Abbreviated form for the request of additional doses

A. Requirements:

1. The request will need to be endorsed by the Minister of Health and Minister of Finance or their delegated authority.
2. The completed request together with the supporting documents as per section I. of this form must be submitted to Gavi by e-mail (proposals@gavi.org copying the Senior Country Manager) by **18 July 2023**.
3. Once this form has been received including all required supporting documentation, it will be tabled for review at the next meeting of the Independent Review Committee (IRC).

B. Rationale

Please explain in the below the rationale for the request of additional doses, in particular for the expanded age range, including how this request link to the assumptions made earlier. Please provide a detailed calculation showing doses requested and approved earlier, the additional doses now requested as well as the total.

Following evidence of progressive increase in the number of confirmed measles cases (lab and epi-link) countrywide, along with progressive geographical extension of the affected areas (more and more districts affected), the country submitted its application to GAVI for MR campaign to be implemented in 2021, targeting 4,480,930 children 9 months to 4 years countrywide.

In line with country's approved application, it received USD 2,912,604 for operational costs, and 4,870.000 MR vaccine doses (see table 1) and corresponding injection safety devices in middle 2022, out of estimated need of 4,973,900 doses, considered 1.11 wastage rate.

Justification for campaign extended age group

The distribution of confirmed measles cases by age group, shows that the age group of 1-4 years and 5-9 years are the most affected, with 35.9% and 30.6%, respectively, while a progressively increasing number of children affected in those groups from 2020 to 2022 is observed. Same tendency is observed in the 10-14 years age group, with 14% of total confirmed cases. This evidence indicates that targeting under 5 years children only will not interrupt measles transmission as considerable proportion of cases (45.3%) occur in older children (5-14 years), which remains a huge reservoir and source of transmission also to younger and most vulnerable children. Hence the need to address with MR campaign, children under 15 years of age (see analysis in the epidemiological context section).

Furthermore, the challenges of routine immunization in reaching eligible children, as demonstrated by low immunization coverage in surveys, WUENIC estimates and routine MR2 coverage, along with progressively increasing number of measles cases in older children makes the catch-up campaign the most suitable choice to address immunity gap to prevent large scale measles outbreak and its related complication among high-risk populations.

Commented [MC1]: This should be called a "follow-up" campaign

Table 1. Estimated number of children 9 months-4 years, for MR campaign in 2021 and corresponding number of vaccine doses

Distritos	Nr of children in the Target Group (9 Monts - 4 Years)	Total Vaccine to Requisitar (1.11 Wastage Factor)	Total Vaccine Vialls (rounded to finish in Zero)
Niassa	332,993	369,622	369,630
Cabo-Delgado	387,072	429,650	429,660
Nampula	918,957	1,020,042	1,020,050
Zambezia	932,256	1,034,804	1,034,810
Tete	444,033	492,876	492,880
Manica	365,681	405,905	405,910
Sofala	354,472	393,464	393,470
Inhambane	175,537	194,846	194,850
Gaza	178,435	198,062	198,070
Maputo Provincia	283,010	314,141	314,150
Cidade de Maputo	108,486	120,419	120,420
Total Country	4,480,930	4,973,832	4,973,900

However, the new under 5 years target based on the results of the Polio rounds in 2022/2023 is of 9,965,589 children. After deduction 0-8 months, we come to a target of 9,169,742 children aged 9 moths to 4 years, which is 2.05 times more than the 4,480,930 children countrywide, number originally targeted for in 2021. This means that 4,688,812 children eligible for vaccination in 2023 were left out, due to limited vaccine availability (table 2 below).

Table 2. Number of Under 5 children eligible for MR campaign vaccination in 2023, and left out, based on achievement of the polio campaign rounds.

Under 5 years in 2023 based on result of Polio Campaign	9,965,589
9 Months - 4 Years In 2023 - Based on Polio Campaign	9,169,742
Targeted children aged 9 months - 4 Years in 2021 Application Based on official INE Data	4,480,930
Target Children left out in 2023 MR campaign	4,688,812

This situation led the country to develop a decision framework to allocate the scarce vaccine available to highest priority districts to start responding, while the country prepared to request additional vaccine and resources for the remaining districts. Seventy-one districts in 5 provinces (Niassa – 9 districts), Zambezia, Tete, Manica and Sofala (all districts in these provinces – 22 districts, 15, 12 and 13, respectively) were considered for this phase one of MR campaign. Total of 4,811,849 children were targeted. The vaccine needs were estimated at 5,341,180 doses. Since the country received 4,870,000 MR vaccine doses form GAVI, the country added 471,180 doses. We present below the summary of the number of targeted children in selected provinces (see table 3).

Table 3. Number of children 9 months – 4 years by province, targeted by MR follow up campaign in 2023

Provincias	*Nr of Chld in target group U5 Years - Based on Polio Achievements*	Total Vaccine to Estimated (1.11 Wastage Factor)	Total Vaccine to Estimated round to finish in Zero (1.11 Wastage Factor)
Niassa	*520,970*	*578,277*	*578,280*
Zambezia	*1,836,268*	*2,038,258*	*2,038,260*
Tete	*905,960*	*1,005,615*	*1,005,620*
Manica	*740,730*	*822,211*	*822,220*
Sofala	*807,920*	*896,792*	*896,800*
Total Mocambique	*4,811,849*	*5,341,152*	*5,341,180*

As mentioned above, the highest number of children vaccinated in polio campaign is 2.05 times more the official estimates. The adjustment method used, is like the one explained below for the adjustment of the under 15 years (9 months – 14 years) target in 2024, for which the country is requesting support in this application.

Commented [MC2]: 9 years?

It is worth mentioning that yet in the context of response to polio outbreak initiated in 2022, the country conducted round 1 round of bOPV2 in June 2023, targeting children under 15 years, since there was evidence of polio in 11 children in the age group of 5-9 years, and 5 children in the age group of 10-14 years (10, 12 and 14 years). A total of 22,682,644 children were vaccinated. This represents 1.58 times more than 14,389,932, the number of under 15 years provided by national bureau of statistic for 2023.

Therefore, the occurrence of polio cases in children between the age groups 5-9 years and 10-14 years, along with the occurrence of a significant number of measles cases in the same age groups as already demonstrated, is an indicator of the persistence of immunity gaps in these groups due to the weaknesses of immunization program in the last 10-15 years and reinforces the need to consider vaccination against measles in children younger than 15 years. Therefore, the country's request is funding to carry out a campaign that covers children under 10 years old, that is, 9 months to 9 years old. Below we demonstrate the methodology used to estimate the target group of 9 months – 9 years in 2024, adjusted to the results of the 2023 polio campaign.

Commented [MC3]: Kindly explain how these immunity gaps are being addressed through RI - e.g. are PIRIs or similar activities organised in areas with high numbers of cases in those age ranges?

Target group estimate for Measles campaign in 2024 (see table 3)

Parameters considered:

1. Starting point – total number of children under 15 years vaccinated in polio round 8 - 22,682,644
2. Compare the result achieved with INE data for the same age-group (under 15 years) in 2023 - 14,389,932.
3. Find the differential factor between the INE data and the polio results in the same group (under 15 years) – 1.576 more than INE data.
4. Apply this differential factor to same age group in 2024, since the campaign will be conducted in 2024, to get the corresponding under 15 years estimates for 2024 (14,559,882*1.576) = 22,950,534.
5. From the INE population aged < 1 year in 2024, extract the population aged 0-8 months, by dividing total pop under 1 year (1,138,685) by 12 and multiply by 8, to obtain the number of children in 0-8 months (759,123).
6. In INE pop data, then calculate the percentage of 0-8 months children obtained in nr 5, out of the under 15 population according to INE in 2024 (5.21%).
7. Apply this percentage to total under 15 years population in 2024 estimated population in nr 4 above (22,950,534*5.21%), to obtain 0-8 months children (1,196,595).

To calculate number of children 9 months – 9 years

8. Since the age was revised to 9 months – 9 years, proceed as follow:

   a) use INE data for 2024 and get the total number of children < 1 year (1,138,685).
   b) Divide the result in a) by 12 and multiply by 8, to get number of children 0-8 months (1,138,685/12*8 = 759,123)
   c) Deduct the result in b (759,123) out of the total number of children <10 years to obtain number of children 9 months – 9 years (9,717,497-759,123 = 8,958,374)
   d) Calculate the % children 9 months – 9 years over the total < 15 years in 2024 (8,958,374/ 14,559,882 = 61.53%.
   e) Apply the result in d) over the total number of children under 15 years in 2024 adjusted to polio results as estimated in step 4 above, to obtain the adjusted number of children 9 months – 9 years in 2024 (22,950,534 *61,5% = 14,120,956)[1].

To calculate number of children 5 – 9 years

9. Since the second group to be targeted in 2024 is that of 5-9 years, proceed as follow:

   a) Use INE data for 2024 and get the total number of children 5-9 years (1,548,616).
   b) Get the percentage of a) over total number of children < 15 years (1,548,616 / 14,559,882 = 10.64%)
   c) Apply the result in b) over the total number of children under 15 years in 2024 adjusted to polio results as estimated in step 4 above, to obtain the adjusted number of children 5-9 years in 2024 (22,950,534 * 10.64% = 2,441,061)[2].

Note [1,2]: Kindly note that the results of the estimates in [1,2] demonstrated above were considered for 9 months-9 years and 5-9 years for all districts, just to demonstrate the steps involved in the adjusted estimates of the number of children in both target groups. Therefore, the total numbers shown in [1,2] is not the real number considered in the application since some districts will be targeting 9 months-9 years, while other districts will be targeting 5-9 years children. The total number in the application based on applying the above methodologies to each group and by province, is presented in table 3 below.

Commented [MC4]: Could you please explain why the starting point is children under 15 rather than under 10 in view of the target population?

Commented [MC5]: Under 10?

Commented [MC6]: Are you using nationwide estimates or just the data for the provinces that will target from 9m-9y?

Commented [MC7]: Where are you excluding the children 9m-4y already vaccinated in 2023 from this target population?

Commented [MC8]: Are the 5-9yo not already included under point 8 just above?

Table 4. Estimate of target group and vaccine needs for Measles campaign in 2024

Distritos / Provincias	NR CHILDREN TARGETED / PROVINCIA (9 Months - 9 Years) / (5 - 9 Years)	Total Vaccine to Request (09 Mths - 14 Years)	Nr of Vaccine Vials (09 Mths - 14 Years
Niassa	652,735	724,600	72,460
Cabo-Delgado	1,214,368	1,348,040	134,804
Nampula	2,974,981	3,302,340	330,234
Zambezia	1,416,342	1,572,250	157,225
Tete	699,447	776,460	77,646
Manica	531,889	590,460	59,046
Sofala	582,420	646,560	64,656
Inhambane	537,164	596,320	59,632
Gaza	528,608	586,820	58,682
Maputo Provincia	893,660	992,010	99,201
Maputo Cidade	322,052	357,530	35,753
Total	**10,353,666**	**11,493,390**	**1,149,339**

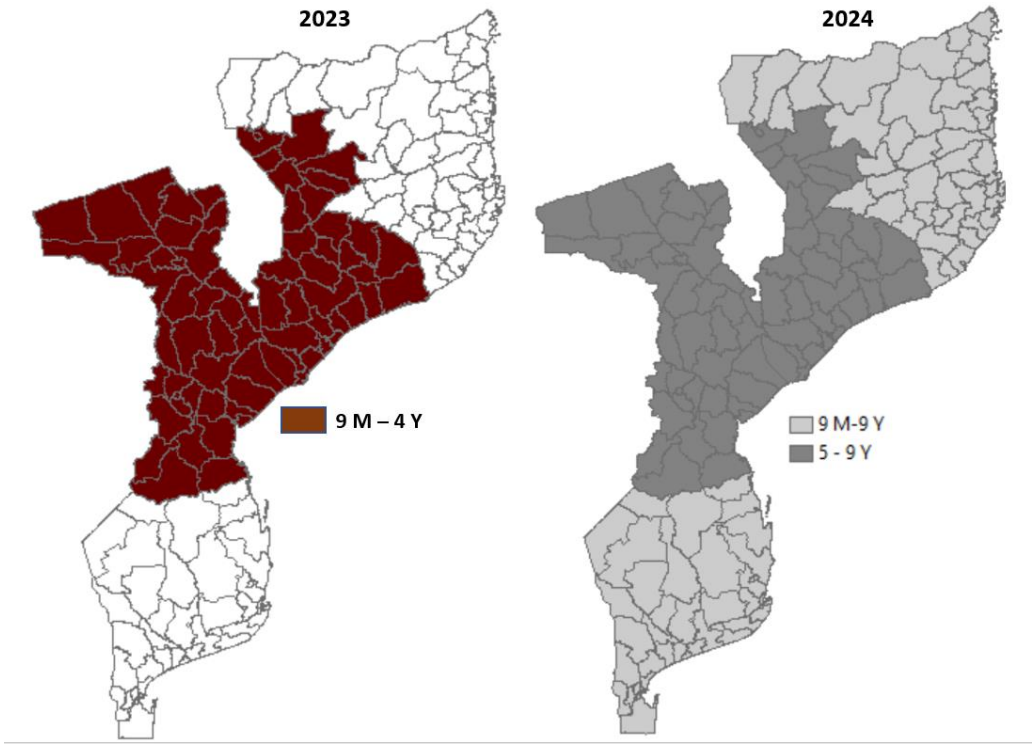
Note: Zambezia, Tete, Manica and Sofala conducted **9 months–4 years** campaign in 2023, in all Districts. Therefore, in 2024 these provinces target **5-9 years only**. On the other hand, Niassa conducted the campaign in 9/16 districts: therefore, in 2024, Niassa province targets **5-9 year**s in 9 districts and **9 moths-9 years** in the remaining 7 districts.

With the above demonstrated estimates, the country is expressing to GAVI and other partners, its interest in conducting the MR campaign in 9 months – 9 years children in 2024, and requests support in MR vaccine (11,493,390 doses) and related injection safety devices, and VIG funds estimated at USD 0.80 /child out of the 10,353,666 children targeted, to cover campaign operational cost. We note that the estimated target has been discussed and agreed by MoH (National Directorate for Public Health), EPI partners at country level and NITAG.

Commented [MC9]: Columns 3 and 4 refer to ages up to 14 years. This should be amended up to 9 years in view of revision of upper age requested ?

Commented [MC10R9]: Could we have a table showing for each province
Total number of children 9m-4y,
Total number of children 5-9y,
Number of children 9m-4y targeted in 2023,
Number of children 9m-4y targeted in 2024,
Number of children 5-9y targeted in 2024

Figure 1. Districts that conducted MR campaign in 2023 in 9n months – 4 years, and districts to implement MR campaign in 2024 in 5 – 9 years and 9 months – 9 years children



C. Context

The section briefly captures relevant information on the context rationale including some of the following:

(i) Country context

- ***Country situation***

Mozambique, located on the east coast of southern Africa on the Indian Ocean, shares borders with six countries (Tanzania, Malawi, Zambia, Zimbabwe, South Africa and Swaziland). With an approximate surface area of 800,000 km2, the coastline stretches almost 2,700 km from north to south and the climate ranges from tropical to subtropical.

There are 11 provinces, clustered into three regions: north (Niassa, Cabo Delgado and Nampula), central (Zambézia, Tete, Sofala and Manica) and south (Gaza, Inhambane, Maputo and Maputo City). Maputo City is the capital.

Provinces are currently subdivided into 161 districts, which are further subdivided into administrative posts and then again into localities – the lowest geographical level of the central state administration.

Of a population of 32,419,747 in 2023, approximately 66% lives in rural areas. Nampula and Zambézia provinces are home to approximately 40% of the country's population. Although the average population density is 36 per km2, density varies across the country, with most of the population living along the coastline. Just over half the population (52%) is female (INE 2017).

Insurgent attacks in northern and central districts of Cabo-Delgado, North of Mozambique, have resulted in internally displaced population that settled mostly in Pemba, Ancuabe, Chiúre and Montepuez districts in Cabo-Delgado province, Erati, Nacaroa and Meconta districts in Nampula province, and Namacurra and Nicoadala districts in Zambézia province.

In addition, cyclones in 2021, not only displaced populations internally in northern and central provinces of Mozambique, but also from Morrumbala and Derre districts to a neighbouring country, Malawi. Those that were in Malawi, were resettled back to their districts of origin in middle 2022 However, access to these villages for the provision of health services is still a huge challenge, since roads and infrastructures destroyed by the cyclones and floods have not yet been recovered.

Tropical Storm Freddy hit Mozambique 2 times in 2023, on 24 February 2023 and between 11 and 12 March. The most affected province was Zambezia, mainly Quelimane, but other districts in this province were also affected. The provinces of Sofala, Nampula, and Tete (the most populous countrywide, bearing 21%, 19% and 10% of total country's population, respectively) have also been affected and recorded heavy winds and rainfall, and extensive flooded areas. About 100,000 people were affected, with thousands of displaced, destroyed properties, health facilities, school rooms and crop fields, and the access roads to peripheral communities also partially or completely cut off. This situation makes it even more challenging for the health system to reach those remote communities due to difficult access roads and transport needs not readily available.

It is noted that the return of Freddy to Mozambique followed weeks of intense rainfall and flooding, which have already significantly impacted the southern and central parts of the country. The system's slow speed (6km/h) was an aggravating factor, worsening the impact in areas of its path.

In general, the uncontrolled population movements because of the cyclone, has worsened the already pre-existing challenges with denominator as discussed below.

Mozambique's epidemiological profile is typical of developing countries. The most important causes of serious illness and mortality after the first month of life are malaria, HIV, acute respiratory infections, diarrhoea, anaemia, malnutrition, sepsis, and meningitis[1]. Malaria was the fourth leading cause of death in the country in 2019, accounting for 42% of deaths among children under five years of age. HIV prevalence among adults in Mozambique is 12.5% and is higher among women (15.0%) than men (9.5%).

The leading health risk factors are high levels of poverty and malnutrition and inadequate access to clean water and sanitation. The high prevalence of chronic child malnutrition increases a child's risk of mortality from other diseases (particularly communicable).

The National Health System (NHS) in Mozambique is organized into four levels of care. Levels I and II, the most peripheral ones, are meant for implementing the Primary Health Care (PHC) strategy and for levels III and IV clinical conditions that cannot be attended to at those levels. Levels III and IV are fundamentally meant for more specialized curative care and serve as a referral for the immediately inferior levels.

In general, PHC is the main strategy of health intervention to reduce the high rates of morbidity and mortality due to communicable diseases. Primary health care services, including immunization, are offered free of charge at all 1,625 health centres (all level 1) in the country which are open from Monday to Friday. Some health centres have outreach teams attached to the facilities that provide immunization and other essential health services for mother and child survival in outreach sessions. There are also community health workers (APEs), which function as an extension of health services in remote areas. They provide selected health packages to communities including treatment of minor ailments, health education, mobilization for adherence to health services, and referrals to health facilities including immunization services.
The Public Sector is the main provider of health services nationwide. The private sector represents around 5% of health services. The non-allopathic sector is dominated by traditional medicine practitioners, herbalists, and others.

Overview of the EPI Program in Mozambique

The EPI is over four decades old and, since its establishment, has contributed significantly to the reduction of vaccine-preventable deaths through the administration of vaccines. Currently, seven vaccines in the routine infant vaccine schedule (BCG, bOPV, DTP-Hep-Hib, PCV, Rotavirus, IPV and Measles-Rubella) are administered between 0 to 24 months of age. These vaccines protect against 12 different diseases (tuberculosis, diphtheria, whooping cough, tetanus, hepatitis B, rotavirus

diarrhoeal disease, Haemophilus influenza type b, pneumococcal disease, measles, rubella, and poliomyelitis).

Mozambique Expanded Program on Immunization (EPI) was established in 1979 under the Primary Health Care. Within the Ministry of Health, EPI is a National Program within the National Directorate of Public Health. Immunization services are offered in both fixed-point and outreach activities.

Over the last few years, EPI has operated under considerable pressure, with several routine and emergency activities driving planning and focus: polio, measles, and cholera outbreaks, the C19 emergency, and more recently, the urgent need to implement catch-up activities in the routine immunisation programme. A major concern to the MoH is the negative impact the C19 pandemic and response have had on routine immunisation and the continuity of primary health care more broadly. In addition, the country is committed to ensuring its population retains the highest possible level of protection from C19.

National administrative data show an increase in Penta 1 from 100% in 2021 to 106% in 2022, while Penta 3 coverage dropped slightly from 89% to 87% in 2021 and 2022, respectively. An increasing trend has been observed for all antigens and may be indicative that progressively more children have been accessing immunization services in the early post-covid pandemic era. However, at the subnational level, administrative data has shown persistent challenges in achieving the minimum 80% coverage of DTP3 at the district level, as per WHO recommendations.

Similarly, MR2 vaccination coverage increased from 85% in 2020 to 88% and 89% in 2021 and 2022, respectively.

Commented [MC11]: Up until what age can children be caught up through routine immunisation? If the country is seeing cases in children beyond 5, it would be helpful to understand how the country can catch such children outside of campaigns, e.g. through school vaccination, especially if the country sees cases in 10-14 years old. It would be helpful to understand if some areas see higher cases in those age ranges than others.

Figure 1. Penta 1-3 Admin and WUENIC coverage 2020-2022

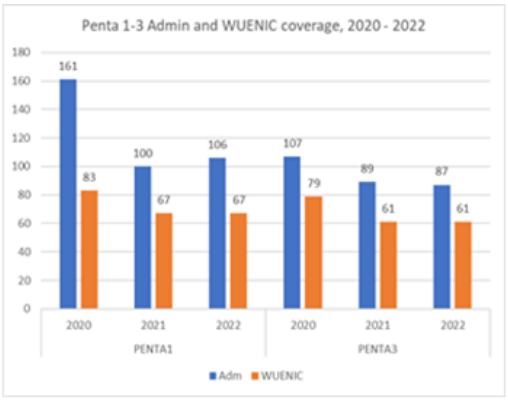
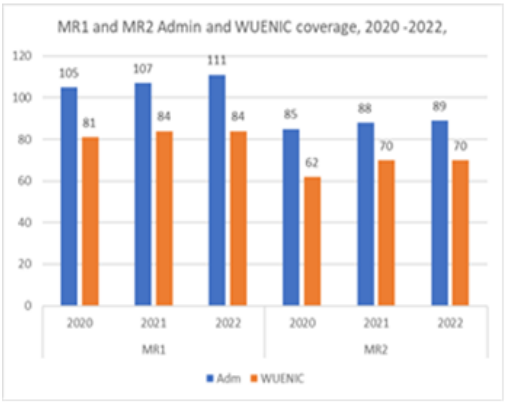


Figure 2. MR 1-2 Admin and WUENIC coverage 2020-2022



Meanwhile, surveys have consistently shown low coverage in Nampula, Zambézia, Tete, and Manica, with values consistently below the national average (table 2). Moreover, the coverage surveys indicate persistent discrepancies with administrative data (an average discrepancy of 28% over the period).

Commented [MC12]: In view of this, could you please explain why the province was not prioritised for the July 2023 campaign? Is it due to available supply of vaccines or for other reasons?

Table 4. EPI coverage through surveys: MICS 2008, DHS2011, IMASIDA 2015 and PC CS 2028

	DHS 2003	MICS 2008	DHS 2011	IMASIDA 2015	PCCS 2018
Province	Meales	Meales	Meales	Meales	Meales
Niassa	51.9	74.9	87.7	86.0	73.9
Cabo-Delgado	80.2	83.8	80.6	95.0	65.4
Nampula	69.1	67.1	83.4	74.0	65.5
zambezia	63.3	61.7	71.5	71.0	69.9
Tete	72.0	60.0	75.8	75.0	80.7
Manica	81.5	69.2	80.3	89.0	73.0
Sofala	74.7	82.9	87.4	80.0	81.7
Inhambane	92.2	86.9	86.4	96.0	88.3
Gaza	91.7	83.4	85.6	96.0	89.8
Maputo Provincia	95.2	87.4	98.1	98.0	90.8
Maputo Cidade	96.9	93.0	95.4	99.0	94.2
National	76.7	74.1	81.5	82.7	75.5

Furthermore, WHO and UNICEF estimates of immunisation coverage (WUENIC) confirm the downward trend in vaccination coverage over the same period. For instance, WUENIC estimates also indicate that Penta1 has dropped from 83% in 2020 and further down to 67% in 2021 and 2022, indicating progressive decrease in access to immunization services, and a progressive increase in Zero-dose children, while DPT3 dropped from 88% in 2019 to 79%, in 2020, and to 61% in 2021 and 2022.

Figure 3. Penta1 coverage WUENIC estimates

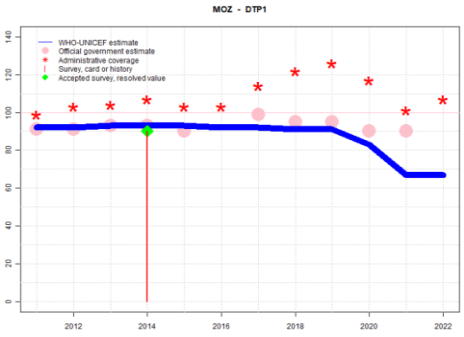
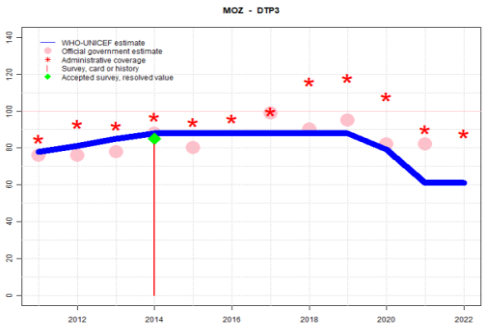


Figure 4. Penta3 coverage WUENIC estimates



Similarly, WUENIC estimates country MR1 coverage to have dropped from 87% in 2019, to 81% in 2020, and then a slight increase to 84% in 2021 and 2022, while MR2 dropped from 64% in 2019 to 62% in 2020 and then increased and stagnated at 70% in 2021 and 2022.

Figure 5. MR1 coverage WUENIC estimates

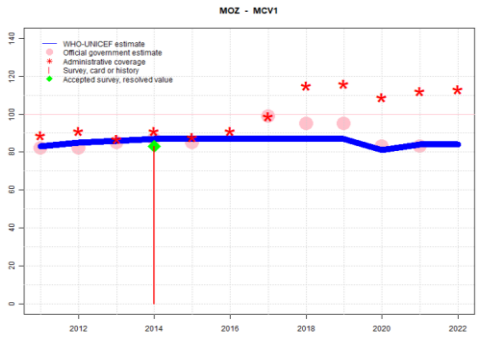
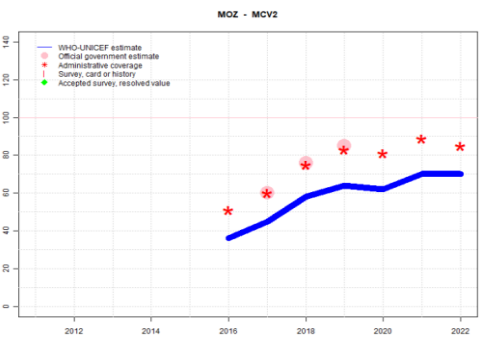


Figure 6. MR2 coverage WUENIC estimates



The primary issue related to coverage above 100% reported through administrative data, is the underestimation of the target group. Target group estimation currently uses official data from the National Institute of Statistics (INE) however, these data are known to be inaccurate. In addition, projected live births in the MCH DHIS2 databases are unreliable. There is a discrepancy at all levels between the number of people receiving BCG (proxy of live births) and the target group of live births calculated based on INE population estimates.

Analysing data for some of the related essential health interventions, such as the pre-natal consultation (PNC) and BCG in 2021 and 2022, it was observed that the number of expected pregnant women (5% of the total population) was estimated at 1,541,613 and 1,580,804, respectively. However, the number of pregnant women reached in the 1st PNC was 1,895,876 and 2,090,854 representing 123% and 136% in 2021 and 2022, respectively. Meanwhile, for live births estimated at 1,348,108 and 1094152, the number of children reached with BCG was 1,348,108 and 1,462,934 representing 126% and 134% coverage, in 2021 and 2022, respectively. In any case, the official target estimated has been surpassed, which is an indication that the denominator might be underestimated.

The underestimation of the target has resulted in a reduced quantity of vaccines supplied to the country, with special emphasis on those supported by GAVI (Penta, IPV, MR, Rota and PCV). Given the urgent need to improve vaccine forecasting and quantification, EPI has been analysing different methodologies to reduce stockouts, ensure continued, sufficient vaccines in-country for target groups and improve the reliability of reported vaccine coverage data. For operational purposes, EPI recently proposed, for internal MoH consideration, using the number of children vaccinated with BCG as a proxy denominator for live births in each district.

The choice of BCG stems from various reviews undertaken in which EPI has noted a continuous supply of BCG vaccine administered at birth at all levels for the past years. Despite the limitations in data quality, the BCG vaccine has shown greater reliability compared to other interventions because

it is administered only once. EPI is continuing to review alternative forecasting and supply planning methodologies with partners.

Vaccine stockout has also been observed in health facilities, even when the vaccine is available at the district level, due to inadequate vaccine forecast and stock management at this level. This situation needs to be addressed through proper capacity building of peripheral health workers.

To recover routine immunisation and surpass pre-C19 coverage levels, EPI and its partners developed a Recovery Plan in 2022. The plan's objectives are to (1) reduce the number of zero-dose and under-immunised children between 2019 and 2022 affected by the disruptions to routine immunisation services exacerbated by the C19 pandemic in the priority districts; and (2) identify and implement activities that can adaptively overcome persistent challenges in the immunisation program and re-build a system that is able to withstand future disruptions.

Implementation of the Recovery Plan, supported in 2023 by Gavi (CDS3) involves implementing several rounds of PIRI to catch up on the missed doses among children under five (the main missed age cohort), particularly those defined as zero-dose. All life-saving vaccines in the routine schedule will be administered, as will C19 vaccine booster shots. The Plan also includes activities to strengthen performance in key programmatic areas e.g. improving planning, implementation, and monitoring of mobile brigades and improving data quality to capture zero-dose and under-immunized children.

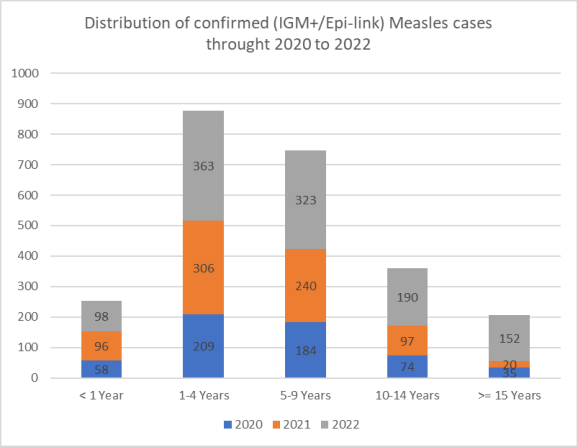
- ***Epidemiological context***

The update of measles analysis in the last 3 years (2020-2022) indicates a progressively increasing number of confirmed measles cases from 560 in 2020, to 759 in 2021 and to 1126 in 2022, totaling 2445 cases over the 3 years period (see table 1 and figure 3). Furthermore, while the age group of 1-4 years and 5-9 years are the most affected, with 35.9% and 30.6%, respectively (see figure 4), it is observed a progressively increasing number of children affected in those groups from 2020 to 2022. Same tendency is observed in the 10-14 years age group.

Table 1. Distribution of Confirmed (IGM+/Epi-link) Measles Cases by Age Group throughout 2020 to 2022

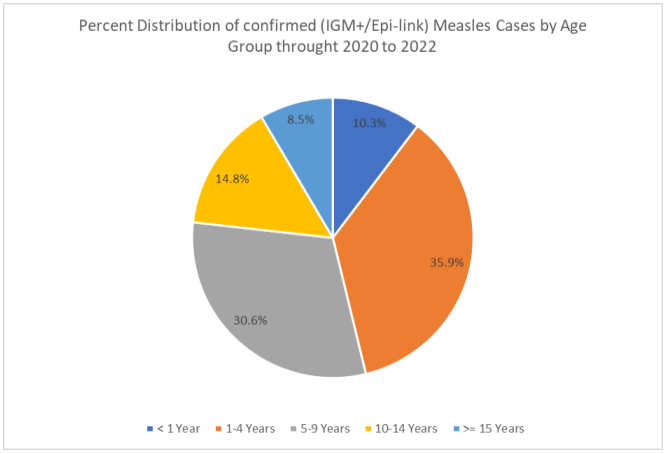
	2020	2021	2022	Total
< 1 Year	58	96	98	252
1-4 Years	209	306	363	878
5-9 Years	184	240	323	747
10-14 Years	74	97	190	361
>= 15 Years	35	20	152	207
Total	***560***	***759***	***1126***	***2445***

Figure 7. Distribution of Confirmed (IGM+/Epi-link) Measles Cases by Age Group throughout 2020 to 2022



Overall, out of the 2445 confirmed measles cases reported over the last 3 years (2020-2022), 46.2% occurred in children aged under 5 years, and 45.3% in those aged 5-14 years. The remaining 8.5% occurred in those aged 15 years and more (see figure 4).

Figure 4. Percent Distribution of Confirmed (IGM+/Epi-link) Measles Cases by Age Group throughout 2020 to 2022



The above evidence indicates that targeting under 5 years children only will not interrupt measles transmission as considerable proportion of cases (45.3%) occur in older children (5-14 years with 30.6% in 5-9 years age group), which remains a huge reservoir and source of transmission also to younger and most vulnerable children. Hence the need to address with MR campaign, children under 10 years of age. The 14.8% of cases occurring in children 10-14 years, will be addressed through school health programs in most places where there is primary and / or secondary schools, and outreach activities in remote areas when conducting routine immunization outreach.

(ii) Programme context

a. What are the objectives, key indicators, and expected outcomes?

Overall Objective

The objective of this catch-up campaign is to close the population immunity gap for measles and rubella, attaining high levels of population immunity by reaching and protecting children missed by routine immunization services and children who failed to develop immunity after their first dose of measles vaccine, and this way, prevent the occurrence of measles and rubella outbreak and their complications, countrywide.

Specific Objectives

- ✓ To vaccinate ≥ 95% of the estimated 10,353,666 children aged 9 months to 14 years, with MR vaccine irrespective of their vaccination status.
- ✓ To ensure injection safety through safe waste management practices.
- ✓ To create demand for the uptake for all vaccines, included in routine immunization, during and after the campaign.
- ✓ To close the equity gap for vaccination through identification and strategic planning to reach zero dose and under vaccinated children with routine vaccines.
- ✓ To intensify surveillance activities during the campaign and timely identification and investigation of any suspected MR and AEFI cases.
- ✓ To strengthen cold chain management and ensure potent vaccines are administered to all eligible children.
- ✓ To ensure data quality through collection of accurate, complete, and timely data.
- ✓ To conduct a post coverage survey to validate administrative data.

b. What are the specific additional target populations (specific number of people) to be reached?

The MR catch up campaign in 2024 targets 10,353,666 children aged 9 months to 9 years. The country is aware that since is conducting 9 months – 4 years campaign in 2023 in selected provinces / districts, ideally it should target only 5-9 years in all provinces / districts involved in the campaign now in 2023, and target children 9 months to 9 years in all other districts not implementing the campaign in 2023.

c. Specific districts/regions/states are to be reached?

All provinces / districts (161) countrywide will be reached, as explained in b, above.

d. What are the actions to be taken?

The key activities to take place in the pre, during and post-campaign will include the following:

1. Activate the ICC and the technical working groups at both national and sub-national levels
2. Update district micro plans, a process that will be initiated at the health facilities, with mapping of all settlements and engagement of local leadership and influential people in the process.
3. Advocacy and social mobilization – communication activities will be undertaken using several community platforms such as health workers, religious leaders, community theatre, Community Health Committee, Community radio and traditional leaders, traditional healers, talk shows and use of SMS messaging, media, amongst others. The communication materials and messages will be translated into the appropriate local language.
4. Training – training materials and tools will be adapted, and trainings conducted to equip health workers with adequate knowledge and skills plan, implement and monitor a good quality campaign.
5. Supervision – supportive supervision will be conducted before, and during the campaign implementation, to identify and address capacity gaps and other challenges. Appropriate supervisory checklists will be developed to support supervisors in their supervisory visits.
6. Monitoring and Evaluation – monitoring and evaluation will be done by MoH with support of partners, in pre-campaign (through coordination meetings and supervisory visits and assessing the district readiness), intra-campaign (daily data collection of vaccinated children, vaccine utilization and AEFIs, intra-campaign supervision, and rapid convenience monitoring process), post-campaign (LQAS and later, post campaign coverage survey – PCCS).

e. What has changed since the original approval? What are the challenges resulting from these changes? What would be the interventions necessary to address these changes?

What changed since the original approval was basically the target age group and number of children to be vaccinated. The original application targeted 9 months to 4 years old children, while this proposal aims at reaching an expanded age group (9 months to 14 years old). Consequently, the number of vaccine doses and operational involved is higher.

f. If applicable, indicate how these additional doses were provided prior to this request along with the previous source of funding (i.e. other donor, government, etc.)

(iii) How is this request integrated with other ongoing programmes (in particular catch-up and other upcoming campaigns)?

The intends to integrate the MR catch-up campaign in 2024 with bOPV in the same age group, in the context of polio eradication, to reinforce polio immunity, and integrate the with Vit A supplementation and deworming tablets for under 5 years. However, this is yet an outstanding discussion with GPEI and Nutrition Program partners.

Commented [MC13]: Did I understand correctly that integration with bOPV had been excluded for the July 2023 campaign due to bOPV being done house to house and in schools. Where would the integration take place? Only in schools?

(iv) Please discuss if this request would address any coverage and equity issues and how.

The request is intended to implement MR campaign countrywide, since measles cases not only have been increasing in number and affecting older ages over time as discussed above, but also spreading to more and more districts countrywide.

To address coverage and equity issues the tools for planning will include coverage and equity tools to identify areas and populations affected by inequities in immunization service delivery. This will ensure special populations such as refugees, mobile population, religious sects, hard to reach (urban poor, gated communities, geographical barriers) are reached with immunization services. Additional special focus will be on the identified districts with inequities in immunization, mapping of the special characteristic to ensure optimal services. Advocacy and social mobilization activities in these places will be reinforced.

(v) Brief summary of engagement with other key stakeholders

The country has a Communication group, coordinated by the Health Promotion Department in close collaboration with EPI and other programs and MOH departments, United Nations Agencies, particularly UNICEF and WHO, International NGOs (and national non-governmental organizations and media organizations and relevant ministries.

Currently, several community platforms such as religious leaders, community theatre, Community Health Committee, Community radio and traditional healers are promoting integrated Life Messages including immunization and health seeking behaviors. The media, including social media, radio and television, are also currently being used for demand promotion on Polio, HPV and routine immunization, particularly demand promotion on Measles second dose.

In addition, under to emergency response due polio and cholera outbreak, community mobilizers are being trained and engaged to conduct door to door visit and mobilize caregivers to vaccinate their children. All these platforms will be used to promote adherence to MR vaccination campaign.

Nevertheless, the current advocacy, social mobilization and behavior change communication for children under five years, will be reviewed to include other important stakeholders like Ministry of Education to reach children under 15. Ministry of Health has a good system for flow of information from central to school level and engagement of teachers. This was demonstrated during the introduction of HPV vaccine, COVID-19 Vaccine for adolescents and last polio campaign which reached people under 15 years old.

Commented [MC14]: Please expand on how the approach will be different here since you are targeting school-age children. How will you engage with the Ministry of Education? How will you get out of school children? What proportion of children do they represent in the 5-9 year olds?

A multifaith organization PIRCOM, is another key partner, due their influence, on mobilization of their believers to adhere to immunization services. PIRCOM had an active engagement on mobilization of the different target groups to COVID-19 vaccine, cholera and polio campaigns.

ACASUS, JSI, UNICEF and WHO has important role in providing technical assistance on development of strategies, plans, tools and communication material. In addition, UNICEF has partnership with ICS, Forum of Community of Community Radios (FORCOM) PIRCOM, community theatre that could be engaged on social mobilization and demand promotion for MR vaccination.

Emphasis to Advocacy, social mobilization and behavior change communication will be given on ensuring a well-defined and executed advocacy and social mobilization strategy to:

- create awareness and sustain demand for MR among the target group caregivers of children under 15 years old.
- address all rumors and misinformation that exist or may occur
- reach all children especially out of school children

D. Past implementation challenges and lessons learned from Gavi/other partner support in your country as applicable. Please provide updated information on complementary immunisation activities including results, and challenges. Explain how these challenges and lessons learned have been considered in this request and how they are going to be addressed. This can be presented in the form of a table.
(Maximum 800 words)

Use of lessons learned to improve the outcome of the next campaign

1. Challenges in the identification of the age of eligible children, leading to vaccination of older children – careful selection and training team supervisors, as well as the training of vaccination teams and community mobilizers, with simulation of vaccination sessions, and demonstration of the different technics to be used as a proxy to identify the child's age, in case that no child health card or any identification is available, will help to minimize the vaccination of older children and mislead the coverage estimates. In addition, the intra campaign supervision and the in process independent monitoring will help to assess and identify the areas and extent to which this phenomenon might be occurring, and by this way, the vaccination teams involved so that timely corrective measures can be taken. Timely allocation of resources will allow this exercise to take place, at least in the week before campaign kick-off.

2. *Challenges in Identifying all settlements in the catchment area ahead of the campaign implementation* – the country intends to get technical assistance to implement google geospatial mapping of communities in districts to identify all communities' settlements in the district. Then health workers will locate and map all those settlements, and make sure that these communities, through their leadership and influential people, are engaged in the micro plan, in the development of tailor-made strategies to reach them and in supporting organization and implementation of immunization sessions in their respective communities.

These settlements will be subject to very close supervision and the in-process independent monitoring will inform about the level of coverage achieved, and the reasons for non-vaccination, to inform the mop-up processes.

Commented [MC15]: Will this be through available PEF-TCA funding? Or other? Will the support need to be confirmed or are the funds already available?

It is noted that once mapped, these statements will be integrated in the routine micro plan of the health catchment areas, to be reached with essential health services. This mapping experience has been conducted in the past with support of CDC expertise in some districts of the 14 districts that conducted sub-national immunization days (sub-NIDs) in response to vaccine derived poliovirus (VDPV) type 2 event in 2018.

3. Communication gaps between providers and rural communities, especially in ethnic minority and hard-to-reach communities – no transport to reach remote areas for advocacy and social mobilization in the pre-campaign is planned. The mobilization relies on local leaders that can be contacted by cellphones or can attend called meetings, and not always reach all communities – Plan transportation mean for peripheral health workers to reach those remote communities and engage them in the microplanning exercise and develop community specific and tailor-made immunization service delivery strategies to promote better adherence to services and address the inequity in service delivery. In addition, communication with community health workers or community focal persons in all localities, can facilitate the liaison between community and health facilities.

4. Unusual heavy rain falls during the campaign dates, even though the campaign was planned to be conducted in the usually dry season (April - May) it still rained heavily, probably attributable to climate changes – although aware that the rains can fall at any time of the year, the country has decided to plan the follow-up campaign for dry season (August / September), when the probability of heavy rain fall is very low. This will allow vaccination teams to reach the most remote communities, since the access routes to most remote communities are better.

E. Vaccine related specifics:

Year	Vaccine name and presentation	Wastage	Target age	Population in target age cohort	Target population to be vaccinated according to coverage target
2024	MR	1.11	9 Month – 9 years	14,120,956	6,718,604
2024	MR	1.11	5 – 9 years	7,021,852	3,635,062
Total			9 Month – 9 years	14,120,956	10,353,666

Commented [MC16]: Please clarify these numbers. Pop in target age cohot for 9m-9y is the same as the total at the bottom?

*Since some districts have conducted 9 months – 4 years MR campaign in 2023, while other districts didn't, and considering that the age to be targeted has been extended to 9 years in 2024, there will be two cohorts in 2024: (a) 5-9 years for districts that conducted campaign in 2023, and (b) 9 months – 9 years in those that did not implement the campaign in 2023. For details on how the targets were estimated, please refer to section B "Target group estimate for Measles campaign in 2024" on page 2.

F. Data source:

The estimates are based on the results achieved in round 8 of polio campaign in under 15 years, in June 2023. However, national bureau of statistic (INE) estimates for 2023, was used to find the coefficient used to adjust the 2024 target, and then use 2024 INE population for both cohorts (9 months-9 years, and 5-9 years) to find the respective coefficient used to adjust the number of children based on the adjusted under 15 years children for 2024 (se detailed explanation in section B above). We note that we have used under 15 years as a starting point in either case, because we do

not have any campaign results so far for both age group 9 months-9 years, and 5-9 years.

G. Other comments/recommendations (optional)

Provide any additional contextual information relevant to this request (any explanations that further clarify any possible linkages, routine monitoring, any considerations, or data that informed this request)

Detailed information has been provided in section B above.

H. Government signature form

The Government of Mozambique would like to expand the existing partnership with Gavi for the improvement of the immunisation programme of the country, and specifically hereby requests Gavi support for:

Measles-Rubella Follow-up Campaign

The Government of Mozambique commits itself to the continued development of national immunisation services on a sustainable basis in accordance with the national health and immunisation strategic plans. The Government requests that Gavi and its partners contribute financial and technical assistance to support immunisation of children as outlined in this application.

Please note that Gavi will not review this application without the signatures of both the Minister of Health and Minister of Finance or their delegated authority.

We, the undersigned, affirm that the objectives and activities in this request are fully aligned with the national health and immunisation strategic plans (or equivalent), and that funds for implementing all activities, including domestic funds and any needed vaccine co-financing will be included in the annual budget of the Ministry of Health.

We, the undersigned, further affirm that the requested funding for salaries, salary top-ups/allowances, per diems and incentives does not duplicate funding from other sources (e.g. from other donors).

We, the undersigned, further affirm that the terms and conditions of the Partnership Framework Agreement between Gavi and the Country, its Annexes and associated Decision Letters remain in full effect and shall apply to any and all Gavi support made pursuant to this application.

Minister of Health (or delegated authority)	**Minister of Finance (or delegated authority)**
Name	Name
Date	Date
Signature	Signature

I. Mandatory supporting documents:

To support your request, please ensure the following documents are provided with this short form:

- Updated target population and coverage
- Revised Campaign Action Plan in line with this request
- Epidemiological analysis supporting expanded age range
- Clear calculation supporting the number of additional doses requested, with a reconciliation to the original request (see section B above)
- Budget for Operational Costs (on Gavi Budgeting & Reporting template)