Sudan

Joint Appraisal report 2018

Country	**Sudan**
Full JA or JA update	☑ **full JA** ☐ JA update
Date and location of Joint Appraisal meeting	24-27 September 2018 - Khartoum
Participants / affiliation[1]	Attached list of participants
Reporting period	Jan-Dec 2017
Fiscal period[2]	2016- 2017
Comprehensive Multi Year Plan (cMYP) duration	2017-2021
Gavi transition / co-financing group	Preparatory transition…

1. RENEWAL AND EXTENSION REQUESTS

Renewal requests were submitted on the country portal

Vaccine (NVS) renewal request (by 15 May)	Yes ✓☐ No ☐ N/A ☐
HSS renewal request *	Yes ✓☐ No ☐ N/A ☐
CCEOP renewal request	Yes ☐ No ☐ N/A ☐✓

*Requesting HSS no cost extension for the period of July 2019 to June 2020 and approval of next annual tranche for disbursement.

Observations on vaccine request

Population	**44,571,144**				
Birth cohort	**1,690,238**				
Vaccine	**Penta**	**Rota**	**PCV13**	**IPV**	**MenA**
Population in the target age cohort	**1,520,161**	**1,520,161**	**1,520,161**	**1,520,161**	**1,520,161**
Target population to be vaccinated (first dose)	**1,480,012**	**1,480,012**	**1,480,012**	**1,391,211**	**1,368,145**
Target population to be vaccinated (last dose)	**1,391,211**	**1,361,611**	**1,391,211**	**NA**	**NA**
Implied coverage rate	**94 %**	**92%**	**94. %**	**94%**	**90%**
Last available WUENIC coverage rate	**1,439,013 (94.7%)**	**1,448,618 (95.2%)**	**1,438,848 (94.6%)**	**7388 (0.5%)**	**1,246,987 (82%)**
Last available admin coverage rate	**1,439,013 (94.7%)**	**1,448,618 (95.2%)**	**1,438,848 (94.6%)**	**7388 (0.5%)**	**1,246,987 (82%)**
Wastage rate	**1%**	**1%**	**1%**	**4.6%**	**29%**
Buffer	**1,075679**	**699699**	**1,098,325**	**478,718**	**475718**
Stock reported	**2,148,187**	**1,652,650**	**2,417,650**	**486,900**	**1,309,740**

Source for wastage rate: EPI annual report

[1] If taking too much space, the list of participants may also be provided as an annex.
[2] If the country reporting period deviates from the fiscal period, please provide a short explanation.

The population used for vaccine need calculation was based in the EPI administrative population data estimation for 2017. This operational figure provide opportunity for more accurate and reliable vaccines and other immunization supplies forecasting.

The program has reached all the planned targeted coverage with slight increase for Pentavalent (94.7%), Rota (95.2%) and PCV (94.6%). Inactivated Polio Vaccine (IPV) was not available (stock out) throughout the year due to global vaccine shortage. The birth Cohort who missed their planned dose will be reached through a catch-up campaign as soon as it become possible.

Vaccine wastage rate for Gavi-supported and traditional vaccine for antigens is within the recommended wastage rate as showed in the table below. System wastage was reported during 2017.

Vaccine wastage rate 2017:

Vaccine	Penta	Rota	PCV13	IPV	MenA	bOPV	Measles	TT	BCG
Wastage rate	1%	1%	1%	4.6%	29%	11%	16%	13%	34%

Indicative interest to introduce new vaccines or request Health System Strengthening support from Gavi in the future[3]

Indicative interest to introduce new vaccines or request HSS support from Gavi	Programme	Expected application year	Expected introduction year
	Yellow fever	Jan 2019	Jan 2020
	CCEOP	Jan 2019	Sep 2019
	HSS new grant	Sep2019	Jan 2020
	MR	Sep 2019	Jan 2021

2. RECENT CHANGES IN COUNTRY CONTEXT AND POTENTIAL RISKS FOR NEXT YEAR

The Republic of the Sudan is the third largest country in Africa, with a land area of 1.882 million km2. It shares borders with seven countries and has a coastal line along the Red Sea. Sudan is a multiracial, multicultural nation distributed along 18 states and 189 localities only four of them lies South Kordofan (Dalami 428, Umdorain 3561,Alburam 1510 ,Heban 4435 , and Blue Nile states, which completely closed because of conflict. The total population accounts to 40,782,742
Million people out of which around 70% live in rural areas and 8% are pastoralists. There are **2.2** million internally displaced people, and refugees from neighboring countries amount to another **2 million** 74% of (south Sudanese refugees) out of camps. Currently, Sudan is witnessing growing transformation towards urbanization. The population's growth rate is 2.8% with a total fertility rate of 5.2 and the family size ranges from 5-6 members. Children less than 5 years old represent 15.2% of the total population amounted to 7,033,567 under-five children and 1,520,161 infants, while those less than 18 years o ld represent 50.6%. About 46.5% of the population lives below the poverty line earning less than $1 a day, with 8% living in extreme poverty. Disparities between rural, semi-rural and urban areas are evident with a poverty rate of 67.4% in semi-rural and 64.8% in rural areas and 8% are nomads. The country ranks 165th on the Human Development Index (HDI). The adult literacy rate in Sudan is 69% and 45.2% among women aged 15-24 years. The primary education enrolment is 46%; with 82.2% of the cohort entering primary school completing primary education. Sudan is a lower middle-income country with a per capita gross domestic product (GDP) of $1,940 in 2014 and an annual economic growth rate of 2.3 percent.

Outbreaks and emergencies:

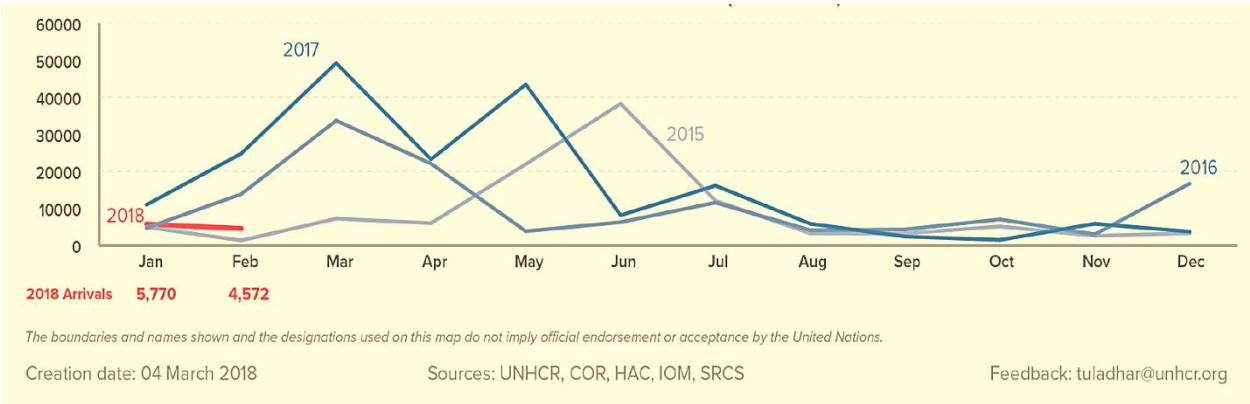
Due to massive influx of refugees from neighboring countries (South Sudan and other countries in the region), and floods, Sudan was experienced several health emergencies in 2017 mainly; Acute Watery Diarrhea, total number of reported cases was **36,962** with case fatality rate 2.23%. Despite the remarkable reduction of measles during 2017 compared to 2015-2016 but still 5 localities (Kassala town, Reifi aroma, West Kassala, Sodary, Abuhamad) from 3 states (Kassala, North Kordofan, River Nile) were reported measles outbreak, total number

[3] Providing this information does not constitute any obligation for either the country or Gavi, it merely serves for information purposes.

of reported 438 cases. There was around 45 suspected diphtheria cases reported from 9 states and 203suspected pertussis cases reported from 5 localities in 4 states but with no outbreaks.

The significant population movement and influx of refugees, Internally Displaced Population (IDP) and returnees: Instability in neighboring countries and in the region resulted in high number of refugees who crossed the boarders to Sudan. Among the refugees, **771,376** are from South Sudan, which is the second-largest number of South Sudanese refuges in the region. In November 2017, in an effort to better account for all South Sudanese refugees in Sudan, UNHCR and the Commission of Refugees (COR) in Sudan amended the official population statistics for South Sudanese refugees to over 805,000.

Monthly arrival trends of South Sudanese Refugees in Sudan (2015-2018)

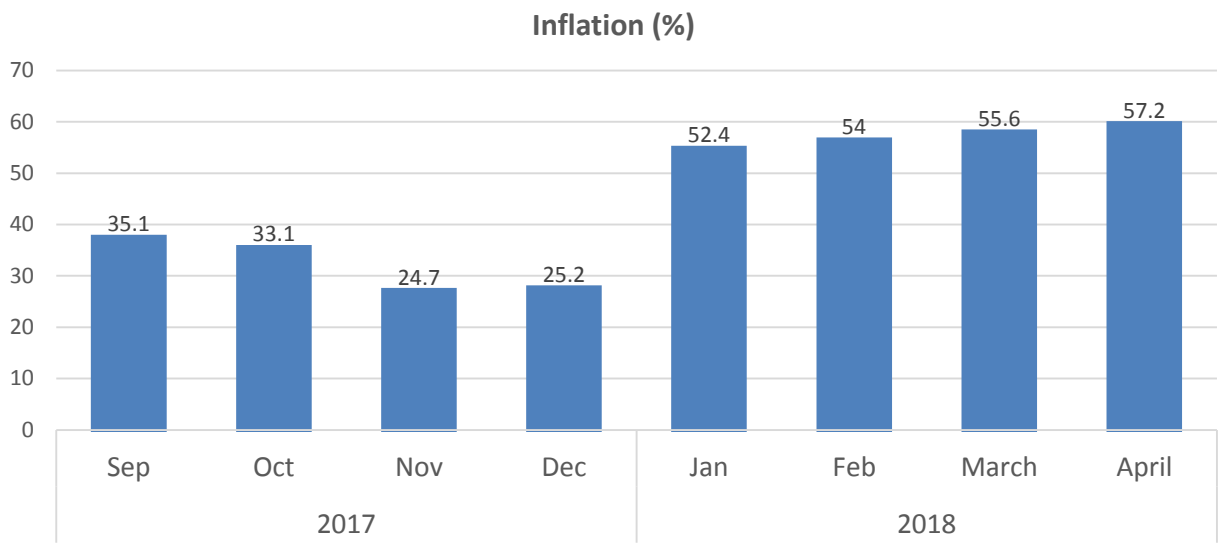


Access to conflict affected areas

Access to health services has improved in areas that were not accessible before, mainly in Jabal Marra in Darfur region. However, some parts of Jabal Marra (upper mountain villages), in addition to the three areas in South Kordofan and Blue Nile States are still inaccessible. More advocacy and involvement of tribal and community leaders is ongoing to ensure that population in these areas will have access to basic health services including immunization. Recent experience of containing AWD outbreak in the inaccessible areas in Jabal Marra is an example of the roles that community can play to address these barriers.

Impact of economic downturn on health

- Sudan faces economic crises resulted in increase of inflation rate, devaluation of the local currency and severe shortages of fuel. The impact of economic situation on health includes disruption of provision of health services and delays in implementation of some interventions including, immunization campaigns. FMOH organized a meeting with donors and development partners to discuss the impact of economic situation on health and requested partners to support FMOH to address the immediate needs and ensure sustainability of the gains and achievements during the past years that include immunization.
- Out of pocket, expenditure represents 79% of the total health expenditure despite the increase in Government expenditure on health from 6% in 2012 to 10% in 2016 out of the total Government budget.
- In 2017, the contribution of Government in EPI budget was 12%, while Gavi supported 60% of the budget and other partners covered the remaining.



Source: Central Bureau of Statistics, year on year rate 2018

Endorsement of National Health Policy NHP 2017 -2030

NHP was developed through inclusive and participatory approach. It aspires to contribute to Sudan's national development vision through effectively responding to health challenges and priority health needs. It is guiding health system reform to re orient health system enshrined in universal health coverage with focus on promotion of health and wellbeing of Sudanese in line with the Sustainable Development Goals SDGs. FMOH has developed and endorsed other key policies and strategies which include:

- Health finance policy and strategy;
- UHC declaration 2017;
- Family health policy and strategy;
- Health in All Policies (HiAPs) road map;
- Global health strategy (focusing on health security, HRH, trade and health and health diplomacy);
- Sub-system policies (laboratories, blood transfusion, HRH, pharmacy, etc.)

Polio transition:

During 2017 the transitional plan was drafted and shared with partners for feedback before endorsement summary of the plan is below:

Transition planning of polio, defined as the sustained interruption of transmission in a sizeable geographic area with the continuation of vaccination to guard against reintroduction. The Mission of the plan is to benefit from polio related resources, financial, programmatic, capacity support and ensuring healthy lives and promoting well-being for all, through strengthen health systems and to progress towards universal health coverage and ensuring access to high-quality essential health care services and medicines, including vaccines. The plan has general objectives is to insure that the investments made to eradicate poliomyelitis contribute to future health goals, through a program of work to systematically document and transition the knowledge, lessons learned and assets of the [GPEI] by 2021 and beyond and this will be reached through specific objectives which are

- Sustain a polio-free and maintain essential functions needed especially in fragile states by 2021 and beyond
- Strengthening country capacity for public health surveillance
- Integrating essential functions into broader health programmers
- Develop detailed costing

As the Sudan moves towards certification of the eradication of wild poliovirus and implementation of the post-certification strategy. A set of capacities and assets with good leadership will need to be maintained

to sustain polio-essential functions and capacities in order to complete the process of certification of polio eradication, and to ensure that a polio-free sustained after certification.

Current targets

The joint Transition taskforce which includes Ministry of Health, WHO and UNICEF, followed the recommendation of the WHO that Sudan is in need to conduct a nation Transition plan scale the post-polio eradication era.

Potential future targets

National EPI in Sudan considers strengthening AFP surveillance, involves reinforcing the performance of the system, building the skills and competencies of the surveillance staffs at state, locality and reporting site levels, improving the exchange, and dissemination of relevant good quality information and ensuring accessibility to the information derived from the system. Strengthening the routine coverage for IPV in addition to conduct follow up campaign for under 5 years every three years this will be implemented through three strategies

1. Achieve and maintain high levels of population immunity by providing high vaccination coverage with bOPV and IPV vaccines
2. Monitor disease using effective surveillance and evaluate programmatic efforts to ensure progress
3. Develop and maintain outbreak preparedness and respond rapidly to outbreaks and manage cases
4. Mobilize more resources from domestic government budget and from other international mechanisms and donors

Key risks include:

1. Economic downturn has impacts on health system
2. Instability in the region and population movement (IDPs, returnees and refugees) that strain health system and pose great risk on health security;
3. Outbreaks and emergencies particularly, AWD, Measles, Pertussis, and Diphtheria …etc
4. Continued brain drain of health mid-level management staff that negatively impacts program management and quality of EPI performance
5. Although government started to put investment on traditional vaccines however the gap to be fulfilled by UNICEF remains huge especially with current funding trend and lack of interest from donors increase the likelihood of emergence of funding gap that will adversely affect the coverage of these vaccines , **Short term measures for 2018:**
    - Acceleration receipt of agreed upon government contribution for traditional vaccines
    - Negotiation with UNICEF HQ and senior management to increase mobilization of internal regular resources to support vaccines
    - Long term up to 2021
    - Advocacy with government to increase the annual contribution during the period 2018-2021
    - Advocacy among non-regular donors to raise fund for vaccines

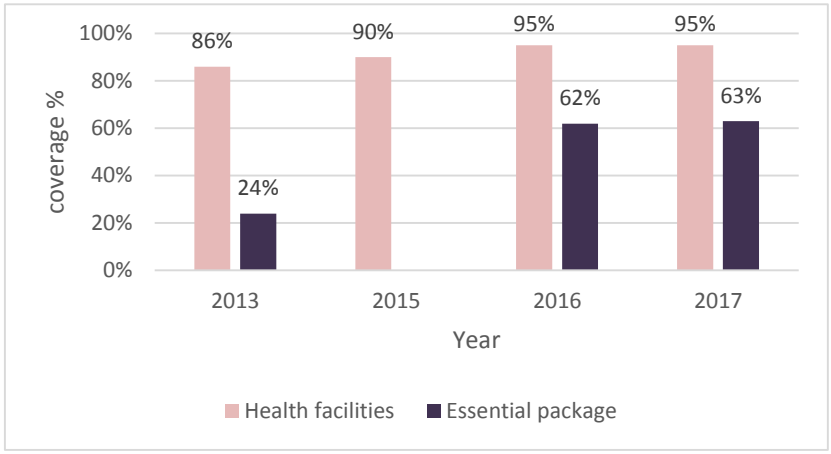
3. PERFORMANCE OF THE IMMUNISATION PROGRAMME

3.1. Coverage and equity of immunisation

Coverage with PHC fixed sites:

The geographical access to health services fixed sites have slightly increased during the 2017. In which 528 health facilities had been constructed out of 1004 planned for the year. This number of newly

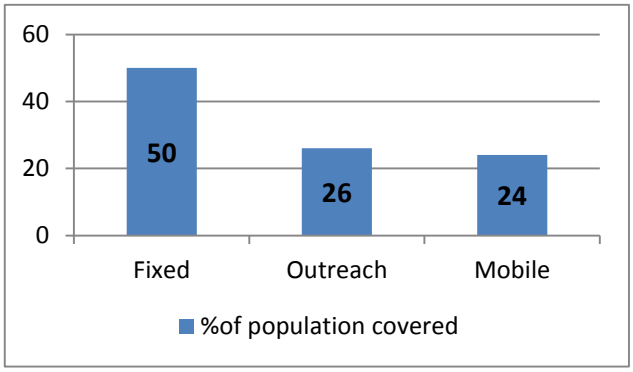
constructed facilities had no high reflection in the percentage of population coverage. The percentage of the coverage with essential package including EPI had improved to 63%. See the graph below.



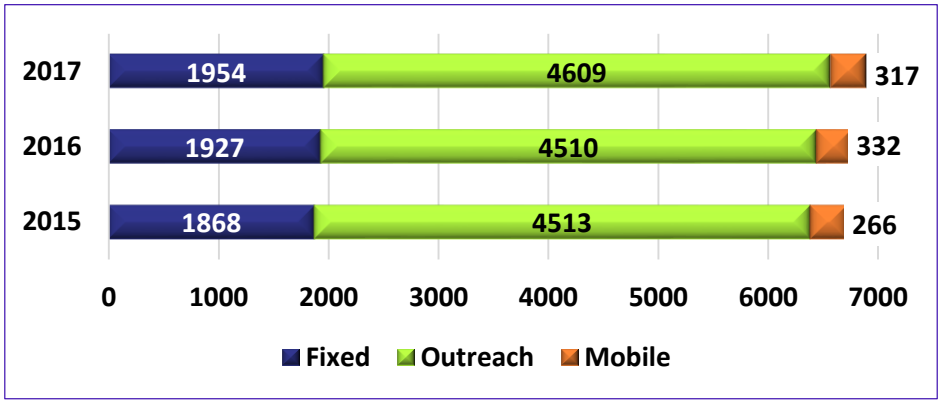
One of the challenges discussed in the mid-annual review is delay in the completion and handing over the construction of the health facilities due to the change in the economic status and increase inflation, which resulted in fluctuation of the prices.

EPI Coverage:

Immunization services in Sudan delivered through three main strategies; fixed, outreach and mobile. The below graph show the % of population covered by each strategy 2017.



The EPI target is to expand the fixed services to cover most of the population, as the other two strategies are more expensive. a success has been achieved regard as shown in the below graph, however more effort will be done in the coming years utilizing the opportunity of PHC expansion as well as the CCE OP support to open more fixed sites.



The routine immunization coverage in the country varies with different antigens; there are vaccines that have achieved the targeted coverage of more than 90% since 2008 (BCG, Penta3 and polio3) with dropout rate (DOR) between first and third dose more than 5%. 2017 witnessed great improvement in measles vaccination that was stagnant for several years, where MCV1 reached 90% for the first time and MCV2 reached 72% at national level. During the coming years efforts need to be focused to reduce MCV1-MCV2

Dropout and inter locality variation in order to ensure sustained high population immunity that can interrupt. TT 2+ vaccination remained stagnant with a coverage of only 53%

Regular in-depth analysis used to be done on quarterly basis for the root causes beyond this low coverage by the EPI team and the main causes identified were ;

- High dependency on volunteers in implementing the vaccination session and the low incentive rates affected session implementation
- High turnover of qualified midlevel staff affected implementation as well as programme management.
- Accessibility and security issues:
- S. Kordofan state had 4 localities total un-accessible and 9 partially accessible localities
- Blue Nile had 2 locality partially accessible

Also a community based study to give insight on the reasons for none vaccination in low performing localities to inform planning and implementation of immunization activities is planned to take place

Equity :-

The inequities in immunization services may include differences between populations with ethnicity, gender or socioeconomic status. Implementation of Reaching Every District (RED) approach facilitated equitable in immunization services. Vision of EPI in Sudan is to reach every child regardless his/her sex, ethnicity, tribe, location, rich or poor. To guarantee this:

- Immunization services in Sudan distributed all over the country using different strategies e.g. fixed, out-reach or mobile wherever it suits; immunization services are free of charge even if offered through private clinics.
- Annually special plans to reach the children in hard to reach, nomads, IDPs or closed areas developed and the implementation closely monitored by the FMOH jointly with partners mainly WHO and UNICEF.

Sudan adopt several approaches to enhance equitable service delivery and reaching every and last child. These approaches are:

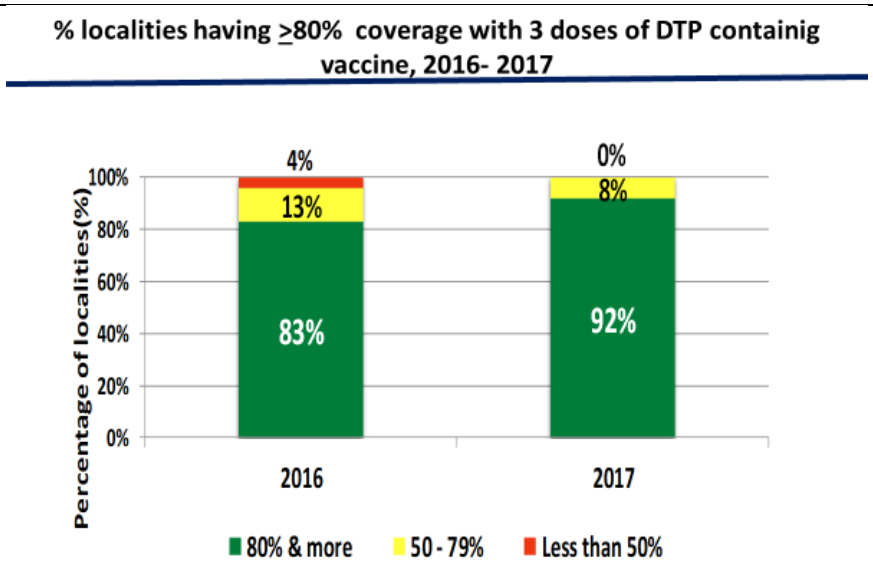
- Implementation of systems to identify and reduce missed opportunities to vaccination
- Second year vaccination and booster vaccination
- Full implementation of Reaching Every Community approach (REC)

1. Gender

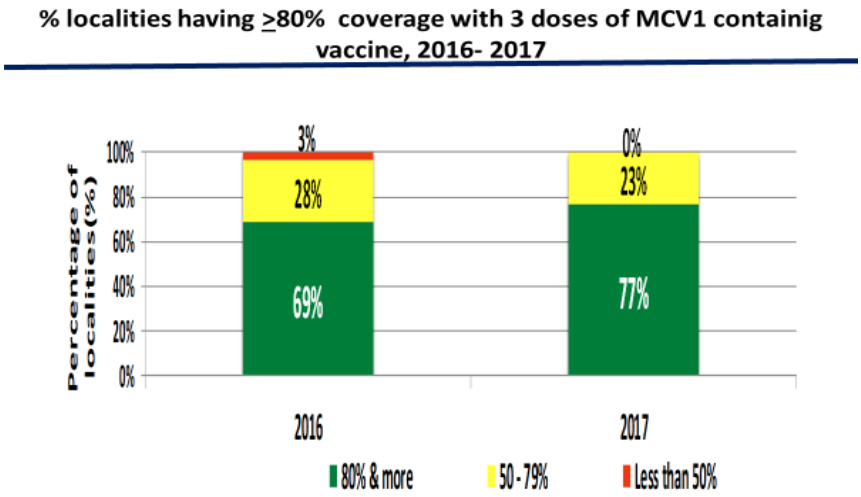
Sudan is a diversified country and certain degree of gender disparities couldn't be ruled out. There is no documented evidence to conclude existence of gender based disparities in accessing PHC/immunization services in Sudan. However, the existing routine immunization data 2017 shows that, it is almost equal percentage of vaccinated children, where males is (48.5%) and females is (51.5%).
Also in a positive note, volunteers providing routine and supplementary immunization services are predominantly females. In addition to that, in areas (e.g. Eastern zone of Sudan) that have certain norms related to limiting women contact with foreigners especially males, vaccination teams are usually selected from the local communities female volunteers as much as possible in order to ensure gender equity during the vaccination campaigns. The graph below shows the % of Penta3 coverage by gender /state 2017

2. Geographical coverage

Coverage achievement by locality is used to analyses geographical coverage as an indicator of equity, 2017 witnessed good improvement in vaccination coverage by locality when using Penta 3 as a tracer. As per below graph



However measles coverage by locality remains an area for action as show by the below chart



3. Hard to reach, special and disadvantaged population

Special population groups represents ; Nomads, IDPs, Displaced persons, Refugees, crossing points and tribes with customs and traditions that negatively affects immunization services, closed communities with cultural/geographical barriers living in conflict-affected areas, difficult access area.

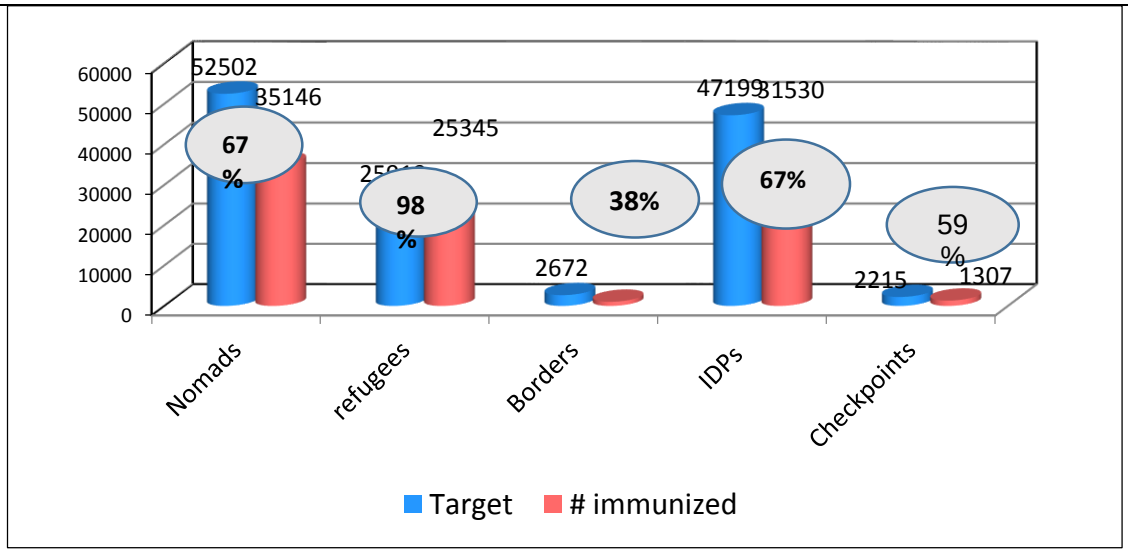
The Special population groups represent, 13% of all children targeted with routine immunization services in Sudan

Strategies for delivering immunization services :

Routine immunization according to type of special population group carried out by the three vaccination strategies fixed, mobile and outreach.

A focal person often selected from the group; trained to provide the service in order to know the customs, traditions and language. As for the mobile groups, usually vaccinated by the mobile teams after determining their location and routes the identification focal person is coordinated with him for location identification and vaccination.

Percentage Penta3 coverage – For the Special groups Sudan 2017

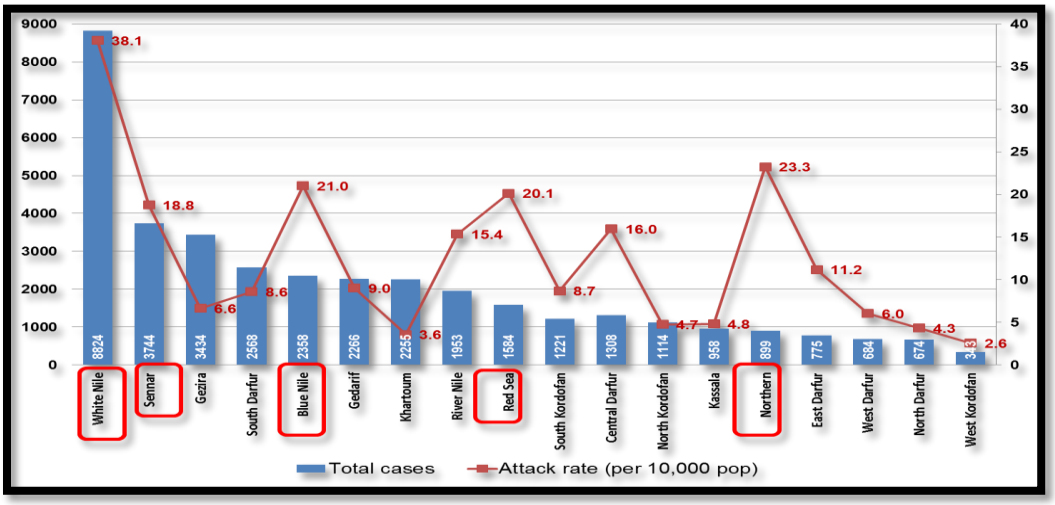


Most of the reported AFP cases were from resident population (88%), the remaining 12% were nomads (5.4%), IDPs (5.2%) and refugees (1.4%). These percentages are acceptable based on the population of each group, and reflecting the functionality of the AFP surveillance.

Outbreaks

Acute Watery Diarrhea: The outbreak that started in 2016 continued in 2017, cases reported in all (18) states. Total number of reported cases was 36,962 with 823 deaths (case fatality rate was 2.23%). This continued emergency posed an additional burden on the health system in general and immunization system in specific at national and sub-national levels. EPI and Polio officers from MOH and partner agencies were fully involved in the implementation of the response plan. WHO and UNICEF has supported the development and submission of OCV proposal to the Global Task Force on Cholera Control (GTFCC). WHO conducted an independent external evaluation of AWD multi-sectoral response to provide recommendations to the Government of Sudan and its partners to address identified gaps/challenges and inform the update/ revision of the National AWD Preparedness and Response Plan

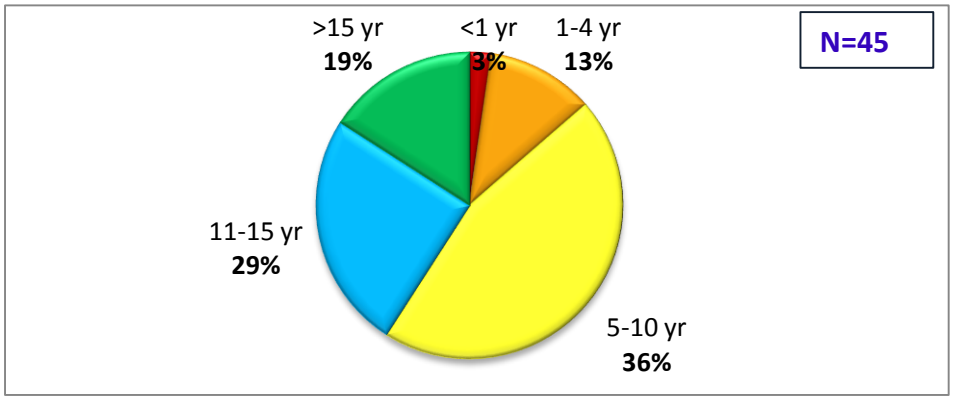
AWD cases and attack rate
Total AWD cases: 36,962 (823 deaths) CFR: 2.23%



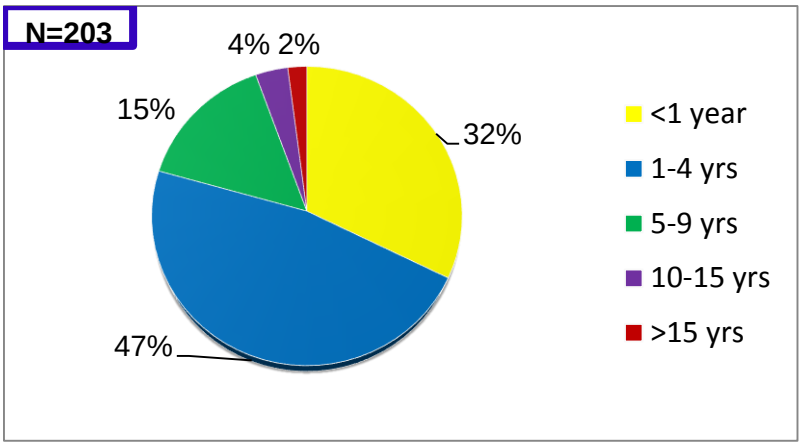
- Measles Outbreaks in 2017 were limited in only 3 states and relatively small in number compared with 2015-2016, table below summarizes measles outbreaks :

State	Locality	Time	Number of Cases	Clinical samples	Response
Kassala	Kassala town	Oct 2016 -June 2017	192	Yes	Review of the routine immunization performance was conducted and a plan of action to improve it was prepared.
	Reifi Aroma	Dec 2016 – August 2017	52	Yes	
	West Kassala	Oct 2016 -July 2017	147	Yes	
North Kordfan	Sodary	May-June	23	No	campaign
River Nile	Abu Hamad	Mar-May	24	No	Campaign

Distribution of Probable Diphtheria Cases by Age Group, Sudan 2017



Distribution of Suspected Pertussis Cases by Age Group, Sudan 2017



The problem of diphtheria &Pertussis surveillance both are not lab based most of cases either suspected or probable

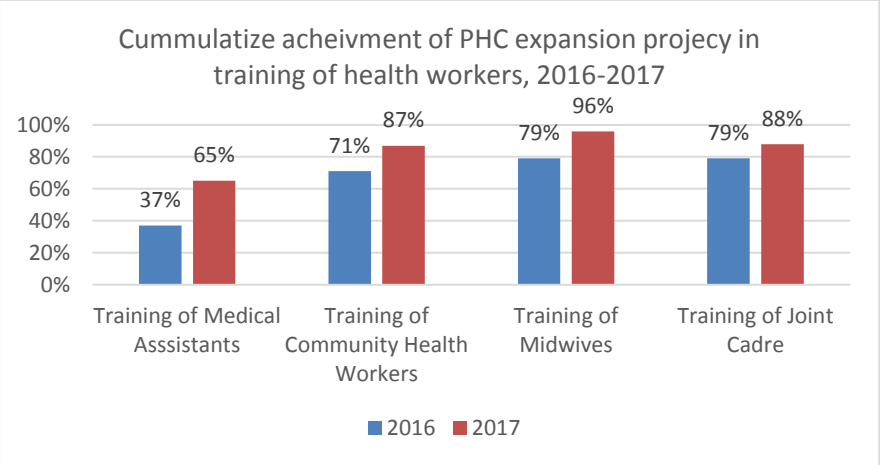
3.2. Key drivers of sustainable coverage and equity

Health Work Force:

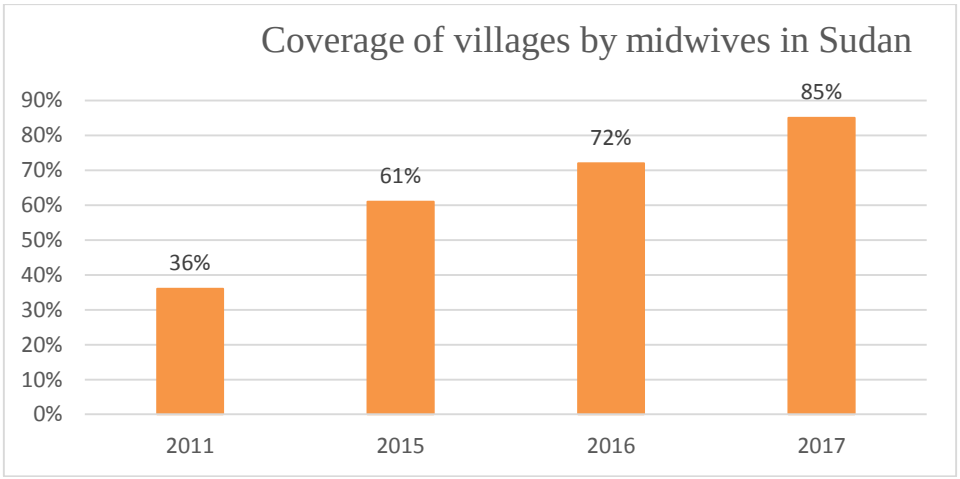
Human resources training is one of the PHC expansion project pillar, in which targeted health worker trained to cover the gab identified by the project. The objective of the training is to achieve quality of health services and equitable distribution. The table below show the health worker targeted by training and the achievements and gab as per 2017.

Health worker	Target	Achievement	Percentage	Training gab
Medical Assistants[4]	7,922	5,119	65%	2,803
Community Health Workers	5,160	4,479	87%	681
Community Midwives	13,438	12,846	96%	592
Joint Cadre	4,253	3,734	88%	519

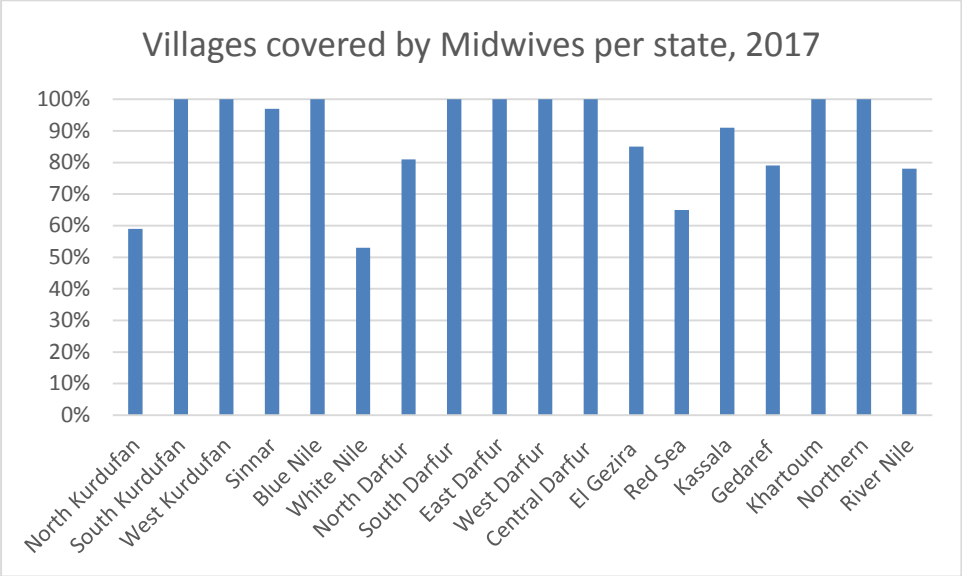
In 2017, Gavi contributed in training of 450 Community Health Workers and 120 Midwives.
In general, there is steady steps to achieve the targets of the PHC expansion project as seen in the below graph.



Coverage of villages by midwives is improving steadily since the beginning of expansion project. In 2017, 85% of the villages in Sudan covered by a trained midwife as seen in the graph below. This coverage has varied between the states as shown in the graph below.



[4] This include the basic training plus bridging course



Other aspect of the PHC expansion project is to ensure that the health system is benefiting from the trained health worker through their employment. In 2017, out of the unemployed health worker, 52% of the trained midwives were employed, 69% of the trained medical assistant 69% and 50% of the trained community health worker.

The migration of health professionals and turnover of the staff remains one of the chief constrains in the health system at all levels including immunization that is aggravated by the deterioration in the economic situation that started Q3 2017. A lot of investment put into training every year to build the capacity of the new staff, which puts a huge burden on the already overwhelmed national EPI. In addition, most of the vaccinators did not have jobs within the health hierarchy and work as volunteers. FMoH raised this issue to the higher levels, as result the vice-President has directed states' government and other concerned institutions to resolve the problem and help develop capacity building system to equip and motivate the vaccinators was conveyed to the higher government officials and a direction to all states to create jobs within the health system for the vaccinators. In addition the situation is further complicated by the fact that the exiting employed vaccinators are not distributed based on the need and in many states they are clustered in the main cities.
The EPI program took the opportunity offered by The Global Health Development/Eastern Mediterranean Public Health Network (GHD/EMPHNET) for polio operation officers, and used it to Empower the EPI locality operation officers in EPI targeted diseases Surveillance. In an effort to retain EPI mid-level managers and to strengthen their capacity in disease surveillance; through strengthening their technical capacities to run and manage the Integrated Vaccine Prevented Disease Surveillance (IVPDs). This a 3 month training (classroom and field) followed by involvement of the LOO in surveillance system in the locality level which was previously managed by the state level. The program implemented in phases in 2017 where 78 locality officers enrolled. The program will continue during 2018 to cover all locality officers

Supply chain:

EPI has a vertical supply chain system and procurement of vaccine, injection supplies and CCE is mostly through UNICEF supply system. Within the WHO prequalification standards.
Study on Optimization of Immunization Supply Chain (iSC) was conducted with aim to strengthen and optimize the current iSC through identification of possible areas for optimization, redesign and integration of iSC (Dry Supply part excluding vaccine) with National Medical Supply Funds (NMSF). Some supply chain management challenges and bottlenecks related to the key supply chain fundamentals identified; these include:

- Lack of adequate stores for dry chain at all system levels,
- lacking basic infrastructure of good storage practice,
- No clear budget allocated for vaccines distribution at lower level,
- Lacking refrigerated vehicles along supply levels
- Suitable electronic system for managing inventory is not yet available at states and localities.

• Vaccinators often have inadequate or no training to prepare them for the logistics tasks they are expected to perform,
• High turnover and mobility among vaccinators and locality level staff, which create challenges for retaining trained and experienced staff,
• Lack of training policy and plans in most of the States for supply chain capacity building programme

Based on evidence created during situation analysis for iSC and NMSF supply systems, the study recommended the following changes:

• Integration of EPI dry supply chain and maintenance system with NMSF
• Remove locality supply level from the system administrative levels at logistic side only,
• Outsourcing third party to carry one or more of the supply chain functions like distribution or maintenance,
• Introduce electronic information system along with introduction of the DHIS at PHC.

EPI is considering the option to integrate immunization injections supplies with NMSF and benefiting from their transportation and dry storage capacity. The program also considers strengthening its distribution and storage system at the locality level.

EVM improvement plan is under implementation, cold room's calibration, mapping and physical inspection exercise has completed supported by WHO as PEF/TCA, all vaccine refrigerators which are newly procured were equipped with the recommended continuous temperature monitoring devices, and all the cold rooms at state and locality level will be supplied by electronic continuous temperature monitoring system supported by WHO . Training on VSSM support by WHO and cold chain technician supported by UNICEF were completed. The recommendation related to refrigerated vehicles not addressed yet due to funding gaps. Other recommendations are all under implementation process and EPI is going to translate the Multi-year EVM improvement plan into annual action plans to better monitor implementation progress.

The overall cold chain functionality has significantly declined from 85% to 79% and the number of states with cold chain functionality less than 80% increased from five in 2016 to 9 in 2017. At the locality level, it is even worse with 41% of the localities having low performance in cold chain functionality. The aging equipment and inadequate maintenance system are the key factors contributing to poor cold chain functionality. To address the persistent gap in cold chain maintenance and technician capacity; UNICEF has supported the government through National and international institutes to train 66 cold chain technicians from all states and some localities on cold chain maintenance, installation and preventive maintenance. The trained technicians responsible to train vaccinators in preventive maintenance and provide support to the locality level cold chain technician, in addition to conduct regular monitoring to cold chain system in their respective states.

As part of establishing maintenance system, five maintenance workshop has established in five states and agreement with third party signed at the national level for monitoring and maintenance support to different levels. UNICEF also provided 40 solar refrigerators, 84 Ice lined refrigerators, 440 vaccine carriers, two large cold rooms with central temperature monitoring systems, 3,300 fridge loggers, 3000 freeze tag, 20 kits for temperature mapping and temperature monitoring,120 bicycle, 15 motorcycle and 50 computers. An additional 10 ice lined refrigerators were also made available through government and WHO.

With aim to strengthen the immunization supply system and rehabilitate the cold chain equipment, the country will re-submit its CCE OP proposal January 2019. This proposal expected to re-shape the cold chain system and provide sustainable solutions to immunization supply chain in the key fundamental areas.

Service delivery and demand generation:

Throughout years EPI managed to build a strong communication network of volunteers in the ground and good engagement of community leaders as well as COS. Additionally, the use of midwives and community health workers in demand generation for health services in general and vaccination in particular.

UNICEF Alshuffa'a Alsoghar communication initiative launched in 2015 is as a long-term multi-sector and multi-channel communication initiative aimed at strengthening mothers/caregivers knowledge and adoption of six key household and family practices that impact child survival, development and protection including immunization. Aims to reach mothers and caregivers of children under five years; fathers and grandmothers (Haboobs) as key influencers of household decisions on immunization; as well as critical frontline staff and

community motivators who engage mothers and households the key practices. Children in school aged 7-18 years identified as a special audience category to act as channels of communication to families and households and to drive household behavior change.

The low awareness and suboptimal demand for immunization services, intercountry population movement, multi-ethnic with big cultural disparities, many different local linguistic, relatively high illiteracy, poverty rate and lifestyle in some rural areas are still hindering the utilization of available immunization services. All these factors manifested in persistently high drop -out rates between MCV1 -MCV2, as well as low rate of fully immunized children (as reported in SHHS 2006, 2010 and MICS 2014 as well as S3M 2014. The role of the vaccination as a promotor for immunization is very weak, mainly because they are not well trained in interpersonal communication (IPC) but sometimes because of the overload in the facilities with high caseload. The home visits is not well used for raising awareness for immunization and need to maximize its benefits.

To address these gaps in communication, MCH communication strategy is underdevelopment, also with support from UNICEF through PEF TCA, an EPI annual communication plan drafted, and a study on immunization barriers in low performing localities is under process to inform the finalization of the MCH strategy and the annual plans
The main recommendation to strengthen the communication for EPI and increase demands are:
- IPC skills strengthening at community level and at Health facilities level:
To have module for vaccinators and community workers/ health promoters/ volunteers on IPC skills & communication skills
- Update training material
Have a clear map of IEC material and timely dissemination
- Strengthen coordination between the health promotion and EPI (specifically regarding IEC material).
Need to have a common committee between EPI and Health Promotion
- Engage better the CSOs
- Improve timing and budget for campaigns (C4D component)
- Have a stand-alone communication plan to increase demand on routine immunization
- Continuous monitoring & evaluation of C4D activities
- Availing the needed supplies at State level, such as megaphones, mobile video vehicle
- Increase political commitment on immunization at all levels
- Improve Funding transfer timing at Federal & State levels – to arrive ahead of time before campaigns / ensure C4D funding for routine immunization

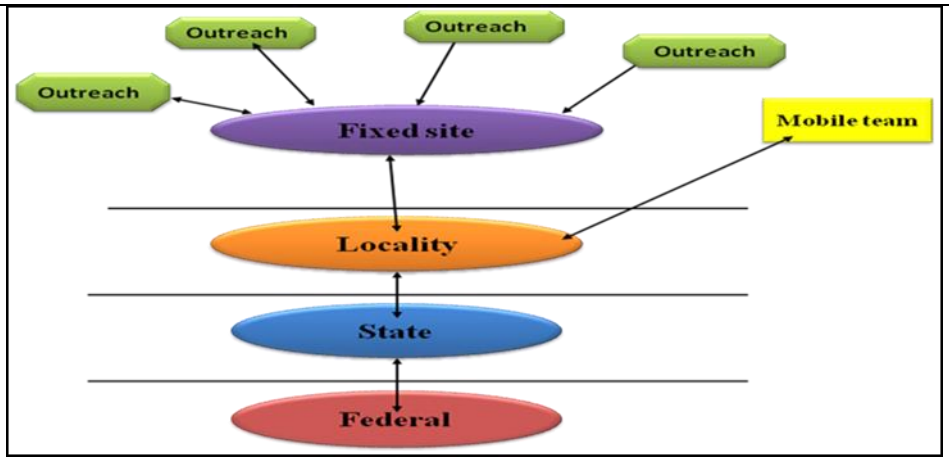
Leadership, management and coordination:

The states with low coverage are mostly are the conflict/post conflict states, in-depth analysis for the root causes beyond this low coverage was conducted by the EPI team and the main causes identified were weakness in implementation of immunization sessions, poor quality of the sessions and lack of supportive supervision. All these related to the programme management capacity mostly due to high turnover of the trained staff. However, an in-depth health system analysis is also crucial to identify the systems weakness along with the programmatic ones. This way will insure comprehensive approach to tackle the root causes of the low coverage, addition to strengthen the social mobilization activities to create demand and ensure awareness

3.3. Data

Health and immunisation information system

- The EPI information system includes coverage and disease data, supply chain and vaccine management data and communication data. The reliability and accuracy of the reporting system is assessed using data quality self-assessment (DQS) which is implemented as a routine supervisory tool where most of the important issues of quality of the system where included. The flow of information shown in the figure below:



- Last DQA done in 2003 , the data quality then assessed as part of EPI Review in 2013 and showed good Data accuracy/quality
- There is a strong system in place well maintained through supportive supervision with frequent data quality checks. All involved personnel trained and there is use of the DQ assessment tool measuring quality and accuracy. Quarterly feedback is done followed by corrective on-job training
- Borders immunization data is dealt with through having separate registers one for Sudanese and one for non-Sudanese
- Special population like Nomads data collected during outreach activities using same format but reported separately. Refugees data usually received from UNHCR

Challenges:

- Denominator consensus problem with relying on yearly estimation for targets
- Stock-outs of registration books, cards due to protracted procurement process (may take months)

HMIS:

Routine Health Information System

- Digitization of paper-based system through adoption of DHIS2 launched in April 2016, to increase coverage by DHIS2 continuous training and capacity building to the staff in the localities and health facilities was performed at federal and state level.150 localities reporting to DHIS2 directly to federal level while the remaining deploy their reports to the nearest localities or to the states. Equipping the localities by PC and internet and now we are distributing mobile numbers for communication at hospital level 75 were trained in Gezira and they still need pc s to perform

- Roll out in 17/18 states (negotiation with Khartoum state ongoing)

- Significant improvement in reporting rate taking into consideration challenges of implementation due to weakness in supportive supervision, Incomplete the planned training , M&E
- Use of data from the health information reports and DHIS2 data is expected to increase because it is computerized reports easy to be visualize through dashboard, maps, charts and tables so it will become more attractive for health decision makers

Challenges:

- Stock out due to in availability of enough funding and Long procurement process for equipment and printing (>65% of budget)
- Insufficient number of personnel/qualified staff at state level and turnover in staff at all levels
- Internet and electricity at state level hinder efficient implementation
- Challenges during supervision- far out and scattered facilities

Denominators:

The EPI denominators estimated from the 2008 census projections based on the population growth rates, In some states due to conflicts and population movement ,the estimated projected denominators could be in accurate and below the actual population size. The EPI in such cases for example when the first dose coverage achieved is higher than the estimated projected population, operational targets are used in these states using the higher figure as denominator (taking the first dose coverage as a denominators). Therefore, the total country denominator used for infant estimated based on the mixed procedures mentioned above.

Data Quality

The National health information system (HIS) witnesses a general improvement in the implementation at the states level. In which the use of the national M&E frame at the states reflected in the annual statistical report. However, challenges have perceived in some areas. In general, the quality and the consistencies in the health information require more focus and efforts to be improved.

The improvement in the reporting rate of the PHC health facilities has gradual increase: from 38% in 2014, 50% in 2015, 54% in 2016 to 55% in 2017.

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- Completeness and timeliness of reports 2017

The % of completeness of report is 100%, for timeliness is 98% just two state is less than 100% (E. Darfur 83% - N. Darfur 75%)

- Data quality review planned 2018 as part of the comprehensive EPI review, the quality of EPI data in routine and SIAs will be reviewed at all levels for the past three years, according to the findings, improvement plan will be developed.

Supply Chain data:

- The country has four-supply chain levels; National, state, locality and health facility level. Manual immunization supply recording is the common practice at all levels. Vaccine Supply Stock Management System (stand-alone system) support by WHO at the national level and 4 states is currently in use, the rolling out of this system to all states has been delayed due to the plan to use the web-based VSSM which still in the piloting phase.
- The current vertical system provides reliable data on vaccine, cold chain and other EPI supplies through monthly reporting system. Chance for compression between vaccine utilization and vaccinated children is possible through monthly reports and regular inventories from all levels. Data available regularly used for decision in vaccine request, demand and distribution. However, the current system is not effective nor efficient to respond to the growing need of data management. Therefore, there is a need to move toward more innovate and advanced stock management system to improve the coverage, equity and the quality of immunization services.
- Capacity building for supply staff needed to ensure proper use of the system and to overcome the challenges from the high staff turnover.
- The data showed that all vaccine except IPV were available throughout the year with no reported stock out at all supply levels. IPV stock out has been report during 2016 and continued through 2017 due to global vaccine shortage. Children who missed their vaccination schedule due to IPV shortage planned to be reached through a catch-up vaccination campaign.
- Data on vaccine wastage is available in monthly bases. Vaccine wastage for all different antigens underutilization is within the recommended range during 2017 as showed in the table above (page1).
- Although the current cold chain storage capacity at the national (219,324 Liters) and states (108,017 Liters) levels is sufficient but due to the many planned campaigns there is a need to expand the cold chain capacity at the national level and strengthen the planning and distribution at the state level to prevent possible overstock at these levels.

Cold chain equipment:

CCE inventory last updated in August 2017 total of 3,182 cold chain equipment at all levels, of which 865 CCE with PIS, 1,027 with PQS 1,260 are non-PQS or PIS and 30 cold /freezer rooms. 2,519 (79.1%) of the CCE are functioning at the survey time. Based on the survey finding, the health facilities with at least one functional and pre-qualified cold chain equipment are 884 (38%). In general, 75% of all health facilities with need for rehabilitation, replacement and or extension of its cold chain equipment.

Integrated vaccine Preventable Diseases Surveillance(IVPDs) :

- Based on the success of the AFP surveillance system, measles and neonatal tetanus surveillances integrated within the AFP surveillance system .As the surveillance system was developing, AEFI surveillance was established in EPI. In 2007 Rotavirus and bacterial Meningitis surveillance was established, Pneumonia surveillance in 2012, CRS surveillance 2014.
- In Sudan many reasons explain the need for integration of vaccine preventable disease surveillance, as a "common" service:
    - It is effective, efficient and sustainable approach for improving surveillance capacity at all levels
    - With similarity of some disease surveillance objectives it has good opportunity to strength all surveillance functions
    - Overcome the challenges and constrains for individual disease surveillance.
    - The surveillance activities that are well developed in one area may act as driving forces for strengthening other surveillance activities, offering possible synergies and common resources.
    - Although specific disease control programs require different surveillance data, they all require similar core activities (case detection, reporting, investigation, confirmation, analysis, interpretation and action) and support functions (surveillance standards, epidemiology training, supervision, geographical mapping ,communications, laboratory support and financial re-sources)
    - 2017 witnessed the decision to change surveillance of Diphtheria, Whooping cough, Neonatal Tetanus into lab-based surveillance, new guidelines and SOPs of sampling and testing developed, approved by taskforce technical committee.

The table below shows the VPDs reported in 2017:

Disease	Suspected cases	Laboratory investigation		Number of confirmed cases
		Number of suspected cases tested	Number of positive cases	
Diphtheria	45	7	2	2
Measles	2203	1875	356	665
Neonatal tetanus	60	0	0	60
Pertussis	355	64	12	12
Rubella	2203	1875	256	259
Congenital Rubella syndrome (CRS)	15	15	5	5
Rota virus Gastroenteritis	1955	2338	342	342
Hib	766	417	10	2
Pneumonia	660	25	7	7

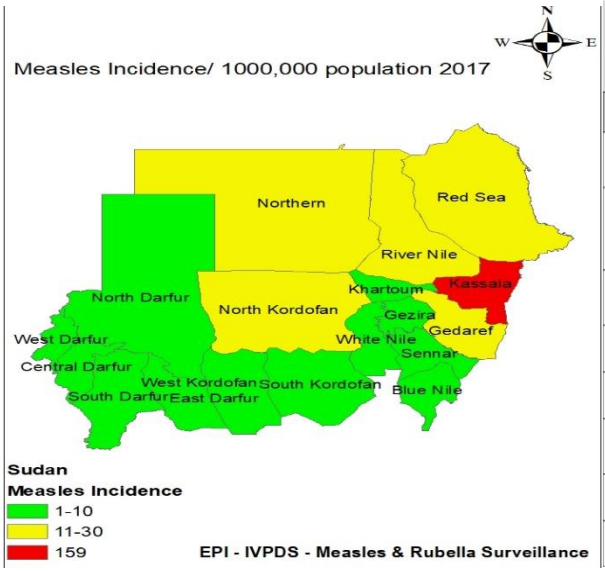
AFP surveillance:

- Performance indicators have reached the certification standard since the beginning of 2001 and continued through years. Last reported case of Polio was in 2009.
- The regional certification commission accepted Sudan certification documents for 2017.
- Polio outbreak preparedness and response plan was updated for the year 2017

Major AFP surveillance performance indicators 2017

State	Total reported AFP cases	% Adequate stools	Annualized non polio AFP rate	% NPEV
BLUE NILE	15	87	3.5	7%
CENTRAL DARFUR	18	100	5.3	17%
EAST DARFUR	15	93	3.0	27%
GEDARIF	28	100	2.7	11%
GEZIRA	73	96	3.2	8%
KASSALA	28	96	2.9	29%
KHARTOUM	88	100	3.0	9%
NORTH DARFUR	40	85	3.9	13%
NORTH KORDOFAN	33	91	3.4	15%
NORTHERN	11	100	3.7	0%
RED SEA	15	93	3.9	14%
RIVER NILE	20	100	3.8	10%
SENNAR	27	100	3.2	19%
SOUTH DARFUR	44	100	2.6	18%
SOUTH KORDOFAN	29	93	4.0	14%
WEST DARFUR	27	100	3.6	7%
WEST KORDOFAN	28	100	3.5	14%
WHITE NILE	31	90	3.2	10%
Total	570	96%	3.3	13%

Measles surveillance

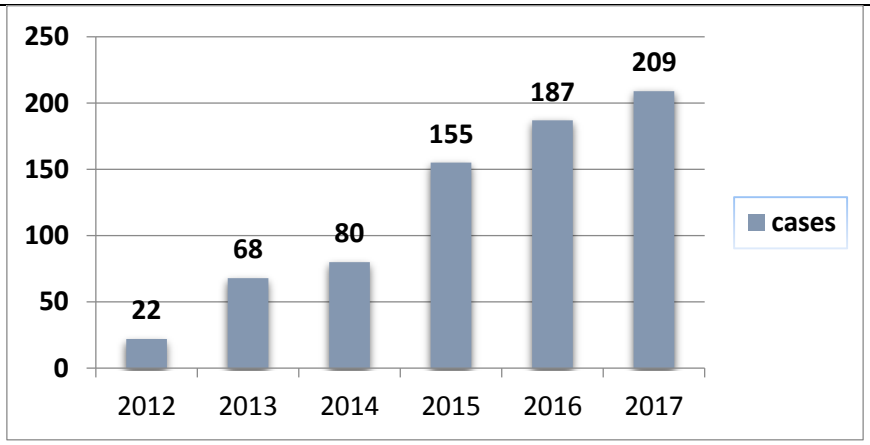


Measles and Rubella Field Surveillance Indicators (2016, 2017):

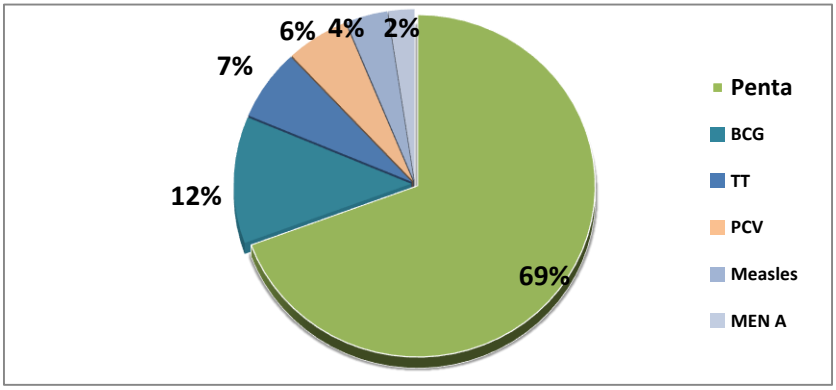
Indicators	Target	2016	2017
Rate of Non- Measles Non- Rubella Cases/100,000pop	2: 100000	4.1	2.9
Representativeness (states with non Measles non Rubella reporting rate ≥2)	≥80%	78%	56%
% Cases with Adequate serology samples	≥80%	98%	96%
% Cases with Adequate investigation	≥80%	99.5%	99.7%
Lab confirmation	≥80%	99.7%	97.1%
% Samples Received within 5days of collection	≥80%	89%	93%
% Results reported back within 4days	≥80%	96%	96%
genotype		B3	B3

AEFI surveillance:

The AEFI surveillance as important tool for immunization safety was facing of under reporting but there was an effort for increasing surveillance sensitivity



Graph below shows the routine reported AEFI by antigen 2017:



During campaigns in 2017, 60 cases reported: 10 cases of AEFI reported during measles campaigns in Gazira state, 60 AEFI cases in TT campaign with no death. All serious cases were assessed and classified by AEFI causality assessment committee

Main challenges facing the IVPDS are:

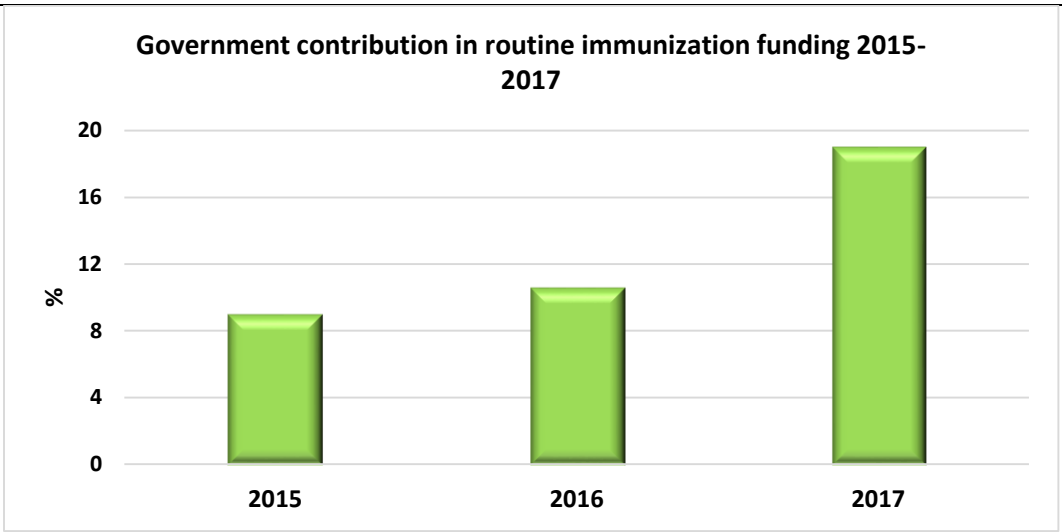
- The remarkable reduction of the funds especially for measles and polio
- High turnover among the staff

3.4. Immunisation financing

EPI financing

Throughout the previous year's government expenditure was limited to payment of the permanent EPI staff at all levels (National, state, District, health unit), as well as supporting the programme with some transportation and other logistical issues. As EPI considered a high priority in the government agenda, it started to invest more on the current EPI resources since 2006, where it funded the cost of injection supplies. From 2008 onwards, co-finance payment for new and underutilized vaccines paid timely (reached 3.3 Million USD in 2017) and vaccines became a line item in national health budget in 2015. More government commitment shown in 2016 when MOF put a clear line item to support procurement of cold chain equipment and confiding of preventive campaign. In 2017, Government of Sudan finally accepted to come in with UNICEF and contribute to the cost of traditional vaccines to reach full self-financing by 2025.

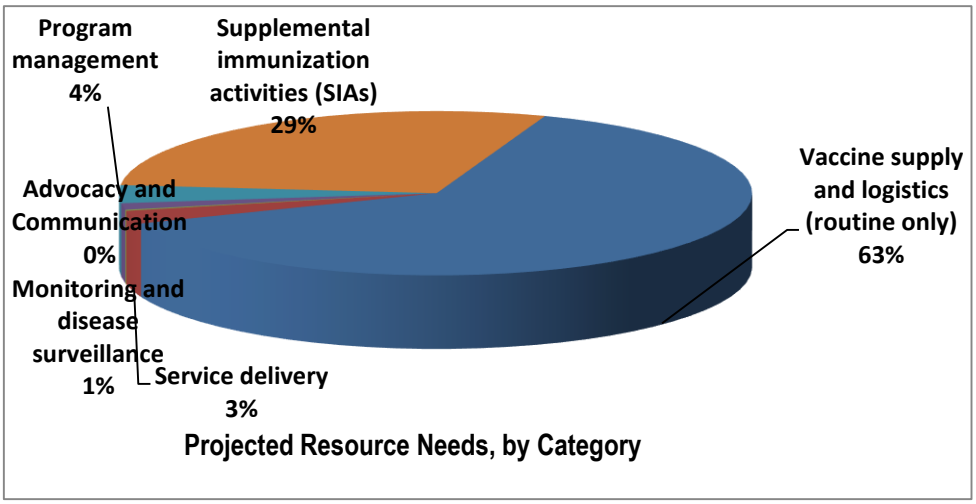
Graph below shows the increasing trend in government financing for EPI



EPI in Sudan remains a program that is highly dependent on donors and hence with threatened sustainability. Main partners of the EPI are Gavi, UNICEF, WHO, and some major NGOs.

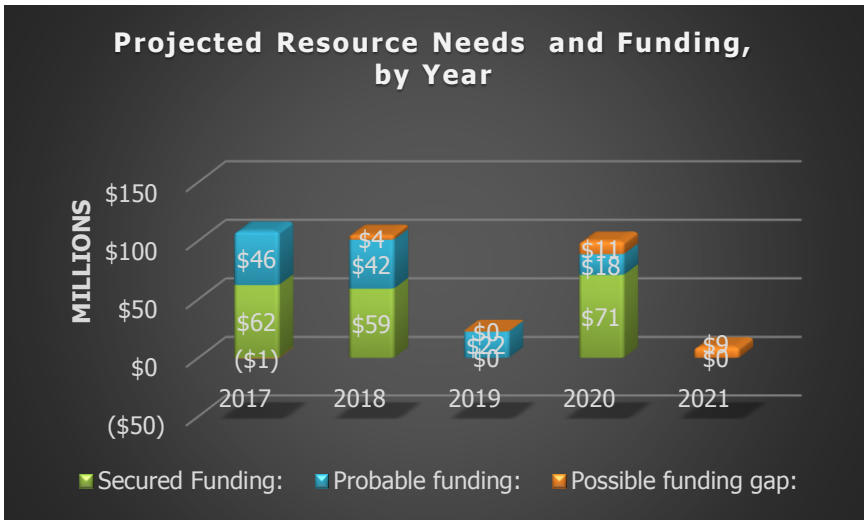
These partners provide technical and financial support to the programme for routine services as well as for the supplementary immunization activities. Gavi support usually covers cost of new vaccines, implementation of immunization sessions in outreach and mobile strategies, training of EPI staff, cold chain equipment procurement, information system support as well as preventive campaigns. In 2017, Gavi fund amounted to 60% of expenditure on EPI of WHO"s support includes capacity building at all levels, deployment of international and national experts at different locations and co-coordinators at both federal and state levels. WHO further supports the AFP/VPDs surveillance network, NIDs for polio eradication, training, and other routine and supplementary activities. UNICEF provides traditional vaccines bundled with AD syringes and safety boxes for routine and campaign use, cold chain equipment's as well as capacity building of cold chain technicians and communication and social mobilization, in addition supports service delivery in hard to reach population in the states. The Fund further supports polio NIDs, as well as MNT and other routine EPI activities (e.g. social mobilization and cold chain).

The resource requirement of the immunization programme is based on the programme objectives the cMYP 2017-2020 shows that The total resource requirements for the EPI in Sudan, including shared costs is estimated at ($416.3 Million) with average about ($104Million) for annual bases. Out of which, total routine immunization accounts for (296. 5 Million), while the remaining ($ 119.7 Million) is for polio SNIDs one round in each year of the strategy , measles and rubella (MR) catch up campaign and measles follow up campaign in the , 3 rounds of yellow fever Campaigns (2017-2019)and MNT campaigns (CBAW). Routine Vaccines comprise 63% of the projected resource requirement for the cMYP cycle.



Financing and gap analysis

From cMYP 2017-2020, the total secured funds are (US$ 263, 3 million); with a funding profile as follows: GAVI is the major funding source followed by, UNICEF, government (national and sub national) and then WHO. When only considering secure funds, the funding gap will reach an average of 37.0% of the total resource requirements. The funding gap with secured resources will decreased from 45% in 2017 to 29% in 2020.



The government share or co- financing for under used and new vaccines. The co-finance will have an increasing trend over the period of cMYP in addition by 2020 the country will go into the accelerated phase of transition from Gavi funding.

Program based on a permanent reliance on external funding are usually not viable in the long term. At the same time, precipitous withdrawal of external funding may also doom the programme. A consistently agreed upon gradualist approach may be optimal. There should be country plan for this transition from the initial stages to ensure sustainability.

Steps being taken to increase domestic resources for immunisation :

To achieve sustainability of financing the immunization programme, certain opportunities will be addressed by the following action:

- Mobilizing additional resources from local and external sources (e.g. Qatar foundation ,Japan fund)
- Advocate increase the contribution of sub government level for immunizations as part of their responsibilities because the PHC services by law is a state mandate.
- Health insurance will cover the preventive health services, which might include the immunization (still under study).
- Effectively managing donor funds
- Increasing reliability of resources

Seek for innovative ways for potential immunization financing and support.

- Co-financed: Full filament of Gavi co-financing commitment timely.

- Start paying for traditional vaccines

- Advocacy among private sector for immunization funding

-Monitor the flow of funds from ministry of finance and partners.

Timely disbursement and execution of resources

Budgets are disbursed to lower level based on the following :

- The reference point is the approved monthly requirement based on the micro-plan, fund is disbursed on monthly basis and performance based (coverage performance during that month) as well as sharing the liquidation document that support fund utilization as planned
- No problems faced during 2017 in regards to timely disbursement.
- Delay of funds (Gavi, Acc. fund) every grand

4. PERFORMANCE OF GAVI SUPPORT

4.1. Performance of vaccine support

Achievements against agreed targets

EPI has reached all the targeted children for 2017 by all the antigens, it sustained the Penta 3 coverage at 94%, and MCV1 approximates 90%. In addition the country success to sustain polio free.

Overall implementation progress of Gavi vaccine support.

All planned immunization sessions has been implemented

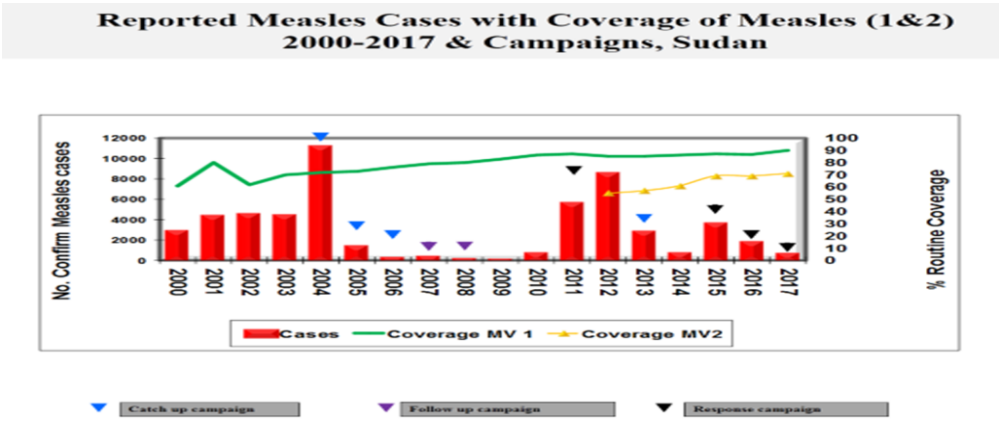
Campaigns:

The planned campaigns in 2017 were the measles follow up campaign and yellow fever phase 3, both not implemented. Measles follow up delayed because the proposal was rejected in the first submission and resubmitted latter in 2017, while the yellow fever delayed due to global vaccine shortage.

Situation analysis for measles and rubella

Measles routine coverage:

Since 1995, measles vaccination coverage has ranged from 73% to 90% in 2017 for MCV1. MCV2 was introduce in 2012, the coverage was 54% and 57% in 2013, and 2014 respectively and increased to 71% in 2017, although still lagging behind the target to achieve measles elimination, so routine MCV1 and MCV2 coverage still one of the weaknesses towards elimination goals. To move further steps towards measles elimination routine infant immunization with measles vaccination must be strengthen to reach the 95% coverage for MCV1&2 in all districts.



Measles surveillance:

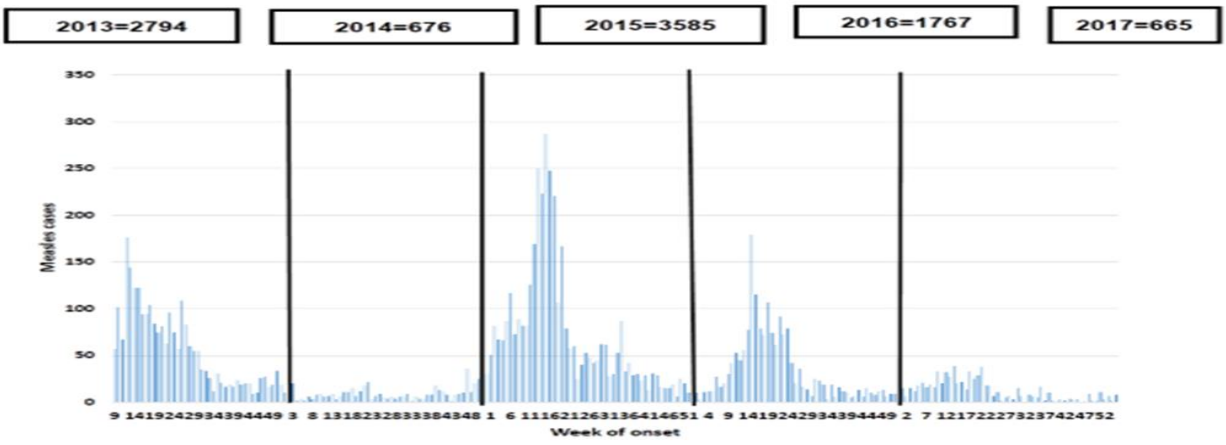
- Case based surveillance was established and implemented in all 18 states with the laboratory as an integral part for establishing effective measles surveillance
- With the help of laboratory analyses data generated to identify population at risk and supports in monitoring and evaluating program activities, and guide policy decisions.
- Since 2007 the surveillance was strengthened and the surveillance indicators were met the standards requirement (>80%) and the virus was isolated from a circulating point of an outbreak in North Darfur state ,W.Darfur, Kassala Khartoum and Gezira states it was B3, D4 and D9.

Measles surveillance indicators 2006-2017:

Indicators	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Reported cases	449	500	781	1725	6465	9467	3936	2778	6824	4534	2203
% Adequate serology specimens	59	93	95	98	98	98	97	96	99.2	98	93
Rate of Non measles Non Rubella/100000 pop	1.46	1.2	2.01	2.6	2.3	2.5	2.9	3.2	5.4	4.1	2.9
% Investigated within <48 h	59	93	97	95	99	97	97	99	99	99	100%

Confirmed measles cases 2013-2017:

Distribution of confirmed measles cases, Sudan 2013-2017:



Measles outbreak in 2017 :

Five localities have reported measles outbreak in 2017, Kassala state (Kassala, Reifi Aroma and West Kassala), North Kordofan in Sodary locality and Abu Hamad locality in River Nile State.

Measles and rubella 5 year plan not developed yet , it will be one of the priority areas for technical support in the coming PEF/TCA

4.2. Performance of Gavi HSS support (if country is receiving Gavi HSS support)

FMOH has adopted "One Plan, One Budget, One Report" approach to ensure alignment and harmonization of different plans and projects supported by government and donors. Implementation of "One plan" approach is a noteworthy step to improve efficiency and ensure value for money. Gavi supported activities are fully aligned and complementing existing strategies and plans. In fact, Government and its partners consider Gavi support as catalytic in mobilizing additional resources, including domestic, and in generating evidence, that guides the transformation of the health sector. For example, Gavi mainly supported construction of PHC health facilities in priority states, now government is taking the lead in expanding PHC services through implementation of PHC expansion project.

FMOH has institutionalized the Joint Annual Review (JAR), which is a mechanism to bring all partners and stakeholders to review the progress in implementation of the annual and strategic plans jointly, instead of the fragmented and agency-based reviews.

The table below reflect the progress of the implementation of the grant activities that are oriented toward the grant objective and aligned with the country priorities.

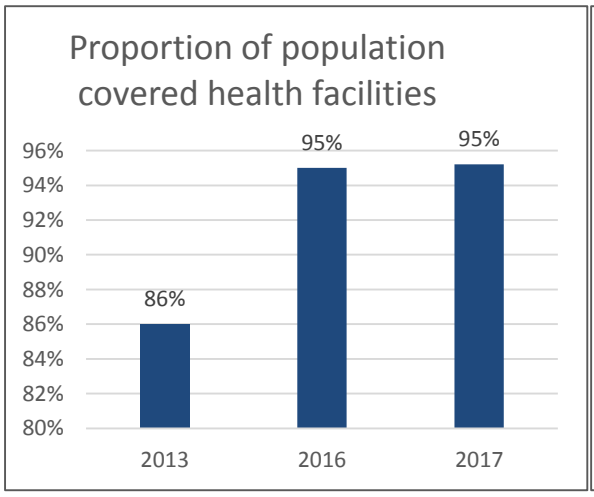
Key implementation bottlenecks and plans to address them:

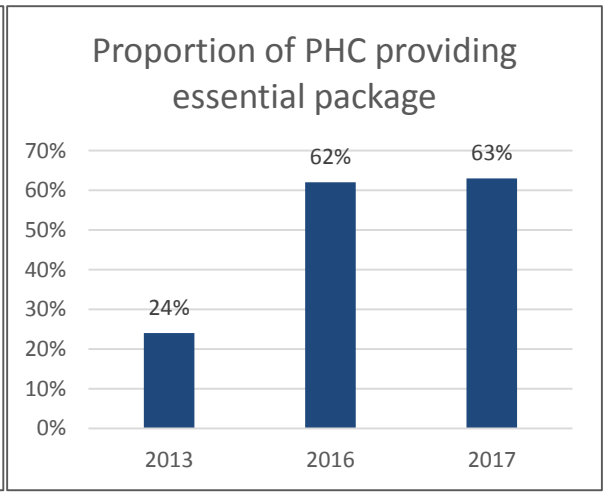
The implementation of Gavi HSS grant has been affected and influenced by several factors, these include:

- Insufficient capacities particularly, at sub-national level: The health system in Sudan is decentralized with three levels of governance: federal, state and locality. The implementation of the activities including management and provision of PHC services is the responsibility of the states and localities. Key challenges include insufficient structures and lack of adequate number of qualified staff particularly, at locality level. To address these challenges, FMOH and its partners developed a plan to strengthen the decentralized health system that aims at improving governance and leadership; institutional capacities; financing and community engagement.
- High staff turnover at different levels of the health system: this is one of the main health system bottlenecks. There are pushing and pulling factors that lead to this phenomenon. Migration of the qualified health workers is the main risk. Root causes include lack of retention measures in addition to poor working conditions. Recently, FMOH developed the HRH and Migration policies aiming at addressing the causes of migration and staff turnover. The implementation of these policies remains a key challenge.
- Recent Gavi assessments and new requirements and procedures: During the last two years, Gavi conducted extensive Programme Audit in addition to the Joint Financial Management Assessment. These reviews and assessment affected the implementation of the activities due to the high burden and transaction cost on PMU in addition to the delays in releasing the funds to implement planned activities.
- FMOH developed an acceleration plan that yet to be fully approved by Gavi.

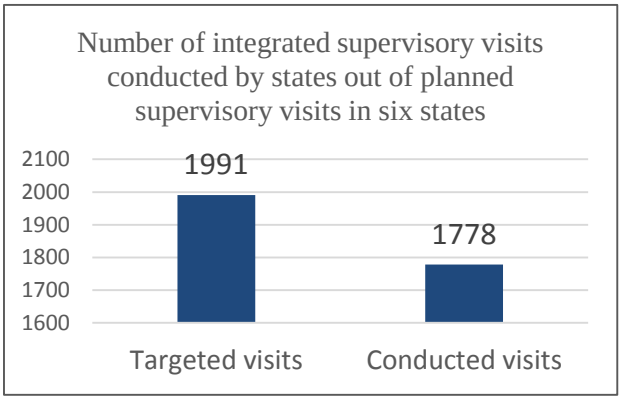
Grant Performance Framework:

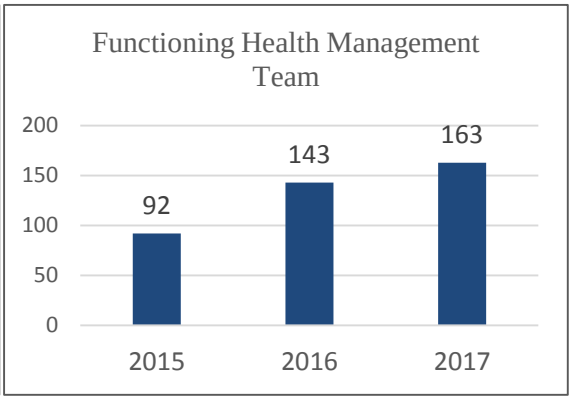
- The fund disbursement and utilization had been affected directly and indirectly by many factors. The ability of the country to absorb the fund could be improved by addressing the key issues at different level. This is to say, the available fund in 2017 until mid-December 3,649,892.25 USD which counted to 69% of the planned budget. The delay in the transaction process led to receive additional fund by December 2017. Not to mention the fact that the developed acceleration plan was not fully approved during the year but kept going back and forth until the year finished. Thus, the utilization of HSS available cash until mid-December was (77%) but dropped to (53%) by the end of December 2017.
- The total expenditure used for CSOs activities were 45% of the target amount.
- For PHC performance: geographical accessibility continued to be 95.2% with slightly increase in the number of population covered by PHC services. This reflected as slight increase in the coverage with essential package in relation to the 2016.





- The regular integrated reporting submitted by PHC facilities according to standards reached 55%.
- Although some states ministries of health have revised their structure to adapt to the local needs and changes, the percentage of the states with approved structure has not change (83%). Additionally, 88% of localities in Sudan have a functioning health management team by 2017.
- 89% of the planned supervisory visits were conducted in 2017.





- 36% (570) of targeted workforce been trained in 2017. Although the percentage is low, only the bridging course was not implemented which was targeting 1,000 cadre. The total number of trained health workers through PHC expansion project is 3739 in which Gavi contributed in training of 15% of them.

Table 1: Training of Community Health Workers and Midwives in Sudan during 2017

Sudan	Project Country target	Project Total trained	Project Percentage	Target 2017	Trained in 2017	Percentage
Community Health Workers	5,160 CHW	4,479 CHW	87%	1,510 CHW	829 CHW	87%
Midwives	13,438 MW	12,846 MW	96%	2,505 MW	1,913 MW	76%

PBF

The first performance based funding received in December 2016. The fund absorption were: 1,193,250.46$ was received and 1,100,402.51 $ (92.2%) was absorbed till December 2017.

HSS overall achievements:

- Health information system:
  - General improvement in the HIS reflected in the use of the national M&E framework from the states.
  - Improvement in the reporting rates from the states.
  - Support DHIS2 introduction, through training of the core staff. 150 localities reporting through DHIS2.
  - Support the health information observatory.
- Strengthening Planning, Leadership and decentralization
  - Implementation of the Zonal coordinators support.
  - Build leadership and management skills.
  - Improve supervisory visits to the localities and health facilities.
  - Support the health management team.
  - Development of the strategic plan 2017-2020.
  - Implementation of the JAR
  - Endorsement of the National Health Policy
- Strengthening the primary health care
  - Training of health workers (Midwives, Health workers, joint cadre).

- Sustainability of the health financing through Finance policy and strategy.
- UHC conference and Khartoum declaration for UHC.

- Development of the National Health Policy 2017 – 2030
  - Transformational shifts to achieve Universal Health Coverage and ensure equity
  - Health Financing Policy and strategy to ensure sustainability
  - PHC and Family Health policy to ensure integrated service provision
  - Health in All Policies HiAPs to address the Social Determinants of Health SDH
- Enhance the engagement and strengthen the capacities of CSOs
  - Establishment of the National NGOs working in health (Sudan Health Network)
  - Training of NGOs in the in case definition and emergency response of AWD

- Implementation of Gavi Programme audit action plan:
  - In Program audit took place in March 2016
  - The areas covered vaccine supply, budgeting and financial management, Expenditure, disbursement, and procurement.
  - Resulted 16 Recommendations and 75 action points
  - 13 recommendations were completely covered.
  - 3 recommendations were partially met by December 2017:
    - Translation of the operational manual, delayed due to the updates
    - Finalization of the Retention policy,
    - The independent assessment of the construction of PHC facilities supported by HSS, completed by Feb 2018
- Strengthen the capacities of Gavi HSS financial management unit
  - Introduction of the financial software system Tally (moved from Excel-based to software system)
  - Development of the Operational Manual and procedures that include procurement guidelines
  - Recruitment of two finance officers

Objective 1	
Objective of the HSS grant (as per the HSS proposals or PSR)	To improve sustainable and equitable access and utilization of quality Immunization as part of an Integrated Primary Health Care focusing on underserved and disadvantaged populations
Priority geographies / population groups or constraints to Coverage & Equity addressed by the objective	Most of the activities are implemented at national level with no targeted geographical area. However, underserved population and disadvantaged are priority/targeted population (which could be found anywhere), this is reflected in the nature of the activities planned under this objective. Construction of health facilities is however not nationwide.
% activities conducted / budget utilisation	69% Budget utilization (Jan-Dec 2017) with 63% of activities being implemented.
Major activities implemented & **Review of implementation progress** including key successes & outcomes / activities not implemented or delayed / financial absorption	Overall, the implementation of the activities was good since the major activities performed. Those activities contributed in objective as follow: a. In responses to improve access and equity of immunization, **cold chain equipment** procured through UNICEF and deployed to needed area. b. **Home visits, mobile sessions and outreach** activities were also implemented resulted in Penta 3 coverage of 94.7% at national level. c. **450 community health workers (CHW) and 120 midwives have been trained** using Gavi HSS funds. This is out of a total of 829 CHWs and 1,913 midwives. Training of CHWs last for nine months and last for 15 months for midwives. Training is completed at an academy. The training was done jointly with PHC services in response to a national survey that completed a health map. The survey showed that only 24% of health facilities provided the full PHC package. An expansion programme was defined, which is what has been funded through the Government with contribution of Gavi

	HSS. CSOs were also involved through training of volunteers to respond to emergencies such AWD. And deliver basic health service in security compromised areas. Initially, only Gavi funded these training. After that Global fund started to support. This has now been followed by Government support. Hence, the Gavi HSS was an important catalyzer for this comprehensive training. There is need to evaluate the Expansion Programme to assess where the trained people now work. A dataset is available at least for the last two years, showing who was training and there they are now. d. As strategy to increase access to immunization services and reduce dropout, the **demand generation** was major strategy supported through designing, printing and distributing of advocacy materials focusing on vaccination and school health. The country still facing challenges in vaccine utilization due to culture and other barriers. In addition to literacy and poverty among most population; to optimise health resources raising community awareness is priority area for health system. FMOH has made efforts to strengthen CSOs through training and networking to scale up community initiative like "friends of immunization". e. One of the major activities is the assessment of medical waste disposable management. Delay in implementation of activities such as printing of SOPs experienced. This attributed to many reasons, one of which is delay in finalization of related activities (e.g. designing and updates preceding printing). The absorption of is affected due to delay disbursement of fund for ¼ of routine activities for Vaccination but didn't delay the activities, that is due to the inadequate amount of available fund.
Major activities planned for upcoming period (mention significant changes / budget reallocations and associated **needs for technical assistance**[11]	The strategic change reflected in the amount of fund reallocation to this objective. In the acceleration plan, (2018-2019) a considerable amount of fund reallocated to support the cold chain equipment in alignment with CCEOP. This is in addition to improve access and equity through support to proivde Solar system to health facilities, which will be implemented through UNICEF. By that reallocation, this objective consumes most of the remaining fund of the current grant (64%).
Objective 2:	
Objective of the HSS grant (as per the HSS proposals or PSR)	To strengthen an integrated, comprehensive, efficient and sustainable Health information System in support of evidence-based policy and planning
Priority geographies / population groups or constraints to C&E addressed by the objective	Support to build core team of DHIS 2 at national level in addition to training of staff at locality level. Almost 150 localities out of 189 now providing reports on regular base. Reporting rate increased significantly for health centres and health unites from Jan 2017 to December 2017 from 12% to 25.9% for health unites and from 18% to 29.5% for Health centres.
% activities conducted / budget utilisation	61% of the fund 42% of the activities been implemented
Major activities implemented & **Review of implementation progress** including key successes & outcomes / activities not implemented or delayed / financial absorption	During 2017, Gavi has supported HMIS to address gabs in the system to be more efficient. a. Strategically, the country is gradually transitioning from paper base to electronic base system through implementation of DHIS2 at the locality level with maintenance of paper base system at the health facility level. b. The DHIS2 national core team, faced turnover of staff –like other programs- therefore, capacity building had continued. Two rounds of DHIS2 academy training had attended. c. Support provided to operationalize health information observatory to lead the process of data documentation, availability and to encourage transparency, data sharing and use by stakeholders. This is in addition

	to provide evidence for decision making, planning and policy development. The information used to inform the response to the outbreak of AWD to be directed toward selection of high priority areas, training in case definition and management conducted in the White Nile state. d. Fund had been reallocated to support completion of EPI coverage survey. **Delayed activities:** Delays were experienced in printing activities (HMIS tools, annual statistical report and SOPs of the case definition) due to audit requirement of on procurement. Those activities are planned to be implemented to cover the need of 2018. Implementation of Studies where delayed but re-planned to be conducted during the remaining period of the current grand (2018-2019). For example, equity study had been expanded from focusing only on gender barrier to be a comprehensive one and planned to be conducted in 2019
Major activities planned for upcoming period (mention significant changes / budget reallocations and associated **needs for technical assistance**[11]	A study for resources mapping and to explore the financing options to ensure sustainability of PHC services including the gains of vaccination will be conducted during the period 2018-2019. In addition, to conduct study equity study in 2019. Health Information system strengthening with focus in DHIS2 is the main direction of the activities in objective 2 during the remaining period of the grant. Thus, supportive supervision, training and printing. New activities had been introduced to support HMIS include for Support introduction of new modules in DHIS2 and training on those new modules. GAVI had an agreement with Oslo University to support the implementation of the new modules (including EPI module). Moreover, Sudan Household Survey will conducted in 2018-2019.
Objective 3:	
Objective of the HSS grant (as per the HSS proposals or PSR)	To support production, equitable distribution and retention of multi tasked facility and community health workforce to meet immunization and PHC need
Priority geographies / population groups or constraints to C&E addressed by the objective	Health workforce high turn -over is major challenge for health system, immigration of health workforce has been addressed through HRH immigration and retention policy supported by GAVI 2017 Training of community health workers, medical assistant and midwifes conducted at state level in addition it aligned with the expansion project priority and needs which aims for Sudan universal health coverage by minimum PHC package by 2020 Strengthening the states Academies of Health Science was corner stone in sustainability of human resources for health continuous development
% activities conducted / budget utilisation	46% of the fund had been absorbed 71% of the activities had been implemented
Major activities implemented & **Review of implementation progress** including key successes & outcomes / activities not implemented or delayed / financial absorption	a. **Migration and retention policy of health workforce**: Global Fund and the Government initially funding this activity. An expansion was possible with Gavi HSS support. A health workforce migration policy has been developed using Gavi HSS funds. This has meant that Human Resources for Health contributed to the overarching health sector policy. Policy options for retaining health workforce are outlined in the policy, including for those funded by external health system donors. A second draft of the policy will be available at the end of 2018. The policy will be presented to the Health Council, which is headed by the president. For the next HSS, a projection plan for health workforce is needed. b. **Leadership for mid-level management** supported in 2017. The continuation of this activities support the fact there is a high turnover of the staff. EPI staff trained as part of overall cohort of mid-level management training

	c. Financial incentives to EPI focal persons at PHC and locality level was not implemented during 2017 due to Gavi audit issues. The audit recommendation was to ensure that the incentive payment was linked with performance. According to the auditors, the incentives were not adequately linked with performance. Moreover, the auditors requested an update of incentive guidelines. The challenge has been that the incentives guideline is a common document shared by many donors and it therefore takes time to update the guidelines. **Delayed activities:** Delay was experienced in provision of support to Human resources observatory and review of the training programs curriculum. There is currently no single source for HR information in Sudan. WHO is currently Human Resource department to develop a road map for improvement. The road map put strengthening the Human resources observatory and information system as one of the major areas of focus.
Major activities planned for upcoming period (mention significant changes / budget reallocations and associated **needs for technical assistance**[5]	Finalization of the immigration and retention policies are expected by the end of 2018. Additionally, international and national technical assistance will be hire to support development of clear career pathway for allied health workforce, in addition to national consultant to develop annual inventory of posts. To support production of multitask facility and community health workforce midwifes training 120 will be supported this year 2018 along with strengthening of state CPDs and AHS to undertake this activity by skill labs
Objective 4:	
Objective of the HSS grant (as per the HSS proposals or PSR)	To strengthen management and leadership capacity of the decentralized health system at state and locality levels for an effective and efficient implementation of an integrated PHC package including EPI services
Priority geographies / population groups or constraints to C&E addressed by the objective	Decentralized health system has many obstacles in implementation the governance at central level prevent movement of resources to lower levels also the low managerial capacity particularly the finance management function at locality level make it hard for direct funding. Some activities developed to be implemented in targeted states (e.g. Supervision) and others are to be implemented at nationwide (e.g. Zonal Coordinators).
% activities conducted / budget utilisation	28% of the planned budget 57% of the activities implemented.
Major activities implemented & **Review of implementation progress** including key successes & outcomes / activities not implemented or delayed / financial absorption	a. Implementation of the **zonal coordinators** activity and supervision of the states and localities. The Zonal Coordinator is targeting the five geographical zones of the country. The proposed team composed of four persons covering the areas of planning (team leader), health information, PHC and supply chain. The zonal coordinators have significant roles in support of the supervision from the states to localities and from the localities to the health facilities and to strengthen the management and leadership of the decentralized level. This is translated in receiving regular reports of the lower level. Four zonal coordinators have been recruited whom carried out the functions in the states and localities. However, there was delays in recruitment, which contributed to low funds absorption. b. **Integrated supervision** has implemented in six states. Supervision from states to all localities was supposed to be quarterly, but it only

[5] Note: When specifying Technical Assistance (TA) needs, do not include elements of resource requirements. These will be discussed in the context of the Targeted Country Assistance (TCA) planning. The TCA planning will be informed by the needs indicated in the JA. TA needs should however describe - to the extend known to date - the type of TA required (staff, consultants, training, etc.), the provider of TA (core/expanded partner) the quantity/duration required, modality (embedded; sub-national; coaching; etc.), and any timeframes/deadlines. JA teams are reminded to both look back (TA which was not completed/successful in the past) and forward (planned vaccine introductions, campaigns, major upcoming HSS activities, etc.) when specifying TA priorities for the coming year. The TA menu of support is available as reference guide.

	happened twice in the year. This is the reason for low fund absorption. Integrated supervision been expanded to support all states in 2018 and planned to be twice a year. c. **Leadership diploma training** was conducted targeting staff mainly from the states to support strengthening the decentralized health system and **Diploma in MCH** to support the direction toward implementation of integrated PHC package. d. **One plan, one budge and one report**. All 23 donor agencies signed one health plan in 2018. This was headed by Federal Ministry of Health. This is an annual plan, for the first time, all interventions were included in one document, including allocated funds. e. **Operational planning manual** was updated and completed. This is for annual planning. The manual is closely linked with health sector strategies. The manual has not been printed yet due to the audit issues. f. Kick of meeting to develop an action plan for the **Joint Financial Management Assessment (JFMA).** JFMA was conducted jointly World Bank, Gavi, Global Fund, WHO and UNICEF. This activity was a commitment of the country after signing the international health partnership (IHP+) in 2014. g. **Locality health management teams** have been established in 60 localities. 30 vehicles and 60 motorcycles are planned, but procurement is on hold due to the audit issues. Locality health management team contain a MCH focal point, which included EPI. **Delayed activities:** The low utilization of the fund coming from the delay in the implementation of activities mainly related procurement (e.g. printing of the planning manual was delayed due to delay in finalization of manual updated). Most of the delayed activities were included in 2018 plan for execution. Also, delay in the implementation of other training were experienced due to shifting of the priority from training of the health worker to response the AWD outbreak occurred during 2017 as reflected in the other objectives. Therefore, the trainings plan had shifted for implementation in 2018-2019.
Major activities planned for upcoming period (mention significant changes / budget reallocations and associated **needs for technical assistance**[Error! Bookmark not defined.]	Zonal coordinators will continue with change in TORs, in order to achieve changes at senior level management level at the states and localities. This is in addition to expand the activities to cover all the states specially -but not limited to- the support for supervision. In the accelerated plan, 2018-2019 support for supervision will provided for all 18 states. In the long run, it is expected that the states will be able to manage without zonal coordinators. Therefore, there is a need to assess the impact of the support to the lower levels and to identify the gaps and supportive strategies to strengthen the decentralized health system that includes the training of health workforce.
Objective 5:	
Objective of the HSS grant (as per the HSS proposals or PSR)	Programme management
Priority geographies / population groups or constraints to C&E addressed by the objective	This activities focusing of supporting the PMU activities and other management cost related to the grant implementation. This includes staff, working environment, supervision, training and planning and review meetings for the implementing units
% activities conducted / budget utilisation	59% of the fund absorbed, 83% of activities have implementation.
Major activities implemented & **Review of implementation progress** including key successes & outcomes / activities not	Program management Support supervisory visit to one of the targeted states as a sample to follow up the implementation of the supported activities. Annual planning and review meetings supported. The Joint Annual Review meeting (JAR) was one of the major achievement during 2017.

implemented or delayed / financial absorption	The Joint Annual Review meeting (JAR) was one of the major achievement during 2017. This JAR was the first of its kind and covered the period of 2016-mid 2017. It highlighted the achievement as well as the gaps. As a result, recommendations and action plan were developed. The Preparation for the endorsement of the national health policy (NHP) stared in 2017 and the endorsement workshop implemented in early 2018.
Major activities planned for upcoming period (mention significant changes / budget reallocations and associated **needs for technical assistance** (mention significant changes / budget reallocations and associated **needs for technical assistance**Error! Bookmark not defined.	Budget reallocation put to support the implementation of NHP and the JAR in 2018.

4.3. Financial management performance

HSS absorption:

Gavi HSS absorption was 51% of the available fund and 53% of the planned budget. And PBF1 absorption in 2017 was 92% of the received fund. See the table below.

Year	Available fund	Planned budget	Expenses	Absorption rate
2017	5,524,100 $	5,314,556 $	2,809,355 $	53%
PBF 1	1,193250.72 $	1,584,000 $	1,100,402.51$	92%

The 65% absorption rate is composed only on the HSS plan excluding the second performance funding. This absorption of the available fund had been affected by the delay in approval of the acceleration plan and late receiving of the part of the fund as seen in the table below in which the real implementation was depending on the fund remaining from the previous year which was (3,649,892 $) until 14 December 2017 which measure the real absorption during the year as 77%. The lengthy process of the fund transfer had been noticed since 2016.

Description	Amount received in Euro	Date	Equivalent in USD
Opening Balance brought forward from previous years	657,692.57	07/01/2014	845,738.75
GAVI Inflow Health System Strengthening	5,776,188.74	13/07/2014	6,931,426.49
GAVI Inflow Health System Strengthening	1,723,913.22	14/04/2016	1,896,304.54
GAVI Inflow Health System Strengthening	1,935,655.92	12/12/2016	2,051,795.28
GAVI Inflow Health System Strengthening	1,604,629.82	14/12/2017	1,874,207.63
Sub-Total			**12,753,733.93**
GAVI Inflow Performance Budget #01	1,136,429.01	19/12/2016	1,193,250.46
GAVI Inflow Performance Budget #02	1,174,163.46	20/12/2017	1,384,338.72
Sub-Total			**2,577,589.18**
Total fund received			**16,177,061.86**

The frequency of reporting had been changed from quarterly basis to be on semi-annual basis (every 6 month).

With compliance with the financial reporting in 2017, semi-annual report submitted to Gavi in August 2017. The audited financial report and the annual audit report for 2016 submitted to Gavi on July 2017. The delay in the submission of the annual audit report of the grant was due the implementation of the program audit recommendation action plan that curried out in 2016. One team from the National Audit Chamber (NAC) had carried out both assignment.

Gavi Programme Audit's Action Plan:

The implementation of the Audit recommendation had taken place during 2017. In which most of the action plan had implemented. GAVI Program audit conducted on May 2016. An action plan to develop to respond to 16 recommendations with 75 action points. Those actions were implemented throughout 2017.The implementation of the action points had gone through two-verification process. By the end of 2017, most of the action point were covered. 13 recommendations were completely covered. the remaining recommendation consist of three actions as follow:

1. Translation of the operational manual, this activity delayed due to its linkage with required updating of the manual.
2. Finalization of the retention policy, this activity is part of the current HSS grant and the development of the policy started in the second half of 2017 as planned. However, the policy has not finalized in 2017 due to the lengthy process of policy development given the need to have extensive consultation at different levels, sectors and stakeholder.
3. The independent assessment of the construction of PHC facilities supported by HSS. The assessment started in 2017 as planned (it is final by Feb. 2018).

5. By the now all actions were met and final verification process implemented by GAVI through National Audit Chamber-Sudan and the report submitted.

5.1. Transition planning (if applicable, e.g. country is in accelerated transition phase)

Gavi transition planning:

Government ability to take over the cost of the traditional and new vaccine is highly questionable especially with the recent deterioration in economy, this need great effort to advocate for this among the higher governmental officials and to show the impact in financial, economic and human rights terms,. There is no transition plan developed up to date, but the country is preparing to develop it through the follow:

- Development of the transition committee (done and it is headed by the under-secretary of the FMOH with participation from the ministry of finance).
- Meetings is took place so far:
- UNICEF technical support to develop evidence regarding the economic impacts of use of vaccine as well as the equity cost and how does it cost in Sudan to reach and every child to inform transition planning and to be used as advocacy tool. This is in addition to the development of immunization financing road map are moving as planned and results are expected early in 2019.
- Two meeting held and Gavi workshop last year for sharing to exchange and learn from the experiences of countries in transition
- Policy dialogue with ministry of finance to put the immunization service as dependent budget line in the country budget, or other possible option to mobilize more resources for immunization such as (earmarked tax) is still ongoing.
- Review with PHI the health financing assessment and found immunization financing not including ,now work on updated version to uploaded
- **Private sector:** good efforts to engage private sector in financing EPI have already started as part of the preparation for country transition. In general Sudan EPI showed strong collaboration between MoH and the private sector (both for profit and not for profit).The private sector committed to apply the same national immunization guidelines, registration and reporting system, on the other hand the MOH committed to count the private sectors as immunization post in term of distribution of vaccine, supervision, evaluation and monitoring. The private sector even committed to implementation of the VPDs surveillance especially for polio and measles. In addition, private sector represented in several EPI technical and coordination groups.

  In all states, the general work of NGOs regulated and authorized by HAC, while the work of for profit private sector regulated by directorate of private care facilities under the state MoH in

certain states that have high presence only. There is no national body responsible of coordination or provision of unified guidance on care delivery by for profit private sector.

EPI district micro-plans on annual basis include list all sites providing immunization services (private and non-private), their catchment areas and target population, calculate their supply need and define the frequency of monitoring and supervision.
However; contribution of private sector to population coverage by immunization services and the vaccination coverage are monitored separately and on regular basis

- The country facing two transition (Polio and GAVI) some activates can be linked and integrated

5.2. Technical Assistance (TA)

TCA 2017 implemented through UNICEF

TCA	Status
Conduct temperature monitoring study during Vaccine transportation and propose best practices for implementation	Consultant identified and contract raised. Study implementation will start late July. Some delay experienced in the review and agreement on, and final signature of the ToR. Another minor delay was experienced in reaching the profiles of the candidates identified from the global cold chain experts roster resting in the portal with DHR
Support MoH cold chain technicians capacity building in repair and maintenance	65 cold chain technicians from the 18 states trained in 3 training sessions. Training was done by EPI and the National Institute for energy research (3 training reports are available)
Support EPI to conduct in-depth bottleneck analysis to improve planning to reach the most vulnerable children in the low performing states	Training workshops implemented in February 2018. states micro plan 2018 developed

TCA 2017 implemented through WHO

TCA	Status
Support development of proposal for introduction of YF vaccine in the routine immunization schedule	Postponed by MOH due to the PCA mission and will submitted in January 2019
Support development of proposal for IPV campaign for the cohort group not vaccinated since the vaccine stock out	As per the guidelines it is not need a new proposal
Support update the surveillance guidelines for yellow fever and meningitis	Done
Sustain the two national technical officer for EPI and HSS	Done

6. UPDATE OF FINDINGS FROM PREVIOUS JOINT APPRAISAL

Prioritised actions from previous Joint Appraisal	Current status

1. Support to develop the applications 2018 :- • IPV routine and campaign • YF routine • MR	***IPV routine and campaign :*** *Agreed on micro plan to be submitted*
	YF routine : **Shifted to 2019**
	MR : **Not done**
2. Decision making prior to HPV application, including defining evidence, disease burden, analysis on financial implications and planning	In progress : **with UNDP consultant was come - started *analysis of disease burden***
3. Case based surveillance in large hospitals in high risk states to analyses the impact of YF vaccine and Meningitis	Done
4. Cross-bordering surveillance and vaccination for meningitis and yellow fever (TA or MenAfri Net)	Not done
5. TA to build evidence on impact of vaccines to advocate transition process	With regional office agreed to conducted a cost analysis study & equity
6. Study on MCV Sero conversion to identify the immunity gaps in population by age group	**Was** Delayed To conduct after the measles follow-up campaign
7. Technical assistance needed to establish a cold chain maintenance system	In process
8. Recruit a consultant to provide support in this system and in the development of the deployment plan.	In process (expected consultant in 30 Sep2018?
9. Partner support on development of equity assessment in 2018.	Shifted to 2019
10. Health system in depth bottleneck analysis. Develop deep understanding of low performing localities. Slums areas? Camps? to be revised	**Dropped**
11. TA support to build accountability framework for the health sector	In process (TA was implement and the final report it will be shared by the end of the 2018

7. ACTION PLAN: SUMMARY OF FINDINGS, ACTIONS AND RESOURCE/SUPPORT NEEDS IDENTIFIED AND AGREED DURING THE JOINT APPRAISAL

*Briefly summarise the **key activities to be implemented next year** with Gavi grant support, including if relevant any introductions for vaccine applications already approved; preparation of new applications, preparation of investment cases for additional vaccines, and/ or plans related to HSS / CCEOP grants.*

*In the context of these planned activities and based on the analyses provided in the above sections, describe the five **highest priority findings and actions to be undertaken to enhance the impact of Gavi support or to mitigate potential future risks to programme and grant performance**.*

Please indicate if any modifications to Gavi support are being requested, such as:

- *Changes to country targets as established earlier, either from the agreed Grant Performance Framework (GPF) or as part of the NVS renewal request submitted by 15 May;*
- *Plans to change any vaccine presentation or type;*
- *Plans to use available flexibilities to reallocate budgeted funds to focus on identified priority areas.*

Priority areas for 2019

Data management:

1- EPI Coverage survey (International consultant WHO/PEF)
2- DHIS 2 and routine EPI reporting system without jeopardizing the existing vertical system (capture all necessary data and reporting sites as well as reporting completeness).(WHO)

3- Training and TA to design and pilot digital birth registration (National consultant and TWG/ Committee with representation of WHO and UNICEF)
4- Data quality assessment for (national and EPI): agreed be implemented before the PEF by WHO International TA not part of PEF but as a priority area. (Reprogrammed from EPI review).

Leadership, Management and Coordination

1- Conduct Training Needs Assessment (including Cold Chain HR) and development of comprehensive training plan. (WHO/ PEF)
2- Need to update the national guidelines, policy and training manual
3- Revitalize the zonal coordinators system under (HSS grant + PBF) for EPI.
4- Technical support to develop projection plan for HR needs (PBF)

Demand promotion, communication and SCOs engagement

1. Development of 5-year EPI communication strategic plan (present in the current TCA).
2. Printing to IEC material, training for inter-personal communication (PBF3)
3. National consultant to support development/update the health promotion strategy and multiyear plan (PBF2)
4. Building the capacity for health promotion department at different levels (PBF2)

Surveillance

1. comprehensive Surveillance review (PEF/ WHO)
2. Develop a comprehensive measles/rubella elimination multiyear strategic plan (PEF/ WHO)
3. Study tour with some similar countries to exchange experience surveillance system for vaccine preventable disease (PEF/WHO))

Immunization supply chain

1. EVM assessment (PEF/WHO)
2. TOT to support vaccine management (PEF/ WHO)
3. Strengthen vaccine management with focus on the care delivery levels (PBF3- training)
4. Solar system: TA to support the assessment and implementation (PEF /UNICEF)
5. TOT for EPI Cold chain technicians (PEF /UNICEF)
6. Zonal Equipment for maintenance Workshop for cold chain (PBF3- 3 workshop)
7. Study tour with some similar countries to exchange experience Vaccine supply management (UNICEF)

Staffing

1. Sustain the two posts for the HSS and EPI (NOD&NOB) for the next year (PEF/WHO)

Health System strengthening

1- Develop and implement policy options for financing health workforce focus on PHC workforce (PBF 3+ PEF WB).
2- TA to support the proposal development for HSS3 (international consultancy – PEF /WHO and UNICEF)
3- Impact of investing in training of Health worker (PEF/ WHO+ PBF3)
4- TA to strengthening Information system and observatory (PBF3)
5- Domestic Resources mobilization strategy for Health (TA, PEF / UNICEF)

Key finding / Action 1	Strengthening the health information system, data management and data quality
Current response	Introduction of DHIS2

Agreed country actions	Support the introduction of EPI module in DHIS2
Expected outputs / results	Use of DHIS2 in EPI reporting
Associated timeline	2019 – 2020
Required resources / support	International TA Training in EPI module Supportive supervision
Key finding / Action 2	Strengthening the health information system, data management and data quality
Current response	Fund can be provided through current HSS and can be complemented with activities in PBF
Agreed country actions	To design and pilott Digital Birth Registration
Expected outputs / results	Having Digital birth registration that provide more accurate denominators for child intervention including EPI.
Associated timeline	2019-2020
Required resources / support	National TA IT equipment and supportive commodities
Key finding / Action 3	Strengthening the health information system, data management and data quality
Current response	To implement the activity through International Consultancy funded by PEFTAC and operational cost from HSS2
Agreed country actions	Implement EPI coverage Survey
Expected outputs / results	Identify weakness and strengths; validate reported EPI coverage, insight about the reasons of non/incomplete vaccination.
Associated timeline	2019
Required resources / support	International consultancy
Key finding / Action 3	Strengthening the health information system, data management and data quality
Current response	Fund for the assessment can be provided through the current HSS but the TA is requested as part of PEF TCA
Agreed country actions	To conduct data quality assessment for the national system and for EPI
Expected outputs / results	To cover any gaps found during the assessment through development and implementation of Data Quality Improvement plan
Associated timeline	2019
Required resources / support	International TA and National TA
Key finding / Action 4	Capacity of HRH
Current response	To be implemented through PEF TCA
Agreed country actions	To conduct Training need assessment including Cold Chain HR and develop comprehensive training plan
Expected outputs / results	To strengthening the HRH capacity and provide replacement training to overcome the turnover of the staff.
Associated timeline	2019-2020
Required resources / support	Technical Assistance
Key finding / Action 5	Strengthening Human Resources Retention
Current response	
Agreed country actions	- Develop HR 2030 projection (PBF) - Develop and implement policy option for financing health workforce focus on PHC (PEF) - Measure the impact of investing in training of Health workers with focus on CHW and MW (PEF) - TA to strengthening the HRH information system and HRH observatory (PBF)

Expected outputs / results	To identify the need of HR for health including EPI staff at different level, implementing
Associated timeline	2019
Required resources / support	International and National TA
Key finding / Action 6	**Leadership, Management and Coordination**
Current response	To include this activity in the PBF3
Agreed country actions	To update EPI policy and EPI training material
Expected outputs / results	To cover all vaccines in the policy and EPI guidelines.
Associated timeline	2019
Required resources / support	Technical working group to review and update the policy and training material.
Key finding / Action 7	**Revitalization of the zonal coordinators system in EPI program**
Current response	To cover this under the current HSS 2 and PBF
Agreed country actions	EPI Zonal coordinators
Expected outputs / results	to improve the M&E activities at the states level and provide technical support in the implementation
Associated timeline	2019
Required resources / support	To develop proposal and TORs for Zonal coordinator
Key finding / Action 8	Exchange experience
Current response	Proposed to be part PEFE TCA
Agreed country actions	Study tour with some similar countries to exchange experience in vaccine supply management, integrated surveillance system for vaccine preventable disease.
Expected outputs / results	Lesson learned from other countries
Associated timeline	2019-2020
Required resources / support	Identify the locations and provide the financial support and coordination
Key finding / Action 9	Implementation of the 5-year EPI communication strategic plan
Current response	To be included on the PBF
Agreed country actions	Printing to IEC material, training for inter-personal communication
Expected outputs / results	Increase demand for EPI services and community mobilization and coordination with other bodies
Associated timeline	2019
Required resources / support	Added in PBF
Key finding/Action 10	Strengthen surveillance system
Current response	Include those activities in PEF TCA
Agreed country actions	- Conduct comprehensive surveillance review - Develop a comprehensive measles/ rubella elimination multiyear strategic plan
Expected outputs / results	To identify areas for improvement and consequently develop improvement plan.
Associated timeline	2019
Required resources / support	TA to support the implementation of the said activities through PEF TCA
Key finding/Action 11	Immunization supply chain
Current response	To be included in the PEF TCA, EVM assessment operational cost from the current HSS 2
Agreed country actions	- Implement EVM Assessment (PEF) - TOT to support vaccine management (PEF) - Strengthening Vaccine management with focus on the care delivery level (PBF) - Support the assessment and implementation of Solar system (PEF)

	- TOT for EPI cold Chain technicians (PEF) - Zonal Equipment's for maintenance workshop for cold chain (PBF)
Expected outputs / results	To improve the immunization supply chin and vaccine management quality
Associated timeline	2019
Required resources / support	TA and training
Key finding/Action 12	Immunization sustainability
Current response	Implementation of domestic resources mobilization study for EPI
Agreed country actions	Domestic Resources mobilization strategy for Health
Expected outputs / results	To set direction toward domestic resources mobilization for sustainability including EPI.
Associated timeline	2019-2020
Required resources / support	TA through PEF

8. JOINT APPRAISAL PROCESS, ENDORSEMENT BY THE NATIONAL COORDINATION FORUM (ICC, HSCC OR EQUIVALENT) AND ADDITIONAL COMMENTS

- *Does the national Coordination Forum (ICC, HSCC or equivalent) meet the Gavi requirements (please refer to http://www.gavi.org/support/coordination/ for the requirements)?*
- *Briefly describe how the Joint Appraisal was reviewed, discussed and endorsed by the relevant national Coordination Forum (ICC, HSCC or equivalent), including key discussion points, attendees, key recommendations and decisions, and whether the quorum was met. Alternatively, share the meeting minutes outlining these points.*
- *If applicable, provide any additional comments from the Ministry of Health, Gavi Alliance partners, or other stakeholders.*

9. ANNEX: Compliance with Gavi reporting requirements

Please confirm the status of reporting to Gavi, indicating whether the following reports have been uploaded onto the Country Portal. ***It is important to note that in the case that key reporting requirements (marked with *) are not complied with, Gavi support will not be reviewed for renewal.***

	Yes	No	Not applicable
Grant Performance Framework (GPF) * reporting against all due indicators	Yes		
Financial Reports *			
Periodic financial reports	Yes		
Annual financial statement			NA
Annual financial audit report	YES		
End of year stock level report (which is normally provided by 15 May as part of the vaccine renewal request) ****			
Campaign reports *			
Supplementary Immunisation Activity technical report			NA
Campaign coverage survey report			NA
Immunisation financing and expenditure information			
Data quality and survey reporting			
Annual data quality desk review			NA
Data improvement plan (DIP)			NA
Progress report on data improvement plan implementation			NA
In-depth data assessment (conducted in the last five years)			NA
Nationally representative coverage survey (conducted in the last five years)			NA
Annual progress update on the Effective Vaccine Management (EVM) improvement plan			
CCEOP: updated CCE inventory	Yes		
Post Introduction Evaluation (PIE)			NA
Measles & rubella situation analysis and 5 year plan			NA
Operational plan for the immunisation programme			NA
HSS end of grant evaluation report			
HPV specific reports			NA
Reporting by partners on TCA and PEF functions	YES		

In case any of the required reporting documents is not available at the time of the Joint Appraisal, provide information when the missing document/information will be provided.
