Joint Appraisal (JA) report 2018

Country	*CAMEROON*
Full JA or JA update	☑ **Full JA** ☐ Updated JA
Date and location of Joint Appraisal meeting	*Ebolowa, 10-14 September 2018*
Attendees/affiliation[1]	*Provided as an attachment*
Reporting period	*January-December 2017*
Fiscal period[2]	*January-December 2017*
Comprehensive Multi Year Plan (cMYP) duration	*2015 -2019*
Gavi transition/co-financing group	*Preparation phase*

1. RENEWAL AND EXTENSION REQUESTS

Renewal requests were submitted through the country portal

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

Observations on vaccine request

Population	**24,253,757**				
Birth cohort	**876,315**				
Vaccine	**IPV**	**Penta**	**Rota**	**PCV-13**	**YFV**
Population in the target age cohort	875,039	875,039	875,039	875,039	875,039
Target population to be vaccinated (first dose)	700,031	848,788	796,285	848,788	752,534
Target population to be vaccinated (last dose)	N/A	787,535	743,783	787,535	N/A
Implicit coverage rate	80%	90%	80%	90%	86%
Last available WUENIC coverage rate	76%	86%	83%	84%	78%
Last available admin coverage rate	76%	86%	83%	84%	78%
Wastage rate	10%	6%	5%	5%	20%
Buffer	25%	25%	25%	25%	25%
Stock reported	26,210	1,813,000	495,597	1,956,749	473,890

The EPI uses the population projection data from the 2005 census to plan vaccine orders.

Before 2017, vaccine requirements were estimated based on achieving results according to standard international immunisation coverage (IC) levels (90% for Penta3) and the cMYP. In addition, the physical inventory of vaccines and inputs prior to the country's vaccine requirements forecast was neither systematic nor comprehensive. During previous years, only the data for stock available at national level storage depots were considered when estimating requirements. Moreover, since 2014 performance has decreased (80-85% for Penta3). The quantities planned and delivered based on the 90% IC goal were not realistic, which resulted in excess stock and significant vaccine wastage from the overestimate.

To find a solution to this situation, an ICC meeting was held as were meetings with partners (WHO, UNICEF, and the Clinton Health Access Initiative (CHAI)), during which the country decided to reduce the vaccine requirements by revising IC objectives.

[1] If the list of attendees takes up too much space, it may also be provided as an attachment.
[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 future[3]

Indicative interest to introduce new vaccines or request HSS support from Gavi	Programme	Expected application year	Expected introduction year
	MenAfriVac	*2019*	*2020*
	HPV	*2017*	*2019*
	Measles-rubella 2	*2018*	*2019*

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

- **Security situation and displaced populations**

Because of security crises in northern Nigeria and the Central African Republic, Cameroon has recorded episodes of cross-border insecurity in the East and Far North regions since July 2014[4]. Sporadic attacks by armed groups and cases of kidnapping continue to be reported in the Far North, North and Adamawa regions. Data from the United Nations High Commissioner for Refugees (HCR) reveal that Cameroon accommodated 351,114 refugees from Nigeria (95,027) and the Central African Republic (255,907)[5]. Mainly dispersed across the Far North, East, and Adamawa regions, these special populations live in humanitarian camps or in communities. In addition, the number of internally displaced persons in the country's Far North in December 2017 was estimated at 241,030, especially in the health districts of Fotokol, Gouffey, Kousseri, Makary, Mogode and Mora[6]. Since 2016, instability in the Northwest and Southwest regions resulted in population movements inside of these regions, towards neighbouring regions (an estimated 160,000 persons)[7] and even towards Nigeria (estimated at over 20,000 persons)[8].

- **Difficult to access areas**

We distinguish two categories of areas in the country that remain difficult to access for immunisation services in Cameroon:

  - **Areas affected by insecurity**

The Far North region is particularly affected by insecurity. It has eight health districts (HD) in total (Goulfey, Kolofata, Kousseri, Koza, Mada, Makary, Mokolo and Mora) with at-risk health areas, including approximately 3,179 EPI target children. In the Northwest and Southwest regions, which are affected by socio-political unrest, four HDs (Batibo, Fundong, Mbengwi and Njikwa) and 14 HDs (with the exception of Bakassi, Buea, Limbé and Tiko) respectively, are affected by insecurity. Overall, 10,376 (14.8%) target children from the Northwest region and 37,104 (69.3%) target children from the Southwest region are located in an area of insecurity[9]. Nationwide 50,659 (5.9%) target children are in an area of insecurity.

  - **Remote areas**

Remote areas have been identified in 3 health districts of the Far North region (Mada, Makary and Bogo), with an estimated target of 1,197 children, representing 14.6% of the total target for these districts. In the Littoral region, remote areas were identified in the HDs of Abo, Dibombari, Edéa, Manoka and Yabassi., which account for 777 (12.3%) target children. In the West region, the district of Malantouen includes 1,058 (20.2%) target children living in remote areas. In the North region's Lagdo district, there

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

[4] Koungou Léon (2014). Boko Haram, Cameroon Tested by Threats. L'Harmattan.

[5] *UNHCR: Cameroon Factsheet – April 2018.* https://reliefweb.int/report/cameroon/unhcr-cameroon-factsheet-april-2018

[6] *IOM: Displacement Tracking Matrix. Cameroon, Far North Region. December 2017* https://reliefweb.int/sites/reliefweb.int/files/resources/iom_cmr_dashboard_rd12_en.pdf

[7] *UNICEF: Cameroon Humanitarian Situation Report, May 2018.* https://reliefweb.int/report/cameroon/unicef-cameroon-humanitarian-situation-report-may-2018

[8] *UNHCR :* http://www.unhcr.org/news/briefing/2018/3/5ab0cf2b4/anglophone-cameroonians-nigeria-pass-20000-mark.html

[9] *Information received from the EPI Regional Technical Group Coordinators.*

are an estimated 2,604 (49.9%) target children living in remote areas. In the Southwest region, the Tiko HD and the entire Bakassi HD are remote and include 1,069 (20.2%) target children[10]. Nationwide 6,705 (0.8%) target children are located in remote areas.

- **Epidemiological situation of vaccine-preventable diseases**

Since July of 2014, no cases of wild poliovirus (WPV) have been confirmed in Cameroon. However, after cases of WPV and circulating vaccine-derived poliovirus (cVDPV) were reported in the state of Borno in Nigeria in August 2016, Cameroon developed four polio emergency plans to strengthen surveillance of acute flaccid paralysis (AFP) and increase herd immunity. Twelve rounds of response campaigns were carried out in the three northern regions bordering the state of Borno in Nigeria; some rounds involved other at-risk regions such as the Northwest and West regions.

As part of measles-rubella (MR) vaccine post-introduction activities, a sentinel surveillance system for congenital rubella syndrome (CRS) was implemented and has been operational since April 2018. Four HDs had measles epidemics in 2017; immunisation response actions were taken in each of those districts.

Four cases of yellow fever were confirmed in the HDs of Bertoua, Bangue and Kumba. However, after in-depth investigations were concluded, none of these HDs were declared to have epidemics.

As for neonatal tetanus (NNT), three HDs (Ndom, Nguti and Ngog Mapubi) crossed the elimination threshold and one (Lolordorf) was identified as being high risk. An initial round of the tetanus immunisation campaign was conducted in the HDs of Lolodorf, Ndom and Ngog Mapubi. The activity was delayed in the Nguti HD because of the security situation.

At the conclusion of the cholera risk analysis for 2010-2015, the Ministry of Public Health conducted a preventive immunisation campaign against cholera with the support of its partners in the Mogodé HD in the Far North region in May and June 2017. Nevertheless, since mid-July 2018, 19 HDs have been affected in the Centre, Far North, Littoral and North regions. Overall, as of 29 October 2018, 645 cases were recorded (537 of them in the North region, which has 13 districts with epidemics) and 43 deaths (24 of which were in communities), for a fatality rate of 6.7%[11], in particular because patients did not seek or belatedly sought treatment from health facilities.

- **Macroeconomic situation**

In 2017, Cameroon's economic activity experienced a slowdown marked by a decrease in the growth rate from 5.7% in 2015 and 4.5% in 2016 to 3.2% in 2017[12]. This decrease was due to the decline in the petroleum sector (-17.7% in 2016, compared with +3% in 2015), despite the healthy performance of activity in other sectors[13]. Future macroeconomic forecasts for Cameroon are encouraging. According to the International Monetary Fund (IMF), Cameroon's real Gross Domestic Product (GDP) will grow in 2018 to around 4.0% and should increase further to 4.5% in 2019[14]. The government anticipates a GDP of 4.1% at the end of the 2018 fiscal year[15]. The economic context is marked by the need to allocate more and more funds for defence and security, limiting how much of the government budget can be allocated to social services. This is in a context of drastic decreases in outside financial support for immunisation, mainly because the Global Polio Eradication Initiative is coming to an end.

- **Adjusting needs and strategies for special populations**

In the first half of 2018, 3,653 (1.1%) of refugee children received Penta3, out of a total of 321,638

[10] *Idem.*

[11] *MoH, 2018. Situation report No.12, Management of the cholera epidemic. 01/08/2018.*

[12] *Circular N°001/CAB/PRC of 20 June 2018 on the preparation of the State Budget for the 2019 fiscal year. Available at https://www.prc.cm/fr/multimedia/documents/6514-circulaire-n-0001-cab-prc-du-20-juin-2018-relative-a-la-preparation-du-budget-de-l-etat-pour-l-exercice-2019.*

[13] *CEMAC. Mid-term multilateral surveillance report 2017 and outlook for 2018. Available at https://www.cemac.int/sites/default/files/publications/Rapports/Rapport_int%C3%A9rimaire_Surveillance_Multilat%C3%A9rale2017_Perspectives_2018.pdf*

[14] *http://www.imf.org/en/Countries/CMR. Accessed on 24/07/2018*

[15] *Circular N°001/CAB/PRC of 20 June 2018 on the preparation of the State Budget for the 2019 fiscal year. Available at https://www.prc.cm/fr/multimedia/documents/6514-circulaire-n-0001-cab-prc-du-20-juin-2018-relative-a-la-preparation-du-budget-de-l-etat-pour-l-exercice-2019.*

children immunised in the country. Since the percentage of these children is relatively low, the country did not ask for changes to be made to its request for vaccines. As for insecure zones in the Northwest and Southwest, the service delivery strategies to better reach targets are being reviewed and will be included as part of HSS2 implementation.

- **Global Polio Eradication Initiative (GPEI) transition**

The GPEI has helped stop wild poliovirus (WPV) from circulating in Cameroon since 2015. The last case of WPV detected in Cameroon was on 9 July 2014, and the last case of cVDPV dates to 12 August 2013. The country successfully introduced the IPV and replaced the tOPV with the bOPV in routine immunisation. The 189 HDs and HAs have been mapped, including using geopositioning (GIS). Immunisation system stakeholders have improved their proficiency at organising mass campaigns, including applying special strategies. Disease surveillance and coordination mechanisms have been enhanced, hence the annualised non-polio AFP rates above 5 since 2014. A functional and well-equipped polio laboratory was installed at the Cameroon Centre Pasteur. Communication in support of immunisation was strengthened with commitments from leaders and community involvement. In this context, governors' fora were implemented and a follow-up committee for the fora is responsible for monitoring polio prevention and immunisation activities in eight of the country's regions. The supply chain was improved. The country now has a total storage capacity of 62 m^3 of positive storage and 17 m^3 of negative storage at the national level.

As GPEI funding is drastically decreasing, in 2017 Cameroon developed a polio transition plan for 2017-2021 as well as a business case. It plans to guarantee the operations needed to keep Cameroon polio-free after the disease is eradicated and see to it that the investments made to eradicate polio help achieve national health objectives. This plan includes six objectives and eight strategic focus areas that address strengthening routine immunisation, disease surveillance, and response to epidemic outbreaks, among other things. The total budget for the plan over five years is CFAF 37,451,489,933. Proposed funding sources to implement the plan are from the government (14.20%), Gavi (3.39%), WHO (43.11%), UNICEF (28.48%), CHAI (0.04%), and CDC (0.26%). Gavi's expected contribution over the five years of the plan's implementation comes to CFAF 1,268,941,540, in particular for procuring vaccines and inputs and health system strengthening (HSS) activities. It should be pointed out that there is a funding gap of CFAF 3,939,713,405[16]. A donors' forum is planned in order to mobilise additional funding.

For the programme, 2019 will be characterised by strengthening logistics, especially through continuing to carry out Cold Chain Equipment Optimisation Platform (CCEOP) activities at the operational level and building the new storage facility at the national level, as well as introducing new vaccines. CCEOP activities will increase storage capacity and the quality of vaccine conservation in the country. This will ensure a greater availability of vaccines at the points of service and increased service delivery. The introduction of HPV and the second dose of the MR vaccine are opportunities for strengthening communication and social mobilisation in support of immunisation, as well as strengthening stakeholders' capacities at all levels on immunisation in practice. In addition, having a Management Partner will help to strengthen programme management. All of this will have a highly positive impact on programme performance and will help achieve objectives.

However, the following risks should be pointed out[17, 18, 19]:

Worsening socio-political unrest in the Northwest and Southwest regions could intensify the movements of populations seeking security, and health facilities being abandoned by staff who are often victims of insurgents' distrust of institutions. Indeed, only 47% of HDs (9/19) in the Northwest and 17% (3/18) of

[16] *MoH (2017). Analytical summary and business case for the polio eradication programme transition plan in Cameroon 2017-2021. Yaoundé-Cameroon*

[17] International Crisis Group (2017). *https://www.crisisgroup.org/fr/africa/central-africa/cameroon/130-cameroon-worsening-anglophone-crisis-calls-strong-measures*

[18] *Euler Hermes Economic Research (2017). Available at www.eulerhermes.com/economic-research/blog/EconomicPublications/cameroon-country-report-sep17.pdf*

[19] *MoH (2017). Polio eradication programme transition plan in Cameroon 2017-2021. Yaoundé-Cameroon*

HDs in the Southwest have been somewhat spared by the unrest. Compared with 2017, the number of health facilities reporting immunisation activities for September 2018 decreased by 12.5% in the Northwest and 38.2% in the Southwest, corresponding respectively to 34 and 96 health facilities ceasing activities in these regions. The number of children immunised with Penta3 decreased by 11.4% in the Northwest and 30.8% in the Southwest. Escalation of this trend would make implementing operational plans and achieving targets more difficult, resulting in a greater decrease in immunisation coverage and an increase in outbreaks.

In the northern part of the country, although they are residual, acts of violence by the Boko Haram terrorist group together with organised crime continue, creating an unfavourable environment both for health personnel and for recipients of services, with effects similar to those described above.

Cameroon will hold legislative and municipal elections in 2019. Unrest during the election period could have negative repercussions on immunisation services delivery.

The HDs of Bakassi, Manoka and Ndom recorded IC of less than 50% (Penta3) over the last three years, and because of this, present a significant risk of epidemics.

Increasing needs for larger and larger sums to be allocated to defence and security limits how much of the government budget can be allocated to social services; outside financial support for immunisation has been drastically decreasing, mainly because of the GPEI coming to an end. A lack of funding for the programme would make it difficult to carry out the action plan, and consequently, to achieve the objectives.

No.	Risks identified	Probability of occurrence (Score 0-4)	Impact on the executing the plan and achieving objectives (Score 0-4)	Mitigation measures
1	Worsening socio-political unrest in the Northwest and Southwest regions	3	4	A humanitarian emergency plan was developed by the government; the health component incorporates strengthening immunisation activities through mobile health units and implementing supplemental immunisation activities as part of the Ministry of Public Health's prevention programme.
2	Continued sporadic incursions by Boko Haram and organised crime in the northern areas	3	3	Hit&Run and Firewalling strategies that are usually applied to affected areas will be implemented.
3	Epidemics arising in chronically underperforming HDs	3	2	Disease surveillance will be intensified. In addition, these districts will be classified as high priority out of the 54 HDs identified as requiring RED approach priority strengthening actions, by incorporating equity analysis and applying the “Missed Opportunities of Vaccination” (MOV) strategy.
4	Insufficient programme funding	2	3	The country is conducting efforts to start HSS2. Activities to mobilise funding for immunisation from national private sector stakeholders as well as civil society and communities are in progress. The Universal Health Coverage implementation process incorporating immunisation in the packet of

				priority interventions is also in progress[20]. Advocacy is carried out on a regular basis with Department officials to increase resources allocated to the programme.
5	Potential social unrest in the context of elections	2	3	The plan cited in point one will be revised and applied in areas affected by the unrest.

3. PERFORMANCE OF THE IMMUNISATION PROGRAMME

3.1. Coverage and equity of immunisation

Since 2015, Penta3 IC has increased slightly, but the country remains below the GVAP/cMYP objective of 90%. The target to be immunised was lowered in 2012, after the results of the 2005 general population and housing census (2005 GPHC) were published, and again in 2017, following the review of projected targets from the 2005 GPHC[21]. Measles IC has been decreasing since 2013 (Figure 1).

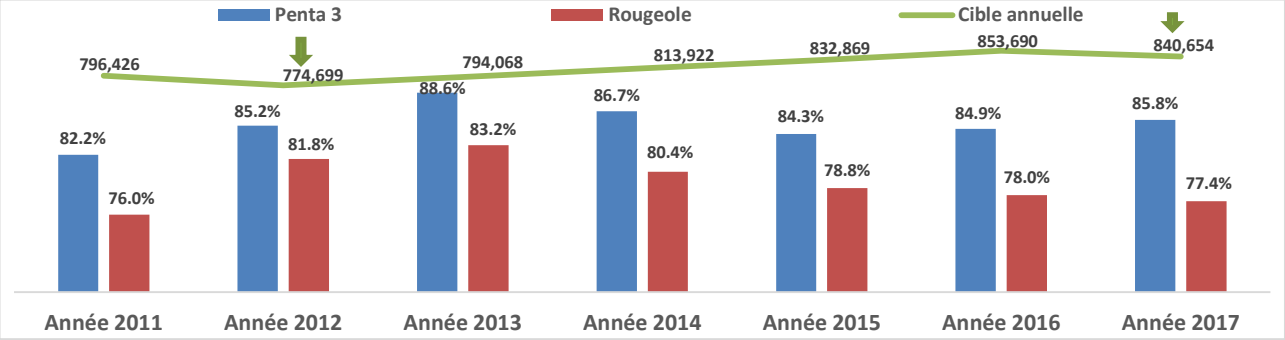
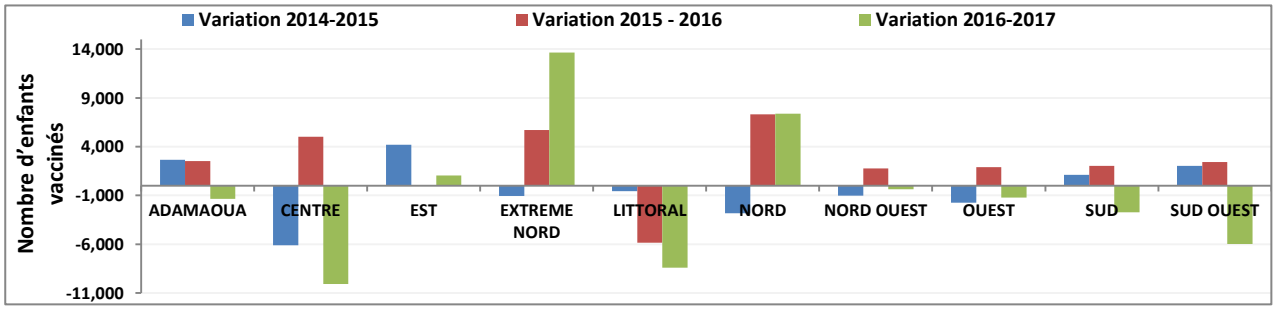


Figure 1: Trends in targets and immunisation coverage for Penta3 and measles from 2011 - 2017

Sources: *Official estimates/WHO/UNICEF estimates, EPI database 2017*

Out of 840,654 infants expected in 2017, 719,157 were immunised with Penta3, for IC of 86%. The data on the number of infants immunised with Penta3 per region show that no region consistently increased that number from one year to the next. Seven of the country's 10 regions immunised fewer children in 2017 than in 2016. The Littoral region has recorded a decrease in the number of children immunised since 2015 (Figure 2). From the various discussions with the regions, it is apparent that in addition to the socio-political unrest in the Northwest and Southwest regions, the decrease in the number of children immunised can also be explained by issues like complacency in the health districts whose targets had been lowered in 2017 (HDs in the cities of Douala and Yaoundé, South region HDs) and underreporting of data related to the lack of tools for recording immunisation acts (immunisation tally sheets and registers) in some immunisation posts. OPV, IPV and Penta stockouts also led to a decrease in the affected regions.



[20] *MoH (2018). Take stock of UHC at the central services conference. Available at http://www.minsante.cm/site/sites/default/files/Point%20CSU%20Conf%C3%A9rence%20Services%20Centraux%202018%20OK.pdf*

[21] *MoH, 2016. Demographic projections and estimates of priority targets for various health programmes and interventions, Yaoundé - Cameroon*

Figure2 Gaps of immunised infants through the years since 2014
Source: *EPI_2014-2017 database*

Table 1. Top 10 HDs with the greatest number of infants not immunised with Penta3

REGION	RANKING	DISTRICT	Children missed	% (of total number of children missed)	% cumul. increase	Completeness of health facilities' reports (%)
Far North	1	Kousseri	6,898	5	5	100
Far North	2	Mora	4,904	3.6	8.6	100
Far North	3	Makary	4,106	3	11.6	97.2
Littoral	4	Boko	4,022	2.9	14.5	96.3
Centre	5	Nkolndongo	3,384	2.5	17	93.2
Northwest	6	Bamenda	2,992	2.2	19.2	100
North	7	Touboro	2,977	2.2	21.4	100
Northwest	8	Ndop	2,968	2.2	23.6	100
Adamawa	9	Ngaoundéré Urban	2,931	2.1	25.7	100
Far North	10	Maroua 1	2,871	2.1	27.8	100
COUNTRY TOTAL			**137,456**	**100**	**100**	**97.5**

Source: *JRF analysis report*

Overall, 137,456 children were missed in 2017. The table below [sic] lists the 10 main districts that missed the most children during the year, or 28% of children missed in the country. In spite of the increase in the number of children immunised in the Far North region, it can be seen that four of the health districts (Kousseri, Mora, Makary and Maroua 1) out of the 10 that missed the greatest number of children in 2017 are from this region. The Far North and North regions affected by the acts of violence by Boko Haram are where nearly half of the country's infants that are lost to follow-up and unimmunised are concentrated.

The Northwest and Southwest regions that have been affected by socio-political unrest since the fourth quarter of 2016 experienced decreases in the number of children immunised with Penta3 of 10.3% and 14.3%, respectively, in 2017. In the first half of 2018, IC fell to 67% and 59%, respectively, compared with 82% and 89% at the same time in 2017. This increasing downward trend in IC could increase the risk of epidemics in the most affected communities.

For 2017, the Far North and Northwest regions recorded Penta3 IC below 80%. Only the East and South regions had all districts with IC above 80%. Measles immunisation performance is dragged down by six of the country's 10 regions (Adamawa, Far North, Littoral, North, Northwest and West) that have IC below 80% (Figure 4). As with Penta3, performance varies from one district to another in the same region. Only the East region has all districts with IC above 80%. Based on administrative data consistent with WHO/UNICEF estimates, MR IC in 2017 was 77%. Coverage for other vaccines is detailed in the table below.

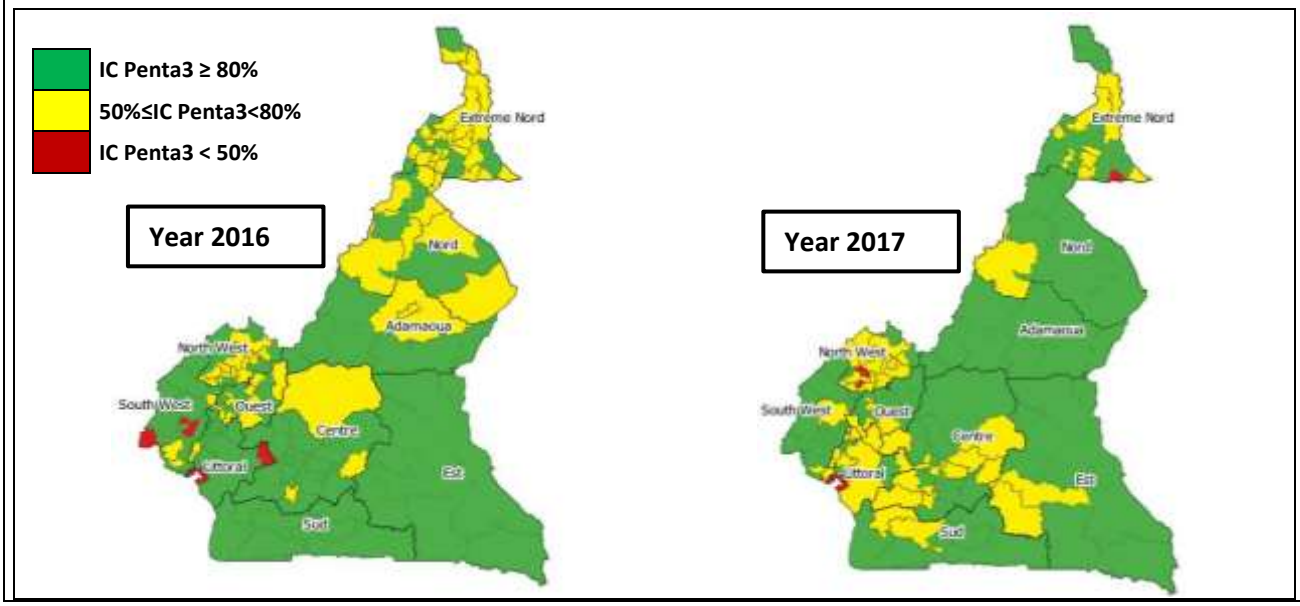


Figure 3 Immunisation coverage for Penta3 by district in the 10 regions – 2016 and 2017
Source: *EPI 2017 database*

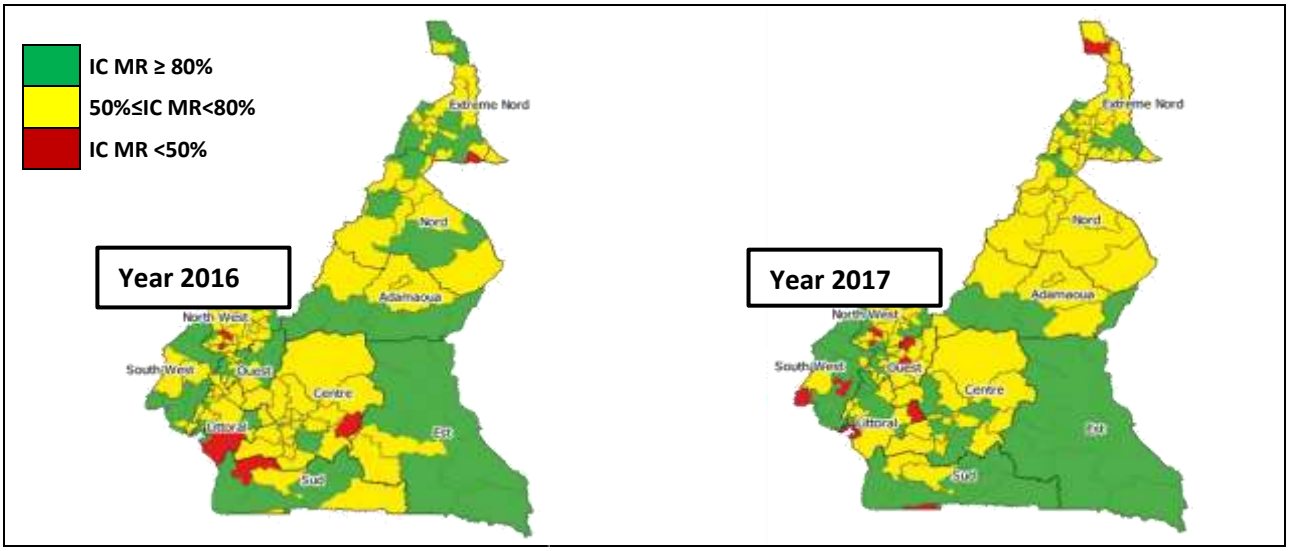


Figure 4 Immunisation coverage for measles by district in the 10 regions 2016 and 2017
Source: *EPI 2017 database*

Table 2. Overall routine immunisation performance by region and in the country

REGION	BCG	PENTA1	ROTA2	PENTA3	OPV3	IPV	PCV 13-3	MR	YFV	TT 2+	SDR*	GDR*
Objectives	90%	95%	80%	90%	90%	79%	90%	85%	85%	72%	7%	10%
ADAMAWA	93%	99%	88%	90%	83%	82%	89%	77%	77%	72%	9%	23%
CENTRE RURAL	93%	101%	90%	92%	90%	73%	90%	79%	79%	65%	9%	20%
CENTRE URBAN	93%	101%	96%	97%	97%	77%	97%	89%	90%	79%	4%	15%
CENTRE	98%	101%	94%	95%	94%	75%	94%	85%	85%	73%	6%	17%
EAST	99%	110%	99%	99%	98%	87%	99%	93%	93%	109%	9%	13%
FAR NORTH	91%	87%	73%	78%	75%	69%	76%	73%	71%	56%	10%	22%
LITTORAL RURAL	90%	97%	93%	90%	90%	83%	91%	75%	78%	66%	7%	22%
LITTORAL URBAN	88%	88%	85%	86%	86%	79%	86%	72%	79%	81%	3%	22%
LITTORAL	89%	90%	87%	87%	87%	80%	87%	72%	79%	78%	4%	22%
NORTH	87%	91%	76%	82%	81%	76%	78%	72%	76%	81%	10%	28%
NORTHWEST	68%	80%	78%	78%	78%	78%	78%	73%	73%	63%	3%	0%
WEST	91%	91%	80%	83%	81%	71%	83%	75%	75%	69%	9%	17%
SOUTH	100%	112%	103%	101%	97%	93%	101%	90%	90%	79%	9%	16%
SOUTHWEST	87%	96%	91%	90%	90%	89%	90%	90%	89%	85%	7%	4%
CAMEROON	91%	93%	83%	86%	84%	76%	84%	77%	78%	72%	8%	18%

Source: *EPI 2017 database*

**SDR: specific droput rate; GDR: general dropout rate*

Immunisation coverage gaps are observed between vaccines that are administered at the same time; IPV IC is 10 points lower than Penta3 coverage and eight points lower than OPV3 and PCV-13 3. Rota2 IC is one point lower than Penta2 coverage (Table 2). These discrepancies illustrate missed opportunities at the different immunisation posts because of stockouts of IPV (lasting 2 to 96 days in all 10 regions), Penta (lasting 7 to 15 days in 3 regions), and OPV (lasting 11 to 35 days in 5 regions).

The percentage of missed children in local and national polio immunisation days has remained below 5% since 2016.

Equity in immunisation between HDs is improving; 135 HDs (71%) have IC greater than or equal to 80%, compared with 118 HDs (62%) in 2016. Four HDs (2.1%) have Penta3 IC below 50%: Bakassi, Konye, Manoka and Ndom. The South and East regions have the best immunisation equity (100%). No significant differences are noted with regard to gender (girl/boy), which is consistent with data from the last MICS Survey[22], which also showed that children from urban environments, who have mothers with a high level of education or who belong to the wealthiest economic quintiles are the best immunised (Table 3).

[22] *Multi indicator cluster survey (MICS5) 2014. Cameroon Final Report*

Table 3. Immunisations by basic characteristics

Class		Percentage of children immunised		Percentage of children
		Penta3	Measles	Fully immunised
Sex	Male	81.1%	85.1%	79.9%
	Female	82.5%	86.6%	77.3%
Area of residence	Urban	90.9%	91.4%	85.4%
	Rural	74.9%	81.7%	67.7%
Mother's level of education	None	63.0%	69.1%	56.6%
	Primary	83.8%	89.0%	77.8%
	Secondary	93.2%	94.6%	85.8%
	Higher	99.8%	100	94.9%
Economic wealth quintile	Poorest	57.2%	64.9%	51.9%
	Second	80.1%	85.5%	73.7%
	Mean	89.4%	93.3%	80.3%
	Fourth	91.0%	94.4%	86.1%
	Wealthiest	95.1%	94.2%	89.2%

Source: *2014 MICS Report*

Vulnerable groups have been clearly identified in the country. These include residents of isolated areas (mountains, slums, marshy areas or those isolated by natural barriers), nomads (pygmies, shepherds), seasonal workers (farmers, fishermen), internally displaced people and populations in areas with compromised security (where there are wild animals or armed conflicts). The surveys that were conducted did not explore the IC specific to these groups; however, the equity analysis conducted in five health districts (Ebolowa, Edéa, Moloundou, Mora and Yoko) revealed IC was lower for these groups. The main bottlenecks to reaching the groups were identified as:

- Lack of access to immunisation services because of a shortage of human resources and the poor implementation of immunisation sessions planned using outreach and mobile strategies (insufficient consideration of these groups during planning, lack of transportation means and fuel, insecurity, and seasonal inaccessibility);
- Lack of continued use of immunisation services because of poor involvement of dialogue structures and community participation, irregularly held immunisation sessions, parents not coming to appointments and the mobility of nomadic populations.

Corrective actions have been identified and plans have been developed to improve the situation in the districts that were evaluated. The funding needed to implement the actions has yet to be found[23]. This analysis should be expanded to the Country's other districts, given the particularities of each.

Analysis of surveillance data shows that 20% of districts are underperforming in the surveillance of polio and other surveiled diseases; in addition, the country faced stockouts for reagents and consumables in the laboratories responsible for analysing biological specimens.

Four confirmed measles epidemics were recorded in 2017 (HDs of Maroua 1, Moloundou, Mora and Tignere) (Figure 5), and two in the first half of 2018 (HDs of Ngong and Rey Bouba). With the exception of the Moloundou HD, all of the others have MR coverage rates below 80%. The Moloundou outbreak revealed the unequal distribution of IC in the district. In fact, the investigation report revealed IC of only 57% in the communities that were affected[24].

[23] *MoH (2018). Equity of access and immunisation Report describing children's inequities of access to immunisation in the priority health districts of Ebolowa, Edéa, Moloundou, Mora and Yoko.*

[24] *MoH (2017). Investigation report for a measles epidemic in the Moloundou health district - East region*

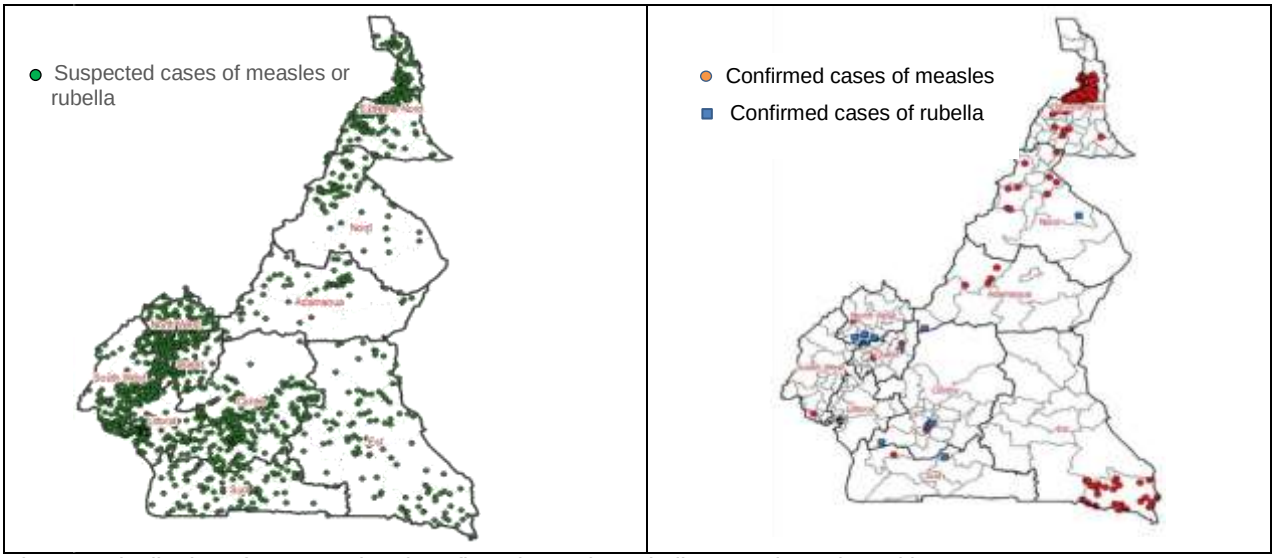


Figure 5 Distribution of suspected and confirmed measles-rubella cases investigated in 2017
Source: *EPI 2017 database*

Cross-referencing immunisation data with vaccine utilisation data at the national level indicates negative wastage rates. However, a more refined analysis by region shows that this is not the case, because of residual stocks available in the regional depots, as shown in Tables 4 and 5. This analysis of stock movements at the regional level shows relatively high wastage rates for Penta3, and in the Adamawa, Centre, Littoral and South regions, as well as negative wastage rates in the Far North and North regions. However, the poor visibility of stocks at the district and health facility levels should be pointed out; sizeable stocks remaining at the end of the year in the refrigerators of districts and health facilities could explain the high wastage rates and the negative wastage rates for the following year.

Table 4. Comparison of MR vaccine doses used with children immunised (CI), and calculation of wastage rate

MR vaccine	Carryover 1 January 2017	Qty received in 2017	Stock as of 31/12/17	Wastage identified	Total useful doses 2017_2	Children immunised MR	Gap CI - Dose 2	Wastage Rate 2
Adamawa	21,450	66,450	-	12,630	75,270	36,166	39,104	52.0%
Centrre	74,710	79,600	-		154,310	107,527	46,783	30.3%
East	40,500	31,500	-		72,000	32,443	39,557	54.9%
Far North	114,060	137,710	-		251,770	143,982	107,788	42.8%
Littoral	270,770	50,300	930	9,380	310,760	66,349	244,411	78.6%
North	75,270	46,550	-	-	121,820	83,262	38,558	31.7%
Northwest	30,610	40,000	400	-	70,210	50,576	19,634	28.0%
West	54,210	70,730	-	350	124,590	62,713	61,877	49.7%
South	26,980	9,500	-	1,340	35,140	20,599	14,541	41.4%
Southwest	54,210	42,000	1,990	40	94,180	46,926	47,254	50.2%
Total	**762,770**	**574,340**	**3,320**	**23,740**	**1,310,050**	**650,543**	**659,507**	50.3%
National Level	**245,350**	**250,000**	**-**	**-**	**495,350**	**650,543**	**-155,193**	-31.3%

Table 5. Comparison of doses of Pentavalent vaccine used with children immunised (CI) and calculation of wastage rate

Pentavalent vaccine	Carryover 1 January 2017	Qty received in 2017	Stock as of 31/12/17	Wastage identified	Total useful doses 2017_2	Children immunised MR	Gap CI - Dose 2	Wastage Rate 2
Adamawa	63,000	183,100	18,700	0	227,400	132,307	95,093	41.8%
Centrre	11,610	498,180	43,230		466,560	368,392	98,168	21.0%
East	31,550	95,810	4,500		122,860	108,949	13,911	11.3%
Far North	71,500	377,600	8,900		440,200	484,443	- 44,243	-10.1%
Littoral	31,170	461,100	60,470	17,290	414,510	240,923	173,587	41.9%
North	320	299,740	10,800	0	289,260	296,481	- 7,221	-2.5%
Northwest	52,800	203,200	21,460	52,500	182,040	163,900	18,140	10.0%
West	46,250	229,100	-	17,300	258,050	217,471	40,579	15.7%

South	22,820	82,970	9,450	3,990	92,350	72,614	19,736	21.4%
Southwest	46,250	151,500	23,030	27,880	146,840	145,006	1,834	1.2%
Total	**377,270**	**2,582,300**	**200,540**	**118,960**	**2,640,070**	**598,991**	**80,289**	**3.0%**
National Level	**2,140,600**	**383,100**	**33,600**	**0**	**2,490,100**	**650,543**	**1,839,557**	**73.9%**

Only the Adamawa region saw each of its HDs reporting at least one case of an adverse event following immunisation (AEFI), whereas the Far North, Northwest and Southwest regions had fewer than 40% of their HDs reporting at least one AEFI case. Overall, only 49% of districts report AEFIs.

Table 6. Performance of AEFI surveillance in Cameroon in 2017

Regions	Minor cases reported (DVDMT)	Serious cases reported (DVDMT)	Serious cases investigated	% HD reporting one case of AEFI	Percentage of serious AEFI cases for which an investigation was begun in a timely manner
Adamawa	16	0	0	**100%**	N/A
Centre	131	4	0	**66.7%**	N/A
East	47	7	0	**57.1%**	N/A
Far North	68	6	0	**36.7%**	N/A
Littoral	73	15	0	**41.7%**	N/A
North	100	3	0	**46.7%**	N/A
Northwest	34	0	0	**36.8%**	N/A
West	103	19	1*	**50%**	100%
South	169	0	0	**60%**	N/A
Southwest	31	6	0	**38.9%**	N/A
CAMEROON	**772**	**60**	**1**	**50.3%**	**100**

Source: 2017 AVW Report

3.2. Key drivers of sustainable equity and coverage

In 2017, 138 staff members worked full time for the EPI, 53 of them at the national level and 85 in Regional Technical Groups housed in the 10 Regional Public Health Delegations. In the health districts and health facilities where integrating activities is prevalent, health personnel work part time for the EPI. In many health facilities in rural areas, a single staff member is responsible for offering the whole packet of health activities, including immunisation. Throughout the country's 189 HDs, routine immunisation was offered by 3,691 of the 5,853 health facilities (63%) officially counted in 2017. An analysis of the distribution of health facilities across the country shows two groups of regions:

- The first group (Centre, Far North, Littoral, West, Northwest and Southwest) has a high population density and a low ratio of population to health facilities;

- A second group (Adamawa, East, North and South), has a low population density with a high ratio of population to health facilities.

In addition, there is a disparity between rural areas and urban ones (Figure 6).

The country issued guidelines that immunisation services should be offered daily in all of the health facilities with functional cold chain equipment. However, the basic survey conducted by the Ministry of Public Health in 2017[25] showed that only 23.6% offer immunisations on a daily basis, mainly facilities in large cities in the Littoral, Centre and West regions. Most health facilities plan fewer than 10 fixed strategy immunisation sessions per month; only 54% of those that immunise conduct outreach strategies, which they plan on the basis of available resources, with a completion rate of 80.2%.

Cold chain coverage of health facilities is 75%; Cameroon's goal is 80%. The inventory conducted in 2016 by the Ministry of Health revealed that the EPI has five negative cold rooms and 21 positive cold rooms distributed among the national and regional levels. A total of 3,675 refrigerators were counted in the 4,326 health facilities visited. Only 68% of refrigerators inventoried were functional and 93% of functional equipment did not comply with pre-qualification standards.

[25] Basic survey report on the factors for decreasing immunisation coverage in Cameroon, 2016.

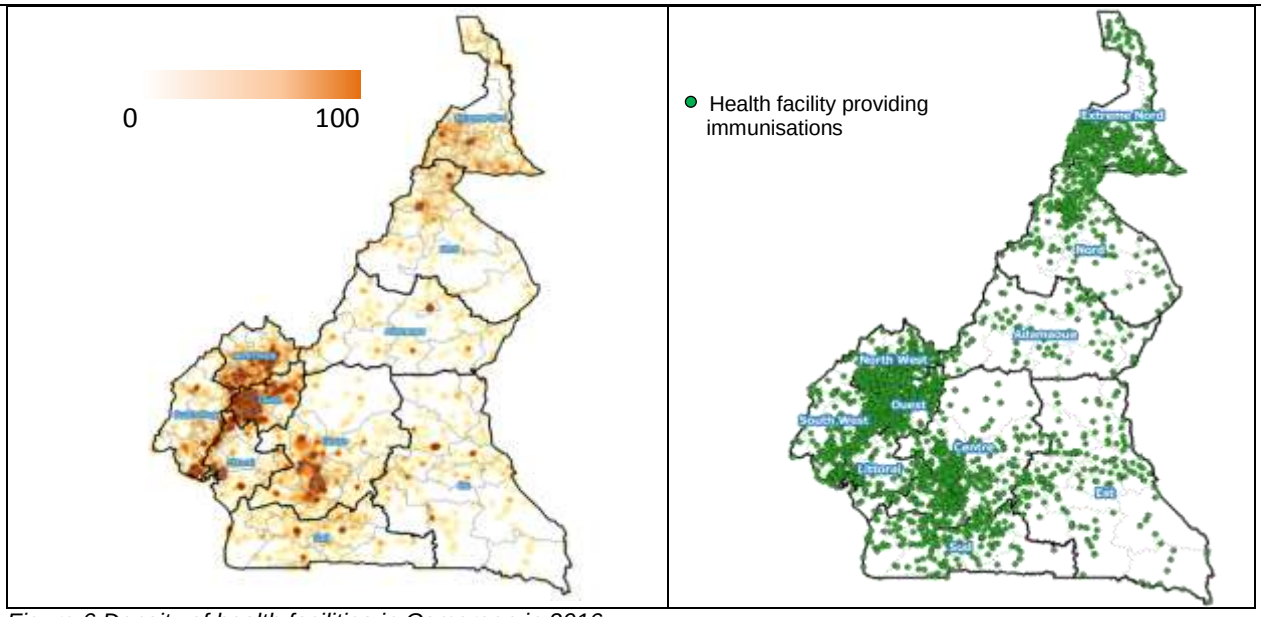


Figure 6 Density of health facilities in Cameroon in 2016

Source: *Mapping of health facilities in Cameroon*

Table 7. Dropout analysis

REGION	Dropout rate (Penta1 - Penta3)	Dropout rate (Penta1-MR)
ADAMAWA	9%	23%
CENTRE	6%	16%
EAST	9%	16%
FAR NORTH	10%	16%
LITTORAL	4%	20%
NORTH	10%	21%
NORTHWEST	3%	9%
WEST	9%	18%
SOUTH	9%	19%
SOUTHWEST	7%	7%
CAMEROON	8%	17%
CENTRE Rural	9%	22%
CENTRE Urban	4%	11%
LITTORAL Rural	7%	23%
LITTORAL Urban	3%	19%

Key

> 10%
7%≤X<10%
0%≤X<7%

Source: *EPI 2017 database*

According to the external EPI review conducted in 2013, the community organisations that help promote immunisation are associations (40%), the private sector (27%), women's organisations (25%), local government (10%) and local NGOs (2%). In addition, Community Health Workers (CHWs), churches and mosques, as well as local leaders, are the most-used channels for creating immunisation demand. Since 2016, 74 community radio stations have been created and contracted in 7/10 regions to mobilise the populations, 239 associations were contracted in 3 regions (Centre, Littoral and Far North). In addition, 50 other associations have been involved through the partnership with an interface NGO in the Northwest and West regions. The use of community organisations to generate demand remains limited to certain regions of the country, and there is poor coverage of health areas by CHWs. This is because of the CHW:population ratio, which is by far below 1:1,000 inhabitants in rural areas and 1:2,500 in urban areas.

Overall, the dropout rate specific to the pentavalent vaccine (Penta1-Penta3) is 8% nationwide, above the objective of 7% set by the country. Three of the country's 10 regions have a dropout rate below 7%, in compliance with the national objective. Two regions have crossed the critical threshold of 10%. Pentavalent vaccine dropout is thus overall under control. The dropout rate between the pentavalent and measles-rubella (Penta1 - MR) is 17%, which is much higher than the objective. All regions other than Northwest and Southwest have a high dropout rate, which also reflects the MR vaccine stockout that the country experienced during 2017. Rural areas have relatively higher dropout rates than urban areas, as shown in the

analysis made for the Centre and Littoral regions (Table 6).

The 2016 survey conducted in the major cities (Douala and Yaoundé)[26] identified the following causes for not immunising and dropping out: inadequate services (services not publicised, stockouts, financial barriers), the lack of quality services (uncomfortable waiting areas, long waits, poor organisation, unwelcoming, unfriendly staff), the negative effect of multiple door-to-door immunisation campaigns, distant immunisation posts, and the lack of trust of some parents with regard to vaccines.

The health professions have a large number of women. Indeed, at the last census, women represented 56.2% of the workforce[27]. In Cameroon overall, 62.2% of women are engaged in an economic activity[28]; however, immunisation is generally only offered as a daytime service—during business hours—and very rarely on the weekend, except during campaigns or intensified immunisation activities. This lack of flexibility and adaptation of immunisation planning could represent an obstacle for working women, who must sacrifice their activities in order to go for immunisations. Thus 15.1% and 13.4% of women in the cities of Douala and Yaoundé, respectively, miss immunisation due to a lack of time/unavailability[29].

Gavi's assessment of EPI capacities at the end of 2016[30] identified certain major operational bottlenecks. In the area of programme management, it was noted that there were delays in making matching funds available by the government and the lack of human resources in both quantity and quality. However, at the beginning of 2018, the organisational chart was revised, staff were assigned in line with programme needs, and capacity building has been in progress since. With regard to monitoring-evaluation, the lack of a M&E plan for the cMYP was noted. This plan is being prepared as part of the mid-term revision of the cMYP. As for the management of vaccines and cold chain equipment, it was noted that equipment was inadequately maintained, there was no distribution plan, and there was a lack of monitoring/supervision leading to vaccine wastage. Since that assessment, an equipment maintenance unit has been created and staffed. It is responsible for implementing the National Equipment Maintenance Plan for the EPI cold chain 2017-2021. SMTs are collected and analysed on a monthly basis and the report is shared. A maintenance contract was signed with companies to maintain cold rooms at the national level. In addition, for 2018, national level stakeholders were trained in forecasting, and an annual distribution plan for vaccines and inputs was prepared and is being implemented. Logistics experts and storage depot managers were trained in May 2018 on standard operating procedures for managing vaccines and inputs and a round of logistics supervision by peers was completed in all 10 regions in June 2018. These measures have resulted in only 640 doses of all vaccines combined being lost in the first half of 2018,, compared with 202,561 doses during the same period in 2017, a clear improvement in vaccine management.

With the support of the Dalberg firm, a capacity building plan for the programme was prepared and is being implemented. As part of this plan, a management partner is being hired jointly by Gavi and the Ministry of Public Health. The improvement plan for gaps in EVM prepared following the EVM assessment conducted in 2013 had identified 48 corrective activities[31]. In July 2018, 37 (77%) of activities were completed, 8 (17%) are in progress and 3 (6%) are pending completion.

3.3. Data

[26] *Kwedi Nolna S. et al. (2016) Factors influencing the enduringly high number of children not immunised or incompletely immunised in Douala and Yaoundé. CDBPS-H.*

[27] *MoH (2011). General census of health sector staff in Cameroon. General report Yaoundé – Cameroon.*

[28] *Multiple indicator cluster survey (MICS5) 2014. Cameroon Final Report*

[29] *Kwedi Nolna S. et al. (2016) Factors influencing the enduringly high number of children not immunised or incompletely immunised in Douala and Yaoundé. CDBPS-H.*

[30] *Gavi – The Vaccine Alliance (2017). Cameroon Programme Capacity Assessment. Final Report*

[31] *MoH (2013). Cameroon Effective Vaccine Management Assessment*

Since 2016, the Ministry of Public Health has committed to a process of unifying the data collection system through DHIS2 housed at the Health Information Unit (CIS). The EPI collaborated to incorporate all of its indicators into this tool, and a data quality improvement plan for the programme was developed, which incorporates a timeline for activities dedicated[32] to migration to DHIS2. Use of DHIS2 was scaled up in 2018 but the completeness of immunisation data in this platform has remained very low (<50%), forcing the programme to continue using the DVDMT while closely monitoring and giving feedback to lower levels on the consistency of data between the two systems. The main source of routine immunisation data used for monitoring is still the DVDMT. However, the programme still intends to fully migrate to DHIS2 in 2019 without any intermediary tools, and an immunisation data analysis module is being added with the support of AFRO and the University of Oslo.

The desk review of programme documents concluded that the national completeness of health facilities is 98%, as reports from some health facilities were not sent for certain months. In 2016, completeness of reports from health facilities was 98.5%. Promptness of reports from regions is 88.9%; for districts it is 76.5% and almost 30% of districts return reports on time less than 75% of the time. Promptness of health facilities is 86.5% and almost 27% of facilities return reports on time less than 75% of the time..

Following analyses conducted in 2016 on the database from the 2005 GPHC by the Central Census and Population Survey Bureau (BUCREP), the National Institute of Statistics (INS) and the Health Information Unit (CIS) of the Ministry of Health, corrections were made in January 2017 to denominators starting at the health area level[33]. Rates for each age bracket were determined for each region and for the country's two large cities, thus putting an end to the flat rate of 3.8% that had been systematically applied for the 0-11 months target population. These new targets are closer to demographic realities and are harmonised acros the entire health system. These targets are lower than estimates based on the old calculation method, which explains the increase in IC in 2017, although the number of children immunised was lower than in 2016.

Gavi's three requirements for data quality compliance were fulfilled in 2017. For *routine monitoring through an annual desk review of immunisation coverage data*, the desk review was conducted in 2017 and 2018. In addition, administrative data were reviewed monthly on a regular basis. The *periodic in-depth assessment of routine administrative data for immunisation coverage* was conducted in 2013 as part of the external EPI review. In 2017, a DQA was completed prior to developing the strategic plan for data quality improvement. Cameroon has conducted *periodic population surveys* on a regular basis *to measure immunisation coverage.* The last MICS (Multiple-Indicator Cluster Survey) was completed in 2014; a Demographic and Health Survey (DHS) has been in progress since June and will be completed in December 2018. A strategic plan for data quality improvement was developed for 2017-2019 and incorporates a component for M&E and resource mobilisation, which has been assigned to the working group on data quality that conducts quarterly reviews of plan implementation.

DHIS2 is being used from the national level to the health district level. Referral health facilities and some lower category pilot health facilities enter their data directly in this platform. The managers of the country's 189 HDs (100%) and 1,893 health facility managers (34.2%) were trained in filling out the monthly activity report log and in sending it electronically through DHIS2. A significant portion of health facility managers still need to be trained, which could explain the relatively low completeness of data obtained through the platform[34]. As part of monitoring immunisation performance, EPI stakeholders guide operational stakeholders towards optimal usage of this platform, since all immunisation data must be collected exclusively through DHIS2 starting in January 2019.

Surveillance data for AEFIs are reported through the same channels as immunisation and are consolidated through DVDMT and DHIS2. Nevertheless, the reporting rate for AEFIs remains low; only 95/189 HDs

[32] MoH (2017). Strategic plan to improve immunisation data quality in Cameroon 2017-2018 Yaoundé - Cameroon

[33] MoH (2016). Demographic projections and estimates of priority targets for various health programmes and interventions, Yaoundé - Cameroon

[34] CIS (2018). Briefing on DHIS2 deployment in Cameroon

(50.3%) have reported at least one AEFI and individual AEFI reporting forms are not generally filled out. Only one serious AEFI was reported and investigated nationwide in 2017[35].

During 2017, with the support of UNICEF, the EPI started a pilot for implementing a real-time management information system for vaccine stocks and utilisation. This pilot aims to reduce wastage, stockouts and overstocking of vaccines at points of service. To this end, 177/449 health facilities in the South and East regions have been enrolled, as well as all district depots. At the end of 2017, the completeness of information at intervention sites was 88% in the South and 83% in the East, reflecting a clear improvement in reporting immunisation management data. However, the KoBocollect application used is not compatible with DHIS2. Cameroon is therefore considering other solutions that would be compatible with DHIS2, such as Open LMIS, to manage vaccine management data. In the meantime, the Viva platform was installed at the national level and will be expanded to the regions.

3.4. Immunisation financing

The Medium-Term Expenditures Framework (MTEF) for 2017-2019 incorporates needs forecast from immunisation activity planning at the regional and national levels to improve the financial sustainability of the EPI.

However, budget planning for the operational level where activities are integrated does not consider programme-related specifics.
For the past four years, the Ministry of Health's share of the national budget has hovered around 4-7% and remains lower than the standard of 15% adopted at the Abuja conference. The Ministry of Health budget allocates barely 2% to the EPI, mainly dedicated to procuring traditional vaccines and paying matching funds; only 5% is assigned to operational costs. This is insufficient for implementing all of the immunisation activities. Resource mobilisation remains a major challenge in view of the country's economic context.

Seventy percent of EPI funding comes from partners (Gavi, UNICEF, WHO, and CHAI). Bolstered by the transition context, the country is committed to implementing mechanisms for sustainably funding immunisation. The Polio Transition Plan developed in 2017 is the beginning of this. Furthermore, efforts have been made to reduce vaccine wastage and improve the overall setting for administering vaccines in health facilities in order to make the programme more effective and efficient.

To facilitate payment of matching funds, the Ministry of Economy, Planning and Land Use (MINEPAT) has shortened the funding circuit, as attested by the letter from the MINEPAT Minister dated 09/07/2018 and registered as number 2953 in the Ministry of Public Health's mail. In 2018, payments will be made directly from the Ministry as soon as the expenditure is validated.

4. PERFORMANCE OF GAVI SUPPORT

4.1. Performance of vaccine support

In 2017, 719,157 children were immunised with Penta3, for IC of 86%; however, the number of infants immunised decreased. This IC is four percentage points below the 90% target.. The country did not introduce new vaccines into the EPI that year, but did replace the single-dose PCV-13 with the multi-dose PCV-13 (four doses) in October 2017. The DVDMT analysis shows that there were not any significant differences in wastage rates for this antigen before and after this replacement. However, the replacement did reduce storage capacity needs for this vaccine at all levels of the health pyramid.
NVS support ensured relatively good availability of vaccines (Tables 7 and 8). However, SMT analysis shows stockouts of more than seven days for IPV, DTP-HepB-Hib, Rota and PCV-13.

Outbreaks of measles-rubella occur cyclically in Cameroon with peaks every three years (the last one was recorded in 2015). In 2017, four health districts experienced measles epidemics. Since the MR campaign of

[35] *MoH (2018). Annual report 2017 for the Expanded Programme on Immunisation Yaoundé - Cameroon*

2015, the population of susceptible persons has increased and the annual incidence of measles is approximately 8.1 cases/10^6 inhabitants, far from the elimination objective of less than 1 case/10^6 inhabitants/year. Although the Far North and North regions were the most affected, cases were scattered across the entire country. A national follow-up campaign is planned for 2019.

Table 8. Doses received in 2017

Vaccine	Total doses approved, 2017[36]	Total doses received, 2017	Doses carried forward from previous years and received in 2018	Stockout for more than 7 days at all levels in 2017
IPV	988,600	1,057,800	261,000	**Yes**: TAG-EPI and regions except West and Northwest
Penta	1,784,000	383,100	33,600	**Yes**: Adamawa and Southwest
Rota	1,372,500	1,319,500	799,050	**Yes**: Centre, North and Northwest
YFV	565,200	1,529,400	739,780	**No**
PCV -13	1,682,900	1,575,000	546,400	**Yes**: East

Sources: *Decision letters 2017, SMT 2017*

Table 9. Stock level for each vaccine supported

Vaccine	National level		Regional Level	
	Reserve stock (months)	Stock carried forward to 2018	Reserve stock (months)	Stock carried forward to 2018
Penta (10 doses)	3	33,600	1	159,900
IPV (10 doses)		261,000		138,860
Rota (1 dose)		799,050		302,102
PCV-13 (4 doses)		546,400		559,080
YFV (10 doses)		739,780		297,720

Source: *SMT 2017*

The Ministry of Public Health, with the support of Gavi and in collaboration with WHO, CDC/CAFETP, IMC and the Ma Santé organisation, conducted two rounds of a preventive immunisation campaign against cholera in the Mogodé health district of the Far North region in May and June 2017, targeting 127,463 eligible persons. The objective was to immunise at least 95% of the target. At the end of the two rounds, the comprehensive immunisation coverage was 90.6%. At the conclusion of the post-intervention survey, IC was estimated at 93.7%. The 95% objective was not achieved mainly due to absences during the campaign period, as some residents had travelled for activities outside the intervention area (nomads and farmers who left to go to distant fields).
Cameroon obtained approval for the introduction of HPV and the second dose of MR in 2019. It also plans to introduce MenAfrivac in 2020 and will submit a proposal to that end in 2019.

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

Gavi noted irregularities during audits of vaccine management and financial management; these irregularities were confirmed by an investigation conducted by the Country. Because of this situation, the release of Gavi grants was suspended and recommendations were made so that things could return to normal. Efforts made by the Country to improve its financial management and vaccine management, upcoming reimbursement by the Country of the amount agreed upon at the end of the investigation as well as implementing an interim management mechanism make it possible to plan on resuming disbursement of Gavi support.

[36] *See decision letters*

4.3. Performance of Gavi CCEOP support (if country is receiving Gavi CCEOP support)

In September 2016, Cameroon requested support for the cold chain optimisation platform to procure 3,089 equipment items during the 2017–2021 period. In December 2017, the country obtained the funding agreement for the first two years, for a total of 1,470 items of electrical and solar equipment. The following activities have already been completed: (i) alternative equipment choice; (ii) assessment of sites for the first year; (iiii) developing and sending the operational plan for the first year's deployment to UNICEF; (iv) the choice of equipment models based on the cost estimate to procure them; and (v) setting up a working group at the central level.

The next part of the process will include (i) obtaining the estimated costs of equipment for the first year; (ii) obtaining the waiver letter for customs clearance of equipment; (iii) validating the alternative plan; (iv) evaluating sites for the second year; (v) training members of the working group at the national, regional and peripheral levels; (vi) setting up an M&E system based on the indicators listed in the decision letter; and (vii) coordinating the process for deploying equipment (customs clearance, transport, installation, training users, etc).

The selected service provider will train staff as well as transport and install equipment at the different sites.

4.4. Financial management performance

- **Financial absorption and utilisation rates**

Table 10. Budgetary execution of grants

Grants and implementation period	Approved budget in CFAF	Approved budget in US$	Budget executed as of 31/12/2016 in CFAF	Execution rate as of 31/12/2016	Expenditures in 2017	Available balance as of 31/12/2017 in CFAF	Execution rate 2017	Expenditures in 2018	Available balance as of 31 July 2018 in CFAF	Available balance as of 31 July 2018 in US$	Execution rate in June 2018	Comments (1US$=585frs)
ISS and intro PCV-13 remainder	39,785,207	68,009	18,907,367	48%	0	20,877,840	48%	0	20,877,840	35,689	48%	
2008-2010 repayment	675,939,675	1,155,452	219,866,504	33%	0	456,073,171	33%	7,031,447	449,041,724	767,593	34%	
HPV	95,794,760	163,752	95,167,332	99%	0	627,428.0	99%	0	627,428	1,073	99%	
IPV	339,364,590	580,110	299,880,008	88%	- 6,693,357 (Payout)	46,177,939	86%	0	46,177,939	78,937	86%	
ROTAVIRUS	367,816,047	628,745	357,784,349	97%	0	10,031,698	97%	0	10,031,698	17,148	97%	
MR INTRODUCTION	378,960,000	647,795	0	0%	0	378,960,000	0%	0	378,960,000	647,795	0%	
MR-CAMPAIGN	2,801,743,583	4,789,305	2,546,572,750	91%	215,082,222	40,088,611	99%	14,860,000	25,228,611	43,126	99%	
Foreign exchange gain, MR	636,378,300	1,087,826	0	0%	0	636,378,300	0%	0	636,378,300	1,087,826	0%	**Currency adjustment**
Total	5,335,782,162	9,120,995	3,538,178,310		208,388,865	1,589,214,987		21,891,447	1,567,323,540	2,679,186		

The table above shows the budgetary execution level for each grant. These balances are available in the EPI account held at the Standard Chartered Bank of Cameroon (SCB), minus the slight adjustments due to interest income or expense, bank charges, outstanding invoices and non-objection balances[37].

- **Compliance with financial reporting and audit requirements**

To date, all required financial reports by grant in 2017 have been submitted through the Gavi portal. External audit reports for 2015 and 2016 were produced and sent to Gavi. Financial statements for 2017 were audited by the CLS Audit Conseil firm, which produced a provisional external audit report for this purpose. Arrangements were made to respond to observations made by the firm, so that a final report will be produced at the end of the third quarter of 2018.

- **Implementation of recommended solutions to address the key issues found in cash programme audits or programme capacity assessments**
  - **Internal EPI audit**

As part of improving internal control, the country trained accounting managers in using new harmonised management tools (budgetary monitoring, financial management, and electronic payment). Results from these efforts have improved monitoring of financial information, giving justifications for activities in a timely

[37] *See grant closing reports.*

manner, and considerably reducing cash payments by introducing electronic payment methods (Orange Money and MTN Mobile Money).

- **Gavi audits and assessments**

Following up on the conclusions of Gavi audits (programme audit, programme capacity assessment (PCA)) that resulted in disbursements being frozen, the country implemented risk mitigation measures to restoring trust. This is described in the table below.

Table 11. Implementation status of recommendations from Gavi audits and assessments

Area	Problem noted	Solution recommended	Implementation status
Budgetary management	**<u>Weak grasp of the budget process</u>**: 1. Preparing budgets without good microplanning that incorporates several variables such as geographical distribution of target populations, realities on the ground at the decentralised level and distances to be covered. 2. As activities were carried out, there was some unauthorised reconfiguring of the budget as well as unjustified instances of going over budget. 3. Insufficient budgetary monitoring during the execution of activities, limiting any budgetary reframing process	1. Microplanning must be a prerequisite for budget allocations or submissions for mass activities. 2. Budgets will be prepared by implementation level and centre of responsibility, combined with measures for mitigating management risks that have been identified. 3. Using accounting software for budget management at the national and regional levels. 4. Systematic design of budgetary monitoring masks for district and health	1. Microplanning is in effect before implementing any mass activity. 2. Prepared budgets that have been prepared are distributed by level of implementation and include identified management risks (national, regional, district, health area levels). Awaiting acquisition by Gavi. Budgetary monitoring masks are available when activities are implemented.

		area levels for each activity.	
Financial management	**<u>Failure to maintain bookkeeping for programmes as well as to monitor cash flow</u>** 1. Impossible to retrace the daily use of funds made available to the decentralised level (lack of logs, bank journal, and accounting books) 2. No bookkeeping done to retrace all transactions related to programmatic activities with the TOMPRO software available to EPI-TAG or in another form. 3. Supporting documentation that is incomplete, poor quality, and not submitted on time.	1. Effectively implement accounting measures (TOMPRO) as soon as possible by building the skills of national and regional level financial officials. 2. Reduce the handling of cash as much as possible through contracting with organisations that transfer funds electronically. 3. Systematically and regularly deploy financial supervision missions at all levels of the health pyramid to ensure that documentation is high quality, complete and sent with minimal delays. 4. Train all those involved in the districts' financial chain in essential procedures excerpted from the EPI accounting, financial and	1. Awaiting acquisition by Gavi. 2. Implement and effectively use electronic payment mechanisms, Orange Money and MTN Mobile Money Create map of network areas (district, health area) to identify the appropriate type of payment during mass activities 3 and 4. Data review workshops and twice-yearly financial supervisions during which the following actions were taken: review supporting documentation; evaluate the quality of financial reports; give training on essential procedures for justification and procurement; give training on using new harmonised financial and budgetary management tools

		administrative procedures manual.	
Expenditure commitments	**<u>Expenditures were made without abiding by the rules of commitment, liquidation, ordering and payment.</u>** Expenditure commitments without prior authorisation, without budgetary provisions, exceeding/modifying the budgetary provision or ineligible expenditures.	1. Occasionally check the execution of expenditures to ensure compliance with procedures for commitments. 2. Disseminate budgets to all stakeholders at the decentralised level to limit fraud and discrepancies with guidelines for implementing activities.	1. Verification completed during financial supervision 2. Routinely distribute budgets to all stakeholders combined with a reminder of basic budget management principles (no changes to provision, exceeding lines prohibited, eligibility of expenditures)
Purchasing and procurement	**<u>Procedures for purchasing and procurement were not complied with:</u>** Failure to comply with thresholds and failure to comply with competitive bidding	Effectively applying the manual, which adequately defines aspects related to purchasing and procurement, with an emphasis on transparency and competitive bidding.	Strengthen capacities of stakeholders in the expenditure chain (Gescom, cashiers and coordinators) in essential procedures for justification and procurement
Fixed assets management	**<u>No regularly maintained fixed assets register</u>** 1. Sporadic and incomplete updates of the fixed assets register at the national level 2. The decentralised level does not do fixed asset	1. General and comprehensive inventory of EPI fixed assets at all levels of the health pyramid 2. Efficient management of fixed assets following	1. General inventory of fixed assets completed in December 2017 2. Implementation of a system for a twice-yearly update of the fixed assets file at the decentralised level

	accounting	current accounting principles detailed in the EPI-TAG procedures manual.	

- **Financial management system**

The TomPro-1 accounting system available to the EPI is not usable because of outdated licences, version and functions. In addition, almost all of the existing accounting staff have not received training on it. However, the TAG-EPI financial management system has improved, although hiring and training staff on the TomPro-2 accounting software has yet to occur. Through the use of structured Excel applications, the system currently tracks flows and produces the required financial information, in particular regarding cash flow management, on a regular and timely basis. However, major challenges remain for the EPI accounting system to adhere to required international standards: availability of the TOM2PRO software, training financial chain staff in its use, and the effective start of bookkeeping on an ongoing basis. Technical assistance is therefore planned to strengthen the system over an 18-month period, during which an interim mechanism for managing grants will be implemented by the country and its partners.

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

Based on the analysis of economic performance and projections, Cameroon will enter the accelerated transition phase starting in 2022. In advance of this deadline, a transition plan will be prepared to ensure continuity of activities during the accelerated transition and after graduation. To this end, starting in January 2019 a working group will be set up and an evaluation of the transition conducted to prepare the foundations for developing the transition plan, taking due account of lessons learned from the preparation and execution of the polio transition plan, as well as activities already incorporated in this plan.

- **Technical assistance**

Technical assistance from partners as part of PEF-TCA 2017 aimed to (i) strengthen capacities of committees of experts; (ii) improve data quality and the submission process in preparation for the introduction of new vaccines; and (iii) stimulate demand for immunisation services.
The main accomplishments resulting from WHO implementing TCA 2017 are:

- Improved vaccine management (forecast, temperature monitoring, stock visibility, rate of consumption, survey of wastage rates) by training logistics experts in using logistics management tools, monitoring vaccine management at the national and regional levels through the SMT tool, and supporting expansion of remote temperature monitoring in three regions.
- Supported optimising the supply chain through support for assessing sites in preparation for deploying cold chain equipment and support for preparing the CCEOP equipment operational deployment plan.
- Trained members of the EPI programme scientific committee (NITAG) on their roles and responsibilities;
- Trained members of the polio committee (CNC, CNEP, Confinement) on roles and responsibilities, as well as on preparing a workplan;
- Mid-term evaluation of cMYP 2015-2019 and the strategic communication plan;
- Technical support for the introduction of hepatitis B vaccine at birth, the PCV-13 switch (from single dose to four doses), and preparing the application for the large-scale introduction of HPV vaccine.

UNICEF provided technical and financial support to the programme in four programmatic areas of PEF TCA 2017: communication for development, cold chain and logistics, data management, and strengthening routine immunisation. Thus, from 2017 to June 2018, UNICEF supported:

- Evaluating and revising the 2014-2020 strategic communication plan, which from now on will cover 2018-2020 and includes legacy and polio transition activities;
- On-site installation of 94% of equipment, or 56/60 solar refrigerators in the East, North and Far North regions. Only 4/60 equipment items are yet to be installed in the South region;
- Continuous temperature monitoring not only through monitoring recordings by fridge tags but also through a remote temperature monitoring device called “Beyond Wireless”; a regional mapping exercise for cold rooms was conducted in the Centre, East, Far North, North, Northwest, West and South regions;
- Building capacities of logistics experts and warehouse managers on vaccine management;
- Support for analysing immunisation coverage and monthly equity data, and for the equity analysis process in Cameroon, in which stakeholders from every level of the health pyramid actively participated and whose deliverables were validated;
- Gradual development and use of TIC-based tools, contributing in real-time to managing vaccine stocks with the objective of reducing waste, losses and overstocking of vaccines in two pilot regions.

The Clinton Health Access Initiative (CHAI), in support of the EPI, carried out a project between October 2016 and February 2018 with Gavi funding structured into six objectives with a goal of improving routine immunisation in Cameroon[38]. CHAI assisted the 15 HDs in the cities of Douala and Yaoundé with microplanning by preparing, monitoring implementing and providing quarterly reviews of microplans in 2017. Supportive supervision plans were developed and implemented by the 15 HDs. In addition, CHAI

[38] *CHAI, Support for Francophone Africa - Project in Cameroon for Supporting Routine Immunisation: Final Progress Report to Gavi, the Vaccine Alliance, Yaoundé, 2018.*

provided support for revising tools and the supportive supervision methodology, which were incorporated into the updated norms and standards document, as well as in training regional and district supervisors. For the introduction of new vaccines, CHAI assisted the EPI in preparing the request and the HPV introduction plan, which were approved by Gavi. This introduction was initially planned for 2018 but was postponed until 2019.
In collaboration with UNICEF, CHAI provided support to build capacities of civil society organisations (CSOs) involved in monitoring incompletely immunised or unimmunised children in the districts of Yaoundé. In the same vein, CHAI, in collaboration with the EPI, developed tools to monitor persons lost to follow-up and coach the staff of the 15 large city HDs on using the tools.

The current supply system is no longer capable of meeting the EPI's current challenges. Stock level visibility at the national level conceals numerous problems in the district and health facility storage depots.
Several reports produced by the EPI and evaluations revealed incompatibility between the number of doses administered and the number of doses received.
We propose implementing the following activities

- Set up an Open LMIS pilot project in the Centre and Littoral regions;
- Conduct an evaluation of the supply system;
- Conduct a study on vaccine wastage over the last five years (wastage of vaccines usage in health facilities);
- Deploy the multi-year SMT at the national and regional levels.

5. UPDATE OF FINDINGS FROM PREVIOUS JOINT APPRAISAL

Prioritised actions from previous Joint Appraisal	Current status
Improve immunisation coverage and equity	
1. Strengthen implementation of the RED approach	RED microplanning was only able to be supported in 10 of the Lake Chad Basin HDs during 2018. Because of a lack of HSS2-Gavi funding, the activity could not be conducted in the other priority HDs identified.
2. Implement strategic plan activities on staff capacity building	- January 2018, national and regional level staff admitted to the Licence in Health Logistics programme at the LOGIVAC Centre; - April 2018, two national level staff members admitted to the immunisation logistics course at the LOGIVAC Centre; - May 2018, the supportive supervision guide, mentoring guide and monitoring dashboard for training activities prepared and endorsed; - June 2018, national and regional officials trained on EPI norms and standards.
3. Strengthen activities to generate demand	In 2017: -The 2014-2019 EPI strategic communication plan was revised based on social data and realities; - Two rounds of integrated supervision for communication stakeholders to promote immunisation were completed covering all 10 regions during the first round and five regions during the second. In 2018: - Integrated communication plans were developed for all 10 regions and 10 priority health districts in the Far North region; - A forum on taking ownership of the Addis-Ababa roadmap was organised in May in preparation for the African Immunisation Week; - Strengthened C4D planning capacities for officials in all 10 regions (10 communication focal points and 10 EPI coordinators).
4. Strengthened the surveillance system to support the	Capacities of focal points and clinicians were strengthened on surveillance of rotavirus diarrhoea and paediatric bacterial meningitis.

introduction of new vaccines	Financial support from WHO enabled shipping costs to be reimbursed. However, frequent stockouts of reagents and consumables created interruptions to the system. Following the introduction of the MR vaccine, the country implemented a sentinel surveillance system for congenital rubella syndrome that has been operational since April 2018. SOPs were developed and stakeholder capacities were strengthened. At Epidemiological Week 30, three suspected cases were analysed, and all were negative.
5. Vaccine prevention of and response to cholera epidemics in the northern regions	A preventive immunisation campaign against cholera conducted in two rounds in the HD of Mogodé, Far North region, in May and June 2017, targeting 127,463 eligible persons.
Management of the supply chain is satisfactory, in particular for stocks of vaccines and inputs, with enhanced logistics capacities and strengthened EPI supply chain performance	
6. Strengthen vaccine and input stock monitoring at all levels	SMTs are analysed on a monthly basis at the national and regional levels and regular conference calls on monitoring stocks are organised with the regional logistics experts. The project to monitor health facilities' stocks of vaccines and inputs in real time using the "Kobo collect" application is being implemented in the South, East, and Far North regions with UNICEF support. The EPI conducted a national physical inventory up to the health facilities level to gain a solid grasp of levels of vaccine and input stocks and better plan orders of vaccines and inputs.
7. Implement an integrated logistics management system	An integrated management system has not yet been implemented. The programme plans to build this system onto DHIS2, which is being deployed at all levels of the health pyramid.
8. Strengthen storage capacity as part of the CCEOP and HSS 2	In progress, the first pieces of CCEOP cold chain equipment are expected in the country starting in October 2018.
9. Strengthen logistics management capacities at all levels	Logistics section managers and regional logistics experts were trained on stock management in September 2017. In May 2018, there was another training on using SOPs and vaccine reception terms and conditions for logistics experts and warehouse managers. Peer-coaching was also implemented between regional logistics experts and warehouse managers to share best practices in vaccine management.
Implementation of the data quality improvement plan	
10. Improve data collection and consolidation	Produce a data quality improvement plan. Produce immunisation and check-in registers for two regions, which represents 10% of the country's needs.
11. Strengthen data use for action	Hold monthly data review meetings.
12. Attach the EPI data collection system to DHIS2	Migrate towards DHIS2 with total integration of all of data units from the EPI activity report. However, problems related to this migration have been noted, such as: - Completeness of reports and data; - Training of stakeholders; - Lack of computer equipment in health facilities; - Lack of funding for close supervision of DHIS use in HDs and health facilities in order to guide the change.
13. Strengthen capacities of	Training for 1,816 health facilities. This is still insufficient with respect

stakeholders involved in data management	to the total number that are in the country. Training on DHIS2 in June 2018 for regional level stakeholders.
14. Implement studies/surveys (annual health sector review combined with DQA or with DQRC/immunisation coverage survey/KAP surveys)	The desk review of 2017 data was conducted. The DHS survey is in progress and incorporates immunisation-related variables.
Audit recommendations	
15. Continue to implement recommendations from Programme audits	The EPI-TAG emphasised local stakeholders ownership of preparing/executing/monitoring cash flow budgets in compliance with Gavi and government accounting practices and policies. We also took internal control steps that we deemed necessary to prepare a cash flow situation devoid of significant anomalies resulting from fraud or errors. We were able to collect sufficient and appropriate conclusive information to back up decision-makers' opinions on innovative mechanisms such as electronic payment, regular financial reporting, opening specific accounts, and regular monitoring of local stakeholders to ensure activities are conducted as planned during microplanning. To this end, a plan will be prepared to monitor the recommendations generated by the different audits as required by GMRs.
16. Strengthen programme leadership, management and coordination	In 2017, 3/4 of ordinary ICC sessions were organised. The EPI organisational chart was reviewed following decision n°0253/D/MINSANTE/CAB/ of 1 March 2018. As part of this review, three bodies were created: the ICC (coordination body) was reorganised; an advisory body, the GTCNV, the EPI-TAG (implementing body). Large numbers of qualified staff were assigned.
17. Strengthen the financial management system	The financial management system was strengthened by implementing the following actions: Developing tools for daily, weekly and monthly monitoring for the regions and the national level. Reduced handling of cash by decreasing the places where budgets and cash payments are handled. Emphasis was placed on the end recipient, who should have the entirety of its budget as approved.
18. Improve the work setting for the EPI-TAG and in regional units	At the national level, we note that computer equipment has been procured (full computers, printers, scanners). In the regions, 10 full computer stations (one per region) have been deployed. Regional technical groups have been created and qualified staff assigned, with clearly defined tasks. The EPI-TAG building is in the process of being renovated. Bonuses for 2017 have been paid at the national level and are being processed for the regions.
The transition plan in anticipation of vaccine independence has been prepared and implemented	
19. Prepare the transition plan towards vaccine independence	The country is not yet at the accelerated transition phase. The plan has not yet been prepared. However, during the ICC meeting of 19 July 2018, it was strongly recommended that a working group responsible for preparing the plan be set up by the beginning of 2019.
20. Implement the polio transition plan	The polio transition plan and its business case have been prepared and endorsed. An adaptation workshop chaired by the Minister of Public Health was organised. The DevSmart firm was hired to mobilise

	resources to fill in the plan's budget gap.
21. Mobilise resources for the transition to vaccine independence	Items from the programme's budget were included in the 2018-2020 MTEF. The programme was therefore able to schedule 800 million CFAF in the 2018 budget to procure vaccines for routine immunisation in the EPI operational budget. This amounts to nearly 90% of the government's obligation. And for 2017, nearly 60% of government resources were mobilised.
Additional significant IRC / HLRP recommendations (if applicable)	**Current status**

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

Overview of key activities planned for the next year:

The programme planned the introduction of several vaccines in its cMYP. To this end, Cameroon submitted support requests in May and September for the introduction of the HPV vaccine, the MR follow-up campaign and the introduction of the second dose of MR. These activities will take place in 2019. From the second half of 2018 to the first quarter of 2019, the emphasis will be on completing activities to prepare for the various introductions. Concurrently, the country will have to prepare the MenAfrivac introduction plans, which is planned for 2020.

HSS 2 activities will be implemented. In addition, with the CCEOP implementation committee set up, procuring, deploying and installing equipment will be accelerated, along with any associated activities.

Within a context of security crises in some regions, reduced funding, and the risk of epidemic outbreaks in some chronically under-performing HDs, the country has undertaken some mitigation measures to ensure that programme activities, including those receiving Gavi grants, will be successfully implemented. Thus, the government developed a humanitarian assistance plan, whose health component incorporates strengthening of immunisation activities. As part of making the immunisation component operational, the programme identified innovative strategies to strengthen routine immunisation in the Northwest and Southwest regions. In the health districts at risk for epidemics, disease surveillance will be intensified and actions to strengthen the RED approach and to apply the "Missed Opportunities for Vaccination" (MOV) strategy are planned. As for funding, the country will continue to work to satisfy the necessary requirements to restore the environment of trust with Gavi and mobilise supplementary funding for the health sector.

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Key finding/action 1	**Improve immunisation coverage and equity**
Current response	Many HDs (97/189, 51.3%) have IC<80%, in particular in insecure urban areas, in special populations and in areas with compromised security in the Far North, Northwest and Southwest regions.
Agreed country actions	1. Analyse equity in priority districts (districts with special populations: refugees, difficult geographic access, nomads, internally displaced people, insecure areas, slums and suburban areas, etc).
	2. Implement the strategy to reduce MOVs in priority HDs.
	3. Hold a consultation meeting with local stakeholders; develop and endorse an immunisation strengthening plan in the NW and SW regions in addition to the emergency humanitarian plan.
	4. Implement polio phase IV immunisation activities.

	5. Strengthen monitoring for action at all levels and set up an EPI inputs storage depot in Kousseri to resupply the four HDs of Logone and Chari.
	6. Provide communication in support of routine immunisation, especially in urban areas and other priority areas.
	7. Promote community participation and advocacy in favour of immunisation.
	8. Map difficult to access areas, team itineraries, tracking stakeholders and reimmunisation in poor coverage areas.
	9. Organise the introduction of HPV, MR2 and the MR follow-up campaign.
Expected outputs / results	Achieve immunisation coverage objectives and expand delivery of programme vaccines.
Associated timeline	October 2018-December 2019
Required resources/support	Budget of CFAF 623,000,000; technical assistance for actions 1, 4, 5, 6, and 7.
Key finding/action 2	**Management of the supply chain is satisfactory, in particular stocks of vaccines and inputs, with enhanced logistics capacities and strengthened performance of the EPI supply chain**
Current response	Lack of storage capacity in 141 HDs and 544 health facilities, poor visibility of stocks at the district and health facility levels.
Agreed country actions	10. Implement CCEOP activities.
	11. Implement EVM activities (train national, regional and district stakeholders on EVM criteria and conduct the EVM assessment).
	12. Conduct an evaluation of the supply system.
	13. Implement the Viva platform in the regions.
	14. Finalise the 2019 forecast and prepare the 2020 forecast.
	15. Improve visibility of vaccine stocks at the district and health facility levels.
	16. Conduct a study on vaccine wastage over the last five years (wastage in using vaccines in health facilities).
	17. Deploy the multi-year SMT at the national and regional levels.
	18. Conduct quarterly supportive supervisions specifically for logistics from regions to districts and health areas.
	19. Procure and install 2,000 fridge tags to replace those that are already expired in order to maintain a good quality cold chain.
	20. Expand the remote temperature monitoring system in seven regions (Far North, North, East, Northwest, Centre, South and West).
Expected outputs / results	Strengthen the supply chain and monitoring of temperatures and vaccine and input stocks.
Associated timeline	October 2018-December 2019
Required resources/support	Budget of CFAF 247 586 580; Technical assistance for actions 12, 13, 14, 16, 17, and 20
Key finding/action 3	**Improve data quality**
Current response	Lack of data analysis module in DHIS2, lack of programme management tools for service delivery and for data quality.
Agreed country actions	21. Develop the DHIS2 dashboard module that is accessible by level with data transfer to the DVDMT/RIM format.
	22. Conduct an annual desk review of programme data quality.
	23. Implement a codified/standardised filing system (to share electronic and physical data at the national level).
	24. Improve data collection and consolidation.
	25. Strengthen data use for action (capacity building, meetings to review and endorse data: monthly for HDs, quarterly for regions and twice-yearly at the national level).
	26. Improve data collection and consolidation. [sic]
	27. Expand the electronic system for weekly transmission of vaccine and input data at the health district level.

	28. Update the health map using geopositioning.
	29. Record historical immunisation data for the last three years (2015-2017) in DHIS2
Expected outputs / results	Application of analysis and exporting of immunisation, surveillance, and logistics data available in DHIS2, improved data quality and availability of programme management tools
Associated timeline	October 2018-December 2019
Required resources/support	Budget of CFAF 85,135,000; technical assistance for actions 21, 24, 25, 26, 27 and 28
Key finding/action 4	**Strengthen surveillance of polio and other vaccine-preventable diseases**
Current response	20% of districts are underperforming in surveillance of polio. Only 49% of districts report AEFI cases and laboratories experience stockouts of reagents and consumables.
Agreed country actions	30. Strengthen polio surveillance.
	31. Strengthen AEFI surveillance.
	32. Supply referral laboratories with reagents and consumables.
	33. Hold surveillance focal point monitoring meetings at all levels.
	34. Provide payment for biological specimen transporter costs.
Expected outputs / results	95% of districts have good performance in the surveillance of polio and other vaccine-preventable diseases and report AEFIs
Associated timeline	October 2018-December 2019
Necessary resources/support	Budget of CFAF 1,306,647,400; technical assistance for action 30
Key finding/action 5	**Funding**
Current response	Poor budgetary monitoring, data completeness and quality; failure to comply with procurement standards and sporadic and incomplete updates to fixed asset register
Agreed country actions	35. Implement accounting on TOMPRO2 (procure software and build capacities of national and regional level financial managers) to replace TOMPRO1.
	36. Organise a twice-yearly workshop to review and harmonise financial data.
	37. Revise the accounting, financial and administrative procedures manual.
	38. Improve the work setting in regional units.
	39. Set the value of fixed assets based on expert opinion.
Expected outputs / results	Budgetary management, purchasing and procurement terms and conditions improved; fixed assets register updated and complete.
Associated timeline	October 2018-December 2019
Necessary resources/support	Budget of CFAF 37,338,000
Key finding/action 6	**The transition plan towards vaccine independence has been prepared and implemented**
Current response	
Agreed country actions	40. Prepare the business case for immunisation.
	41. Identify lessons learned from preparing and implementing the polio transition plan.
	42. Conduct an assessment of the transition (analysis of possible financial and institutional bottlenecks and Gavi support).
	43. Prepare the transition plan.
	44. Implement a consultation framework with the countries that have completed the Gavi transition.
	45. Continue carrying out the transition plan and harmonise the two transition plans.
Expected outputs / results	The Gavi support transition plan has been prepared and implemented in line with the polio transition plan.
Associated timeline	October 2018-December 2021
Necessary	Budget of CFAF 40,000,000; technical assistance for actions 40, 41 and 42

resources/support	

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

In advance of the joint appraisal, the Minister of Health issued a memo in July 2018 establishing a working group. This group was made up of MoH officials, EPI-TAG officials, representatives from partner ministries, the civil society platform, and partners (WHO, UNICEF, CHAI and the CDC). This group's terms of reference were to prepare the joint appraisal report, the draft of which was to be sent to Gavi on 10 August 2018, or one month before the joint appraisal mission was to take place. According to a conference call schedule for Gavi, Cameroon, and partners, regular feedback was given by stakeholders to enhance the document. From 10- 14 September 2018, the country hosted the joint appraisal 2018 assessment mission held in Ebolowa during a workshop. At the end of this workshop, an ICC was organised during which the Gavi team debriefed the mission and the summary of workshop tasks was presented by the EPI.
Attendees at this session: the Minister, Technical Advisor No. 3, (**session chair**), representatives from development partners (WHO, UNICEF, CHAI, HKI, CDC, and the Bill and Melinda Gates Foundation); Ministry of Health officials; representatives from partner ministries (Ministry of Social Affairs, Ministry to Promote Women and the Family, Ministry for the Economy, Planning, and Territorial Development, and Ministry of Basic Education); the Cameroon Red Cross (CRC); civil society and denominational organisations (PROVARESSC, OCEAC, CEPCA, OCASC, Ad Lucem Foundation); the EPI Permanent Secretary (**Rapporteur)**; and EPI-TAG staff.

The session began with an introduction by Technical Advisor No. 3, representing Madam Secretary General who was unable to attend. In essence, he welcomed the attendees and reminded everyone of the joint appraisal objectives. Addressing the items marked on the meeting's agenda, the floor was given over to the Gavi country representative.

I. Debrief of the Gavi-country 2018 joint appraisal mission

The Gavi country representative praised how the joint appraisal was organised and centred his presentation on two main points, namely analysis of 2017 performance and the focus points:
1. Performance: The participants were instructed on aspects related to geographic equity and socio-demographic equity. While progress has been made in geographic equity, it remains well below the objectives, with nearly 30% of districts not reaching Penta3 coverage above 80%. Socio-demographic inequity by to wealth and level of education is still very pronounced. Inequity between urban and rural areas is also significant.
2. Focus points: In his presentation, the Gavi country representative indicated some key points that MoH officials should focus on.

- Equity and integration of immunisation services: it was proposed that strategies adapted to specific contexts be implemented (urban environment, insecure contexts, and population movements);
- Coordinating support activities for the MoH: an effective coordination mechanism needs to be implemented at the MoH level to improve efficiency in using resources, and a call for support from different partners for health system strengthening was made.
- Vaccine management: vaccines represent 80% of Gavi support ($167m to date). The EPI-TAG has made progress in improving vaccine management at the national level, strengthening the programme, and support from partners. However, efforts to regularly analyse vaccine data need to be expanded at the decentralised level.
- Sustainability of immunisation activities: the questions of co-financing of vaccines and funding for traditional vaccines were highlighted.

II. Presentation summarising work done at the Gavi-country 2018 joint appraisal workshop and

main discussion points

In summary, four points were discussed: the performance analysis, the joint appraisal workshop process, priority actions chosen by component, and key recommendations that came out of the workshop.
In the discussions, most speakers focused on six themes in connection with the range of actions for the programme in 2019:

- **Prioritising activities**: according to the representative of the Bill and Melinda Gates Foundation, the programme for 2019 is very ambitious. Districts that have low coverage even though they are not insecure must be emphasised. In his closing remarks, he promised to support the country with implementing activities in areas of insecurity. On this subject, discussions with the EPI must continue. In addition, the need to prioritise was repeatedly emphasised by the IGSA, who recommended taking a hard look at the list of activities and assessing what they offer. Beyond that, as a strategic option, the country could opt to maintain immunisation coverage in view of the burdens related to funding.
- **The changeover to DHIS**: the problem raised by the programme was that the DHIS does not yet incorporate the analysis module for immunisation data. The head of the health information unit reassured the development participants that a module for the DHIS2 dashboard is being developed that is accessible by level with data transfer to the DVDMT/RIM format.
- **Coordinating actions by HSS partners**: the question was raised by the Gavi country representative. Several attendees, including the regional advisor for the French Embassy in Cameroon, supported the idea of implementing a coordination mechanism for partner activities in order to avoid duplication, under the leadership of the MoH;
- **Surveillance of VPD:** the WHO representative indicated a significant decrease in the polio funding that had supported surveillance activities up until now. The government was urged to shoulder its responsibilities. The problem of transferring responsibilities for surveillance to the DLMEP was brought up by Madam PS-EPI. The CHAI representative recommended a work session to analyse the various possible options for coordinating and funding surveillance activities.
- **Immunisation strategies**: given the programme's stagnant performance for nearly five years, the CDC country representative called for a change in strategies. He proposed implementing the Reach Every Community strategy. Also, in order to efficiently provide technical support at the operational level, attendees suggested concentrating technical assistance at that level.
- **The interim mechanism and financial investigation**: the IGSA stated its concerns about starting up HSS2 grants. He requested from Gavi an indicative crisis exit plan, despite the fact that these subjects had already been addressed during meetings with the Minister and during thematic work sessions.

Reacting to the launch of HSS2, the Gavi country representative clarified that funding related to the CCEOP, introductions of new vaccines in 2019, and the measles and rubella follow-up campaign would be released if the amounts agreed upon at the conclusion of the Gavi audit and investigations are reimbursed. He noted that he had enough information to show the Gavi Secretariat for a favourable outcome. Finally, he reassured the Government that Gavi is inclined to move forward with the country for immunisation activities in areas of insecurity incorporated into HSS, on the sole condition that said activities conducted in these specific contexts (insecurity/urban, etc) be thoroughly documented.
The representative of the Cameroon Red Cross stated his organisation has a network of volunteers who could be used to implement immunisation activities in areas of insecurity in the Northwest and Southwest.
As a closing statement, the chair of the session thanked all of the attendees for the quality of discussions and instructed programme officials to incorporate the different contributions noted during the session.

Key action points	Responsible parties	Deadlines
Finalise the JA report	EPI	15 October 2018
Prepare a draft MOU between the government and WHO for HSS2 implementation.	DCOOP/EPI	31 December 2018
Take stock of the Gavi account in anticipation of an imminent transfer of Gavi funds to WHO	EPI	31 November 2018
Identify the equipment to be procured via UNICEF as part of	CCEOP steering	October 2018

HSS2 and update the quote request	committee	
Prepare the implementation and monitoring plan for investigation and audit recommendations and Grant Management Requirements	EPI	31 December 2018
Officially send grant closing reports	MoH	End October 2018
Set up the technical ICC	EPI	October 2018
Prepare a MOU with PROVARESSC as part of HSS2	EPI	November 2018
Prepare a proposal to be submitted to the BMGF seeking support for routine EPI in the Far North region and the insecure HDs of other regions	EPI	End October 2018
Prioritise activities to select those that make a significant contribution to improving immunisation coverage and equity	EPI-TAG	Two weeks
Hold a work session to analyse the different possible options for coordinating and funding surveillance activities	EPI-TAG/DLMEP	End October 2018
Review the RED strategy and adopt the Reach Every Community strategy	EPI-TAG	31 December 2018

8. ANNEX: Compliance with Gavi reporting requirements

	Yes	No	Not applicable
Grant Performance Framework (GPF) * reporting against all due indicators	x		
Financial Reports *			
Periodic financial reports	x		
Annual financial statement	x		
Annual financial audit report	x		
Ed of year stock level report (which is normally provided by 15 May as part of the vaccine renewal request) *	x		
Campaign reports *			
Supplementary Immunisation Activity technical report			x
Campaign coverage survey report			x
Immunisation financing and expenditure information			x
Data quality and survey reporting			
Annual data quality desk review	x		
Data improvement plan (DIP)	x		
Progress report on data improvement plan implementation	x		
In-depth data assessment (conducted in the last five years)	x		
Nationally representative coverage survey (conducted in the last five years)	x		
Annual progress update on the Effective Vaccine Management (EVM) improvement plan	x		
CCEOP: updated CCE inventory			x
Post Introduction Evaluation (PIE)			x

Measles & rubella situation analysis and 5-year plan	x		
Operational plan for the immunisation programme	x		
HSS end-of-grant evaluation report			x
HPV-specific reports			x
Reporting by partners on TCA and PEF functions			