networks (community leaders, volunteers, women groups) and encourage peer communication to reach remote areas in order to disseminate information about the benefits of immunization

Activity 7.3.3: Mobilize key government, community figures at zonal, regional and district level and involving them in immunization activities in the form of launching and making public statements in support of the program.

Strategy 7.4: Research, evidence generation and dissemination

Activity 7.4.1: Conduct formative research (KAP studies) of the target population regarding immunization

Activity 7.4.2: Assess the effectiveness of the communication strategies

Activity 7.4.3: Publish and disseminate EPI annual progress report every year

Activity 7.4.4: Conduct immunization coverage survey every three years

2.3 Alignment with GVAP, Regional Targets and Health Sector Strategy

The national cMYP is aligned with most of GVAP and regional targets as shown in Annex 1 'GVAP Checklist'.

3 Implementation Arrangements and Timelines

3.1 Implementation arrangements

The respective zonal health authorities will be responsible for implementation of cMYP. The required policy decisions and approvals will be accorded through the existing health sector coordination mechanisms. All the policy endorsements will be obtained from the Health Advisory Board whereas the operational matters will be carried through approval of the Health Sector Coordination Committee.

The Zonal EPI Manager will be responsible planning and implementation at the zonal level under the guidance of Director Public Health, Director Health Planning and Director General Health. The Zonal EPI Manager at South-Central zone will be responsible for maintaining a liaison with other counterparts in rest of the zones. Budgetary allocations have been proposed for Inter-zonal review meetings.

3.2 Timelines for the cMYP

Objective/strategies/activities		2016	2017	2018	2019	2020
ISC Objective 1:	**Increase performance by strengthening the leadership capacity of Ministry of Health in immunization service delivery**					
Strategy 1.1:	Development and institutionalization of performance management system through integration and alignment with Health Sector Strategic Plans					
Activity 1.1.1:	Mobilize Technical support for reviewing existing EPI policy guidelines and institutional framework and developing Minimum Service Delivery Standards for EPI					
Activity 1.1.2:	Clarify upon the institutional arrangement and roles and responsibilities of MoH, Zonal EPI Office, donors, and EPHS implementation partners					
Activity 1.1.3:	Establish new and strengthen existing EPI Management Teams at zonal, regional and districts levels					
Activity 1.1.4:	Set EPI-specific Minimum Service Delivery Standards (EPI-MSDS) for zonal, regional, and district levels					
Activity 1.1.5:	Develop criteria/methodology for competency assessment and performance appraisal of key EPI management staff (managers and supervisors) and skilled immunization staff (auxiliary nurses, other paramedics trained in vaccination)					
Activity 1.1.6:	Select indicators for measuring performance standards at zonal, regional, and district levels					
Activity 1.1.7:	Implement EPI Minimum Service Delivery Standards under EPHS					
Strategy 1.2:	Streamlining EPI planning processes					
Activity 1.2.1:	Develop integrated EPI annual implementation plans					

Objective/strategies/activities		2016	2017	2018	2019	2020
Activity 1.2.2:	Review and align cMYP with EPI annual implementation plan					
Activity 1.2.3:	Develop annual capacity building plan for managers, supervisors and skilled immunization staff					
Activity 1.2.4:	Develop annual HR recruitment plan					
Activity 1.2.5:	Develop EPI service delivery expansion and infrastructure development plan					
Activity 1.2.6:	Develop cold chain replacement plan and update on annual basis					
Activity 1.2.7:	Develop communication and advocacy plan					
Activity 1.2.8:	Develop emergency plan to deal with disaster like situations					
Activity 1.2.9:	Develop monitoring and evaluation plan					
Activity 1.2.10:	Develop zone-specific, region-specific, and district-specific EPI micro implementation plans with target setting					
Activity 1.2.11:	Develop National MNT Plan					
Activity 1.2.12:	Develop EPI strategy for nomadic and high transmission risk (HTR) population					
Activity 1.2.13:	Develop implementation plan for Intensified Routine Immunization activities (PIRI) for inaccessible districts in South Central zone					
Strategy 1.3:	Streamlining accountability mechanisms at program management levels (national, zonal and regional)					
Activity 1.3.1:	Conduct annual meetings for Health Advisory Board for routine immunization					
Activity 1.3.2:	Conduct biennial meetings of Health Sector Coordination Committee at zonal level					
Activity 1.3.3:	Conduct annual inter-zonal EPI performance review at national level					
Activity 1.3.4:	Conduct quarterly EPI performance reviews at zonal level					
Activity 1.3.5:	Conduct quarterly EPI performance reviews at regional level					
Activity 1.3.6:	Conduct monthly EPI performance reviews at district level					

Objective/strategies/activities		2016	2017	2018	2019	2020
Activity 1.3.7:	Conduct performance appraisal and competency assessment of all EPI management and supervisory staff and skilled immunization staff every two years					
Strategy 1.4:	Advocacy and partnership building					
Activity 1.4.1:	Publish and disseminate EPI annual progress report every year					
Activity 1.4.2:	Organize quarterly coordination meetings between Zonal EPI, donors, EPHS implementers (NGOs)					
Activity 1.4.3:	Produce regularly policy briefs/guidelines/advocacy materials to share with high level officials					
Activity 1.4.4:	Organize consultations meetings with EPI partners and follow up implementation of decisions and actions agreed in the past					
ISC Objective 2:	**Increase the availability of qualified and motivated human resources for the immunization program**					
Strategy 2.1:	Increase number of managerial and supervisory staff at zonal and district levels					
Activity 2.1.1:	Advertise for and recruit national training manager, M&E manager and communication officer for every zone					
Activity 2.1.2:	Advertise for and recruit Regional Cold Chain Technicians (one per region)					
Activity 2.1.3:	Advertise for and recruit district EPI supervisors (one per district)					
Strategy 2.2:	Increase in number of Skilled Immunization Staff for vacant positions and newly established EPI-fixed centers					
Activity 2.2.1:	Advertise for recruitment against 290 auxiliary nurses as part of MoH staff					
Activity 2.2.2:	Select and contract new auxiliary nurses preferably from the areas where they will be appointed to					
Strategy 2.3:	Capacity building of EPI Managers, supervisors and skilled immunization staff					
Activity 2.3.1:	Implement a capacity building program including a TOT, and cascade of training for Mid-Level-Manager's (MLM) training for zonal and regional managers, District EPI coordinators and EPHS managerial staff on: Results-based Planning, achieving results and team working skills, MLM, RED/REC, EVM, Surveillance and outbreak investigation every two years					

Objective/strategies/activities		2016	2017	2018	2019	2020
Activity 2.3.2:	Identify zonal and regional master trainers	■				
Activity 2.3.3:	Carry out refresher training for each skilled immunization staff in immunization practices, introduction of new vaccines, advocacy and awareness, surveillance and reporting mechanisms etc. at least once in 2 years	■		■		■
Activity 2.3.4:	Carry out refresher trainings of cold chain technicians in cold chain repair and maintenance	■		■		■
Activity 2.3.5:	Train vaccine management personnel in logistic management	■		■		■
Activity 2.3.6:	Train zonal and regional EPI managers on orientation and implementation of cMYP	■				
Activity 2.3.7:	Carry out induction trainings for newly recruited auxiliary nurses/skilled immunization staff in immunization practices, introduction of new vaccines, micro-planning, advocacy and awareness, surveillance and reporting mechanisms etc.	■	■			
Strategy 2.4:	Increase in effectiveness of trainings of EPI managerial, supervisory and skilled immunization staff					
Activity 2.4.1:	Introduce training need assessment, and pre & post trainings assessment as a mandatory requirement of training programs	■		■		■
Activity 2.4.2:	Revise training materials as and when required under training need assessment reports	■		■		■
Activity 2.4.3:	Maintain database for training programs and compare training outcomes prior to conducting follow up trainings	■	■	■	■	■
Strategy 2.5:	Training of polio staff in routine immunization activities					
Activity 2.5.1:	Conduct training on Immunization practice based on WHO guidelines	■		■		■
Activity 2.5.2:	Training on VPD surveillance	■		■		■
Activity 2.5.3:	Training on social mobilization and demand creation on Routine immunization	■		■		■
Activity 2.5.4:	Refresher training of polio staff on RI micro-planning and supervision	■		■		■
Strategy 2.6:	Increase motivation of key staff of the immunization program					
Activity 2.6.1:	Arrange overseas study tours for zonal and regional EPI managers		■		■	

Objective/strategies/activities		2016	2017	2018	2019	2020
Activity 2.6.2:	Develop a scheme on financial and non-financial incentives (carrier growth opportunities, performance based incentives etc.)					
Activity 2.6.3:	Explore possibilities for financing and implementation					
ISC Objective 3:	**Increase financial efficiency and sustainability of the immunization program**					
Strategy 3.1:	Enhance efficient utilization of human resources by developing synergies with other health initiatives					
Activity 3.1.1:	Train EPI program managers on program management and developing mechanisms for financial efficiency					
Activity 3.1.2:	Increase number of skilled immunization staff through integration of EPI with other PHC programs being implemented under EPHS					
Activity 3.1.3:	Develop synergies with PEI under ONE-EPI Plan					
Strategy 3.2:	Minimize wastage of resources under immunization program					
Activity 3.2.1:	Rationalize use of POL for monitoring and supervision by management staff at national, regional, and district level					
Activity 3.2.2:	Develop and introduce need-based supply of vaccines, syringes and other materials by incorporating bundling approach					
Activity 3.2.3:	Minimize vaccine wastages and drop-out rates for different antigens					
Strategy 3.3:	Advocacy for resource mobilization for ensuring financial sustainability of immunization program					
Activity 3.3.1:	Use cMYP for financial projections on the 'funding gap' between existing resources and future requirements					
Activity 3.3.2:	Utilize cMYP as the foundation document for developing program proposals and grant application for the government and donor community					
Activity 3.3.3:	Inform political and technical leadership about the importance of funding gap in terms of burden of morbidity and mortality due to vaccine preventable diseases					
Activity 3.3.4:	Mobilize political and technical leadership for increasing share for EPI-specific costs under regular government budget					

Objective/strategies/activities		2016	2017	2018	2019	2020
Activity 3.3.5:	Develop financial projections for mobilizing donors and development partners on yearly basis					
ISC Objective 4:	**Improve/sustain uninterrupted supply, safety and utilization of vaccines. Injection equipment and other logistics to immunization service delivery**					
Strategy 4.1:	Strengthening of Vaccine Logistic Management Information System					
Activity 4.1.1:	Regularly update inventory of exiting cold chain equipment and logistics (including date of installation/supply) by collecting data from zonal, regional, and health facility levels					
Activity 4.1.2:	Develop and install 'Dash Board' for real time data monitoring on vaccine distribution through mobile technology					
Activity 4.1.3:	Determine need for new supply and replacement of cold chain equipment and logistics					
Activity 4.1.4:	Develop specifications and procurement plan (aligned with the availability of funding)					
Strategy 4.2:	Expansion of existing cold chain and vaccine management for the introduction of new vaccines and opening of new service delivery facilities					
Activity 4.2.1:	Procure and install Ice-lined Refrigerators and Freezers for regional vaccine stores					
Activity 4.2.2:	Procure and install refrigerators for health care facilities with technology shift from electricity-operated to solar operated refrigerators/freezers					
Activity 4.2.3:	Procure and supply other cold chain equipment including spare parts, electricity generators and toolkits for repair and maintenance					
Activity 4.2.4:	Train vaccine management personnel in logistic management					
Strategy 4.3:	Improve transportation of vaccines, injection equipment and other logistics					
Activity 4.3.1:	Forecast requirement of vaccines, injection supplies and other logistics at zonal, regional and health facility levels					
Activity 4.3.2:	Develop distribution plans with a focus on bundling vaccines with injection equipment materials					

Objective/strategies/activities		2016	2017	2018	2019	2020
Activity 4.3.3:	Hire private sector vendors for distribution of vaccines in vehicles suitable for vaccine transport					
Activity 4.3.4:	Monitor temperature maintenance by using digital records					
Strategy 4.4:	Up gradation of cold chain temperature monitoring and tracking system by using innovative IT technologies					
Activity 4.4.1:	Install and maintain Remote Temperature Monitoring Device (RTMD) System at zonal level					
Activity 4.4.2:	Procure and install 30-day electronic temperature logger devices for installation at regional levels and EPI-fixed centers					
Activity 4.4.3:	Develop and install 'Dash Board' for temperature monitoring of cold rooms through mobile technology and integrate the system with online monitoring of vaccine stocks and distribution					
Strategy 4.5:	Improvement in vaccine management by implementing EVM Improvement Plan					
Activity 4.5.1:	Carry out EVM assessment every three years					
Activity 4.5.2:	Revise the annual work plan in accordance with the EVM improvement plan					
Activity 4.5.3:	Report on the progress of implementation of the EVM improvement Plan					
ISC Objective 5:	**Strengthen and optimize capacity of immunization service delivery**					
Strategy 5.1:	Expansion in the existing coverage of EPI-fixed centers					
Activity 5.1.1:	Establish 67 new EPI-Fixed centers in all referral and district hospitals					
Activity 5.1.2:	Establish 129 new EPI-Fixed centers in MCH Centers which are operational without EPI services					
Activity 5.1.3:	Involve private health sector and NGOs for expansion in the network of EPI-Fixed centers in private health care facilities					
Activity 5.1.4:	Advocate for establishing new health facilities where no facilities are available					
Strategy 5.2:	Increase in performance/efficiency (effective coverage) of existing EPI Centers					
Activity 5.2.1:	Implement EPI MSDS					

Objective/strategies/activities		2016	2017	2018	2019	2020
Activity 5.2.2:	Mobilize additional qualified skilled immunization staff					
Activity 5.2.3:	Improve micro-planning by increasing use of household listing through regular supportive supervision of designated staff at EPI centers					
Activity 5.2.4:	Improve data validation through field monitoring					
Activity 5.2.5:	Regular use of integrated EPI/Polio micro-plan at health facility and district levels					
Activity 5.2.6:	Introduce outreach services in urban areas where existing health facilities have low coverage					
Strategy 5.3:	Expansion in vaccination coverage for remote areas and nomadic population through effective outreach and mobile services					
Activity 5.3.1:	Identify the geographical areas not covered under the curative health services provided under EPHS and non-EPHS districts					
Activity 5.3.2:	Identify and map geographical areas to be covered through outreach and mobile immunization services					
Activity 5.3.3:	Prepare area-specific outreach immunization micro plans based on RED/REC[41] Strategy in priority districts (37 districts in Phase-I)					
Activity 5.3.4:	Increase number of outreach and mobile vaccination teams as per requirement especially for nomadic population					
Activity 5.3.5:	Conduct Periodic Intensified Routine Immunization activities (PIRI) for hard to access population groups in inaccessible districts in South Central zone					
Activity 5.3.6:	Monitor and supervise outreach immunization services					
Strategy 5.4:	Implementation of Supplementary Immunization Activities (SIAs)					
Activity 5.4.1:	Conduct 4 rounds each for National and Sub-National Immunization Days under Polio Eradication Initiative every year with expected coverage of 95%					
Activity 5.4.2:	Conduct Measles campaign for children (9-59 months) in 2018 and with expected coverage of 95%					
Activity 5.4.3:	Conduct Maternal and Neonatal Tetanus (MNT) campaign for women of child bearing age (15-45 years) –					

[41] RED/REC Strategy – Reaching Every District/Community Strategy

Objective/strategies/activities		2016	2017	2018	2019	2020
	three doses – with expected coverage of 15% per year for 5 years					
Activity 5.4.4:	Defaulter tracing and provision of routine immunization antigens in fixed centers during Polio SIAs					
Strategy 5.5:	Introduction of new vaccines in routine immunization schedule					
Activity 5.5.1:	Develop a national plan for an integrated Hepatitis B control and explore feasibility of Introduction of hepatitis B birth dose in RI					
Activity 5.5.2:	Develop application for introduction of new vaccines (Rotavirus vaccine and PCV-13) in 2019					
Activity 5.5.3:	Introduce Rotavirus vaccine and PCV-13 vaccine in 2020					
ISC Objective 6:	**Performance of surveillance and routine monitoring/reporting improved**					
Strategy 6.1:	Expansion in surveillance network and coverage					
Activity 6.1.1:	Review map the existing active surveillance sites for further need assessment					
Activity 6.1.2:	Increase number of active surveillance sites involving both public and private sector					
Activity 6.1.3:	Integrate Measles and MNT surveillance in AFP surveillance					
Activity 6.1.4:	Use the existing community structure to establish community based surveillance for MNT					
Activity 6.1.5:	Develop synergies with PEI for strengthening of VPD surveillance through participation of PEI staff in outbreak investigation and responses					
Strategy 6.2:	Streamlining data collection and reporting practices					
Activity 6.2.1:	Assess main causes of data quality flaws					
Activity 6.2.2:	Revise HMIS tools to include new vaccines/antigens (IPV)					
Activity 6.2.3:	Introduce regular system of formal feedback mechanism on the administrative reports of subordinated entities					
Activity 6.2.4:	Conduct periodic EPI progress review at zonal, regional and district levels					
Activity 6.2.5:	Strengthen data recording, reporting and analysis of cases of Adverse events following immunization (AEFI)					

Objective/strategies/activities		2016	2017	2018	2019	2020
Activity 6.2.6:	Integrate EPI routine monitoring into mainstream data management					
Strategy 6.3:	Strengthening accuracy of reporting through validation in field					
Activity 6.3.1:	Conduct data validation through field monitoring visits					
Activity 6.3.2:	Conduct Data Quality Audit (DQA) and Data Quality Self-Assessment (DQS) at regular interval					
Activity 6.3.3:	Introduce Geo-location monitoring system for web-based tracking EPI supervisors and skilled immunization staff through android cell phones					
ISC Objective 7:	**Knowledge and attitude toward immunization improved among target population**					
Strategy 7.1:	Advocacy and partnership building					
Activity 7.1.1:	Conduct activities as per annual communication and advocacy plan					
Activity 7.1.2:	Organize two advocacy seminar for political leadership every year					
Activity 7.1.3:	Organize advocacy meetings with technical leadership of MoH, Ministry of Finance and Ministry of Education					
Activity 7.1.4:	Conduct advocacy meetings with political leadership and administration at zonal, regional and district levels					
Activity 7.1.5:	Conduct advocacy meetings with donors and philanthropists					
Activity 7.1.6:	Conduct one advocacy seminar for media/religious leaders etc. every year					
Strategy 7.2:	Behaviour change communication					
Activity 7.2.1:	Standardize immunization related information and content materials					
Activity 7.2.2:	Reinforce promotion of positive attitude towards immunization through creating synergies between multiple channels of communication					
Activity 7.2.3:	Increase effectiveness of interpersonal communication by using the existing network of human resources, especially female health workers, community midwives and village volunteers					
Strategy 7.3:	Community mobilization					

Objective/strategies/activities		2016	2017	2018	2019	2020
Activity 7.3.1:	Develop social mobilization plans at all levels					
Activity 7.3.2:	Activate social networks (community leaders, volunteers, women groups) and encourage peer communication to reach remote areas in order to disseminate information about the benefits of immunization					
Activity 7.3.3:	Mobilize key government, community figures at zonal, regional and district level and involving them in immunization activities in the form of launching and making public statements in support of the program.					
Strategy 7.4:	Research, evidence generation and dissemination					
Activity 7.4.1:	Conduct formative research (KAP studies) of the target population regarding immunization					
Activity 7.4.2:	Assess the effectiveness of the communication strategies					
Activity 7.4.3:	Publish and disseminate EPI annual progress report every year					
Activity 7.4.4:	Conduct immunization coverage survey every three years					

3.3 Monitoring and Evaluation

3.3.1 M&E Framework for Immunization

File attached (click the icon to open it).

3.3.2 Monitoring and Evaluation Strategy and Plan

The M&E Framework is the essential instrument that the immunization program will use for tracking the performance of cMYP in Somalia. The quantifiable indicators are grouped under three broad areas: impact, outcomes and immunization-system-component-specific (ICS) indicators.

The impact and outcomes indicators will facilitate in linking Somalia cMYP with the broader national plans. These will reflect whether the planners and funders are getting value for money.

The ICS indicators will be used to link the inputs, processes and outputs. The source of information for ICS indicators is primarily based on EPI and administrative data. Authenticity and accuracy of program and administrative data is often questioned in Somalia. Therefore, validation of cMYP results through field data validation, DQA, DQS and Immunization Coverage Surveys will ensure transparency and accountability within the reporting system.

The main sources of information include EPI MIS, Health Management Information System and other administrative data. In addition to these health sector-specific data sources, other period surveys including MICS and Health Facility Assessments will provide the information that is not covered under public health sector.

The M&E Framework will be used in planning and decision making while developing new grant proposals including GAVI-HSS Applications, revisiting cMYP, and conducting periodic reviews at national, zonal, regional and district levels. It will also be used to negotiate the resource requirement from the Somalia government, donors and development partners.

The Zonal EPI Manager will be responsible for maintaining and updating the information required for M&E Framework by developing a Plan of Action (PoA) for tracking implementation of cMYP.

Monitoring and evaluation of the Plan of Action (PoA) will be an essential component of cMYP. The program implementers will primarily be focusing on three areas:

1. Program Inputs (human resources, finances and materials)
2. Processes (procedures of carrying out strategy-specific activities)
3. Immediate Outputs (expected deliverables)

The main purpose is to critically and systematically review:

- The extent to which inputs (human resources, finances and materials) are actually being made available and utilized against what was targeted as per plan in a given quarter.
- The procedures and timeliness of processes of program activities are being observed as per plan in order to translate inputs into outputs in a given quarter.

- The degree to which immediate outputs are achieved against the targets to be accomplished in a given quarter.

Such a critical review will enable EPI program implementers, planners and partners to examine and analyze:

- Resource availability and utilization
- Bottle-necks, faults in implementation, or best practices
- Degree and speed of achieving program targets

This evidence will help in identifying the root causes of failures and under achievements to gaps in implementation and learning lessons from best practices of high achievers so that implementation processes can be modified or improved, where and when required.

4 Future Immunization Program Costing and Financing

4.1 Future resource requirements

4.1.1 Overview

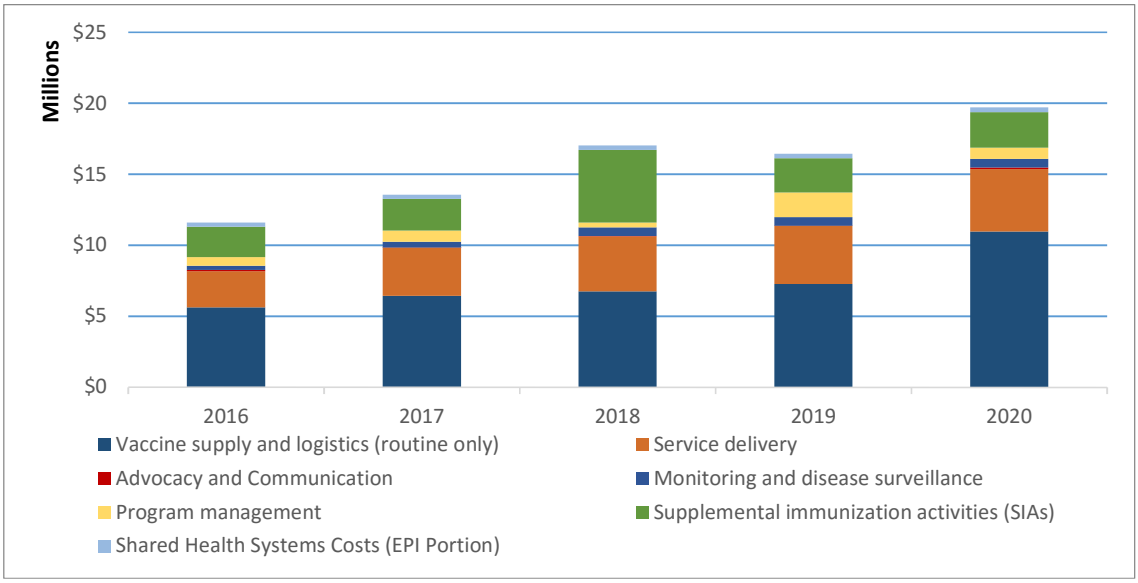
Total resource requirement for 2006-2020 is estimated at USD78.3 million as shown in Table 17. SIA is expected to absorb 18.4% of resources and the remaining to be allocated to routine immunization (including shared health system costs). The share of vaccines and logistics (for routine immunization) amounts to nearly USD37 million (437% of total resource requirements). The contribution of shared health system costs is estimated at 2%.

Table 17: Total resource requirements by immunization system components for 2016-2020

Cost Category	USD	%
Vaccine Supply and Logistics (Routine Immunization Only)	37,045,946	47.3%
Service Delivery	18,312,473	23.4%
Advocacy and Communication	227,782	0.3%
Monitoring and Disease Surveillance	2,531,357	3.2%
Program Management	4,226,678	5.4%
Supplemental Immunization Activities (SIAs) (includes vaccine and operation costs)	14,436,456	18.4%
Shared Health Systems Costs	1,548,686	2.0%
Total	78,329,379	

Total resource requirements increase from USD11.6 million in 2016 up to USD19.6 million in 2020 as shown in Figure 5, lower than the baseline cost estimates in 2014 where a significant proportion of resources was spent on PEI.

Figure 5: Year-wise resource requirements by immunization system components



4.1.2 Future resource requirement: detailed analysis

Table 18 presents details of the estimated resource requirement from 2016 to 2020. The future resource requirement is separately presented under routine immunization costs, campaign cost and shared health system costs.

Table 18: Future resource requirements by cost categories for 2016-2020

COST CATEGORY	2016	2017	2018	2019	2020
	USD	USD	USD	USD	USD
ROUTINE IMMUNIZATION COSTS					
Traditional Vaccines	755,544	939,956	1,107,385	1,272,295	1,487,674
Underused Vaccines	1,924,427	2,388,495	2,743,479	3,136,232	3,667,714
New Vaccines	356,284	477,597	555,863	633,219	3,399,369
Injection supplies	145,584	186,268	218,015	250,380	323,374
Personnel	1,833,273	2,391,672	2,878,737	2,936,312	2,995,038
Transportation	893,275	1,318,120	1,510,767	1,695,081	1,901,881
Other routine recurrent costs	2,265,435	2,561,105	2,271,609	3,787,604	3,078,177
Cold chain equipment	951,307	760,241	296,077	-	-
Other capital equipment	49,368	-	-	-	-
RI Costs (Sub-Total)	9,174,498	11,023,455	11,581,934	13,711,123	16,853,227
CAMPAIGN COSTS	2,142,723	2,231,094	5,133,110	2,419,575	2,520,044
SHARED HEALTH SYSTEM COSTS	297,593	303,545	309,616	315,808	322,124
GRAND TOTAL	11,614,814	13,558,094	17,024,659	16,446,506	19,695,396

(a) Routine immunization costs

The routine immunization costs are further divided in six categories: Vaccines and Injection Supplies, Personnel, Transportation, Cold chain equipment, Other Capital equipment and Other routine recurrent costs.

1. Vaccines and Injection Supplies

In the next 5 years, the Somali EPI plans to improve the coverage rate of different vaccines.[42]

The government also plans to introduce two new vaccines: PCV-13 and Rotavirus vaccine in 2020. These vaccines will be financed through GAVI with co-financing from the government. The introduction of

[42] The financial projections for vaccines and injection supplies are based on the number of doses required per antigen including wastage rates and the latest price list available for cMYP.

new vaccines will have financial implications not only for the resource requirement for procurement of vaccines and injection supplies but also for cold chain equipment, overhead costs and training of personnel.

In order to achieve the immunization coverage targets, the additional resource requirement for procuring vaccines and injection supplies will increase by 2.5 times in 2020. In comparison to the expenditure of USD3.5 million in 2014, the resource requirement will increase to USD8.8 million by the year 2020.

2. Personnel

The National EPI office plans to increase the availability of qualified human resources for the immunization program at zonal, regional and district levels.

- At zonal level, new positions of national training manager, M&E manager and communication officer will be created in 3 zonal EPI offices
- At regional level, 24 new positions of Regional Cold Chain Technicians (one per region) will be created for strengthening data reporting and surveillance activities.
- At district level, 92 new positions district EPI supervisors (one per district) will be created.
- At district level, 290 auxiliary nurses will be recruited for manning new EPI-fixed centers and also for outreach immunization services.

The addition of new staff will require a substantial increase in resource allocation for immunization program. By 2020, the funds required for payment of salaries and allowances will be increased by 2.5 times as of 2014. The EPI will require USD3.0 million in 2020 as compared to USD1.2 million in 2014.

3. Transportation

Expansion in the EPI program coverage will result in increase in demand for resources for transportation. In addition to the existing resource requirement for transportation of vaccines and injection supplies, additional resources will be required for monitoring by the zonal and district level management teams and also, for outreach immunization services. The total expenditure will increase from USD0.4 million 2014 to USD1.9 million in 2020. Almost 58% of the total expenditure on transportation in 2020 will be spent on monitoring visits by the district EPI supervisors and traveling of immunization staff for outreach immunization service delivery.

4. Cold chain equipment

The immunization program plans to enhance the capacity of the cold chain system in order to replace the old chain equipment that has completed its average useful life of 7 years. In addition, the EPI plans to gradually shift from electricity-operated ILR and Refrigerators/Freezer units to solar operated equipment. In order to strengthen monitoring and recording keeping of cold chain system, Remote Temperature Monitoring Device (RTMD) System and 30-day electronic temperature logger (TR06) will be installed at zonal and regional levels, and health care facilities respectively.

It is estimated that USD2.0 million will be required to meet the needs of cold chain equipment. The national EPI office has estimated these projections by using the latest inventory of cold chain established by UNICEF.

6. Other capital equipment/infrastructure

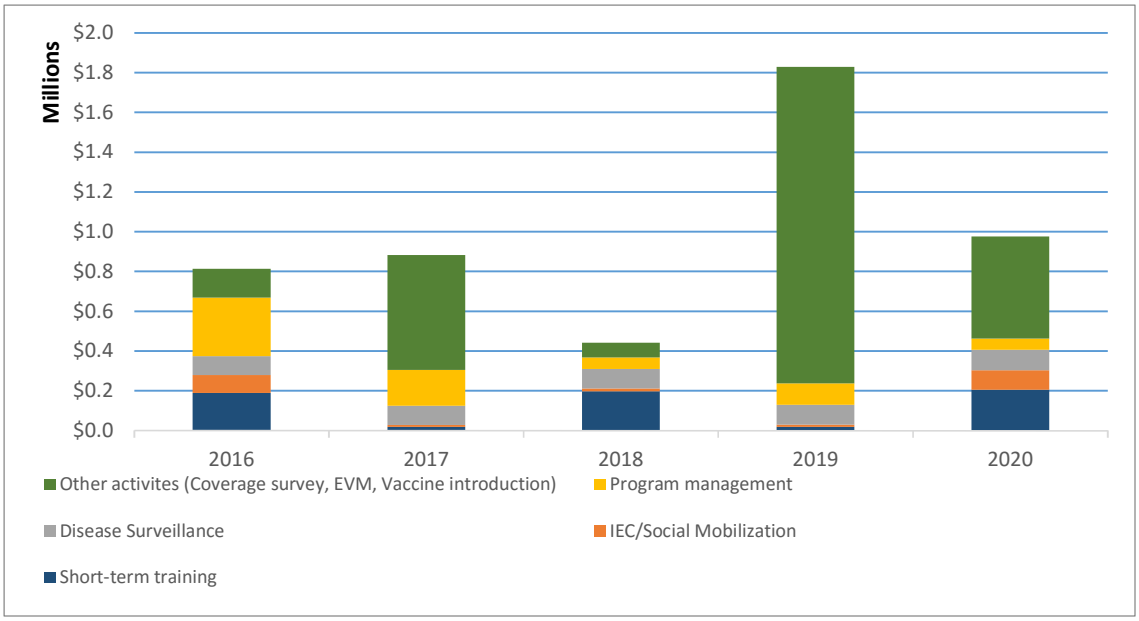
It is estimated that the immunization system requires nearly USD50,000 for supplying capital equipment (laptops, computers, photocopiers etc.) for zonal and regional offices.

7. Other routine recurrent costs

Other recurrent costs consist of funds required for cold chain maintenance and overheads, maintenance of other capital equipment, utility bills, short-term training, IEC/social mobilization, disease surveillance, program management and other activity costs. The zonal EPI office has estimated the resource requirement under this category by breaking down each component into activities and determining the average cost per activity.

The financial projections indicate that an amount of USD13.9 million (USD2.7 million per year) is estimated to be required for meeting the expenditure planned under other routine recurrent costs which is nearly 18% of the total resource requirement under routine immunization (Figure 6).

Figure 6: Year-wise resource requirements by cost categories of "other routine recurrent costs"



(b) Supplementary immunization activities (SIAs)

The Somali government plans to conduct special immunization campaigns (SIAs) in the next 5 years. These include:

1. National and Sub-National Immunization Days (4 rounds each) under Polio Eradication Initiative every year with expected coverage of 95%
2. Measles campaign for children (9-59 months) in 2018 with expected coverage of 95%
3. Maternal and Neonatal Tetanus (MNT) campaign for women of child bearing age (15-45 years) – three doses – with expected coverage of 15% per year for 5 years

Of the total resources requirement for immunization system, 18% of funds (USD14.4 million) are estimated to be spent on SIAs during 2016-2020 (Table 19).

Table 19: Future resource requirements by cost categories for 2016-2020

COST CATEGORY	2016	2017	2018	2019	2020	TOTAL
	USD	USD	USD	USD	USD	USD
Polio Eradication Initiative	1,585,288	1,653,879	1,725,566	1,800,493	1,878,809	8,644,034
Measles Campaign	-	-	2,809,790	-	-	2,809,790
MNT Campaign	555,419	575,198	595,736	617,064	639,215	2,982,632
TOTAL CAMPAIGN COSTS	2,142,723	2,231,094	5,133,110	2,419,575	2,520,044	14,446,546

(c) Shared health system costs

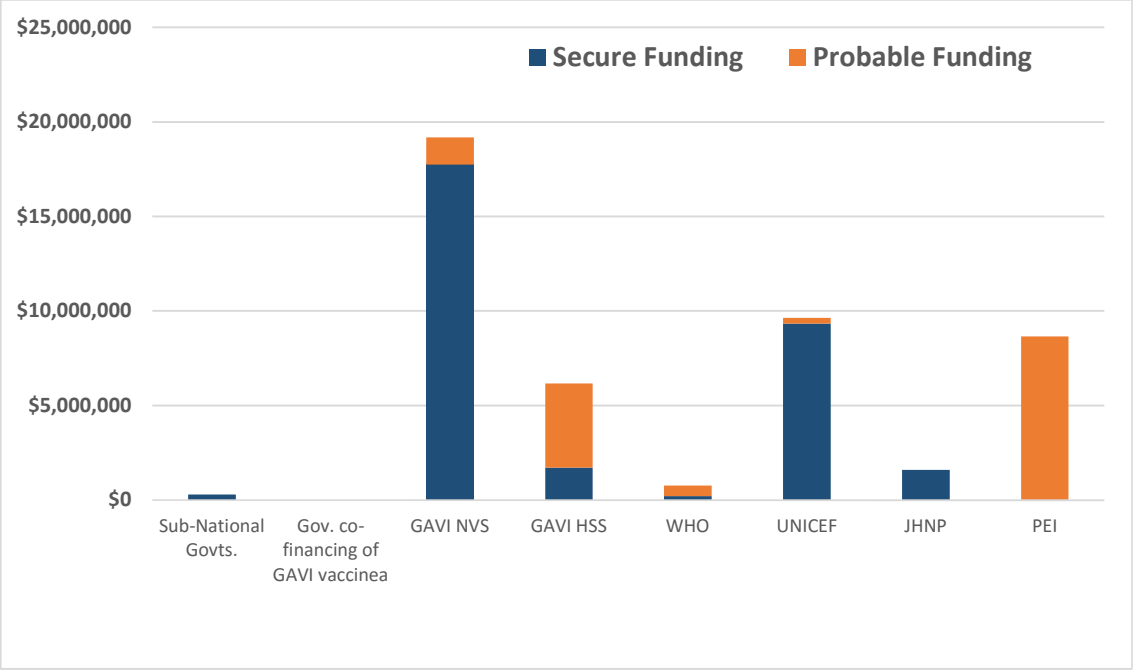
The contribution of Shared Health System costs is estimated at USD1.5 million, 2% of the total resource requirement. This contribution is required on account of shared personnel costs for immunization system.

The next section presents an analysis on future financing and funding gaps of the immunization program.

4.2 Future financing and funding gaps of the immunization program

The total financing available for the immunization program is estimated at USD13.8 million if only secured financing is considered. An additional USD15.3 million is available under probable funding.

Figure 7: Financing structure by sources and types of financing



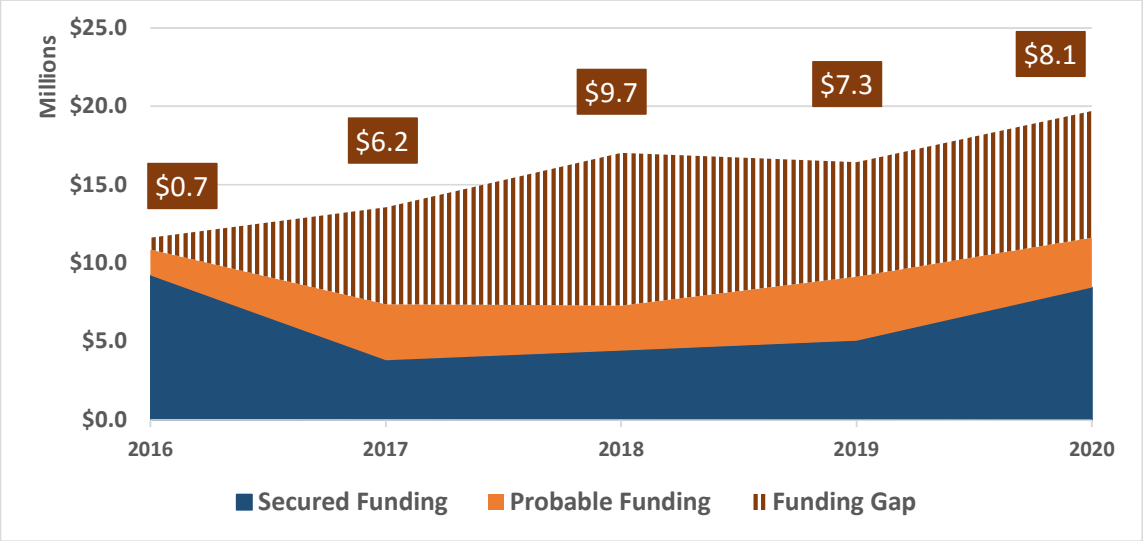
The projections on secure and probable funding presented in Figure 7 indicate that:

- GAVI (NVS) and UNICEF are the main sources of secure financing for immunization program in the next five years, contributing 57% and 30% of the total secured funding respectively.
- Secure financing under GAVI-HSS and JHNP is available until the end of 2016 only.
- Funding for the Co-financing share of the government is available from JHNP only for 2016.
- The secured contribution from the Sub-National governments amounts to less than 1% of the total secured financing. This covers some portion of the remunerations and allowances of the Government staff only.
- The World Health Organization is estimated to provide 0.74% under secure financing for surveillance and other program management activities.
- It is projected that the funding for Polio eradication activities is likely to be available under PEI but yet not secured.

Considering only the secure funds, there is a substantial funding gap of USD47.4 million (61%) for the period of 5 years. However, the funding gap is reduced to 41% (USD32 million) when probable funding is also accounted for.

As shown in Figure 8, the funding gap increases with passage of time and becomes USD8.1 million in 2020.

Figure 8: Year-wise financing and funding gap for 2016-2020



4.3 Funding gap analysis

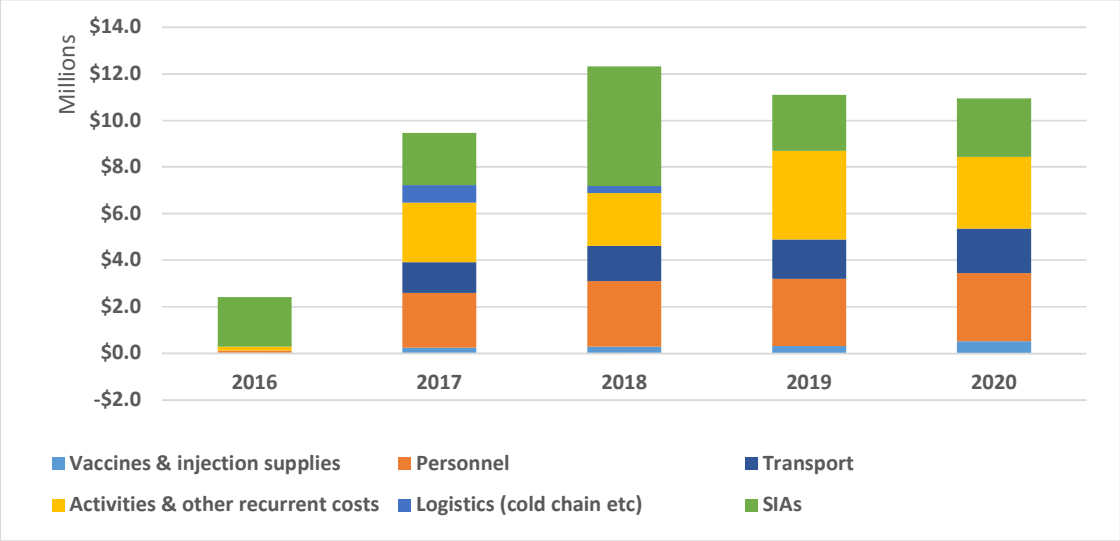
Funding gap amounts to USD46.2 million with only secured financing and USD30.8 million if probable financing is also considered (excluding shared costs), that is 61% and 41% of the total resource requirement respectively, as shown in Table 20.

Table 20: Funding gap by types of financing for 2016-2020 (without shared costs)

Composition of Funding Gap	Gap (secured)	Gap (secured + probable)
	USD	USD
Vaccines & Injection Supplies	1,348,053	1,348,053
Personnel	11,135,582	9,349,745
Transport	6,425,849	6,425,849
Activities & Other Recurrent Costs	11,843,335	7,938,225
Logistics (Cold Chain)	1,056,318	-
SIAs (Campaigns)	14,436,456	5,792,422
Total Funding Gap	46,245,593	30,854,294

Figure 9 indicates that the funding gap with only secure financing varies across different components in different years but it exists across the immunization components from 2017 onwards.

Figure 9: Structure of the funding gap with secure financing for 2016-2020 (without shared costs)



This funding gap is further analyzed under 6 categories: Vaccines and Injection Supplies, Personnel, Transport, Activities and other recurrent costs, Logistics and SIAs.

1. Vaccines and Injection Supplies

The immunization program is dependent upon UNICEF (for traditional vaccines and injection supplies), GAVI-NVS (underused and new vaccines) and external funding (co-financing share for the GAVI-supported vaccines). It is likely that UNICEF and GAVI-NVS will continue their funding. However, the funding for co-financing share for GAVI vaccines will be a major concern when JHNP comes to an end in 2016.

2. Personnel

It is critical requirement that qualified human resources are available for managerial and supervisory responsibilities and provision of immunization service delivery at the grass root level, especially outreach service. The total funding gap under this category is USD11.1 million. Taking into account the probable funding, the Somali government requires to mobilize nearly USD1.8 million to bridge this gap. It will be a big task in the context that GAVI-HSS and JHNP are coming to an end in 2016. Further, majority of the existing positions are supported through UNICEF. This is a major concern because salaries and per-diems of zonal, regional and district level EPI staff are mainly supported by UNICEF and also by WHO. In the absence of these funds, the government will be unable to extend its supervisory network by recruiting district EPI coordinators. A successful GAVI-HSS application is expected to provide the required support.

3. Transport

No probable funding is available for transportation. There exists a funding gap of USD6.4 million without which it will be not possible to conduct the following activities that are essential for the EPI functioning:

- Transportation of vaccines and logistics from Nairobi to Zonal Office
- Transportation of vaccines and logistics from Zonal EPI Stores to Regions and Health Facilities
- Monitoring visits by Zonal and Regional EPI Office
- Monitoring visits by District EPI Coordinators
- Outreach Vaccination by Health Facility Staff

Under the current circumstances, the availability of resources under this category is dependent upon financing from UNICEF and a successful GAVI-HSS application.

4. Activities and other recurrent costs

Under this category, the immunization program requires resources for the following key planned activities:

- Cold chain maintenance and overhead
- Maintenance of other capital equipment
- Social mobilization, advocacy and communication activities
    - Advocacy to political and technical leadership
    - Training of FHWs, village volunteers and communities on social mobilization
    - Seminars for religious leaders/media etc.
    - Formative Research
    - Development of IEC Materials
- Training and workshops
    - Capacity Building Program-TOT & Cascade trainings (MLM, RED/REC, EVM etc.)
    - Performance appraisal and competency assessment
    - Training of Cold Chain Technicians & logistic personnel
    - Trainings for vaccinators
- Program management
    - Technical Support for developing EPI Strategy for Nomads, P4P Scheme, MSDS etc.
    - Annual EPI Planning Workshops
    - Program Reviews (Zonal and Regional)

- Annual EPI Report
- Study Tours for EPI Managers
- Develop android-based Geo-location monitoring system for EPI supervisors and skilled immunization staff

- Other activities
  - Effective Vaccine Management Assessment
  - District level microplanning
  - New vaccine Introduction (Rota, PCV-13)
  - Coverage Evaluation Survey
  - Periodic Intensified Routine Immunization (PIRI) activities for inaccessible districts in South-Central Somalia
  - Annual inter-zonal EPI review meetings

Table 21 highlights that not enough secured funding is available for carrying out these activities that are critical for the functioning of the immunization program. These activities are essential for developing and strengthening EPI in Somalia. Without these important activities it will be impossible to improve the quality of immunization services through establishing performance-based practices and ensuring accountability in management practices.

Table 21: Breakdown of "Activities and other recurrent costs" funding gap by cost categories and types of financing

Composition of Funding Gap	Secure Funding		Probable Funding		Funding Gap	
	USD	%	USD	%	USD	%
Cold chain maintenance and overhead	1,444,896	68%	-	-	7,540,396	95%
Maintenance of other capital equipment	6,630	0.3%	-	-	27,873	0.4%
Short-term training	189,312	9%	319,071	8%	119,956	2%
IEC/Social Mobilization	91,290	4.3%	136,492	3%	-	-
Disease Surveillance	94,095	4%	395,579	10%	-	-
Program management	294,372	14%	404,929	10%	-	-
Other routine recurrent costs	-	-	2,649,039	68%	250,000	3%
Total	2,120,595		3,905,110		7,938,225	

5. Logistics (cold chain and other equipment)

Cold chain and other equipment are one of the areas where it is expected that secured and probable funding will meet the requirements. However, if this requirement is not met timely, it will delay the expansion in immunization coverage.

6. Supplementary Immunization Activities (SIAs) /Campaigns

The probable funding available for SIAs is primarily for PEI. The immunization program plans to conduct Measles campaign in 2018. If funding gap for Measles campaign remains, it increases likelihood of Measles epidemics. Similarly, no secure or probable funding available for conducting MNT campaign during 2016-2020.

4.4 Financial sustainability

Financial sustainability of immunization program is the primary responsibility of the Ministries of Health working under Zonal Governments and Federal Government of Somalia. However, the macroeconomic and sustainability indicators indicate that the immunization system is highly dependent upon external funding in Somalia (Annex 4). It includes both direct financing of EPI and also indirect financing of immunization services as part of JHNP and EPHS.

Somalia is at a critical stage of health development. The HSSPs are about to complete their terms in 2016. More significantly, the existing short-term funding opportunities (for example: JHNP, GAVI-HSS grant) are also coming to an end by 2016. The Government of Somalia well aware of the complexities and difficulties associated with this situation. Therefore, the current cMYP is designed on the structural foundations laid down under HSSPs. Therefore, objectives and strategies of cMYP have already been aligned with the future requirement of the second round of HSSPs for 2017-2020.

The Government of Somalia also plans to utilize this cMYP for developing the forthcoming GAVI-HSS Grant Application and the GAVI Cold Chain Equipment (CCE) Optimization Platform for strengthening the cold chain system.

The Government of Somalia realizes the limited fiscal space for health sector where immunization system has to compete with other health sector priorities. Therefore, the current cMYP not only focuses on availability of vaccines, injection supplies, cold chain, and other logistics but also to reform and strengthen the existing EPI management structures and business processes by employing the following strategies:

- Enhance efficient utilization of human resources by developing synergies with other health initiatives
- Minimize wastage of resources under immunization program
- Advocacy for ensuring financial sustainability of immunization program
- Synchronization of EPI with PEI and non-polio efforts and more efficient sharing of the resources on the ground (including joint micro-planning at district and health facility level) can serve as an effective sustainability strategy in terms saving financial resources and achieving programmatic synergies
- Establishing accountability mechanism through objective program reviews and field monitoring

5 Annexes

Annex 1: GVAP Checklist

GVAP Strategies	Key Activities	Activity included in cMYP			
		Yes	No	Not applicable	New activity
Strategic objective 1: All countries commit to immunization as a priority.					
Establish and sustain commitment to immunization.	Ensure legislation or legal framework in all countries, including provisions for a budget line for immunization, and for monitoring and reporting.	✓			
	Develop comprehensive national immunization plans that are part of overall national health plans through a bottom-up process including all stakeholders.	✓			
	Set ambitious but attainable country-specific targets within the context of morbidity and mortality reduction goals.	✓			
	Scrutinize, defend, and more closely follow immunization budgets, disbursements and immunization programme activities.	✓			
	Support local civil society organizations and professional associations to contribute to national discussions of immunizations and health.	✓			
Inform and engage opinion leaders on the value of immunization.	Explore models to promote collaboration between the stakeholders that generate evidence on immunization and those who use it to set priorities and formulate policies.	✓			
	Develop and disseminate the evidence base on the public health value of vaccines and immunization and the added value of achieving equity in access and use of immunization.	✓			
	Develop and disseminate the evidence base for the broad economic benefits of immunization for individuals, households, communities, and countries.	✓			
	Include immunization in the agendas of governing body meetings at all levels and in other social, health and economic forums.	✓			
Strengthen national capacity to formulate evidence-based policies.	Create or strengthen independent bodies that formulate national immunization policies (for example, NITAGs or regional technical advisory groups).			✓	
	Develop more effective ways for National Regulatory Agencies (NRAs), Health Sector Coordination Committees (HSCCs), and Interagency Coordination Committees (ICCs) to support immunization programmes as part of disease control programmes and preventive health care.	✓			
	Create regional forums and peer-to-peer exchange of information, best practices and tools.				✓
	Create expanded and more transparent mechanisms for aggregating, sharing, and using information to monitor commitments.				✓
Strategic objective 2: Individuals and communities understand the value of vaccines and demand immunization as both their right and responsibility.					
Engage individuals and communities on the benefits of immunization and hear their concerns.	Engage in a dialogue which both transmits information and responds to people's concerns and fears.	✓			
	Utilize social media tools and lessons from commercial and social marketing efforts.	✓			
	Leverage new mobile and Internet-based technologies.				✓
	Include immunization in the basic education curriculum.		✓		
	Conduct communications research.	✓			

GVAP Strategies	Key Activities	Activity included in cMYP			
		Yes	No	Not applicable	New activity
Create incentives to stimulate demand.	Create incentives to households and health workers for immunization, where appropriate and while respecting the autonomy of beneficiaries (for example, cash or in-kind transfers, bundling of services, media recognition).	✓			
	Conduct social research to improve the delivery of immunization services and the ability to meet the needs of diverse communities.	✓			
Build advocacy capacity.	Recruit new voices, including those of educators, religious leaders, traditional and social media personalities, family physicians, community health workers, and trained immunization champions (among others).	✓			
	Train healthcare workers on effective communication techniques, especially to address vaccine hesitancy and to respond to reports of serious adverse events following immunization in order to maintain trust and allay fears.	✓			
	Engage, enable and support in-country CSOs to advocate to local communities and policy-makers and in local and global media regarding the value of vaccines.	✓			
	Create national or regional advocacy plans that involve in-country CSOs.	✓			
	Link global, national and community advocacy efforts with professional and academic networks.	✓			
Strategic objective 3: The benefits of immunization are equitably extended to all people.					
Develop and implement new strategies to address inequities.	Recast "Reaching Every District" to "Reaching Every Community" to address inequities within districts.	✓			
	Engage underserved and marginalized groups to develop locally tailored, targeted strategies for reducing inequities.	✓			
	Introduce appropriate new vaccines in national immunization programmes (see also Objective 5).	✓			
	Establish a life course approach to immunization planning and implementation, including new strategies to ensure equity across the life span.			✓	
	Prevent and respond to vaccine-preventable diseases during disease outbreaks, humanitarian crises, and in conflict zones.	✓			
Build knowledge base and capacity to enable equitable delivery.	Track each individual's immunization status, leveraging immunization registries, electronic databases and national identification number systems.	✓			
	Take advantage of community structures to enhance communication and deliver services (for example, traditional birth attendants, birth registries).	✓			
	Involve CSOs in community outreach and planning.			✓	
	Develop new approaches to community engagement for urban and peri-urban areas.	✓			
	Train health workers and CSOs on how to engage communities, identify influential people who can assist in planning, organizing and monitoring health and immunization programmes, identify community needs and work with communities to meet those needs.	✓			
	Conduct operational and social science research to identify successful strategies to reduce inequities and improve the quality and delivery of immunization services.	✓			

GVAP Strategies	Key Activities	Activity included in cMYP			
		Yes	No	Not applicable	New activity
Strategic objective 4: Strong immunization systems that are an integral part of a well-functioning health system.					
Develop comprehensive and coordinated approaches.	Ensure that global vaccine programmes focusing on eradication and elimination goals are incorporated into national immunization programmes.	✓			
	Ensure that new vaccine deployment is accompanied by comprehensive disease control plans	✓			
	Ensure coordination between the public and private sectors for new vaccine introduction, reporting of vaccine-preventable diseases and administration of vaccines, and ensure quality of vaccination in the public and private sectors.	✓			
	Consider the inclusion of vaccines in health programmes across the life course.			✓	
Strengthen monitoring and surveillance systems.	Improve the quality of all immunization administrative data and promote its analysis and use at all administrative levels to improve programme performances.	✓			
	Develop and promote the use of new technologies for collection, transmission and analysis of immunization data.	✓			
	Further strengthen, improve quality and expand disease surveillance systems to generate information based on laboratory confirmed cases for decision-making, monitoring the impact of immunization on morbidity and mortality and changes in disease epidemiology.	✓			
	Ensure capacity for vaccine safety activities, including capacity to collect and interpret safety data, with enhanced capacity in countries that introduce newly developed vaccines.	✓			
Strengthen capacity of managers and frontline workers.	Ensure that immunization and other primary health care programmes have adequate human resources to schedule and deliver predictable services of acceptable quality.	✓			
	Increase levels of pre-service, in-service and post-service training for human resources, and develop new, relevant curricula that approach immunization as a component of comprehensive disease control.	✓			
	Promote coordinated training and supervision of community-based health workers.	✓			
Strengthen infrastructure and logistics.	Innovate to improve cold chain capacity and logistics, as well as waste management.	✓			
	Minimize the environmental impact of energy, materials and processes used in immunization supply systems, both within countries and globally.	✓			
	Staff supply systems with adequate numbers of competent, motivated and empowered personnel at all levels.	✓			
	Establish information systems that help staff accurately track the available supply.	✓			
Strategic objective 5: Immunization programmes have sustainable access to predictable funding, quality supply and innovative technologies.					
Increase total amount of funding.	Establish a commitment for governments to invest in immunization according to their ability to pay and the expected benefits.	✓			
	Engage new potential domestic and development partners and diversify sources of funding.	✓			

GVAP Strategies	Key Activities	Activity included in cMYP			
		Yes	No	Not applicable	New activity
	Develop the next generation of innovative financing mechanisms.			✓	
Increase affordability for middle-income countries.	Explore differential pricing approaches to define explicit criteria for price tiers and the current and future prices to be made available to lower middle-income and middle-income countries.			✓	
	Explore pooled negotiation or procurement mechanisms for lower-middle-income and middle income countries.			✓	
Improve allocation of funding in low- and middle-income countries.	Strengthen budgeting and financial management in-country to better integrate financial and health care planning and priority setting.	✓			
	Coordinate funding support from development partners and other external sources.	✓			
	Evaluate and improve funding support mechanisms on the basis of their effectiveness in reaching disease goals.	✓			
	Base funding on transparency and objectivity in order to ensure the sustainability of programmes.	✓			
	Promote the use of cost and cost-benefit arguments in fund raising, decision-making, and defense of immunization funding.	✓			
	Explore pay-for-performance funding systems.	✓			
Secure quality supply	Build and support networks of regulators and suppliers to share best practices and to improve quality assurance capabilities and quality control.			✓	
	Develop tools to strengthen global standardization of manufacturing and regulatory processes.			✓	
	Strengthen national regulatory systems and develop globally harmonized regulations.			✓	
	Ensure a forum where countries can communicate expected demand for vaccines and technologies and provide guidance to manufacturers on desired product profiles.			✓	
Strategic objective 6: Country, regional and global R&D innovations maximize the benefits of immunization.					
Expand capabilities and increase engagement with end-users.	Engage with end users to prioritize vaccines and innovations according to perceived demand and added value.			✓	
	Establish platforms for exchange of information on immunization research and consensus building.			✓	
	Build more capacity and human resources in low- and middle-income countries to conduct R&D and operational research.			✓	
	Increase networking among research centres for efficient building of partnerships among high-, middle- and low-income countries' institutions.			✓	
	Promote collaboration between traditional research disciplines and scientists from disciplines not previously engaged in vaccine research.			✓	
Enable the development of new vaccines	Research on the fundamentals of innate and adaptive immune responses, particularly in humans.			✓	
	Research on immunologic and molecular characteristics of microbes.			✓	
	Improve understanding of the extent and causes of variation in pathogen and human population responses to vaccines.			✓	
Accelerate development,	Promote greater access to technology, know-how and intellectual property for adjuvants and their formulation into vaccines.			✓	

GVAP Strategies	Key Activities	Activity included in cMYP			
		Yes	No	Not applicable	New activity
licensing and uptake of vaccines.	Develop non-syringe delivery mechanisms and vaccine packaging that best suit the needs and constraints of countries' programmes.			✓	
	Develop thermo-stable rotavirus and measles vaccines.			✓	
	Develop new bioprocessing and manufacturing technologies.			✓	
	Develop a global, regulatory science research agenda.			✓	
	Adopt best practices in portfolio and partnership management for R&D			✓	
Improve programme efficiencies and increase coverage and impact.	Research the use of more effective information through modern communication technologies.	✓			
	Conduct representative epidemiological, immunological, social and operational studies and investigations of vaccine impact to guide health economics analysis.	✓			
	Perform operational research on improved delivery approaches for life course immunization, and vaccination in humanitarian emergencies, fragile states and countries in and emerging from conflict.		✓		
	Perform research on interference effects and optimum delivery schedules.			✓	
	Perform research to develop improved diagnostic tools for conducting surveillance in low-income countries.			✓	

Annex 2: Immunization coverage targets for cMYP 2016-2020

Type of Vaccine	Baseline	Coverage Targets				
	2014	2016	2017	2018	2019	2020
BCG	31.4%	46%	61%	71%	82%	90%
OPV0	17.5%	26%	34%	42%	49%	57%
OPV	38.6%	48%	59%	67%	74%	84%
Pentavalent (DPT-HepB-Hib)	38.4%	48%	59%	67%	74%	84%
Pneumococcal (PCV13)						20%
Rota vaccine						20%
IPV		37%	56%	66%	74%	84%
Measles	44.8%	47%	56%	65%	73%	83%
Tetanus Toxoid	24.8%	32%	43%	55%	66%	78%

Annex 3: Future secure financing and gaps (shared costs excluded)

Secured Financing	2016	2017	2018	2019	2020
	USD	USD	USD	USD	USD
Federal Government	-	-	-	-	-
Sub-national governments	47,883	55,631	67,015	64,910	66,208
Govt. Co-financing of GAVI vaccine	-	-	-	-	-
GAVI NVS	2,085,931	2,624,342	3,021,663	3,452,019	6,555,893
GAVI HSS	1,720,326	-	-	-	-
WHO	203,761	-	-	-	-
UNICEF	3,553,726	1,126,225	1,325,400	1,522,675	1,811,048
JHNP	1,583,632	-	-	-	-
PEI	-	-	-	-	-
Total Secure Funding	9,195,260	3,806,197	4,414,078	5,039,604	8,433,150
Total Resources Needed	11,612,798	13,556,077	17,022,641	16,444,487	19,693,376
Funding Gap	2,417,538	9,749,880	12,608,563	11,404,883	11,260,226

Annex 4: Macroeconomic and sustainability indicators

Macroeconomic and sustainability indicators	2014	2016	2017	2018	2019	2020
Per capita GDP ($)	284	284	284	284	284	284
Total Health Expenditures (THE) per capita ($)	13	13	13	13	13	13
Population (Millions)	123.2	130.2	133.8	137.6	141.4	145.4
GDP ($ Million)	34,980	36,966	38,001	39,065	40,159	41,284
Total Health Expenditures ($ Million)	1,601	1,692	1,739	1,788	1,838	1,890
Government Health Expenditures ($ Million)	400	423	435	447	460	472
Resource requirements for immunization						
Routine and SIAS (Campaigns) includes vaccines and operational costs) ($ Million)	288	116	136	170	164	197
Routine only (includes vaccines and operational costs) ($ Million)	79	95	113	119	140	172
Per DTP3 immunized child ($)	45.9	41.4	39.4	35.5	36.5	38.3
% Of Total Health Expenditures (THE)						
Resource requirements for immunization						
Routine and SIAS (Campaigns) includes vaccines and operational costs)	17.97%	6.86%	7.79%	9.52%	8.95%	10.42%
Routine only (includes vaccines and operational costs)	4.96%	5.60%	6.51%	6.65%	7.63%	9.09%
Funding gap						
Funding gap (with secured funds only)		1.43%	5.60%	7.05%	6.20%	5.96%
Funding gap (with secured & probable funds)		0.44%	3.55%	5.45%	3.98%	4.27%
% Government Health Expenditures						
Resource requirements for immunization						
Routine and SIAS (Campaigns) includes vaccines and operational costs)	71.89%	27.45%	31.17%	38.08%	35.78%	41.68%

Routine only (includes vaccines and operational costs)	19.84%	22.39%	26.05%	26.60%	30.52%	36.35%
Funding gap						
Funding gap (with secured funds only)		5.71%	22.42%	28.20%	24.82%	23.83%
Funding gap (with secured & probable funds)		1.74%	14.22%	21.79%	15.91%	17.09%
% GDP						
Resource requirements for immunization						
Routine and SIAS (Campaigns) includes vaccines and operational costs)	0.82%	0.31%	0.36%	0.44%	0.41%	0.48%
Routine only (includes vaccines and operational costs)	0.23%	0.26%	0.30%	0.30%	0.35%	0.42%
Per capita	**2014**	**2016**	**2017**	**2018**	**2019**	**2020**
Resource requirements for immunization						
Routine and SIAS (Campaigns) includes vaccines and operational costs) ($)	2.34	0.89	1.01	1.24	1.16	1.35
Routine only (includes vaccines and operational costs) ($)	0.64	0.73	0.85	0.86	0.99	1.18