Joint appraisal (JA) report 2018

Country	Madagascar
Full JA or updated JA	☑ **Full JA** ☐ updated JA
Date and location of Joint Appraisal meeting	11-13 July 2018, at the Carlton Hotel, Antananarivo Madagascar
Participants/affiliation[1]	Annex 1: List of participants
Frequency of reporting results	Annual
Fiscal period[2]	June 2017 to June 2018
Comprehensive Multi Year Plan (cMYP) duration	2018 to 2020
Co-financing/Gavi transition group	Initial self-financing

1. RENEWAL AND EXTENSION REQUESTS

Renewal requests have been submitted in the country portal

Vaccine renewal request (NVS) (15 May at the latest)	Yes **X** No ☐ N/A ☐
HSS support renewal request	Yes ☐ x No ☐ N/A
CCEOP support renewal request	Yes ☐ No ☐ N/A **X**

Population	**26,330,637**			
Birth cohort	**3.53%**			
Vaccine	**Penta**	**PCV-10:**	**Rota**	**IPV**
Population in the target age cohort	876,810	876,810	876,810	876,810
Target population to be immunised (first dose)	876,810	876,810	876,810	876,810
Target population to be immunised (last dose)	876,810	876,810	876,810	876,810
Implicit coverage rate	94%	94%	94%	94%
Last available WUENIC coverage rate	77 %	76%	78%	65%
Last available admin coverage rate	90%	90%	88%	78%
Wastage rate	3%	8%	1%	6%
Buffer stock	619,752	619,752	413,168	230,888
Stock reported	387,700	1,625,300	1,156,350	224,000

Data reported by WUENIC are from 2016, given that 2017 data have not yet been validated. Administrative coverage is from 2017 data. The wastage rate shown here has been calculated using the following parameters:
-Antigen doses sent from the national level from June 2017 to May 2018
-Number of children immunised during this same period
-Stock status for districts as of the end of May 2018

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

Indicative interest in introducing new vaccines or requesting	**Schedule**	**Expected application year**	**Expected introduction year**
	HPV	2018	2019

[1] If taking too much space, the list of participants may also be provided as an annex.
[2] If the country reporting period deviates from the fiscal period, please provide a short explanation.
[3] Providing this information does not constitute an obligation for the country or for Gavi; it mainly serves for information purposes.

Health System Strengthening support from Gavi	Measles 2nd dose	2018	2020

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

Since the last Joint Appraisal, a number of events have occurred that may have affected the performance of the immunisation system and Gavi grants:

- A natural disaster (Cyclone AVA) that ravaged the country in January 2018, causing significant damage to health and roadway infrastructures. The severe weather impacted 161,000 people, with 51 dead and 22 missing in the northern and eastern parts of Madagascar (Sava, Analanjirofo, Atsinanana and Alaotra Mangoro regions).
- Continued and extended rural insecurity from the re-emergence of banditry (social problems, dahalo (bandits in Malagasy) and cattle thefts) that displaced populations and led to health posts being abandoned, including in the following districts: Beroroha, Ankazoabo-Atsimo, Iakora, Ivohibe, Manja, Tsaratanana, Befotaka and Morafenobe. This insecurity was predominantly in the first half of the year, corresponding to the period of agricultural products harvesting, when attacks by zebu thieves are frequent. This limits the implementation of outreach strategies for immunisation; thus, measures have been taken locally such as strengthening collaboration with the fokontany chief or the relevant authority.
- Periodic isolation in the districts of Kandreho, Besalampy, Marolambo and Mananara-North makes these areas difficult to access during the rainy season because of rising water levels, as flooding hampers the provision of immunisation services. Mitigation measures that were taken include providing for three months' worth of immunisation needs and planning catch-up sessions using outreach strategy during the dry seasons.
- Difficult-to-access areas both because of insecurity and periodic isolation are in the districts of Maintirano, Ambatomainty, Antsalova, Miandrivazo, Midongy and Andilamena.
- Impacts related to socio-political problems: continued cases of immunisation refusal during the polio campaign.

Table 1: Results of campaign monitoring those not immunised because of refusal

CAMPAIGN	NID* December 2017	NID January 2018	NID April 2018
Number of districts monitored	51	27	61
% of children not immunised	6%	10%	6%
% of cases not immunised due to vaccine refusal	36%	35%	29%

* National Immunisation Days

- The epidemic of urban pneumonic plague from August to December 2017 that was rampant in the large cities of Madagascar, in particular Antananarivo and Toamasina. This epidemic gave rise to rumours about the existence of a vaccine against the plague, which frightened the population and intensified parents' reluctance to immunise. (131 deaths)
- Demonstrations following passage of the anti-constitutional election law, which led to a strike.
- As a result of the Gavi audit, poor management of HSS1 and ISS was identified. A so-called "hybrid" system of management, or management of funds according to the comparative advantages between the Ministry of Public Health (MSANP) and the Programme Coordination Unit (UCP), WHO and UNICEF, was adopted. A recovery plan for Gavi funding management was prepared: distributing the audit report and establishing a reimbursement plan and a clean-up inside the MSANP.
- Delay in payment of the Government's share for procuring a portion of traditional vaccines, causing a stockout at the national level. In 2017, the Expanded Programme on Immunisation Directorate (EPID) recorded a 43-day TT stockout and a 30-day IPV stockout. In 2018, the TT stockout in January was 30 days (for logistics reasons).
- Madagascar's low economic growth rate as compared to the 4.1% demographic growth rate in 2017 (source: World Bank) increased poverty.
- The State budget does not account for the cost of transporting vaccines.

We note several events that might take place in the next 12 months, given the current situation, vulnerabilities, dependencies, trends and planned changes.

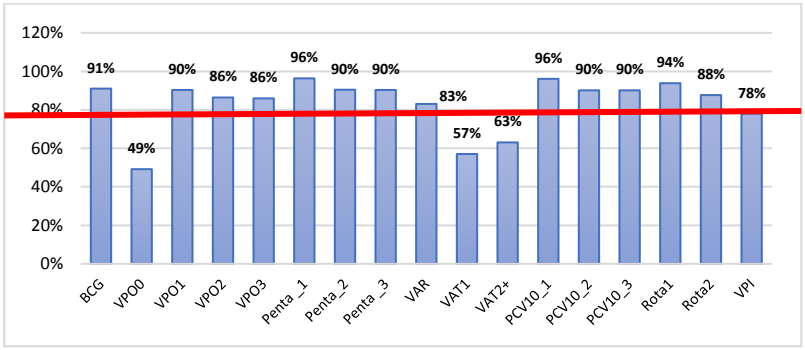
- prediction of cyclones from November 2018 to April 2019. ORSEC (disaster relief organisation) plans must be established prior to the time period;
- an upsurge in diseases with epidemic potential from September 2018 to April 2019;
- post-electoral crisis for November 2018;
- freezing of the State budget commitments to prepare for elections; and
- an increase and worsening of insecurity on the entire island.

3. IMMUNISATION PROGRAMME PERFORMANCE

3.1. Immunisation coverage and equity

3.1.1 Routine immunisation performance

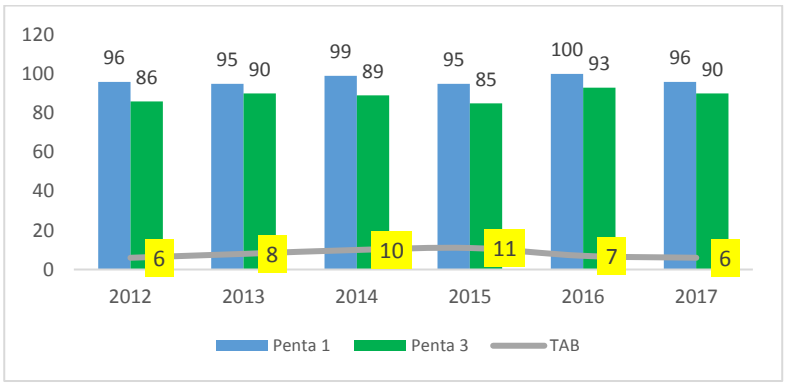
Graph 1: Immunisation coverage trends for all antigens 2017



BCG, OPV0, OPV1, OPV2, OPV3, Penta1, Penta2, Penta3, MCV, TT1, TT2+, PCV-10-1, PCV-10-2, PCV-10-3, Rota1, Rota2, IPV

- According to administrative data in 2017, 90% coverage was achieved for the following antigens: BCG, OPV1, Penta1, Penta2, Penta3, PCV-10-1, PCV-10-2, PCV-10-3 and Rota1. However, the OPV0 coverage objective was not achieved, with actual coverage at 49%. This is due to a parental custom of not immunising the child at birth – one of the reasons why BCG administration is extended up to 11 months.
- For IPV, although the objective was not achieved in 2017, clear progress was observed for IPV coverage between 2016 (41%) and 2017 (78%).
- The same applies to coverage for TT2+, which was 56% in 2016 and 63% in 2017.

Graph 2 : Immunisation coverage trends for Penta1-Penta3 and the dropout rate from 2012 to 2017 at the national level



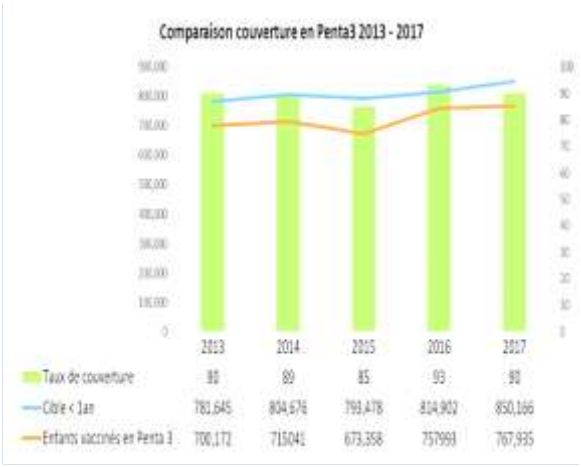
Source: Joint Reporting Form

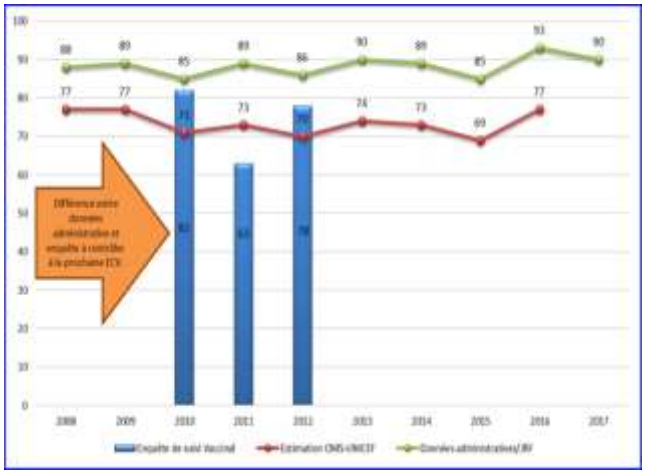
Poor access to immunisation services/care and the low uptake of immunisation services by the population resulted in a decline in Penta1 coverage from 100% in 2016 to 96% in 2017. Penta3 coverage fell from 93% in 2016 to 90% in 2017. However, the dropout rate has been maintained at less than 10% (7% in 2016 and 6% in 2017).

Strengthening the cold chain by creating distribution hubs made it possible to increase immunisation sessions in the basic healthcare centre (BHC), which is a health centre with a functional, good quality refrigerator, storage capacity and the ability to restock surrounding health facilities with vaccines. The epidemic of

pneumonic plague between August and December 2017 led the Government to requisition health personnel for the response, which explains in part the decrease in immunisation coverage between 2016 and 2017. The Mother and Child Health Week (MCHW) in December 2017 was not able to reach the target children

Graph 3 : Change in the number of children immunised for Penta3 compared to targets





Comparison of coverage for Penta3 2013-2017

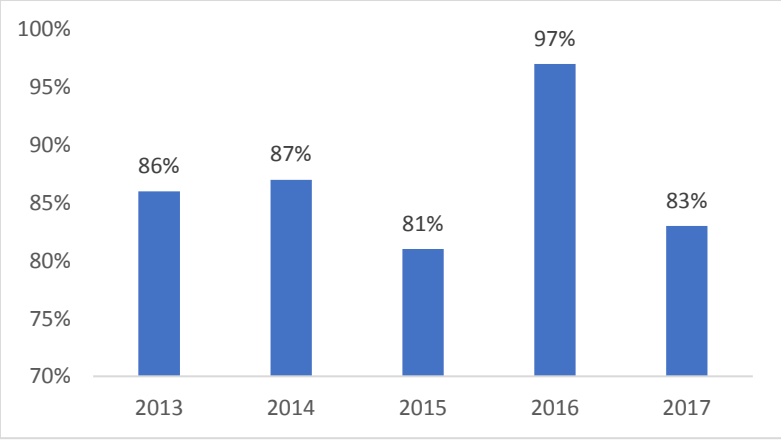
Green: Coverage rate
Blue bar: Target, under 1 year
Orange: Children immunised for Penta 3

Blue: Immunisation tracking survey;
Red line: WHO-UNICEF estimate
Green line: Administrative data/JRF
Arrow: Difference between administrative coverage and survey should be checked at the next VCS (Vaccine coverage survey).

Regarding the target population increase from 2016 to 2017, the number of children immunised remained the same in spite of the restructuring of sectors in 2017. This situation can be explained by the following factors: the ineffectiveness of MCHW in the four districts comprising the “Grand Tàna” in the region of Analamanga, which has the largest number of targets (25%); the 30-day Penta stockout (Tàna city), with supplies delayed due to a coordination issue between the EPID and the Public Health District Department (SDSP) and between the SDSP and BHC; and rumours of immunisation against the plague.

.

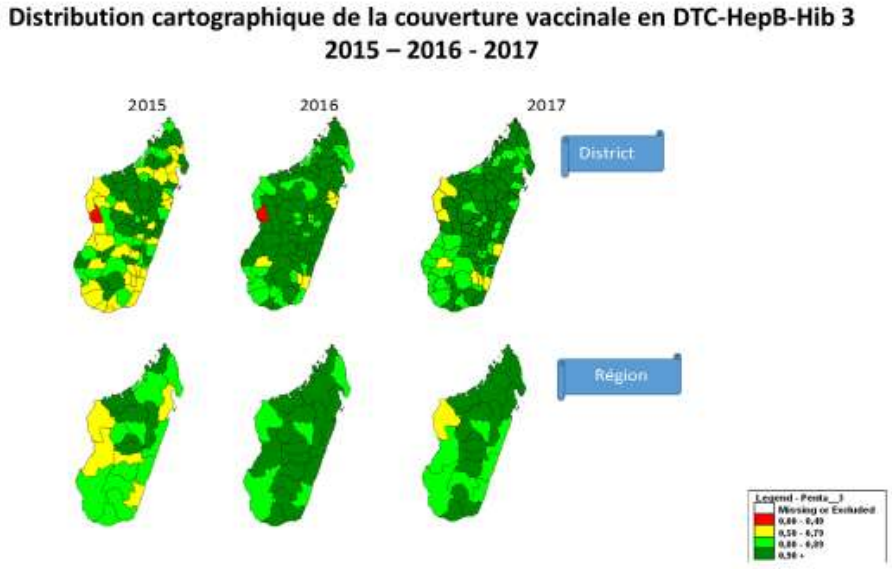
Graph 4 : Change in MCV coverage rates at the national level from 2013-2017



(*Source*: Joint Reporting Form)

The proportion of districts with an MCV coverage rate above 80% was 72/114 districts in 2017. Community protection against measles is far from being effective since the coverage rate is on a downward trend. Routine immunisation coverage for measles from 2011 to 2017 has not always the attained elimination objective (95%). Indeed, immunisation coverage at 97% in 2016 does not reflect reality, as some health districts included campaign data in routine data (see Annex 3). To this end, administration of the second dose of MCV is planned for January 2020 and the measles follow-up campaign is scheduled for October 2019.

Graph 5 : Comparative analysis of DTP-HepB-Hib3 coverage in 2015, 2016, 2017 at district and regional levels

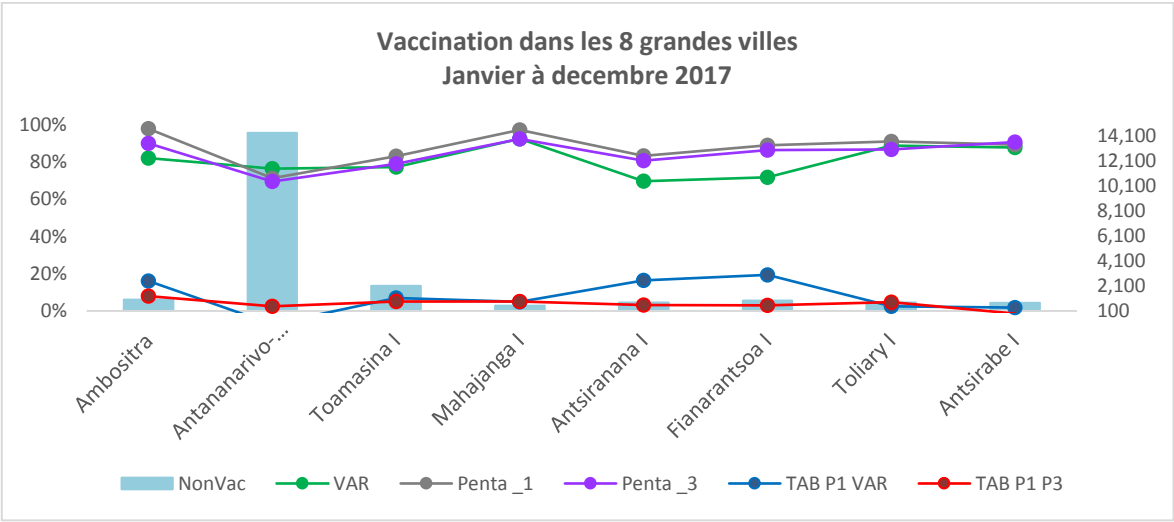


Mapping of the DTP-HepB-Hib immunisation coverage distribution in 2015 - 2016 - 2017
(*Source*: Joint Reporting Form)

In 2017, 100/114 districts had an immunisation coverage rate of at least 80% for DTP-HepB-Hib3. The disparity in coverage rates at the district level should again be noted, especially in isolated regions with a shortage of personnel and where insecurity reigns: Melaky, Ihorombe and South-east. The number of unimmunised children (UIC) increased in 12 regions: South-west, Vatovavy Fitovinany, South-east, Atsinanana, Alaotra Mangoro, Haute Matsiatra, Melaky, Diana, Ihorombe, Bongolava, Anosy and Betsiboka. However, a clear decrease in UIC has been noted in four regions: Itasy, Androy, Amoron'i Mania and Boeny. For the region of Androy, the number of UIC has declined thanks to the implementation of activities by the mobile clinic integrated with immunisation outreach strategies.

Moreover, 12 of the 22 regions experienced an increase in the number of UIC compared to 2016: South-west, Vatovavy Fitovinany, South-east, Atsinanana, Alaotra Mangoro, Haute Matsiatra, Melaky, Diana, Ihorombe, Bongolava, Anosy and Betsiboka.

Graph 6: Immunisation in the eight largest cities for Penta and MCV, January to December 2017

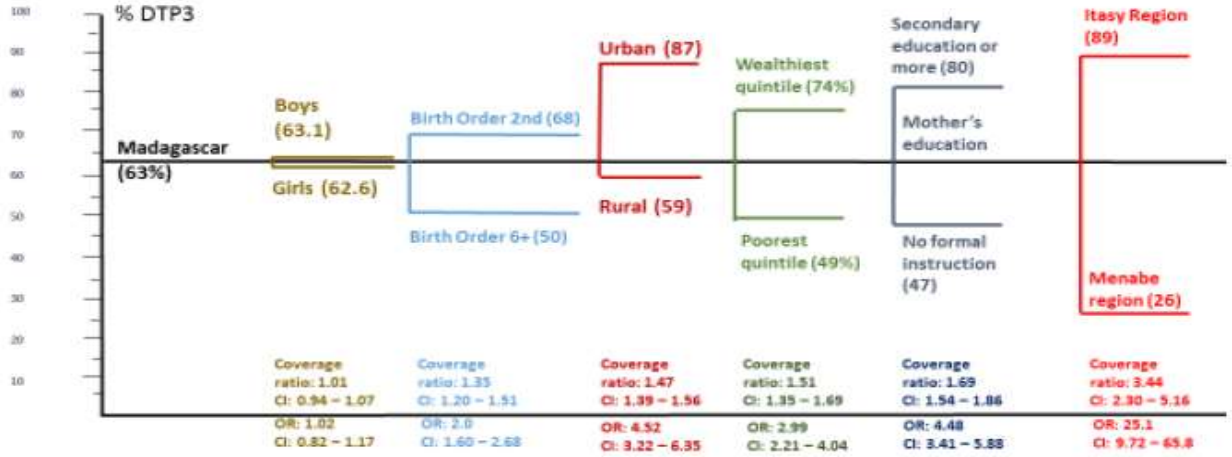


In 2017, the Antananarivo Renivohitra SDSP had the greatest number of UIC of the eight largest cities – over 14,000 children – with low accessibility to services (Penta1 71%). Service usage is good, with a dropout rate below 10% compared to the three SDSP of Ambositra, Antsiranana I and Fianarantsoa I,

which posted dropout rates above 15%. In this district, we note that there are children who are not registered in the community registers nor in the administrative registers.

The figure below shows factors influencing immunisation in Madagascar.

Figure 1: Immunisation inequity according to population characteristics (Madagascar 2011)

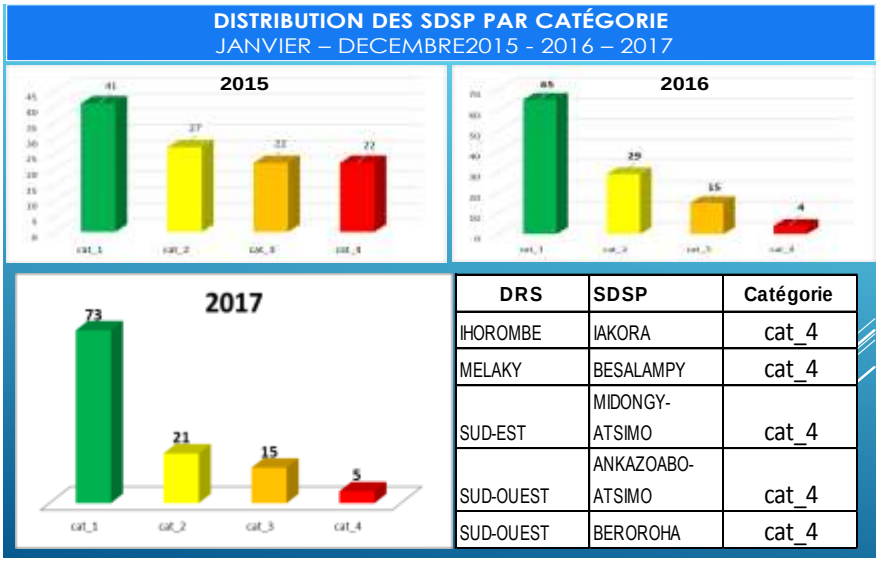


Source: MDG survey, 2013; CI refers to 95% confidence interval; OR = Odds ratio

Penta3 coverage in urban environments is 87%, compared to 59% in rural environments. Children living in urban areas have easier access to immunisation services than children in rural areas. In addition, the wealth/poverty factor has an influence on immunisation in favour of children from affluent families. However, in urban environments, because of population density, the number of UIC is generally higher than in rural environments.

To improve immunisation coverage, strategies must be implemented prioritising good planning; making the Reach Every Child (REC) guidelines available to health workers; and implementing specific strategies that are designed to reach targets in cities. These strategies include: involvement of community workers (CWs) in all immunisation activities by strengthening communication (interpersonal and mass communication); using community registers; monitoring with CWs, immunisation coverage surveys (ICS) and the general population and housing census (GPHC); use of a smaller sector administrative unit instead of fokontany; adapting the number of CWs to the new subdivision; and mapping and identification of UIC.

Graph 7 : Change in SDSP categorisation
January-December 2015, 2016 and 2017



DRS	SDSP	Catégorie
IHOROMBE	IAKORA	cat_4
MELAKY	BESALAMPY	cat_4
SUD-EST	MIDONGY-ATSIMO	cat_4
SUD-OUEST	ANKAZOABO-ATSIMO	cat_4
SUD-OUEST	BERORoha	cat_4

The number of category 4 districts changed from 22 to 5 between 2015 and 2017. Midongy Atsimo and Ankazoabo Atsimo still remain in this category. These districts share the following characteristics: isolation

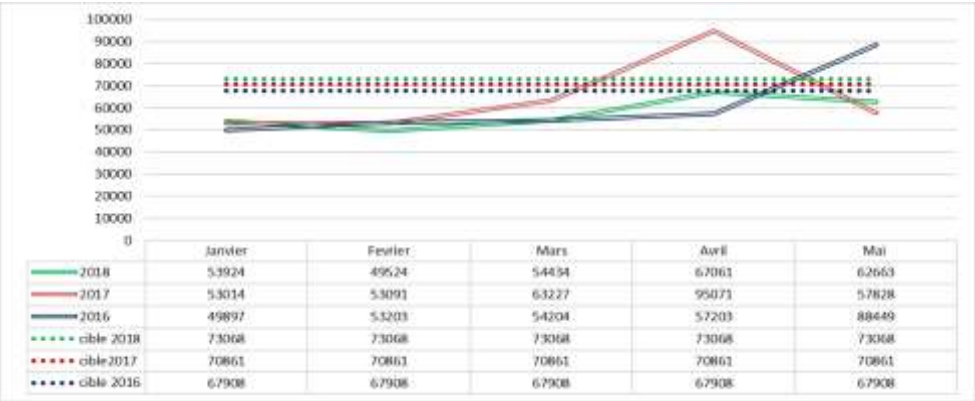
of BHCs with regard to the district and the district with regard to the region; lasting insecurity; and a lack of human resources.

To resolve these problems, the availability of vaccines (cold chain, vaccine management), intensification activities for immunisation and establishment of contracts with health workers are included in priority strategies, with prioritising support in categories 3 and 4 and urban districts.

In the districts of Madagascar as a whole, we note an absence of joint supportive supervision, a lack of adherence to or non-existent instructions at the base level, the poor quality of training, and key bottlenecks in the implementation of immunisation strengthening. The strategic plan takes all districts into consideration but operationalisation is focused on the 54 SDSP because of a lack of funding.

For more equitable harmonisation of immunisation strengthening, priorities are focused on preparing norms and standards for the EPI, supportive supervision, training of health workers in practical EPI, and microplanning. EPID planning must consider all districts, so that other technical and financial partners (TFP) can cover the gap for other districts that are not accounted for in funding.

Graph 8 : Number of children immunised per month for Penta3, January-April 2016, 2017, 2018

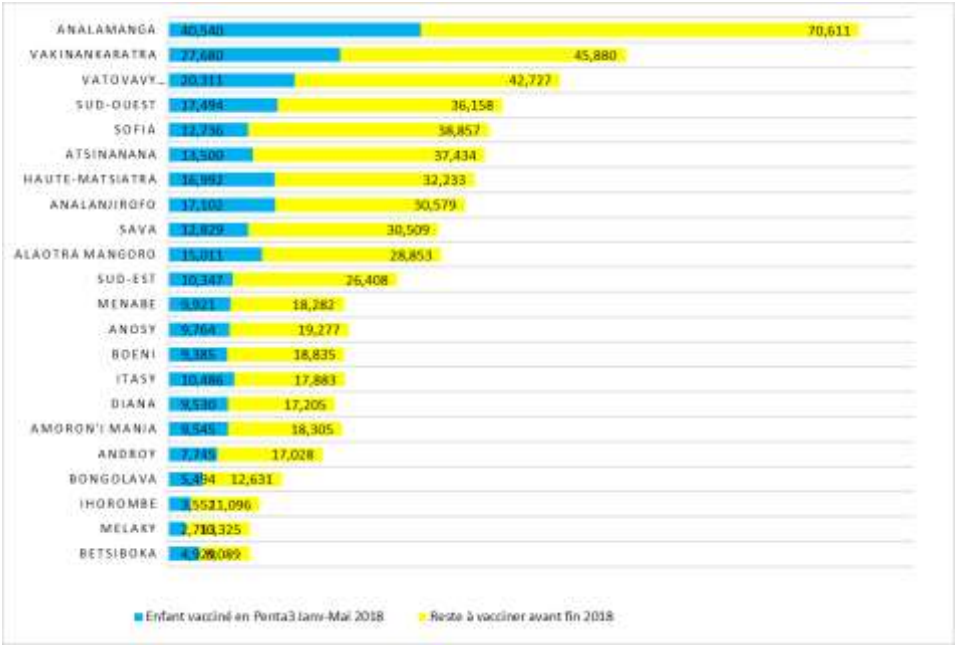


	Janvier	Fevrier	Mars	Avril	Mai
2018	53924	49524	54434	67061	62663
2017	53014	53091	63227	95071	57828
2016	49897	53203	54204	57203	88449
cible 2018	73068	73068	73068	73068	73068
cible2017	70861	70861	70861	70861	70861
cible 2016	67908	67908	67908	67908	67908

Green, red, blue dots: target
Column headings: January, February, March, April, May

Despite the increase in the target population, we note a decrease in the number of children immunised for Penta3 starting in February, March and April 2018 compared to 2017.

Graph 9 : Number of children to be immunised for DTP-HepB-Hib3 before end 2018



Blue bar: Children immunised for Penta3 January-May 2018
Yellow bar: Children to be immunised before end 2018

Efforts are needed to reach children for immunisation. Implementation of the REC approach, particularly in urban environments, would be the best strategy to adopt.

3.1.2 Vaccine preventable disease (VPD) surveillance performance

a. Polio eradication (surveillance of AFP)

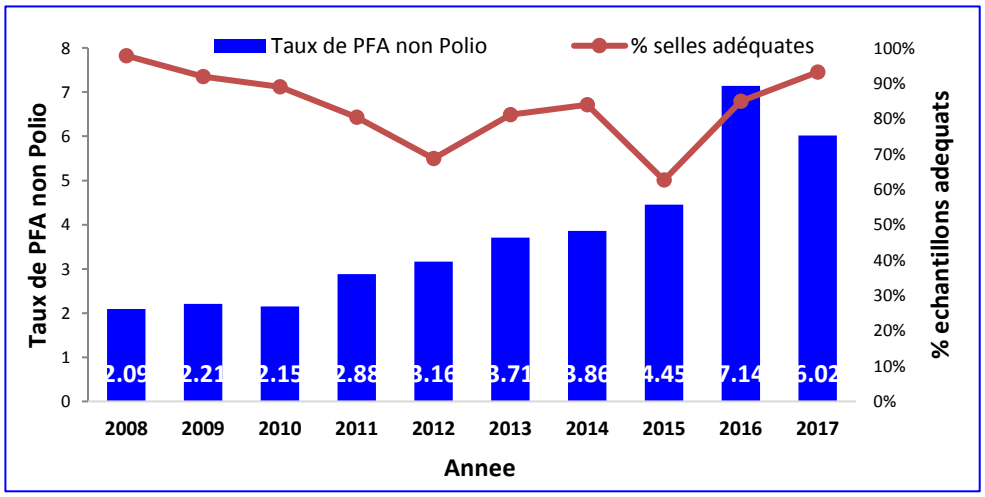
Madagascar was declared to be polio-free during the meeting of the regional polio certification committee held in Abuja from 18-22 June 2018. This is the culmination of progress achieved by the Government and partners in the following areas: i) supplementary immunisation activities (SIAs); ii) strengthening of routine immunisation; and (iii) strengthening of surveillance.

The sensitivity of the acute flaccid paralysis (AFP) surveillance system has gradually improved since 2008, with the rate of non-polio AFP (NPAFP) increasing from 2.09 in 2008 to 6.02 in 2017 (certification standard ≥2/100,000 children under 15 years). This improvement is visible at the subnational level, especially at the regional and health district levels. The percentage of regions achieving the two main AFP surveillance indicators increased from 4.5% (1/22) in 2015 to 95% (21/22) in 2017. The percentage of districts achieving the two main AFP surveillance indicators increased from 24% in 2015 to 71% in 2017. The percentage of stool samples received in the laboratory within 72 hours after the second sample is taken, increased from 72% in 2017 to 84% during the first 24 weeks of 2018. In addition to AFP surveillance, Environmental Surveillance has been in effect since 2015 and to date covers 3 out of the 22 regions, with 17 functional sites.

However, this improvement hides disparities between health districts that can also be observed at the subnational level, in particular at the regional and health district levels. Residual shortcomings include weak surveillance in insecure and isolated areas, the low active surveillance visit rate and the long delivery time for samples. Efforts must be made to maintain gains and guarantee the sustainability of results in the context of the Polio Endgame through developing and implementing the polio transition plan, implementing specific and innovative strategies in high-risk areas, establishing agreements with air and ground transportation companies in order to further reduce transport time for samples, and strengthening community-based surveillance. (See Annex 1)

The graph below summarises AFP surveillance performance at the national level.

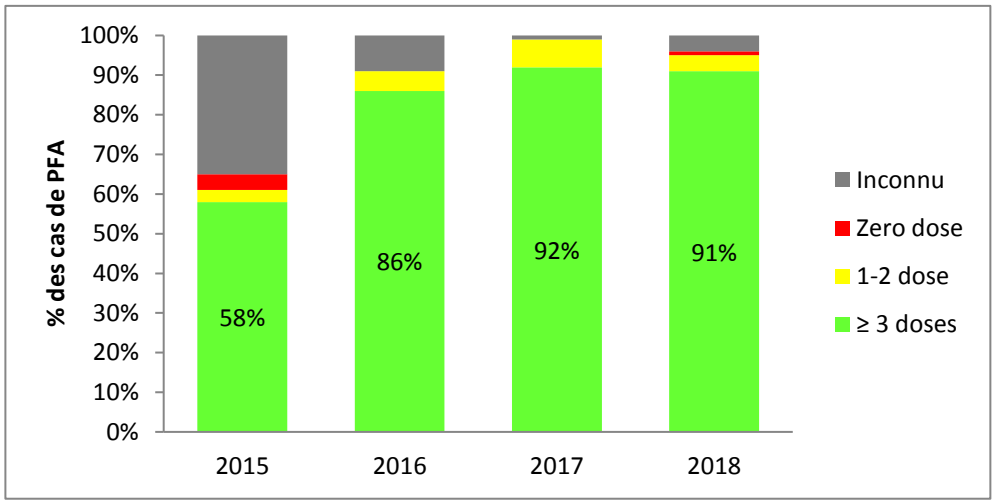
Graph 10 : Change in non-polio AFP rate and stool adequacy from 2008 to 2017 in Madagascar



Legends: Vertical axis: non-polio AFP rate
Horizontal axis: Year
Blue bars: non-polio AFP rate
Red line: % of adequate stool samples

Analysis of the immunisation status for AFP cases aged 6-59 months shows that a high percentage received at least three doses of OPV.

Graph 11: Change in immunisation status of AFP cases aged 6-59 months from 2015 to week 24 of 2018 in Madagascar



Vertical axis: % of AFP cases, Grey: Unknown, Red: Zero dose, Yellow: 1-2 dose, Green: More than 3 doses

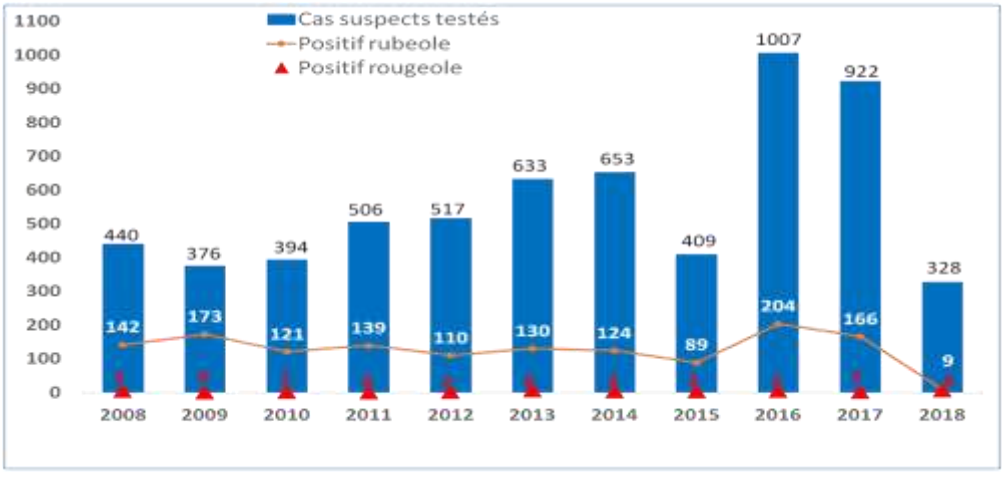
b. Measles and rubella surveillance

Madagascar has not experienced an outbreak of measles in the last 10 years. As part of measles/rubella surveillance, the non-measles investigation rate at the national level was higher than the objective of 2/100,000 inhabitants in both 2016 and 2017. In total, 907 suspected cases were reported in 2017, two of which were confirmed at the laboratory. The annual measles incidence remains below the elimination threshold of 1 case per 1 million inhabitants (see Annex 2). Rubella is becoming a worrisome problem, with about 26% of suspected rubella cases diagnosed as positive for rubella. Almost all positive rubella IgM cases are under age 10, with the majority aged between 1 and 9 years. Immunisation coverage for measles is on a downward trend, decreasing from 97% in 2016 to 83% in 2017. WHO/UNICEF estimates show the percentage at 58% in 2017, indicating an accumulation of susceptible children. The risk analysis performed in 2018 shows that with regard to the population immunity component, 34 out of 114 districts, or 29.8%, present a high risk.

Measles/rubella surveillance is faced with recurring stockouts of reagents and collection kits because of the lack of funding, poor data quality, the lack of basic information on the true extent of congenital rubella syndrome (CRS), and the development and implementation of the measles/rubella elimination plan.

Therefore, two surveys are planned to be conducted in 2018: one retrospective to assess prevalence and the impact of CRS, and the other prospective to assess the burden on the health system. The results of these surveys will serve as a basis for decision-making by the MSANP on the introduction of immunisation against rubella into routine immunisation. Because of this, it is imperative to implement CRS sentinel surveillance in the country, ensure sufficient funding for measles/rubella surveillance, and improve the completeness of information on each suspected case of measles contained in the database.

Graph 12: Change in the number of measles and rubella cases, 2008 to June 2018



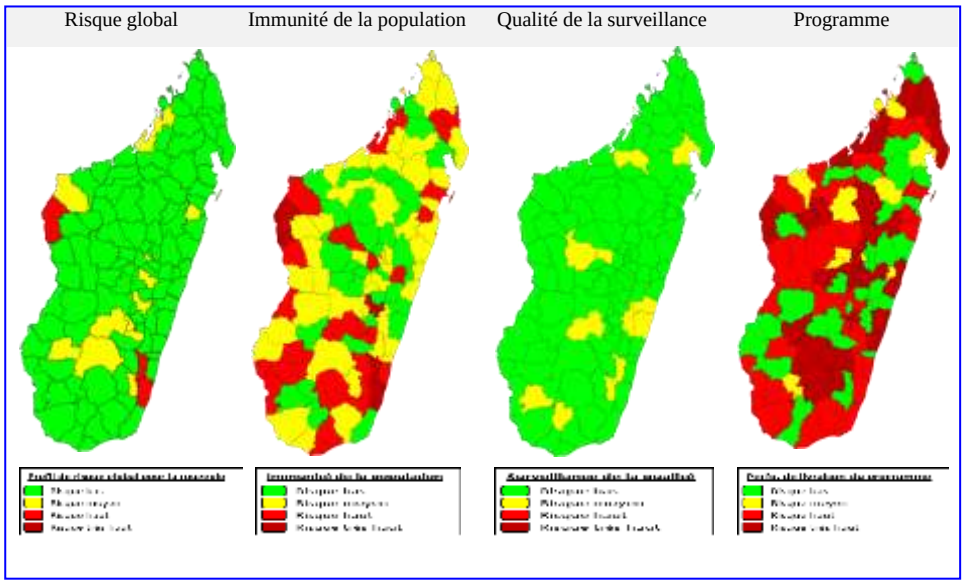
Blue bars: Suspected cases tested, Orange line: Positive for rubella, Red triangle: positive for measles

Incidence at the regional level in 2016 and 2017 shows that there are communities with an incidence above the elimination threshold.

Strengthened surveillance in Madagascar is reflected by achievement of performance indicators at the national level during the last two years. The non-measles investigation rate in 2017 was 3.58% per 100,000 inhabitants (Standard ≥ 2 pour 100,000 inhabitants) and the percentage of districts reporting at least 1 suspected measles case was 99% (Standard ≥ 80%).

In the measles/rubella strategic plan 2018-2022, the second dose of MCV is expected to be introduced into routine immunisation in January 2020 for children aged 15-18 months. A follow-up immunisation campaign for measles in children aged 9 -59 months is scheduled for October 2019, thus achieving the frequency of one every three years.

Graph 13 : Map of the 2018 measles risk analysis findings



Overall risk | Population immunity | Surveillance quality | Programme implementation

Green: low risk
Yellow: medium risk
Red: high risk
Purple: very high risk

- Measles risk analysis for 2018

Results of the analysis show that for the **"overall risk"** of measles component in Madagascar, risk remains low for nearly all districts. Out of 114 health districts in the country, 4 districts (3.5%) are high risk, 17 districts (14.9%) are medium risk and 93 districts (81.6%) low risk.

With respect to the **"population immunity"** component, 34 out of the 114 districts, or 29.8%, present a high or very high risk of measles: 29 districts are high risk and 5 very high risk. In addition, 48 health districts (42.1%) categorised as medium risk also require special attention when interventions are being planned. Moreover, between 2015 and 2017 nearly all of the country's districts (90%) reported over 20% of suspected measles cases with an unknown or unvaccinated immunisation status (acceptable threshold for risk analysis <20%).

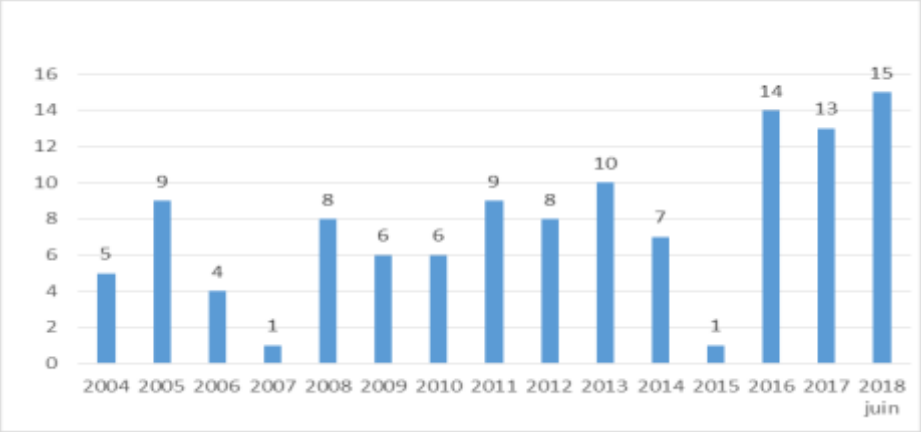
The measles risk is even greater for the **"programme implementation"** component. The analysis shows that almost 60% of districts (n=68) are at high risk, including 33 districts (28.9%) that are very high risk and 35 districts (30.7%) at high risk. This situation is a result of around 60% of the country's districts recording a dropout rate above 10% between the first dose of DTP-HepB-Hib1 and the first dose of measles (MCV1) in 2017.

Requests to Gavi for the introduction of the second dose of measles-containing vaccine in routine immunisation in 2020 for children aged 15-18 months and for the follow-up measles immunisation campaign for children aged 9-59 months in October 2019 were developed and submitted online on 1 May 2018.

c. Neonatal tetanus surveillance

Madagascar obtained the status of a country that has eliminated neonatal tetanus in 2014. However, in view of the tetanus toxoid coverage from 2015-2017, 43%, 52% and 47% respectively, and the rate of assisted childbirth in health centres in 2017 (30.9%), it is clear that the risk persists. Neonatal tetanus surveillance remains weak and under-notification of cases has been observed. It should be noted that only 13 cases of neonatal tetanus out of the 17 reported in 2017 received a response. In the first 24 weeks of 2018, only nine cases were reported, seven of which (78%) garnered a response. Reasons for this weakness include inadequate training of stakeholders, the poor forwarding of investigation forms, poor community-based surveillance, and the lack of a neonatal tetanus elimination maintenance plan at the country level.

Graph 14 : Change in neonatal tetanus cases reported from 2004 to June 2018



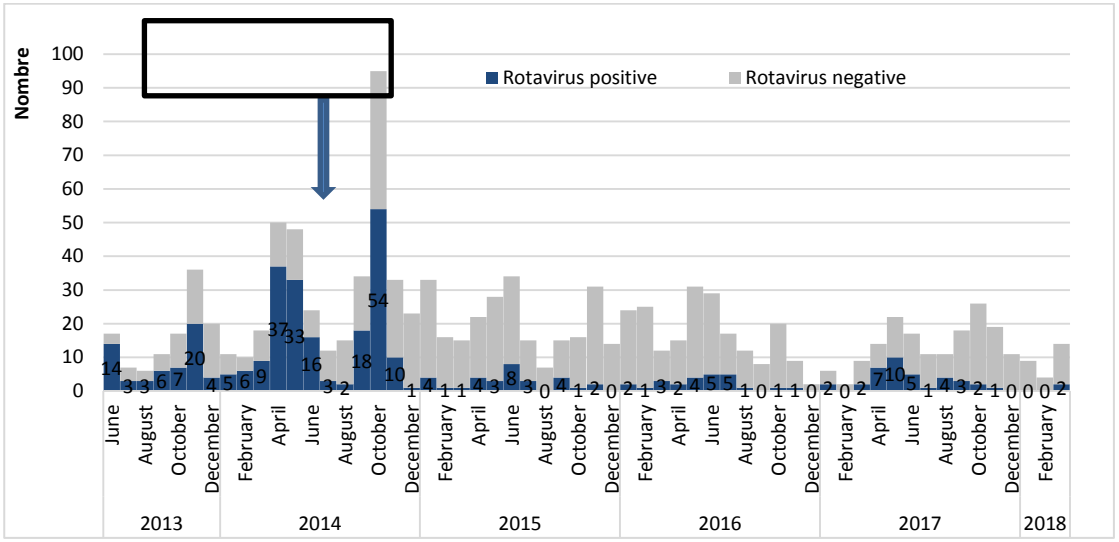
d. Adverse event following immunisation (AEFI) monitoring

In 2017, 97 AEFI cases were anticipated in Madagascar based on a standard 10 cases per 100,000 children under 1 year of age. However, in total, 11 AEFI cases were reported during the period from January-December 2017, or a notification rate of 1.29 per 100,000 children aged 0-11 months (standard: 10 cases for 100,000 survivors). In the first quarter of 2018, there were five AEFI cases, all from the region of Analamanga, corresponding to a notification rate of 2.28 cases per 100,000 children aged 0-11 months. With the support of partners, in 2017 the country obtained a national surveillance guide for AEFI. However, national surveillance capacities are still weak, with surveillance stakeholders not yet trained at all levels. An AEFI Committee is planned to be set up in 2018, as are committees for focal points in the region of Analamanga. Support for the operation of the AEFI Committee and extending training to other regions would make it possible to improve AEFI notifications and EPI management as part of the gradual introduction of new vaccines. At present, use of the VAEIMS (Vaccine Adverse Event Information Management System) application is not yet on the horizon.

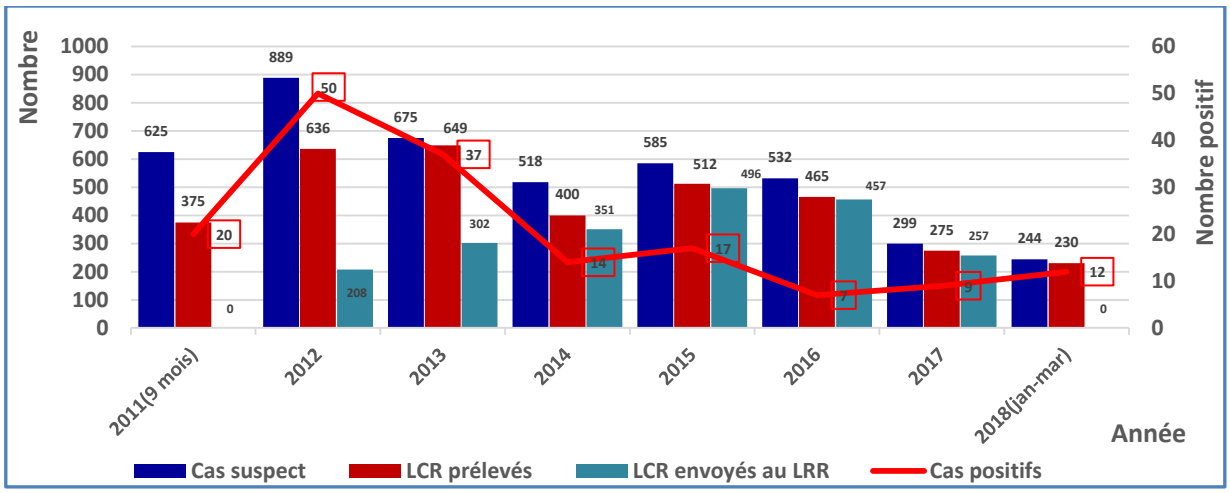
e. Sentinel surveillance of rotavirus diarrhoea and bacterial meningitis pneumonia

Sentinel surveillance of rotavirus diarrhoea and paediatric meningitis was implemented at Tsaralalana Mother-Child University Hospital Centre (CHUMET) in 2013 and 2011, respectively, with satisfactory performance. This showed a decline in the number of pneumococcus and rotavirus cases detected, with Hib nearly disappearing. From the results of case stool samples, we note a decrease in the percentage of stools positive for rotavirus, from **46% (103/225)** in 2014 to **21% (35/164)** in 2017, indicating the vaccine's effectiveness. Likewise, the percentage of cases of meningitis with CSF positive for Hib decreased from **24.04% (50/208)** in 2012 to **0.04% (9/257)** in 2017. Sentinel surveillance results are promising and provide evidence to advocate in favour of immunisation. Measures must be taken to ensure that there is sustainable funding for this. It also represents a foundation on which sentinel surveillance of diseases targeted by other new vaccines, in this case surveillance of CRS, can be added.

Graph 15 : Change in cases positive for rotavirus since the introduction of the rotavirus vaccine



Graph 16 : Change in pneumococcal meningitis cases from 2012 to 2018



Left vertical: Number, right vertical: positive, left below graph: 2011 (9 months), lower left corner: year, Blue bar: Suspected case, Red bar: CSF sample taken, Blue-grey bar: CSF sent to LRR, Red line: Positive cases

Source: CHUMET Report

3.2. Key drivers of sustainable coverage and equity

All children have the right to health, irrespective of sex, race, religious beliefs, income, physical attributes, geographical situation or any other status, as stipulated in the Convention on the Rights of the Child [Source: UNICEF Convention on the rights of the child; 1989].

The Global Vaccine Action Plan (GVAP 2011-2020) aims to ensure that the advantages of immunisation are equitably expanded to all children (Source: World Health Organization. Global vaccine action plan 2011-2020; 2013).

In Madagascar, immunisation coverage increased by five points, from 85% in 2015 to 90% in 2017. However, a downward trend in coverage has recently been observed. In May 2017, coverage for Penta3 was 88% (or 313,088 children immunised), declining to 77% (or 287,606 children immunised) in May 2018.

Penta3 coverage varied at the regional level in 2017. Coverage rates showed a downward trend (Penta3 coverage below 80%) in eight regions (Bongolava, Antsinanana, Alaotra Mangoro, South-east, Haute

Matsiatra, Melaky, Vatovavy Fitovinany and Ihorombe), while six regions were able to improve their coverage (Androy, Betsiboka, SAVA, Analanjirofo, Amoron'I Mania, Itasy). This situation reflects the problem of inequity in immunisation, which is primarily geographical in nature. Chief obstacles to immunisation include the lack of human resources, insecurity, weakness in the supply chain, irregularity in the provision of services and demand generation, and a lack of funding.

Steps have been taken towards eliminating the obstacles and bottlenecks:

- the revised REC approach emphasising the strengthening of community relationships with services, and providing regular services, including maintenance of cold chain functionality and the availability of vaccines;
- creating and operating the project management team to implement the cold chain equipment optimisation plan (CCEOP); and
- procuring solar equipment (132 refrigerators) with the balance of funds from HSS1.

Main factors for sustainable equity and coverage:

- **Health workforce**

In general, staffing needs expressed by the Ministry of Public Health are not honoured. The number of budget items granted is far lower than the projections and sometimes this number decreases during the year in the wake of unfavourable economic conditions. Starting June 2017, the situation became more complicated because the budget items for retiring health workers, in principle available for recruiting new workers could no longer be used, which is why retired staff are not being replaced and paramedics who have recently graduated from the Paramedical Inter-Regional Training Institutes (IFIRPs) (552 from 2016 batch for IFIRP provinces and all of the 2017 batch), cannot be recruited. In addition there are high concentration of staff in large cities.

To resolve personnel challenges, a decentralised competitive exam has been organised to recruit paramedical staff who are graduates of government-accredited private institutes. They will assume their duties at the end of the year and assignments have been planned by prioritising far-flung and isolated regions (34 for Melaky, 43 for Atsimo Andrefana and 29 for Androy compared to 10 per region for the province of Antananarivo).

Involving TFP in the contracting of health workers made it possible to strengthen the workforce for BHCs (5 doctors and 16 paramedics for the PIVOT Project in Ifanadiana SDSP, 30 midwives for UNFPA, and 106 doctors and 134 paramedics for the Nutrition Results Improvement Project funded by the World Bank for the regions of Amoron'i Mania, Haute Matsiatra, Itasy and Vakinankaratra). As part of HSS2, 150 paramedics under contract will enable the doubling of workers who work on their own at health posts in BHCs located in isolated areas and with large populations.

Organising formal EPI training for newly recruited health workers in MSANP health facilities will be one of the programme's priorities. The reform of the initial training for doctors calls for incorporating modules on managing BHCs into the curriculum and once these workers graduate, they will complete one year of civil service in BHCs.

In terms of worker retention and loyalty, a decision on a standard kit for scaling up will be made following the survey on the effectiveness of retention measures that have already been taken (AFD, PASSOBA). Texts must also be updated with regard to isolation bonuses, which are currently extremely low. Finally, scaling up performance-based funding will make it possible to reward health facilities according to their results (bonuses, investing in equipment, contracting with workers using the amounts received).

- **Supply chain**

The last EVM assessment completed in November 2014 revealed sufficient negative and positive storage capacities at the national level, insufficient temperature monitoring at all levels, insufficient preventive and curative maintenance at all levels, poor management of vaccine stocks at the peripheral level, lack of a vaccine distribution plan and non-compliant conditions for vaccine transport, and non-existent funding for transportation to BHCs.

Table 2 : Projections for dry store and cold chain capacity requirements

DESCRIPTIONS	CAPACITY	2018		2019		2020		2021		2022		2023		2024		2025	
		TARGET	OCCUPATION RATE	TARGET	OCCUPATION RATE	TARGET	OCCUPATION RATE	TARGET	OCCUPATION RATE	TARGET	OCCUPATION RATE	TARGET	OCCUPATION RATE	TARGET	OCCUPATION RATE	TARGET	OCCUPATION RATE
Positive cold room	55,895	914,259	81%	938,944	83%	964,295.5	85%	990,331.5	88%	1,017,070	90%	1,044,531	93%	1,072,734	95%	1,101,697	98%
Negative Cold Room	7,863	914,259	82%	938,944	84%	964,295.5	86%	990,331.5	89%	1,017,070	91%	1,044,531	94%	1,072,734	96%	1,101,697	99%
Dry storage store m^3	1,247	914,259	1,247	938,944	1,280.67	964,295.5	1,315.25	990,331.5	1,350.76	1,017,070	1,387.23	1,044,531	1,424.68	1,072,734	1,463.15	1,101,697	1,502.66

The building where the EPID is housed is not accessible to trucks, which makes loading and unloading vaccines and inputs difficult.

During implementation of the EVM Improvement Plan, activities were completed, including making the temperature controller for cold rooms at the national level operational (Multilog), procuring six temperature controllers for cold rooms at the regional level (Unilog), training technicians in preventive and curative maintenance in the 114 districts, monitoring stocks on a weekly basis using electronic frameworks, using the balance of HSS1 to procure 236 cold boxes, 2,571 vaccine carriers, 132 refrigerators including 112 solar refrigerators and 20 electronic, and 40 solar refrigerators procured with the Government's own funding. They are expected to be installed by the EPID team in August 2018 using the balance of Gavi HSS1 funds.

In general, we have noted a poor implementation of this improvement plan. One reason for this is the non-disbursement of HSS2 funds, which serves as a funding source for nearly all of the activities.

Apart from poor implementation of activities included in the EVM Improvement Plan, the EPID has no appropriate facilities for the work. The lack of an organisational framework for logistics staff (duplicating duties, lack of team collaboration, etc) has also been observed. A logistics subcommittee exists within the EPID, which brings together the logistics department and technical support partners.

The EPID supplies the districts on a quarterly basis, following 34 distribution channels, 10 of which are by air and 24 by land. Although 14 regions are equipped with cold rooms, the latter do not manage the vaccines and do not feel involved in monitoring vaccine use in the districts. However, each region has an EPI officer. In addition to the survey on the cost of transporting vaccines conducted by John Snow Inc (JSI), it would be advisable to carry out another survey on the vaccine procurement system in order to outline an appropriate system for the country.

The EPID conducted a cold chain inventory in 2016 while preparing the CCEOP application for Gavi. This inventory was updated in 2017 and showed that at the BHC level, there are 682 solar refrigerators, 221 electric refrigerators and 1,819 absorption refrigerators. Admission of the country to the CCEOP will make it possible to put efficient cold chain equipment in place, thus improving cold chain coverage in the periphery.

In order to guarantee the monitoring of cold chain equipment to be procured as part of the CCEOP, it will be important to develop the cold chain equipment maintenance plan with a detailed budget that includes funding from the Government and TFP. Again, as part of the CCEOP, tools to monitor the temperature of the cold chain, including during transport, must be put into place.

- **Demand generation/demand for immunisation**

a. **REC approach in an urban environment:**

Despite the concentration of health workers in urban areas, immunisation performance is poor in large cities.
There are many reasons for this:

- some parents in affluent families refuse to immunise their children at public BHCs;
- density issues in highly populated fokontany and not enough community workers;
- problems of needy families and marginalised children in slums, as well as under-educated mothers;
- Insufficient provision of services; and
- the existence of so-called “invisible” children who are unknown to either administrative services or immunisation services.

To remedy this situation, a short guide and tools on the urban REC approach has recently been prepared and is ready to be used, initially in the eight large cities of Madagascar. An EPI microplanning workshop took place in the district of Antananarivo city in June 2018 before it was scaled up to the seven other large cities, that is to say the five other ex-provinces together with Antsirabe and Ambositra. The areas where target children can be found need to be identified (mapping), taking “night and day” travel into consideration, with the conduct of sector-wide microplanning (in slums, residential neighbourhoods, markets and bus stations). In addition, some sort of accountability must be required from private health facilities by involving them more in the EPI while streamlining procedures so they can deliver reports properly by equipping them with EPI management tools and strengthening their EPI capacities.

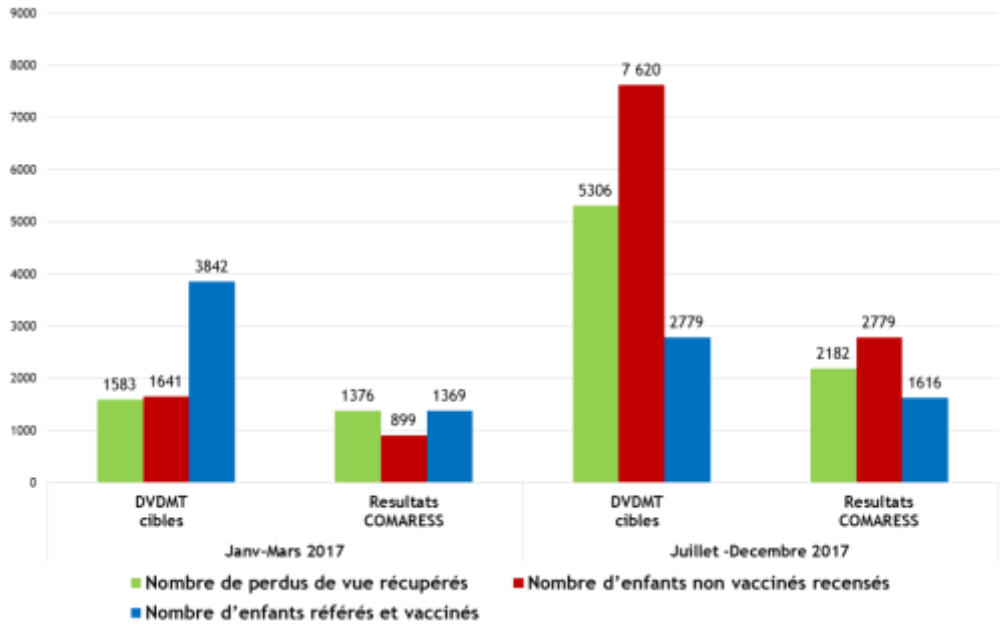
b. Civil society involvement in the immunisation system:

The Malagasy Coalition to Strengthen the Health and Immunisation System (COMARESS) is a national civil society organisation (CSO) platform created in 2014. It is composed of 184 CSOs, with 351 members, and covers 22 regions. In collaboration with the MSANP and in compliance with Gavi recommendations, COMARESS has been called upon to strengthen the links between the community and health services through community mobilisation and awareness-raising activities.

In 2017, CSOs were able to count 2,779 UIC who were recovered, and 2,182 children lost-to-follow-up. Capacity building in epidemiological surveillance of diseases was completed for 148 community workers from 74 Community Fokontany.

Graph 17: COMARESS contribution to immunisation activities from January to March 2017 and July to December 2017

COMARESS contributions to searching for those lost-to-follow-up for immunisation and unimmunised children with respect to targets, according to funding received for the period from January-March 2017 and from July-December 2017 are presented in the graph below:



DVDMT targets COMARESS results DVDMT targets COMARESS results
January to March 2017 July to December 2017

Green bar: Number of children lost-to-follow-up recovered, Red bar: Number of unimmunised children counted, Blue bar: Number of children referred and immunised

Source: EPID 2017 DVD-MT

The following factors contributed to the COMARESS platform's success:

- the platform implementation process (bottom-up, transparent, participatory, accepted by the MSANP);
- CSO platform was represented in 22 regions;
- having framework documents (strategic plan, advocacy plan, management policy, etc);
- energy of base-level CSO members; and
- monitoring and coaching of CWs for on-the-ground implementation

c. The main barriers to generating demand and corrective actions taken are as below:

- The main barriers to generating demand are:
  - rumours, especially on social media networks: the documentary on the New World Order, following post-immunisation reactions, proliferated widely after the urban pneumonic plague epidemic that ravaged the country from September to December 2017;
  - the reluctance to immunise on the part of some leaders (religious leaders, traditional leaders, etc), practitioners of traditional medicine and public and private health workers;
  - inadequate interpersonal communication skills on routine EPI among public and private health workers and community stakeholders for EPI awareness activities;
  - low literacy levels in the rural population aged 15 years and older (33.8%); and
  - population mobility in some districts due to insecurity and/or seasonal activities (mining sites, harvests, etc) is still an issue.

- Corrective actions were taken as follows:
  - Inter-campaign activities were conducted to dampen rumours about the implementation of the series of campaigns against polio, targeting women's associations, bloggers, journalists, teachers from schools and churches, and transporters.

- Different communication approaches were adopted: advocacy meetings involving Traditional and Religious Political and Administrative Associations (APART) in communicating about routine EPI and supplementary immunisation activities; training of health workers and community workers in C4D; a focus group with mothers who refused immunisation; and a scientific conference targeting private physicians, the National Association of Physicians and renowned professors.
- A workshop for the development and implementation of a communication plan on immunisation-related risks is in the process of being scheduled.

- **Barriers related to gender inequality[4]**:

The country has not adopted restrictions with regard to immunisation. However, major barriers associated with gender inequality remain:

- The decision to immunise children is generally made by the father.
- There are low levels of schooling among women as opposed to men in the Malagasy population aged 15 years and older.
- The majority of traditional and religious leaders are men.
- In areas with high levels of insecurity, women cannot bring children to be immunised alone.

- **Leadership, management and coordination:**

As the EPID is a structure integral to the MSANP organisational chart, according to decree No. 2015-1452 of 17 October 2015, it is provided with a credit for operations and also public investment each year, approved by the Finance Act. There is an EPID organisational chart, but it is no longer suited to current challenges and is currently being restructured internally.

The National Immunisation Technical Advisory Group for Immunisation (NITAG) is in the process of being set up, the design note (technical document) awaiting validation from the technical ICC. A draft of a decree will be submitted to the Minister in order to implement the NITAG after validation.

The Directorate of the Madagascar Drug Regulatory Authority (DAMM), which is an independent body, performs the role of the National Regulatory Authority (NRA) through the intermediary of the pharmacovigilance department. Since it is responsible for vaccines as well as medicines, continued capacity building of its staff is necessary.

An absence of leadership at all levels has been observed, a key reason being the lack of supervision of practices learned during trainings. Other reasons include the lack of a framework for sharing tasks at the peripheral level and for career management, the poor quality of service procurement, the lack of skills and transfer of knowledge to the entire team after each training, and a shortage of personnel in some districts, which creates extra work for personnel.

To remedy these problems, strengthening the coaching system and an internal reorganisation within the MSANP, particularly in terms of human resources, have proven necessary.

An EPI cMYP has been updated for 2018-2020 with an annual action plan for 2018 and 2019. A monitoring and evaluation plan is available to monitor the quality of implementation, while regular reviews, unscheduled supervisions and regularly scheduled conference calls are conducted.

We note an improved coordination through the ICC, institutionalised in 2011 by an interministerial decree. The related terms of reference (ToR) updates still need to be finalised. As part of the functions of the decision-making ICC/HSCC, a quarterly meeting with minutes distributed to all members is the norm. The technical ICC meets on a monthly basis. To improve coordination of immunisation activities at the regional level, a breakup of the ICC is recommended.

Certain points are worth highlighing:

- Gavi initiated a series of audits during which poor programmatic and financial management was observed and highlighted.
- Delay in the implementation decree for the National Fund for Immunisation.
- Lack of staff supervision, especially for training of new EPI managers.

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

- Insufficient funding resources, particularly for supervision of districts other than the 54 Gavi-supported districts.
- Some religious institutions have absolutely no involvement in immunisation.
- Insufficient collaboration with the Ministry of National Defence to provide security for stakeholders.
- Improved analyses and data usage.

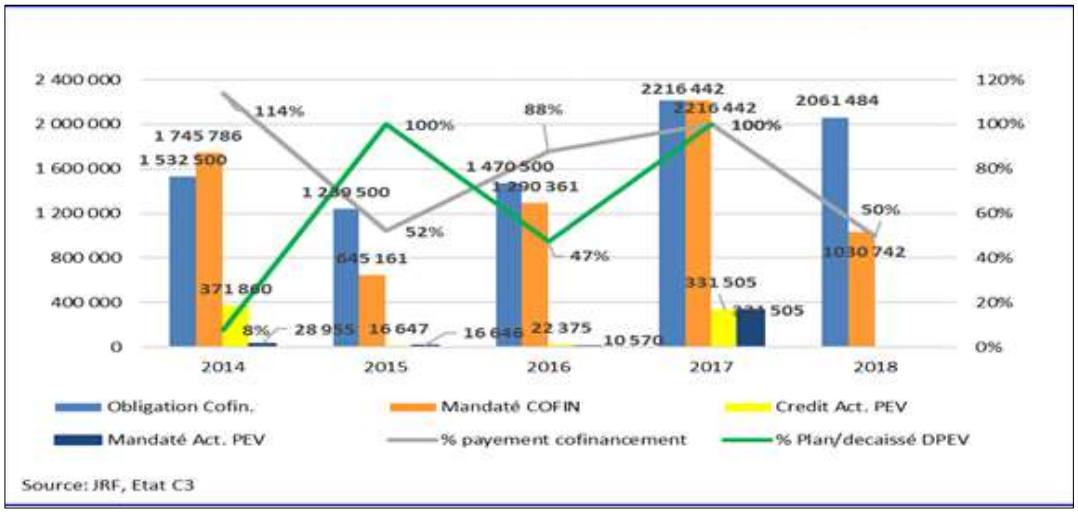
Consequently, the MSANP took the following corrective actions:

- cleaning up management;
- involving the MSANP through preparing a reimbursement plan;
- adopting a so-called "hybrid" management system with funds divided up between the UCP, UNICEF and WHO;
- holding regular ICC/HSCC coordination meetings (decision-making and technical);
- validating and applying the procedures manual for procurement and financial and administrative management.
- holding regular data use and analysis meetings at the national and regional level and sharing routine EPI analysis results at all levels;
- a process for preparing the data quality improvement plan (DQIP) is under way.

- **Public financial management**

Among its four major expenditure focus areas, the Government of Madagascar took into consideration the reduction of neonatal infant and maternal mortality through preventive immunisation activities. The portion allocated for government procurement of vaccines in the operational budget under the "Transfer" category represents about 22% of the sum allotted to the MSANP. From 2013-2017, the Government honoured its commitments to contribute to vaccine procurement. According to the 2017 State budget, the contribution for the year doubled compared with 2016.

Graph 18 : Co-financing and funding of Madagascar EPI by the Government



Blue bar: Co-financing obligation, Orange bar: Co-financing payment, Yellow bar: Current EPI credit,
Dark blue bar: Current EPI payment, Grey line: % co-financing payment, Green line: % plan/disbursed EPID
Source: JRF, C3 status

The amount for 2018 is available in the initial Finance Act and is planned to be released in the second half of the year. The figures stated in the graph reflect the midpoint of the fiscal year.

It should be noted that the country has had Gavi HSS2 suspended because of the irregularities in HSS1 budgetary and financial management, spending commitments, procurement and purchasing, and management of vaccine procurement and fixed assets. This situation, which has impacted immunisation activities, requires implementation of a system of good governance, stakeholder training, rigorous monitoring of the financial management of partners and supportive supervision of local stakeholders.

- **Other critical aspects:**

The following critical aspects have led to poor immunisation performance over the past three years:

1. **Accessibility problems**
   - Only about 40% of the population lives within a 5 km radius of a health facility (source: 2015-2019 HSDP)

2. **Periodic insecurity and isolation in districts as follows (map in annexes):**
   - **Seven districts experience insecurity on a regular basis**: Iakora, Ivohibe, Ankazoabo, Beroroha, Manja, Morafenobe and Tsaratanana with a population estimated at 610,846.
   - **Six isolated districts:** Nosy varika, Marolambo, Anosibe An'Ala, Besalampy, Kandreho and Mananara with a population estimated at 1,080,621.
   - **Six isolated and insecure districts**: Midongy du Sud, Miandrivazo, Antsalova, Maintirano, Ambatomainty and Andilamena with a population estimated at 583,452.

   The following steps were taken to resolve these issues:
   - Supplying BHCs with inputs corresponding to requirements for the period
   - Strengthening outreach strategy after high waters in flood zones
   - Collaborating with the army to implement immunisation activities
   - Deploying regional technical assistants in the 18 regions with isolated/insecure districts

   (source: MDG information at IMEP)

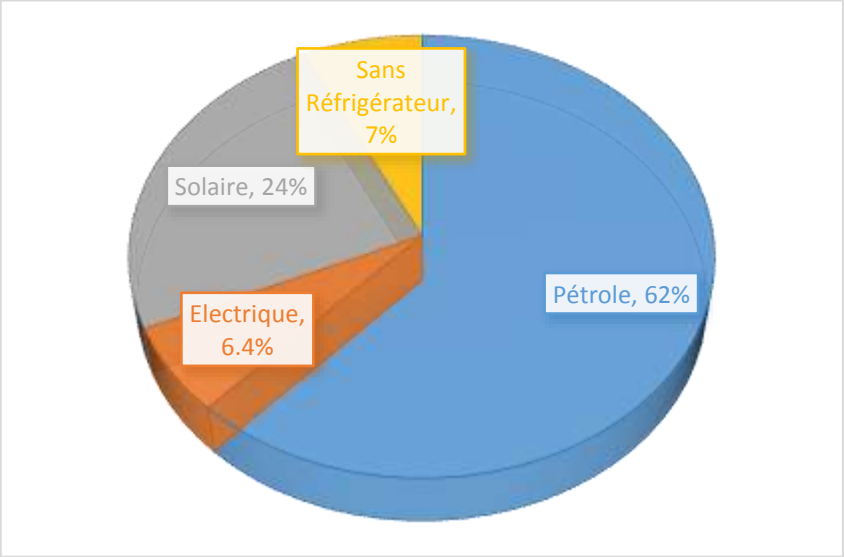
3. **Problem of BHC functionality:**

   a. **Distribution of health professionals according to their number at health post**

   - Some 52% of BHCs are staffed by a single worker (source: DHR June 2018), which affects the quality of services and the number of immunisation sessions and results in an excessive workload. For BHC2, 811 (49%) are staffed by paramedics although standards require that they be staffed by general practitioners.
   - Numerous BHCs have closed for the following reasons: 22 because of buildings being destroyed (other BHCs are temporarily closed for insecurity following Dahalo attacks); to replace retiring workers and assigned workers, the peripheral managers resort to volunteer paramedics to operate the BHCs.
   - In Madagascar, among the 2,845 health centres, 2,756 offer immunisations. Although the MSANP's directive recommends daily immunisation in centres with refrigerators, the majority of centres immunise once a week because of a lack of fuel or poor maintenance practices, or a lack of spare parts (wicks, glasses, burners).

   b. **Breakdown of cold chain equipment by energy source**

Graph 19: Distribution of cold chain equipment by energy source: inventory of equipment on 31 October 2017



No refrigerator: 7%, Solar: 24%, Electric: 6.4%, Kerosene: 62%
Source: EPID

Madagascar's coverage for kerosene refrigerators is 62%. Through HSS1 funds, the country procured spare parts for absorption refrigerators covering a six-month time period. Finalising and implementing the CCEOP will make it possible to reduce immunisation session interruptions due to cold chain breakdowns.

4. **Lack of supervision at all levels**: supervision only occurs during immunisation campaigns.
5. **Lack of or insufficient data analysis** at the peripheral level for corrective actions.
6. **Lack of follow-up on feedback or guidelines.**
7. **Stockouts of some EPI management tools**, including tally sheets, file tubs, child cards, community immunisation register in some BHCs for districts other than the 54 Gavi-supported districts (observed during supportive supervisions and at the time of the health centre visits during the 2018 Joint Appraisal).

3.3. Data

1. Immunisation Information System:

In its Strategic Plan for Strengthening the Health Information System (PSRSIS) 2013-2017, the MSANP planned to equip itself with a National Health Information System that is computerised, effective, integrated and decentralised. Implementing a data warehousing system through DHIS2 has been prioritised among activities to reform the health information systems. At the national level, each central directorate has a verification account and a data entry form and the indicators dashboard is now available on the Ministry's DHIS2 site.

Regarding data from regions and districts, a pilot phase is in progress in the entire region of Vakinankaratra and SOFIA, focusing on data included in the integrated monthly activity report (MAR). However, the MAR does not account for some elements of immunisation data (i.e., fixed and outreach sessions, social mobilisation, cold chain), which leads to completion of two monthly reports, and creates a system of double data entry for immunisation data (GESIS and DVD-MT).

All the BHCs for 29 districts/114 are already using the electronic surveillance system.

At the EPID, a programme was developed to export DVD-MT data to the RIM3 or the ACCESS database, with the objective of reducing transcription errors. For vaccine management at the national level, the SMT is used. However, its use must be expanded to all national level workers and all EPI officers in the regions.

There is a strategic Health Information System (HIS) plan, which was updated in December 2017, and standard operations procedures to manage HIS data but they do not include specificities related to immunisation data. There is a HIS Committee and four subcommittees made up of all partners, including one on data improvement. However, in 2018 the subcommittee has not been functional as the official text addressing the implementation of the subcommittee has not yet been signed.

From a general perspective, data suffer from the lack of a data quality improvement plan.

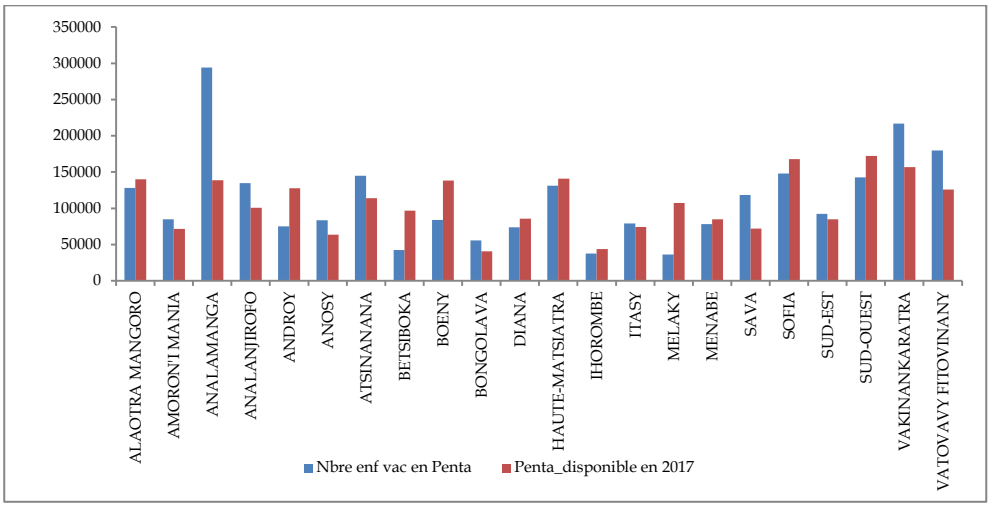
2. Denominator

Since August 2017, health sectorisation has been carried out and each district sent in its target population count, reflecting reality on the ground. The general population and housing census (GPHC-3) is in progress for 2018.

3. Triangulation of data and vaccine availability

In 2017, we noted a discrepancy between the quantity of vaccines available and the number of children immunised for DTP-HepB-Hib in 11 regions. The quantity of vaccine was far smaller than the number of children immunised.

Graph 20 : Comparison of number of children immunised for DTP-HepB-Hib with the number of vaccines available to health regions in 2017



Blue bar: Number of children immunised for Penta, Red bar: Penta availability in 2017

4. Data quality (illustration in Annex 4)

a) Completeness and timeliness of reports

SDSP reports at the national level:

- Rate of completeness for district reports is 100%
- Rate of promptness for district reports is 93%

BHC reports at the district level:

- The completeness rate of BHCs is 96.5% but the promptness rate is 78%. This is due to a lack of means for transport and communication for isolated BHCs.

Data promptness and completeness receive support and collaboration from other sectors (gendarme police for data to be disseminated safely and decentralised territorial collectivity) despite problems with insecurity, natural disasters and network issues.

Data reliability:

Data reliability is analysed every month at the national level. In addition, in order to reduce manual data entry errors, an automated data transfer bridge between the DVD-MT and RIM was created. A data analysis tool was made available to the districts and regions.
There is still a major difference – 16 points – between administrative data and WHO/UNICEF estimates. Moreover, this gap has remained constant since the last coverage survey in 2013. Data reliability is also jeopardised by insufficient availability of management tools at the BHC level, a shortage and inadequate training of personnel, and a target population based on a census dating back to 2003 (a new census is in progress in 2018). Logically, the transcription of data from tally sheets to the MAR could also be the source of errors at the BHC level.

Thus, different sources are used for live births and pregnant women, leading to inconsistent data. The target population problem is exacerbated by community workers not completing the count at the healthcare facilities level.

Internal consistency

✓ **Outlier**

- **For OPV3, DTP3 and MCV1**: the national level varies between 0.1% and 0.2%.
- **For OPV3**: two districts (Fenoarivo-afovoany, Antsiranana I) or 1.8% have extreme outlier values compared to the average.
- **For DTP3**: one district only, Antsiranana I, or 0.9%.
- **For MCV1**: three districts, Ambatondrazaka, Ambovombe Androy, Brickaville, or 2.6%.

The inconsistencies observed are: the negative dropout rate, coverage rates of over 100%, different coverage rates for antigens administered at the same time, and a higher number of immunised children than the number of available doses.

b) Management and date processing tools

All management tools have been validated by the EPI in adherence with national guidelines. It should be noted that there was a major stockout for some of these tools at the health facility level (health book, infant card). Withdrawing the immunisation register as an EPI management tool impaired data collection quality and some BHCs created a makeshift registry. There is a conflict in data between the tally sheet and the MAR. Some indispensable materials are not available at the BHC level, such as calculators. For the other levels, computer equipment is either lacking or out of date.

c) Data quality improvement plan

The data quality improvement plan is in the process of being developed. The information system review and the desk review have been conducted, but the field visit planned during the external EPI review still needs to be completed before the plan is developed. The data improvement team has not been appointed by all stakeholders. However, the ToR have been developed and the letter of appointment for members has been signed by the Secretary General.

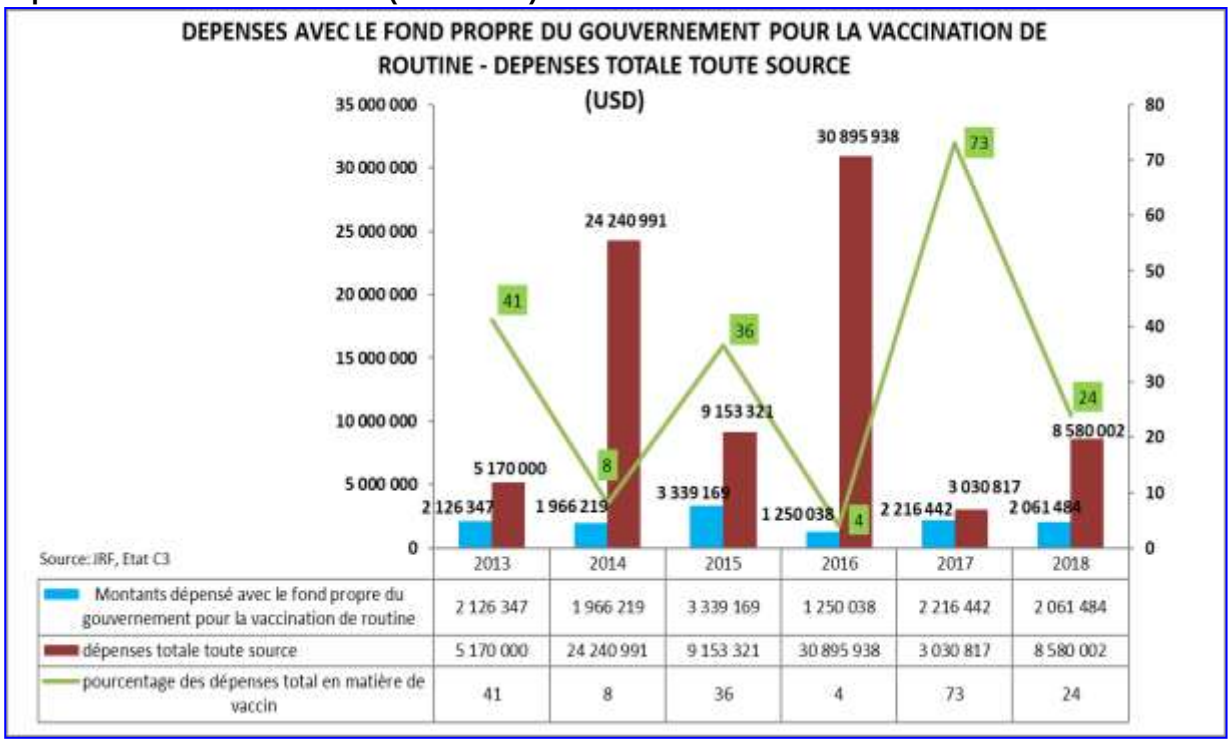
3.4 Immunisation financing

In Madagascar, each structure indicated in the MSANP organisational chart is generally provided with State funding. As such, the EPID is provided with an operations credit and public investment each year as approved by the Finance Act. The credit covers procurement of vaccines, equipment, cold materials, spare parts and fuel through the State's contribution. In line with standard practice in Madagascar, the EPID is obligated to follow the standards and procedures written in the State budgetary memorandum in terms of financial disbursement. With regard to the strategic plan and the budget structure of the MSANP, and for management and budgetary monitoring, the budget allocated for co-financing is centralised at the EPID, except for procurement of fuel, which is placed with health districts that have kerosene refrigerators.

There are budget lines for operations and investment. The State budget allocated to the EPID takes into account needs generated by the cMYP but does not cover all purchases of traditional vaccines and the contribution to operational costs (supervision, vaccine transport, surveillance of VPDs, communication, etc).

There is no effective participation of decentralised collectivities (regions, communes) due to the absence of an interministerial collaboration framework. However, some local authorities contribute to achieving programme objectives with their personal funds such as covering transport costs for inputs from the district to the BHCs. Law No. 2016-058 to create a national immunisation fund was introduced on 2 February 2017. Drafting and publishing processes for the implementation decree are in progress. The objective of these texts is to increase the State's participation in funding immunisation.

Graph 21 : Total expenditures for routine immunisation: Government share with respect to total expenditures from all sources (US dollars)



Blue bar: Expenditures with government funds for routine immunisation
Brown bar: Total expenditures from all sources
Green bar: Percentage of total expenditures for vaccines

The graph above shows total expenditures for immunisation, including funding from the State and partners.

The main challenges are:

- honouring the 2016-2020 co-financing commitments for new vaccines;
- ensuring the gradual purchase of traditional vaccines; and
- inserting the following categories into the initial Finance Act:
  - funding from the Government budget at all levels for activity implementation (particularly the outreach strategy) and monitoring;
  - procuring fuel and spare parts for the remaining fuel-powered refrigerators during the transition period to solar;
  - costs for transporting vaccines and inputs at all levels of the health system;
  - the schedule for drafting and implementing this decree must be defined with the involvement of all entities concerned, e.g. the technical ICC, Ministry of Finance and Budget, Ministry of Justice, Ministry of Commerce and Consumer Affairs and Ministry of Economy and Planning.

Since 2016, projections of co-financing obligations up to 2021 for all Francophone countries have also concerned Madagascar. Despite the budget restrictions experienced by Madagascar, which is just emerging from a crisis situation, it has managed to honour its commitments.

Table 3 : Overall situation for the country with regard to its co-financing obligations

Year	Co-financing in Ar	Payment made in Ar	Balance to be paid in Ar
2015	2,691,20,000		
2016	4,876,800,000		
Cumul 2015-2016	7,568,000,000	1,280,800,000	6,287,200,000
		520,000,000	5,767,200,000
		2,960,000,000	2,807,200,000
		493,147,000	2,314,053,000
		1,000,000,000	1,314,053,000
Co-financing 2017	7,092,615,000		
Obligation 2017 in US$			
1,113,500	3,563,200,000	3,546,307,500	16,892,500
			1,330,945,500
978 915	3,132,528,000		4,463,473,500
		3,546,307,500	917,166,000
Co-financing 2018	6,596,748,000	3,298,374,000	

For 2018 co-financing, US$ 1,030,898.12 (3,298,374,000 Ar) was committed and this represents 50% of the authorised by expenditure regulation for the transfer. A transfer of the same amount is being prepared by the MSANP, representing the balance.

It should be noted that the arrears from 2016 were repaid as part of the 2017 payments. Thus, in comparison to disbursements made in 2017, for 2018, Madagascar is no longer in arrears. In addition, the country has committed to scheduling co-financing as part of the 2019-2020 medium-term expenditure framework.

4. PERFORMANCE OF GAVI SUPPORT

4.1. Performance of vaccine support

4.1.1. Achievements vis-à-vis agreed targets.

The country has extensive experience in introducing new vaccines:

- 2002: viral hepatitis B vaccine (DTP-HepB)
- 2008: *Haemophilus Influenzae* type b vaccine (DTP-HepB-Hib)

- 2012: (October) vaccine for pneumococcal infections (PCV-10)
- 2013: HPV - pilot project
- 2014: (May) rotavirus
- 2015: (May) IPV

The EPI's objective was to achieve at least 90% immunisation coverage for all antigens at the national level and at least 80% in each district according to the GVAP. In 2017, objectives were achieved for Penta3 and PCV10-3 with immunisation coverage of 90% each according to administrative data. However, for two other new vaccines, Rota2 and IPV, coverage was 88% and 78%, respectively.
With respect to Penta3 – the tracer antigen – 13 districts had an immunisation coverage below 80%. These are grouped according to their respective region and bottlenecks (see Annex 4).

4.1.2. Overall progress on implementing Gavi vaccine support

The country abided by its co-financing commitments for procuring vaccines and inputs with Gavi support in 2017.

Table 4: Co-financing requirement for 2018 by the Ministry of Public Health

	Pneumococcal vaccine (PCV-10) 4 doses per vial, liquid, routine	Pentavalent vaccine (DTP-HepB-Hib) 10 doses per vial, liquid, routine	Rotavirus vaccine, 2-dose schedule, routine
Number of vaccine doses	168,800	679,500	148,500
Co-financing amount in US$ including shipping	518,000	527,500	508,500

Table 5 : Gavi grant for procuring vaccines and inputs in 2018

Descriptions	Number of doses
Pneumococcal vaccine (PCV-10), 4 doses per vial, liquid, routine	2,420,400
Pentavalent vaccine (DTP-HepB-Hib), 10 doses per vial, liquid, routine	1,958,000
Rotavirus vaccine, 2-dose schedule, routine	1,393,500
Inactivated polio vaccine, 5 doses per vial, liquid, routine	985,000
Autodisable syringes 2	5,512,800
Safety Boxes	60,675

4.1.3. Supplementary immunisation activities

The country organised two polio NIDs in 2017: (i) Polio10 NID in March; and (ii) Polio11 NID in December.

In the eleventh round of NIDs (December 2017), four regions had an immunisation coverage below 95%, thus not meeting the set coverage objective. These regions were Analamanga (93%), Analanjirofo (94%), Atsinanana (92%) and Vakinankaratra (94%). This situation can partly be explained by rumours circulating since September 2017 about the existence of a vaccine against the plague. Reasons why the objectives were not achieved include:
- the March 2017 Campaign Report in two regions affected by Cyclone Enawo one week after national planning took place in the regions of Analanjirofo (30 March to 1 April 2017) and Sava (4-6 April 2017);
- insecurity in some health districts;
- lack of accessibility in some other districts and BHCs;
- the continuing issue of UIC according to independent monitoring, mostly due to cases of refusal, to children being absent from home, and the vaccination team not revisiting the kids for vaccination purposes; and
- poor local supervision in most districts.

Independent monitoring for FAV11 was performed in 24 health districts where WHO teams were deployed. Analysis of results shows that some children were not reached during SIAs (8.09%). The main reasons for not immunising continue to be cases of refusal, which have been on the increase (40%), and children being absent

from households (37%). Moreover, 89% of parents were informed before the campaign began, with radio (36%) and social mobilisers (21%) being the main channels of communication. During the campaign, BHCs were opened for routine immunisation and UIC who had been identified were sent there to be immunised.

Table 6 : Problems encountered and lessons learned during the different campaigns

Period	Challenges encountered	Lessons learned
NIDs March 2017	- Campaign postponed in two regions affected by cyclone ENAWO one week after the planned national campaign, in the regions of Analanjirofo (30 March - 1 April 2017) and Sava (4 to 6 April 2017). - Insecurity in some health districts. - Inaccessibility of some districts and BHCs. - Continued unimmunised targets according to independent monitoring, mostly due to refusal and absences. - Poor execution of local supervision in most districts. - Pre-marking of households, marking children (status of markers) and households, preparing and using sketches, all remain recurring weaknesses in the implementation of SIAs. - Megaphones and vests are non-existent in all health districts.	- Improve the quality of microplanning per Fokontany, taking into consideration the specifics of the terrain, especially isolated and inaccessible BHCs. - Recruit different stakeholders locally who are known to the community, the coalition of BHC managers and Fokontany/neighbourhood chiefs, which is an asset that makes it possible to immunise all targets and contribute to reducing resistance and rumours. - Real involvement of political and administrative authorities, community workers and community leaders makes it possible to mobilise the population and recover unimmunised children, even in cases of refusal. - The need for stakeholders to have a distinctive sign (a vest or something else) to make it easier for them to be accepted in all environments and for their safety.
NID December 2017	- Rumours about immunisation against the plague during the epidemic from August to December led to reluctance on the part of parents and school officials. - Postponement of the campaign leading to stage 2 vaccines being thrown out. - Four districts in the Analamanga region that were the most affected by the plague epidemic postponed the campaign to January due to a lack of preparation time and rumours about immunisation against the plague.	- Strengthening awareness and strong social mobilisation are very important for a post-epidemic campaign.

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

Objective 1	
Objective of the HSS grant (as per the HSS proposals or PSR)	**Strengthen coverage of good quality primary healthcare services and immunisation in health facilities**
Priority geographies/population groups or constraints to C&E addressed by the objective	**54 districts in the 20 regions**
% activities conducted/budget utilisation	**100% of planned activities were conducted** **Usage rate for the budget is 90%**
Major activities implemented and review of implementation progress, including key successes &	- **Activity 1.2.4.31 – Ensure the availability of vaccines and inputs**: 1,371 BHCs of 54 districts benefited from transport of vaccines and inputs. It should be noted that no funding source other than Gavi is covering this very relevant activity. The financial absorption rate is 100%.

outcomes/activities not implemented or delayed/financial absorption	- **Activity 1.2.4.11 – Train RMT/DMT in microplanning at the regional level**: 20 RMTs from the 20 regions and 108 DMTs from the 54 districts received train-the-trainers training on REC microplanning. The financial absorption rate is 100%. DMTs in 17 other districts benefited from this activity through WHO funding (four SDSP), CDC Atlanta (three SDSP), USAID/MCSP (10 SDSP) and UNICEF (urban approach). The financial absorption rate is 100%. - **Activity 1.2.4.12 – Train BHC officers on microplanning and vaccine management (practical EPI)** 686 BHC officers were trained. The financial absorption rate is 100%. In addition, the DMTs trained the other BHC officers in their jurisdiction that were not covered on their own initiative. In total, 1,371 BHC officers participated in this activity and have microplans that were compiled for the 54 districts. - **Activity 1.2.4.13 – Determine targets by Fokontany (census/counting through use of the community register):** This activity occurred in the 9,973 Fokontany during which children under 5 years and pregnant women were counted. Based on the results of this activity, microplans were prepared. The activities were carried out in full and had a financial absorption rate of 100%. - **Activity 1.2.4.32 – Provide fuel to BHCs**: Among the 855 BHCs of the 54 SDSP planned, 835 BHCs out of 50 SDSP each received 30 litres of fuel, enough for one month. The 20 other BHCs were equipped with solar refrigerators. Consequently, the budget was revised downward during the budgetary reallocation for implementation of other activities. The financial absorption rate is 100%. - **Activity 1.2.4.4 – Achieve targets through outreach strategy**: This activity was introduced after the budgetary reallocation, given its relevance to improving equity and immunisation coverage. This involves completing two rounds of outreach strategy in remote and isolated Fokontany. Given the justifications in alignment with their previous activities,11 SDSP out of 54 benefited from this activity. It should be noted that this activity, planned to start in May 2018, was shifted to June 2018 in response to overlapping activities (MCHW, AIW). The financial absorption rate is 97%. - **Activity 1.2.4.52 – The RMT conducts supportive supervisions at the SDSP level:** 54 out of 54 districts have been supervised by the RMT. Hence the 100% completion rate with a financial absorption rate of 100%. - **Activity 1.2.4.53 – The DMT conducts supportive supervisions at the BHC level**: Considering the justifications in alignment with their previous activities, 11 out of 54 districts completed the supportive supervision of 55 BHCs, a completion of 20% and a financial absorption rate of 23%. In addition, the DMT participates in supervision assignments with the ATR and consultants from other partners deployed on the ground.
Major activities planned for upcoming period (mention significant changes/budget reallocations and associated **needs for technical assistance**	Technical assistance required for**:** Two surveys on CRS Survey on the economic impact of the introduction of the rotavirus vaccine Basic survey on the introduction of the rubella vaccine Submit the proposal to scale-up the HPV vaccine

	Train members of the AEFI experts committee on root cause analysis and train health workers on investigating AEFI cases
Objective 2:	
Objective of the HSS grant as per the HSS proposals or PSR)	**Strengthen cold chain capacity and storage for EPI inputs at the national, regional, district and BHC level**
Priority geographies/population groups or constraints to C&E addressed by the objective	114 districts in the 22 regions
% activities conducted/budget utilisation	**100% of activities completed** **The budget utilisation rate is 87%**
Major activities implemented and review of implementation progress, including key successes & outcomes/activities not implemented or delayed/financial absorption	**Activity 2.1 – Contribute to the functionality of the cold chain at all levels:** - providing spare parts (wicks, burners, etc) for 2,647 BHCs (source DDS) for eight months (from December 2017 to August 2018) - procuring 112 solar refrigerators for the BHCs and 20 electric refrigerators for the BSD, installation in progress - providing 236 cold boxes and 2,571 vaccine carriers for the BHCs - procuring six remote temperature controllers for the six cold rooms of the regions, installation in progress
Major activities planned for upcoming period (mention significant changes/budget reallocations and associated **needs for technical assistance**	- Train technicians on preventive maintenance in the 114 districts with a need for technical assistance - Procure 500 solar refrigerators for the BHCs and 42 for the BSD as part of the CCEOP - Maintenance plan for cold chain equipment and materials - Train the transporters and coach for the national level on EVM - Train national level logistics technicians on SMT, VIVATool, mVAR
Objective 3:	
Objective of the HSS grant as per the HSS proposals or PSR)	**Strengthen the Health Information System to produce quality data for use at all levels in order to facilitate monitoring/evaluation**
Priority geographies/population groups or constraints to C&E addressed by the objective	114 districts in the 22 regions
% activities conducted/budget utilisation	**72% of activities completed** **The budget utilisation rate is 60%**
Major activities implemented and review of implementation progress, including key successes & outcomes/activities not implemented or delayed/financial absorption	- **Activity 3.1.1 – Train managers of districts and regions (SIG and EPI) on EPI software (DVD-MT) and using integrated GESIS, and perform formative monitoring** Activity completed on the six focus areas of the six ex-provinces, 22 regional EPI officers, 114 SIG officers from the SDSP and 114 EPI officers from the SDSP with a financial absorption rate of 86%. **- Activity 3.1.3 – Provide EPI officers and service providers at all levels with management tools (child card, maternal card, immunisation register, postnatal birth register (RAC PON), RMA BHC, check-in register, UD manual** Partially completed activities geared towards districts with a financial absorption rate of 72%. Immunisation schedules, usage poster, file tubs and coverage monitoring curve will be sent with the vaccines in July. **- Activity 3.1.5 – Hold a quarterly review meeting at the district level** Quarterly reviews at the district level were completed in 4/23 districts, with a financial absorption rate of 24%.
Major activities planned for upcoming period (mention significant changes/budget reallocations	Technical assistance required for: - preparing a data quality improvement plan and implementation with technical support needs; - immunisation coverage survey; - switch PCV-10;

and associated **needs for technical assistance**	- setting up NITAG for the introduction of new vaccines; - EPI External Review; - survey on the scope of CRS and the development and implementation of the measles/rubella elimination plan; - support for training the AEFI Committee on root cause analysis; - support for EPI management as part of the gradual introduction of new vaccines.
Objective 4	
Objective of the HSS grant as per the HSS proposals or PSR)	**Enhance the use of care services through stimulating demand**
Priority geographies/population groups or constraints to C&E addressed by the objective	114 districts in 22 regions
% activities conducted/budget utilisation	**100% of planned activities completed** These are contributions from UNICEF through its own funds
Major activities implemented and review of implementation progress, including key successes & outcomes/activities not implemented or delayed/financial absorption	Microplanning workshop for Tanà city Finalise the REC guide for urban environments
Major activities planned for upcoming period (mention significant changes/budget reallocations and associated **needs for technical assistance**	Re-contract with UNICEF Produce IEC support materials Awareness and community mobilisation activity Implementation of the city approach in Tanà city and scale-up to the seven other large cities (technical assistance requirement) Supervision and monitoring/evaluation activities for CSO interventions at all levels
Objective 5	
Objective of the HSS grant as per the HSS proposals or PSR)	**Enhance immunisation funding sustainability**
Priority geographies/population groups or constraints to C&E addressed by the objective	114 districts in 22 regions
% activities conducted/budget utilisation	**86% of planned activities were completed**
Major activities implemented and review of implementation progress, including key successes & outcomes/activities not implemented or delayed/financial absorption	- **Activity 5.1.1 –** Hold meetings to finalise and endorse the cMYP funded by WHO - **Activity 5.2 –** In the medium term, improve the sustainability of immunisation funding through advocacy and passing the law on the EPI: * The vaccine funding act was enacted * Implementation decree written and awaiting approval - **Activity 5.3.3 –** Technical support for the ICC for improved financial analysis, monitoring and coordination framework according to their updated ToR: * The ToR has been updated and is awaiting endorsement - **Activity 5.3.4 –** Organise a joint review of TFP for immunisation on an annual basis * Held joint review of TFP in Toliara from 30 April to 2 May 2018: * Joint appraisal: 11-13 July 2018 - **Activity 5.5.1 –** Support the MSANP in preparing and copying a harmonised procedures manual document:

	* Meeting to endorse the updated financial and administrative management procedures manual completed - **Activity 5.5.2 _** Train managers, staff and recipients on the updated financial management procedures manual: Not completed
Major activities planned for upcoming period (mention significant changes/budget reallocations and associated **needs for technical assistance**	Technical assistance required for: - training managers at all levels on the LMC; - training managers, staff and recipients on the updated financial management procedures manual.
Objective 6	
Objective of the HSS grant as per the HSS proposals or PSR)	**Management cost**
Priority geographies/population groups or constraints to C&E addressed by the objective	22 regions, 54 districts
% activities conducted/budget utilisation	**100% of planned activities were conducted with a budget utilisation rate of 98%**
Major activities implemented and review of implementation progress, including key successes & outcomes/activities not implemented or delayed/financial absorption	- Organised monthly meetings of the technical ICC: 12 meetings have been completed - Organised quarterly decision-making ICC meetings; 11 meetings were completed, 7 in extraordinary session - Participated in organising the joint appraisal workshop with the partners - Guaranteed the payment of salaries for personnel - Participated in operation of the UCP: communication, travel expenses, vehicle maintenance and fuel, and office supplies
Major activities planned for upcoming period (mention significant changes / budget reallocations and associated **needs for technical assistance**	- Recruit a local EPI/Gavi focal point with the UCP - Organise monthly meetings of the technical ICC - Organise quarterly decision-making ICC meetings - Organise the joint appraisal workshop with the partners - Guarantee the payment of salaries for personnel - Participate in the operation of the UCP

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

The country is in the **"procurement planning"** stage (section B): collect international bids (Bii) (see Annex 6)

Implementation status:

In the first phase of the CCEOP, procurement of 500 Solar Direct Drive refrigerators and 42 electric freezers is planned by the first quarter of 2019. This equipment will help improve the cold chain coverage of BHCs from 37% to 53%.

To implement the CCEOP, there is a perceived need for support from national and international technical support assistants (cold chain experts).

4.4. Financial management performance

The total amount of grants disbursed by Gavi for 2017 was US$ 3,026,020, corresponding to the first year of the HSS2 programme. The amount of US$ 628,045 authorised by Gavi was allocated for implementation of priority activities for the period July to September 2017.

These activities are deemed to be essential and relevant for improving immunisation coverage, which the country needs following the suspension of funding after Gavi's external audit.

As of 25 July 2018, the budgetary utilisation rate on priority activities was 87.51%, or US$ 549,588.

- Annex 8: Budget situation as of 25 July 2018

The observation was made that the three-month time period was not sufficient for implementing activities, considering:

- the urban pneumonic plague epidemic that hit the large cities, in particular Antananarivo and Toamasina, which hampered the implementation of all other activities. The epidemic became a national priority whose acute phase extended from August to December 2017;
- the time to complete activities was greatly underestimated, requiring an extension request to be made for the implementation of activities until June 2018;
- the slowness of forwarding supporting documentation and validation of these documents on three levels: GCR, UCP and the tax authority, which delayed the replenishment of funds requiring the full justification of funds previously allocated to the different recipients (EPID, RHD, SDSP, BHC);
- revision of the procedures manual at the start of implementation.

As soon as implementation of priority activities begins, the ICC/HCC technical committee plans to proceed with allocating funds to 54 districts in two tranches for good governance and to facilitate the monitoring of funds. It should be noted that supplying funds for the second tranche is contingent on the full justification of previously allocated funds.

The unused 14% can be explained by the delay in justification of funds allocated to districts. Only 13/54 districts were able to benefit from the six planned activities.

The major reasons identified are: (i) lack of stakeholder competency; (ii) lack of monitoring on the ground; (iii) poor or non-existent compliance with planning for implementation of activities and procedures; (iv) the lack of information; (v) the lack of financial management capacity, which results in low financial absorption capacity at all levels and justification of expenditures not being done systematically; (vi) poor planning skills and the absence of a monitoring-evaluation culture at all levels; (vii) financial management tasks not being separated, especially at the peripheral level; and (viii) the work performed by personnel is not in accordance with their ToR and responsibilities.

The country suggests the following:

- Give a member of the DMT the responsibility of taking on the role of accountant for each SDSP to financially monitor Gavi activities.
- Update the UCP procedures manual.
- Build capacities for DMT members in financial management.
- Revise the GCR's ToR by conferring on it the responsibility to validate documentation, with the tax authority and UCP to play the role of controller.

Audit:

The last audit carried out by Gavi took place from 27 February to 16 March 2017. The auditors' findings focused on anomalies in (i) planning, coordination and monitoring; (ii) budget execution; and (iii) procurement procedures.

Given these observations, the Gavi Secretariat investigated and requested that the country reimburse ineligible expenditures, suspending the use of funds allocated to the EPI, DDS and UCP accounts and funding for Madagascar.

In this context, Gavi, in consultation with the MSANP, set up a so-called "hybrid" management system until further notice. Gavi required that a reimbursement plan be established, as part of which the budget lines for reimbursing funds will be allocated in the State budget for the fiscal budgeting years 2018 and 2019.

The "hybrid' management system involves dividing up the financial management of HSS2 funds among UNICEF, WHO and the UCP according to their area of expertise (comparative advantage).

Financial reporting:

Not following the Gavi financial reporting template demonstrated an overall lack of rigour and respect for the schedule according to the guidelines.

Financial management system:

A procedures manual for administrative, financial, accounting and procurement management of Gavi grants for both implementing directorates (DDS and EPID) is available, endorsed by the decision-making ICC/HSCC on 25 July 2017.

Coordination of HSS2 programme priority activities and the fiduciary management of the associated funds will be the responsibility of the Central Coordination Bureau/Project Coordination Unit (BCC/UCP) of the MSANP, with support from the tax authority. Funds allocated to EPI Directorate activities for the 22 regions and 54 districts will be transferred over time to the respective accounts to implement these activities, according to the established workplan supported by funding requests. The EPID monitors operational level financial and

technical activities. The UCP disburses funds to health regions and districts so they can implement their activities.

For the continuity of the HSS2 project, the "hybrid" system was instituted in consultation with MSANP. This system involves dividing up the financial management of HSS2 funds among UNICEF, WHO and the UCP according to their respective areas of expertise (comparative advantages).

4.5. Transition planning (if applicable, eg country is in an accelerated transition phase)

Madagascar's per capita gross domestic product in 2017 was US$ 383, which is still below the threshold for entering the transition phase. Nonetheless, the national immunisation fund act has already been passed. The implementation decree has been written and is awaiting approval.

4.6. Technical assistance

In addition to the usual technical assistance that the TFP in Madagascar have provided, the country requested for the fourth consecutive year Gavi support to guide programme management and implementation, strengthening coverage and equity as well as building capacities.

For 2018, WHO, UNICEF, JSI, CARDNO and CRS were approached to support the programme both at the national and operational level in the following primary areas: (i) programme implementation/coverage and equity; (ii) funding; (iii) data quality; (iv) the supply chain; (v) vaccine-specific support; and (vi) promoting demand.

The capacity building component, in order to transfer skills and knowledge, was an essential element of technical support at all levels.

Table 7: Distribution of technical support by institution and work stream

Work Streams	WHO	UNICEF	JSI
Programme implementation/ coverage and equity	National - 1 international - 1 national: Regions - 10 nationals	National - 2 internationals - 2 nationals Regions - 8 nationals	- 1 central national Regions 1 national
Funding		- 1 national/central	
Data quality	- 1 national/central	-	- 1 central national
Supply chain		- 1 international/ central	
Vaccine-specific support	- 1 international/central		
Demand promotion	-	- 1 national/central	- 1 central national

Strategic approach to be adopted for technical assistance that helps improve coverage and equity

Improving coverage and equity requires identification of the different bottlenecks, and corrective actions that are appropriate to the context. In Madagascar, the problem of management, governance, availability of resources (human and material, including good quality vaccines) and low involvement at the community level have been identified as the main constraints. The role of technical support would be to ensure strategic measures are implemented in critical areas under the MSANP's leadership.

The following strategic focus areas have been identified:

- ✓ **Stakeholder capacity building at all levels** through organising activities with the stakeholders in order to ensure the transfer of expertise for a handover at the end of the technical assistance under the MSANP's leadership. Added to this is capacity building of participants through coaching sessions, and participation in workshops and other sessions.
- ✓ **Developing and updating tools and user guides for all stakeholders**
- ✓ **Implementing innovative strategies**: technical assistance helps with implementing the REC approach and the city approach in the district of Tana city.

Deploying technical assistance at the regional level makes it possible to strengthen planning, implementation and monitoring of immunisation activities not only at the regional level but also at the district and BHC level.

- **Progress recorded**

Under the MSANP's leadership, technical assistance provided by Gavi and the other partners enabled, among other things, the implementation of a certain number of activities that should lead to a clear improvement in coverage and equity by emphasising essential areas of the Partner Engagement Framework.

- ✓ **Programme coordination and implementation:**
  - Regularly organising monthly analysis meetings on the programme's progress and conference calls
  - Developing strategic documents such as the AWP, cMYP, the application for the second dose of measles and the measles campaign 2019
- ✓ **Data quality**
  - conducting audits of data quality
  - drafting a data quality improvement plan
  - drafting a tool for analysing and using data for decision-making
  - monthly analysis and sharing of coverage data
- ✓ **Funding**
  - Signing the law on immunisation and following up on the implementation decree
  - The balance of liabilities on co-financing of new vaccines and the gradual increase of the government contribution for procuring traditional vaccines
- ✓ **Supply chain**
  - Submitting deployment and alternative plans to launch the procedure to procure cold materials and equipment as part of the CCEOP
  - Organising regular meetings of the logistics subcommittee to monitor activities and monitor input management
  - Procuring and equipping health facilities with cold materials and equipment with the balance of HSS1 (112 solar refrigerators, 20 electric refrigerators, 6 UNILOG remote temperature controllers, 236 cold boxes and 2,571 vaccine carriers)
- ✓ **Promoting demand**
  - Developing a strategic document
  - Producing communication materials (poster, flyers, video, etc)
- ✓ **Support for planning**
  - Training and developing microplans
  - Training on the updated DVD-MT and using data for action

- **Difficulties related to implementation of the technical support plan**

The following major difficulties were observed:

- ✓ The delay in releasing funds for implementing HSS2: not adhering to the conditions required to allow the Gavi Secretariat to implement the hybrid model and release funding; some operational-level activities were not able to be implemented.

- ✓ Misunderstanding of technical support: the technical assistance role of guiding the programme was not really clarified at the operational level.

5. UPDATE OF FINDINGS FROM PREVIOUS JOINT APPRAISAL

Of the 15 recommendations provided before 2017, 13 were completed (86%) and 2 (14%) were partially implemented.

At the conclusion of the June 2017 Joint Appraisal, of the recommendations issued, nine (50%) were completed, six (33%) were partially completed and four (17%) were not completed. (See Annex 7).

6. 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:
The key activities are focused on improving immunisation coverage and equity, and logistics and management of vaccines to rationalise the use of good quality vaccines. A particular focus is on improving data quality; this is important for Madagascar's status as a country that has both eliminated neonatal tetanus and is polio-free. An immunisation coverage survey is essential for evaluating achievements. We note that the last coverage survey dates back to 2008.
For funding, accelerating the release of the implementation decree for the immunisation funding act is a priority for the country.

Key finding/action 1	**Coverage and equity improved**
Current response	54 districts are covered for making management tools available
Agreed country actions	- Prepare the EPI Annual Action Plan 2019, emphasising the implementation of interventions with a high impact on immunisation outcomes: strategies for improving equity, including urban strategies (revisit targeting of priority districts). - By mid-2019, prepare a national training and updated plan for health facility workers on routine EPI management. - Systematically strengthen capacities of coaches and stakeholders at all levels by developing and updating associated tools, manuals and guides according to priority themes with transfer of skills and knowledge. - Make available to the 114 districts the updated EPI management tools including supervision tools. - Implement a monthly and quarterly performance monitoring mechanism for routine EPI, from the grant performance framework (technical ICC). - Use the opportunity of Gavi funds allocated to Madagascar to show their impact on reaching C&E objectives at the time of the Gavi strategy mid-term review in mid-December 2018. - Speed up the implementation and actual operation of the NITAG. - Complete joint supportive supervisions at the national level and decentralised level.
Expected outputs/results	- Management tools available in all health facilities of the 114 districts and the 22 regions - Coaches and stakeholders trained - Associated curricula, guides, manuals and tools prepared and distributed - NITAG set up - AWP 2019 prepared before the end of 2018
Associated timeline	June 2018 to June 2019
Required resources/support	Technical assistance for setting up NITAG
Key finding/action 2	**Logistics and cold chain improved**
Current response	Equip with refrigerators, spare parts, cold boxes and vaccine carriers
Agreed country actions	- Build and equip an appropriate site for vaccine storage and EPI offices. - Develop an equipment maintenance plan by end of September 2018. - Ensure availability of necessary resources for EPI management for the BHCs (wicks, kerosene, fuel for implementing outreach strategies). - Set up an information system to strengthen vaccine management at all levels. - Identify the site for the new EPID facility and make regional storage facilities operational. - Expand the vaccine transport cost survey to the survey of the supply system.
Expected outputs/results	Continued availability of quality vaccines at all levels Premises for building a storage warehouse and facility for the EPID identified Storage warehouse, EPID office built Cold chain equipment maintenance plan prepared
Associated timeline	June 2018 to June 2019
Required resources/support	Technical support to build capacities in logistics management

Key finding/action 3	**Data management and quality improved**
Current response	Significant disparity between administrative coverage and the WUENIC estimate
Agreed country actions	- Reinvigorate the information system subcommittee Sign the official text so it can be implemented Hold scheduled meetings regularly - Officially formalise implementation of the data improvement team Appoint team members Signature of the inauguration note - Update the integrated MAR to add the elements of missing data related to the EPI and promote usage of only the revised integrated MAR in the health facilities and ensure that the same elements are incorporated into DHIS2 - Re-establish the use of the immunisation register in all health facilities and ensure that all tools are updated before they are distributed - Correct the estimate of pregnant women and live births by using the same data source (recalculate previous immunisation coverage rates using corrected targets (HIS, EPID)(August 2018) - Prepare a data quality improvement plan by identifying strategies to reduce significant differences between administrative data and WUENIC estimates as part of a comprehensive HIS approach. - Organise a good quality count at the operational level - Analyse TT data recorded and take corrective measures - Implement a tool to monitor stocks and vaccine status in the regions and districts - Train district workers in DVD-MT production - Conduct immunisation coverage surveys
Expected outputs/results	Discrepancy between administrative coverage and WUENIC estimate is less than 10 points
Associated timeline	June 2018 to June 2019
Required resources/support	Financial support for implementing the immunisation coverage survey
Key finding/action 4	**HSS2 governance, management, coordination and funding improved**
Current response	Financial and technical management capacities of health workers are inadequate
Agreed country actions	- Speed up the signing of the implementation decree for the immunisation act and make a special fund for immunisation operational, including surveillance of VPDs and sentinel surveillance. - Strengthen management of the EPI by setting up stabilisation mechanisms for EPI staff and updating the programme's organisational chart. - Implement mechanisms for accountability and for forwarding supporting documentation for Gavi funding and for partners at the decentralised level in a timely manner. - Build workers' financial and technical management capacities at all levels.
Expected outputs/results	Health workers are trained in financial management and practical EPI
Associated timeline	June 2018 to June 2019
Required resources/support	
Key finding/action 5	**Surveillance of VPDs and AEFIs enhanced to maintain Madagascar's polio-free and neonatal tetanus elimination status**
Current response	Country achieves polio-free status
Agreed country actions	- Prepare a measles/rubella elimination plan and ensure it has sufficient funding. - Draw up an annual work plan for the AEFI committee. - Train the AEFI committees in the regions. - Prepare an annual work plan for new vaccine sentinel surveillances sites. - Prepare and implement the polio transition plan in order to maintain the gains made. - Prepare the neonatal tetanus elimination maintenance plans. - Implement strategies making it possible to enhance ownership of active surveillance activities by surveillance focal points, especially through the use of new technologies (ISS).

	- Set up CRS surveillance in order to provide evidence to support the introduction of the measles/rubella vaccine after 2018. - Incorporate into the budget framework lines intended for funding surveillance activities.
Expected outputs/results	Plan for maintaining the Madagascar polio-free and NT elimination status prepared Functional AEFI Committee Surveys on the socioeconomic impact and the scope of congenital rubella implemented
Associated timeline	June 2018 to June 2019
Required resources/support	Technical support for surveys on CRS
Key finding/action 6	**Decentralised technical assistance in the regions/districts enhanced**
Current response	Transfer of skills and knowledge not yet achieved
Agreed country actions	- Set up a committee for monthly monitoring and coordinating technical assistance under the authority of the EPI director. - Undertake mapping of partner support for Health System Strengthening and immunisation and technical assistance (UCP/BCC/TFP leader). - Transfer skills and knowledge from technical assistance to clearly identified MSANP workers
Expected outputs/results	Monitoring of technical assistance completed
Associated timeline	June 2018 to June 2019
Required resources/support	Technical and financial support

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

Before the Joint Appraisal:

A preparatory committee was set up that included active participation of all stakeholders, directed by the UCP. Committee members, made up of ICC/HSCC technicians, were divided into subgroups by theme (using the themes in the template). Working sessions took place daily, with a debrief on progress given at the end of each week.

The first draft of the template was sent to members of the technical ICC/HSCC and all partners for information, analysis and feedback.

During the Joint Appraisal: The Joint Appraisal took place from 11-13 July 2018.

The first day was dedicated to a series of presentations given by the different members of the preparatory committee according to themes in the template, followed by discussions. Recommendations were issued. (See Annex 8)

Gavi's orientation preceded the group work during the second day.

The Minister of Public Health and members of the ICC-HSCC decision-making group were debriefed on the results from the workshop for any observations and for approval on 13 July 2018.

Note: A field visit was conducted to enable first-hand observation of the realities on the ground.

After the Joint Appraisal:

The writing committee improved the report, incorporating feedback from the debriefing meeting.

The preliminary report, finalised by the drafting committee, was shared with the members of the ICC/HSCC decision-making group for approval on 11 September 2018, before being sent to the Gavi Secretariat.

8. ANNEX: Compliance with Gavi reporting requirements

	Yes	No	Not applicable
Grant Performance Framework (GPF) * Reports on all mandatory indicators		X	
Financial Reports *			
Periodic financial reports	X		
Annual financial statement	X		
Annual financial audit report		X	
End of year stock level report (must be provided by 15 May as part of the vaccine renewal request) *		X	
Campaign reports *			
Technical report for supplementary immunisation activity	X		
Report on surveys about campaign coverage	X		
Immunisation funding and expenditure information	X		
Data quality and survey reporting			
Annual data quality desk review.	X		
Data quality improvement plan (DQIP)		X	
Progress report on implementation of data quality improvement plan		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 cold chain equipment inventory		X	
Post-Introduction Evaluation (PIE)	X		
Five-year measles-rubella plan and situation analysis		X	
Operational plan for the immunisation programme	X		
HSS end-of-grant evaluation report			X
HPV-specific reports			
Partner reports on TCA and PEF functions	x		

LIST OF TABLES

LIST OF GRAPHS

LIST OF FIGURES

LIST OF ANNEXES

ANNEXES

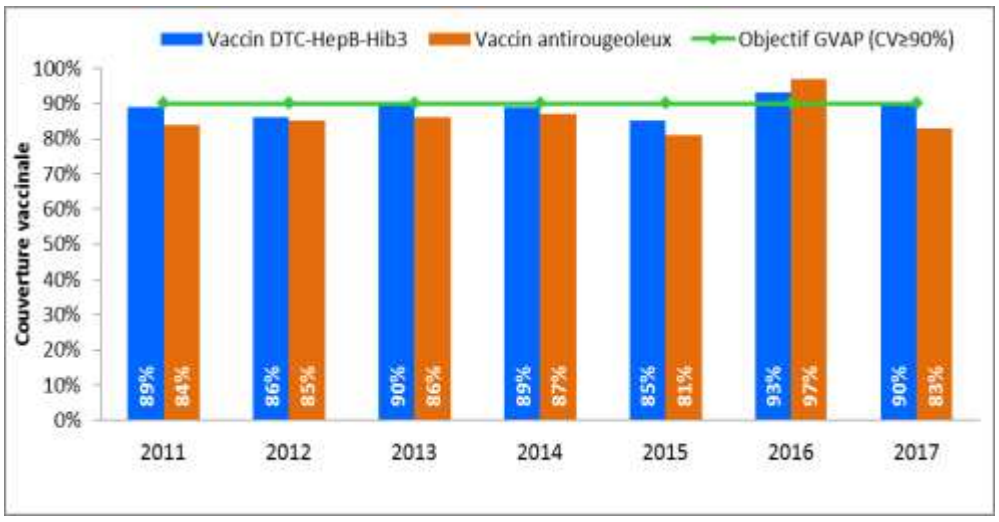
Annex 1: AFP surveillance performance (NP-AFPR: stool adequacy) by region, Madagascar 2015-2017

REGION	NP AFP rate				% of adequate stools			
	2015	2016	2017	2018*	2015	2016	2017	2018
Alaotra Mangoro	2.59	4.86	4.88	7.02	64	96	96	100
Amoron'I Mania	3.07	6.48	15.89	13.26	75	96	93	100
Analamanga	3.99	6.27	4.45	4.99	89	92	98	94
Analanjirofo	3	6.01	4.31	4.84	67	81	96	93
Androy	3.17	7.41	5.52	5.59	35	67	100	100
Anosy	2.97	9.54	7.08	3.71	64	73	96	71
Atsinanana	6.26	8.68	6.09	4.84	37	81	98	100
Betsiboka	5.84	10.1	8.06	8.28	73	94	93	100
Boeny	4.99	5.72	4.67	5.45	79	95	88	90
Bongolava	2.76	4.93	3.77	4.25	100	91	100	100
Diana	3.29	8.14	7.65	7.48	55	83	89	100
Haute-Matsiatra	12.12	8.21	10.34	6.57	65	92	89	90
Ihorombe	3.98	7.75	11.38	6.30	50	83	100	83
Itasy	2.01	2.24	5.14	5.43	71	100	95	70
Melaky	4.9	10.9	7.02	5.90	13	63	67	40
Menabe	5.06	12.76	6.74	3.82	56	82	88	100
Sava	3.85	7.32	4.57	6.75	52	93	92	100
Sofia	3.41	8.38	6.21	5.37	48	85	98	94
South-east	2.58	7.3	4.30	5.44	17	78	85	92
South-west	4.64	7.48	5.88	10.61	84	83	90	95
Vakinankaratra	6.16	7.69	4.96	1.88	76	85	96	100
Vatovavy Fitovinany	3.78	4.47	4.82	3.42	38	79	88	100
Madagascar	4.45	7.14	6.02	5.64	63	85	93	94

Annex 2: Annual incidence by region for measles and rubella in 2016 and 2017

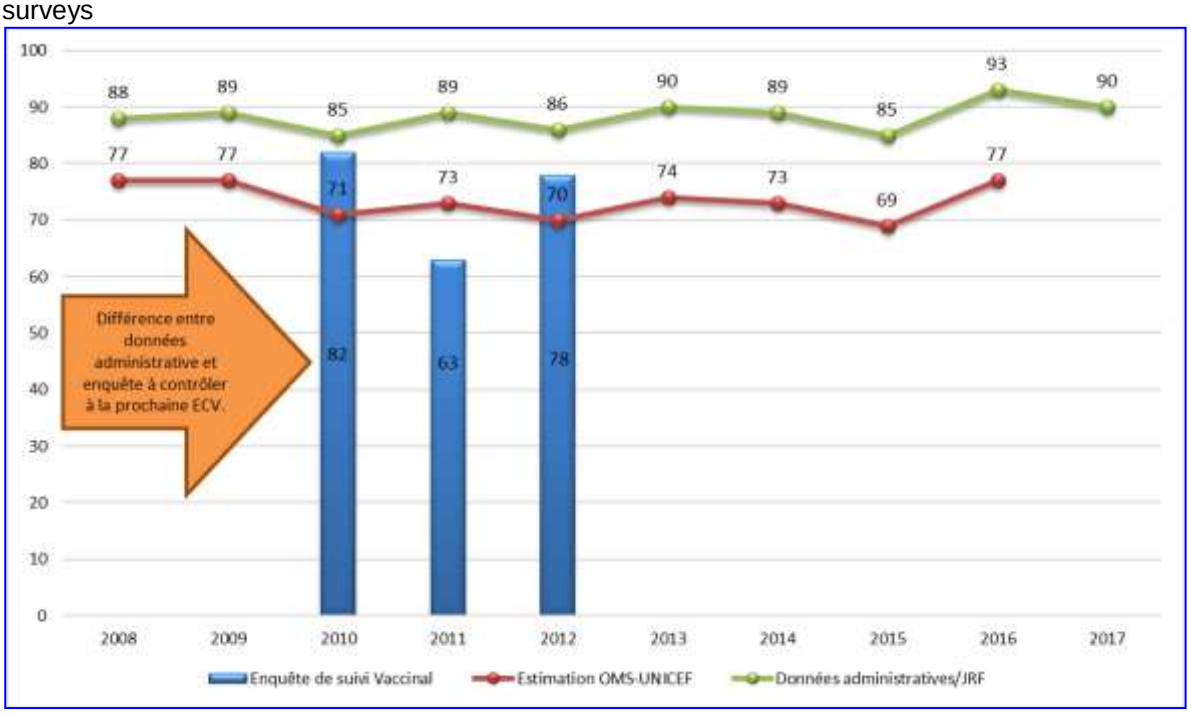
REGIONS	ANNEE 2016			ANNEE 2017		
	ROUGEOLE		RUBEOLE	ROUGEOLE		RUBEOLE
	Taux investigation non rougeoleux (≥ 2/100000 habitants)	Seuil élimination (< 1/1000000 habitants)	Seuil élimination (Norme < 1/1000000 habitants)	Taux investigation non rougeoleux (≥ 2/100000 habitants)	Seuil élimination (< 1/1000000 habitants)	Seuil élimination (Norme < 1/1000000 habitants)
ALAOTRA MANGORO	3,00	0,0	14,6	2,4	0,0	1,5
AMORON'I MANIA	4,60	2,2	14,6	9,9	0,0	18,8
ANALAMANGA	3,74	0,6	13,8	1,9	0,0	4,5
ANALANJIROFO	1,97	0,0	1,5	2,3	0,0	0,7
ANDROY	2,09	0,0	0,0	2,4	0,0	4,1
ANOSY	3,64	0,0	1,3	6,4	0,0	15,4
ATSINANANA	5,42	0,0	6,2	4,1	0,0	8,2
BETSIBOKA	4,83	0,0	2,8	3,9	0,0	13,6
BOENY	2,19	0,0	0,0	1,5	0,0	5,0
BONGOLAVA	1,01	0,0	0,0	1,5	0,0	0,0
DIANA	11,13	0,0	2,6	11,1	0,0	1,3
HAUTE MATSIATRA	6,58	0,0	10,7	5,0	0,0	10,9
IHOROMBE	3,78	0,0	11,6	2,7	0,0	5,8
ITASY	6,55	0,0	30,2	2,0	0,0	4,9
MELAKY	6,44	3,1	3,1	8,1	2,7	2,7
MENABE	4,31	0,0	9,1	2,5	0,0	3,7
SAVA	3,37	0,0	7,2	2,4	0,0	0,0
SOFIA	5,48	0,0	16,4	2,0	0,0	1,3
SUD-EST	3,08	0,0	6,2	2,6	0,0	6,0
SUD-OUEST	1,96	0,0	0,0	3,2	0,6	15,5
VAKINANKARATRA	3,46	0,0	7,6	2,8	0,0	4,3
VATOVAVY FITOVINANY	2,96	0,0	4,7	2,6	0,0	5,4
MADAGASCAR	**4,00**	**0,2**	**8,3**	**3,4**	**0,1**	**6,1**

Annex 3: MCV and DTP3 coverage from 2011 to 2017



✓ **External consistency/Triangulation**

Triangulation between data from administrative immunisation coverage, WHO/UNICEF estimates and surveys

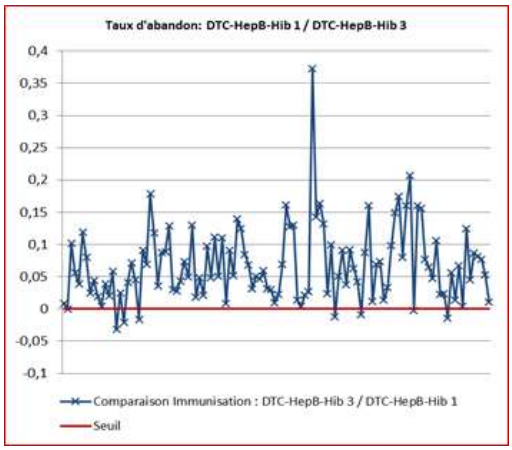


Since 2011, there has been a difference of 16 points between the administrative data and the WHO/UNICEF estimate.

✓ **Negative dropout rate for DTP-HepB-Hib (1/3)**

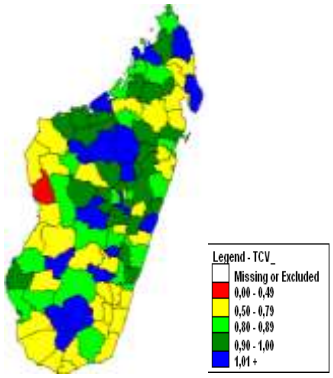
List of districts with a negative dropout rate

Région	District	TAB
ANALAMANGA	ANTANANARIVO-AVARADRANO	-3%
ANALAMANGA	MANJAKANDRIANA	-2%
ANALANJIROFO	Nosy-Boraha (Sainte Marie)	-2%
MENABE	MANJA	-1%
SOFIA	ANALALAVA	-1%
VAKINANKARATRA	Antsirabe I	-1%



- ✓ **Coverage over 100%**

2015

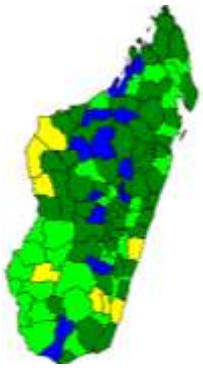


20 districts had a coverage rate above 100% in 2015

2016

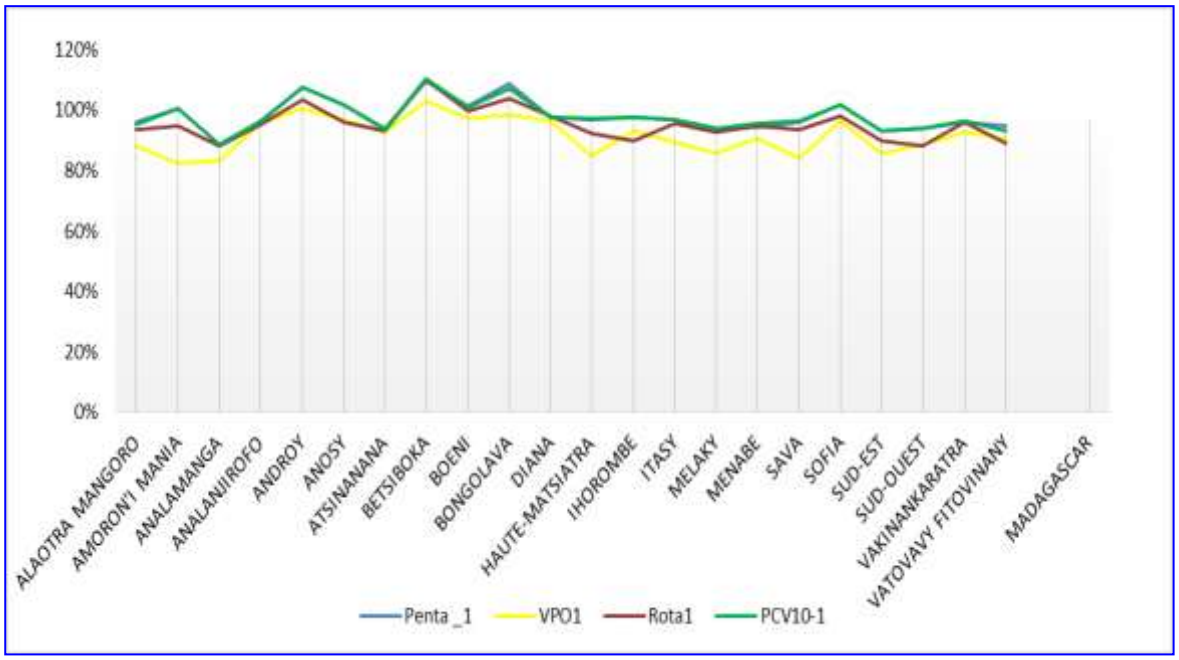
30 districts had a coverage rate above 100% in 2016

2017



14 districts had a coverage rate above 100% in 2017

- ✓ **Comparison between DTP-HepB-Hib1 – OPV1 - Rota1 - PCV-10-1**



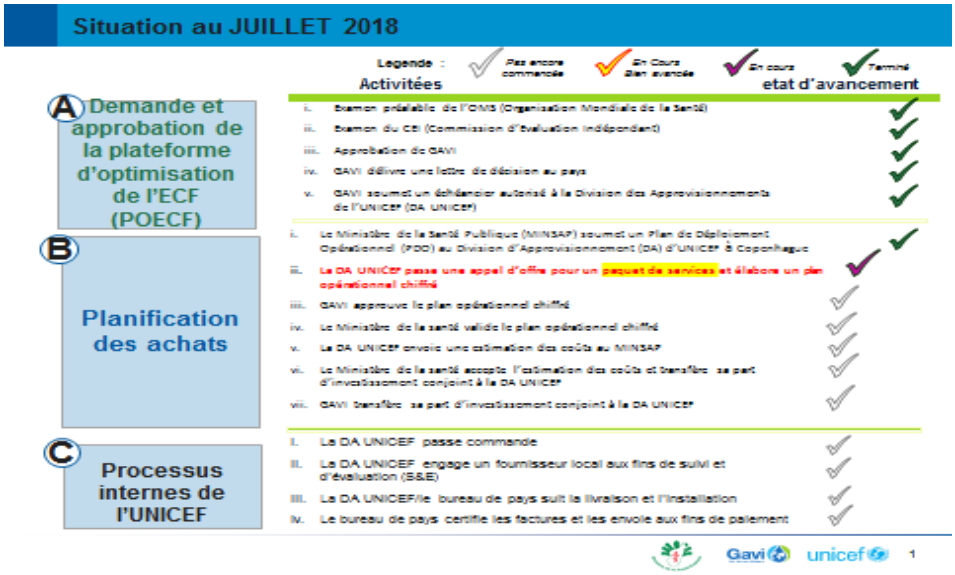
At the regional level, small deviations can be seen between the antigens that are given at the same time, in particular for the OPV1 vaccine, in the regions of Alaotra Mangoro, Amoron'i Mania, Betsiboka, Haute-Matsiatra, Itasy, Melaky, Menabe, and SAVA.

Annex 4: Bottlenecks for Penta3 by region in 2017

Region	Health District	Penta3 immunisation coverage	Bottleneck
Analamanga	Antananarivo Renivohitra	69%	Lack of knowledge on urban area population
Atsinanana	Toamasina I	79%	
Ihorombe	Iakora	66%	Areas that are regularly difficult to access because of flooding that might limit services and/or insecurity.
Melaky	Antsalova	62%	
	Besalampy	73%	
	Maintirano	76%	
South-east	Midongy Atsimo	59%	
	Vangaindrano	75%	
South-west	Ankazoabo Atsimo	70%	
	Beroroha	71%	
Vakinankaratra	Faratsiho	79%	Factors related to staff motivation
Vatovavy Fitovinany	Mananjary	76%	

Low immunisation coverage districts are at risk of epidemics of vaccine-preventable diseases.

Annex 5: CCEOP level of completion as of July 2018



Annex 6: Status of previous Joint Appraisal recommendations

Status of previous recommendations (Joint Appraisals before 2017)	
Recommendations during the Joint Appraisal	**Current status as of 30 June 2018**
1. Submit the draft Law on Sustainable Immunisation Funding to Parliament.	Draft implementation decree for the immunisation act drawn up by the EPID and sent to the Ministry of Public Health legislation department (SLRC) to request a technical opinion.
2. Finalise and update the policy and strategy documents for sustainable immunisation funding (cMYP, National EPI Policy, HSDP).	**cMYP**: The draft cMYP for 2018 - 2020 is available. However, the endorsement by the decision-making body of the ICC/HSCC planned on 26 April 2018 did not occur, due to lack of a quorum. **National Policy**: National health policy incorporating immunisation **HSDP**: updated

3. Settle payment of the Government's contribution to co-financing and VAT in a timely manner.	**Partially completed:** **Co-financing**: In 2017, the Government's contribution to co-financing was 100% rectified. For 2018, MGA 3,298,374,000, or US$ 1,030,898.12 still need to be resolved.
4. Ensure the availability of fuel/cash, power and spare parts.	* **Fuel allocations**: - The Government will provisionally purchase fuel for 10 months, including two months through the EPI Directorate and eight months from district operating budgets. Given the change in procedure for procurement, the unit price has been revised upward through a bid with regard to direct purchasing. Thus, the actual time period can be reduced to less than 10 months. A one-month supply rather than three months starting in December 2017 will be provided by Gavi/HSS2 – priority activities. * **Cash power**: provided through the districts' operational budget by prioritising this activity to comply with procedures. *** Spare parts** Spare parts that are available through HSS1 funding provide a portion of needs for eight months from December 2017 to July 2018. Available stocks of wicks will cover needs until August 2018, and stocks for other spare parts until October 2018.
5. Submit a request for support for the solar refrigerator provision platform (CCE platform) to speed up replacement of cold chain equipment per the cMYP (ensure government purchase of 140 refrigerators for a three-year period).	**CCEOP:** Already endorsed by the ICC/HSCC on 30 August 2016 Already submitted to Gavi on 9 September 2016 Official approval after suspended funding List of BHCs to equip with solar refrigerators validated by the Project Management Team (EGP) on 29 May 2018, then sent to UNICEF Copenhagen to issue a call for tender **Solar refrigerators from the Government:** In 2016, the Government procured 57 solar refrigerators, 27 of which were for EPI services and the rest for loyalty kits for BHC managers. For 2017, it procured 30 solar refrigerators intended for EPI services.
6. Hold an ICC meeting to decide the next steps for the HPV programme.	HPV vaccines introduced into the routine immunisation system **Actions taken:** Gradual scaling up to the national level: incorporated into the cMYP 2018-2020 EPID participation in the HPV capacity building regional workshop for Central Africa and Western Africa organised in Saly/Mbour, Senegal, in February 2018. **Action to be taken:** Submitting the proposal to Gavi in September 2018

7. Follow the recommendations of the recent independent evaluation of the response to the polio epidemic.	Accept certification document in Abuja the week of 18 June 2018. **Outcome**: Madagascar declared "polio free"
8. Strengthen the surveillance system for the timely detection of polio, measles and other VPD epidemic risks.	**Activities completed:** VPD surveillance system strengthening plan available: to be implemented all year long Reinvigoration of community surveillance following the workshop organised with APART and private health facilities in January 2018 Training and implementation of electronic surveillance 124 motorbikes provided for SDSP by WHO (24 May 2018) Polio free documentation prepared Submitted two measles plans (campaign and introduction of second MCV dose) for support request from Gavi: awaiting endorsement. Training on VPD surveillance for 114 SDSP focal points and 22 regional focal points Trained BHC managers in the four districts of the Melaky region and the district of Beroroha
9. Conduct the 2016 census and DQS every two years to improve data quality.	**Completed:** 2016 **Census** by health districts (initiative taken by Ministry of Public Health through the EPID: health sectorisation 2017) GPHC in progress through the National Statistics Institute Counting in the 54 districts completed **DQS**: with HSS2 funding – priority activities Central team to assess the quality of the data monitoring system (DQS) for 12 districts Data collection and analysis (23-25 May 2018) Preparing the data quality improvement plan planned for July 2018
10. Adjust the use of Gavi HSS2 funds and review reallocation and budgeting for 2016 activities as well as indicators that will be incorporated into the performance framework.	**Completed**: HSS2 reallocation and budgeting already endorsed by the ICC/HSCC on 22 December 2016. Implementation of priority activities since July 2017: Training on microplanning at the regional and district levels Community workers conducting a count of targets for immunisation Shipping inputs Providing fuel for one month Supportive supervision by the RMT in the 20 regions and DMTs in the 12 districts Quarterly review in four districts Implementation of outreach strategy in progress in the 11 districts Review of indicators to be incorporated into the performance framework: to be completed per the directives from the 3 July 2018 conference call
11. Review the issue of customs procedures and taxes with the appropriate authorities.	**Completed**: Vaccines and consumables are not subject to tax; transit costs are paid by the Government.
12. Revise and clarify ToRs and member profiles, including those of some traditional partners who have been absent for some time, along with	**Partially completed:**

new/former partners like JICA who are funding the new health information system.	ToRs updated by the ICC/HSCC Technical Committee; awaiting endorsement from the McKinsey consultancy so they can be finalised.
13. Provide liaison with the parliamentary group for health.	**Completed**: Meetings with the parliamentary group for health were held in 2017, especially on the implementation decree for the immunisation act, and setting up the NITAG.
14. Discuss, validate and document corrective measures at the national level for data from the peripheral level and set up a routine feedback system.	**Completed** by: - expanding the analysis team by involving other directorates and partners to improve EPI performance; - harmonising and analysing EPI data, organised monthly at the EPID; - setting up the coaching system for feedback; - distributing information/recommendations from the monthly district data analysis meetings. - 2017: Beginning of the process to draw up the immunisation data quality improvement plan
15. Train stakeholders at all levels in leadership and management (central, DRS, Physician Inspectors), practical EPI and administrative and financial procedures.	- **Completed**: - Training in practical EPI was completed for the 54 districts with HSS2 funding – priority activities - The decision-making body of the ICC/HSCC committee endorsed the procedures manual for the UCP
Status of recommendations from the joint appraisal – June 2017	
Recommendations during the Joint Appraisal	**Current status as of 30 June 2018**
1. Prioritise developing, adopting and implementing a data quality improvement plan by the Ministry of Public Health.	**Completed**: with HSS2 funding – priority activities – DQS – Data collection and analysis (23-25 May 2018) – Training on DVD-MT (10-13 June 2018) – The data quality improvement plan is to be prepared in July 2018
2. Make the HIS committee operational to manage data quality.	**Completed:** HIS committee operational since 17 February 2017 and the committee's roadmap has been drafted
3. Implement the EVM improvement plan.	**Partially completed:** - Make temperature monitors for the cold rooms operational at the national level (Multilog) - Procure six temperature controllers for the cold rooms at the regional level (Unilog) - Training technicians in preventive and curative maintenance in the 114 districts - Monitoring weekly stocks through using electronic frameworks
4. Strengthen coordination of partner interventions: review the ICC/HSCC ToRs, decentralise the ICC to the peripheral level.	**Partially completed:** ToRs updated by the ICC/HSCC Technical Committee; awaiting technical assistance from the McKinsey consultancy so they can be finalised.
5. Conduct an organisational analysis of coordination structures.	**Not completed**

6. Set up a NITAG	**Partially completed:** – Concept note prepared – Advocacy and orientation of the Ministry of Public Health on NITAG implementation and operation
7. Secure and prioritise funding for immunisation	**Partially completed:** - Rectifying 100% of co-financing in 2017, and 50% for 2018 - Creating the National Agency for the National Immunisation Fund
8. Speed up the writing and adoption of the implementation decree on the immunisation funding act.	Draft implementation decree for the immunisation act drawn up by the EPID and sent to the Ministry of Public Health legislation department (SLRC) to request a technical opinion
9. Prepare and implement the polio transition plan.	**Not completed**
10. Implement the PNDRHS: career planning, training plan, retention, increasing staff numbers, etc.	**Partially completed:** – Retention kit: pending the assessment of actions already taken (AFD, PASSOBA) before widely distributing the standard kit – Previous activities completed on the career plan: survey of Forward Management of Staffing, Employment, and Expertise (GPEEC), data collection, simulation of staffing needs – Adopted National Health Training Policy with steering and implementation committees – Strengthening the workforce: incorporating project contract health workers into civil service
11. Set up pools of trainers at the decentralised level	**Completed:** Pool of trainers operational after training in microplanning for DRSP/SDSP
12. Conduct immersion for newly recruited staff	**Completed:** On the job training in practical EPI for newly recruited staff
13. Collaborate with the other stakeholders (armed forces, local authorities, etc).	**Completed:** – Involvement in advocacy and social mobilisation meetings within their camp – Participation in awareness-raising activities for their peers – Involvement in polio inter-campaign activities: briefing and distribution of stickers to transporters and shopkeepers – Advocacy and involvement of APART, school officials, well-known bloggers and facilitators – Hold focus groups and educational talks with local stakeholders, religious and women's organisations and resistant groups – Involve armed forces in immunisation activities (escort in insecure/isolated areas)
14. Improve public-private partnerships (reporting, communication, etc).	**Completed**: - Collaborate with private health facilities and different health professionals associations: involve them in the advocacy meeting for the Analamanga region as part of FAV 12 - Meeting with private health facilities from the city of Antananarivo as part of the FAV 12 pre-campaign: contribute to completing immunisation and reporting on activities (RMA)

	Not completed: - Advocacy to private sector for immunisation funding
15. Prioritise the isolated areas where newly recruited health workers who have signed commitments will be assigned.	Workers will be assigned on the basis of SDSP needs, prioritising isolated and remote areas
16. Distribute the National Policy on Community Health (PNSC) documents and the revised PAC guidelines.	**Completed:** Distribute PNSC documents in the 22 regions **Partially completed:** PAC guidelines updated but awaiting endorsement
17. Implement urban and REC strategies.	**Completed:** - Guidelines and tools for microplanning in urban BHCs endorsed - Training in microplanning for 15 public BHCs in the city of Antananarivo (19-21 June 2018)
18. Issue technical assistance needs according to Ministry requirements.	**Completed**

Annex 7: Recommendations from the Joint Appraisal

Work Stream	Recommendations
1. Human resources	- Advocacy within the Ministry of Health to create a health logistics expert position - Advocate within the Ministry of Health to stabilise people who have been trained - Draft ToR for the EPI Directorate logistics subcommittee - Build capacities for ResPev in monitoring stocks and supervision - Carry out cascaded training for EPI logistics staff, using the services of the Logivac Centre
2. Monitor usage of vaccines by level	- Strengthen supportive supervision - Provide computer equipment - Make the budget available to increase vaccine management tools - Make the analysis framework available - Make the Government's secured fund available to ship vaccines - Implement EPI SOP - Prepare and implement a regular inventory schedule
3. Supply chain	- Redefine the vaccine distribution system through an in-depth analysis of cost effectiveness - Install solar generators for the Melaky and Androy regions - Equip the regional storage depot with a 4x4 vehicle - Assign trained staff - Relocate the EPI Directorate storage facility - Assess the reliability of integrating into the SALAMA procurement system in order to solve the problem of poor storage capacity for dry inputs proven necessary.
4. Plan activities	- Organise the review of the improvement plan on a quarterly basis - Organise an auto-EVM
5. Cold chain equipment	- Advocacy with the Ministry of Health to procure fuel - Study the possibility of internal strengthening (internship in the private sector) to improve the expertise of the 14 technicians on managing cold rooms - Speed up the CCEOP process and release HSS2 - Develop a cold chain equipment maintenance plan

	- Prepare a national biomedical equipment maintenance policy for the Ministry of Health - Find funding (Government, balance of HSS1) to purchase extinguishers - Relocate the Anosy cold room to Fianarantsoa

Annex 8: Financial status of priority activities as of 25 July 2018

BUDGET STATUS OF PRIORITY ACTIVITIES

Status as of: 25 July 2018

Amount US$

Activity	Initial budget	Revised budget (A)	Activities performed				Balance of funds (E= A-B-C)
			Total amount disbursed	Validated expenditures (B)	Expenditures awaiting verification / validation / justification (C)	Non-validated expenditures (ineligible) (D)	
Act 1.2.4.11: Train the (128) RMT/DMT in microplanning at the regional level	23,254	20,076	22,702	21,401	644	657	- 1,969
Act 1.2.4.12: Train and develop the microplan for BHC managers at the SDSP and train health workers on vaccine management (practical EPI) (686 BHC managers)	50,902	44,368	45,064	37,424	5,217	2,423	1,727

Activity 1.2.4.4: Achieve targets through outreach strategy		43,941	42,405	2,369	40,036	-	1,536
Act 1.2.4.52 : Conduct supportive supervisions by RMT at the SDSP level	11,154	10,293	10,292.76	5,430	4,203	659	659
Act 1.2.4.53: Conduct supportive supervisions by DMT at the BHC level	14,126	10,252	2,398	1,858	540	-	7,854
Act 1.2.4.51 : Conduct supportive supervisions by the central team at the SDSP level		13,886	13,246	-	13,246	-	640
Act 1.2.4.32: Operation of cold chain, provide fuel (4 months)	25,675	16,448	17,430	15,160	1,565	705	- 277
Act 1.2.4.31: Ensure availability of inputs (vaccines, consumables)	3,143	3,304	3,340	2,475	760	106	69
Act 1.2.4.13: Determine targets per Fokontany (census/counting using the	229,180	225,578	227,092	188,896	29,957	8,239	6,725

community register)							
Activity 3.1.1: Train District and Region managers (SIG and EPI) on EPI software (DVD-MT) and using integrated GESIS, and perform formative monitoring		56,988	49,164	-	49,164	-	7,824
Act 3.1.5: Quarterly review of districts	62,135	54,707	13,236	10,313	2,923	-	41,471
Act 3,1.3.1: Equip EPI managers and service providers at all levels with management tools (child card, mother card, immunisation register, check-in registers, UDD manual)	179,890	68,743	49,305	49,305	-		19,438
Activity 3.3.3: Prepare the DQRC (data quality report card)		17,203	12,391	12,379	-	12	4,824
TOTAL ACTIVITIES	**599,459**	**585,787**	**508,065**	**347,009**	**148,256**	**12,800**	**90,522**

Management Cost: Salary, medical costs, supervision/monitoring on the use of funds and effectiveness of activities by the Central, regions	28,586	42,258	41,523	37,614	3,910		734
GRAND TOTAL	**628,045**	**628,045**	**549,588**	**384,622**	**152,166**	**12,800**	**91,257**
				61.24%	**24.23%**	**2.04%**	**14.53%**

Disbursement rate:	**87.51%**
Justification rate:	**74.98%**

The justification rate is calculated based on supporting documentation received at the UCP with respect to funds released

List of Acronyms

AEFI	Adverse Event Following Immunisation
AFP	Acute Flaccid Paralysis
APART	Political Administrative Religious and Traditional Authority
AWP	Annual Work Plan
BCC	Central Coordination Bureau
BCH	Basic Healthcare Centre
BNP	Bacterial Meningitis Pneumonia
CCEOP	Cold Chain Equipment Optimisation Platform
CHUMET	Tsaralalana Mother-Child University Hospital Centre
cMYP	Comprehensive Multi-Year Plan
COMARESS	Malagasy Coalition for Health System Strengthening
CSO	Civil Society Organisation
C4D	Communication for Development

DDS	Health District Directorate
DMT	District Management Team
DTP-HepB-Hib	Diphtheria Tetanus Pertussis – Hepatitis B – *Haemophilus Influenzae* B vaccine
DQS	Data Quality Assessment
DVD-MT	District Vaccine Data Management Tool
EPI	Expanded Programme on Immunisation
EPID	Expanded Programme on Immunisation Directorate
FAV	Fanamafisama ny Andron'ny Vaksiny
GCR	Regional Accountancy Manager
GESIS	Health Information System Management
GPHC	General Population and Housing Census
HISM	Health Information System for Management
HPV	Human papillomavirus
HSDP	Health Sector Development Plan
HSS	Health System Strengthening
ICC/HSCC	Interagency Coordination Committee/Health Sector Coordination Committee
ICS	Immunisation Coverage Survey
IEC	Information-Education-Communication
IFIRP	Inter-Regional Paramedic Training Institute
IgM	Immunoglobulin M
IPV	Inactivated Polio Vaccine
JRF	Joint Reporting Form
JSI	John Snow Inc.
LRR	Regional Referral Laboratory
MAR	Monthly Activity Report
MCHW	Maternal and Child Health Week
MCV	Measles-containing Vaccine

MSANP	Ministry of Public Health
NGO	Non-governmental Organisation
NITAG	National Immunisation Technical Advisory Group
NPAFPR	Non-polio AFP rates
NT	Neonatal Tetanus
OPV	Oral Polio Vaccine
PCV	Pneumococcal Conjugate Vaccine
PNSC	Community National Health Policy
PNDRHS	National Plan for Healthcare Human Resources Development
PSRSIS	Strategic Plan to Strengthen the Health Information System
REC	Reach Every Child
RED	Reach Every District
RMT	Regional Management Team
Rota	Rotavirus vaccine
SDSP	Public Health District Department
SIA	Supplementary Immunisation Activity
TFP	Technical and Financial Partners
ToR	Terms of Reference
TT	Tetanus Vaccine (Tetanus Toxoid)
UCP	Programme Coordination Unit
UIC	Unimmunised Children
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VAT	Value added tax
VPD	Vaccine Preventable Disease
WHO	World Health Organization