

Liberia Joint Appraisal Update report 2018

Country	Liberia
Full JA or JA update	<input type="checkbox"/> full JA <input checked="" type="checkbox"/> JA update
Date and location of Joint Appraisal meeting	August 27-29, 2018 Palm Springs Hotel, Congo Town, Tubman Boulevard, Monrovia – Liberia
Participants / affiliation¹	WHO, UNICEF, LIP, MoH, GAVI, JSI, CRS, LMH, USAID, CDC, WORLD BANK, MOFDP, Crusader for peace, JHPIEGO
Reporting period	July 2017 – July 2018
Fiscal period²	July 1 – June 30
Comprehensive Multi Year Plan (cMYP) duration	2016 – 2020
Gavi transition / Co-financing group	<i>Initial Self-financing</i>

1. RENEWAL AND EXTENSION REQUESTS

Table 1: Renewal requests were submitted on the country portal

Vaccine (NVS) renewal request (by 15 May)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
HSS renewal request	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
CCEOP renewal request	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Observations on vaccine request

Table 2: Observations on vaccine request

Population					
Birth cohort					
Vaccine	PENTA	PCV	ROTA	YELLOW FEVER	IPV
Population in the target age cohort	187,892	187,892	187,892	187,892	187,892
Target population to be vaccinated (first dose)	175,309	173,309	167,460	148,566	153,809
Target population to be vaccinated (last dose)	172,540	172,700	163,069	NA	NA
Implied coverage rate	99%	99%	93%	85%	88%
Last available WUENIC coverage rate (2017)	86%	98%	87%	84%	29%
					<i>(NB: IPV was introduced into routine immunization July 3, 2017. This reflects IPV coverage against the under 1 target of 167,667. However, comparing with target approved by Gavi (50,902) will give IPV coverage of 95%)</i>
Last available admin coverage rate	99%	98%	87%	84%	29%
Wastage rate	5%	10%	5%	40%	20%
Buffer	25%	25%	25%	25%	25%
Stock reported	201,955	213,298	199,496	370	54,790

N/B: The stock reported is inclusive of the buffer.

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.

Indicative interest to introduce new vaccines or request Health System Strengthening support from Gavi in the future³

	Programme	Expected application year	Expected introduction year
Indicative interest to introduce new vaccines or request HSS support from Gavi	Typhoid Conjugate Vaccine	January 2019	January 2020

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

I. Immunization Context

The immunization program has made significant progress towards achieving coverage targets, improving performance, expanding the immunization schedule and improving access to immunization services in a sustainable way through 2017. With the support of Gavi since 2001, the EPI programme has made substantial progress in the below areas:

1. New Vaccines Introduction – The following vaccines have been introduced into routine immunization: YF (2007), Penta (2008), PCV (2014), Rotavirus Vaccine (2016), HPV Demonstration (2016), IPV (2017) with MCV2 and HPV scheduled for 2019.
2. Cold Chain Equipment Expansion – Under the cold chain equipment optimization platform (CCEOP) for year one, 108 SDD, 32 Ice-line Refrigerators and 90 Fridge Tags have been procured and installed.

In order to ensure reawakening and further strengthening of routine immunization services Post Ebola, GAVI fully supported the EPI Ebola Recovery plan. This support is in addition to new vaccine support the country has also received from Gavi along with the health systems strengthening (HSS) covering the period 2017 - 2021. The Ministry of Health in consultation with the HSCC provide oversight function on the management of the HSS grant.

A. Routine Immunization services

Programme management: Planning and implementation, coordination, supervision, monitoring, quarterly reviews and evaluation were strengthened and intensified, as plans and regular supportive supervision were conducted at all levels aimed at optimizing immunization service delivery.

Human Resource for Health (HRH):

The Ministry of Health (MOH) along with her partners conducted activities aimed at rebuilding a resilient health system. These activities include but are not limited to:

- i. **Health Workforce Census** to determine the actual human resources (HR) strength available to the delivery of essential health services in 2016 as well as determining their payroll status (GoL Basic Salary). The findings of the health workforce census showed a total of 16,064 health workers of which 59% are on the government payroll. The government health workforce comprised of 234 public service physicians, 518 physician assistants, 3,377 nurses and 927 certified midwives and the remaining composed of other health service cadre. In addition, there are approximately 3,727 community health volunteers who provide basic services in the community. See table below for details per county.

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

Health Workforce distribution per county in Liberia (*health workforce census 2016*)

Professional Details	Grand Total	Bomi	Bong	Gbarpolu	Grand Bassa	Grand Cape Mount	Grand Gedeh	Grand Kru	Lofa	Margibi	Maryland	Montserrado	Nimba	River Gee	Rivercess	Sinoe
Administrators	1,404	33	93	21	47	48	36	22	108	78	53	638	137	15	30	45
Administrative Support	4,311	129	320	73	184	130	217	103	384	228	131	1,564	525	114	85	124
Clinical Support	3,601	128	220	49	111	99	177	71	269	163	128	1,502	416	83	48	137
EHT	285	9	14	6	15	7	20	2	15	16	7	117	40	4	5	8
Dentist	14	0	0	0	0	0	0	0	2	0	0	11	1	0	0	0
Lab Technician	300	6	35	2	8	6	7	4	12	22	11	139	31	6	3	8
Midwife	927	32	110	25	33	34	35	24	97	40	35	316	79	17	20	30
Registered Nurse	3,077	111	286	55	143	77	77	36	245	162	81	1,270	328	59	51	96
Pharmacist	109	4	5	0	4	3	2	2	5	13	2	54	9	2	3	1
Pharmacy Workers	962	31	78	17	38	38	42	17	75	48	38	377	84	15	23	41
Physician	234	3	20	3	7	4	3	2	9	13	6	128	30	3	1	2
Physician Assistant	518	13	19	9	18	33	23	15	38	24	14	209	49	15	20	19
Public Health Specialist	68	0	1	0	4	2	0	0	0	1	1	56	2	0	0	1
Social Workers	254	5	14	2	3	3	11	2	12	32	6	135	21	2	1	5
Total	16,064	504	1,215	262	615	484	650	300	1,271	840	513	6,516	1,752	335	290	517

The findings further revealed that approximately five thousand (n=5,000; 31%) health workers to include vaccinators are not on government payroll and as such these people are demotivated. In order to reduce the unemployment gap, the government intends to increase the absorption rate of health workers on the government payroll. Also, the government intends to:

- Increase the production and enhance the development of health workers
- Enhance the equitable distribution and retention of health workers
- Strengthen regulation, leadership and management of the health workforce

To optimize immunization services at the community level, the Government of Liberia through the Ministry of Health has decided to use the fourth tier (i.e. Community Health Assistants) of the service delivery system to actualize this. The National Community Health Assistants (NCHA) is a platform that will be used to conduct immunization outreach services, defaulter tracking as well as vaccine accountability through mobile technology. To make this operable, GAVI, The Vaccine Alliance has provided support through Last Mile Health (LMH) to work closely with the EPI and Community Health Services Division to achieve this through the concept of “Learning by doing”.

ii. Service Availability and Readiness Assessment (SARA) was conducted in all 15 counties of the country in 2016, with a second phase conducted in 2018 to show the readiness of health facilities to deliver quality health care. The SARA in 2018 covered 92% of available health facilities (765/831) which differs slightly from 2016 SARA (95% of health facilities covered).

Findings show that of the 765 health facilities assessed:

- 671 were clinics, 58 health centers and 36 hospitals
- 449 (57%) were government owned, with the remaining 316 being private owned (NGO not for profit – 19; private for profit – 261; mission or faith-based – 36).
- Immunization services were provided in 81% of the assessed health facilities, an increase by approximately 1% from 80.3% in 2016.
- Immunization services are available in 599 out of a total of 765 health facilities assessed in Liberia. In addition, 77% of health facilities provided immunization services on a daily basis b) South eastern region of the country has the lowest percentage (53%) of health workers on Government of Liberia payroll and the lowest percentage (42%) of health facilities with GSM coverage c) Highest proportion of stock out of all vaccines is also noticeable in the South east.

iii. **Capacity building for:**

- 1198 health workers (CMs and Vaccinators) Immunization In Practice (IIP); PCV-13 switch from single dose to 4 doses; Infection Prevention and Control (IPC) practices (2 per facility for the 599 existing health facilities at the time of the training).
- 45 cold chain staff on installation and maintenance of Solar Direct Drive (SDD) cold chain equipment (CCE).
- Interpersonal Communication (IPC) for members of community health committees (CHCs) and Health Facility Development Committee (HFDC) on community engagement strategies were intensified and regular supportive supervision conducted.

These activities contributed substantially to increasing the confidence level of health workers, vaccinators which enabled them to provide quality routine immunization services. Also, this provided awareness creation for community dwellers on the benefits provided by immunization services.

Infrastructure:

As part of improving supply chain system as well as warehousing, the central medical store (CMS) has been constructed to improve supply chain capabilities. Also two regional stores were constructed at Bong and Grand Gedeh counties, with Bong being functional at the moment. A total of 108 SDD, 32 Ice-line Refrigerators and 90 Fridge Tags have been procured and installed under the CCEOP year one operational deployment plan (ODP) aimed at expanding cold chain capacity and vaccine management in all 15 counties. To strengthen infection prevention and control (IPC) measures, all health facilities providing immunization services were supplied basic IPC materials (Gloves, Hand Sanitizers, Infrared Thermometers, Soap, Aprons, etc.)

Vaccine stock management: For the period under review, there was a national stock out of yellow fever vaccines which led to stock out of yellow fever in some counties and health facilities over a three month period. This was due to global stock availability as well as wastage rate of 25% used in forecasting as opposed to the 40% recommended by WHO. In addition, there was also stock out of IPV vaccines in some counties and health facilities, which was due to non-adherence to dosing schedule and multi dose vial policy.

To address the aforementioned challenges, the following corrective actions were taken:

- a. An SOP on IPV administration and vaccine management was developed and circulated to all counties for onward transmission to health facilities.
- b. The current Gavi Program Approval Request (PAR) has considered the WHO recommended wastage of 40% for yellow fever vaccines.
- c. Guidance was also sent to counties on the importance of stock monitoring as well as adherence lead time in the context of requisition of bundle vaccines.

Impact on coverage: With the support from Gavi HSS grant, Liberia immunization program has sustained increase in immunization coverage over the past two years as demonstrated by WUENIC estimates. This can be attributed to increase in outreach activities, the conduct of PIRI, strengthening of supportive supervision, increase in demand generation and implementation of the ‘Urban Immunization Strategy’ in Montserrado County.

However, Antenatal care (4 or more) visits decreased by 13% while delivery by skilled birth attendants increased by 1.4% (MOH Annual Report 2016 & 2017). Table 2.0 below presents selected health sector performance indicators in 2016 & 2017.

Indicators (Source: Ministry of Health)	2016	2017
HMIS completeness	91.6%	In 2017, the completeness was at 87%. The dip in 2017 completeness rate was mainly due to upgrading of the DHIS2 system to incorporate the new integrated health management information system (HMIS) tool which was done in the last quarter of 2017
Fully immunized children	70%	77%
4 ANC visits completed	62%	49%
Delivery by skilled birth attendants	55%	56.4%
Intermittent preventive treatment of Malaria in pregnancy	47.5%	62.8%

3. PERFORMANCE OF THE IMMUNISATION PROGRAMME

Analysis of 2017 immunization data revealed that tremendous progress has been made in the attainment of immunization coverage rates at all levels. Immunization coverage trend over the past six years show that all antigens made significant progress especially the third dose of Pentavalent vaccine (Penta 3) from 52% to 79% (WUENIC, 2016) and 86% (WUENIC, 2017).

Fig. 1.0 below presents the trend in Penta 3 Coverage from 2006-2017.

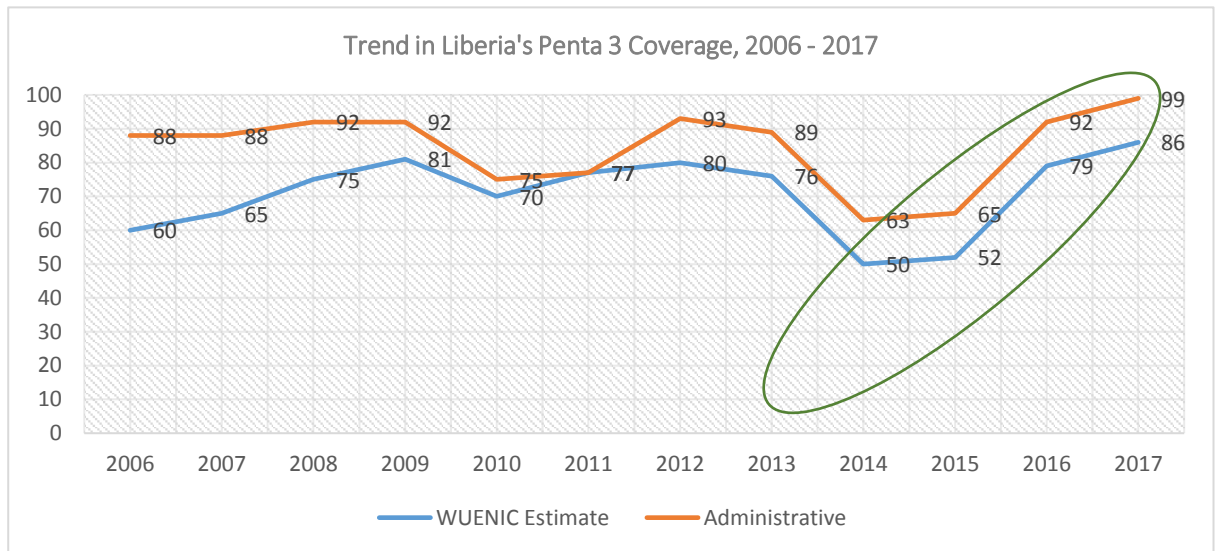


Fig. 2.0 below presents the trend in Measles Coverage from 2006-2017.

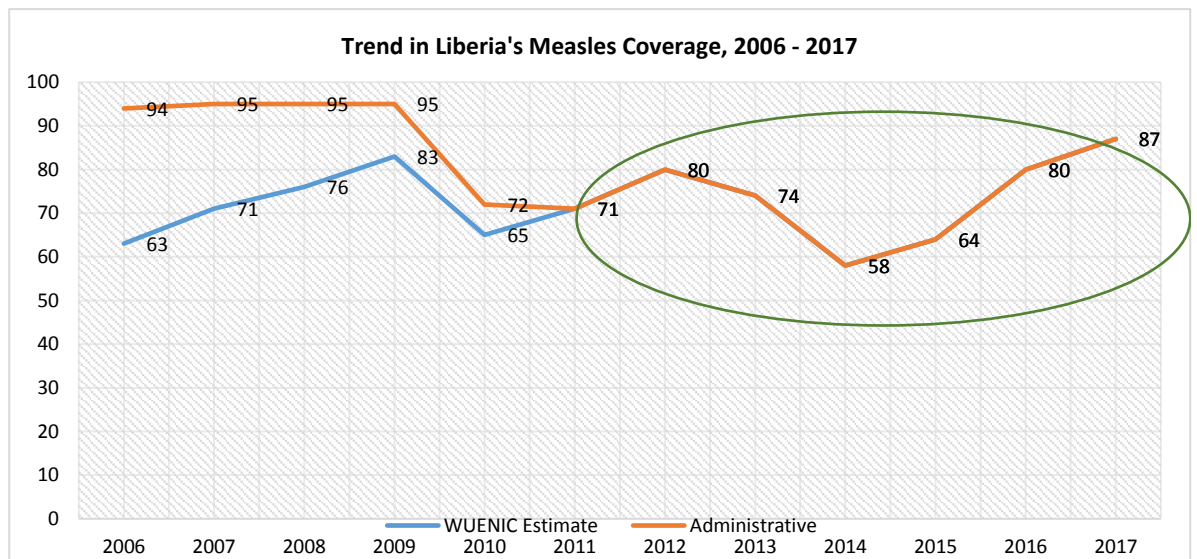


Fig. 1.1 below presents the trend in Penta 3 & MCV 1 coverage by county for 2016. The below figure shows tremendous improvement by all counties for the first dose of MCV 1.

Fig. 1.2 presents the trend in both Penta 3 & MCV 1 coverage by county for 2017. The below figure shows tremendous improvement by all counties for the third dose of (Penta 3)

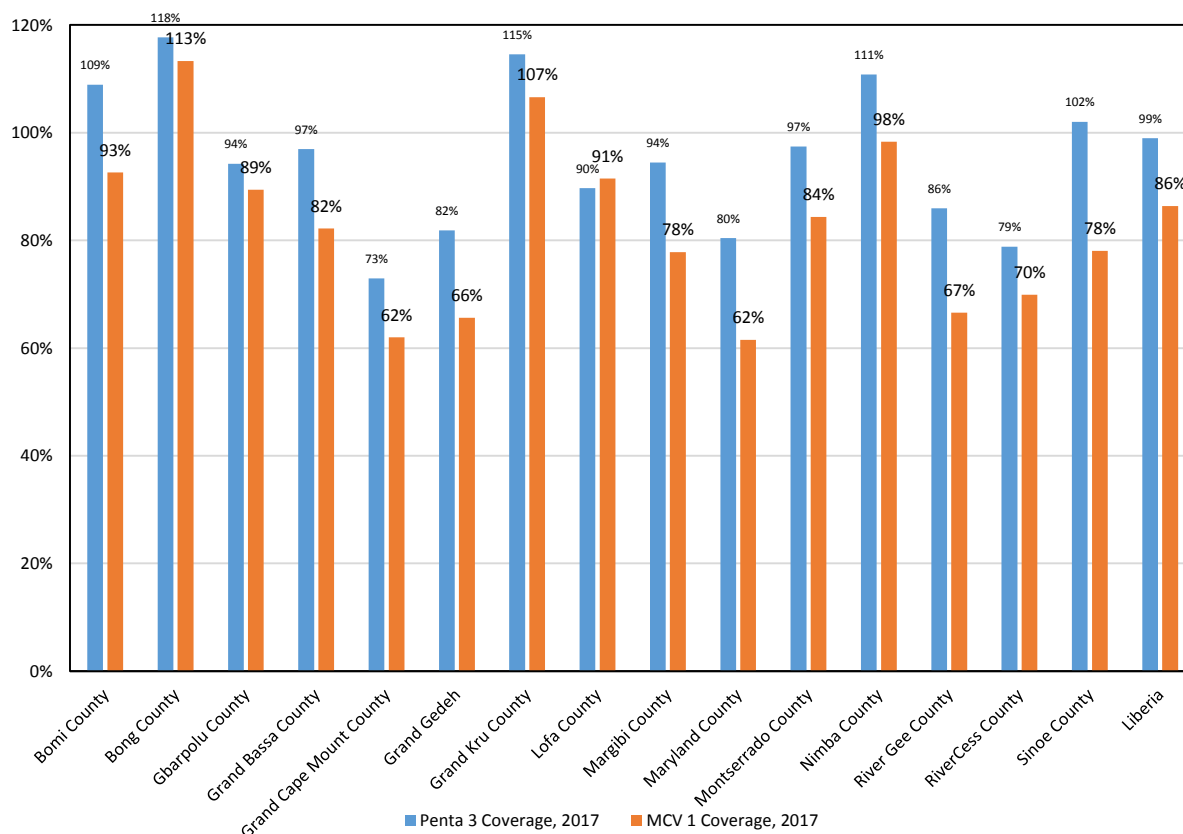


Table showing drop out rates (Penta 1&3) and (Penta 1 & MCV1) by county from 2013 - 2017

County	2013		2014		2015		2016		2017
	DOR (Penta 1- Penta 3)	DOR (Penta 1 - MCV 1)	DOR(Penta 1-Penta 3)	DOR(Penta 1 - MCV 1)	DOR(Penta 1-Penta 3)	DOR(Penta 1 - MCV 1)	DOR(Penta 1-Penta 3)	DOR(Penta 1 - MCV 1)	DOR (Penta 1- Penta 3)
Bomi	22%	30%	25%	29%	16%	31%	26%	39%	10%
Bong	8%	18%	10%	17%	8%	-2%	7%	9%	5%
Gbarpolu	26%	38%	6%	16%	12%	19%	7%	19%	6%
Grand Bassa	19%	36%	23%	30%	22%	7%	22%	40%	15%
GrandCape Mt.	7%	24%	20%	28%	20%	37%	15%	34%	9%
Grand Gedeh	-4%	2%	6%	9%	5%	6%	1%	18%	-1%
Grand Kru	20%	25%	27%	16%	21%	23%	20%	24%	8%
Lofa	0%	28%	8%	18%	6%	12%	2%	3%	9%
Margibi	25%	34%	24%	15%	25%	28%	6%	20%	11%
Maryland	-1%	36%	15%	35%	14%	26%	8%	35%	7%
Montserrado	8%	18%	14%	21%	14%	14%	11%	17%	4%
Nimba	2%	28%	20%	30%	21%	33%	8%	26%	1%
River Gee	-15%	11%	28%	23%	20%	48%	9%	37%	-9%
RiverCess	7%	19%	12%	-2%	14%	5%	12%	24%	7%
Sinoe	-3%	23%	3%	20%	9%	16%	7%	31%	2%
Liberia	8%	24%	15%	22%	15%	17%	10%	22%	6%

Table 3 shows the dropout rates (administrative data) for Penta 1&3 at national level increased in 2014 – 2015 declined significantly to 6% by 2017. Dropout rate as calculated with Penta 1 & MCV1 however remained high 17% in 2017, with a mean of 20.4% over the five-year period under review. At the county level, few counties s dropout rates for Penta 1&3 above 10% as of 2017 while only 13% (2/15) of counties had dropout rates for Pen MCV1 below 10% in 2017.

Coverage and Equity

In order to address issues or contributing factors responsible for immunization inequities, the Ministry of Health along partners introduced the ‘Urban Immunization Strategy ‘in Montserrado since 2013. In addition, five counties (Margibi, M Grand Kru, River Gee and Grand Bassa) were identified and supported to implement county specific coverage improvement. The counties were selected based on the following parameters: immunization coverage (Penta 3 and Measles), drop-c terrain (hard to reach, riverine etc.), population density and access for communities beyond 5 km from health facilities populations (mining and fishing communities).Based on the above, counties were supported to conduct special outreach children 0 – 23 months informed by county data analysis; community engagement meetings to increase demand generati health facility data to inform discussions and enhance community ownership and participation.

Other Activity:

Ebola rVSV

- Updated Liberia Ebola VSV vaccine protocols that clearly articulates activities that are to be implemented du EVD outbreak and operational plans
- Developed Protocol addendum on Severe Adverse Event (SAE) following EVD VSV vaccinations, including protocols for EVD vaccine deployment to hard-to-reach areas in view of cold chain requirement

3.4. Immunisation financing

Please provide a brief overview of the main issues affecting the planning, budgeting, allocation, disbursement and execution of funds for immunisation. Please take the following aspects into account:

- **Availability of national health financing framework and medium-term and annual immunisation operational plans and budgets**, whether they are integrated into the wider national health plan/budget, and their relationship and consistency with microplanning processes.
- **Allocation of sufficient resources in national health budgets for the immunisation programme/services**, including for Gavi and non-Gavi vaccines, (integrated) operational and service delivery costs. Discuss the extent to which the national health strategy incorporates these costs and any steps being taken to increase domestic resources for immunisation. If any Co-financing defaults occurred in the last three years, describe any mitigation measures that have been implemented to avoid future defaults.
- **Timely disbursement and execution of resources:** the extent to which funds for immunisation-related activities (including vaccines and non-vaccine costs) are made available and executed in a timely fashion at all levels (e.g., national, province, district).
- **Adequate reporting** on immunisation financing and timely availability of reliable financing information to improve decision-making.

Currently, there exists a national health financing framework that is supported by an operational plan and budget for which there is a clear budget line for immunization financing. This clearly demonstrates GOL commitment to supporting the immunization programme through a long term sustainable mechanism. In addition, there GoL has continued to provide minimum budgetary allocation for immunization on an incremental basis; for instance, in 2010 the national budget for immunization was US\$ 50,000.00 and has increased to US\$ 650,000.00 as of the last fiscal year (2017/18). However, due to the prevailing economic situation, the current immunization budget for FY 2018/19 is \$600, 000. 00. This amount is expected to be retained for FY 2019/ 2020.

The GoL budgetary support for immunization is use to meet government commitment through the provision of her Co-financing contribution, monthly salaries and incentives for public health service providers and infrastructure for immunization services including distribution and management of vaccines. The GoL is keen in procuring traditional bundled vaccines fully by 2020. Immunization partners such as WHO, UNICEF and USAID support capacity development, supply chain management, social mobilization and health promotion.

As part of the sector advocacy for sustainable immunization financing, there exists a parliamentary forum for immunization in the national legislature, which serves a national level advocacy group for improved budgetary support to the national immunization program. Amid GOL commitment to fund immunization, there are still challenges specifically the payment of about 300 vaccinators (50%) are not on government payroll.

Liberia has been consistent in meeting its Co-financing obligations in line with the partnership framework agreement in a timely manner. In order to improve timeliness in disbursement and execution of resources at the national and sub-national levels, including internal control, the ministry through the office of financial management has decided to commence a web based financial reporting platform (NetSuite) in a phase wide approach starting with 6 counties (Montserrado, Grand Bassa, Margibi, Bong, Lofa and Nimba). This will ensure timely and reliable financial transaction records for the immunization program.

4. PERFORMANCE OF GAVI SUPPORT

4.1. Performance of vaccine support

*Provide a succinct analysis of the performance of Gavi vaccine grants, focusing on **recently (i.e. in the last two years) introduced vaccines**, or planned to be introduced vaccines, and **campaigns**, supplementary immunisation activities (SIAs), demonstration programmes, MACs etc., as well as switches in vaccine presentations. This section should capture 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 vaccine support.
- **Campaigns:** Provide information on the periodicity of campaigns and key results of the post-campaign survey, including the coverage achieved. If achieved coverage was low, provide reasons. How was the operational cost support spent? Explain how the campaign contributed to strengthening routine immunisation e.g. by identifying zero-dose children and lessons learned.
- Update of the **situation analysis for measles and rubella** (using the latest immunisation coverage and surveillance data for measles, rubella and congenital rubella syndrome from national and sub-national levels⁴) and update of the country's **measles and rubella 5 year plan** (e.g. future dates of MR intro, MCV2 intro, follow-up campaigns, etc.).

⁴ Please refer to the JA analysis guidance document for additional information on the expected analyses for measles and rubella.

- **Describe key actions related to Gavi vaccine support in the coming year** (e.g. decision-making on vaccine introduction, future application, planning and implementation of introduction/ campaigns) **and associated needs for technical assistance**⁵.

Achievements Against Agreed Targets

Overall, the performance of the immunization program was encouraging in 2017 with an average of about 7% increase in routine immunization coverage for most of the antigens. Rotavirus vaccine performance was much higher at 39% increase in coverage due to low baseline of 48% in 2016 which was the year of introduction. A summary of the performance against planned targets for vaccination coverage show overwhelming progress. For instance, Penta 3, Measles and PCV coverage increased by 7% from baseline in 2016 of 79%, 80% and 80% respectively (WUENIC 2017). The proportion of children fully immunized with all basic vaccines increased by 9% in 2017 from 68% in 2016 to 77% in 2017 (HMIS, DHIS2). YF low coverage was due Global shortage which impacted the national stock availability and this has since being resolved. In addition, Liberia has taken measures to enhance communication to facilities regarding MCV1 and YF dual immunization. Yellow Fever (YF) vaccine wastage rate has been updated from 25% to 40 % in the 2019 forecast consistent with WHO recommendation.

Though immunization coverage rates have generally improved for all antigens, however, the dropout rate for Rotavirus vaccine is higher when compared to Penta and PCV. One of the contributing factors for high Rotavirus vaccine wastage rate was due to the overstay of at the airport due to break in communication which led to the entire vaccine have a change of VVM stage from 1 to 2. Being cognizant of this reality, the immunization programme along with its partners have taken proactive steps aimed at improving vaccines utilization and management practices. For instance, vaccines shipment alerts have included all members of the immunization team (EPI, UNICEF, WHO) to avoid communication gaps resulting to timely vaccines arrival and clearance (e.g. Rota vaccine in VVM stage II).

These progresses were achieved as a result of the meaningful contributions made by all stakeholders (MOH, GAVI, UNICEF, WHO, USAID, CDC, etc.) Among these, GAVI is making the biggest donor contribution towards vaccines procurement, cold chain improvement, motivational support for monthly outreach sessions, training in vaccines administration, data management and reporting and effective cold chain management, enhancement of the urban immunization strategy, providers and management capacity development and quality supportive supervision, as well as infrastructural investment (i.e. Central Medical Store, Regional Vaccines Stores, Health Campus, etc.).

Summary of Immunization Coverage Performance in 2017 using Administrative Data (change to WUENIC)				
#	Indicators	Baselines 2016	Targets 2017	Achievements
1	Penta-3	79%	80%	86%
2	PCV-3	79%	80%	98%
3	MCV1	80%	75%	87%
4	Rota-2	48%	80%	87%
5	Yellow Fever National shortage in 2017 impacted low coverage at all levels	73%	80%	83%
6	Fully Immunized (JRF)	68%	77%	77%
7	Penta drop-out rate (Penta1 - Penta3) (JRF)	10%	8%	6%
8	Penta1 Measles drop-out rate (Penta1 - MCV) (JRF)	22%	10%	17%
9	PCV drop -out rate (PCV1 - PCV3) (JRF)	9%	8%	5%
10	Rota drop -out rate (Rota1 - Rota2) (JRF)	NA	5%	13%

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.

11	% of counties with Penta 3 coverage \geq 95% (double check data DHIS)	7%	13%	47%
12	% of counties with Penta 3 coverage \geq 80%	13%	27%	33%
13	% of counties with Penta 3 between \geq 50% & <80%	73%	60%	20%
14	% of counties with Penta 3 between <50%	7%	0%	0%

In order to lower the dropout rate, in the lower performing counties to \leq 10% in these counties, the Global Routine Immunization Strategy and Plan (GRISP) will serve as the foundation to address problems associated with coverage and equity. By this, the below steps will be followed:

- Update health facility microplans to ensure that all communities are targeted within the session plan. To ensure that every child is reached, optimize available resources, reaching the right people with the right messages with the collaboration of communities.
- Prioritize services to reach the largest number of unvaccinated children by reducing huge burden of unimmunized children in hard to reach areas, through a rollout urban strategy, standardization of defaulter tracking etc.
- Revitalization of health facility special outreach services in some districts with huge population in long distances and limited number of health facilities by increasing the frequency from once a month to a level that can improve coverages.
- Conduct Periodic Intensification of Routine Immunization (PIRI) in settings requiring rapid, short-term coverage improvement or “catch up” missed vaccinations. The EPI will conduct this activity using immunization and surveillance data as an evidence for prioritization.
- Expansion of target age groups for routine immunization to cover the life-course and increase opportunities to vaccinate
- Awareness creation on the importance of home-based record retention as well as the benefits associated with vaccination especially the socio-economic benefits
- Strengthening of defaulter tracking system to seek-out children that have missed plan vaccination
- Avoiding of missing opportunities. By conducting MOV assessment based on WHO guidelines. In order to achieve the above, the national community health assistance programme will be used as a critical vehicle. The EPI and partners will explore possibilities using community health services supervisors (CHSS) to provide health facility outreach services in addition to the vaccinators and midwives.

Nationwide Measles Campaign

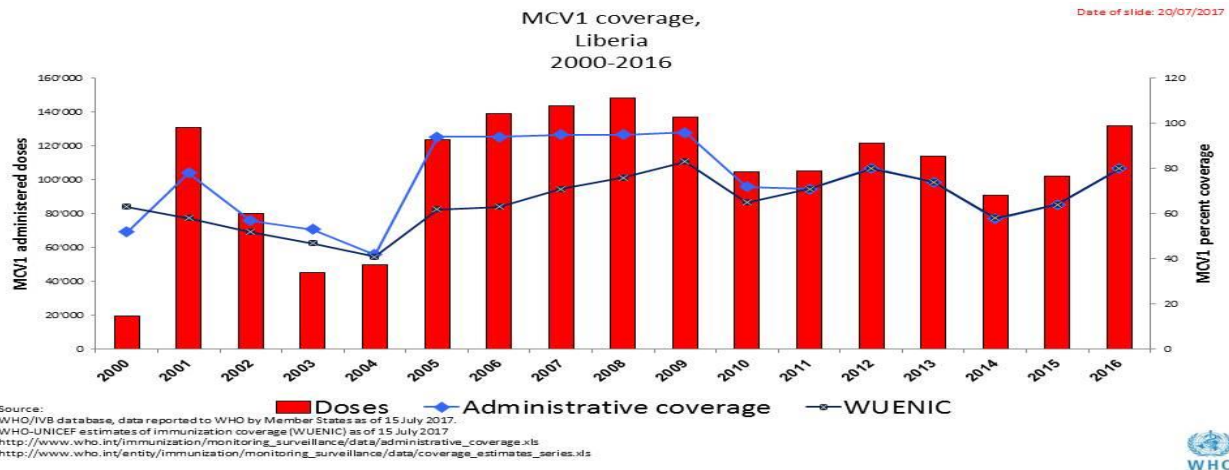
The Ministry of Health of Liberia along with its partners conducted a nation-wide measles follow-up campaign from 15 February to 28 March 2018 in 3 phases. Target population were children aged 6 to 59 months. The objective was to achieve coverage of 95%. The campaign follows a 3 year cycle after the Measles campaign in 2015. Pre-campaign, implementation and post campaign activities were led by the MOH with support from partners such as WHO, UNICE, CDC, USAID, JSI, LMH, LIP etc.

Following the campaign, a Post Campaign coverage survey was conducted to evaluate the coverage achieved by the campaign. The survey methodology included whole country and with no stratification, minimum sample size calculated at 1,503 eligible, 76 enumeration areas (EA) selected among 8,542 EA of Liberia with probability proportionate to size (PPS), 30 households selected per EA and all the children aged 6 to 59 months at the time of the campaign were included. The findings showed 99.9% household participation rate, information about the campaign was 81%, national coverage was 88.8%, primary reasons for missed children were due to absence and low awareness during the campaign. The low awareness was due to limited budgetary support for social mobilization activities. Thus, there is a need for increased mobilization of resources

especially from in country partners and private sector to enhance social mobilization activities during subsequent campaigns. The coverage during the routine according to the history of the vaccination was rather high. Unlike vaccination during the campaign, the coverage was higher in urban than in rural areas. Children who were vaccinated during routine immunizations were more likely to be vaccinated during the campaign. This has reduced the campaign's added value in providing an opportunity to vaccinate children who were not vaccinated during the routine. During the campaign, 2.9% had zero dose, with projected population of 15, 316.

Some of the challenges during the campaign include limited funding, delayed release of funding for the campaign, inadequate social mobilization activities.

Situation analysis for measles and rubella



The coverage for the first dose of measles containing vaccine (MCV 1) for Liberia started a progressive trajectory from 2005 upto 2009. There was a dip in 2014 and 2015 following the deadly EVD outbreaks that led to the nearly collapsed of the health system. However, as part of its recovery efforts in building a resilient health system, a significant rebound was made in 2016. The measles coverage for WUENIC and administrative data converged in 2011 and remained so upto 2016. Amid the level of progress, the overall coverage levels remained below 95% which is the requirement for Measles elimination. However, the country continues to make progress to accelerated measles control. Little more details ex: by investing more into regular outreach activities as well as conducting PIRI to reach the underserved population and promoting strong community engagements through the National Community Health Assistant (NCHA) platform and the involvement of CSOs In addition KAP study conducted in 2017 findings highlighted more male involvement as a mean of increasing immunization uptake. Against this background the EPI has developed messages promoting male involvement. Approval for MCV 2 which will be administered targeting children in the 2nd year of life by 2019 will enhance population immunity.

Figure : Epi-Curve of reported Measles Cases by Week, 2017

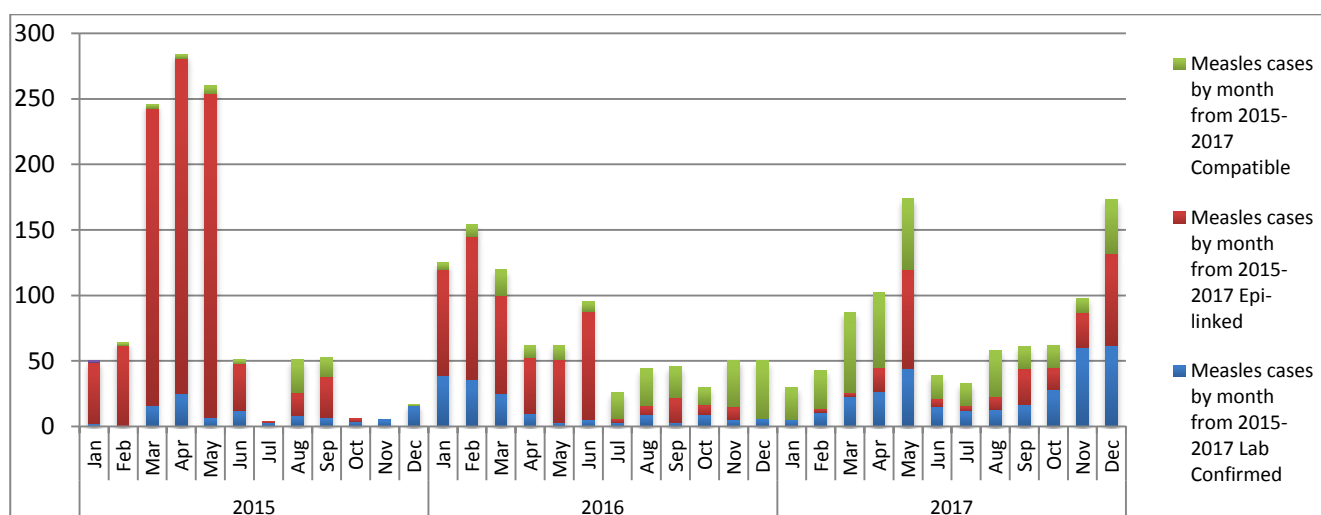


Figure shows the epi-curve of measles cases by month in 2015 - 2017 with peak of transmission noted between March and May. This is similar to trends elsewhere in literature and will also inform the ideal time for introduction of MCV2 and any planned measles campaign for maximum immediate impact. Phase wide approach measles campaign was conducted between February to April 2018 as a means of mitigating the measles sporadic outbreaks.

Figure : Classification of Measles cases (and rubella), Liberia , Week 1 – 52, 2017

Classification of Measles Cases, Liberia, Week 1-52, 2017

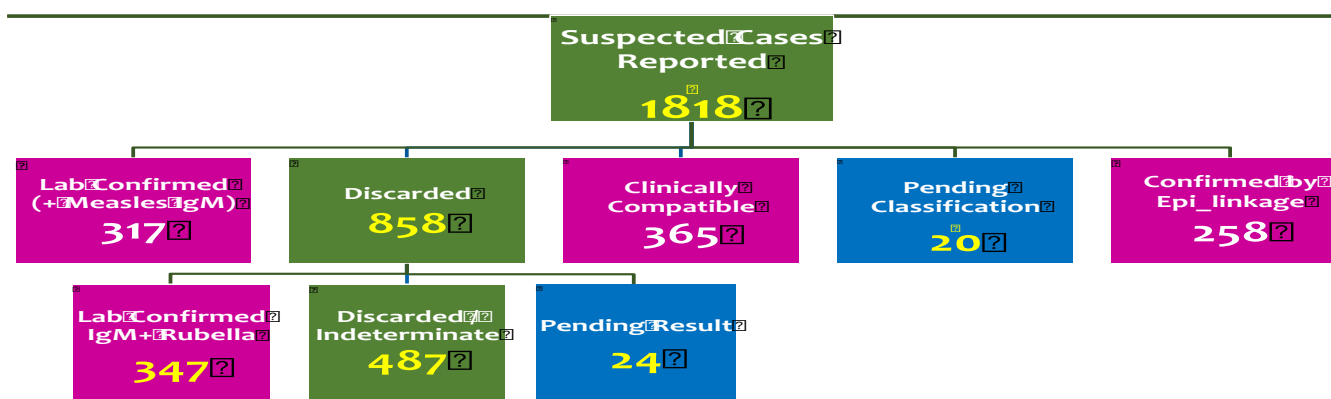


Figure 4 shows the absolute numbers of measles (suspected and confirmed) and rubella cases reported as of 2017. A total of 936/ 1818 (51%) were confirmed measles cases. The figure also shows that 40% (347/ 858) of specimen that tested negative for measles were confirmed for rubella.

Key Activities conducted

1) Governance and partnerships

- Conducted weekly EPI Technical Working Group (TWG) meetings with participants from MOH, WHO, UNICEF, LIP, USAID, CDC, JSI, LMH etc. Furthermore, participated in Ebola VSV Vaccine Technical Working Group (TWG) meetings along with NPHIL, MOH, CDC, Merck, NIH as a means of improving coordination, updating our work plans and ensuring plan activities are conducted.
- Conducted Quarterly immunization review meetings – Four EPI quarterly review meetings were conducted to review immunization performance and institute appropriate actions to improve immunization planning, management and performance at all levels. 2017 last review meeting was conducted in January 2018 followed by 2018 1st quarter review meeting which was held 28th May – 2nd June 2018. As part of action point from this review poorly performing counties were to be visited by EPI and partners in a phase out approach. First three counties (Bomi, Cape Mount and Gbarpolu) were visited in the month of July. As a result of this visit a decision to provide special

outreach support to Gbarpolu was agreed upon while Cape Mount County is being propose to benefit from the equity support under UNICEF.

- Participated in the quarterly Health Sector Coordination Committee (HSCC) meetings during the period under reviewed. For instance, one of the outcomes of the HSCC was the review and endorsement of New Vaccines Applications (MCV2, HPV), New Vaccines Renewal Support (NVS) and EPI operational plan
- Conducted quarterly National Polio Committee Meetings including NTF, NPEC and NCC members during which annual polio updates were developed and submitted, final classification for AFP cases were conducted.
- Concluded the first phase of the high level County engagement mission on Immunization targeting 3 high priority counties (Bomi, Gbarpolu and Grand Cape Mount). The county engagement included senior management from MOH, WHO, UNICEF and targeted County Health Officials, Ministry of Internal Affairs, county authorities, community leaders, local partners etc. As a result of this engagement strong commitments were made by the superintendents of counties visit pledging their continual support once notified by the health authority if require to promote health messages and encourage their people to visit health facilities for available health services including immunization. Superintendents from Gbarpolu and Cape Mount also told us that new health facilities were constructed with funding from their County Development Fund (CDF) as a means of increasing access to health services.

2) Capacity building

- In order to ensure the smooth operations of the immunization supply chain (iSC) system, participants from national and counties were trained in vaccine & cold chain maintenance, stock management and continuous temperature monitoring. The training brought together a total of 41 participants (15 county child survival focal persons; 9 national cold chain supervisors and technicians; 2 regional store managers; and 15 county cold chain officers.

3) Service Delivery

- Conducted periodic outreach sessions and supportive supervision were held at county, district and health facility levels. The contribution of outreach sessions to increased immunization coverage in 2016 and 2018 continue to bridge the equity gaps in the provision of immunization services. For instance, a total of 48, 082 and 52, 052 children under 1 year were vaccinated with Penta 3 through outreach activities in 2016 and 2018 respectively. This exercise significantly contributed to improvement in coverages across the months January to April with an achievement of 19% increase in performance for just a week as a result of the PIRI.
- However, the SARA results for 2018 showed that health facilities availability and readiness to deliver health services in Liberia stood at 56% compared to 2016 result of 59%, a decline of 3%.
Some of associated reasons are likely to link to the following: political transition, opening of new facilities, budgetary decline and delay in disbursement of allotment to County Health Teams couple with stock out of basic supplies in health facilities.
- Findings also show the following: a) Immunization services are available in 599 out of a total of 765 health facilities assessed in Liberia. In addition, 77% of health facilities provided immunization services on a daily basis b) South eastern region of the country has the lowest percentage (53%) of health workers on Government of Liberia payroll and the lowest percentage (42%) of health facilities with GSM coverage. The report also showed that the south-eastern region has the lowest percentage (61%) of health facilities that provide weekly outreach services. Nationally, out of 765 health facilities assessed, 63% provided outreach services weekly. Majority of the 166 facilities that are not providing immunization services are specialized institutions and private for profit facilities. In addition, geographic landmarks couple with deplorable road and inaccessible terrains remain one of the major challenges within the South Eastern Region thereby causing low coverages.

4) Vaccine management and cold chain

- Originally, the ISC workshop was planned for 2017, however, due to delay in HSS disbursement the workshop was postponed to 2018. The Immunization Supply Chain (iSC) System Design workshop was conducted from July 30 2018 to August 2, 2018. The workshop brought together a total of 45 participants from all levels of the MOH Supply chain including partners(JSI, WHO

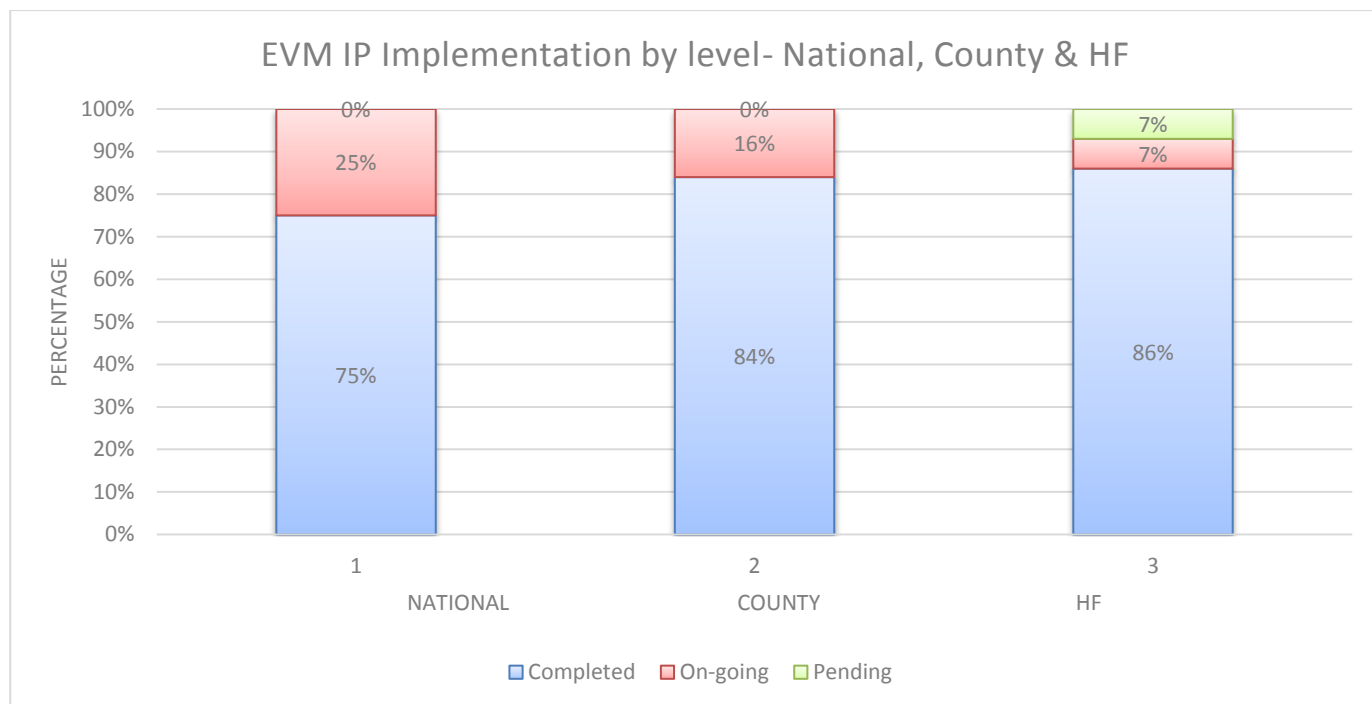
and UNICEF were provided with a clear understanding of system design, how system design can support countries to optimize their supply chains, including opportunistic resource sharing (or integration) options and agreed upon next steps for iSC analysis for improvements in public health commodity (including vaccines) availability, reach, and efficiencies across the public health supply chain and eventual contributions to health outcomes. Nine scenarios have been identified for modelling and the country has agreed to conduct a result sharing workshop tentatively in March 2019.

- Conducted immunization county cold chain equipment inventory assessment to all 15 counties covering 599 health facilities offering immunization service. This activity was conducted between July 12 – 24 2018. One team per region comprising of 4 members inclusive of either of the partner UNICEF or WHO were deployed to the five regions. Analysis of data is ongoing. Findings of this assessment will inform the CCEOP, year 2 ODP.
- As a way of improving the cold chain system, the following were done: B/w the period 2016 – 2018 a total of 248 pieces of solar direct drives have been installed and commissioned; 32 pieces of Ice-line refrigerators procured and installed; procurement of two cold vans and one truck that are in active operations relative to bundle vaccines distribution, construction of two (2) regional cold stores, contribution to the central medical store (CMS), etc.
- In 2017 plan started to transition vaccines storage to CMS this exercise is still ongoing full transition expected by Dec. 2018. Additional HSS funding has been allocated in 2018 to complete the National Drugs Service Warehouse (Central Medical Store). Effort has been made to ensure the readiness of the CMS by conducting the temperature mapping and fire safety measures put in place, in response to GAVI audit recommendations.
- Ongoing implementation of the EVM cIP. To date, 75% of activities at the national level have been implemented; 84% of activities have been implemented at county level and 86% of activities have been implemented at health facility level. Please see table and chart below for details:

cEVM Improvement Plan for Liberia

cEVM Improvement Plan for Liberia - Roadmap and Strategic Actions (2016-2020)			Recommendations by level		
S#	Strategic Goal	Operational Activities	National/Regional	County	HF's
1	SG 1	Scaling up LMIS to ensure reliable and timely data to effectively manage the immunization supply chain	5	3	2
2	SG2	Compliance with effective vaccine management (EVM) policies and practice by strengthening the human resources for logistics at all levels	7	6	2
3	SG3	Ensure sufficient storage infrastructure including future need of WHO pre-qualified CC equipment	11	6	8
4	SG4	Design and implement a pull-based distribution system for bundle vaccines	2	1	1
5	SG5	Addressing governance and leadership challenges	3	2	
6	SG6	Neglected waste management system	2		
7	SG7	Technical Assistance	6	1	1
			36	19	14

cEVM Improvement Plan Status by Level – National, County & HF



5) New Vaccines

HPV and MCV2 introduction applications

- HPV demonstration in two counties in 2016. The administrative coverage achieved for dose one in both counties was about 93.5% in year one. The project targeted girls age 10 years in and out of school. Intensive community engagement & advocacy were among the key strategies that contributed to the success of the program. Within the same year a second dose was administered with a coverage of 88.5%. HPV introduction in 2019 will build on lessons from the pilot project which in strong community mobilization and involvement of schools’ authority.
- A follow up HPV Stakeholder workshop was conducted in April 2018 targeting key participants from MOH, MOE, Ministry of Gender, county authorities, members of parliament, civil society organizations etc. Resolution to introduce HPV into the national immunization program was adopted by the forum. HPV introduction will build upon the lessons gather at the HPV stakeholders’ workshops.
- Subsequently, MCV2 and HPV introduction applications were submitted and same were recommended for approval by Gavi IRC and the requested clarifications are to be addressed by September. The introduction of these two new vaccines into routine immunization is scheduled for MCV2 (May 2019) and HPV (October 2019).
- Typhoid Conjugate Vaccine (TCV) application process is also on-going and to be submitted by January 2019.

IPV PIE

- Inactivated Polio Vaccine (IPV) was introduced into its routine immunization program on July 3rd 2017. Approximately 12 months after IPV introduction into routine immunization, July 9-14, 2018 a Post Introduction Evaluation (PIE) was conducted. The PIE took a regional approach during which time it was conducted in 5 regions, 6 counties and 25 health facilities. Some key highlights from the PIE findings PIE for IPV introduction include but not limited to the below:

Key Achievements

- The IPV introduction plan was deemed good as it covered all aspects of vaccine introduction and was implemented accordingly at Central and county levels for IPV. However, at the level of the HF the were some challenges that were resolved.
- Training was of good quality at Central level (all staff could answer questions on IPV)

- The PIE reports noted successful interventions such as same time introduction at county levels and bundled vaccines delivery.

Key Challenges

- Multi dose vial policy for IPV not adhered to by some health facilities. Feedback received suggested that some staff were newly recruited and had not been formally trained on immunization in practice.
- Poor knowledge of IPV immunization schedule by some health facilities staff as identify by the PIE report
- Following the gaps identified from the field, the MOH and partners drafted a guidance notes that was circulated to all county health teams to ensure adherence to the protocols at all levels.
- Lack of AEFI protocol at all levels as identified by the PIE In response MOH and partners are working to strengthen the AEFI surveillance and response system through the development of guidelines, reporting tools, reactivating AEFI committee and capacity building for health workers.
- Reports of stock out of IPV at some health facilities in 5 out of the 6 (Margibi, Montserrado, Nimba, Rivercess and Sinoe)

Data Management and Quality Improvement

- Production and dissemination of weekly VPD surveillance updates, Monthly RED Reports, Monthly ISS updates, as well as EPI Bulletins
- Conducted a national Data Quality Review (DQR). Recommendations contain therein the DQR will be culminated into an EPI Data Quality Improvement Plans which should be finalized by Q4, 2018 with support from WHO. In addition, given the importance of data quality is a critical piece for decision making, the program intends to institutionalize bi-annual data quality self-assessment for immunization
- Conducted SARA in all 15 counties in Liberia in 2018
- Quarterly and bi-annual MOH Verification of Information (VOI)

Community Engagement

- Knowledge Attitude and Practice (KAP) study on immunization in 2017, debrief for MOH and partners conducted. Findings and recommendations from the KAP are being used to develop messages for immunization and updating of the immunization communication strategy in Q3 2018. For instance, the findings revealed active interest and involvement of male parents in childhood immunization, to sustain and build upon this findings, messages are being developed to target the male parents.
- Commemorated African Vaccination Week (AVW) in April 2018 with national launch ceremony in Monrovia and in other County capitals.

Surveillance

- Enhanced Active Surveillance for Vaccine Preventable Diseases (VPD) within the framework of IDSR

Ongoing plans for strengthening of AEFI Surveillance system, including reactivation of national AEFI surveillance committees, development of national AEFI Surveillance guidelines and planned capacity building on AEFI surveillance at all levels

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

Objective 1: Increase access to quality EPI and other priority RMNCAH services (including ANC, PMTCT, FP, etc.) by target populations especially populations that are inadvertently deprived from immunization services so as to increase equitable coverage and uptake of EPI and other priority RMNCAH services by December 2021.

Objective of the HSS3 grant (as per the HSS proposals or PSR)	- To strengthen outreach services with an initial emphasis on poor-performing counties (eg. Seven (7) counties currently) below 70% Penta 3 coverage using three-pronged approach (fixed, outreach and mobile) so as to increase coverage and equitable access of target populations, including hard-to-reach communities for EPI and other RMNCAH services during the grant period. - Ensure equitable access to communities deprived from immunization such as urban poor and rural-remote communities
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	- Address inequities due to geographic locations
Priority geographies / population groups or constraints to C&E addressed by the objective	Analysis of the coverage for Penta 3 in 2017 revealed that 7 counties (e.g. Grand Bassa, Grand Cape Mount, Grand Gedeh, Maryland, Montserrado, River Gee and Sinoe) had coverage rate less than or equal to 80%. The national target was set at 85% by this, these counties are lagging behind and as such additional support will be provided to develop county-specific coverage and equity improvement plans that will be used to address any health system barriers that are linked to coverage and equity in the implementation of immunization services.
% activities conducted / budget utilisation	Budget Utilization: <u>Service Delivery</u> : Used approximately 87% of the total amount of \$763,670.00 for the period January to June 2018
Major activities implemented & Review of implementation progress including key successes & outcomes / activities not implemented or delayed / financial absorption	<p>The below listed activities have been implemented for the period January to June 2018:</p> <ol style="list-style-type: none"> <u>Development of health facilities immunization micro plans</u> In order to update existing health facility micro plans, two-days orientation workshop was held for participants from counties and central MoH. At the end of the exercise, these participants worked with health facilities in updating existing micro plans. At the end of this exercise, 100% (n=599 HF providing immunization services) micro-plans were updated. These micro-plans were developed based on RED/ REC approach and will guide program implementation and monitoring at health facility and counties levels, ensuring that most at risk population and underserved areas are covered. <u>Provided support (financial and technical) for the conduct of monthly</u> Health facilities outreach services as per the afore-mentioned period – Approximately 29% of the population live beyond 5 km from the health facilities; therefore, in order to ensure that distance is not a factor in reaching the un-reached population, six-monthly health facility outreach support was provided to conduct outreach services. For the period, January to June 2018, a total of 28,401 children received the third dose of Pentavalent vaccine (Penta 3) and 28,448 received MCV1 during the delivery of outreach services nationally. These numbers account for 35% and 36% respectively of the total children who received Penta 3 and Measles through during the reporting period (January to June 2018). <u>Supportive Supervision</u> Conducted two quarterly supportive supervisions at county and health facility levels – Sixty-three health facilities in nine counties were supervised by the national supportive supervision team. Bottlenecks found ranged from high proportion of vaccinators (69%) not on payroll and 38% of vaccinators were newly hired and had not received any formal vaccinators training. On-site mentorship was provided to these newly hired vaccinators and recommendations to have them trained and placed on government payroll were captured in the supportive supervision report. <u>Quarterly Review Meeting</u> Conducted quarterly (two quarters) EPI review meetings – - Venue and date: EPI quarter 1 review meeting was held in Buchanan, Grand Bassa County from 30th May to 2nd June 2018. – Participants: It brought together a total of about 150 participants (Central MoH, National Public Health Institute of Liberia, County Health Teams, National Legislature (committee on Health), and Partners - Purpose: To review immunization (routine and SIA) performances for all counties; re-emphasize the importance of supportive supervision; monitoring and use of data for action; fostering the culture of coordination and collaboration at all levels; identify immunization bottlenecks and challenges in relation to coverage and equity at all levels; and adapt new approaches for the implementation of PIRI and outreach services Outcome: a). Commitments made by County Health Officers to conduct regular in-county review of the immunization programme and have immunization included as a

standing agenda item during county health team meetings. b). Prioritization of immunization during national budgeting and planning by legislators. c). Commitments by national legislators to advocate for the inclusion of vaccinators on government payroll. d). Commitments by County Health Teams to prioritize activities leading to coverage improvement especially for MCV1
 Bring out other innovation that government is considering to improve the grant.

5. Periodic Intensification of Routine Immunization (PIRI)

Conducted one round of Periodic Intensification of Routine Immunization (PIRI) in all 15 counties targeting hard to reach communities and underserved population which helped in increasing the coverage rates for all antigens as demonstrated by April 2018 performance for measles vaccine coverage of 101% (14, 629) compared to March 2018 performance of 80% (11, 583) against a monthly target of 14,474.

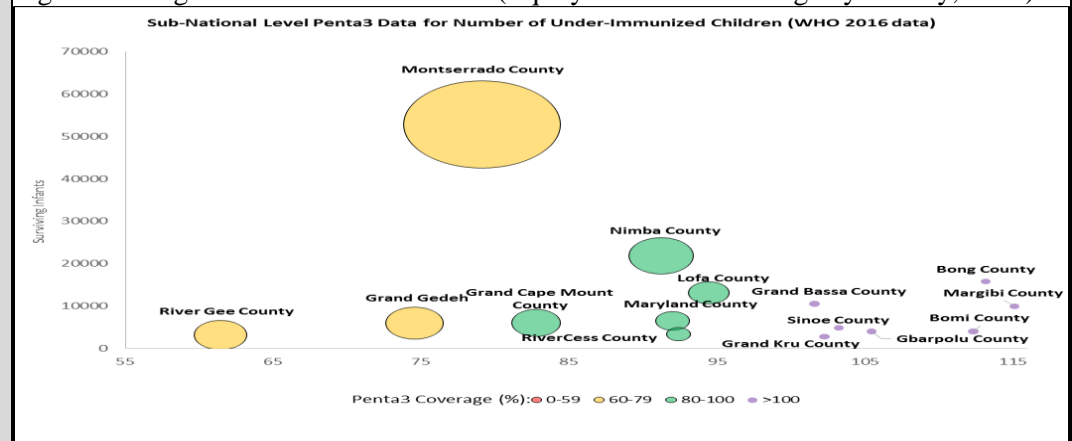
6. Surveillance

Surveillance visits to priority sites – From a total of 804 priority sites (high: 96 sites, medium: 162 sites and low: 546), 10% were selected for surveillance visits aimed at improving timely detection, reporting and completeness. The MOH continues to advocate and support efforts of the surveillance team within the IDSR framework to improve timeliness and completeness of report. AEFI Surveillance system is also being reinforced through reactivation of national AEFI surveillance committees, development of national AEFI Surveillance guidelines and SOPs, and reporting channels

7. Implementation of Urban Immunization Strategy

In an effort to address issues associated with immunization inequities in urban Montserrado County, the urban and non-urban strategies were further strengthened and implemented. Please see charts below:

Figure: Strategic Performance Overview (Equity – Penta 3 Coverage by County, 2016)



The above chart indicates that in 2016 there were four counties (Montserrado, Nimba, Grand Gedeh and River Gee) having huge number of un-immunized children who didn't receive the third dose of pentavalent vaccine (Penta 3).

Figure: Strategic Performance Overview (Equity – Penta 3 Coverage by County, 2017)

	<p>Sub-National Level Penta3 Data for Number of Under-Immunized Children (WHO 2017 data)</p> <p>Surviving Infants</p> <p>Penta3 Coverage (%): ● 0-59 ● 60-79 ● 80-100 ● >100</p>
	<p>Comparative analysis of Montserrat performance in 2016 and 2017 clearly demonstrates significant coverage improvement in 2017 as seen in the chart below given the size of the bubbles. Attributing factor(s) for such a significant progress is the successful implementation of the “Urban & Non-Urban Immunization Strategies” in county. In addition, it further reveals that 4 counties (Grand Cape Mount County, Lofa County, Maryland County and Grand Gedeh) had the largest numbers of under-immunised children.</p>
<p>Major activities planned for upcoming period (mention significant changes / budget reallocations and associated needs for technical assistance¹¹)</p>	<p>The below activities have been planned for implementation during the last two quarters of 2018:</p> <ul style="list-style-type: none"> - Health facility outreach services - Periodic Intensification of Routine Immunization to be more data driven and targeted toward lower performing districts. - Quarterly supportive supervision - Quarterly EPI review meetings - Surveillance visit to priority sites - Implementation of the Urban Immunization Strategy - Implementation of the coverage and equity plans - Capacity building for AEFI surveillance committees at national and sub-national levels - Missed opportunity for vaccination (MOV) eg YF and MCV1 - Reduction of Rota drop out rate to at least 10% - Following donor coordination discussions MOH is reviewing opportunity to enhance donor funding for example through integrated training of health workers and supervision.
<p>Objective 2: Enhance community demand for and uptake of quality EPI and other priority RMNCAH services so as to improve EPI and other health outcomes nationwide by December 2021.</p>	
<p>Objective of the HSS grant (as per the HSS proposals or PSR)</p>	<ul style="list-style-type: none"> - Enhance the quality of community-based health services by improving the skills of community health assistants in public service and community health volunteers and make them more effective in delivering integrated, prioritized community health services including EPI services by December 2021 - Strengthen communication and social mobilization for EPI in all the 15 counties to increase demand for and uptake of EPI and other priority RMNCAH services in the entire grant period - Revitalize community ownership and uptake of immunization services by strengthening EPI focused advocacy engagements with national policy makers, religious leaders and sub-national stakeholders in all counties nationwide by the end of the grant period
<p>Priority geographies / population groups or constraints to C&E addressed by the objective</p>	<p>Routine data analysis supported by the recently conducted KAP identified some challenges associated with low immunization uptake in 7 counties (Grand Bassa, Grand Cape Mount, Grand Gedeh, Maryland, Montserrat, River Gee and Sinoe). To address the identified challenges, with support from the GAVI HSS grant, the current immunization communication strategy is being updated and messages are being revised and will in addition target male parents who have been noted to play significant role in immunization uptake. In addition, community structures (CHC and HFDC members) have been trained in 3 South Eastern counties Maryland, River Gee and Sinoe with a plan</p>

	to continue to roll out trainings to the rest of the county. The main purpose, was to train on Interpersonal skills and the importance of community ownership relative to immunization.
% activities conducted / budget utilisation	Budget Utilization: Community System Strengthening: Used approximately 90% of the total amount of \$228,065.00 for the period January to June 2018
Major activities implemented & Review of implementation progress including key successes & outcomes / activities not implemented or delayed / financial absorption	<ul style="list-style-type: none"> • Trained Community Structures (CHC and HFDC) members in 3 South Eastern Counties- Maryland, River Gee and Sinoe • Conducted a Knowledge Attitude and Practice (KAP) study on immunization, debrief for MOH and partners conducted. Findings and recommendations from the KAP are being used to develop messages for immunization and updating of the immunization communication strategy. For instance, the findings revealed active interest and involvement of male parents in childhood immunization, to sustain and build upon this finding, messages are being developed to target the male parents. • Updated the Immunization Communication Strategy with findings and lessons learnt from the KAP survey • Developed/Revised, Printed and Disseminated Immunization Information Education and Communication Materials • Conducted Immunization Advocacy Meetings in all 15 counties and 91 Health districts
Major activities planned for upcoming period (mention significant changes / budget reallocations and associated needs for technical assistance ¹¹)	<ul style="list-style-type: none"> • Implementation of Communication Activities in line with the Communication Strategy • Airing of messages for improved uptake of routine immunization • Conduct quarterly community engagement meetings in view of increasing community ownership for immunization with the community structures along with the National Community Health Assistance (NCHA) Programme Platform (Develop Standardized Defaulter Tracking Systems). In this context EPI and LMH are planning to pilot the inclusion of immunization services and monitoring under the NCHA programme in Rivercess County • Conduct targeted outreach informed by county, health facility and community data
Objective 3: Strengthen the logistics and Supply Chain Management System of MOH/EPI in order to improve the efficiency of stock management and distribution of vaccines and other essential medical commodities at all levels of the health system in the 15 counties by December 2021	
Objective of the HSS grant (as per the HSS proposals or PSR)	<ul style="list-style-type: none"> • Expand the cold and dry storage capacities for vaccines and other EPI and medical commodities in the National Vaccine Store (NVS), Regional Vaccine Stores (RVS), County Vaccine Stores (CVS) and Health Facility Vaccine Storage equipment to adequately accommodate all vaccines in the grant period • Improve the efficiency of distribution of vaccines and related supplies from the national and regional stores to 15 county depots to ensure delivery of potent vaccines • Protect the cold-chain integrity and vaccine potency by improving both vaccine stock management and safeguard mechanisms in vaccine handling from the port of entry at the airport/customs up to health facility level throughout the grant period • Establish/operationalize Preventive Maintenance System for effective maintenance of cold chain and other critical equipment at the NVS and at county and health facilities in the 15 counties throughout the grant period • Establish an electronic Integrated Logistics Management Information System (LMIS) for MOH that captures EPI vaccine inventory, other essential medical supplies and logistic entities at national level, all County Health Offices, all District Health Offices and all MOH/EPI-supported health facilities within the first two years of the grant period

<p>Priority geographies / population groups or constraints to C&E addressed by the objective</p>	<p>The EVM efforts are nationwide yet targeted efforts focus on south east and central regions to strengthen regional vaccines stores in Grand Gedeh and Bong.</p>
<p>% activities conducted / budget utilisation</p>	<p>Budget Utilization: <u>Procurement and Supply Management</u>: Used approximately 66% of the total amount of \$1,214,776.44 for the period January to June 2018</p>
<p>Major activities implemented & Review of implementation progress including key successes & outcomes / activities not implemented or delayed / financial absorption</p>	<ul style="list-style-type: none"> • Conducted Immunization Supply Chain (iSC) System Design workshop in August 2018 during which about 45 participants from all levels of the MOH Supply chain and partners(JSI, WHO and UNICEF were provided with a clear understanding of system design, how system design can support countries to optimize their supply chains, including opportunistic resource sharing (or integration) options and agreed upon next steps for iSC analysis for improvements in public health commodity (including vaccines) availability, reach, and efficiencies across the public health supply chain and eventual contributions to health outcomes. Nine scenarios have been identified for modelling and the country has agreed to conduct a result sharing workshop tentatively in March 2019. • Conducted immunization county cold chain assessment to all 15 counties covering 599 health facilities offering immunization services • As a way of improving the cold chain system, the following were done: B/w the period 2016 – 2018 a total of 248 pieces of solar direct drives have been installed and commissioned; 32 pieces of Ice-line refrigerators procured and installed; procurement of two cold vans and one truck that are in active operations relative to bundle vaccines distribution, construction of two (2) regional cold stores, contribution to the central medical store (CMS), etc. • Contribution HSS funds to the National Drugs Service Warehouse (Central Medical Store) expected to transition vaccines to CMS by January 2019 • NVS Transition plan has been developed and number of activities have been implemented. • RVS in Bong is fully operational and Regional Vaccines Store (RVS) in Grand Gedeh is technically operational after temperature mapping. HSS purchased two generators for the regional store in Grand Gedeh • Under CCEOP window, 140 CCE have been installed and HWs trained including county depots and health facilities. Liberia is first country in WA region to complete the CCEOP as planned. • The firefighting equipment have been installed in all EPI stores at national and regional depots. Staffs trained on fire safety. • Supply movement to NVS is ongoing; improvement of facilities at existing store. • Vaccine management guidelines, SOPs, data tools and supervisory operation guide have been developed and in use. • Information sharing and coordination among MOHS and all partners has improved. Liberia has achieved 100% in reporting procedures for vaccines arrival. • Procurement of cold chain spares and devices from HSS grant ongoing. • In addition to the provision of SDDs, River Gee County vaccine depot is being solarized for to sustainable power generation. • CCE inventory assessment data collection has been completed. • Procured rain gear for all health facilities (599) and 15 county cold chain officers and child survival focal persons outreach activities • Fuel support for vaccine storage and distribution provided to all counties.
<p>Major activities planned for upcoming period (mention significant changes / budget</p>	<ul style="list-style-type: none"> • Development of CCEOP Yr. 2 ODP to be finalized by September 2018 • Solarisation of additional 2 Counties-Maryland and Grand Kru • Funding for the procurement of the 2 walk in cold rooms will be reprogrammed to support other cold chain needs as the current cold chain storage at the new national store at Caldwell is sufficient.

reallocations and associated needs for technical assistance ⁶	<ul style="list-style-type: none"> • Conduct Immunization System Design Modelling to test prefer options followed by national roll out • Conduct an internal EVM Assessment to review progress IP in preparation for the full EVMA in 2020 Operationalization of the new vaccine store • Procurement of Vehicles and 44 motorcycles for health facilities
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5.4 Performance of Gavi CCEOP support (if country is receiving Gavi CCEOP support)

<p><u>Performance of CCEOP indicators</u></p> <p>First phase (Year 1) CCEOP CCE installation has been completed as reported from the service providers. MoH and CCEOP Project Management Team (PMT) is awaiting final comprehensive report from the supplier. The CCEOP indicators in GPF has been shared with Gavi to be agreed and finalized. The CCEOP indicator performance indicator will be reported beginning 2019 as indicated in GPF.</p> <p><u>Implementation status</u></p> <p>The final operational deployment plan included 108 Solar Direct Drive (SDD) refrigerators and 32 Ice lined Refrigerators and Ice-pack freezers. The total of 140 units of CCE were received in country in March and installation completed within July. Project Management Team (MoH, UNICEF and WHO) also conducted post installation monitoring of CCE. Users were found with good knowledge of preventive maintenance of SDDs. The monitoring team has recommended for future the grid CCE also to have clear visible pictorial for preventive maintenance on top of the equipment.</p> <p><u>Contribution</u></p> <p>The distribution of the CCEOP CCE was developed considering access equity for counties. The CCEs have just been installed in the health facilities. The contribution of these CCE can only be determined in 2019 and onward.</p> <p><u>Future needs for technical assistance</u></p> <p>The implementation of first phase of CCEOP project has been successfully completed before the expected timeline. Liberia is first country in West Africa Region to complete the first phase of CCEOP project. For the smooth coordination of CCEOP projects for the years 2019-2022 Technical Assistance is needed and requested. Currently, year 2 ODP is being developed with a completion timeline of September 2018.</p>

5.5 Financial management performance

<p><u>HSS-3 Financial absorption and utilisation rates</u></p> <p>The absorption and utilization of the HSS-3 Grant after six months' implementation, is progressing well. The absorption rate of the first tranche disbursement of the HSS-3 grant (\$3,462,666.00 for six months) was at 72% by August 2, 2018 amid the slow start due to the transition in government. Some of the factors responsible for the increase in the utilization rate include but are not limited to the following:</p> <ul style="list-style-type: none"> - Recruiting a dedicated accountant for GAVI funds which has a positive bearing on the utilization of grant execution rate, as per the Grant Management Requirement. - Stronger coordination and collaboration between and among programmes of the Ministry of Health and partners. Regular coordination meeting with partners eg. Technical Working Group meetings where activities implementation and timeline are discussed and follow-up actions initiated with regards to grant performance. There has been an improvement in collaboration with the M&E and Research Units of the Ministry of Health to conduct data verification exercises in the counties and
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⁶ 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 extent 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.

the conduct of the KAP study thereby contributing to the increase in absorption and utilization rates. Improved financial absorption can also be attributed to the close collaboration with the Community Health Department of the MoH wherein community engagement activities (eg. Use of CHAs to conduct defaulters tracking, development of the vaccination tracking tool) were jointly planned and implemented. The Health Promotion Division of the MoH closely collaborated with the EPI programme to develop culturally appropriate messages on immunization for the entire country. (can you give more detail/examples?)

- Ministry of Health’s Office of financial management (OFM) initiated field supervision providing support (technical, monitoring, etc.) to counties’ financial officers for the enhancement of timely utilization and liquidation of funds.

IPV Vaccine Introduction Grant:

IPV Vaccine Introduction Grant (VIG) has been fully utilized by end of August 2018. All planned activities have been fully implemented as outlined in the IPV introduction report. There was a very good absorption and utilization of the IPV VIG during the period under review.

Measles SIA Grant:

There has been a very good absorption and utilization rate of the measles SIA grant. By 27 August 2018, the utilization rate of the grant for the measles campaign stood at 99% after implementation of the campaign and the post measles SIA coverage survey.

Compliance

Financial audit is an integral part of the grant condition precedent for disbursement and annual audits have been conducted at the end of every fiscal period. In addition, in August 2017 Gavi, The Vaccines Alliance commissioned its own financial audit and investigation. For instance, the audit revealed the presence of an internal control structure at the MoH which ensures compliance to the MoH’s financial management manual and the GOL’s financial policies. The Ministry is currently implementing recommendations from the audit concerning financial management. Please see table below status update on management responses:

S/N	Audit Recommendation	Management Response
5	<p>The MOH should:</p> <ul style="list-style-type: none"> i. Develop an Annual Work Programme and Budget jointly between the EPI and the OFM teams, prior to commencing of programme implementation for each grant; ii. Maintain an up-to-date approved Annual Work Programme and Budget in its NetSuite system; and iii. Prepare budget execution and budget variance analysis reports at specified intervals and submit them to the Gavi grant coordinator for review. 	<p>Ministry of Health agrees with the recommendations.</p> <p>Recommendation i: The annual work programme and budget has been developed and programme implementation has begun. Responsible unit: OFM</p> <p>Recommendation ii: The HSS 3 budget was uploaded into the NetSuite system on January 26, 2018. Responsible unit: OFM</p> <p>Recommendation iii: The Quarterly financial report and the budget execution and budget variance analysis reports for the first quarter will be submitted to GAVI, on May 15, 2018, 45 days after the end of the of the quarter. Responsible Unit: OFM & EPI</p> <p>Status: As of 27 August 2018, the draft quarterly financial report, the budget execution and budget variance analysis reports were finalized pending submission.</p>
6	<p>The MOH is recommended to:</p> <ul style="list-style-type: none"> i. Institute a practice whether the OFM and EPI teams jointly review progress of implementation every 3 months, by reviewing the quarterly budget against expenditures incurred. ii. Consolidate the grant balances of HSS 1 and 2 and with the technical support of Alliance partners revise the HSS workplan which includes activities that accelerate programme implementation. 	<p>The Ministry of Health agrees with the recommendations.</p> <ul style="list-style-type: none"> i. We have agreed that a joint review progress implementation meeting will be held the second Friday after the end of the quarter. That means, the meeting for the first quarter will be held on April 13, 2018. Responsible units: EPI, OFM & <p>Procurement</p> <ul style="list-style-type: none"> ii. The consolidation of the grant balances for HSS1 & 2 will be done on March 9, 2018. We will also recommend that the balance of the ISS funding in the pool account be transferred to the GAVI HSS account at the Central Bank of Liberia. Responsible Units: EPI, OFM & Procurement. <p>This activity has been concluded</p>

7	<p>The MOH should improve its process of reviewing accountabilities, so as to ensure that supporting documentation submitted by the counties complies with national financial management requirements. Any issues or differences identified by this review should be promptly followed up with the counties. Unresolved issues or suspected anomalies should be referred to the internal audit and MOH management for further consideration.</p>	<p>The Ministry of Health agrees with the recommendations. Responsible units: OFM, Internal Audit</p> <p>Status: This activity is ongoing</p>
8	<p>The MOH should ensure that the all counties promptly account for their advances by submitting the required supporting documents in a timely manner. The review log and tracking of advances prepared by the Examiner should reviewed by his supervisor, and action taken to address any shortcomings identified.</p>	<p>The Ministry of Health agrees with the recommendations. A meeting was held with the counties reiterating the timely submission of liquidation to the OFM which has become a challenge for the MOH. However, as part of the OFM plan in terms of quarterly monitoring and supervision visits to the counties (to review their financial records and give support where necessary) have become irregular due to lack of funding. The financial support from GAVI will assist the OFM with the continuation of our quarterly visits to the counties thereby addressing the issues of liquidation and advances. Responsible Units: EPI, OFM, Internal Audit</p> <p>Status: Completed for two quarters in 2018</p>
9	<p>The MOH should:</p> <ul style="list-style-type: none"> i) Finalise coding of expenditure for Gavi in NetSuite ERP financial system so that it is possible to generate Gavi-specific grant reports which are then submitted to Gavi every three months, as agreed; (revised) ii) Prepare interim and annual financial statements within the agreed deadlines as set down in the Aide Memoire and other Gavi agreements; and iii) Ensure that dedicated, ring-fenced bank account(s) are maintained for Gavi provided funds. 	<ul style="list-style-type: none"> i. Partially disagreed with the first bullet recommendation. The OFM ERP/accounting system, Oracle NetSuite has the capacity to generate donor specific reports at any point in time. The system has unique codes and uses the Government of Liberia (GOL) for donors and projects that are distinct and can generate specific reports. The annual GAVI reports that are prepared by the OFM are generated from the system. (MOH to reconsider its response) ii. Recommendation accepted iii. Recommendation accepted, however the OFM wishes to recommend that the balance ISS funding in the pooled account at Ecobank be transferred to the HSS account at CBL thus making the CBL account the sole ring-fenced bank account. Responsible unit: EPI & OFM <p>Status:</p> <ul style="list-style-type: none"> i. GAVI expenditure in the NetSuite ERP Financial system have now being coded and can generate GAVI specific grant report. ii. Financial reports have been prepared and submitted iii. The Office of Financial Management wrote GAVI requesting approval requesting that ISS balance funds be transferred to HSS account at CBL. Approval pending
10	<p>The MOH should ensure that in future:</p> <ul style="list-style-type: none"> i) The audited financial statements are completed and submitted on time to Gavi, in compliance with the agreed requirements stipulated in the Aide Memoire and Partnership Framework Agreement, This includes that both the external auditor appointment and the conduct of the audit is done on time. ii) The audit firm selected is competitive and is able to conduct the audit in compliance with Gavi's guidelines on financial management and audit requirements. 	<ul style="list-style-type: none"> a) The Ministry of Health agrees with the recommendation (i). Responsible Units: EPI & OFM. b) The Ministry of Health agrees with the recommendation (ii). Responsible Units: EPI, OFM, Internal Audit, Compliance, & Procurement <p>Status: Request for the hiring of responsible auditing firm to conduct the upcoming FY17/18 audit is ongoing</p>
11	<p>It is recommended that:</p> <ul style="list-style-type: none"> i. The EPI, OFM and Internal Audit teams should discuss the areas of high risk to be reviewed by internal audit with respect to the programme budget, workplan and activities funded by Gavi; 	<p>The Ministry agrees to the recommendation and will institute quarterly meeting moving forward.</p> <p>Status: This is ongoing</p>

<p>ii. Each year, internal audit develops a risk-based internal audit plan identifying the key elements to be audited matched by the resources required to execute the plan; and iii. A discussion is held with Gavi’s Country Programme team to explore the possibility of Gavi funding specific internal audit activities and components.</p>	
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As part of compliance to the Grant Management Requirements (GMR), an external audit as well as all financial reports (HSS-3, IPV VIG and Measles SIA Grant) are due in September 2018.

Financial Management

The Office of Financial Management (OFM) is responsible to provide oversight function on all health financial transactions at central and county levels. Its operations is in conformity with the Public Financial Management (PFM) Law of Liberia including other donor requirements and guidelines. In an effort to address Gavi’s audit findings and in conformity with the public financial management (PFM) law and other donor guidelines, the Office of Financial Management (OFM). In order to improve timeliness in disbursement and execution of resources at the national and sub-national levels, including internal controls, the Ministry through the Office of Financial Management (OFM) has commenced the usage of a web based financial reporting system (NetSuite) aim at improving the timeliness, completeness and absorption/utilization rate. This system is being implemented through a phase-wide approach beginning with six (6) big counties (Montserrado, Grand Bassa, Margibi, Bong, Lofa and Nimba). This will ensure timely and reliable financial transaction records for the immunization program. The MoH intends to roll-out NetSuite to the remaining nine (9) counties which are currently using Excel Software by December 2018.

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

<p>NA</p>

5.7 Technical Assistance (TA)

<p>In order to optimize immunization services at all levels, for the purpose of this grant, technical assistance needs are categorized into two areas. Namely, short and long term. However, UNICEF, WHO, CDC, World Bank and expanded partners (PATH, JHPIEGO, JSI, CHAL, LIP) will continue to provide both technical and financial support to the Expanded Programme on Immunization (EPI).</p> <p>Technical support will be provided at national and subnational levels and will include capacity building through skills transfer as well gap filling and embedded support.</p> <p>UNICEF has supported the ministry for the transition to the New Caldwell store. Temperature mappings completed in 2 regional stores. UNICEF provided technical support for procurement, shipment and clearing as well as trainings for the CCEOP platform. 140 additional cold chain equipment (108 SDDs, 32 ILRs, 900 fridge tags and 100 voltage regulators deployed as part of the CCEOP. System design workshop has been conducted, Options for modeling have been identified. Next step will include the modeling of the options and selecting the best option. WHO supported the conduct of the PIE for IPV, participated in development of Guidelines and tools for supportive supervision and also in the supportive supervision. They also convened and provided technical assistance for the conduct of the HPV stakeholders meeting.</p> <p>Challenges identified in the implementation of the One technical assistance plan included overlapping roles of TA. There is need for further clarity in roles and responsibilities. Time and competing priorities also resulted in some delays in implementation. The ministry needs to develop a targeted plan for TA from which UNICEF, WHO and other partners can identify areas to support based on their comparative advantage. Partners need to be more specific in their support and have clearly defined expected results and milestones. Limited participation and visibility of other partners benefitting from the one TA investment.</p> <p>An amendment in the current TA, is that UNICEF will not be supporting the recruitment of an international consultant for the Equity assessment, but will reprogram that funding to build national capacity on conducting equity assessments.</p>

Technical support Needs:

Short term: interim EVMA and development of EVM improvement plan, National EPI Policy & Strategic Plan, planning for new vaccine(s) introduction and coverage and equity.

- CCL Strengthening Platform for EVM IP implementation
 - Cold Chain Inventory and rehabilitation and expansion plan,
 - Cold Chain Equipment Maintenance Plan,
 - National, County-level capacitation exercises in cold chain and logistics management
 - Strengthening of vaccines Management
- Planning for NUVI, MCV2 and HPV in 2019 e.g. TCV and other new vaccines
- Advocacy, social mobilization and community engagement for new vaccine introduction
- Coverage survey, external EPI review and EPI policy review
- Capacity building for Mid-Level Managers (MLM)

Medium Term:

- Data quality improvement
- Scaling up of the Urban Strategy
- Establishment of a NITAG
- Operational Research to understand why there are differences in the coverages btw coverages of vaccines administered at the same time and why the significant drop out rates between Penta 1 and MCV1

Long term: logistics and cold chain management, social mobilization and communication, program performance management.

- Immunization Supply Chain Management (iSCM) Strengthening including Immunization Systems Design
- Evidence-based equity approach for coverage improvement, -Use of findings and lessons learnt from equity assessment and Urban Strategy Evaluations to adjust and implement county and health facility micro plans
- Strengthening public private partnership for active inclusion of civil society organization into workings of immunization through community engagement at national and subnational levels

Technical Assistance will be provided by the partners based on their proven comparative advantages. For example, core partners, WHO will provide TA in Leadership and Governance, Data and Surveillance whilst UNICEF will provide TA in the areas of Demand Promotion, Supply Chain and Coverage and Equity. This will include TA for the next phases of the Immunization Supply Chain Systems Design, conduct of immunization coverage equity assessments and implementation of improvement plans, support for the implementation of the Updated Immunization Communication Strategy and the trainings of Community Health structures on IPC and defaulter tracking, piloting the CFC approach in one county.

WHO will support the data quality improvement including conduct of data quality self-assessments (DQSA) and the implementation of a data quality improvement plan. Will also support the planning, implementation, monitoring and evaluation of New vaccines introduction. TA for the institutionalization of AEFI surveillance and the establishment and trainings of NITAGs. Also for the conduct of operational research.

Other Potential Partnerships identified include:

- PATH for planning, implementation, monitoring and evaluation for HPV
- JHPIEGO for trainings and mentorship for HPV roll out with a focus on school health programming and provide TA for the review of the HPV communication strategy
- PATH for TCV application (funded by BMGF)
- JSI for embedding TA at national level and for the conduct of the Vaccine Wastage Study, also the parenting of poorly performing counties

- Liberian Immunization Platform and Crusaders for Peace for advocacy and community engagement
- Last mile Health will support MOH in River Cess to support the integration of immunization services into the community health platform including defaulter tracing and the inclusion of vaccine related indicators in the CBIS, as well as pilot digital health

6 UPDATE OF FINDINGS FROM PREVIOUS JOINT APPRAISAL

Prioritised actions from previous Joint Appraisal	Current status
<p>1) 1. Immunization outreach services</p> <p>In order to ensure that each and every child has access to high quality immunization services irrespective of the geographical locale (hard to reach, difficult terrain, and/or underserved communities), the program intends to continue providing support to facility based monthly outreach activities to under-served communities. In addition, robust defaulter tracking mechanism will be established to ensure that children entering the immunization programme complete the vaccination schedule fully. Support to Outreach activities will include the provision of technical support for facility level micro planning, motivational package, provision of motorcycles, bicycles, and profiling of catchment communities (e.g.; documentation of under fives, pregnant women, and women of reproductive age).</p>	<p>The EPI programme has supported all 15 counties to develop county and facility based micro plans. However, these micro plans are not costed at the lower levels, leading to inequitable distribution of funding.</p> <p>The current Health System Strengthening (HSS) grant provides support for the conduct of monthly health facility outreach services. From January to June 2018 all 599 Health Facilities offering immunization have conducted at least one outreach session per month targeting hard to reach areas, supported by HSS...These outreach account for 32% of routine coverages. About 60 Motorcycles were procured by the MOH</p> <p>UNICEF and Last Mile Health are in the planning phase with MOH to implement defaulter tracking approaches in 2 counties. Lessons learnt from both approaches will be documented for scale up.</p>
<p>2. Periodic Intensification of Routine Immunization (PIRI)</p> <p>As a strategy to reduce the number of un-vaccinated children across the country and to increase immunization coverage, the program intends to conduct four rounds of PIRI in all counties.</p>	<p>The current Health System Strengthening (HSS) grant provides support for the conduct of bi-annual periodic intensification of routine immunization (PIRI). To date, one round of PIRI has been implemented which contributed to 32% of routine coverage. The program along with partners will employ targeted approach to PIRI that is data driven (equity assessment, risk assessments, RED categorization etc.) to ensure maximum impact</p>
<p>3. Supportive supervision</p> <p>Central level quarterly supportive supervision to counties and county level monthly supervision will continue as planned. However, financial and logistical support to county health teams is been actively reviewed for possible increase and to ensure sustained and efficient management of vaccine stock and distribution. The supportive supervision will also provide mentoring and capacity building of service providers.</p>	<p>Two rounds of EPI supportive supervision have been conducted Quarter 2 and 3, 2018. The first targeted all 15 counties whilst the 2nd targeted 9 counties based on review of immunization coverages, cold chain availability, surveillance data and the RED categorization tool. The program updated Supportive Supervision guidelines and SOPs. Furthermore, an orientation session on supportive supervision was conducted for a total of 30 national supervisors.</p>
<p>4. Parenting of Poorly Performing Counties</p> <p>To ensure comparable performance across the country and to ensure that the last child is vaccinated, county (ies) that are lagging behind will received national technical assistant(s) to support them in all aspects of immunization activities until an appreciable level of capacity and performance is observed. However routine follow up and supportive supervision will continue to ensure sustained ability of gains.</p>	<p>Review of 2017 immunization performance, revealed 7 counties with MCV1 < 80% and 2 counties with DPT3< 80%. Despite some improvements in other counties Grand Gedeh still performed poorly for MCV1 in Q1 2018. 30 day national technical assistance was provided in the second quarter of which resulted in an improvement of MCV1 coverage from 46% in Q1 2018 to 66% in Q2.</p>

<p>Communication for immunization In order to improve demand generation activities that will thereby lead to increase in immunization uptake, several activities are being suggested in three broad categories:</p> <p>A. Formative Research – Knowledge, Attitude and Practice (KAP)</p> <p>B. Updating of EPI Communication strategy</p> <p>a. Review and revise communication strategy based on KAP findings</p> <p>b. Media Promotion – Appearance of EPI Technical Staff on Health Talk, Airing of routine immunization messages on 7 FMs & 30 community radio stations</p> <p>c. Production and dissemination of IEC/BCC materials</p> <p>C. Communication Engagement & Ownership</p> <ul style="list-style-type: none"> - Advocacy meetings - Focused Group Discussions - Training of CHC and HFDC members on Interpersonal Communication Strategy <p>It is hoped that if the aforementioned activities are implemented, it will strengthen and intensified communication activities for immunization.</p>	<p>A. A knowledge, Attitude and Practice (KAP) study was conducted aimed at understanding client perception about vaccination. The study was both qualitative and quantitative.</p> <p>B. Updated the Immunization Communication Strategy using findings from the KAP study</p> <p>C. 1350 pieces of IEC/BCC materials were printed and distributed to all 15 counties and all 599 health facilities providing immunization services. In addition, routine immunization messages are being aired on 7 FM and 30 community radio stations.</p> <p>D. Trained 1,778 Community Health Structure (CHC and HFDC) Members in 3 south eastern counties</p> <p>E. Conducted 2 quarters of Immunization Advocacy Meetings in all 15 counties</p>
<p>6. Health information systems and evaluation of immunization services Data are needed for evidence based immunization interventions and planning. Routine health information system is critical to EPI success and better health outcomes. Therefore, MOH plans to conduct quarterly data verification and validation exercises, train service providers and managers in the use of data for action and quality immunization service delivery, review of EPI performance, post vaccine (IPV) introduction evaluation, training of health workers in community based information system and external evaluation of EPI.</p>	<ul style="list-style-type: none"> • Quarterly verification of information and bi-annual data harmonization exercises are conducted aimed at culturing the habit of data used for action. • A Post-Introduction Evaluation (PIE) of Inactivated Polio Vaccine (IPV) was conducted in July, 2018, • Due to competing priorities, EPI In-depth Review & Coverage Survey are planned for Q1 2019.
<p>7. Immunization cold chain management Cold chain management is at the center of the EPI program. Without effective and adequate cold chain facilities and management, the potency and timely distribution of vaccines will be compromised thus, the number of vaccine preventable disease outbreak will surge. The planned activities include:</p> <ul style="list-style-type: none"> • The conduct of Effective Vaccine Management (EVM) assessment • Procure two 40m3 cold room and three 20m3 freezer room, training in cold chain management, • Establish temperature monitoring system • Conduct of cold chain assessment • Procure 260 pieces of 6 volts’ deep cycle batteries to replace faulty batteries • Under take regular maintenance of cold chain equipment. 	<p><u>EVMA</u> Currently, Liberia is implementing a five year EVM Improvement Plan (cIP) which ends in 2020., The next EVMA is slated for 2021. However, the country intends to conduct an internal EVMA in 2019</p> <p><u>Storage Capacity</u> Assessment of the cold chain capacity at the central medical store revealed adequate storage space. Therefore, funding under the current HSS grant 3 will be used to support other aspects of immunization.</p> <p><u>Cold Chain Assessment</u> A nationwide cold chain assessment was conducted assessing 75% of the total health facilities providing immunization services. This was intended to further verify inventory information regarding the functionality of cold chain equipment in Liberia. In addition, routine maintenance services were conducted.</p>

	Procurement of spare parts for CCE are in process, in addition approximately \$590, 000 was reallocated to support the finalization of the central medical store as part of the joint donor investment
<p>8. Capacity development</p> <p>Reports from several assessments done have revealed several critical capacity gaps ranging from human resource, logistical and infrastructure at all levels of the program. The program has finalized plans to bridge these gaps through the following intervention:</p> <ul style="list-style-type: none"> • Insurance of vehicles, motorcycles and EPI vaccine warehouse • Rehabilitation/Refurbishments of EPI warehouses • Routine maintenance of EPI central and county vehicles • Procure additional EPI equipment including 12 sets of Eurobond monoblock refrigeration unit and rain gears • Provide leadership and management training to EPI managers at all levels to include, M&E, financial management, etc. 	<p>Insurance</p> <p>All vehicles and motorcycles assigned to the Expanded Programme on Immunization are insured. However, for the warehouse, there is ongoing conversion since the new central medical store will house several programme commodities including immunization. Under the HSS 3 a reprogrammed amount of approximately 24K is available as Gavi contribution to insurance.</p> <p>Procurement</p> <p>Procured rain gears, vehicles, motorcycle and other CCE spare parts.</p> <p>Capacity Building</p> <p>Several EPI staff have benefited from external capacity building activities in various areas ranging from Leadership, Financial Management, M&E, Project Management and Surveillance.</p>
Additional significant IRC / HLRP recommendations (if applicable)	Current status
NA	NA

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

<p>Overview of key activities planned for the next year:</p> <p>1. New Vaccine Introduction/application:</p> <ol style="list-style-type: none"> MCV2 introduction in May 2019 (High priority) HPV Vaccine introduction in October 2019 (High Priority) TCV application in March 2019 (Medium Priority) Switch from TT to Td vaccine (High Priority) <p>2. Immunization Services, Coverage and Equity:</p> <ol style="list-style-type: none"> Urban Immunization Strategy (UIS) Roll-out (High Priority) Implement the UIS in other counties of urban potential using the lessons learned and the approaches from the Montserrado experience Integration of Immunization Services into Community Health Assistants (CHA) Programme (Community Health Services Supervisors (CHSS) conducting immunization services; a phased approach following a review of the immunization pilots in two counties). Digital Health through CHA platform (Medium Priority): The development of a digital vaccination tracking tool to be used by CHAs using tablets. Development and roll-out of a national defaulter tracking strategy using community health platform. There are several different defaulters tracking systems being piloted across the country and there is a need to develop at the national level, a defaulter tracking strategy that will be rolled out nationwide (High Priority) Evaluation of Child Friendly Communities (CFC) pilot in Grand Gedeh and Last Mile Health (LMH) pilot in River Cess to develop a harmonized approach to immunization in community health (Low Priority for next year) Partner with Community Health to update Community Based Information System (CBIS) tool to include immunization indicators (Medium priority)
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- f. Implementation of Missed Opportunities for Vaccination (MoV) eg. Increasing YF, MCV2 uptake during campaigns or other health interventions (Medium priority)
- g. Conduct of special and regular Immunization outreach services (High Priority)
- h. Conduct two rounds of targeted PIRI in underserved and poorly performing areas following mapping exercise (High Priority)
- i. Conduct quarterly supportive supervision from national to county level and monthly from County to health facility with emphasis on vaccine management (High Priority)
- j. Conduct county engagement activities to counties that are lagging behind (High Priority)
- k. Continue the parenting of poorly performing counties (deployment of technical assistance from the national level to support poorly-performing counties over a period of time) (Medium Priority)
- l. Develop county-specific equity plans following equity analysis (Medium Priority)

3. Surveillance:

- a. Institutionalize AEFI surveillance at all levels (High Priority)
- b. Strengthen MNTE surveillance activities eg. Case investigation of suspected NNT (High Priority)
- c. Training of Child Survival Focal Persons in basic VPD surveillance (High Priority)
- d. Improve VPD reporting through collaboration with National Public Health Institute of Liberia
- e. Conduct surveillance visits to priority sites (high, low, medium) (High Priority)
- f. Respond to vaccine preventable diseases outbreaks eg. Measles, pertussis, etc. (High Priority): detailed investigation and reporting of all cases of VPD, provide technical support to counties to plan and implement outbreak response activities (circumscribed campaigns): treatment and vaccination. (High Priority)

2. Cold chain and Logistics:

- a. CCEOP phase 2 implementation and phase 3 development (High Priority)
- b. National Cold chain inventory (High Priority)
- c. Print additional Job aids and SOPs and ensure that they are posted in every health facility (High priority)
- d. Implement Corrective Actions, Preventive Actions (CAPA): (Medium Priority)
The National Logistics team is expected develop a system for equipment maintenance and to build the capacity of county teams to develop preventive maintenance plans that will be regularly updated to reflect history of servicing and planned service dates.
- e. Conduct Immunization Supply Chain modelling exercise (High Priority)

3. Data Management:

- a. Conduct DVD-MT training and roll-out (High Priority)
- b. Conduct quarterly data verification, validation and harmonization following the DQS protocol (Medium Priority)
- c. Conduct Regional EPI coverage survey (High Priority)
- d. Develop and implement Data Quality Improvement Plan (DQIP) (High Priority)
- e. Conduct vaccine wastage study (High Priority)
- f. Update immunization data tools to begin tracking cross-border populations for planning purpose (Medium Priority)
- g. Advocacy with the Liberia Institute of Statistics and Geo Information Services (LISGIS) to resolve the problems of denominator (High Priority)

4. Demand Creation/promotion:

- a. Cross-border collaboration through advocacy meetings and social mobilization to improve immunization uptake and surveillance (Medium Priority)
- b. Collaboration with the private sector, CSOs, and the media to improve local resource mobilization and improve demand for immunization services; strengthen public-private partnership (High Priority)
- c. Production and distribution of IEC materials (High Priority)

5. Human Resource and Training

- a. Conduct Immunization in practice training for immunization service providers (High Priority)

- b. Review and update TOR of immunization service providers (eg. Vaccinators, midwives, CHSS, etc.) (Medium Priority)
- c. Engage national stakeholders and develop a strategy to ensure that immunization service providers are placed on GoL payroll (High Priority)

6. Policy and Leadership:

- a. Update the comprehensive multi-year plan (cMYP) to include new and future vaccines (High Priority)
- b. Conduct high-level stakeholders’ advocacy meeting with parliamentarians to increase budgetary allocation for immunization (High Priority)
- c. Update the EPI policy to reflect new immunization age group (High Priority)

Key finding / Action 1	Immunization Supply Chain (iSC)
Current response	<ul style="list-style-type: none"> i. Frequent breakdown of aged cold chain equipment (CCE) ii. Absence of vaccine management guideline, SOP, maintenance plan and temperature monitoring forms in some health facilities iii. Poor management of vaccine stock records iv. Challenging supply chain system
Agreed country actions	<ul style="list-style-type: none"> i. In order to address the supra-mentioned immunization supply chain issues identified from the Gavi Audit and other supervisory visits, the country team has agreed to use a phase-wide approach using the HSS and CCEOP funding mechanisms. For instance, under Year One implementation of the CCEOP, 108 Solar Direct Drives (SDD); 32 Ice-Lined Refrigerators (IRL) and 900 Fridge-Tag. In addition, year two operational deployment plan considers both aged CCE and newly constructed health facilities. ii. Develop and distribute vaccine management guideline, SOP, CCE maintenance plan and report form, and temperature monitoring form. In addition, refresher training will be conducted for the end users (i.e. service providers) on the proper use of the vaccine stock ledger and importance of recording practices iii. Conduct immunization supply chain modelling activities iv. Conduct roll-out training for the use of DVDMT
Expected outputs / results	<ul style="list-style-type: none"> i. Replacement of aged and broken cold chain equipment ii. Availability of vaccine management guidelines, SOP, Maintenance Plan and Temperature monitoring forms at all levels (i.e. Central, Regional, County and Health Facility)
Associated timeline	<ul style="list-style-type: none"> i. Replacement of Aged Cold Chain Equipment – This will be conducted over 5 Years ii. Distribution of guidelines, SOP, maintenance plan and monitoring form will be conducted over 12 months’ period with close supportive supervision iii. Immunization supply chain modelling 1 – 2 years iv. DVDMT to be implemented in the next 12 months’
Required resources / support	Financial and Technical Resources will be required to complete these very cardinal immunization supply chain activities
Key finding / Action 2	Service Delivery: Introduction of New Vaccines (MCV2, HPV, TCV and Td Switch) and conduct of SIA
Current response	<ul style="list-style-type: none"> i. Liberia’s application for the introduction of MCV 2 and HPV into routine immunization have been approved ii. Switching from TT to Td in 2019 iii. Finalization and submission of TCV application in 2019
Agreed country actions	<ul style="list-style-type: none"> i. Introduction of MCV 2 and HPV into routine immunization May and October 2019 respectively ii. Successful switching from TT to Td in 2019 iii. Submission of Liberia’s TCV application March 2019 iv. Conduct Post Introduction Evaluation (PIE) for MCV 2 and HPV

	v. Conduct SIA (e.g. Polio) in 2019
Expected outputs / results	i. MCV 2 and HPV introduced into routine in 2019 ii. TT to Td switch process completed by 2019 iii. TCV application submitted by March 2019 iv. MCV 2 and HPV PIE final report v. Conduct high quality polio SIA and achieve 95% coverage
Associated timeline	One Year
Required resources / support	i. VIG support ii. Switch budget iii. Technical Assistant for the conduct of MCV 2 and HPV PIE
Key finding / Action 3	Service Delivery: Urban Immunization Strategy Implementation, Periodic Intensification of Routine Immunization (PIRI)
Current response	
Agreed country actions	i. Scaling-up of the urban immunization strategy ii. Conduct of focused PIRI in counties with low coverage as measure by Penta 3 and MCV 1 iii. Intensification of monthly health facility outreach services iv. Implement pioneering child survival activities to address issues associated with low coverage
Expected outputs / results	i. Implementation of the urban strategy in additional five (5) counties (e.g. Bong, Lofa, Nimba, Margibi, and Grand Bassa) ii. Number of counties that conducted focused PIRI
Associated timeline	1 – 3 Years
Required resources / support	i. Financial resources
Key finding / Action 4	Monitoring & Evaluation: EPI In-depth Review and Coverage Survey, Immunization Data Quality Improvement Plan
Current response	
Agreed country actions	a. Conduct EPI In-depth Review and Coverage Survey b. Develop and implement Immunization Data Quality Improvement Activities (Data Quality Self-Assessment)
Expected outputs / results	
Associated timeline	One Year (This activities will be annualized
Required resources / support	a. Financial Resource b. Technical Resource (i.e. Recruit international TA to support the conduct of EPI In-depth Review and Coverage Survey)
Key finding / Action 5	Surveillance
Current response	
Agreed country actions	a. Establish AEFI surveillance monitoring system b. Strengthen VPD surveillance activities at all levels c. Conduct surveillance visits to priority sites d. Develop outbreak response and preparedness plan e. Respond to VPD outbreak(s)
Expected outputs / results	
Associated timeline	
Required resources / support	Financial Resources

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

- The Joint Appraisal (JA) process started with a discussion on the JA Review Meeting dates with key stakeholders. The August 27-29, 2018 dates were agreed and communicated with the relevant MOH programs, partners and GAVI secretariat through an invitation letter signed by the Deputy Minister of

Health. The team requested the revised JA template from GAVI and established a core team, comprising of MOH, WHO, and UNICEF to draft the JA report and circulate same before the scheduled workshop. The core team worked for two weeks and developed the draft JA report that formed the basis for the Joint Appraisal Review Meeting that ran for three consecutive days (August 27-29, 2018) at Corina Hotel, Sinkor, Monrovia, Liberia. The Review Meeting brought together over 40 participants from in country, particularly GAVI Alliance partners, MOH staff, EPI Partners and other stakeholders. Members of the GAVI secretariat graced the Review Meeting and provided technical support. The Report was reviewed by stakeholders in groups and plenary and was refined during the process. At the end of the three days JA Review Meeting, HSCC members have already endorsed the JA Report.

- Additional information contained in the report include but not limited to Administrative Data (2017-present); Liberia Demographic and Health Survey (2013) and WHO/UNICEF estimates of 2017.

9 ANNEX: Compliance with Gavi reporting requirements

	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 for 2016 (2017 due end of this year)		
End of year stock level report (which is normally provided by 15 May as part of the vaccine renewal request) *	Yes		
Campaign reports *			
Supplementary Immunisation Activity technical report	Yes		
Campaign coverage survey report	Yes		
Immunisation financing and expenditure information	Yes		
Data quality and survey reporting			
Annual data quality desk review		No	NA: This will be institutionalized beginning 2019
Data improvement plan (DIP)		No	NA: This will be institutionalized beginning 2019
Progress report on data improvement plan implementation		No	The DQIP is yet to commence. However, implementation is scheduled for 2019
In-depth data assessment (conducted in the last five years)	Yes		
Nationally representative coverage survey (conducted in the last five years)		No (DHS planned for February 2019)	
Annual progress update on the Effective Vaccine Management (EVM) improvement plan	Yes		
CCEOP: updated CCE inventory	Yes		
Post Introduction Evaluation (PIE)	Yes		
Measles & rubella situation analysis and 5 year plan	Yes		
Operational plan for the immunisation programme	Yes		
HSS end of grant evaluation report			n/a
HPV specific reports	Yes		
Reporting by partners on TCA and PEF functions	Yes		

