



Kenya Joint Appraisal Report 2019

Country	KENYA
Full JA or JA update	<input checked="" type="checkbox"/> full JA <input type="checkbox"/> JA update
Date and location of Joint Appraisal meeting	22- 28th October, Mombasa
Participants / affiliation	Gavi Ministry of Health WHO WHO- IST UNICEF USAD UNICEF ESARO JSI CHAI KANCO Living Goods CDC American Red Cross Kenya Paediatric Association University of Nairobi Jomo Kenyatta University of Agriculture and Technology KMTC
Reporting period	2018/2019
Fiscal period	July 2018 –June 2019
Comprehensive Multi Year Plan (cMYP) duration	2019-2022
Gavi transition / co-financing group	<i>e.g. initial self-financing or preparatory transition...</i>

1. RENEWAL AND EXTENSION REQUESTS

Renewal requests were submitted on the country portal

Vaccine (NVS) renewal request (by 15 May)	Yes
Does the vaccine renewal request include a switch request?	No
HSS renewal request	Yes
CCEOP renewal request	Not applicable

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2. GAVI GRANT PORTFOLIO

Existing vaccine support

Introduced / Campaign	Date	2018 Coverage (WUENIC) - %	2019 Target		Approx. Value \$
			%	Children	
Penta	2001	92	87	1 235 709	171 328 494
YF	2001	1	77	96 498	826 916
Rota	2014	78	83	1 263 169	29 860 395
PCV	2010	81	87	1 235 709	214 687 036
MR2	2015	45			13 513 824
IPV	2015	88	87	1 367 407	7 314 994
HPV	2019	NA	80	612 966	5 981 400
MenA	2018	NA			2 409 964

Existing financial support (to be pre-filled by Gavi Secretariat)

Grant	Channel	Period	Total Grant Amount	Cumulative financing status @ June 2019		Compliance
				Disb.	Util.	Fin.
HSS 2 (INCL ISS)	UNICEF/ KANCO	2017 - 2020	22 543 099	11 226 227	7 289 451	
YF VIG	UNICEF	2018 – 2020	107 838	107 838	82 018	
MEN A SIA OP COSTS	UNICEF	2018 – 2020	1 714 140	1 714 140	1 392 935	
HPV VIG	UNICEF	2018 – 2019	1 838 890	1 838 890	1 318 005	
MR SIA OP COSTS	UNICEF	2019 - 2020	3 989 174	3 989 174	-	
PCV PSG	UNICEF	2018 - 2020	370 531	370 531	327 446	

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

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

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Grant Performance Framework – latest reporting, for period 2018

Intermediate results indicator	Target	Actual
% of health facilities in the 17 focus counties providing timely administrative data reporting	80	95
% of health facilities in the 17 focus counties submitting complete administrative data reports	80	Not reported
Drop-out rate between Penta1 and Penta3 in the 17 counties	7	4.9
Number of immunization champions engaged in promoting immunization KANCO	47	337
Number of meetings of AEFI expert committee	1	1
Pentavalent 3 coverage for the 17 focus counties (including Nairobi)	78	78
Percentage increase in yearly national budget allocation for immunization as proportion of the previous year's allocation- KANCO	5	Not reported
Percentage of trainees who have mastered knowledge as per pre and post test	80	80
Proportion of immunizing health facilities in the 47 counties reporting zero stock-outs for nationally available vaccines (Pentavalent)	360	Not reported
Proportion of Immunizing Health Facilities with Functional Cold Chain Equipment	85	89.5
Comments		
<p>The intermediate results indicators above are taken from the list of the tailored intermediate results. Most reported indicators have met their target. This is good illustration of the impact of the intermediate indicators in pointing out the areas that need improvement and prompt corrective action to improve it.</p> <p>The Country had in place target indicators to be achieved every year with the implementation Of Gavi HSS Activities. The country achieved the targets for some indicators, while other indicators performed below the target. The country achieved the set targets for some antigens like Rota Vaccine (82%), while others were slightly below the set target: National Penta 3 coverage, Pneumococcal Vaccine and Measles Rubella Vaccine. For the IPV, the country surpassed the set target by one percent (86%) On the dropout rates, the targets for the dropout rates between Penta 1 and Penta 3 were met (6%), however the dropout rates between PCV1 and PCV3, and Rota 1 and Rota 2 were not met. For the Gavi HSS focus counties, they met the set Penta 3 coverage (78%) and surpassed the Penta 3 dropout rate that had been set.</p> <p>The AEFI committee meetings were not held in 2018 since the committee was formed and inaugurated in 2019. The number of sub-counties in the 47 counties that are using national SMT to monitor end to end vaccine stock level was initially set at 291, however the target was 301 due to additional sub counties that were created in the course of the year. The targets for Proportion of trainings that had been planned, annual support supervision visits and the numbers of trainees to be trained were met. Generally, the country met most of the targets that had been set.</p>		

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PEF Targeted Country Assistance: Core and Expanded Partners at December 2019

	Year	Funding (US\$) Excl PSC			Staff in-post	Milestones met	Comments
		Appr.	Disb.	Util.			
TOTAL CORE	2018	1,815,199	1,587,948	1,587,858		133/138	
	2019	1,827,100	1,370,325	246,715		33/42	
UNICEF	2018	909,000	681,750	681,748		46/47	The strike in 2017 and prolonged electioneering adversely affected implementation of EPI activities. Most activities finalized in 2019
	2019	909,000	681,750	207,808		17/18	Funds received in April 2019. Delays in implementation mainly due to the many competing priorities in 2019 including polio vaccination campaigns and new vaccine introductions. Balance of funds will be utilized for staff costs and implementation of key activities- EVMA, GIS and REC in priority counties in the first half of 2020
WHO	2018	715,449	715,448	715,360		38/42	
	2019	731,100	548,325	38,907		14/21	Ongoing implementation of planned activities until June 2020
CDC	2018	190,750	190,750	190,750		3/4	
	2019	187,000	140,250	-		2/3	
TOTAL EXPENDED PARTNERS	2018	696,522	332,095			41/47	
	2019	432,425	169,446			38/42	
University of Oslo	2019	909,000	681,750			n/a	
	2018	715,449	715,448			n/a	
CRS	2018					19/20	
Africa Resource Center	2019	195,633	190,530			n/a	

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CHAI	2018	330,605	-		9/13	
	2019	165,302	141,565		23/23	
Field Epidemiology Society of Kenya	2018	49,980	42,000		4/4	
Indep. Consultants (PEF)	2018	10,740	-		n/a	
John Snow, Inc.	2018	-	84,709		8/9	
	2019	87,830	-		14/18	
PATH	2019	247,757	-		1/1	
PWC	2018	41,100	42,737		1/1	
	2019	-	(17,700)		n/a	

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

The Kenya economy continued to witness tremendous economic growth as measured by the World Bank GNI per capita increase increased from \$1380 (2016) to \$1620 (2018). With economic growth averaging 5.8% since 2016, Kenya is one of the fastest growing economies in Sub-Saharan Africa.

The President assented to the Health Act which led to restructuring of the Ministry of Health including establishment of the position of the Director General for Health. The National Vaccines and Immunization Program (NVIP) is now a Division under the Department of National Strategic Public Health Programs. This shift creates visibility for the immunization program and opportunities for advocacy with higher level. As part of Government's commitment to UHC, the president launched an elaborate program in four pilot counties and immunization has been profiled as one of the critical services to achieving UHC. Based on learning from the pilot, there are ongoing discussions on financing mechanisms for UHC, including reforms to the review of Public Finance act and the NHIF act. Since Kenya, is a lower middle-income economy, there is a need for the country to develop a plan towards self-sustainability in order to prepare for phasing out of Gavi support for new vaccines. There is therefore a need for the Immunization program to position itself to effectively participate in the discussions on transition from donor funding. Currently, the country is in the preparatory phase and in 2022, the country is projected to enter the accelerated transition phase, in which the Government is expected to rapidly increase the co-financing payments to self-sustainability over a period of five years in line with Gavi policy. To address this, the MOH has constituted a taskforce to develop a transition strategy for programs that have funding commitment from donors such as Global Fund, World Bank and GAVI. The government and partners have a forecasting plan for vaccines, however there is a need to review the multi-year vaccine forecast and develop a forecasting plan for devices and operational costs of the immunization program.

The Kenya National Immunization Coordinating Committee (NICC) that was established in 2017 continues to provide a forum for coordination of investments in immunization, supports management of key action points and oversees the work of appointed technical working groups and task-forces. It is chaired by the Director General for Health (DG) or his designated representative. Kenya has also established the KENITAG, an independent technical advisory group of experts to advise on key areas of investments and policy.

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In 2019, Kenya switched 2-dose to 4-dose Pneumococcal Vaccine (PCV) vial. This will reduce cold chain storage requirement for PCV by half. Kenya also introduced the Yellow Fever Vaccine in two additional high risk counties (Turkana and West-Pokot) and conducted a Meningococcal vaccination campaign in 5 high risk counties (Turkana, Marsabit, West-Pokot, Manderu and Wajir). In September 2019, Malaria vaccine implementation program was launched in 8 counties (Bungoma, Busia, Homabay, Siaya, Migori, Kisumu, Vihiga and Kakamega). Nationwide introduction of HPV vaccine was officially launched by the Head of State in October. One round of polio campaign was conducted this year and another round will be conducted in November 2019.

The government implemented Year 1 of HSS grant and also completed distribution of equipment for Year 1 of the CCEOP. The country was successful in applying for an additional HSS grant worth \$9m to further address gaps in coverage and equity, with IRC clarifications still outstanding.

Kenya is due to commence a Full Portfolio Planning in 2020. Critical evidence generation activities are planned for 2020 including evidence for new vaccine introductions, equity analysis and the coverage evaluation survey/DHS.

Potential future issues (risks)

During the reporting period, sporadic health workers industrial actions across the counties affected health sector performance including immunization. This is a continuing threat given that most of the issues have not been resolved. In addition, funding for other critical programs such as HIV have reduced, with donors pushing the government to commit resources for the same. In view of this, there is a risk that the immunization program may not be prioritized in this process hence the need for continuing advocacy. The continuing threat of polio is likely to disrupt routine immunization. Other emerging threats such as Ebola could also destabilize delivery of health services including immunization.

Vaccine hesitancy that arose from a section of religious leaders especially during campaigns are a risk. Their concerns have been addressed through continuous engagement of religious leaders and other stakeholders, particularly around the introduction of the HPV vaccine.

As part of the Measles Elimination Strategy and Outbreak response, the country planned to conduct a measles rubella campaign. In order to avert a measles outbreak, the country had planned for a measles rubella campaign in 2019. However, there was a shortfall in funding with an additional \$3.9 million required. The Ministry of Health is pursuing additional funding from National Treasury to meet this gap and avert further measles outbreaks but the commitment remains outstanding.

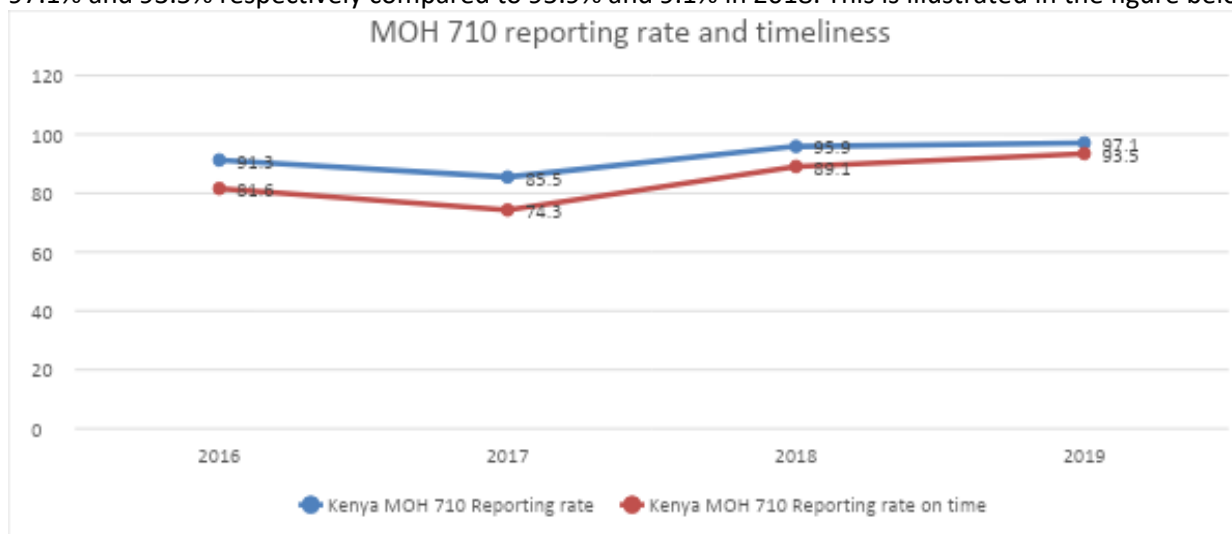
4. PERFORMANCE OF THE IMMUNISATION PROGRAMME

4.1. Coverage and equity of immunisation

National Coverage of Immunization services

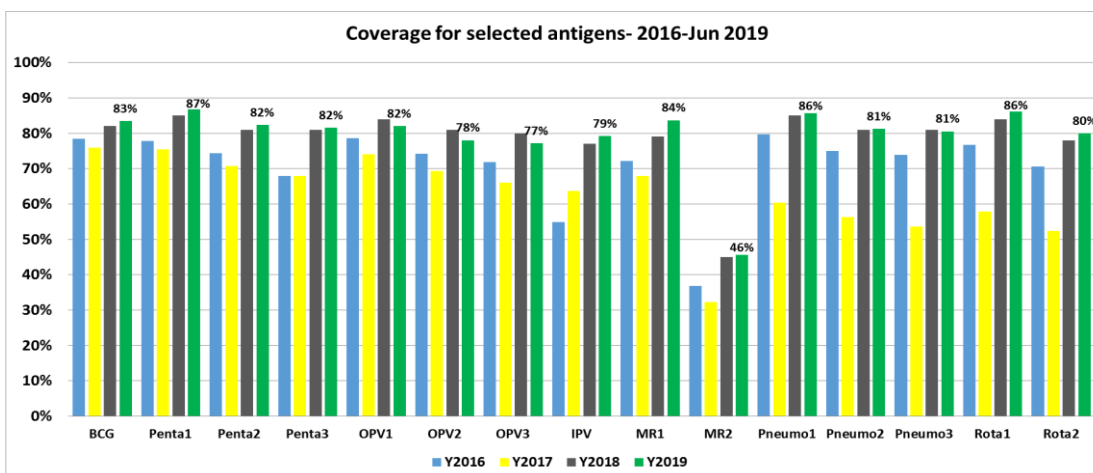
Immunization Data

Kenya has fully integrated routine immunization data into DHIS2. There are ongoing efforts to have more of the supply and logistics data available in the system. Reporting rate and the timeliness and completeness of the data reported in the system has improved over time. In 2019, the reporting rate and timeliness stand at 97.1% and 93.5% respectively compared to 95.9% and 9.1% in 2018. This is illustrated in the figure below.



In 2018, coverage improved across all the antigens and this has continued in the first half of 2019. Kenya targeted to vaccinate 1,598,193 children below one year with 3 doses of Penta and 1 dose of Measles Rubella vaccines by end of 2018. 1,297,817 children received 3 doses of Penta vaccine representing 81% of the target while 1,258,434 children received one dose of Measles and Rubella vaccine representing 79%. By end of June 2019, 82% of the targeted children have been reached with Penta 3 and 84 % of the target have been reached. The figure below shows the performance across the counties.

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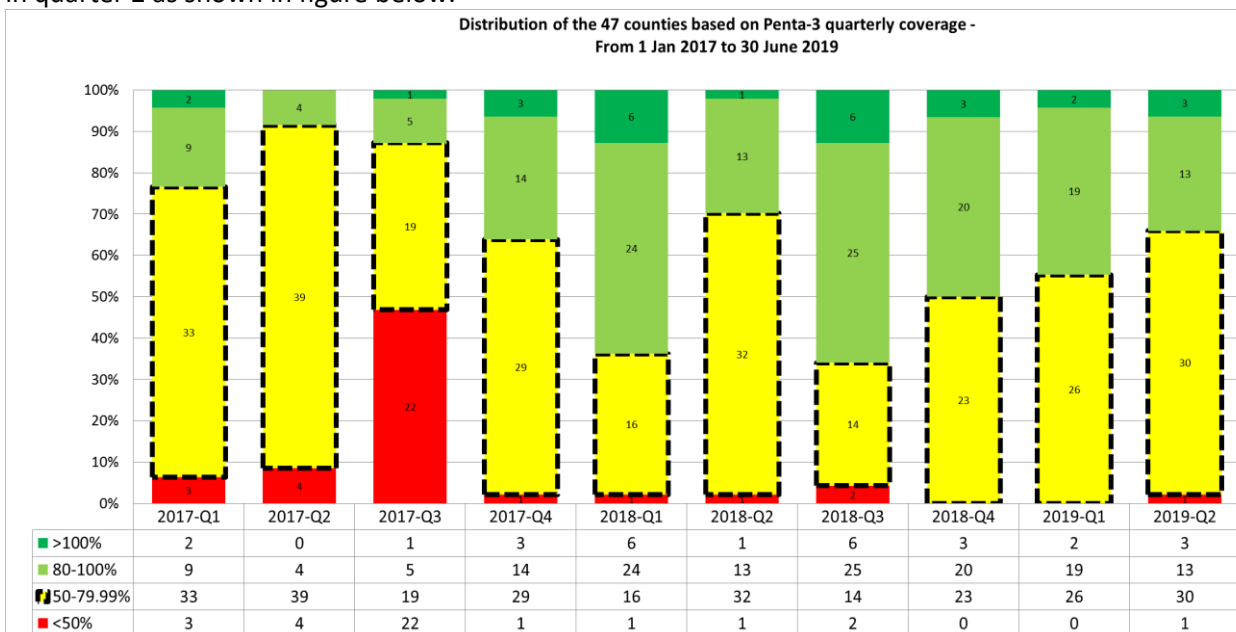


Coverage of selected antigens 2016-June 2019

From the graph above, there was remarkable improvement in the performance in 2018 compared to the preceding years. The performance of MR 2 has shown a +1 improvement from 46% in 2018 compared to 47% in 2019 but has consistently performed poorly. With the exception of OPV 2, OPV3 and IPV whose national coverages were 78%, 77% and 79% respectively, all other antigens had national coverages greater than 80%.

Sub-national coverage

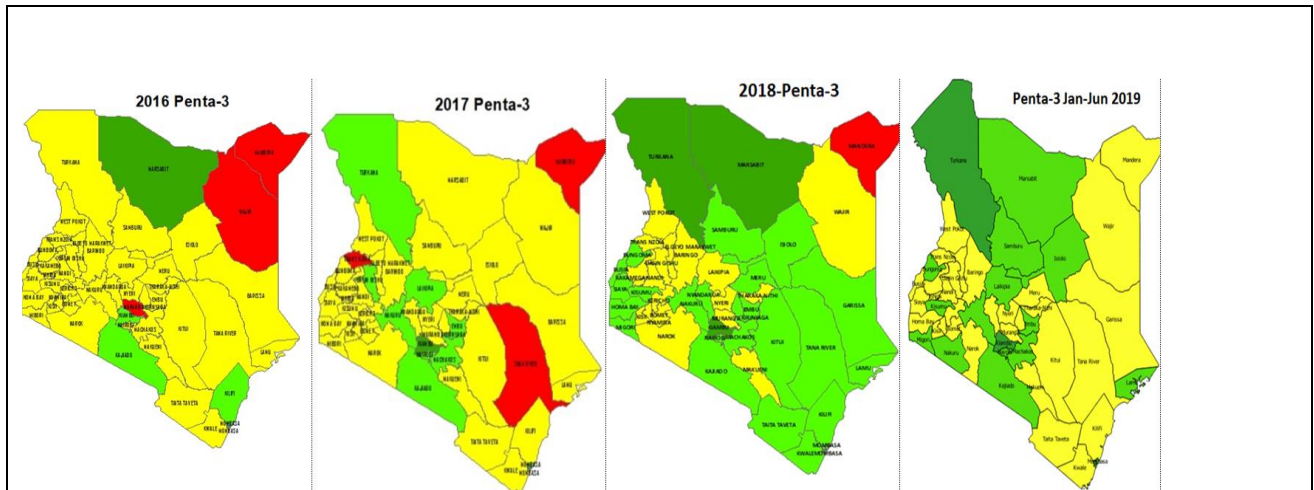
Sub-national coverage shows wide disparities across the different counties in the country. In 2018, 19 counties out of the 47 counties had Penta 3 coverage above 80%. In quarter one of 2019, 21 Counties (44%) had 80% or greater coverage with three doses of pentavalent vaccine but this dropped to 16 counties (34%) in quarter 2 as shown in figure below.



Distribution of Pentavalent 3 by county

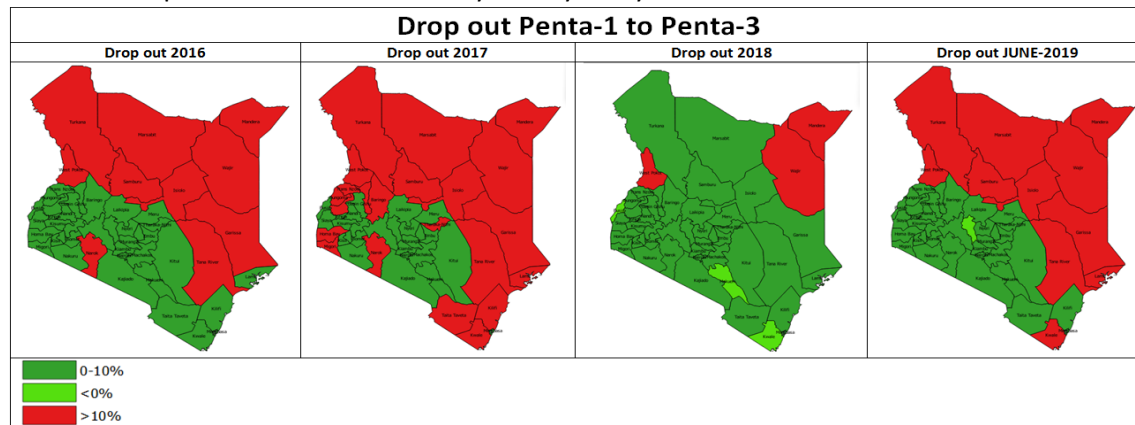
The figure below, shows performance for the last 3 years. In 2019, no county had penta 3 coverage <50%. Some of the persist challenges inaccurate denominator and gaps in data quality. Below is a map showing the coverage of pentavalent 3 from 2016 to June 2019 across the counties in Kenya.

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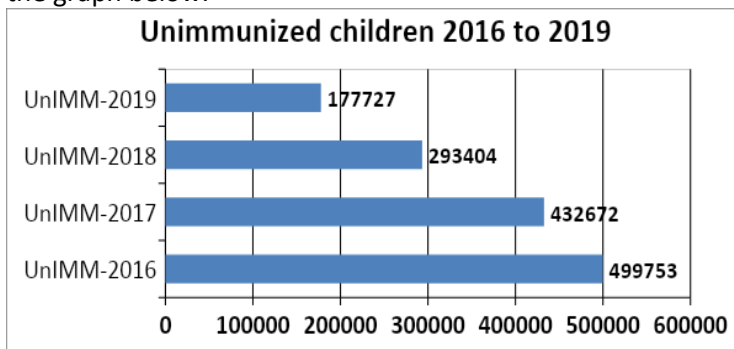
Map showing Penta 3 coverage by county from 2016 to June 2019

Dropout rate- In 2018, the national Penta1-Penta3 drop-out rate was 3.8 %. By mid- 2019, it had risen to 4.7%. The maps below show variation by county and year.



Unimmunized children

The number of unimmunized children in the country has consistently reduced over the years as shown in the graph below.



Graph showing the distribution of unimmunized children in Kenya since 2017

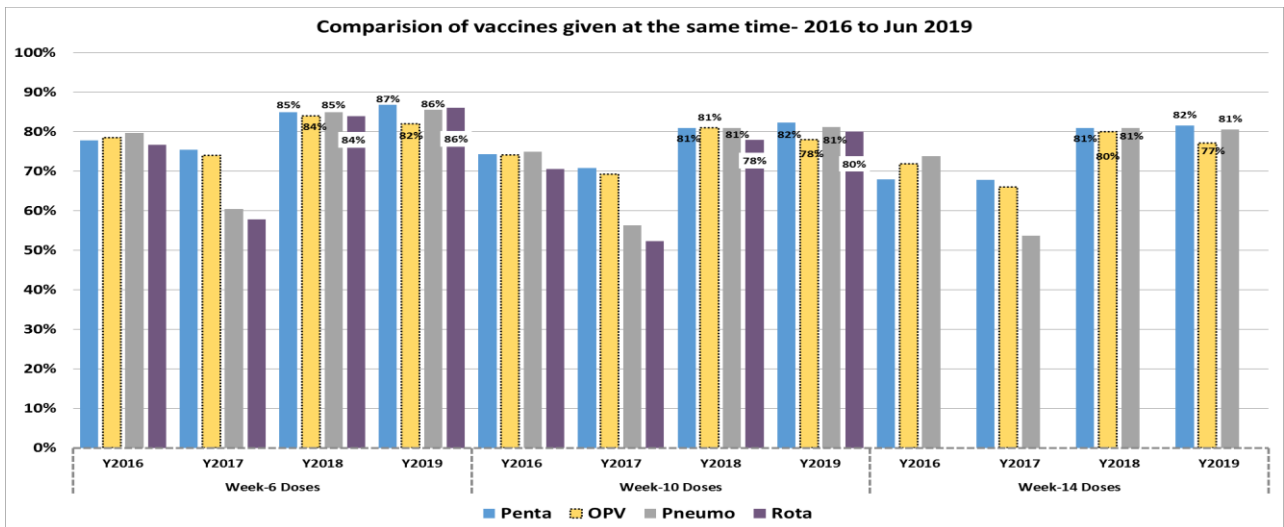
In 2018, the number of under one-year old children unimmunized with Penta-3 was 293,404 compared to 432,672 in 2017. This year, the number stands at 177,727. Mander and Nairobi Counties have the highest number of unimmunized children.

Coverage of vaccines given at the same

There are several discrepancies between vaccines given at the same time. For example, in 2019 there is a 5-point difference between Polio and Pentavalent vaccines given in week 14. However, the cause for difference is not clear can be attributed to reporting issues, lack of stocks at service delivery point etc. The only trend in the discrepancies in doses given at the same time is the difference between Rotavirus and Pentavalent which has been reducing from 2016 to 2019 for both dose 1 and 2. This has been due to a

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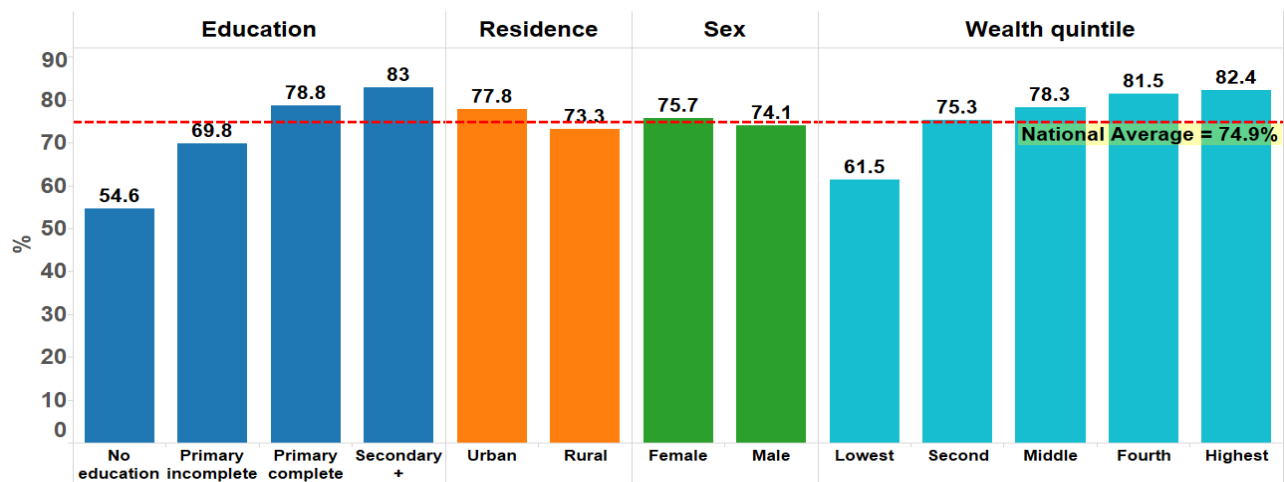
concerted effort by the program to ensure Rotavirus vaccine erroneous contraindications are not used to prevent vaccination.



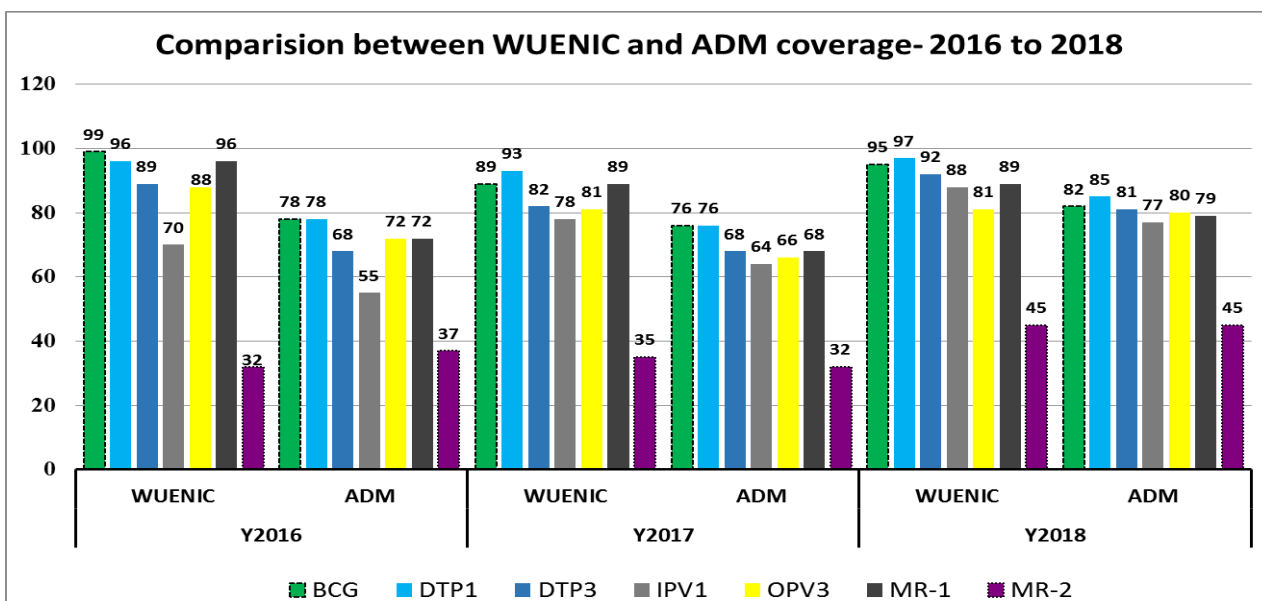
Coverage of vaccines given at the same time 2016 to June 2019

Equity

Kenya has not conducted any survey since 2014 to determine whether there are any disparities in immunization coverage between socio-economic and other status. Kenya Demographic & Health Survey (DHS) 2014 shows lowest vaccination coverage amongst households in the lowest wealth quintile, among children of mothers/caregivers with no education and among those that live in rural areas. At the national level, there is no difference in immunization coverage based on sex. Trend analysis from 1989 to 2014 confirms that access to education and wealth are the two major determinants for full immunization. Gaps between the rich-poor and educated-not educated appear to decline between 2003 and 2009, followed by an apparent widening in 2014.



Source: Kenya Demographic and Health Survey (KDHS) 2014



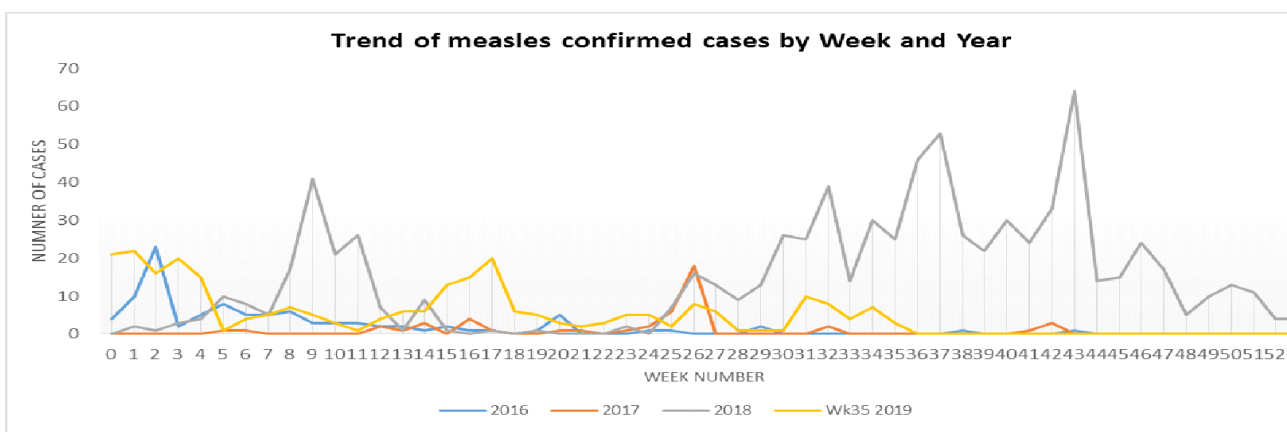
Comparison of administrative coverage and WUENIC

When compared with WUENIC data, apart from MR2, all the other antigens have lower values reported in the administrative data. This could be as a result of the denominator challenges together with data quality issues such as under tally and completeness in reporting. However, as illustrated in the figure below, there has been consistent improvement over the year and the coverage values reported are closer to the estimates in 2019 compared to the preceding years.

Surveillance

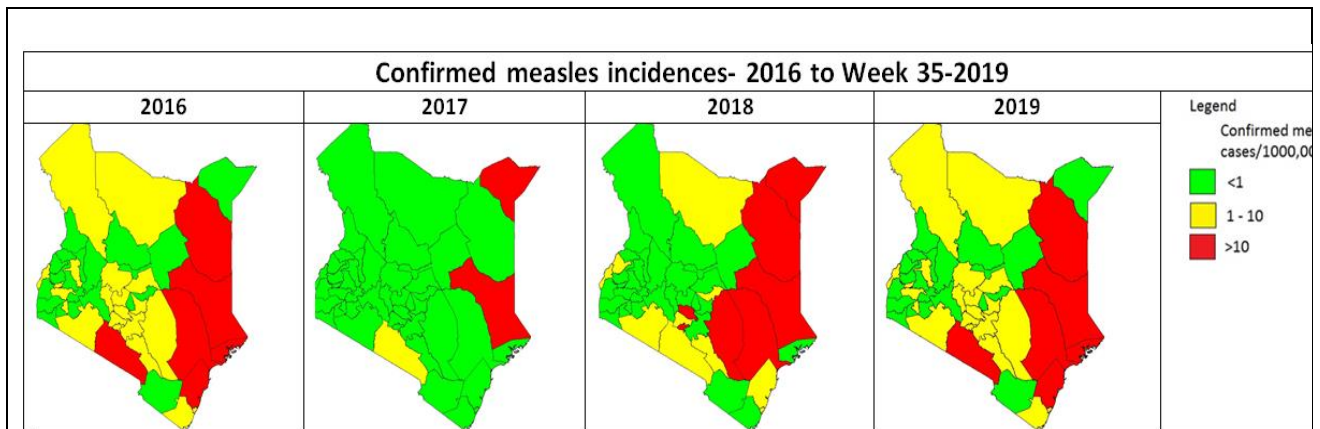
Measles

The country reported an increase in number of confirmed and epi-linked measles cases in 2018, compared to proceeding years. 802 and 264 laboratory confirmed and epi-linked measles cases were reported in 2018 and the first 35 weeks of 2019 respectively.

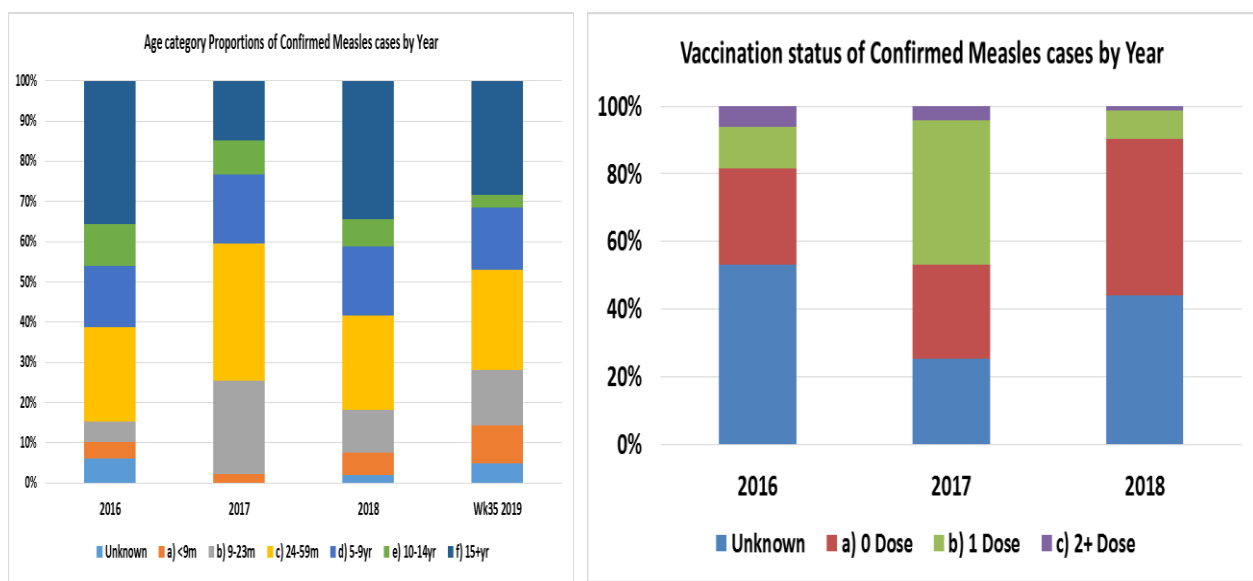


Kenya has continued experiencing sporadic measles outbreaks. In 2018, measles outbreaks were reported in 8 counties – many of these in the north eastern part of the county: Garissa, Wajir, Mandera, Muranga, Kajiado, Kitui, Tana River, Kiambu, and Nairobi. 16 counties had incidence rates above accelerated control threshold of <1 cases per a million population.

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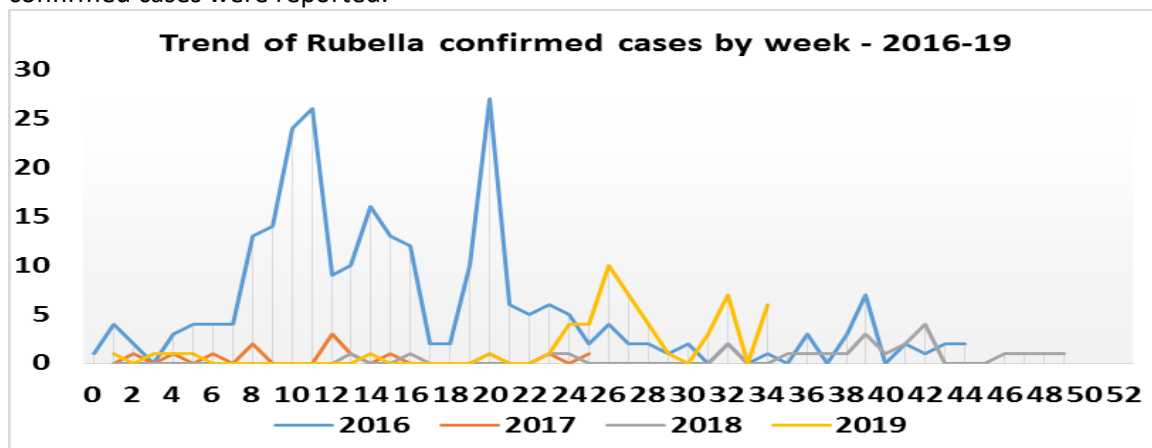


The characteristics of the confirmed measles cases are shown in graph below. Majority of the case were aged older than 24 months of age and were either not immunised against measles or immunisation status was unknown.



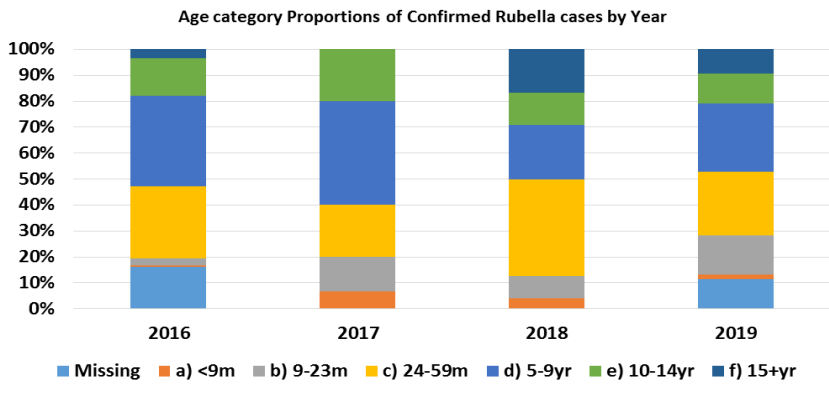
Rubella

The number of laboratory confirmed rubella cases has remained low since 2017. In 2018, 24 laboratory confirmed cases were reported.



The characteristics of the confirmed rubella cases are shown in graph below. Majority of the cases were aged more than 24 months and were either not immunised against measles or immunisation status was unknown.

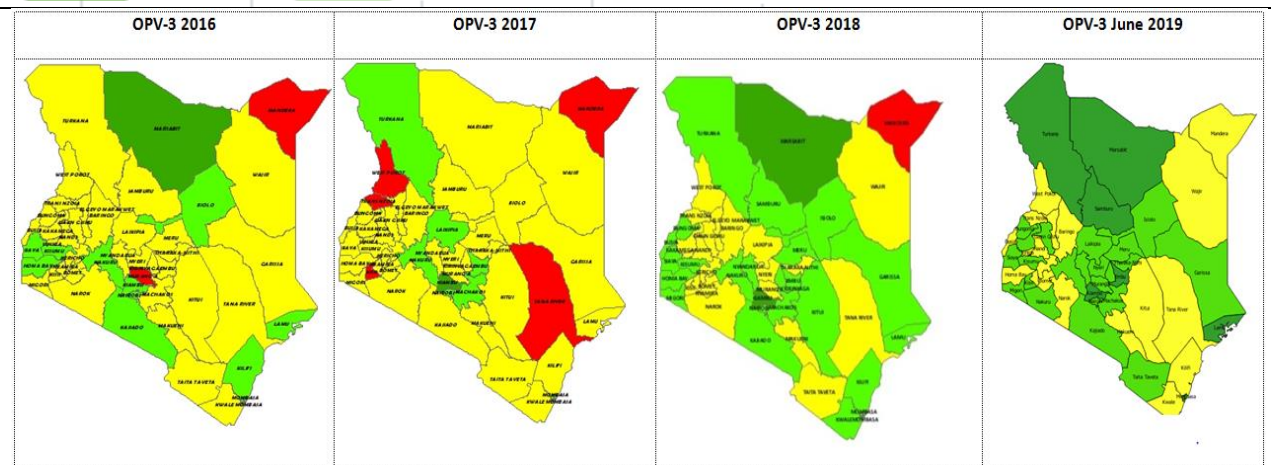
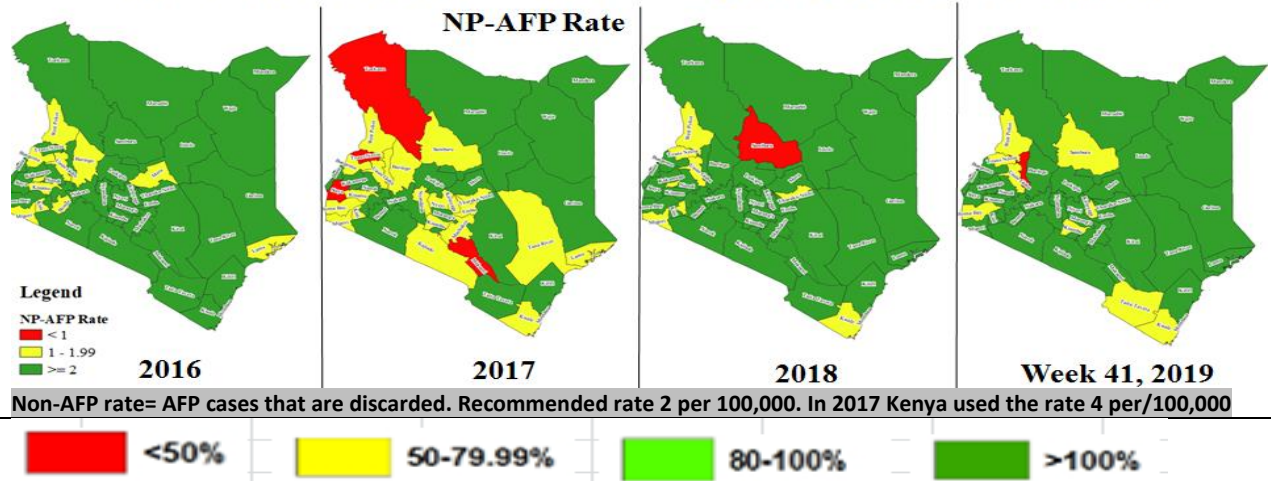
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AFP surveillance for polio eradication

Kenya has been polio free since 2013. A cVDPV was isolated from environmental samples in April 2018. 656 AFP cases were reported in 2018 from 47/47 counties, 459 cases during in 2017. The national non-polio AFP rate was 3.19 (target 2) and stool adequacy of 84% (target 80%). 68%(32) counties had non-polio AFP rate of $\geq 2/100,000$, while 66%(31) had stool adequacy of $\geq 80\%$. 43%(20) counties have achieved target for both indicators. 86% AFP cases had 3+ doses of OPV in Yr 2018, 87% during similar period in Yr 2017. Unknown vaccination history in Yr 2018 is 3%, and $<1\%$ during similar period in Yr 2017.

AFP Surveillance Performance by County, Kenya, 2016 – Week 41, 2019



Other VPDs

- In 2018, 330 samples for rota were tested in two sentinel sites; 66 (20%) were positive. The positivity rate is below the target of 30%.

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- In 2018, 387 samples for invasive bacterial diseases (IBD) were tested in two sentinel sites; Streptococci pneumonia was isolated from two samples.
- 2 cases of Pertussis were reported in Nairobi in 2018.
- No cases of MNNT have been recorded in 2017 and 2018.
- Outbreaks due to Meningitis A were recorded in Turkana – Kakuma refugee camp (2009) and West Pokot in 2006. No cases of Men A have been reported in 2018.
- The last yellow fever outbreak was in 1992. No cases of YF have been reported in 2017 and 2018.

Challenges

- There are crucial gaps in financing of surveillance activities – many activities are currently supported by funds from the GPEI. There is inadequate funding for measles, IBD and rota surveillance.
- Knowledge gap on vaccine preventable disease surveillance exist, particularly at the tertiary HF levels.
- Untimely and incomprehensive response to measles outbreaks. This is partly due to inadequate funds for outbreak response.
- Poor data quality or documentation. For example, nearly a half of measles cases have unknown immunisation status.

4.2. Key drivers of sustainable coverage and equity.

Supply chain and logistics

Planning, forecasting and Procurement

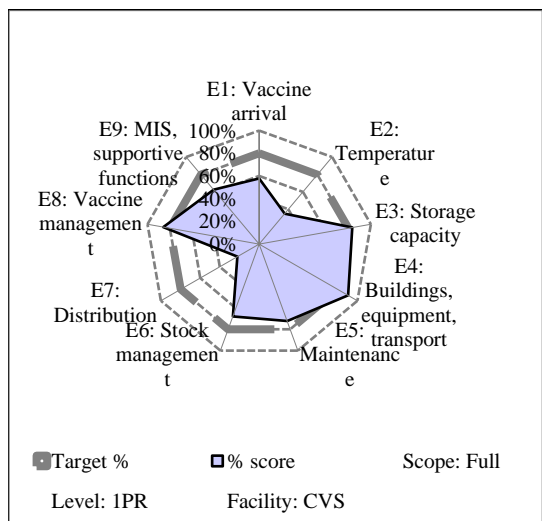
The country has experienced a fairly stable supply situation. However, sporadic interruptions in the supply of syringes and other vaccine consumables remains a challenge. Vaccine stock outs also occurred at various levels of the supply chain in 2019 as evidenced during the monthly and quarterly reports. This can be attributed to a number of factors including inadequate cash flows affecting shipment plans, weak distribution mechanisms at lower level and inadequate stock management practices. Financial support to the vaccine supply chain system varies across counties.

Effective Vaccines Management (EVM):

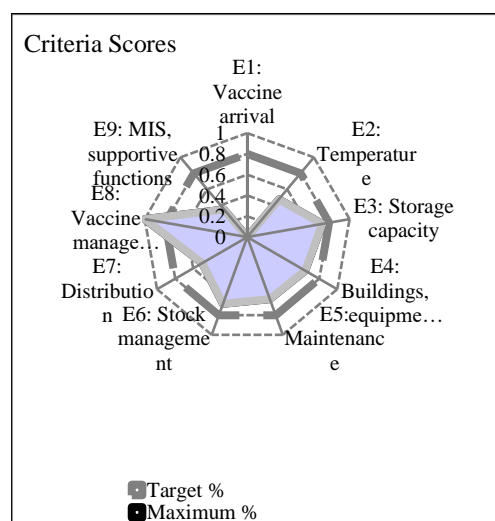
With the last EVMA having been carried out in 2013, the NVIP team organized and carried out Self – Assessment at Central Vaccines Store (CVS) and Regional Vaccines Stores (RVS) in April 2017 and April 2018 respectively in response to the gaps and recommendations cited in the 2015 Gavi program audit report. With time, notable improvement in a number of areas, specifically in stock management practices, cold chain capacity and performance, temperature monitoring and vaccine management has been realized. The objective was to establish specific areas with gaps and institute a targeted improvement plan that would be used to accelerate improvement of EVMA indicator scores to the acceptable minimum of 80%. The web charts below show the findings of both assessments.

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CVS EVMA Self-Assessment, April 2017

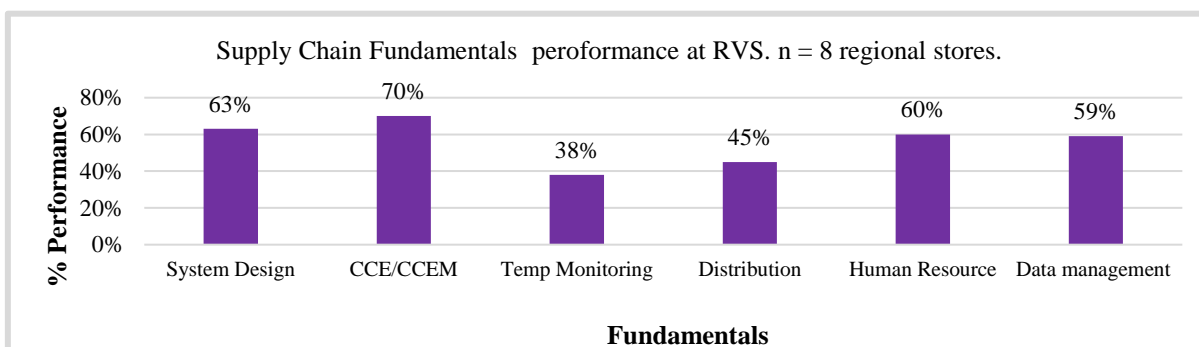


RVS EVMA Self-assessment April, 2018



RVS performance by 5 supply chain fundamentals: While the overall score did not meet the acceptable minimum of 80%, major gaps observed at both levels were related to temperature monitoring systems, stock management practices and vaccine delivery planning. Since, a lot of effort has gone into improving stock management practices, such as advocating for regular use of SOPs, standardising physical count procedures which have become rigorous and regular temperature reviews and monitoring, cold chain maintenance and improved vaccine management practices.

The vaccine stores, however, continue to face staffing and operational challenges. The working environment is known to impact on staff productivity and there is need to improve water availability, and funding for operations to motivate the existing workforce. The NVIP plans to conduct a comprehensive EVMA at the end of Quarter 1 in 2020 to ensure continuous improvement. In addition, the progress made in the five supply chain strategy fundamentals is outlined below:



In 2019, NVIP planned and implemented some of key activities of the improvement plan as a result of EVMA carried out in 2013 and self-Assessment in 2018/2018 respectively at that included:

- A sensitization workshop for 20 officers from Regional and National level on EVMA in February – March 2019 was carried out.
- Mentorship to RVS was planned.
- Monthly physical stock reporting was generated by County, Sub-county and regional stores was initiated.
- Chanjo tool refresher training was planned to train key participants on the new version as well as improve order management and importance of real-time transaction.
- SOPs were finalized, printed and distributed to all immunizing Health Facilities in the country.

1. Supply chain leadership

As indicated in the EVMA above, NVIP planned and organized workshop on EVMA for 20 officers from National and Regional levels respectively that aimed at creating awareness and capacity building on EVMA. In August 2019, all (47) county Chief Medical Engineers and County EPI logisticians were sensitized on how to conduct Cold Chain Inventory assessment and the exercise is underway. Four depot officers (2 - National and 2- County depots) attended a short course in Vaccines supply and Logistics management in India in April, 2019, with the aim of improving competencies and leadership in supply chain management.

The GAVI STEP programme was implemented in March 2019, that targeted 50 senior vaccines supply chain management practitioners with the aim of improving supply chain training and mentorship. It is envisioned that this will provide a pool of mentors with adequate skills who will in turn support and downstream immunization officers to improve vaccine management standards and practices.

As part of the GAVI STEP programme, 9 regional depot officers underwent a sensitization workshop on strengthening distribution practices and order management. Several supply chain distributions models were discussed and distribution guide was developed

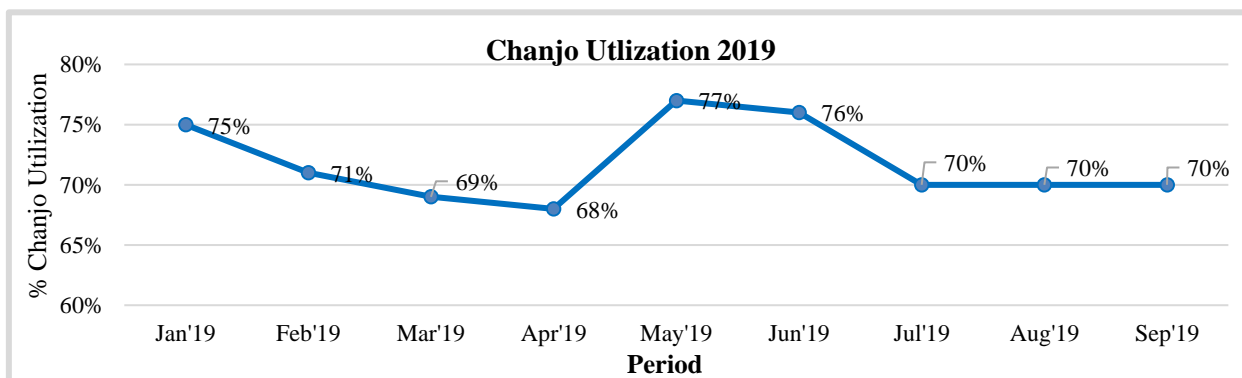
2. Continuous improvement & planning

The last EVMA was conducted in 2013 and Kenya is due for a follow up assessment scheduled in Q1 of 2020. Studies done in 2018 aimed at improving the immunization supply chain system include: a) the ELMA Study, “Using RTM to provide visibility into CCE performance for timely action”. b) Temperature Monitoring Study in Q2 of 2018 to assess and improve the CCE performance and practices for vaccines in storage (CVS to HF and outreach sessions) and during transportation. The findings of these assessments and studies guided strategies and activities included in the cMYP (2019-2023) draft and the draft 2019 EPI Annual Work Plan. Furthermore, NVIP has been working towards implementation of the improvement plan, developed as a result of the 2013 EVMA as well as the CVS and RVS self – assessment through:

- Regular review of stock levels at all stores (Central, Regional and Sub-county stores).
- Continued capacity building support to the Regional, county and Sub-County officers.
- Timely distribution of vaccines to all the 9 regional stores.

3. Supply chain data for management.

The program continues to enhance use of existing stock data tools and explore strategies that will increase visibility and monitoring of stock situations regularly, especially at the sub-levels. One of these is to improve data visualization, institutionalize regular data review using key performance indicators to inform decisions at national, county, subcounty levels and HF levels. The eLMIS (Chanjo®) system utilization 2019 trends at subcounty level are as shown in the graph below. Utilization is currently at 70%.



Note:

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- i) The 9% spike (from 68% in April to 77% in May) was due to: Training of the regional vaccines stores heads on Chanjo utilization with focus on vaccines ordering, issuing and receiving.
- ii) NVIP is working on improving utilization through: Chanjo roll out with inclusion of other cadres, identification of champions at all levels, scheduled follow-up led by the NVIP - NLWG shortening turnaround time on technical issue - handling and continued mentorship.

The system promises to significantly improve real-time visibility of stock data at levels of implementation when used optimally and technically supported. NVIP continues to strengthen data use to promote continuous improvement in the supply chain through regular stock data review meetings. The program has also embraced use of UNICEF-ViVa which give upstream supply visibility to inform shipment schedule. The program is focused on putting in place processes that routinely promote use of real-time data to reduce stockouts. Data will be triangulated to ensure that stock data is linked to coverage, cold chain capacity and vaccine wastage to enhance system performance.

NVIP has put in place, several systems at different levels for utilization and visualisation of data to inform, supply chain position at every level as well as generation of evidence-based decision to strengthen vaccines supply chain systems. The systems include:

- Manual records used in Health Facilities for vaccines stock transactions, reporting and ordering.
- Stock Management Tool (SMT): Informs the team on stock levels at National level
- ViVa: National supply visibility on shipment schedule at national level
- Chanjo: Gives stock transaction data at National, regional, county and sub-county level.
 - Analytics on Chanjo such as the weekly CS report which has generated interest in the top leadership in reviewing data presented and enabled it to make evidence-based decisions on vaccines commodities.

4. Cold chain equipment

Capacity

In August 2016, the program developed a 5-year Cold Chain Expansion and Rehabilitation Plan (CCERP 2017-2021) to guide investment in cold chain during this period. The gaps identified took into consideration the country's vaccines stockholding policy at different levels of the supply chain, population growth and planned vaccines introductions. Implementation of the CCERP started in 2018 where the country procured cold chain equipment worth USD 5.1 Million under the GAVI CCEOP in a multi -year, phased procurement structure. In order to supplement efforts towards accelerated immunization performance, the country further prioritized procurement of CCE worth UDS 7.5Million from a World Bank (WB) Loan.

In line with the CCERP,

- 1496 (19% of 7834) facilities that had PIS¹ and non – EPI equipment² received PQS grade A technology.
- 250 HFs that had PQS compliant equipment received additional capacity.
- All Sub-County stores received sufficient platform compliant capacity to serve needs beyond 2021.

In addition, completion of cold rooms installation in 4 counties and 1 regional store: - Garissa, Mandera, Wajir, Turkana and Kisumu has been achieved. Expansion of Mombasa Regional Store is yet to start due to ongoing building refurbishment. Infrastructure remains a challenge, with some sub-counties still limited with dry supply storage. This has greatly affected installation of cold chain equipment, where some lack physical space for hosting cold chain storage equipment.

Use of non-EPI cold chain equipment in facilities is driven by non-standard procurements by county authorities. This has resulted in 15% of health facility refrigerators being unsuited for vaccine storage. These

¹ Product Information Sheet; equipment previously pre-qualified for vaccine storage that no longer meets PQS standards.

² Non-EPI equipment; commercial, over-the-shelf refrigerators not specifically designed for vaccine storage.

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non-EPI refrigerators have significant temperature fluctuations, and have no ability to maintain vaccine storage temperatures in the event of power loss. As primary responsibility for cold chain procurement is with the counties, advocacy and guidance to relevant stakeholders on procurement and use of WHO pre-qualified vaccine refrigerators remains a priority to ensure vaccine safety and potency.

CCE Maintenance

One of the weakness noted during the comprehensive programme review in June 2018 was limited contingency planning in the event of cold chain breakdown. NVIP has since provided all immunising health facilities with job aids on excursion diagnosis and response as a contingency in the event of equipment failure. This transfers initial responsibility for equipment maintenance to front line staff, reducing potential equipment downtime and risk to vaccines.

Through Gavi HSS and World Bank funding, procured CCE was bundled with recommended spare parts. Additionally, 17 counties are funded to carry out preventive maintenance of their equipment. In aid of this, in the period since 2016, at least 3 medical engineering technicians from every county have been provided with training on equipment management, as well as repair and maintenance of newer technologies of equipment (SDD, Grad-A freeze protected). In addition, the program procured 48 motorbikes and toolkits to support maintenance activities in every county and distribution of these items is ongoing.

CCE Performance monitoring

The country is exploring strategies to better collect and utilize temperature data to guide maintenance activities more efficiently. This includes installing RTM devices at all subcounty stores, with support from Nexleaf and Gavi. Currently, a number of CCE technologies deployed have inbuilt TM systems while others have stand-alone systems that generate a lot of data. There is need to standardize or draw points of similarities and establish how the data can respond to information needs of the program. -A Temperature monitoring-specific workshop, which brought together relevant partners and experts is planned for 2019. NVIP has since updated its cold chain inventory and reviewed its CCERP as part of as deployment of year 2 CCEOP.

5. Supply chain system design

A system design approach is a continuous improvement approach that should be evidence-based, and measure key performance indicators that are both quantitative (e.g. product availability) and qualitative (e.g. risk, community will). It should encompass a holistic system approach that incorporates people (stakeholders, decisionmakers and other contributors), activities, processes, products, infrastructure, money, incentives and other related systems in their unique contexts. There is need for a system design approach that will help examine how “multiple components” in the current immunization supply chain in Kenya influence each other. This should include such components as how changes in the distribution network affect the overall availability, potency and efficiency of the immunization supply chain. The proposed System design must look beyond incremental improvements, examining all supply chain components and how they interact.

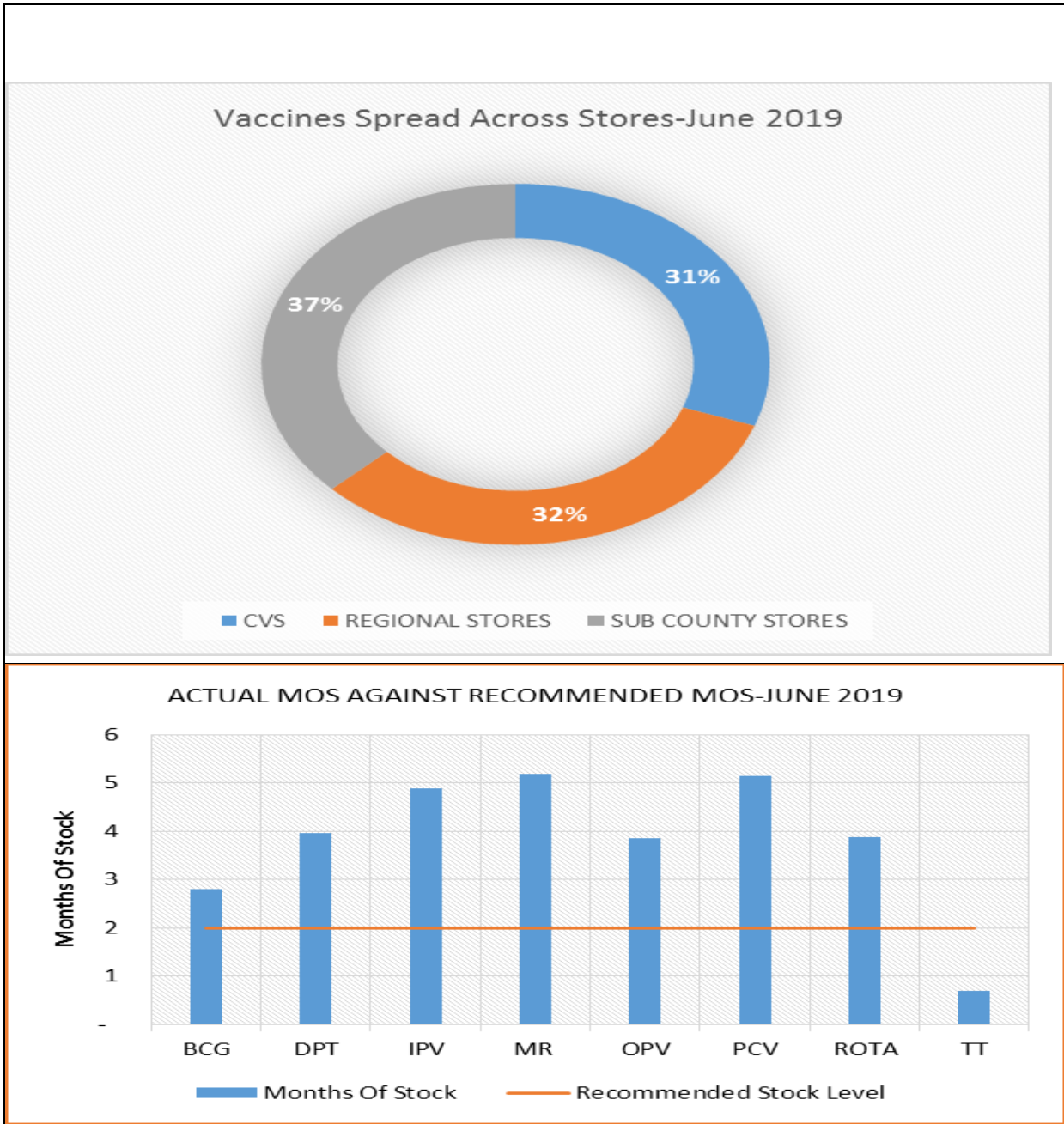
The Vaccine supply chain is 4-tiered with one Central vaccine Store, nine regional stores that serve 291 subcounty stores. Vaccine procurement is done at national level by NVIP. All EPI vaccines are procured through UNICEF. The Government of Kenya also has a financing agreement with UNICEF called the vaccine independent initiative (VII). This provides a mechanism to maintain an annual group procurement of vaccines while encouraging governments to finance and assume increasing responsibility for procurement of vaccines on the international market. VII form of financing buffer that allows countries to pay after delivery of vaccines to them. This mechanism has been utilized to ensure steady availability and supply of vaccines.

Clearance of vaccines at port of entry is outsourced to a Third-party Logistics company who then delivers them to the CVS. Vaccines are then distributed to the 9 regional stores on a quarterly basis. This technically

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is a pull system as all level send their requirements to higher level. The counties/ sub counties then collect vaccines from regional stores on a quarterly basis and service delivery points collect monthly. With the devolved system of governance, County governments handle subnational distribution. Practice varies with some counties consolidating their needs and collecting as one, while others have opted to form County stores.

The graphs below shows vaccines availability at different stores and Months of stock as at June 2019.



Recommendation: There is a need for the programme to carry out a supply chain system design assessment.

There are two steps proposed approaches to the system design

1. Analysis and recommendations

- Advocacy by introducing the concepts to stakeholders and decision-makers to clarify scope, interest and opportunities.
- Modelling – The need to validate and optimize the existing supply chain, potential future needs, and analyze scenarios to highlight improvements.

- Drawing an action plan that reflects known barriers, stakeholders, funding and risks

2. Implementation (Phased)

- Implement the recommendations of the plan using a targeted, phased approach.
- Evaluate the project and decide how to expand the implementation.
- Expand the implementation, model and optimize a new set of questions

Health Work Force: availability, skill set and distribution of health work force

As per the 2010 Kenya constitution, management of the health workforce became one of the functions of the County government that lead to a significant transition of trained immunization staff to other responsibilities creating a significant immunization skills gap at the implementation and middle management level.

Findings from the review of Kenya Health Sector Human Resource Strategy (KSHRS II) 2014 – 2018 show that the number of Health Care Workers (HCWs) in the public sector grew by 37%, i.e. from 46,000 in 2014 to 73,557 as at 2018. About 68,106 HCWs are employed on permanent terms by the National and County governments while 5,486 are on contract terms and funded by various development partners. This increase in HCWs improved health worker density from 5 core health workers per 10,000 population in 2014 to a national average of 8.3 health workers per 10,000 population in 2018 which is still below the recommended WHO ratio of 4.45 skilled health professionals per 1,000 population. It was also noted that 60% of HCWs are deployed in levels 4 to 6 while 40% are deployed in level 2 and 3 HF where bulk of immunization services are offered. However, this ratio is not sufficient and it still continues to be a major barrier to immunization service delivery.

Lack of motivation of the health care workers continues to be a barrier in the delivery of adequate services in the immunization program. This is as a result of lack of salary reviews, delays in payment of salaries, and lack of a clear system for staff motivation. This is evidenced by continuous industrial strikes, low staff morale and high attrition rates across the counties.

The current HSS grant will continue to support scheduled operational level training, mid-level managers training and the micro-planning exercises in the focus counties. Therefore, further investments in capacity building are needed to augment this so as to scale up the trainings especially in counties not targeted by the HSS funds. Furthermore, an alternative to HSS funds could be explored through advocating to county leadership to increase allocations to health and specifically capacity building for immunization healthcare workers through the development and roll out of a basic package on immunization delivered through shorter courses or updates, CMEs etc. to improve capacity, scale up support supervision and involve other health care staff beyond the routine immunization.

Efficiencies in capacity building interventions can also be realized through the integration between the Ministry of Health (MoH) and training institutions such as Kenya Medical Training College (KMTC) into EPI activities and the review of the current training curriculum to ensure that the lecturers are fully equipped with current updates on immunization. These trainings are expected to enhance the knowledge of the health care worker on EPI. It is also important to boost the interpersonal communication skills of the healthcare workers so that they are able to deliver succinct immunization messages to the caregivers. HCW require to foster peer learning and mentorship to reinforce the current national policy which dictates that immunization services should be offered on a daily basis.

Service delivery and demand generation

The National vaccine and immunization programme provides vaccines free of charge in public health facilities in order to eliminate economic barriers to immunization, in the context of the National Health Sector Strategic Plan (NHSSP)

Overall, there are 11,678 registered health facilities; of these 5,753 are government owned, 4,886 are privately owned and 1,039 are owned by Faith Based Organizations (FBOs).

CHVs play very important roles in service delivery such as defaulter tracing and social mobilization, supporting outreaches among others with regards to immunization. Skills and knowledge gaps exist among them on immunization and in guidelines on their engagement in immunization Service delivery.

Community health volunteers should be sensitized on inter personal communication, basic immunization concepts and vaccine preventable diseases and provided with job aids and guidelines to facilitate their work. They should also be actively involved in the microplanning process alongside the health workers and community leaders to ensure community ownership and linkage to the health services. Secondly, strategies to increase integration with other Government interventions can be explored such as the planned training of National Youth Service (NYS) through KMTC on providing community health services.

In 2018 and 2019, the CHV ToT manual was developed and reviewed with inputs from several stakeholders to provide guidance on the training of CHVs.

NVIP is leveraging on the HSS funding to update and implement communication plans at all levels as outlined by the National Immunization Communication Plan. Mass media and social media digital platforms such as Facebook, Twitter, WhatsApp will continue to be used to share information on routine immunization and issues of public concern. Social media monitoring will also be strengthened to ensure that emerging issues are addressed in a timely manner.

So far, 20 counties have developed county specific communication plans however this have not been implemented due to resource constraints. To ensure that the communication plans are implemented successfully, it is imperative to advocate the mainstreaming of the plans into the overall EPI plans and advocate for funding to support implementation of the plans at county level.

In 2019 operational level training was carried out in 4 counties. This is expected to scale up the implementation of RED/REC in those counties. Furthermore, 4 additional non-HSS counties have mobilized resources to conduct operational level training including RED/REC training. In order to scale up RED/REC activities to the remaining 26 counties, the program will finalize the REC module in preparation to the roll out in 2020. Additional budgetary support to finalize and train on usage of the revised operational level training guides, facilitation guide and curriculum will be mobilized to ensure that all HCWs are reached.

Leadership, management and coordination

There is political commitment as evidenced by the Government of Kenya's funding for Government vaccines, procurement and meeting Gavi contributions to the new and underused vaccines. In addition the President of Kenya took the lead in launching the HPV vaccine further highlighting the highest form of commitment to the immunization program. The Cabinet secretary of Kenya is a key champion of the immunization program in the country and is continuously advocating for immunization.

There are also exist several supportive legal frameworks and policy documents that anchor immunization services in Kenya such as the constitution of Kenya, health laws act 2018, child rights act and Kenya health sector strategic plans.

There program currently engages with parliamentarians through the parliamentary health committee and senate health committee to advocate for improved immunization financing and to anchor immunization services in critical areas such as Universal Health care and other laws.

There is need to encourage relations with an inter sectoral approach that would improve performance in EPI. There is a continued need to strengthen Community mobilization and engagement among community leaders, religious leaders, health professionals, civil society and other stakeholders in immunization.

There is a need to continuously advocate and lobby to have a definition of the skillset for persons leading the immunization program at the county and Sub county levels especially when it comes to the decision makers in matters of immunization.

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The coordination of the immunization program is supported by the immunization interagency coordinating committee (N-ICC), the KENITAG (Kenya National Immunization Technical Advisory Group), and the NVSAC (National Vaccine Safety Advisory Committee). These groups provide technical and advisory support and ensure coordination between different stakeholders.

Challenges

The coordination and implementation of activities has been a challenge due to competing tasks in the program as well as the introduction of vaccines (malaria and HPV), expansion of yellow fever vaccinating counties from 2 to four, switching of PCV10 from 2 doses to 4 doses and SIA on MEN A in 5 high risk counties.

Need to have the counties mapped in terms of the structure to ensure the right personnel with influence are contacted during activities in the program and partner coordination with the program put forth as a proposed solution. These would necessitate continuous reporting to NVIP which would strengthen partner accountability, provide opportunities for forging of synergies and reduce duplications.

There is need to have regular coordination meetings between the program and partners with a harmonized and simplified reporting process to ensure activities are implemented in a timely manner.

Data / Information system

Quality and Reliable data is needed to inform the design of interventions and to monitor and evaluate plans and quantify progress towards predetermined treatment, prevention, care targets and progress in the implementation of interventions. Nevertheless, there still exists significant challenges that can be seen through low reporting rates in some counties, incomplete, inaccurate and improper handling of data at all levels.

This has been attributed to inadequate tools availability at health facility levels, existing knowledge gap by staff at all levels on reporting tools, logistical challenges (insecurity, poor infrastructure and natural disasters) experienced by health staff that impede delivery of hard copies to HRIOs, Health staff competing tasks at facility (heavy workload) that results in poor recording (tallying) and prioritization on tools to fill, Lack of SOPs for immunization reporting tools and poor data coordination at all levels between MOH, partners and private immunizing facilities.

In the same way, devolution effects, lack of immunization specific budget allocation at county level, poor infrastructure and insecurity, lack of health staff motivation and reporting incentives, weak integration between various MOH and partner's programs especially at county levels and inadequate mapping and high staff turnover for private health facilities continue to inhibit the programs ability to provide quality data for immunization decision making.

Strengths

One integrated reporting system for Routine Immunization data through DHIS2 across the country which is accessible from sub county to national level and some facilities.

- Availability of geo coded Master Facility List can support GIS mapping
- Good monthly immunization report completeness rate as a country (>90%)
- The availability of Immunization scorecard to monitor immunization indicators at national and county level
- Electronic Logistics Management Information System (eLMIS) is implemented and functional at National, Regional and sub-Counties stores to monitor the vaccine stock management
- The Monitoring of immunization and other RMNCH interventions at community level using Community Health Volunteers (CHVs) to collect data at household levels
- The following weakness and strengths have been identified

Weaknesses

- Inaccurate denominator in most sub counties continues to be a challenge to computing actual coverage figures.

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- In urban counties such as Nairobi County and Mombasa County with slums and large number of undocumented migrants the coverage is persistently low due to the complexity of offering immunization services to these populations.
- In the large cities, nomadic populations and those affected by natural disasters, cause frequent population movements across catchment areas. This further constrain defaulter tracking of clients and distort reported coverage across the catchment areas and counties
- The Outreach session data is currently not well captured in many counties
- Data discrepancy between data sources is a challenge in many health facilities
- Data not systematically used for decision making, especially at all levels due to knowledge gaps and limited resources

These weaknesses are summarized in the table below;

<u>ISSUE NO</u>	<u>WEAKNESS</u>	<u>CAUSE</u>	<u>PROPOSED SOLUTION</u>
Weakness 1 (Data collection, Quality and Reporting)	Low reporting rates, incomplete, inaccurate and handling of data at all levels	<ul style="list-style-type: none"> · Inadequate tools availability at health facility levels · Knowledge gap by staff at all levels on reporting tools · Logistical challenges experienced by health staff that impede delivery of hard copies to HRIOs e.g insecurity, poor infrastructure and natural disasters. · Health staff competing tasks at facility (heavy workload) that results in poor recording (tallying) and prioritization on tools to fill. · Lack of SOPs for immunization reporting tools · Poor data coordination at all levels between MOH, partners and private immunizing facilities. 	<ul style="list-style-type: none"> · Enhance health care workers' skills and practices to improve efficiency in screening for eligible population. · Monthly feedback to subnational level on data quality issues
Weakness 2 (Data collection, Quality and Reporting)	Lack of some key immunization indicators such as cold chain indicators into current reporting tools	<ul style="list-style-type: none"> · Lack of cold chain indicators integration in current reporting tools · Weak and uncoordinated data sets at all levels [Logistics, Service delivery) · Weak connection between public and private health facilities · Lack of availability of some tools at facility levels. 	<ul style="list-style-type: none"> · Policies for pilots/tests/experiments to exist and formation of a Research Committee
Weakness 3 (Data Utilisation)	Lack of systemic data use and decision making at all levels Weak/fragmented data coordination across levels and thematic		<ul style="list-style-type: none"> · Periodic desk review/documentation of key program areas utilised to inform action · Continuous advocacy for data use culture.

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	work streams		
Weakness 4 (Research/ & Surveys)	Optimal capacity by staff to conduct operational research Poor dissemination and adaption/review of findings Inadequate operational research Some research ongoing by partners and MOH	<ul style="list-style-type: none"> Weak coordination on research between partners and MOH Lack of funding for research associated to lack of budget to support the same 	

4.3. Immunisation financing

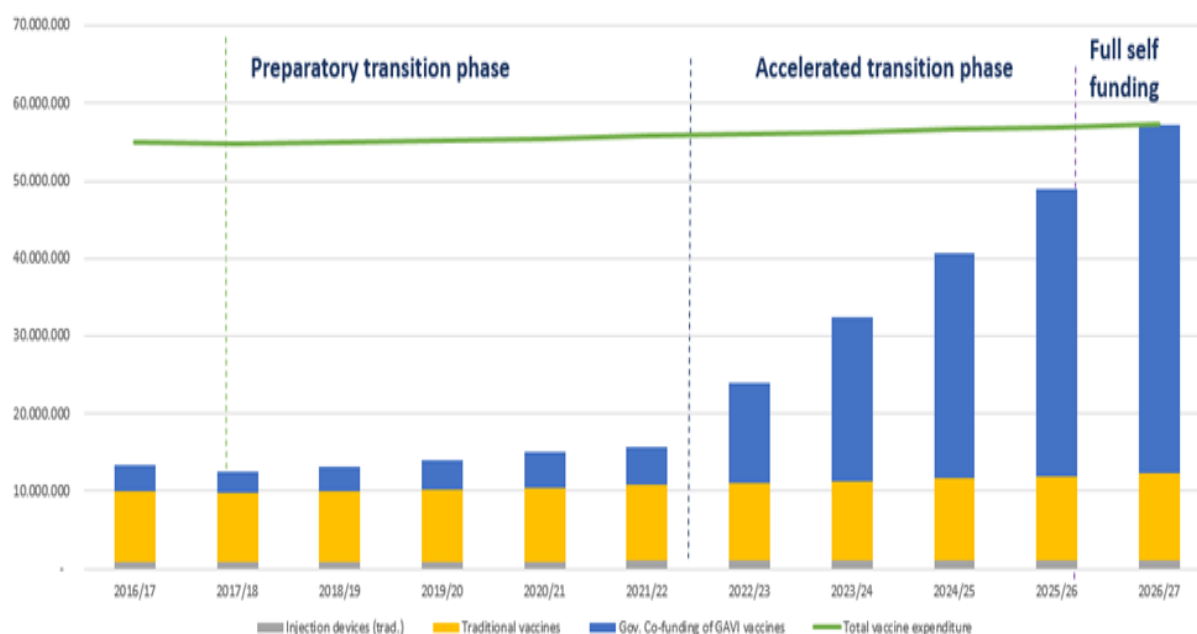
Availability of timely and accurate information for planning/budgeting
<p>The MOH is developing the health financing strategy which provides a roadmap for strengthening of health systems. The strategy will have a focus on primary health care with immunization being a key component.</p> <ul style="list-style-type: none"> In FY 2018/19, a draft costed National Immunization Strategic Plan 2019-2023 (cMYP) was developed. The plan defines the broad agenda of what is required over the next five years in order to ensure a sustainable equitable immunization services for the control, elimination and eradication of targeted vaccine preventable diseases. The immunization program has also included the transition plan for immunization in the Kenya Health Sector Strategic and Investment Plan II (KHSSP II) 2018-2023. This strategic plan provides the Health Sector Medium Term focus and informs the annual ministerial budgeting processes. At the county level, planning is guided by the county integrated development plans (CIDP -2018-2022) and annual development and work plans. All counties have immunization program priorities included in their CIDPs with clear indicators. However, there is varied commitment by counties towards immunization funding <p>Allocation of sufficient resources in national health budgets for the immunization program/services</p> <ul style="list-style-type: none"> Kenya's budget is set out in the Public Financial Management Act revised 2015 and currently under review. At the national level, the medium-term planning framework is called the Budget Policy Statement (BPS) and at the county level, the County Fiscal Strategy Paper (CFSP). The budget formulation process is managed by the Cabinet Secretary (Treasury) and begins with the publication of the Budget Circular in August of every year, where the macro-economic expectations, priorities and processes related to program based budgeting and prioritization of resources are described. The budgeting process follows a Program Based Budgeting (PBB) approach and is informed by sector development plans. Planning and budgeting process at county level links to the national process. However, there is need to ensure institutionalization of the use of the National Immunization Strategic Plan (cMYP) and the Annual Operational Plan to inform budgeting.

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- At the national level, immunization is allocated about 1% of the ministry of health's budget. This budget covers the cost of traditional vaccines, GAVI co-financing and EPI operational budget. The tables below give the breakdown.

Financial Year	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
MOH Budget (Ksh. Million)	45,838.59	60,001.00	65,830.17	72,944.75	99,258.99	104,205.75
Vaccines Procurement (Ksh. Million)	703.00	703.00	703.00	748.00	823.00	933.89
EPI Operational Budget (Ksh. Million)	20.11	20.24	4.58	4.58	4.72	4.86
Total Immunization Budget (Ksh. Million)	723.11	723.24	707.58	752.58	827.72	938.75

- Between 2016/17 and 2018/19, vaccine procurement budget remained constant at Ksh. 703 million. There was an increase in the national MOH immunization budget from Ksh.707,583, 671 (USD 6,985,031) in 2018/19 to Ksh.752,583,671 (USD 7,429,256) in 2019/20. This is projected to further increase to USD 8,170, 989 and USD 9,267,060 in 2020/21 and 2021/22 respectively.
- Kenya is expected to enter accelerated transition phase in 2022/2023. This translates to significant annual increase on the funding requirement towards immunization with the amount expected to rise to about USD 60 million per annum by the end of the accelerated transition phase in 2026/27. Concerted efforts are necessary to ensure that immunization program is adequately funded during accelerated transition phase and beyond GAVI support.



- Counties are responsible for financing non-vaccine components of the immunization program. At the county level, budget allocation towards immunization differs across counties depending on the level of commitment. There is no standardized approach to budgeting for immunization across counties. Instead, components of immunization program are budgeted for under various vote heads within county departments of health.

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- The MOH and partners will work to comprehensively cost and hold sensitization and advocacy forums on financing for the program to key stakeholders, including the counties and national treasury. This is to ensure the financial gaps at the national and county level are addressed.

Timely disbursement and execution of resources

- There is a notable delay in the disbursement of resources that affects timely procurement and distribution of vaccines and vaccine commodities affecting all levels of government. Kenya continues to experience challenges with cash flows affecting key programs and operations. As a result, the National Treasury makes delayed disbursements to various government agencies. The cash flow issues have affected critical functions of the ministry of health including immunization. To mitigate the cash flow situation, Kenya has relied on the Vaccine Independence Initiative (VII) credit facility to ensure uninterrupted supply of vaccines. The current VII ceiling is USD 4.5 million. However, the cash flow situation has also affected VII replenishments.
- Counties are equally affected by the delayed disbursement of funds from the national government. Significant proportion of county budgets are funded by national government transfers with counties complementing with own-source collection and support from partners. The county treasury manages all county revenue and controls expenditure by all the county departments. County department of health's (CDOH's) operations are also affected by the cash flows issues with immunization programs also being affected. As a result, there have been occasional stockouts in immunization syringes and documentation tools in some counties with many counties not attaining their immunization targets.

Adequate reporting

- At national level, financial reporting by the program is timely as per the program reporting tools for both partner funding and GOK. The GOK funding is reported through the Integrated Financial Information Management System (IFMIS). IFMIS helps to generate both national and county expenditure reports. However, the quality of financial reporting is still a major challenge facing the immunization program especially at the county level. It is still difficult to know how much is invested and spent on immunization. There are weak mechanism to track immunization budget allocations and expenditure at both levels of government. Immunization expenditure tracking helps to identify the baseline level of investment required to meet the needs of the immunization program.

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5. PERFORMANCE OF GAVI SUPPORT

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

UNICEF received contribution from GAVI in April 2017 on behalf of the Ministry of Health. The Gavi HSS Grant implementation however fully commenced in November 2017 after the government had addressed most of the issues outlined under the GMR. Implementation rate was affected following appointment of new County staff after 2017 elections and the polio outbreak response in 12 counties, 6 of which were Gavi HSS target counties, following isolation of polio virus from the environment in April 2018. In 2019, competing priorities have affected the implementation of HSS including PCV 10 switch, Yellow fever introduction to two additional counties, Malaria vaccine introduction to 8 counties, HPV introduction to all 47 counties. This to a large extent has affected the implementation of the HSS grant activities.

Below is summary of grant utilization on programmable funds:

Fund utilization by Gavi HSS Objectives (October 2019)

<i>Objective</i>	<i>Approved Budget</i>	<i>Expenditure plus commitments</i>	<i>Balance</i>
Objective 1	168,738.48	194,627.21	(25,888.74)
Objective 2	3,265,825.75	1,955,952.02	1,309,873.56
Objective 3	1,418,729.68	1,227,925.52	190,804.09
Objective 4	785,700.42	488,236.65	297,463.73
Objective 5	86,948.33	170,606.71	(83,658.38)
Unicef-Grant management	1,084,134.00	1142,128.42	(57,994.48)
Grand Total	6,810,076.66	5,209,476.53	1,600,599.77

The balance from objective 2 is mainly from balances in motor vehicle procurement which is proposed to be re-programmed into other activities as shared /discussed with Gavi. In addition, micro-planning activity which is also under objective 2 is planned for 2020. Objective 4 activities are planned for the last quarter of 2019 and the funds have already been committed. Program coordination activity went beyond the stipulated budget due to more engagements with counties at the inception of the project.

Achievements against agreed targets

There has been improvement in Penta-3 performance in 2019 compared to 2018. All the GAVI supported counties reported coverage of above 64% for the period between January to August 2019 with half achieving coverage of 80% and above. Mandera has improved from 63% coverage in 2018 to 76% in the current year 2019, Wajir has improved from 64% in 2018 to 67% in 2019. Laikipia has improved from 79% in 2018 to 83% 2019 and Bomet achieved coverage of 67% compared to 63% in 2018.

The 17 Focus Counties reported a drop in the number of unimmunized children between January-August 2019. Nairobi which is one of the GAVI supported counties has the highest target population of 154,915 for 2019 and have achieved an immunization coverage of 87% for penta-3 from January-August 2019 and still has the highest number of unimmunized children.

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How Gavi support is contributing to address the key drivers of low immunisation outcomes

The support from Gavi address the following drivers to low immunization in Kenya: inadequate funding by counties for outreaches, low health worker capacity to deliver quality services, stockout of vaccines at the sub-national level, low demand for vaccination services and sub optimal political good will.

The following activities have contributed to strengthening the Epi program and contributing to improved coverage in 2019:

- High level political engagement with the President to rally the country leaders to address low immunization performance
- Support for outreach services to underserved areas
- Support of county and subcounty teams to conduct continuous support supervision with on job mentorship and training of frontline health workers to deliver quality services including tracking of missed children
- procurement of cold chain equipment- this increased the number of immunizing health facilities as well as replacing non-functional and obsolete cold chain equipment thereby helping reduce cold chain equipment break downs
- Vaccine forecasting has helped the national program and counties to plan for their vaccines to help minimize vaccine stock outs
- With the Procurement of utility vehicles to selected counties and motorcycles to all the 47 counties, transportation and distribution of vaccines from regional/ sub county depots to health facilities is expected to improve.

Relevance of activities selected

The activities planned under HSS remain relevant though after thorough review several activities are proposed to be re-allocated to other activities based on priorities and the feasibility of implementation of prior activities. The revised and balance of funds re allocated are proposed to be reprogrammed to underfunded priority activities identified during the Joint Appraisal including expanding support to other counties in need. The country suggests that the funding for MLM and balance of funds from procurements that have been concluded be re-allocated to expand operational level trainings and REC microplanning to non-Gavi HSS counties to improve delivery of quality services. Other activities that need additional funding are county engagement, planning and review meetings and program coordination to allow the NVIP program officers to engage and provide technical assistance to the county implementation of HSS activities seamlessly. With the GAVI contribution of US\$7,354,882.40, of which US\$6,810,076.66 is programmable to support Immunization Health System Strengthening (HSS). Of the programmable amount, US\$ 4,960,326.16 utilized to date.

Planned budget reallocations

There have been balances in the first year of the Gavi HSS implementation and re-prioritization from some activities which are proposed to be re-programmed to other activities based on NVIP priorities. A total of US\$ 1,849,750.50 is proposed to be re-allocated (*details of the proposed re-programming and the budget are attached as annex*). This exercise was completed during a country mission in June 2020 and finalized in the newest Gavi budget template in Q4, with the allocation approved by the Gavi country team.

*If applicable, briefly describe the usage and results achieved with the **performance based funding (PBF)** the country received. What grant performance framework (GPF) metrics will be used to track progress?*

Not applicable

Complementarity and synergies with other donor support (e.g. the Global Fund, Global Financing Facility)

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The Kenyan government has come up with “the big 4 development agenda” to be achieved by 2022. Among these four agendas is the Universal Health Coverage which focuses on improving access to quality and affordable health services. Immunization is one of the priority interventions identified under this agenda. Gavi HSS support to the immunization program to improve coverage and reduce barriers and inequities to immunization is therefore in tandem with the achievement of universal health coverage. Through Gavi support, the Health Information system has been enabled to undertake population denominator harmonization to create harmony across all programs.

The program is working with counties to create synergy with the World Bank funded “Transforming Health Systems”(THS), an initiative to counties to improve reproductive, maternal, neonatal, child and adolescent health. The program working together with World Bank and UNICEF procured cold chain equipment to support counties to improve immunization services. A joint mission is planned for early 2020.

Private Sector and INFUSE partnerships

Nexleaf in collaboration with NVIP is in the process of implementing remote temperature monitoring to all the sub county stores as part of the INFUSE project. The devices are in the country the M2M (Machine to Machine) SIM cards have been secured from Safaricom. In Nairobi county an addition 40 devices were added to the RTM dashboard inventory based on the expansion of CCE at the sub county supply chain capacity and inclusion of freezers through the CCEOP and World Bank support. The planned activities include cluster training of the sub-county nurses and biomedical engineers. Ongoing activities also include the integration of RTM data into the Chanjo eLMIS. Approval for data sharing to the global platform is still pending.

Living goods main focus areas are to increase demand for immunization services through the strengthening of community engagement in immunization and improve data quality by use of mobile technologies in supporting community health strategy in selected counties.

Civil Society Organization (CSO) participation

GAVI support to CSOs have led to high level engagements with legislators at National and county level lobbying for better support for the immunization program. The engagements have also contributed to the counties and national accountability for immunization program ensuring the immunization services are prioritized. KANCO held 4 Parliamentary health, Budget and Finance committee meetings with each meeting having representation of more than 6 Members of parliament. There was a Senate Health committee meeting in which 5 members attended and the main aim was discussing about their oversight role and accountability on utilization of public funds. Through this engagements KANCO has been able to garner support for the budget for immunization and also give updates to parliamentarians on the immunization status of the Country. The Parliamentarians were also briefed on the GAVI transition and shown the map to ensure that by 2027 Kenya can be able to sustain their immunization status.

KANCO held a women’s representatives meeting in which the main objective was to recruit them as immunization champions or ambassadors for their counties of representation. We had 12 participants of whom 3 were County women representatives, 1 Senator and 8 members of parliament.

KANCO held County meetings with the Members of the County Assemblies from 13 Counties of focus and met with more than 200 Members of County Assembly from the Health, Finance and Budget committees. This led to huge successes as in 3 counties a CHV bill was drafted and passed by the MCAs and now the CHVs in this county get some allowance from the county governments. There has been increased appreciation of the Community Strategy due to continuous engagement with the MCAs.

There has also been increased media coverage on immunization matters with more prioritization of immunization stories by the media and engagement with other key stakeholders including religious leaders.

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Through engagement of more than 300 religious leaders and over 150 journalists immunization hesitancy has decreased and there are more people in the communities seeking immunization services.

CHV's engagement and capacity building have improved immunization services through community mobilization and have been able to trace defaulters and bring back to care more than 1000 children who missed immunization.

Progress of the HSS grant implementation

Objective 1	
Objective of the HSS grant (as per the HSS proposal or PSR)	To accelerate strong political engagement, improve governance and financial sustainability for immunisation outcomes in line with devolution by 2019
Priority geographies / population groups or constraints to C&E addressed by the objective	<p>47 counties</p> <p>National and 47 county governments are clear on their roles and responsibilities regarding management of EPI services in a devolved system</p> <p>Each of the 17 focus counties have at least 1 CSOs actively engaged in EPI related activities.</p>
% activities conducted / budget utilisation	<p>80% as planned</p> <p>115% % utilizations of the budget due to the underestimating of the budget for advocacy activities</p>

Joint Appraisal (full JA)

<p>Major activities implemented & Review of implementation progress including key successes & outcomes / activities not implemented or delayed / financial absorption</p>	<p>This were both National and County High Level Engagements</p> <ul style="list-style-type: none"> • Engagement with Members of Parliament health, budget and Finance: meetings Held with the members of parliament from the Parliamentary Health Committee, Budget committee and Finance and Planning Committee, Engagement with the Senate Health Committees, Engagement with the Women Representatives: 1 meeting held with elected women leaders ,members of county Assembly engagement: KANCO has been able to engage over 200 policy makers including Members of the County assemblies and Decision Makers <ul style="list-style-type: none"> • County Health Management Teams engagement involvement • Continued engagement with counties through the MOH, CSO and partner organizations to increase collaborations at all levels • Engagement with the Members of the Parliamentary health committee and women parliamentarians through KANCO forums to advocate for the provision of immunization services • HACT orientation re-training conducted in several counties through the National HSS accountant to ensure consistent and accurate reporting on the HSS grant • Ranking and awarding of the best County EPI technical implementers during the 2nd Intergovernmental Immunization Consultative Forum held in February 2019
<p>Major activities planned for upcoming period (mention significant changes / budget reallocations and associated changes in technical assistance¹²)</p>	<ul style="list-style-type: none"> • Engage local institution of higher learning to Build the capacity of NVIP Management through Competency Based Management Training Courses for three staff with Internal Placement (From within MoH)
<p>Objective 2:</p>	
<p>Objective of the HSS grant (as per the HSS proposal or PSR)</p>	<p>To achieve equitable access to and utilization of routine immunization services in 16 focus counties by 2019</p>
<p>Priority geographies / population groups or constraints to C&E addressed by the objective</p>	<p>17 priority counties</p> <ul style="list-style-type: none"> • Caregivers in the 17 focus counties are aware of and adhere to the national immunization schedule • Health-workers adhere to immunization guidelines including reporting on AEFIs. • All health facilities in target counties implementing micro plans to reduce numbers of unvaccinated children • Children in difficult to reach populations are reached through outreaches and defaulter tracking strengthened

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	<ul style="list-style-type: none"> • Communication plans are developed in the different counties and media engagement are strengthened • Difference in average Penta 3 Coverage in the 16-focus county and National is reduced
<p>% activities conducted / budget utilisation</p>	<p>Seventy-six per cent of planned activities for year 1 were completed. Of the allocated budget for year 1, 60% of the funds were utilized.</p>
<p>Major activities implemented & Review of implementation progress including key successes & outcomes / activities not implemented or delayed / financial absorption</p>	<ul style="list-style-type: none"> • Operational level trainings have been conducted in 13 out of 17 counties. 4 planned in the last quarter of 2019. This has led to a total of 910 health care workers trained • Media café conducted • CSO engagement during Africa vaccination week • Capacity building of the CHVs on defaulter tracking • Increased financing towards support supervision • During the Africa vaccination week, accelerated outreaches were conducted, sensitizations, morning shows, radio shows done.e.g an Outreach in Gando where 700 children reached(299 children defaulters reached) • LG-MVIP IEC materials -production and dissemination • Drafted a RI documentary draft • IEC materials developed during the AVW and • Re branding of the immunization program done • KAP assessment done in 17 counties • CHV guide completed • Risk communication plans finalized and used it in Elgeyo Marakwet • Mass media campaigns done on routine immunization • Market day event for mobilizations were implemented Nairobi, Eldoret, Narok, Kisii • Interpersonal communication training conducted • Media sensitization on the new vaccines done and Religious media and leader’s sensitization
<p>Major activities planned for upcoming period (mention significant changes / budget reallocations and associated changes in technical assistance¹²)</p>	<ul style="list-style-type: none"> • Print job aids (Flip Chart) for CHVs on immunization in all 47 counties • Expand support to 30 Non Gavi Counties with a focus on underserved and marginalized urban populations by implementing specific and contextualized REC strategies that responds to the needs of the urban poor and working class • Engage/ Contract Local Training Institutions (Kenya Paediatric Association, University of Nairobi, Moi University, Kenya Medical Training College) to conduct Advanced and Basic Level training for 60 HCWs in each of the 21 Low Performing Non Gavi Focus Counties • Finalize the communication plans already developed
<p>Objective 3:</p>	

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Objective of the HSS grant (as per the HSS proposal or PSR)	To strengthen immunization supply chain and logistics system (iSCL) for availability of quality vaccines and immunization supplies at national and subnational levels by 2019.
Priority geographies / population groups or constraints to C&E addressed by the objective	National
% activities conducted / budget utilisation	For year 1,86.5% of allocated funds were utilized.
Major activities implemented & Review of implementation progress including key successes & outcomes / activities not implemented or delayed / financial absorption	<ul style="list-style-type: none"> • Vehicle procurements done • Continuous planned preventive maintenance done in all the 47 focus counties • Cold chain procurement and distribution • Sensitization of biomedical engineers
Major activities planned for upcoming period (mention significant changes / budget reallocations and associated changes in technical assistance ³)	<ul style="list-style-type: none"> • Strengthen Immunization Supply Chain Management and Information resources through procurement of an open source LMIS with linkage to and creation of an Immunization data repository that enables data storage, sharing, quality for all partners with support to key NVIP computer applications to improve visibility, transparency, accountability, traceability and effectiveness, through a local University- Jomo Kenyatta University for sustainability • Restoration of the North Eastern Regional Vaccine Depot in Garissa • Cold Chain Logistics Procurement (CCEOP Contribution) and Distribution

Objective 4:	
Objective of the HSS grant (as per the HSS proposal or PSR)	To strengthen immunization data management and information systems for timely decision making at national and subnational level by 2020

Joint Appraisal (full JA)

<p>Priority geographies / population groups or constraints to C&E addressed by the objective</p>	<p>National</p>
<p>% activities conducted / budget utilization</p>	<p>Funds utilization for year 1 was 66.2%</p> <p>All planned M and E activities for the year were conducted</p>
<p>Major activities implemented & Review of implementation progress</p> <p>including key successes & outcomes / activities not implemented or delayed / financial absorption</p>	<ul style="list-style-type: none"> • M&E framework and data improvement guidelines developed • Development of data SOPs
<p>Major activities planned for upcoming period</p> <p>(mention significant changes / budget reallocations and associated changes in technical assistance)</p>	<ul style="list-style-type: none"> • Review and update DQIP • Conduct DQSA in the 47 focus counties • Sensitization on the Immunization scorecard • Mapping of under one year • Support supervision to the 47 counties • Roll out of Data SOPs

	OBJECTIVE	ACHIEVEMENT TO DATE
1.	<p>To accelerate strong political engagement, improve governance and financial sustainability for immunization outcomes in line with devolution by 2019</p>	<ul style="list-style-type: none"> • Program visits and mentorship to the 17 focus counties • Procurement of vehicles, desktop, laptops • Advocacy with national and county parliamentarians on immunization services done

Joint Appraisal (full JA)

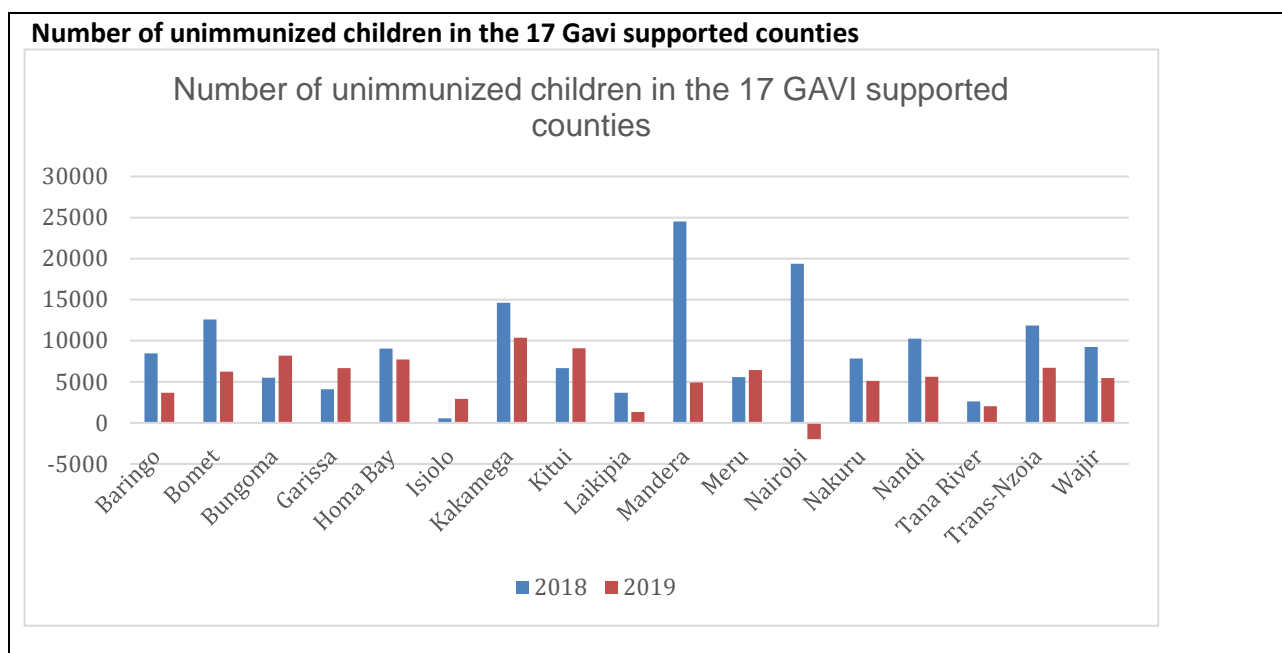
Intermediate result	Each of the 17 focus counties have at least 1 CSOs actively engaged in EPI related activities	The engagement process is through KANCO and three implementing partners have been engaged to implement advocacy activities to address arising EPI issues viz; SIMAHO, and ACK MT KENYA
Intermediate result 3	Sufficient funds for immunization at national and county level	Counties have had METs support, operational level training, supportive supervision.
Objective 2:	To achieve equitable access to and utilization of routine immunization services in 16 focus counties by 2019	<ul style="list-style-type: none"> ● Conduct workshop to adopt National communication plan of action including risk communication in the context of devolution completed ● Conduct workshop to develop County communication plan of action including risk communication for the 16 focus counties-completed ● Conduct rapid assessment in focus counties to inform the communication plan-completed ● Train Subcounty Social mobilizers as TOTs on IPC in all 16 focus counties - completed ● Production of media messages on immunization in 18 languages (2 national plus 16 local languages)-on going
Intermediate result 2	Health-workers adhere to immunization guidelines including reporting on AEFIs	<p>Operation Level Trainings conducted in 14/17 focus counties (910 nurses trained)</p> <p>Operational level Trainings for the remaining counties 4/17 conducted, in Wajir, Isiolo, Meru, Homabay)</p>
Intermediate result 3	All health facilities in target counties implementing micro plans to reduce numbers of unvaccinated children	Currently all health facilities are implementing after the operational level training. Other Counties also implementing through other support (Non HSS)
Intermediate result 4	Difference in average DPT 3 Coverage in the 16 focus county and National is reduced	This is shown by the comparison of the data between Jan to Aug 2019

Joint Appraisal (full JA)

Objective 3:	To strengthen immunization supply chain and logistics system (ISCL) for availability of quality vaccines and immunization supplies at national and subnational levels by 2019	<ul style="list-style-type: none"> ● Cold chain equipment procurement (GAVI CCEOP co-pay) -completed ● Support all sub-county medical engineers undertake planned preventive maintenance still on going ● Conduct forecasting review meeting- completed ● Vehicle and boat procurement-completed
Objective 4:	To strengthen immunization data management and information systems for timely decision making at national and subnational level by 2019	<ul style="list-style-type: none"> ● Develop immunization scorecard using the National and County RMNCAH tool to promote accountability for results. ● Support the Counties to carry out support supervision in their sub Counties (Assist in drafting of budgets). ● Conduct immunization performance review and feedback at national and County level to improve coordination. ● Finalization of M&E Framework
Intermediate result 1	Improved data quality assessment scores in 16 counties	<p>Data quality self-assessment is done- the sensitization meeting of the national officers</p> <p>Data quality self-assessment to the counties is scheduled</p>
Intermediate result 2	Regular National and sub-national performance reviews conducted	Performance review has been done
		Development of RMNCH Score card done

The number of children aged below one year who have not received the recommended 3 doses of Penta vaccine has been consistently reducing over the years nationally from 499,753 in 2016 to 177,727 by the end of October 2019. The five counties contributing the largest number of un-vaccinated children in the country are: Kakamega (10,388); Narok (10,053); Kitui (9,089); Bungoma (8,176); Homa Bay (7,709). The trend in reduction in the number of unvaccinated children is reported across many counties with nine Gavi focus counties reporting decline between 2018 and 2019. Mandera County reported the most dramatic drop in number of unvaccinated children which mirrors the significant increase in immunization coverage. The following counties reported increased numbers of unvaccinated children: Kitui, Bungoma, Isiolo and Meru.

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5.2. Performance of vaccine support

Malaria Vaccine Introduction Pilot

In September 2019, Malaria vaccine implementation pilot began in 8 counties (Bungoma, Busia, Homabay, Siaya, Migori, Kisumu, Vihiga and Kakamega) targeting 279,759 infants.

All counties began vaccination activities from 16th to 20th September 2019, except for Kisumu County whose healthcare workers were on strike. The health workers resumed duty in October 2019 and began vaccinating. Post Launch Monitoring Visits were conducted in September 2019 and found adequate malaria vaccines and related supplies, documentation tools and social mobilization materials in all the targeted sub counties at the service delivery points. There was high acceptance and demand of the vaccine by the caregivers. No serious adverse events have been reported

All the immunizing health facilities including public hospitals, Private and faith-based health facilities are administering the vaccine. A total of 533 health facilities are administering the malaria vaccine.

HPV Vaccine Introduction

Nationwide introduction of HPV vaccine was officially launched by the Head of State in October 2019. The Vaccine is now being offered Nationally alongside other Routine Infant Vaccines in ALL Counties, through an existing network of over 9,000 Public, Private, Faith Based and NGO health facilities to 800,000 girls, who are currently 10 years old and subsequently to all girls as they turn 10 years in future.

The public response is immense, with high demand for the vaccine. The Ministry of Education was engaged and teachers were sensitized on the HPV vaccine. Most counties held their launches in October 2019, a few counties were delayed due to logistical challenges that resulted from heavy rains. All 47 counties have so far held ceremonial launches to further mobilize communities for vaccination

Yellow Fever Vaccine Expansion

Following the 2016 yellow fever risk assessment, Kenya expanded yellow fever vaccination to two additional counties- Turkana and West Pokot in May 2019. Health workers from the two counties were trained and vaccines and related supplies (including social mobilization materials) were distributed to the two counties. The program continues to monitor coverage of the vaccine.

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PCV 2-dose to 4-dose formulation switch

The country conducted a switch in the formulation of Pneumococcal Vaccine from the 2-dose formulation to the 4-dose formulation in April 2019. The switch was conducted nationwide through face to face training and through job aids. Stock monitoring was conducted and balances from low volume facilities were moved to high volume facilities by subcounty public health nurses.

Meningococcal A Supplemental Immunization Activity

The country conducted a Meningococcal A SIA in June 2019 which was carried out in five high risk counties namely Turkana, West Pokot, Marsabit, Wajir and Mandera. The total targeted population was 3,116,626 and the campaign achieved a coverage of 82%.

Lessons learnt

Lessons were learnt across all the introduction and switches done.

- Proper planning is very key in terms of activity days, trainings, logistics supply and distribution and the roll out dates
- The Men A SIA was an opportunity to sensitize the community on uptake of other immunization services.
- Key challenges included insufficient budget and external pressure. In the future campaign it will be important to put into considerations the vastness of a county, human resource available and how the challenge of human resource can be handled, the topography of the county and the different cultural dynamics in each county.

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

Following a Cold Chain Inventory (CCI) in 2016-2017, several gaps in the country's cold chain infrastructure were found, including;

- 18% (1,245 out of 6,911) of immunizing health facilities did not have cold chain equipment (CCE)
- Only 19.9% (1,186 out of 5,972) of equipment at health facilities was PQS (Performance, Quality and Safety) compliant. No equipment present was Grade-A freeze protected.

In line with the Cold Chain Equipment Rehabilitation Plan (CCERP), Kenya was a successful applicant to Gavi's Cold Chain Equipment Optimization Platform (CCEOP).

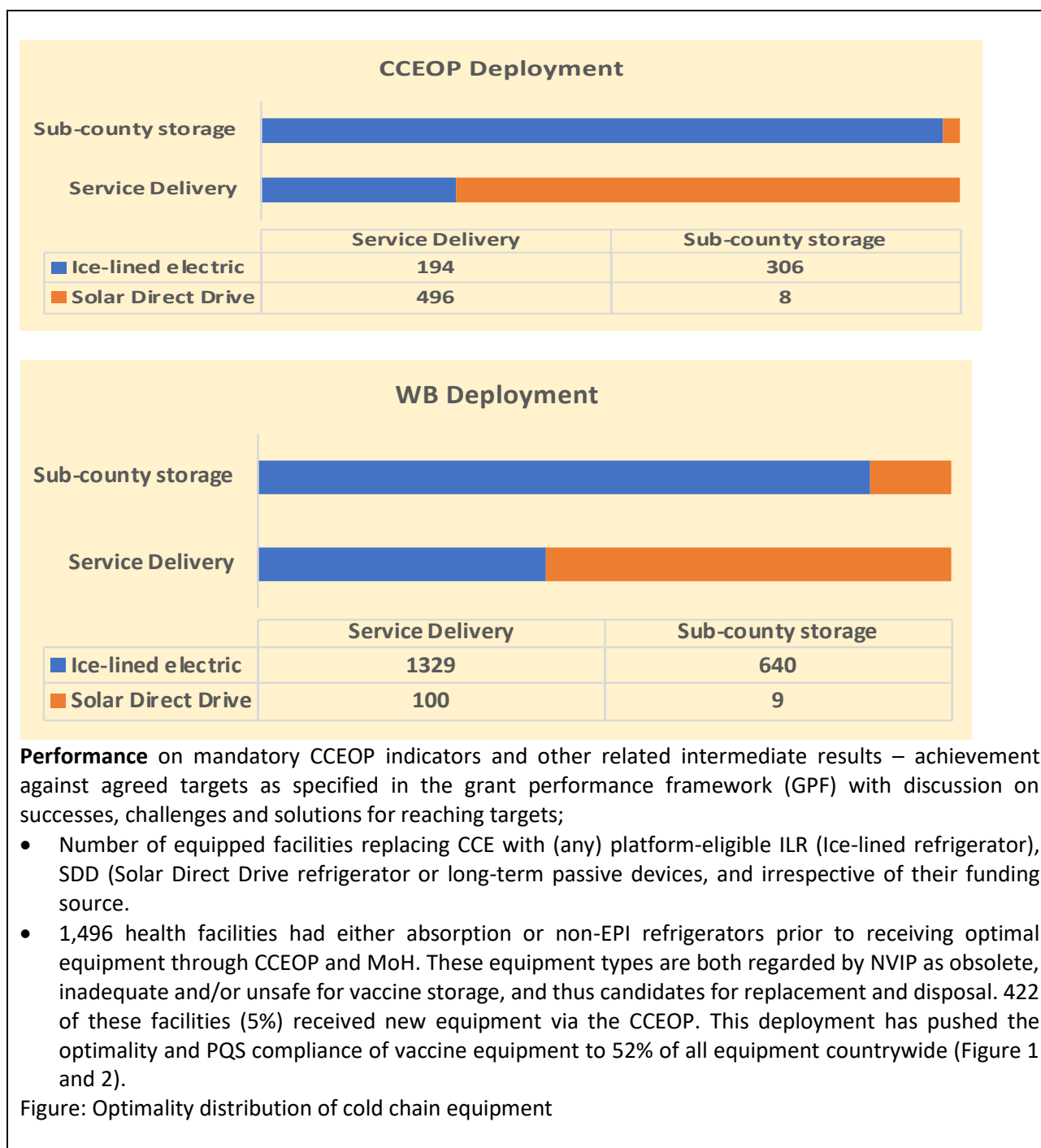
In 2018, Kenya's Ministry of Health (MoH) received the first year's consignment of its CCEOP procurement. This consisted of 1,004 refrigerators (500 electric, 504 solar), deployed to both service delivery points (690 units) and sub-county storage points (314 units).

The priority of this first-year deployment was;

1. Addressing all capacity gaps at the sub-county storage level nationwide.
 - a. While all sub-county stores contained some storage capacity, significant numbers (82%) were obsolete or non-EPI equipment.
2. Addressing capacity gaps at health facilities;
 - 17 high priority counties with a disproportionate representation of unimmunized children were given first priority, but all counties were recipients of this distribution.

These procurement numbers reflect a significant reduction from initial planned procurement figures due to a number of factors. As such, this necessitated the MoH to obtain additional funding from a World Bank (WB) loan to adhere to the Cold Chain Rehabilitation Plan. This resulted in the procurement of an additional 2,078 refrigerators to supplement the CCEOP procurement, and remain in line with CCERP targets.

Figure: Equipment deployment numbers by funding source and supply chain level



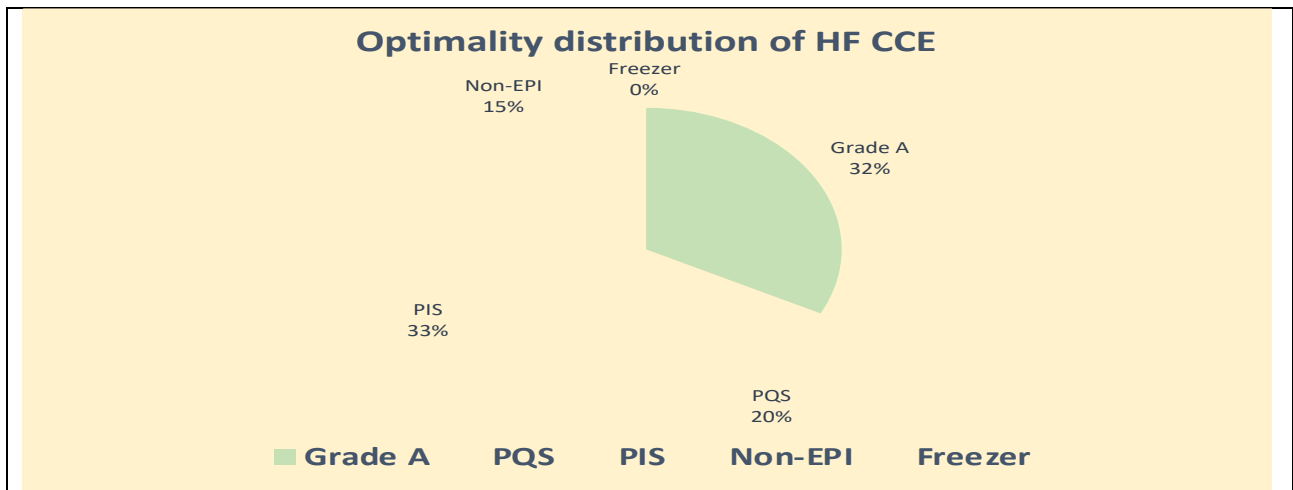
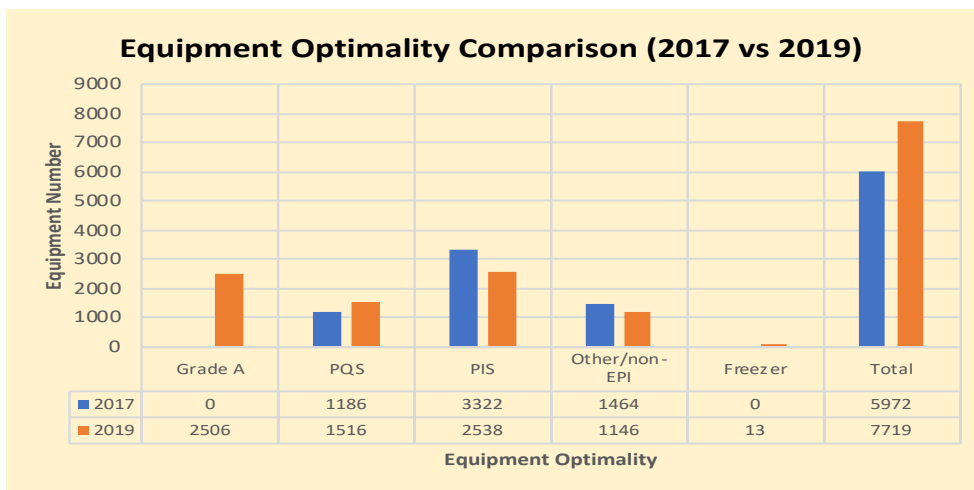


Figure: Progression of equipment optimality, 2017-2019

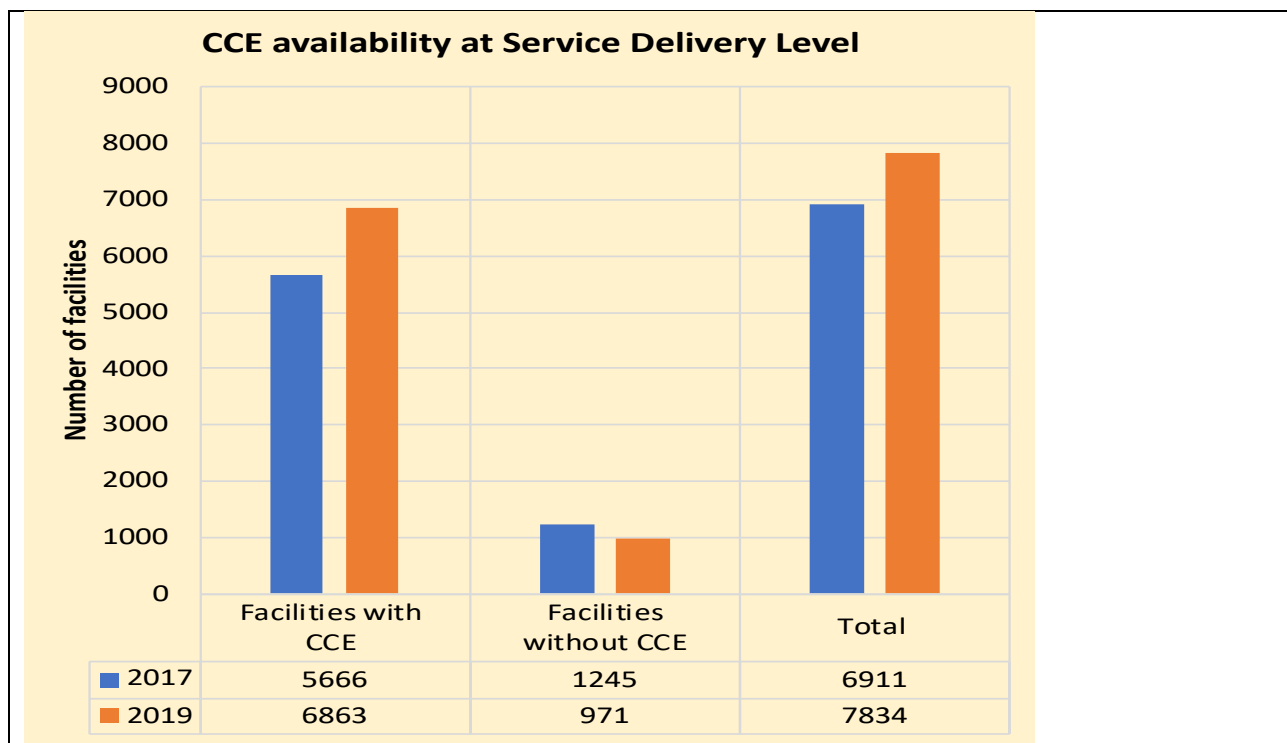


Number of facilities previously without equipment that is equipped with platform-eligible equipment (i.e. ILRs, SDDs or long-term passive devices).

- 373 health facilities out of 7,834 (5%) had no cold chain equipment prior to being beneficiaries of the CCEOP and MoH-WB deployments. Availability of equipment prior to these deployments stood at 82% of facilities and 100% of sub-county depots. Significant numbers of these facilities and storage points however were reliant on non-EPI or obsolete CCE, or equipment present was not of sufficient capacity to serve their requirements. The priority for the 1st year of deployment was addressing capacity gaps, with an emphasis on 17 priority counties that harbour 42% of unimmunised children. By targeting these counties, greater impact and less cost could be achieved by addressing larger gaps in critical regions.
- Current equipment coverage at facilities stands at 88%, compared to 82% in 2017. This 2019 figure however represents a much greater proportion of PQS equipment (figure 3).

Figure: CCE availability at service delivery level

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Percentage of equipped facilities with functioning cold chain evidenced through Temperature Alarm tracking: Frequency and duration of temperature excursions during review period to determine non-functioning equipment

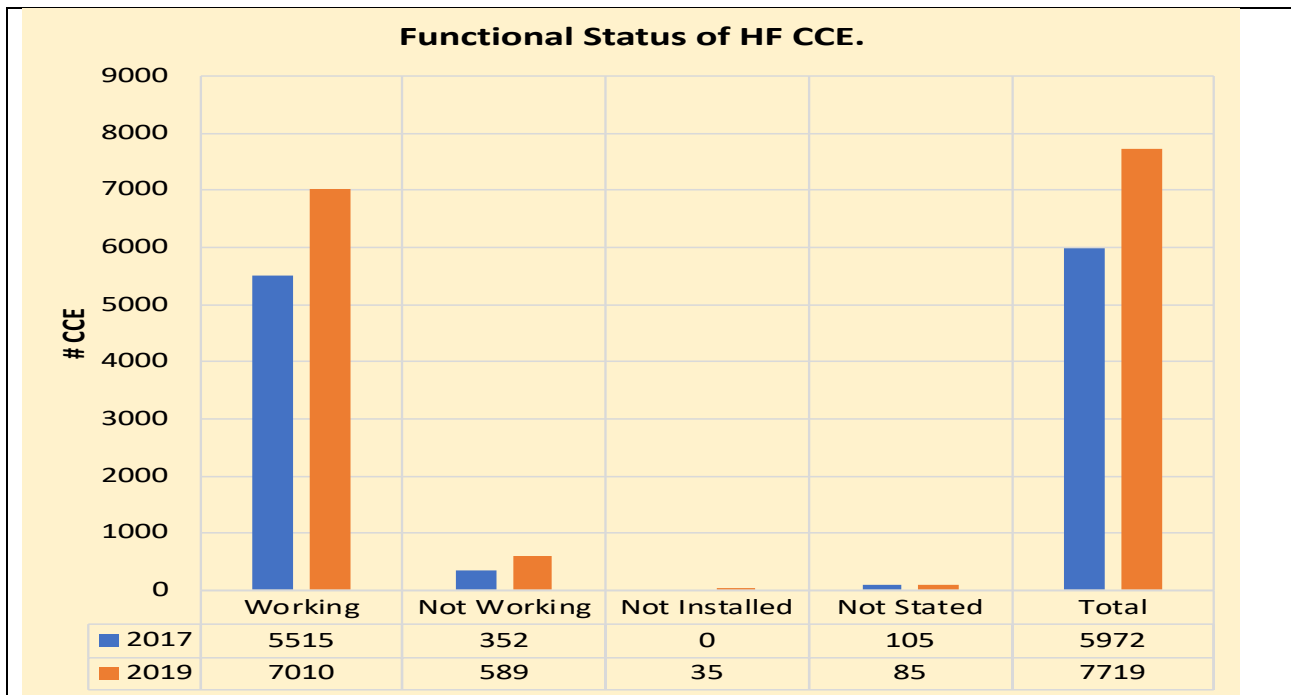
- All vaccine storage refrigerators nationwide have temperature monitoring devices (Fridge-Tag 2e) installed. While data from these remains inaccessible to the national program, temperature monitoring and excursion response are carried out at the specific service delivery and storage points hosting the equipment.
- Continuous Temperature Monitoring Device (CTMD) alarm tracking data currently remains inaccessible to NVIP, as a significant number of recently procured equipment under CCEOP and World Bank (65%) does not have a built-in remote temperature monitoring solution.
- Of the 546 B-Medical devices available on a central dashboard (VacLog), 517 are currently functional (temperature between 2-8 degrees).

Functional status of cold chain equipment: Ratio of functional CCE by national and county level

- Current equipment functional rate is 91% (source is 2019 CCI); this is slightly lower than 2017's 92%. It however represents a greater number of refrigerators (7,010 out of 7,719) than in the previous inventory (5,515 out of 5,972).

Figure: Functional status of HF CCE

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- Number of health managers trained and dispatched for supply chain oversight function and rate of reported monitoring activities.
- Prior to CCEOP deployment, 70 medical engineers from all 47 counties were provided with training on the installation, management and maintenance of the new equipment. However, further monitoring and supervision of their activities is currently pending planning by NVIP.

Implementation status

- number of equipment installed / waiting installation.
 - As of Q2 2019, all CCEOP equipment had been deployed and commissioned as assigned, with a negligible number of deviations, for which there were mitigating circumstances.⁴
- user feedback on preventive maintenance training, refrigerator performance, etc.
 - Some facility staff were unhappy with the lack of ice packs/freezing potential in the equipment they received. While initial plans called for a greater distribution of freezing capacity, cost-cutting measures necessitated removal of planned deployment numbers of dual units.
 - Some facility staff were hesitant to use new equipment because it did not come with immunization trays, provided in the past by NVIP. These are increasingly not part of CCE procurement bundles, forcing facility staff to create non-standard solutions and storage practices. Standardization and mass production of the trays is hindered by the differing profiles and capacities of equipment by manufacturer.
 - There is currently a very low frequency for decommissioning and disposal of old equipment. In addition to other procurements by the counties, CCEOP and MoH equipment procurements and deployments have greatly increased the number of CCE in facilities and storage sites. As staff at these points are unable to make unilateral decisions on disposal of equipment, this has created a significant amount of obsolete and/or sub-optimal equipment in many sites. 1,746 recipient health facilities, and all 291 sub-county stores, had cold chain equipment prior to recent nationwide deployments.
- any challenges / lessons learned.
 - Initial procurement plans called for the purchase of 2,448 refrigerators for the 1st year of the CCEOP, prioritising all storage levels, as well as facilities with insufficient storage capacity, particularly in underperforming counties. However, a number of factors led to a significant adjustment in this number of equipment;
 - ◆ The service bundle cost and handling fees were greatly under-estimated, subsequently accounting for a significant portion of the country's allocated co-pay.

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- ◆ Equipment cost greatly appreciated in the period between application and procurement, with adjustments varying between 24% to 54% per equipment. This similarly necessitated a significant reduction in planned procurement figures in order to remain within assigned budget.

In order to keep in line with the CCERP, supplementary funding was obtained via a World Bank (WB) loan that served to address the gaps in procurement that could no longer be covered by the first year of the CCEOP. However, this only addressed the issue temporarily, as available co-pay funding for subsequent years could not meet the requirements of the CCERP if the procurement model was to be maintained.

NVIP and partners carried out an assessment into the cost-effectiveness of the CCEOP's service bundle, using the parallel MoH deployment as the control. This aimed at assessing the approaches and guide a decision in transitioning to a country-led (de-linked) deployment model.

The assessment found supplier (CCEOP) and country-led (WB-MoH) models performed at a similar level in terms of quality. However, the CCEOP model was 120 days faster and roughly 2x more expensive than the country-led model. This evidence enabled the submission of a proposal to opt for a country-led deployment model for CCEOP Year 2.

A significant number of procured equipment models were found to be highly susceptible to freezing excursions. As such, it was necessary to review and adjust the procurement models for subsequent years of the platform, pending critical improvements in the culpable models.

Contribution of CCEOP to immunisation performance (i.e. how CCEOP is contributing to improving coverage and equity);

- The replacement of gas-powered absorption refrigerators with SDD units has provided counties and their respective storage and service delivery points with a significant cost-cutting solution, as vaccines can now be stored safely with no risk of exhaustion of a power source, or limited funding for replenishment.
- A national training in support of the deployment resulted in the training of at least one technician per county. As technical capacity and human resources in cold chain repair and maintenance has been a challenge and, in some counties, lacking, this served to mitigate both limitations significantly, providing counties with additional personnel to respond to repair and maintenance issues in their cold chain. This impact transcends the deployment, as significant numbers of equipment can now be responded to similarly.
- With 373 facilities receiving new, previously unavailable vaccine storage capacity, provision of immunisation services can now be extended to more geographies and create greater impact in coverage; remote, immunising facilities in receipt of new CCE no longer have to be reliant on secondary facilities or sub-county storage points to provide storage capacity. This results in a greatly reduced logistics burden on the counties' resources.
- Procurement of platform compliant equipment improved access to immunization services.
- While the benefit of the new equipment will likely become more apparent over time, it appears that an immediate benefit has been seen; despite 4 new vaccine introductions this year (Yellow Fever, Malaria, HPV, and a TT/TD switch), capacity to store and maintain potent vaccines has not been a challenge, likely due to the expanded storage capacity associated with the new equipment.

5.4 Financial management performance

The Government is currently receiving Gavi HSS and Vaccine introductory grant through UNICEF Kenya country office. The country is also implementing the GMRs.

⁴ 35 units were inventoried as "Not installed", but located at service delivery level. These are equipment procured outside the CCEOP (county procurement or WB-MoH), and at the time were pending installation by responsible county technicians.

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Grant utilization is covered in section 4.3 on immunization financing and section 5.1

5.4. Technical Assistance (TA) (progress on ongoing TCA plan)

UNICEF was supporting program implementation on coverage and equity, health information, ACSM and health financing and sustainability. The specific activities include operationalization of the presidential activities, collaboration between MoH and MOE, scaling the use of GIS system, scaling use of RED/REC in counties with urban informal settlements and support to the supply chain and logistics working group. In addition, the supported the national program to understand budgeting and budget execution at county level and to develop targeted support to improve immunization financing.

WHO was supporting the program in the LMC work stream, data use for decision making in surveillance, coverage and equity activities and vaccine specific support in new vaccine introductions and general program implementation support.

JSI is supporting the implementation of the HPV vaccine introduction in Kenya. The main focus of the TA was capacity building, microplanning, service delivery and post introduction support. JSI supported the development of the training guides and the training slides and support Siaya and Kiambu county to train the health care workers on HPV microplanning and introduction.

CHAI is implementing the leadership, management and coordination work stream. The focus of the LMC work stream in Kenya is to support the coordinating unit in implementation of the Gavi HSS. CHAI has successfully placed coordinators in 8 counties who have supported the National and County Government in immunization services in general and HSS activities in particular. CHAI received a No Cost Extension for the Gavi LMC that will support the joint appraisal process and the finalization of the immunization strategic plan.

CDC was implementing activities outlined in the Kenya data quality improvement plan. The focus of the activities was to integrate data quality improvement activities into regular supervision by MoH staff in 5 counties.

PATH has begun to implement the development of the urban immunization strategy for Nairobi and Kisumu counties.

6. UPDATE OF FINDINGS FROM PREVIOUS JOINT APPRAISAL

<p>Prioritised actions from previous Joint Appraisal</p>	<p>Current status</p>
<p>1. Use of technology & Innovations to improve data quality- GIS mapping & EVRs</p>	<p>Several Innovations to improve data quality are being piloted in the Country- Chanjotrack in Kibera, Chanjo in Nyandarua County, Scan form technology in Kwale county and Siaya County, EVR in Siaya County.</p> <p>The various innovations are different phases of implementation, yet to decide on an option that meets the needs of the Program.</p> <p>GIS: National strategy on Use of Geospatial data and technologies developed with leadership from Department of M&E and Health Informatics. Preliminary report on mapping of immunization coverage and equity for small geographic areas in Kenya using GIS conducted by KEMRI through the data SFA support under review</p>
<p>2. Support to Quarterly National Immunization Data Review, Harmonization and Target Setting</p>	<p>National Quarterly review of Immunization Performance done on a quarterly basis. Follow up is done on the Counties with significant performance dip.</p> <p>Preparation for National and County Target setting done, the activity scheduled for 2020 January. A gap identified –There is need to conduct County and Sub county target setting before the National and County Activity.</p>
<p>3. Finalize and Disseminate Immunization M& E framework and Data SoPs</p>	<p>M and E framework drafted based on the draft Strategic Plan available. It will be finalise alongside the Strategic Plan since that’s the main source document.</p> <p>The Data SOPS at the health facility were printed and distributed to all the health facilities in combination with vaccine management SOPS.</p> <p>The Comprehensive Data SOPS has been finalized pending editorial work.</p>
<p>4. Support to improve the design, and disseminate national immunization bulletin and National Immunization Score card and institutionalization of the same.</p>	<p>The Immunization Scorecard was disseminated during the National and County Consultative Forum 2019 to all the 47 Counties, as well as the Parliamentary Health committee during sensitization on Immunization. Orientation of counties and sub-counties on use of the scorecard for accountability scheduled for Q4 2019.</p> <p>Immunization scorecard used as a feedback mechanism to the Counties.</p> <p>The Immunization Bulletin design was improved for feedback.</p>
<p>5. Support to Follow up for Sub-national level reporting to improve Data Quality</p>	<p>Follow up on Reporting of the 17 Gavi HSS counties done on a monthly basis, with the sub counties that are not reporting encouraged to report.</p> <p>For the other 30 counties, during review meetings at national level, the counties with either drastic performance drop are called for feedback and action.</p> <p>Data Quality Self-assessment tools updated, and the 17 counties oriented</p>

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	<p>The multiple support supervision tools from several platforms have been consolidated, and uploaded into the DHIS2 for data collection.</p> <p>Review of data collection Tools</p> <p>Printing and distribution of Updated documentation tools to all health facilities with HPV Vaccine Introduction</p>
Additional significant IRC / HLRP recommendations (if applicable)	

Several Innovations to improve data quality are being piloted in the Country and the scale up of these is dependent on the results of the pilot.

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

Overview of key activities planned for the next year and requested modifications to Gavi support:

The program plans to address the bottlenecks and challenges identified as per the five thematic areas: Governance, Data management, Supply Chain, Capacity building and Demand generation. The program has developed an annual workplan for 2020 outlining specific activities under each thematic area. Selected activities were allocated to be supported under TCA as outlined below.

The Draft Annual Workplan Plan is annexed.

Key finding / Action 1	<p>Build on current initiatives for the improved use of data through capacity building and a focus on innovative approaches to addressing coverage and equity including GIS and the immunization scorecard.</p> <p>RI coverage monitoring system well established, using DHIS2 with good data management practices. Data SOPs distributed to all health facilities alongside Vaccine management SOPs. A harmonized support supervision tool has been developed and customized into the DHIS2. However, to further improve the quality of data at all levels for, the activities will be focused on building capacity of health care workers to analyze and use data for decision-making and corrective actions.</p>
Current response	<p>Some activities scheduled to be conducted by December 2019</p> <p>Orientation of 17 Counties on use of Immunization scorecard as a management and accountability</p> <p>Conducting Support Supervision in the remaining 25 Counties.</p> <p>Develop the tool for mapping unimmunized children at national level.</p>

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Agreed country actions	<ol style="list-style-type: none"> 1. Use of technology & Innovations to improve data quality e.g. GIS mapping 2. Support to Quarterly National Immunization Data Review, Harmonization and Target Setting 3. Finalize and Disseminate Immunization M& E framework and Data SoPs 4. Review and Implement a National Immunization Data Quality Improvement Plan 5. Support to improve the design and dissemination of the national immunization bulletin and National Immunization Score card and institutionalization of the same 6. Support to Follow up for Sub-national level reporting to improve Data Quality and reporting rates
Expected outputs / results	Reliable data for planning and decision making which will improve interventions and improve coverage.
Associated timeline	December 2020
Required resources / support and TA	Technical Assistance for GIS for equity and Programming and Data quality improvement plan.
Key finding / Action 2	<p>Scale up strategies to increase immunization program visibility and increase access to information through mass media and penetration of social networks to boost public demand for immunization, increase awareness and public trust and combat vaccine hesitancy (particularly on the HPV vaccine).</p> <p>There is general acceptance of vaccination services in the communities, communication focal persons at sub-national levels and Community Health Volunteer structure in place. The continues to face increased vaccine hesitancy and refusals in sections of the community with new vaccines introduction. There is also inadequate capacity of the health workers to communicate with caregivers on immunization services. There is also poor access to information on immunization by the communities leading to misconceptions.</p>
Current response	<p>Communication plan and CHV guidelines have been developed.</p> <p>The immunization program rebranded based on the 2018 KAP findings.</p> <p>The program also continues to monitor social media messages around vaccine hesitancy and refusals.</p>
Agreed country actions	<ol style="list-style-type: none"> 1. Disseminate and Implement national /risk communications plan and CHV guidelines to counties 2. Support coordination of National Demand Creation Activities- Thematic group, Implementation and Monitoring of a common Demand Generation Road map 3. Scale up strategies to increase immunization program visibility and increase access to information through mass media and penetration of social networks to boost public demand for immunization, increase awareness and public trust 4. Implement interventions aimed at increased acceptance, reduced vaccine hesitancy and refusals in post new vaccines introductions and campaigns- HPV, Yellow Fever, Men A, Measles Rubella

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	5. Develop and implement strategies to engage Primary Schools on RI, including development and dissemination of immunization IECs
Expected outputs / results	High acceptance of immunization services and reduced vaccine hesitancy leading to improved coverage.
Associated timeline	December 2020
Required resources / support and TA	Technical assistance needed to: <ol style="list-style-type: none"> 1. Implement sustainable strategies to increase Program Visibility and Access to information by the communities through electronic mass media and social networks 2. Develop a strategy and tools to engage Primary Schools on RI
Key finding / Action 3	Develop political support and momentum for support to the prioritization of immunisation and the development of sustainable financing for vaccines and service delivery through advocacy and strategy development. Governance, Sustainable immunization financing – There is inadequate and unpredictable financing for immunization including for new vaccines support and operations, weak coordination mechanisms between National and County Level, poor linkages between the program and budgeting, outdated legislation and Policies on Immunization and significant human resource gaps at all levels
Current response	Continued political commitment, Coordination Platforms in Place.
Agreed country actions	<ol style="list-style-type: none"> 1. Support efforts to develop and update the legal framework for immunization 2. Support the Launch and Dissemination of the National Immunization Strategic Plan and development of the Annual National and County Plans, aligned to the Strategic Plan, to inform planning and Budgeting 3. Support to the National and County Annual Immunization Consultative Forums, N-ICCs, and KENITAG, KNVSAC 4. Support to update the National Immunization Policy Guidelines 5. Support to the process of developing an Immunization Financing Strategy and Transition Plan, from Gavi support 6. Support the Implementation of the Presidential Directives on Immunization- Setting up and Operationalization of a Joint MoH and MoE taskforce, Policy Framework and Certification/ Validation systems
Expected outputs / results	Improved political goodwill that will ensure adequate financial support and high level political commitment by the Government.
Associated timeline	December 2020
Required resources / support and TA	Technical assistance needed to: <ol style="list-style-type: none"> 1. Update the National Immunization Policy Guidelines 2. Develop an Immunization Financing Strategy and Gavi Transition Plan 3. Finalization of the National Immunization Strategic Plan
Key finding / Action 4	Improve vaccine management and the design of the current immunization supply chain system, including the visibility of stock data to ensure stock availability and potency. Vaccine quality, Supply chain and Logistics – A well functioning vaccine cold chain and supply chain system is in place. There are still challenges with vaccine and injection devices stock outs at the Health Facility level existing , gaps in the

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	vaccine logistics management information system, poor visibility of stock data, weak reporting and response to AEFIs and Gaps in implementation of EVMA recommendations
Current response	Development of ODP year 2 and 3 Vaccine supply and consumables procurement and distribution Vaccine supply chain management
Agreed country actions	<ol style="list-style-type: none"> 1. Conduct an EVMA, 2020 2. Support training of National and Regional Depots Supply chain staff, in Vaccine supply chain Management 3. Support the CCE PMT to carry out validation during CCE deployment, Development of the ODP for Year 2 & 3 and updating the Cold chain inventory 4. Strengthen supply chain data and improve utilization of the eLMIS to facilitate decision making through OJT, Feedback, Supervision and Innovation 5. Strengthen implementation of planned preventive maintenance and response for CVS and regional depots, including development of CCE Maintenance framework 6. Carry out national and county forecasting meeting
Expected outputs / results	Reduced stock outs and improved cold chain system which will lead to increase coverage with high quality vaccines.
Associated timeline	December 2020
Required resources / support and TA	Technical assistance needed to: <ol style="list-style-type: none"> 1. Conduct EVMA 2. Support the PMT to update the Cold chain Inventory
Key finding / Action 5	<p>Develop tools and staff capacity to further identify and target areas of low-coverage and high drop-out (MCV-2) to sustainable improve immunization outcomes in low performing areas.</p> <p>Service Delivery, Capacity Building, Coverage and equity</p> <p>There are a few counties that continue to have low coverage and high number of unimmunized children despite the overall improvement in coverage and reduction in unimmunized children. There is a lack of updated routine immunization Micro-plans including outreaches, weak defaulter tracing mechanisms and missed opportunities to vaccination due to various reasons including scheduling of vaccines, lack of screening at other service delivery points etc. There is also gaps in knowledge and skills among health workers for provision of immunization services.</p>
Current response	Supporting counties to carry out outreaches and supportive supervision. Introduction of new vaccines into the routine system (HPV and Yellow Fever), piloting Malaria vaccine and several immunization campaigns.
Agreed country actions	<ol style="list-style-type: none"> 1. Support the Planning for Measles Rubella vaccination campaigns 2. Finalize adaptation of the REC strategy and tools, disseminate it and implement strategies to improve coverage in all counties

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	<ol style="list-style-type: none"> 3. Scale up and institutionalize capacity building of Health workers through a mentorship approach in priority counties 4. Conduct National review to determine reasons for stock outs at service delivery level and develop strategies to address the problem 5. Develop, design and disseminate immunization job aids to address and reduce missed opportunities for Vaccination 6. Implement key strategies identified in the urban immunization strategy assessments
Expected outputs / results	<p>Improved health care worker knowledge, skills and practices</p> <p>Improved compliance to the national immunization policy and guidelines</p>
Associated timeline	December 2020
Required resources / support and TA	<p>Technical assistance needed to:</p> <ol style="list-style-type: none"> 1. Support planning for Measles Rubella vaccine campaign. 2. Adapt the REC Strategy and tools 3. Scale up Capacity building for Health Workers through a mentorship approach 4. Implementation of the urban immunization strategy

Based on the above action plan, please outline any specific technology or innovation demand that can be fulfilled by private sector entities or new innovative entrepreneurs.

Innovations and technology needs will be reviewed and considered as part of the Full Portfolio Planning process.

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

On 15th October 2019 members of the immunization TWG met to prepare for the Joint Appraisal. Teams were constituted as per thematic area to pre-populate the different sections of the Joint Appraisal template. The Joint Appraisal was held 21st – 28th October 2019 in Mombasa, Kenya. Participants were drawn from the Ministry of Health and in-country partners as well as technical partners from outside the country. Participants included: MOH, WHO, UNICEF, CHAI, CDC, KANCO, JSI, USAID AND GAVI.

During this process the following key documents were utilized in developing the 2018 JA; JA analysis guidance, Guidelines on reporting and renewal, the JA template, CMYP 2015 document, KDHS 2014, The GAVI TCA, KHSSP 2014-2018, WHO-UNICEF JRF, EVM assessment of 2013, DHIS reports and the EPI review.

The team also conducted field visits for first-hand observation. During the workshop, members developed the Annual Workplan for 2020 covering each thematic area. Members also reviewed the draft JA report, specifically the country context and performance as well as progress in implementing recommendations made during 2018 JA. Members then reviewed key drivers of low coverage and equity as per the thematic areas and provided an action plan for the JA 2020, taking into consideration pending activities planned in the last JA, activities in the HSS and on-going partner and MOH activities.

The Immunization ICC met on 31st October 2019 and endorsed the joint appraisal report and the key activities for 2020. The ICC urged the program to ensure the planned in a staggered manner to ensure activities are not all done at the same time.

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9. ANNEX: Compliance with Gavi reporting requirements

	Yes	No	Not applicable
End of year stock level report (due 31 March) *	X		
Grant Performance Framework (GPF) * reporting against all due indicators	X		
Financial Reports *	X		
Periodic financial reports			
Annual financial statement			
Annual financial audit report			
Campaign reports *	X		
Supplementary Immunisation Activity technical report			
Campaign coverage survey report			
Immunization financing and expenditure information			
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	Updating		
Post Introduction Evaluation (PIE) (specify vaccines):	NA		
Measles & rubella situation analysis and 5 year plan			
Operational plan for the immunization programme	X		
HSS end of grant evaluation report	NA		
HPV demonstration programme evaluations	NA		
Reporting by partners on TCA	X		