Sudan Joint Appraisal report
2017

The italic text in this document serves as guidance; it can be deleted when preparing the Joint Appraisal report.

Country	Sudan
Full Joint Appraisal or Joint Appraisal update	Joint Appraisal Update
Date and location of Joint Appraisal meeting	Khartoum / 9-12 October 2017
Participants / affiliation[1]	attached
Reporting period	2016
Fiscal period[2]	2016
Comprehensive Multi Year Plan (cMYP) duration	2017-2020

1. SUMMARY OF RENEWAL AND EXTENSION REQUESTS

1.1. New and Underused Vaccines Support (NVS) renewal request(s)

Type of support (routine or campaign)	Vaccine	End year of support	Year of requested support	Target (population to be vaccinated)	Indicative amount to be paid by country	Indicative amount to be paid by Gavi
Routine	NVS – PCV in existing presentation	2020	2018	1,580,967	US$ 12,458,500	US$ 1,726,500
Routine	NVS – Pentavalent in existing presentation	2020	2018	1,580,967	US$ 4,375,500	US$ 612,000
Routine	NVS – Rotavirus in existing presentation	2020	2018	1,580,967	US$ 4,453,500	US$ 682,500
Routine	NVS – IPV in existing presentation	2020	2018	1,038,644	US$ 1,027,000	US$
Routine	MenAfrivac	2020	2018	1,437,187	US$ 460,500	US$ 64,000

1.2. New and Underused Vaccines Support (NVS) extension request(s)

[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.

If 2017 is the last year of an approved multiyear support for a certain vaccine and the country wishes to extend Gavi support, please do so by requesting an extension of the vaccine support. The extension can be requested maximum for the duration of the Comprehensive Multi-Year Plan (cMYP), which must be submitted to Gavi.

Type of Support	Vaccine	Starting year	Ending year

1.3. Health System Strengthening (HSS) renewal request

Gavi commits to Health System Strengthening grants up to a five year period, with the first tranche approved with the approval of the proposal. In subsequent years, the country should submit a renewal request for the approval of the following HSS funding tranche.

*Below table summarises key information concerning the amount requested for the next year. Please note that funds previously requested and approved may be pending disbursement and do **not** require further approval.*

Total amount of HSS grant	33,240,000 US$
Duration of HSS grant (from…to…)	May 2014-June2019
Year / period for which the HSS renewal (next tranche) is requested	January – December 2018
Amount of HSS renewal request (next tranche)	6,325,194 US$

1.4. Cold Chain Equipment Optimisation Platform (CCEOP) renewal request

THE PROPOSAL SUMBITED on September,

Total amount of CCEOP grant	10,476,738 US$	
Duration of CCEOP grant (from…to…)	2018-2021	
Year / period for which the CCEOP renewal (next tranche) is requested	2018	
Amount of Gavi CCEOP renewal request	50% (5,238,396)US$	
Country joint investment	**Country resources**	2,838,722 US$
	Partner resources	1,877, 647 US$
	Gavi HSS resources[3]	522 US$

1.5. Indicative interest to introduce new vaccines or request Health System Strengthening support from Gavi in the future[4]

Indicative interest to introduce new vaccines or	Programme	Expected application year	Expected introduction year

[3] This amount must be included either in an earlier HSS approval or else in the current HSS renewal request in section 1.4 above.
[4] Providing this information does not constitute any obligation for either the country or Gavi, it merely serves for information purposes.

request HSS support from Gavi	Yellow fever	2018	2019
	Measles Rubella routine and catch up (MR)	2019	2020
	HPV routine and MAC	2019	2020
	IPV campaign fIPV (2 doses)	2018-2019	2018

Background

*Gavi's support to a country's immunisation programme(s) is subject to an **annual performance assessment**. The Joint Appraisal is a key element of this performance review. It is an annual, country-led, multi-stakeholder review of the implementation progress and performance of Gavi's support to the country, and its contribution to improved immunisation outcomes.*

*To inform the Joint Appraisal discussion, the country is expected to post all reporting documents on the Gavi Country portal not later than **four weeks ahead of the Joint Appraisal meeting**.*

*This includes reporting against **key requirements**:*

- *Update of the grant performance framework (GPF) for indicators which are due*
- *Periodic financial reports, annual financial statements and audit reports (for all types of direct financial support received, with specific submission deadlines depending on a country's fiscal year)*
- *End of year stock reporting (which is compulsory to be submitted by 15 May of each year to calculate future vaccine requirements)*

Other critical information to be posted on the Country Portal four weeks prior to the Joint Appraisal include:

- *Immunisation financing and expenditure information*
- *Data quality information (including annual desk review and progress report on the implementation of immunisation data quality improvement plans)*
- *Annual progress update on the Effective Vaccine Management (EVM) improvement plan*
- *Campaign reports (if applicable)*
- *HPV specific reporting (if applicable)*
- *HSS end of grant evaluation (if applicable)*
- *Post Introduction Evaluation (PIE) reports (if applicable)*
- *Expanded Programme on Immunization (EPI) reviews (if applicable)*
- *Gavi and/or polio transition plans or asset mapping information (if applicable)*

Other information that will inform the Joint Appraisal discussion include:

- *Report by WHO and UNICEF on their technical assistance milestones funded through the Partners' Engagement Framework that should be updated four weeks in advance of the Joint Appraisal*
- *Analysis on coverage and equity and other relevant programme aspects, as informed by the Joint Appraisal Analysis Guidance (if available)*
- *Full Country Evaluation report (if applicable)*
- *Other evaluation of Gavi programmes*

***Note: Failure to submit the relevant information described above on the country portal four weeks ahead of the Joint Appraisal meeting (except for the vaccine renewal request, which is to be submitted by 15 May) may impact the decision by Gavi to conduct the Joint Appraisal meeting and renew its support**.*

2. CHANGES IN COUNTRY CONTEXT SINCE LAST JOINT APPRAISAL

Comment on changes which occurred since the previous Joint Appraisal, if any, to key contextual factors that directly affect the performance of the immunisation system and Gavi grants (such as natural disaster, political instability, displaced populations, inaccessible regions, etc., or macroeconomic trends or disease outbreaks).

Please indicate if the country has been formally identified by Gavi as fragile and specify if flexibilities in grant management are being requested.[5]

- Sudan composed of 18 states, is characterized by a strategic geographical location, that links the Arab world to Sub Saharan Africa, and it shares its borders with 8 countries. This put it in risk of cross bordering transmission of communicable diseases.
- In 2016 total population is estimated to be 38 Million as projected from the 2008 census with growth rate of 2.8%, 6,786,004 under-five children and 1,466,741 infants.
- 70% of population are rural and 8% are nomads, there are about one million refugees from neighbouring countries, settled all over the country within and outside the camps.
- Poverty remains widespread in the country, with 46.5% of the population living below the poverty line according to the national definition of poverty.
- Difficult access to some areas, rural-urban migration, natural disasters, the longstanding civil war and limited resources had a significant impact on the provision of immunization services. As a consequence there are variations within the country in delivery of services, vaccination coverage and disease incidence though at national level the immunization coverages based on Penta 3 coverage for 2016 was 93%.
- While the peace agreement has contributed to stability in some parts of Darfur, the escalation of violence in the Jebel Marra area in 2016 led to a further 82,000 people, including 47,000 children, being displaced in Darfur, also the ongoing conflict in South Sudan since 2013 has led to an estimated 297,168 people crossing the border into Sudan during 2016. These new and scaled up emergencies in a long drawn conflict further exacerbate fragilities in host communities.
- Acute watery Diarrhoea continued to be reported in high numbers during 2016.This continued emergency posed an additional burden on the health system in general and immunization program in specific at national level as well as the affected states. This provides an example for the importance to improve the resilience of the health system so that it is not affecting the ongoing activities and services provided. This is due to the fact that many EPI staff has been involved in the outbreak response as well as implementation of the cholera vaccination campaign among South Sudanese refugees due to the long EPI experience in planning and implementation of mass vaccination campaigns. After approval by NITAG, EPI conducted OCV vaccination campaign and covered all the South Sudanese refugees in White Nile State by 2 doses (more than 60000 persons above one year were vaccinated).
- On a positive note; the launching of the 10 in 5 RMNCHA strategy 2016-2020 that took place in 2016 sets a clear path for MCH in Sudan in the coming five years and immunization plays a central role in this strategy.

[5] For further information refer to http://www.gavi.org/about/governance/gavi-board/minutes/2016/7-dec/minutes/08a---fragile-settings,-emergencies-and-displaced-people/

- Also during 2016 the school health strategy was developed and forms the platform for EPI for introducing relevant routine older age vaccination and empowering students and teacher to play active role in immunization.
- the Expenditure on PHC including immunization program has reached 46% in 2016 from a baseline of 6% in 2008, this in fact reflects the increasing government commitment toward Primary Health care
- Sudan implemented the MenAfrivac mini catch up campaign in the 18 states, targeted 4,093,623 1- 4 years old child, and achieved 101% coverage (4,123,133 child vaccinated)
- The MenAfrivac vaccine was introduced through the existing immunization services using all the three strategies for providing the services that is the fixed, out-reach and mobile strategies, schedule at 9 month of age along with the first dose measles.
- In Sudan Immunization is high in the government's agenda, It is the engine that drives integrated health services.
- Out of pocket expenditure in Sudan represents 75% of the total health expenditure despite the increase in Government expenditure from 6-9% from 2012 to 2015 out of the total Government budget. In 2016, the EPI budget is funded 12% by the Government, 60% by Gavi and the remaining from other partners.
- On 25th of April 2016, Sudan has launched the "National Switch Day" for the Switch off from tOPV to bOPV. National plan was prepared and required committee and core team was established at the national level as well as state level to implements the plan. Waste management and disposal subcommittee based on the WHO guideline was formulated; training manual was developed for the training of the state immunization staff. Validation of the switch implementation was conducted by "independent" supervisors and monitors, who were not involved with executing the switch. tOPV was found in one cold chain store and in one facility out of the 252 fixed services points assessed.
- This Effective Vaccine Management (EVM) assessment was done by an external team from WHO EMRO and in collaboration with a national team from the MOH, the result of this EVM assessment demonstrated that the overall score by criteria was 89%, with all the criteria exceeds the standard required score of 80%, showing a remarkable improvement compared to the results of the EVM assessment conducted in 2013 76% (where, only four criteria (E1, E2, E3 and E8) exceeded the 80% score).

3. PERFORMANCE OF THE IMMUNISATION SYSTEM IN THE REPORTING PERIOD

This section should provide a succinct analysis of the performance of the immunisation system, including a thorough analysis of immunisation coverage and equity, as well as a review of key drivers of poor coverage. It should focus on the evolution/trends observed over the past two to three years and particularly changes since the last Joint Appraisal took place.

Information in this section will substantially draw from the recommended analysis on coverage and equity and other relevant programme aspects which can be found in the Joint Appraisal Analysis Guidance (http://www.gavi.org/library/gavi-documents/guidelines-and-forms/joint-appraisal-analysis-guidance/).

3.1. Coverage and equity of immunisation

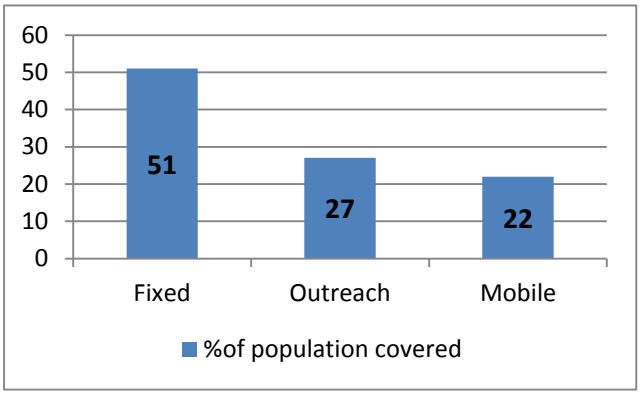
Please provide an analysis of the situation related to coverage and equity of immunisation in the country.

*Provide a summary of the difference in **coverage across various geographical areas, populations and communities** and the evolution over the past years. Relevant information includes: overview of districts/communities which have the lowest coverage rates and/ or the highest number of under-vaccinated children, number of vaccine preventable diseases (VPD) cases observed in various regions/ districts etc.*

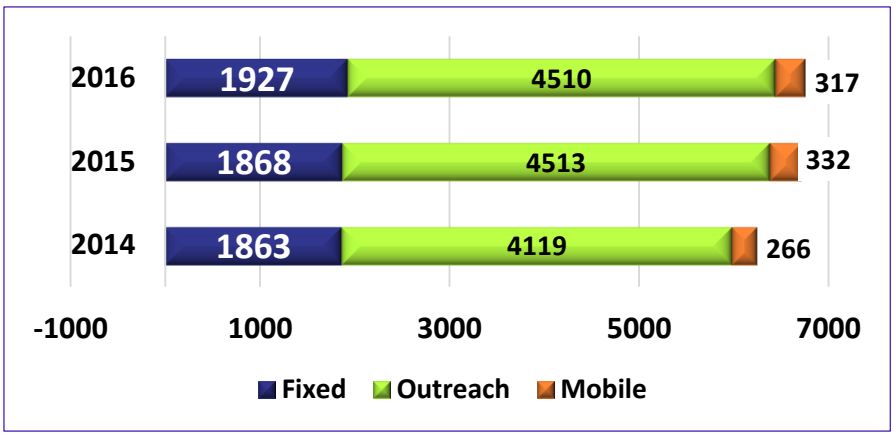
Countries are strongly encouraged to include heat maps or similar to show immunisation coverage trends over time. Examples of such analysis are available in the Joint Appraisal Analysis Guidance (available via http://www.gavi.org/library/gavi-documents/guidelines-and-forms/joint-appraisal-analysis-guidance/)

Coverage:

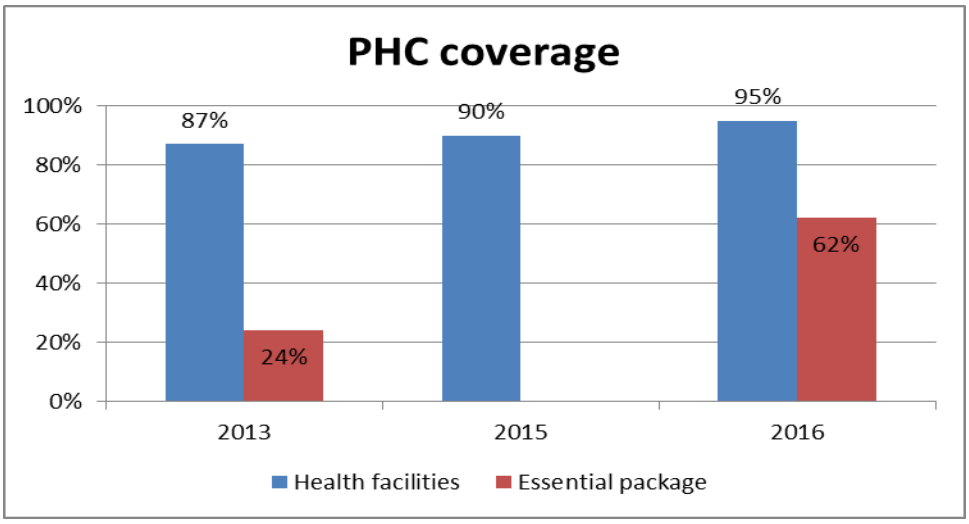
Immunization services in Sudan are delivered through three main strategies; fixed, outreach and mobile. The below graph show the % of population covered by each strategy.



The EPI target is to expand the fixed services to cover most of the population as the other two strategies are more expensive, and remarkable success has been achieved in this as shown in the below graph –

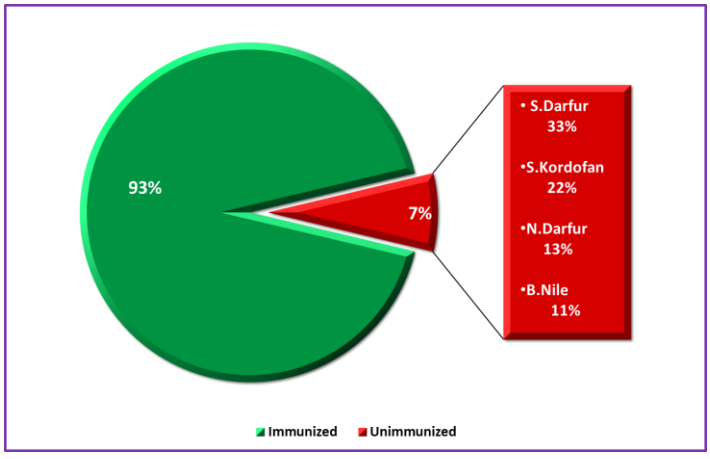


The geographical access to health services had reached 95% in which the functionality of the health facilities had been taken into account. In general, the PHC expansion project still has long way to go in which only 55% of the targeted health centers and units have been constructed. GAVI had played a major role in supporting the access to primary health services through fixed sites construction which in turn act as a key role in immunization sustainability. The percentage of health facilities providing essential PHC package, including immunization services, increased from 24% in 2013 to 62% in 2016 as shown in the figure below.



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%. Vaccines coverage in progress or stagnant that could not achieve the 90% target (MCV1 and Rotavirus) with coverage ranged from 75% - 86%. The stagnant low coverage vaccines (TT2 and MCV2), their coverage ranged between 37%-67% for the last four years.

Despite the great effort to reach all children, but Penta 3 coverage remain stagnant at 93-94% for years (2014-2016), there are around 7% of children not reached. Mapping of these children showed that they were mainly in conflict/post conflict states; namely S. Darfur (33%), S. Kordofan (22%), B.Nile (13%) and N. Darfur (11%) as shown in below chart.



Regular in-depth analysis used to be done in quarterly bases 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 contributed to the weak and poor quality in implementation of immunization sessions.

- Frequent division and increasing in the number of localities every other year that lead to weaknesses in the programme infrastructure (Cold chain, transportation means and qualified HR) and 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

Corrective measures were planned and implemented, improvement of coverage was reported by end of 2016 and expected to be better in 2017.

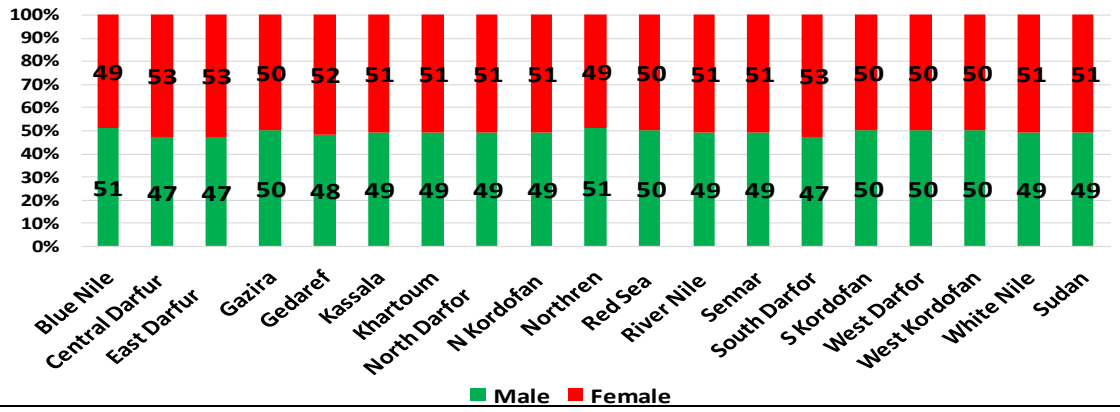
Equity

The inequities in immunization services may include differences between populations with ethnicity, gender or socioeconomic status. Sudan implemented Reaching Every District (RED) approach since 2002; which facilitate to ensure equity in immunization services. Additionally the 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 are 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, ultimately it is affordable for the poor equally as the rich child. 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. The main areas EPI program focus on in order to ensure equity in immunization services will be discussed in details below.

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 2016 shows that, it is almost equal percentage of vaccinated children, where males is (49%) and females is (51%).

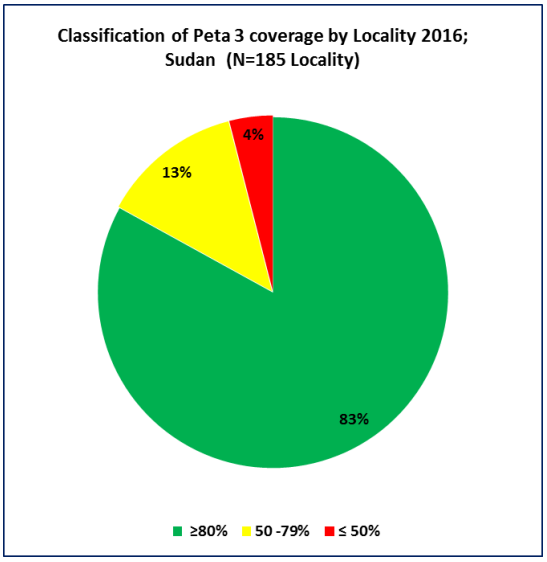
Also in a positive note, volunteers providing routine and supplementary immunization services are predominantly females. 73 % of service providers for TT vaccination campaign in December 2016 were females. In addition to that, in areas (e.g. Eastern zone of Sudan) that have certain norms related to limiting 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 (Equity) 2016



Geographical coverage

Routine immunization coverage used to be assessed quarterly by the EPI program with focus on the fragile states where the immunization services are disrupted as part of the overall health system, many strategies to reach those children usually planned and implemented with highly appreciated support from the partners especially WHO and UNICEF for example in implementation of acceleration campaign in Darfur states. This approach is very expensive but very effective in reaching every child in these remote and partially closed areas.

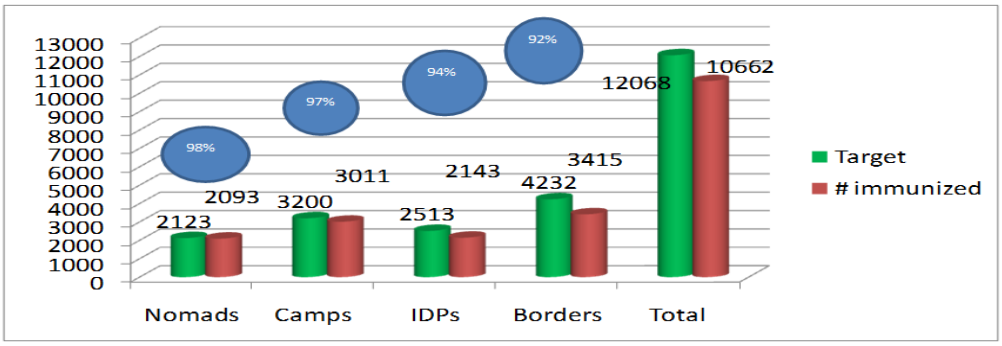
Despite these efforts vaccination coverage achievement for routine vaccination is varying among different districts during 2016 for Penta and MCV as shown in graph below; JRF2016.



Hard to reach, special and disadvantaged population

About13.7% of the population do not have access to PHC services with a significant portion being pastoralists/nomads, IDPs, communities with cultural/geographical barriers and/or living in conflict affected areas. Frequent and large scale population movements inside the country (conflict induced IDPs, pastoralists, economic migration). Besides that, the currently has open borders with neighbouring countries with the massive influx of the South Sudanese refugees and returnees. All these groups are well addressed during the microplanning process addition to close monitoring of the immunization services to ensure all children were reached. To insure reaching all unreached population/children; bottle neck analysis for immunization services is planned in Nov-Dec 2017 and the result of this analysis will be used during the annual review and district micro-planning process with all states.

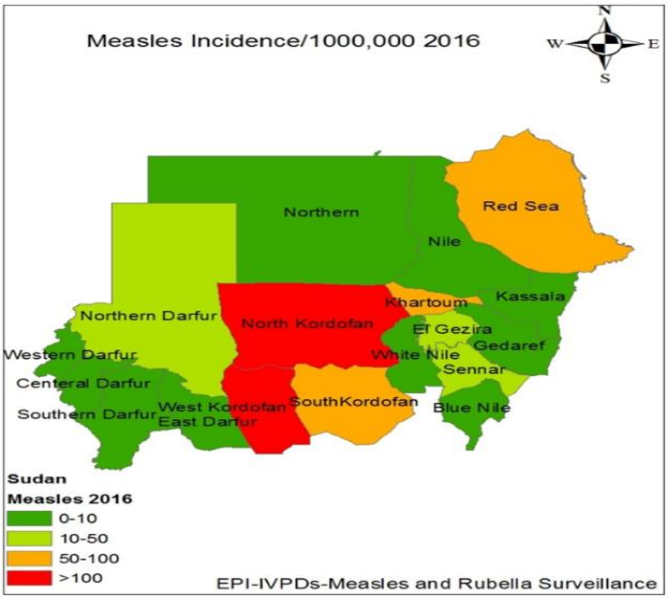
The graph below shows the coverage of Penta3 of special groups



Outbreaks

The outbreak in Sudan didn't reflect any sign of inequity, for example measles outbreak which continued since end of 2014 till end of 2016, all states were hit by the outbreak as shown in the below graph (Sudan measles incidence by states 2016), even for the suspected diphtheria and pertussis outbreaks; despite that both were only reported scattered cases not confirmed but the distribution of cases didn't showed that it is linked to any disparities in immunization services or inequity.

Under the HSS2 grant, activities to improve health facility readiness to manage outbreaks were successfully implemented and led to the establishment of this approach in 2017 including: case management, surveillance and infection control. At community level, training on health promotion was conducted. White Nile and South Kordufan are where the interventions were implemented. In both states about 493 health care providers and 80 ministries staff were trained.



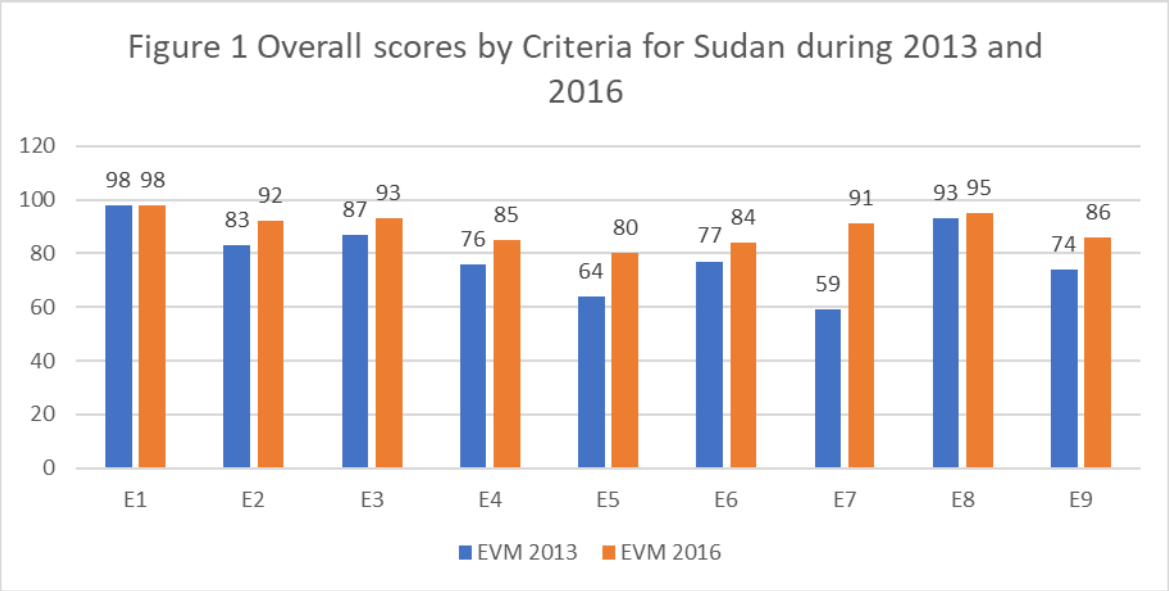
3.2. Key drivers of low coverage/ equity

*Please highlight key drivers of the low levels of coverage and equity highlighted in the section above. For those districts/communities identified as lower performing, explain the **key barriers** to improving coverage.*

***Health Work Force**:*

- The migration of health professionals and turnover of the staff are one of the chief constrains in the health system at all levels including immunization. Immunization services are provided through all four levels; the national, state, locality and the health facility/service delivery points (fixed, outreach and mobile strategies). The constant change in number of states & districts is creating a major challenge not only for the national immunization programme but also for the other parts and programs in health. As a sequence of this increase every year the programme is requiring extra trained human resources, financial and logistic support. Additional, the program suffered of severe loss of human resources at all levels and most of the vaccinators didn't 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. Health facilities are not equally distributed; this leads to high dependency in unsustainable strategies such as mobile and acceleration activities conflict affected states, especially Darfur states. EPI has started bottleneck analysis and started implementation of strategy toward more sustainable immunization services and increase the access for under-served communities as part of PHC expansion and universal health coverage
- ***Supply chain**:*

The most recent Effective Vaccine Management (EVM) which was conducted in December 2016, showed that there is a remarkable improvement in vaccine management components at various levels as compared to the pervious EVM of 2013 (see table below). The overall average score was 89% compared to 76% in 2013.



At national level, the overall score has remarkably improved from 88% to 99%. Although building and equipment criterion has improved from 86% to 94%, still it has scored the lowest among the other criteria. Maintenance has improved from 88% to 100% at the national level.

EVM results at the state level, has improved from 80% to 89%. Locality level has scored over 80% in all criteria. At the health facility level, the improvement was not significant with one criterion (the maintenance criterion) still below the recommend level of 80%.

The CCI was conducted in the period October to December 2016. In general 2,333 health facilities, 183 localities, 18 states and the national level have been surveyed for facility and equipment assessments. The finding revealed that there is 3,182 cold chain equipment at different levels. A total of 2,519 (79.1%) of the CCE are functioning at the survey time. Out of all 2,333 health facilities (service delivery points) that were surveyed, the facilities with at least one functional and pre-qualified cold chain equipment are (38%) and 75% of the facilities with a real need for rehabilitation, replacement and or extension. It's worthy to mention that there are 537 (23%) facilities that currently under the category of extension to increase the geographical coverage.

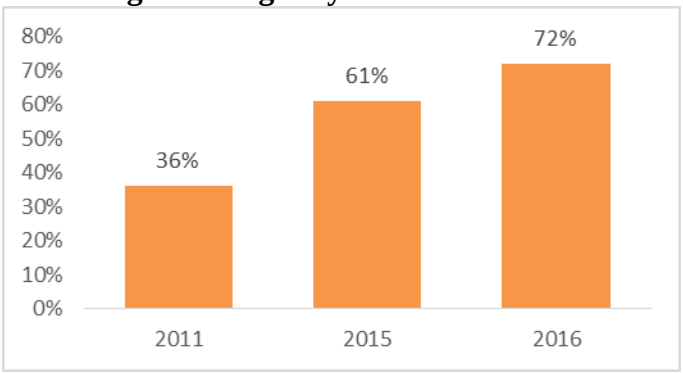
With aim to improve the supply chain system, EPI with partners has carried out the below listed activities:

1. Developed and started implementation of EVM improvement plan
2. Conducted cold chain inventory and developed CCEOP proposal to renovate the cold chain equipment
3. Started the process to establish maintenance system
4. Conducted cold rooms inspection and calibration exercises
5. Conducted temperature mapping for the cold rooms at all levels
6. Conducted EPI optimization supply chain study
7. Recruited national cold chain consultant to help strengthening the cold chain system.

- ***Demand generation / demand for vaccination**:*

  Communication is deeply impeded in EPI program since its early start, this became well formulated with the commitments towards disease elimination and eradication targets for which the multi strategies implemented, especially for polio end game and measles elimination initiative, resulted in a strong communication network of volunteers in the ground and good engagement of community leaders. In the other hand low awareness, intercountry population movement, multi-ethnic with big cultural disparities, the many different local linguistic and relatively high illiteracy and poverty rate and lifestyle in some rural areas are still hindering the utilization of available immunization services which sometimes depend in acceleration or hit and run strategies. FMoH has constantly uses the CSOs and I/NGOs to deliver and raise the awareness of the local communities in low performing and unsecured areas where they have comparative advantages to reach more children in these areas. FMoH is also adopting a policy to build the capacity of allied health staff. National consultant has been recruited to help developing communication micro plan and help. Barriers to immunization study in the low performing localities was also started to identify the root causes affecting immunization services
  Additionally, the use of Midwives and community health workers in demand generation for health services in general and vaccination in particular specially that there is ongoing project of providing midwifes in Sudan. The coverage of villages by midwives had increase from 36% in 2011 to 72% in 2016 (shown in figure below).

Coverage of villages by midwives in Sudan



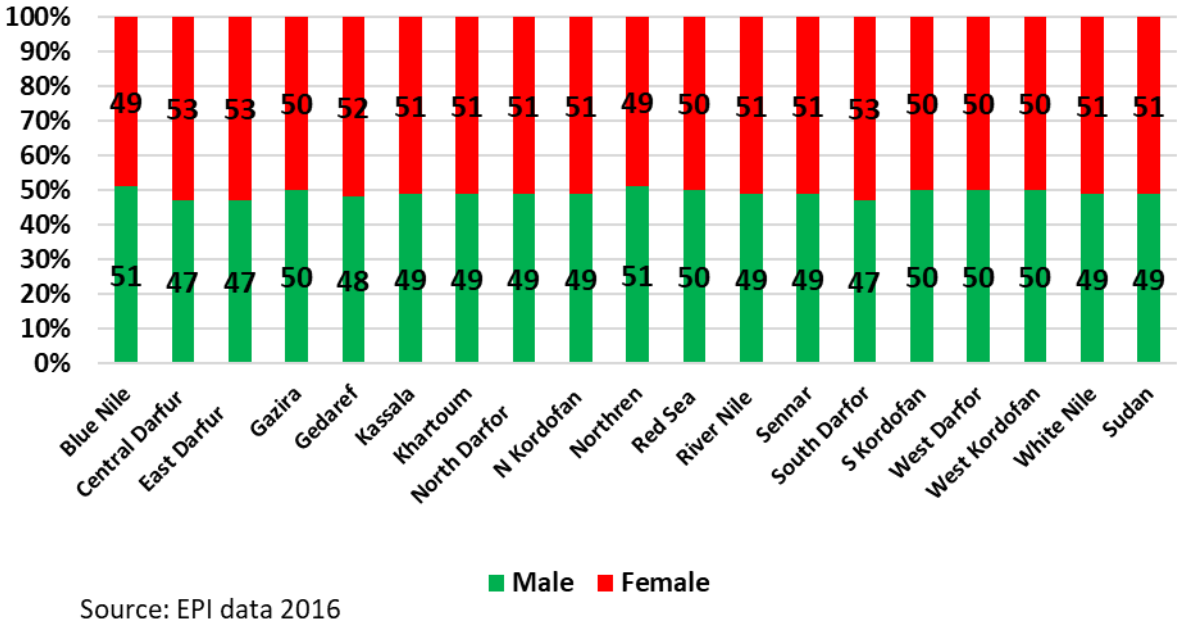
- ***Gender-related barriers[6]**:*

Although there is no study was conducted to identify the impact of gender in accessing and utilizing immunization services, EPI administrative data shows some but not significant gender differences in utilizing immunization services with less girls receiving the third dose

[6] Gender-related barriers are obstacles (for access and use of health services) that are related to social and cultural norms about men's and women's roles. Women tend to be the primary caretakers of children, but sometimes lack the decision-making power and resources to access or use available health services.

of penta 3 in 2 states namely Blue Nile and Northern (see the figure below). Gender equity study is planned through Gavi HSS to inform the future country plan.

% of Penta3 coverage by gender (Equity) 2016



Source: EPI data 2016

- ***Leadership, management and coordination****:*

The states with low coverage are mostly 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

*Provide a succinct review of key challenges related to the availability, quality and use **of immunisation data**. This section should at least cover insights on coverage data (target populations, number of children vaccinated) and could also cover topics such as vaccine supply chain data, VPD surveillance data, AEFI data.*

Please take the following aspects into account:

- ***Compliance** with Gavi's data quality and survey requirements (the requirements are detailed in the general application guidelines available on www.gavi.org/support/process/apply/). If you are not compliant, explain why.*
- *Highlight key **challenges** pertaining to data availability, quality and use, referring to results from most recent annual desk review, any recent assessments and implementation of immunisation data quality improvement plan. For example, are you aware of key limitations / weaknesses related to the quality of the data and data analyses you have used to inform this Joint Appraisal.*
- *Main **efforts / innovations / good practices** focused on improving data system strengthening and addressing key issues.*

Target populations:

Total Population (Estimated from 2008 census projection)	38 Million
Growth rate	2.8%
Under-1 year population	1,466,741
Under-5 years population	6,786,004
Pregnant women	1,641,751

Number of children vaccinated:

Administrative Coverage Achievements by Antigens 2012-2016

Year	BCG	OPV 1	OPV2	OPV3	DTP 1/ Penta 1	DTP 2/ Penta2	DTP 3/ Penta3	PCV 1	PCV2	PCV3	Rota1	Rota2	MCV1	MCV2	MenA
2012	91.9 %	99.5 %	93.6 %	91.6 %	99.5 %	93.7 %	91.6 %	NA	NA	NA	81.3 %	74.6 %	85	24.5 %	
2013	93.2 %	100 %	95%	93%	100 %	95%	93%	70.1 %	47%	30%	86	80.3 %	85	56.9 %	
2014	94.7 %	100. 7%	96.2 %	94.2 %	100. 7%	96.2 %	94.3 %	101. 2%	97.7 %	96.7 %	89.9 %	85.6 %	86.2	61%	
2015	87.8 %	98.2 %	93.4 %	92.7 %	98.2 %	93.4 %	92.7 %	98.1 %	93.2 %	92.6 %	88.5 %	84.4 %	87.3	69.2 %	
2016	95.7 %	98.7 %	94.2 %	92.5 %	98.7 %	94.2 %	92.5 %	98.7 %	94.2 %	92.5 %		94.2 %	86.4 %	68.5 %	98%

Performance Indicators of Routine Immunization:

	Indicators	2014	2015	2016
Immunization DOR	**DOR (DPT1 –DPT3)**	6.4%	5.6%	6.2%
	% District with >80%	90%	83%	83%
	% Districts < 50%	0%	2%	4%
	% Districts with (DPT1- DPT3) DOR > 10%	34.3%	24.5%	33%
	DOR (MCV1-MCV2)	**29%**	**21%**	**20%**

VPD surveillance data

Polio and measles and rubella case-based surveillance form the backbone of VPD case surveillance and are an absolute requirement in disease eradication and elimination programmes. On this basic surveillance infrastructure, other VPD case reporting were established and maintained with a need for improvement and strengthening, including MNT, diphtheria, pertussis and congenital rubella surveillance. The important challenge facing the

program regarding the VPDs surveillance are:

1. The remarkable reduction of the funds especially for measles and even polio
2. No funds for other VPDs surveillance
3. Yellow fever and meningitis surveillance lies within another department and suffering a lot of obstacles
4. High turnover among the staff

Great effort has been done by the program to have integrated vaccine preventable surveillance reporting for all VPDs using polio and measles existed systems including:

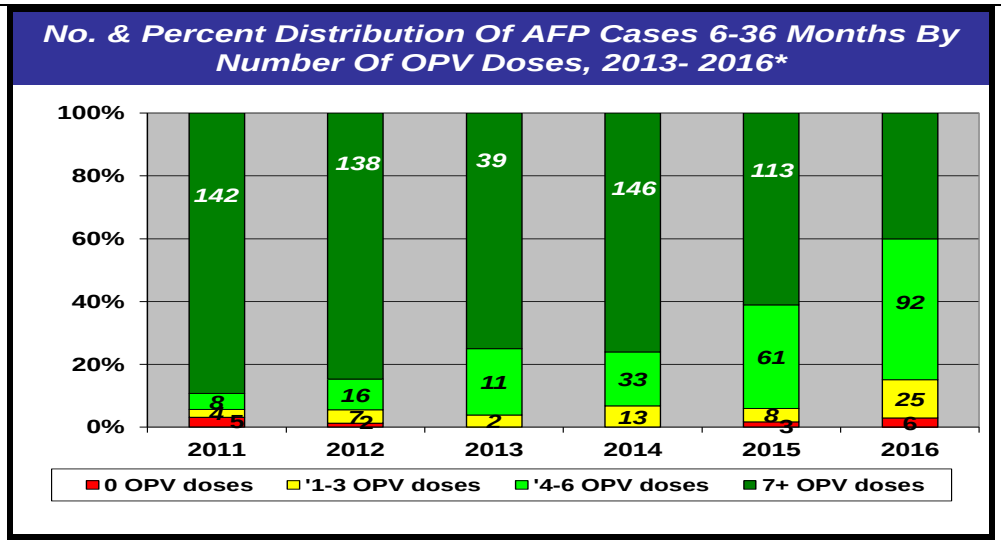
- Assignment of focal person per each state
- Development of training manual

- Revision of the national guidelines, treatment protocol and SOPs

The table below shows the VPDs reported in 2016:

Disease	Suspected cases	Laboratory investigation		Number of confirmed cases
		Number of suspected cases tested	Number of positive cases	
Diphtheria	65	25	0	0
measles	4534	3543	866	1767
Neonatal tetanus	62	0	0	62
Pertussis	575	0	0	0
Rubella	4534	3543	935	996
Congenital Rubella syndrome (CRS)	73	70	9	9

The AFP surveillance performance indicators have reached the certification standard since the beginning of 2001. These indicators remained above the target for the subsequent years up till now. The graph below shows the distribution of AFP cases per vaccination status



Measles case based surveillance was established in 2006 and implemented in all states with the laboratory as an integral part for establishing effective measles surveillance .Since that more than four international reviews were conducted , concluded that " the system is well developed and fully functional throughout the administrative levels, the staff are highly motivated with a supportive management and logistic infrastructure. Measles surveillance now facing the challenge of availing funds for availing the laboratory supplies and for the running cost of the surviellance because of the remarkable reduction of the funds from the donors e.g. the MRI. The measles surveillance used to achieve all the target indicators as Shown in the below table.

Indicators	Target		2015	2016
Rate of Non- Measles Non- Rubella Cases/100,000pop	2: 100000		6.4	4.1
Representativeness (states with non-Measles non Rubella reporting rate ≥2)	≥80%	> 2	100%	78%
		1>0< 2	-	22%
		> 1	-	-
% Cases with Adequate serology samples	≥80%		98%	98%
% Cases with Adequate investigation	≥80%		99%	99 %

% Samples Received within 5days of collection	≥80%	93%	89%
% Results reported back within 4days	≥80%	74%	96%

For the new vaccines introduced, disease burden and programme impact is mainly measured through a laboratory-based sentinel hospital surveillance system. Sudan as a member state in the EMR has joined the BMS and Rotavirus surveillance network since 2007. Surveillance is based on a sentinel surveillance which provided general disease information, which used for decision making for the new vaccines introductions and will be used to monitor the trend of the VPD

Disease	Suspected cases	Laboratory investigation		Number of confirmed cases
		Number of suspected cases tested	Number of positive cases	
Rota	3120	2338	752	752
Hib	1025	419	0	0
Pneumonia	361	314	35	35

Since introduction of the MenAfrivac in 2012, Sudan started case base surveillance for meningitis from more than 500 sites in all 18 states;

Year	SP	HI	nmA	nmW135	Total
2008	1	1	12	1	15
2009	60	11	39	11	60
2010	5	0	25	8	38
2011	2	4	6	0	17
2012	4	6	6	2	18
2013	13	2	0	2	17
2014	9	1	0	9	10
2015	2	1	0	0	3
2016	5	0	0	0	5

Vaccine supply chain data,

Supply chain in Sudan is the back bone of the immunization programme. It extends over different administrative levels of the country (National, State and Districts) up to the service delivery points. For each level of the supply chain certain cold chain equipment is used according to the need and population size. Cold chain equipment of different types (PQS &non PQS), different capacities, and different manufactures and models are distributed over a very wide area of the country.

The Central Cold Store was certified by WHO and UNICEF in 2008, it achieved the certification standard with overall score of 94% for the 10 vaccine management global criteria's as the forth country in EMRO to get this certificate. In 2009, it has awarded the award of excellence in vaccine stock management from GAVI.

During the period 2001 - 2004, the programme had introduced advanced technologies for

vaccine stock management (VSSM) and temperature monitoring into the central cold store.

Cold Chain Storage Capacity at National Level

There are 7 walk in cold rooms and one freezer room at the National cold store, with total storage capacity as shown below, the available cold storage capacity was found sufficient for the current routine and campaigns vaccines as calculated by the EVM implemented on December, 2016

Gross vaccine storage capacity at (2 - 8 C) = 219,324 Liters

Gross vaccine storage capacity at (-15- -25 C) = 10,000 Liters

Cold Chain Storage Capacity at the Sub National level (states)

Gross vaccine storage capacity at (2 - 8 C) = 108,017 Liters

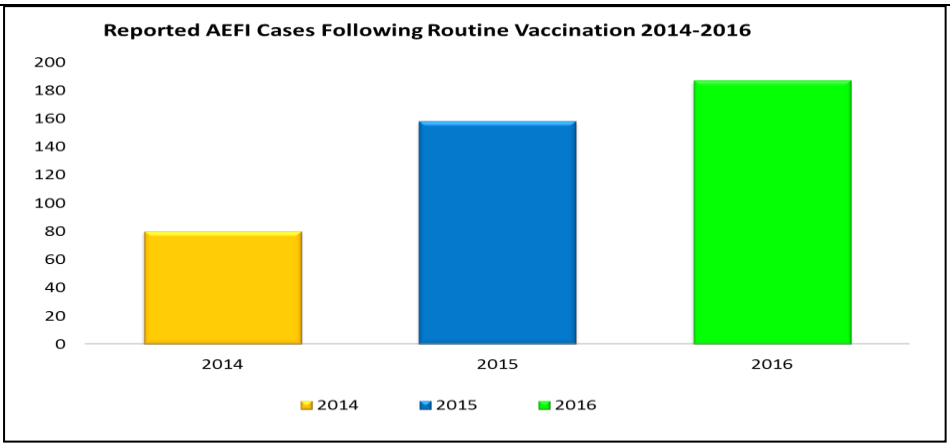
Gross vaccine storage capacity at (-15- -25 C) = 16,458 Liters

Total number of cold rooms at this level is 27; number of chest freezer is 71, and refrigerators 64. Cold rooms used in all 18 states comply with the WHO specifications (CFC free). The last inventory assessment conducted in November 2016, showed that there is a shortage of capacity at +5OC (functioning with PQS code) in 2 states, Khartoum and Gaziera states while there is no shortage of capacity at the state vaccine stores for -20 OC . At the locality level there are 8 cold rooms, 489 refrigerators and 106 freezers.

The recent Effective Vaccine Management (EVM) conducted in Dec 2016, reflected that there is a good progress in the performance between the previous EVM findings in 2013 (79% score) and the recent one in 2016. The country overall scored 89% for the different EVM criteria. Gap areas were identified in some areas as completeness of stock recording, temperature monitoring, vaccine wastage system monitoring and vaccine distribution plans and monitoring were not satisfactory. EVM improvement plan was developed and implementation is closely monitored.

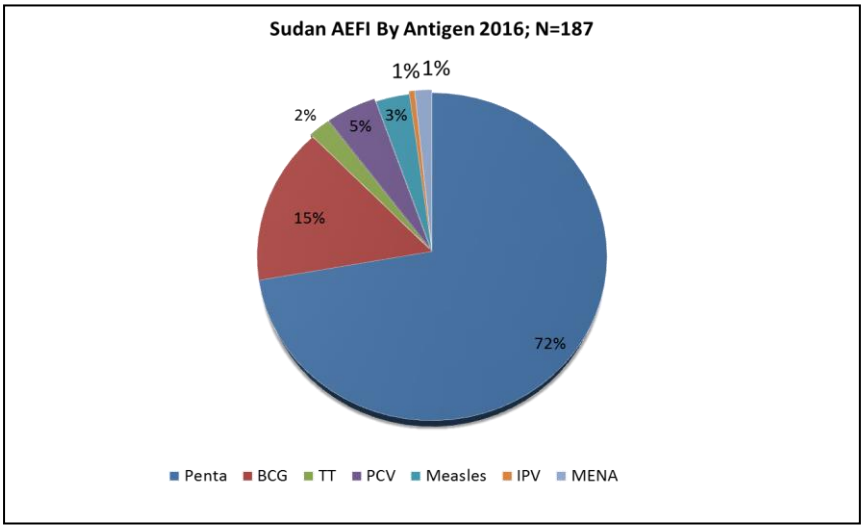
AEFI data:

Remarkable efforts were done to improve the adverse events following immunization (AEFI) surveillance system since 2014 and it is now functioning in all the 18 states. Three types of reporting are implemented; Immediate reporting for any serious events following immunization, and weekly zero reporting with the AFP Zero reporting and monthly reports compiling all events (minor & major), analysis and classification of reported AEFI cases usually done by antigen and actions taken accordingly. As shown in the below graph.



During 2016, from the **routine immunization 187 AEFI cases** were reported: 182 were mild cases and the remaining 5 cases were serious AEFI with no deaths reported.

Graph below shows the AEFI by antigen 2016:



During campaign 230 cases were reported: 45 cases of AEFI were reported during measles campaigns, 102 AEFI cases in meningitis campaign with one death and 83 cases during tetanus vaccination campaign. All serious cases were assessed by AEFI causality assessment committee that had been established in 2012.

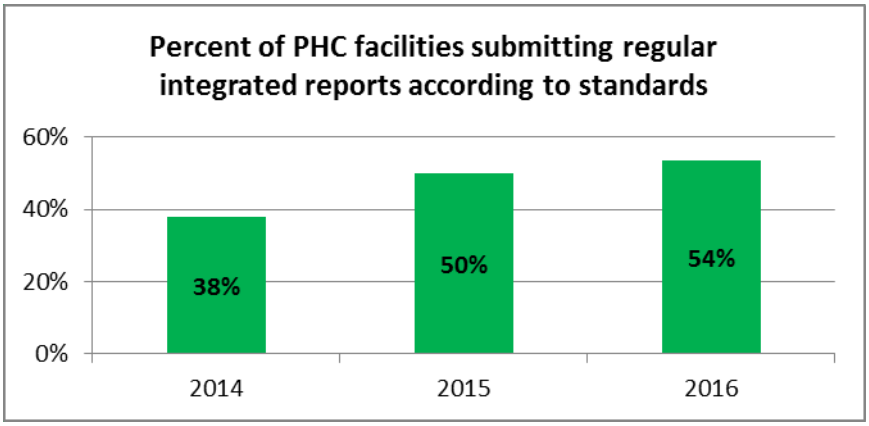
***Post-marketing Surveillance*:** As WHO Global Advisory Committee on Vaccine Safety (GACVS) recommended to develop a system of post-marketing surveillance for new vaccines, and recommended a standardized approach to address potential safety issues regarding rotavirus vaccine, Sudan has started intussusception surveillance for infants in 2011, the system included 4 major paediatric hospitals. First phase of the data collection was completed, 242 cases were reported and the findings were:

- No reported intussusception case within 7 days after vaccination with the 1st dose of Rotarix vaccine
- There are 3 intussusception cases reported within 7 days after vaccination with 2nd dose of Rotarix vaccine.

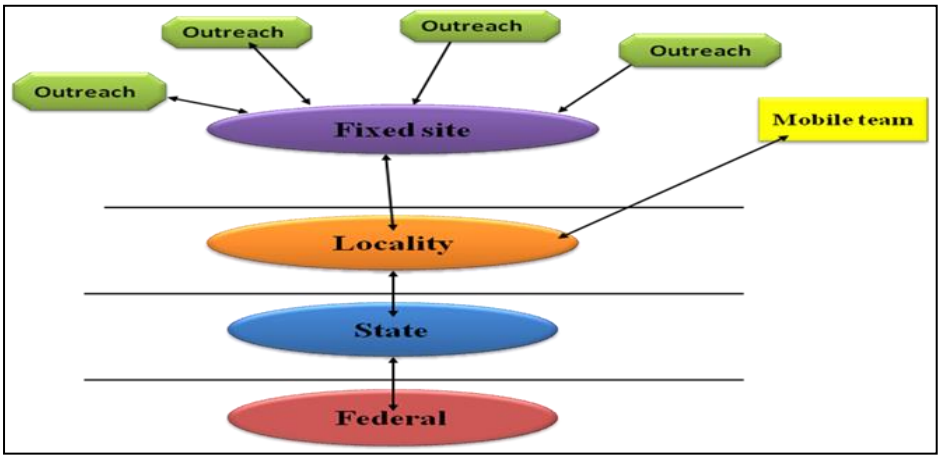
Based on this data, the results raised to the NITAG and decision of release of age restriction of the Rota vaccine was taken and implemented.

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 is 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 figure below shows the improvement in the reporting rate of the PHC health facilities. It shows overall improvement in the rate of the reporting.



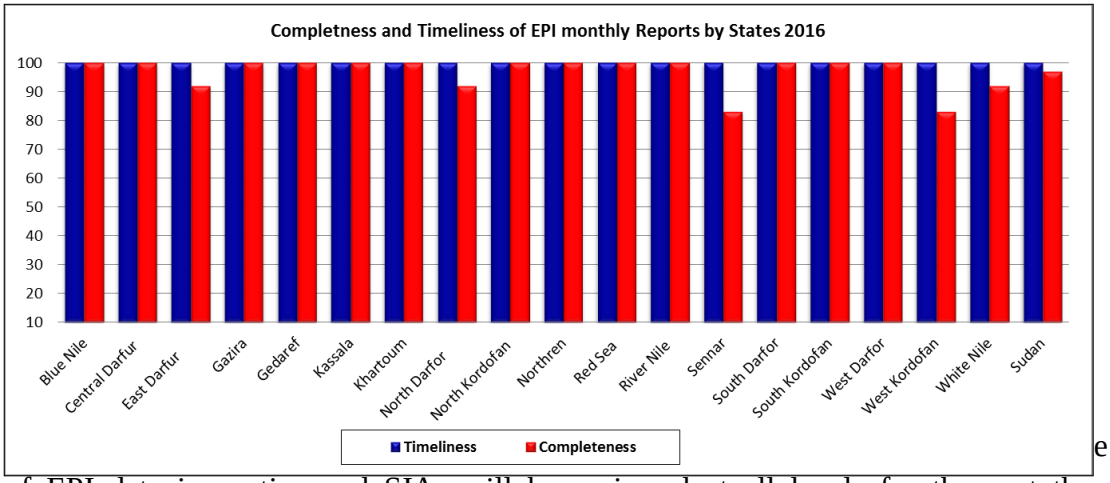
At the same time, the EPI information system includes coverage and disease data, supply chain and vaccine management data and communication data. The reliability and accuracy of the reporting system is assessed using data quality self-assessment (DQS) which is implemented as a routine supervisory tool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



The system is functioning well with certain remaining areas for improvement e.g. denominator issues, use of data at locality and HF level, disaggregated data by

socioeconomic, gender by antigens other than Penta vaccine, use of technology for data collection and analysis, and computerized recall system for defaulter tracing.
Data quality was evaluated during the last EPI review 2013 and it was proved that Sudan has good quality data system.

On the other hand most of the states achieved 100% timeliness and completeness of the reporting in 2016 for the EPI , for the overall it was 97%, as shown in below graph.



e 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.

3.4. Role and engagement of different stakeholders in the immunisation system

Please provide relevant information on the role and engagement of the various stakeholders:

- ***National Coordination Forum** (ICC, HSCC or equivalent): the extent the forum meets the Gavi requirements (please refer to http://www.gavi.org/support/coordination/ for the requirements).*
- ***Civil society**: the role and engagement of civil society in the immunisation system in the past year (service delivery, demand generation etc.).*
- ***Other donors**: the role and investments of other bilateral and multilateral donor in the immunisation system. Please include information on possible reductions in non-Gavi donor support that influence the overall system capacity (e.g. reductions in Global Polio Eradication Initiative funding).*
- ***Private sector**: public-private sector collaboration, indicating possible vaccine supply between Government and private sector and the percentage of children receiving immunisation through the private sector.*
- ***Cross-sectoral collaboration**: e.g. collaboration between health and education programmes.*

National Health Sector Coordination Committee:

Strong Coordination Fora (CF) is critical for the effective and efficient management of Gavi grants and has a catalytic impact on the successful implementation of the plans. Hence, the role of NHSCC. NHSCC has held many meetings brought together governments and other relevant key stakeholders together the last year to discuss the related issues.
Sudan specifically is moving towards an integrated inclusive health coordination mechanism that is seen essential within the current partnership scheme in the country. The health sector Partners Forum is mandated to fulfil many roles such as coordinate the cooperation efforts within the health sector.
This includes evaluation of the NHSSP and development of further plans in the format of the adopted “one plan, one budget, one report” strategy. It also oversees and monitors the implementation of the approved plans and the different partnership processes beside other

roles. A previous transitional step within this integrated coordination direction was when the National Health Sector Coordinating Committee (NHSCC), the coordination body for the GFATM HSS, and the ICC have been merged to ensure harmonization in planning, implementation and monitoring of HSS and immunization activities supported by both the GFATM and GAVI. Now in 2017, GAVI and Sudan FMOH are already engaged in a process to assess of the effectiveness and efficiency of the current coordination mechanism and how to improve its functionality, and to transform it within the Partners Forum structures.

Civil society

Civil society organization and health promoter are playing a crucial role in bridging the gap between the available services and the community through raising awareness of the community to the importance of immunization and improving the health seeking behaviour. It is strategic move to enhance the demand for services by strengthening the community initiatives and training the CSOs in addition to support the health promotion activities. In 2016 the ministry of health heaves a considerable effort in training the CSOs and volunteers in addition to train the state and locality health promoters in implementing and monitoring their strategies and plans. GAVI had invested a considerable amount in the said area.

Many NGOs working and strongly support the EPI program in Sudan e.g. the Immunization Friends Society, The Sudanese Women Union and many others especially in the security compromised areas.

Private sector*:*

1. ***In service delivery***

In general Sudan EPI showed strong collaboration between MoH and the private sector (both for profit and not for profit) in immunization, as 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 is present in several EPI technical and coordination groups:

National level:

- Several paediatricians and the chair of paediatric association are member of the NITAG
- Humanitarian Aid Commission, SCO network and INGOs are members of the NHSSC

State level:

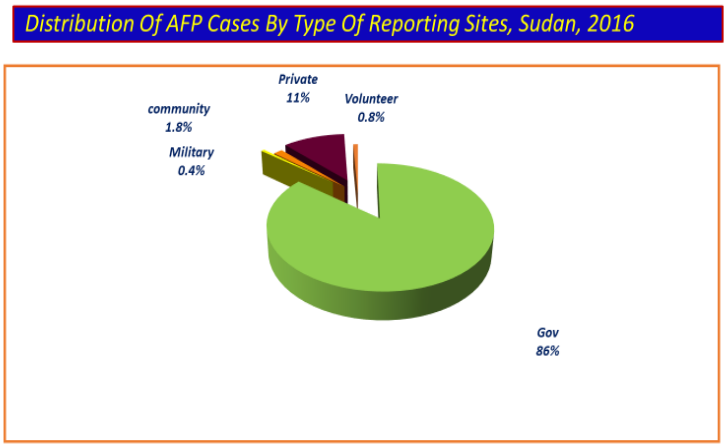
- NGOs are members in the health coordination taskforce
- DG health monthly forum where PHC directorate provide technical feedback on performance of private health firms (based on supervisions finding) to Directorate of private health firms.

In all states the general work of NGOs is regulated and authorized by HAC, while the work of for profit Private sector is regulated by directorate of Private care facilities under the state MoH in certain states that have high presence only. There is no national body that coordinate or provide unified guidance on care delivery by for profit private sector.

As mentioned earlier and from technical perspective private sector provide immunization / VPD surveillance service and reports as per EPI policy/ guidelines, receives vaccines and other supplies including reporting formats from federal 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 only in states where private sector presence is significant as in Khartoum state (private for profit sector is flourishing with vast steps) and in Darfur states (NGOs providing humanitarian support)

For example: 47% of Khartoum state population are covered by Private sector, while 37% of Darfur population is covered by NGOs (National and international) and 10% in Kordofan zone. While for contribution to vaccination coverage; 52% children receiving 3 doses of pentavalent vaccine in Khartoum, 31% in WD and 9% in WK state have been reached through private sector. In surveillance especially AFP surveillance; contribution of private sector to AFP reporting is analysed at national and state levels (see below graph)



To sum all the efforts done by EPI to ensure quality implementation, as well as availability information on private sector to immunization; 1- one national EPI guidance or policy that regulate work of private sector needs to be developed, and distributed to all states 2- data analysis and monitoring of private sector contribution to all immunization achievements needs more focus and strengthening at national level similar to what is being currently done for AFP surveillance.

2. In financing EPI

Efforts to engage private sector in financing EPI have just started as part of the preparation for country transition; mapping of existing private investment institutions and companies…. etc and their interest in fund EPI will be done by MoH and in near future as the first step followed by advocacy and fund raising.

Cross-sectoral collaboration:

Sudan is one of the leading countries globally in adopting Health in All policies as an approach for health improvement through inter-sectoral collaboration to reach universal health coverage and tackling the root cause of inequities. An example of this collaboration the health finance policy and strategy had been formulated together with the ministry of Finance and Health insurance fund as main actors along with other partners. Many other policies, strategies and plans were also formulated through collaborations.

In the area of immunization, the collaboration between health and other related sectors is very

strong and highly acknowledged e.g. Ministry of Education, Ministry of Finance, Ministry Guidance and Endowment, Ministry of Defence, Ministry of Youth, Ministry of Social Welfare and the military especially in the conflict areas. Addition to the strong collaboration with the community and all community leaders who used to play appreciated role in immunization during the routine and campaigns.

4. PERFORMANCE OF GAVI GRANTS IN THE REPORTING PERIOD

4.1. Programmatic performance

*Provide a succinct analysis of the performance of Gavi grants for the reporting period. Describe **how Gavi support is contributing to advancing the performance of the overall immunisation programme** and health sector strategies (with a particular focus on those districts/communities with lower coverage), and how the barriers identified in section 3 above are being addressed, stating -as relevant- **good practices and innovations.***

This analysis should cover all Gavi support received, including NVS, HSS and CCEOP. This section must address the following:

- ***Achievements against agreed targets**, as specified in the grant performance framework (GPF), and other grant-related activity plans. If applicable, reasons why targets as specified in the GPF have not been achieved, identifying areas of underperformance, bottlenecks and risks.*
- ***Overall implementation progress** of Gavi grants including **NVS**, **HSS** (incl. performance based funding **PBF**) and **CCEOP**.*
- *Past performance for measles and rubella (immunisation coverage analysis and rubella surveillance, performance[7]) and progress against the country's **measles-rubella 5 year plan**.*

*Please mention any other **relevant initiative not supported by Gavi** that addresses the key drivers of low coverage (described in section 3).*

Performance Indicators:

- The Utilization of GAVI HSS budget was 99% of the fund available at the beginning in 2016. Although, some fund (Quarter 2) had been received by mid of December, this is not being considered in the mentioned percentage because the two weeks remained was too short for its absorption. However, if the whole fund received in 2016 taken into consideration irrespective to the time received, then the utilization will 57%.
- The total expenditure used by CSOs 50% of the targeted amount.
- In regards to PHC performance: geographical accessibility was 95% of the population are living with five kilometres from health facility in Sudan and that was beyond the target (70%). However, 62% of the health facilities are providing the essential package of services including immunization which is beyond the targeted for 2016 (50%).
- The regular integrated reporting submitted by PHC facilities according to standards reached 54% which is also beyond the targeted for 2016 (50%).
- The approved organizational structure for the states ministries of health have three categories to be implemented according the states capacity. Accordingly, 88% of the states supported by GAVI are implemented one of the approved ones which is reaching the target for 2016. Additionally, 77% of the localities in Sudan have a functioning health

[7] Please include analysis of MCV1 and MCV2 routine immunisation and MCV campaign coverage at national and sub-national levels (admin and survey data), information on case distribution by age, geography, vaccination history, etc. for measles and rubella (including CRS), including outbreaks, at national and sub-national level.

management team by 2016 with target of (73%).

- 67% of the planned supervisory visits were implemented in 2016 which was higher than the expected for the year (60%).
- 21% of the targeted workforce had received training supported by GAVI. This is because some of the categories had been training by the government through the PHC expansion project.

Grant Activities:

- **Training of health worker and PHC support**
  - This is composed of training for Midwives, joint cadres, medical assistance and health worker. As reflected in the performance indicator only 21% of the targets were trained. The training of the medical assistance was implemented by the PHC expansion program catalytic effect of the grant for the government which reflects commitment and ensures sustainability.
  - Activity related to the rehabilitation, construction and provision of equipment's to health facilities were not implemented. That is because the audit mission recommendation is to postpone the implementation of these activities till conduction of an assessment.
  - Revision and update of the curriculum of the training in states such as Continues professional development (CPD) and Academy of Health Sciences (AHS) were supported through HSS grant as well.
  - Conducted training in leadership and planning for the states and localities. Additionally, there were support for attending a monitoring and evaluation regional training
- **Demand creation**
  - In 2016, network of NGOs working in health was established. HSS has supported the capacity building of the network in regard to management and leadership at states level. This in addition to support the start of the mapping assessment for those CSOs working for Health.
- **Health Information System**
  - Support of the running of the health information observatory along with the provision of hard copies of the annual statistical report. Additionally, since DHIS2 had been launched in early 2016, support had been provided to build the capacity needed run the system through building core team. The core team at the national level had been provided with overseas training in DHIS2 Academy. At implementation level, localities health information focal points were trained in data management and analysis.
- **Management, planning, coordination and decartelization**
  - Establishment of zonal coordinators functions
  - Supervisory visit conducted from the states and localities to the health facilities. Four states out the six conducted the supervisory visits supported by the grant. The numbers of visit were 885 visits out the planned 1320.
  - Number of planning meetings was supported including the national strategic plan

2017-2020 as well as preparation for the Joint annual review and Universal health coverage conference.

- Support the development of the health finance policy and strategy.
- Support of the joint financial management assessment

- **Assets and equipment's:**
    - Office equipment's had been provided to support the health management team. That includes computer, printer and photocopiers

The main achievements:

- **Joint financial management assessment**

The assessment was conducted at the behest of Sudan Minister of Health for the period on June 2016, to determine the competences of the public financial management system of Sudan. It has been carried out by a team representing the GAVI, the Global Fund, WHO, UNICEF and the World Bank. Recommendations of the assessment were to strengthen donor coordination mechanisms and actively solicit support from the Development Partners and the Ministry of Finance to address the weaknesses identified to help improve and strengthen the resources management processes across the Ministry of Health.

- **Health Finance Policy and strategy**

Development of the health finance policy and strategy is one the strategic achievement of the FMOH toward reforming the health sector and achieving UHC. The policy and strategy address major point such as level of funding, rising inflation, coverage both by health services and insurance and financial protection. They highlighting the challenges in the finance system functions (collections, pooling, purchasing and stewardship). The policy direction moving toward universal health coverage, focusing on poor, near poor and vulnerable population, achieving equitable decentralized health system, overcome fragmentation and improve efficiency. The strategy provided a five-years plan to cover the population of Sudan by essential package through insurance. Moreover, the payment modality for the health services provider, accreditation for the health centers and services package were also addressed and defined. GAVI has a contribution in the development of the policy and the strategy of the health financing system.

- **Joint annual review (JAR)**

The FMOH has numerous fragmented programs and plans evaluation carried periodically at different levels. This fragmentation neither reflect the bigger picture of the health system function nor provide linkages to tackle the cross cutting issues. The JAR addressing the fragmentation issue and advocate for implementing one plan, one budget and one monitoring approach for health in order to enhance the efficiency and effectiveness of the resources utilization and better alignment and harmonization by partners. The preparation for the first JAR has begun during the last period in 2016. GAVI HSS was involved in the preparation for this JAR as one of key partners for

FMOH. Strategically JAR is suggested to substitute all the singular evaluation at the MOH and provides a comprehensive report for all the partners as a basis for evaluation.

- **Universal Health coverage and Khartoum Declaration**

  As Sudan moving to address the SDGs as strategic guide through its health reform, the federal ministry of health organized an international conference in Universal Health coverage aiming to enhance the transformation of the health sector through bringing together the key stakeholders and partners in order to build a common ground of policies and directions. The outcome of this conference was Khartoum Declaration for UHC (Universal Health Coverage Declaration January 2017) in which all the representatives of different governmental sector in both Federal and state level, development partners, civil society organization, media and the community has avowed that health is the responsibility of all and committed to support and enhance the transformation of health sector at all level. The partners had signed on list of commitments affirming Health in All Policies as an approach for improving health. For more details: http://phi.edu.sd/UHC.aspx.

  GAVI HSS at FMOH was part of the technical committee for the preparation and also had supported the implementation of the event. Additionally, GAVI HQ had a representative during the conference.

Challenges:

- During the Audit 2016, the implementation of the activities had been postponed as well as the disbursement of fund.
- Delayed and partial disbursement of years 2 HSS budget:
  - 25% of the budget had been received after the first quarter of 2016 and another 50% had been received at the end of the year (on December).
  - Due to the sanctions, the fund transfer faces many challenges (took months).
  - Disbursement on quarterly basis and lengthily process and detailed requirement for disbursement.
- Capacity of the staff at the implementing unit leading to delay in fund absorption.
- Finance management team in term of the number of the staff and the shift from the manual to the electronic system which required excessive training and data input to the system.
- High turnover staff and inadequate capacities at implementing units at different levels including the states.

Conflict in some states and neighboring countries (IDPs, Refugees).

4.2. Financial management performance (for all cash grants, such as HSS, vaccine introduction grants, campaign operational cost grants, transition grants, etc.)

Provide a succinct review of the performance in terms of financial management of Gavi's cash grants. This should take the following aspects into account:

- *Financial **absorption** and utilisation rates[8];*

[8] If in your country substantial amounts of Gavi funds are managed by partners (i.e. UNICEF and WHO), it is recommended to also review the fund utilisation by these agencies.

- ***Compliance*** *with financial reporting and audit requirements;*
- *Major issues arising from cash programme* ***audits*** *or programme capacity assessments;*
- *Financial management* ***systems***[9]*.*

Financial absorption and utilisation rates:

During the reporting period (1 January 2016 until 31 December 2016) the FMOH received funds from Gavi for HSS2. The remaining balance of year 1 (2014 – 2015) has been carried over to year 2016. Expenditures of Gavi funds detailed as below:

Grant Name	Funds Received in April 2016 (Euro)	Funds Received in April 2016 (USD)	Fund carried over from year 1 (2014-2015)	Total Fund Available in USD - Year 2016	Total Expenditures in USD - Year 2016	% Spent - Year 2016
HSS2	1,723,913.22	1,896,304.54	394,545.55	2,290,850.09	2,284,534.21	99.72

Grant Name	Funds Received in December 2016 (Euro)	Funds Received in December 2016 (USD)
HSS2	1,935,655.92	2,051,795.28

Grant Name	Funds Received in December 2016 (Euro)	Funds Received in December 2016 (USD)	Total Expenditures - Year 2016
PBF	1,136,429.01	1,193,250.46	No expenditures made from the PBF fund in year 2016

Compliance with financial reporting and audit requirements;

The financial practices of the grand are governed by the policies, procedures and regulations of Sudan Ministry of Finance and the Federal Ministry of Health. Audit of the financial year commencing 1 January 2016 ending 31 December 2016 has been conducted by the National Audit Chamber (NAC); the Audit report and the Audit recommendations sent to Gavi on 11 September 2017. Recommendations of Gavi Programme Audit conducted for the period 1 January 2014 to 31 December 2015 were followed; an official response from the NAC Sudan has been sent directly by the NAC to Gavi.

Major issues arising from cash programme audits or programme capacity assessments;

Part of the challenges we were facing is the delay in receiving funds from Gavi. Due to the US sanction imposed on Sudan Gavi funds were received in Euro instead of USD. Activities related to constructions and procurement were suspended by the Gavi. Such activities could have absorbed a large amount of the funds. Grants allocated for the implementation of activities at the state level are executed based on advances to be cleared/ liquidated after the

[9] In case any modifications have been made or are planned to the financial management arrangements please indicate them in this section.

implementation is completed. Unsatisfactory documentation of the advances would block funds at the Ministry of Health level until sufficient documentation is provided.

Financial management systems

HSS unit at the FMOH has successfully introduced and implemented accounting software (Tally) to improve the financial management performance of HSS2 grant.

Men A

- Op cost
- VIG

Yellow fever

- Unspent op cost funds

4.3. Sustainability and (if applicable) transition planning

Provide a brief overview of key aspects and actions concerning the sustainability of Gavi support to your country. Please specify the following:

- ***Financing of the immunisation programme**:*

  During 2016 the total expenditure on Expanded Program on Immunization (immunization specific) was US$ 73,188,426 Million.

RECURRENT COSTS FOR ROUTINE IMMUNISATION	**$55,257,467**
Gavi supported vaccines	**$34,220,000**
Non-Gavi vaccines	**$2,629,368**
Other routine recurrent costs for routine immunization	**$13,923,090**
Injection supplies (both AD syringes and syringes other than ADs)	**$2,612,430**
Personnel	**$1,872,578**
CAPITAL COST FOR ROUTINE IMMUNISATION	**$67,849**
Other capital costs	
ADDITIONAL COSTS	**$17,863,110**
Total expenditures for immunization	**$73,188,426**

- ***Key challenges related to the financing of immunization program:***
  - Ability of the country to mobilize more resources from domestic resources to the immunization service is not assured especially where there are many competing needs facing the government of Sudan within the health sector and between the different sectors.
  - Increasing of the of the operation costs related to immunization services as result of market inflation.
  - Reliability of the predictability of financing flow is not high .
  - Improving and sustaining high level of efficiency in the provision of immunization services. (High quality VS less cost)
  - The financial contribution of the private sector to the provision of the immunization services is not measured. And their interest and ability to contribute.
  - Use of the evidences to persuade the different stakeholders to contribute to the provision of the immunization service
  - Very challenging and exhausting process to maintain the country co- finance

- ***Gavi transition planning****:*
  Gavi transition planning: The government ability to take over the cost of the traditional and new vaccine is highly questionable, 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, otherwise this will lead to stop the use of the new vaccine and no more introduction for additional vaccine unless the programme succeed to guarantee contribution from all potentials financing sources. 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).
    - Request technical support to develop evidence regards to the economic impacts of the use of the new vaccine in Sudan in order to use it as advocacy mean.
    - Conduct stakeholder analysis in order to measure and quantify the interest and ability of the potentials different source of finance for immunization services e.g. health insurance, private sector etc.
    - 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).

- ***Polio transition planning****:*

During 2016 several advocacy meetings were conducted to sensitize high level officials in the federal Ministry of Health about polio transition and its implication. Also a transition technical group was formulated by MoH and it includes relevant MoH departments and partners.

An action plan and activity timeline was developed; it included the following main activities:

- Recruitment of consultants to conduct assets mapping and best practices and lessons learnt documentation
- Implementation of assets mapping
- Documentation of best practices
- Polio Transition simulation exercise
- Development of business case for fund raising

- Development of Polio transition plan

4.4. Technical Assistance (TA)

Briefly summarise key insights generated during the appraisal of Gavi supported Targeted Country Assistance (TCA) activities and milestones.[10] Specify whether amendments to the currently planned and ongoing Technical Assistance activities and milestones are envisaged (short term). If changes are envisaged please provide a justification.

Note: New Technical Assistance requirements for the next calendar year should be indicated in section 6 rather than this section.

Programmatic Area (2018)	Activity
Support to develop the applications 2018	**IPV routine and campaign**
	YF routine
	MR
	HPV
New vaccines introdcution	**Decision making prior to HPV application, including defining evidence, disease burden, analysis on financial implications and planning**
Surveillance	**Case based surveillance in large hospitals in high risk states to analyse the impact of YF vaccine and Meningitis**
	Cross-bordering surveillance and vaccination for meningitis and yellow fever (TA or MenAfri Net
	TA to build evidence on impact of vaccines to advocate transition process
	Study on MCV Sero conversion to identify the immunity gaps in population by age group
Cold chain	**Technical assistance needed to establish a cold chain maintenance system**
	Recruit a consultant to provide support in this system and in the development of the deployment plan.
HSS	**Partner support on development of equity assessment in 2018. Health system in depth bottleneck analysis. Develop deep understanding of low performing localities. Slums areas? Camps? → to be revised**
	TA support to build accountability framework for the health sector

[10] A summary of Technical Assistance approved under Gavi's Partner Engagement Framework (PEF) for the year under review and reporting status can be accessed via the PEF portal by registered users, or by contacting the Gavi Secretariat.

	TA support to design communication strategy which includes CSO participation (Intervention mapping for health promotion
	Need to assess the opportunities of private sector engagement – stakeholder analysis to identify their interest and ability

5. UPDATE OF FINDINGS FROM PREVIOUS JOINT APPRAISAL

Provide the status of the prioritised strategic actions identified in the previous Joint Appraisal[11] and any additional significant IRC or HLRP recommendations (if applicable).

Prioritised actions from previous Joint Appraisal	Current status
1. To undertake a capacity gap analysis of Management of EPI program at different levels (subject to tool being available by end of 2016)	Not done, suggested 2018
Strengthen LMC	GAVI agreed to provide TA to support the FMOH in strengthening the coordination mechanism.
Finalization of development of HR retention policy	The process of the developed started in October 2017. The draft of the policy is planned to be developed by the end of 2017. HRH policy has been developed (endorsed in November 2017)
Enhance capacity and involvement of CSO's in immunization program with a focus on underserved areas.	The formation of CSO's network and capacity building through training in the states.
Strengthen capacity in vaccine management (wastage and temperature monitoring study)	Done Temperature Monitoring Study is in process (expected to be finalized in February 2018)
Strengthen VPD surveillance system	In process
Resource estimation to approach universal coverage by essential health benefit package	In progress
Enhance and strengthen the financial management capacity by hiring two finance staff	Done
Develop and finalize comprehensive context-specific state communication strategies and initiate implementation of communication plans	In process (consultant has been recruited)
Support participation in the One JANS (Joint Assessment of the National Health Sector Strategic Plan)	Done
Develop cMYP	Done
Review and finalise external audit report	Done
Conduct barrier to immunization study in the different low coverage localities.	In process
Support the strengthening of the unified supply system	Done
TA to support supply and cold chain system	Done
Complete yellow fever mass campaigns depending on supply availability	Not done because of vaccine shortage

[11] Refer to the section "Prioritised Country Needs" in last year's Joint Appraisal report

Additional significant IRC / HLRP recommendations (if applicable)	Current status

If findings have not been addressed and/or related actions have not taken place, provide a brief explanation and clarify whether this is being priorities in the new action plan (section 6 below).

6. ACTION PLAN: SUMMARY OF FINDINGS, ACTIONS AND TECHNICAL ASSISTANCE NEEDS IDENTIFIED AND AGREED DURING THE JOINT APPRAISAL

*Briefly outline the **key activities to be implemented next year** with Gavi grant support.*

*In the context of these planned activities and based on the analysis provided in the above sections, describe the five **highest priority findings and actions to be undertaken to enhance the impact of Gavi support**, indicating timelines and Technical Assistance needs.*

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.*

Note: When specifying Technical Assistance needs, do not include elements of resource requirements. These will be discussed in the context of the Targeted Country Assistance (TCA) planning, which will be informed by the needs indicated here.

Overview of key activities planned for the next year:

IPV

In line with the NITAG recommendation, Sudan is planning to re-introduce IPV in routine with full dose in Q1 2018, as well as catch up missed cohorts with campaign. If supply allows it, campaign would be 2 doses of fIPV with 4 months between each round (i.e. March and June 2018); however, if this is not possible, country would expect to vaccinate with a full dose in campaign in Q1 2019. Country will need TA for application in 2018.

MCV

Country has applied for a Measles follow up campaign from 9 month to 10 years old to be implemented in March 2018. Cohorts from 5-10 yrs are aimed to be funded by government and country partners.
Due to the high dropout rate (31%), a strategy to increase MCV2 coverage needs to be put in place, this would include demand generation and social mobilization activities to be supported by TA. In addition to this, the country plans to conduct a sero conversion survey to identify the immunity profile by age group.

YF
Phase 1 took place in 2014 (7,567,567 target) and phase in 2015 (6,157,432 target), due to the global vaccine shortage, phase three has been posponed. The target for phase was revised with consideration to the annual projection and the influx of South Sudanese refugees, as

shown in the below table it is 18,467,377 persons aged 9 month- 60 years

State	Target	Vaccine
Khartoum	7,457,744	8,203,518
Blue Nile	1,066,912	1,173,604
Gazeria	5,224,863	5,747,349
Northern	632,267	695,494
River Nile	1,342,524	1,476,776
Sennar	1,943,067	2,137,373
South Sudanese refugees	800,000	800,000
Total (Phase Three)	**18,467,377**	**20,234,115**

Develop application for YF routine in 2018 for introduction in 2019, according to the recommendation of no more than 6-12 months after completion of the campaign. Technical assistant will be needed to suppot the counry to prepare the application.

As a country with high risk of YF virus circulation, and in preparation of graduation, country is interested in establish a case based surveillance in large hospitals in high risk states to analyze the impact of YF vaccine.

MenA

Need support for cross-boardering surveillance and vaccination, country to develop a plan to strengthen surveillance including intregration of meningitis and yellow fever. MenAfriNet could support with assessment of lab capacity and training.

HPV

Aiming for 2020 introduction of HPV and application in 2019. Given that decision making prior to application submission can take from 12-15 months, in 2018 there will be several activities such as defining the evidence, disease burden, analysis on financial implication and planning.

Cholera

Risk assessment is in process, aiming to be finalized by mid October 2017 that will be accompanied by a plan of action with support from partners. Depending on the results of the risk assessment, there is a possibility to request around 1 million OCV doses to vaccinate high risk population.

PCV

Country to consider possible switch to PCV13 4-dose, looking at cold chain storage capacity and financial implications. If decided to move to a 4-dose vial

CCEOP

Technical assistance needed to establish a cold chain maintenance system and to recruit a consultant to provide support in this system and in the development of the deployment plan.

Key finding 1	Lack of adequate capacities of the decentralized health system	
Agreed country	• Training of MOH staff at state and locality levels in leadership,	

actions	planning and management • Support Health Management Teams in 30 localities to undertake supervision of services and supply delivery though provision of vehicles, IT and office equipment. • Support developed and implementation of frameworks.	
Associated timeline	January – December 2018	
Technical assistance needs	TA to assess the functionality of Locality Health Management Teams and develop action plan to address the identified gaps TA to support the implementation of Accountability framework	
Key finding 2	Low coverage by PHC packages and low utilization rates of services in some localities	
Agreed country actions	• Construction and rehabilitation of health facilities • Medical equipment • On job training for health workers	
Associated timeline	January – December 2018	
Technical assistance needs	Conduct assessment of health system bottlenecks in low performing localities and develop an action plan to address the identified gaps.	
Key finding 3	Health Information System with low reporting rates, DHIS 2	
Agreed country actions	• Supportive supervision • Training in DHIS2 academy, M&E, data management and quality assurance	
Associated timeline	January – December 2018	
Technical assistance needs	TA to scale up the implementation of DHIS2	
Key finding 4	Needs to ensure presence of the sufficient capacities to implement the acceleration plan	
Agreed country actions	• Training in M&E and project management • Zonal coordinators for the states	
Associated timeline	January – December 2018	
Technical assistance needs	Conduct in-depth analysis to identify bottlenecks and barriers to enhance the implementation of the acceleration plan	
Key finding 5	High turnover of the staff	
Agreed country actions	• Support the development of retention policy • Provide incentives • Support partnership forum and coordination mechanisms	
Associated timeline	January – December 2018	
Technical assistance needs	TA to enhance the engagement of the private sector to ensure sustainability of health programmes including EPI	
Key finding 6	Potential opportunities to support the scaling up EPI	
Agreed country actions	Train CHW and CMW	
Associated timeline	January – December 2018	

Technical assistance needs	Assessment of the functionality of the CHW and CMW to identify effective and revise the TORs.	

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

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.

A National Technical Committee was formulated to follow up the preparation for the JA in Sudan-Khartoum for the period 10 – 12 October 2017. The committee consist of members from HSS team and EPI team in addition to representatives from FMOH planning department, Health information system department, international Health department, WHO and UNICEF. The technical committee had regular weekly meeting to discuss the preparation and prepare the zero- draft of the JA report.
Zero draft were shared with GAVI on 29 September 2017.
The JA implementation modality was based on presentations and group work.
Presentations and discussion covered the following topics:

- Introduction to JA and the guidelines.
- EPI performance review.
- HSS performance review.
- Performance indicators.
- Vaccines applications update.
- HLRP 2016 recommendation updates.
- GAVI updates.
- JA draft report.

Then the discussion had been carried out in two groups; HSS and EPI group. By the end of the JA a semi-final draft had been developed and the daft of TA need were also presented and discussed.
During the JA mission, GAVI team had meeting with the undersecretary of Ministry of health, WHO representative and DFID.

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 delayed reporting may impact the decision by Gavi to renew its support.

	Yes	No	Not applicable
Grant Performance Framework (GPF) reporting against all due indicators	Yes		
Financial Reports			
Periodic financial reports	Yes		
Annual financial statement	Yes		
Annual financial audit report	Yes		
End of year stock level report	Yes		
Campaign reports	Yes		
Immunisation financing and expenditure information	Yes		
Data quality and survey reporting			
Annual desk review			
Data quality improvement plan (DQIP)			
If yes to DQIP, reporting on progress against it			
In-depth data assessment (conducted in the last five years)			
Nationally representative coverage survey (conducted in the last five years)			
Annual progress update on the Effective Vaccine Management (EVM) improvement plan			
Post Introduction Evaluation (PIE)			
Measles-rubella 5 year plan			
Operational plan for the immunisation program			
HSS end of grant evaluation report			Not applicable
HPV specific reports			Not applicable
Transition Plan			Not applicable

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.