Joint Appraisal report 2017

Country	**Nicaragua**
Full Joint Appraisal or Joint Appraisal update	Joint Appraisal Update
Date and location of Joint Appraisal meeting	Managua, 20-24 November 2017
Participants / affiliation[1]	**MINSA, PAHO-WHO, Gavi, UNICEF**
Reporting period	2016
Fiscal period[2]	January to December 2016
Comprehensive Multi Year Plan (cMYP) duration	2016-2020

1. SUMMARY OF RENEWAL AND EXTENSION REQUESTS

1.1. New and Underused Vaccines Support (NVS) renewal request(s)

Type of support (routine or campaign)	Vaccine	End year of support	Year of requested support	Target (population to be vaccinated)	Indicative amount to be paid by country	Indicative amount to be paid by Gavi
Routine	Rotavirus	2020	2018	133,801	US$ 471,000	US$ 300,000
Routine	PCV-13	2020	2018	133,801	US$ 1,047,500	US$ 769,500
Routine	IPV	2018	2018	133,801	NA	US$ 229,000
Performance-based funding (PBF)		2018	2018			US$ 240,000

1.2. New and Underused Vaccines Support (NVS) extension request(s)

Type of Support	Vaccine	Starting year	Ending year
NA			

1.3. Health System Strengthening (HSS) renewal request

Total amount of HSS grant	**NA**
Duration of HSS grant (from…to…)	**NA**
Year / period for which the HSS renewal (next tranche) is requested	**NA**
Amount of HSS renewal request	**NA**

[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.

(next tranche)	

1.4. Cold Chain Equipment Optimisation Platform (CCEOP) renewal request

Total amount of CCEOP grant	**NA**	
Duration of CCEOP grant (from…to…)	**NA**	
Year / period for which the CCEOP renewal (next tranche) is requested	**NA**	
Amount of Gavi CCEOP renewal request	**NA**	
Country joint investment	**Country resources**	US$
	Partner resources	US$
	Gavi HSS resources[3]	US$

1.5. Indicative interest to introduce new vaccines or request Health System Strengthening support from Gavi in the future[4]

Indicative interest to introduce new vaccines or request HSS support from Gavi	**Programme**	**Expected application year**	**Expected introduction year**
	NA	**NA**	**NA**

[3] This amount must be included either in an earlier HSS approval or else in the current HSS renewal request in section 1.4 above.
[4] Providing this information does not constitute any obligation for either the country or Gavi, it merely serves for information purposes.

2. CHANGES IN COUNTRY CONTEXT SINCE LAST JOINT APPRAISAL

For the three years ending September 2017, national coverage rates for all vaccines administered to children under 2 years of age were maintained at 100%. Change is observed in the percentage of municipalities with coverage rates higher than 90% for DPT3, used as the trace indicator. In 2015, this percentage was 79%, corresponding to 122 municipalities. In 2016, the percentage increased to 87%, corresponding to 133 municipalities.

As of September 2017, coverage in DPT3 reached 81%, surpassing the projected target of 75%. At this rate, the country is on track to achieve the goal of 100% coverage by the end of the year.

A contributing factor to this increase was Rapid Coverage Monitoring (RCM) during the monitoring campaign on measles and rubella in April 2016 and the monitoring conducted in October and November with PAHO regional funds and PEF support. In parallel, the country received significant cold chain support contributions through Luxembourg, the World Bank and the Inter-American Development Bank (IDB). These contributions have continued since 2015. MOSAFC, the Nicaraguan health model, has proposed to implement the sector reorganisation to guarantee increased health service access, with a higher number of community nurses, for the more remote areas.

As regards the application of 2016 performance-based funding (PBF), this has been delayed due to the procedures required by the administrative government in the purchase of goods and services.

3. PERFORMANCE OF THE IMMUNISATION SYSTEM IN THE REPORTING PERIOD

3.1. Coverage and equity of immunisation

The main factors favouring equity in health in Nicaragua are:

1. The Government of Reconciliation and National Unity insists that health services, including immunisation services, be provided free of charge throughout the country to benefit the entire Nicaraguan population regardless of gender, socio-economic status or religion, thus promoting equality.
2. The primary objective of the Family and Community Health Model, MOSAFC, is to provide quality health services with caring treatment to the population.

The health system is composed of the public sector (MINSA, INSS and army medical services and police) and the private sector. MINSA is the principal health authority and leading health service provider, with a coverage of 65%, followed by the INSS (18%), the regional governments and the army (6%), and the private sector and non-governmental organisations (11%).

The following maps show low coverage rates in the populations of remote and more vulnerable areas (ie, Autonomous Region of the North and South Caribbean Coast).

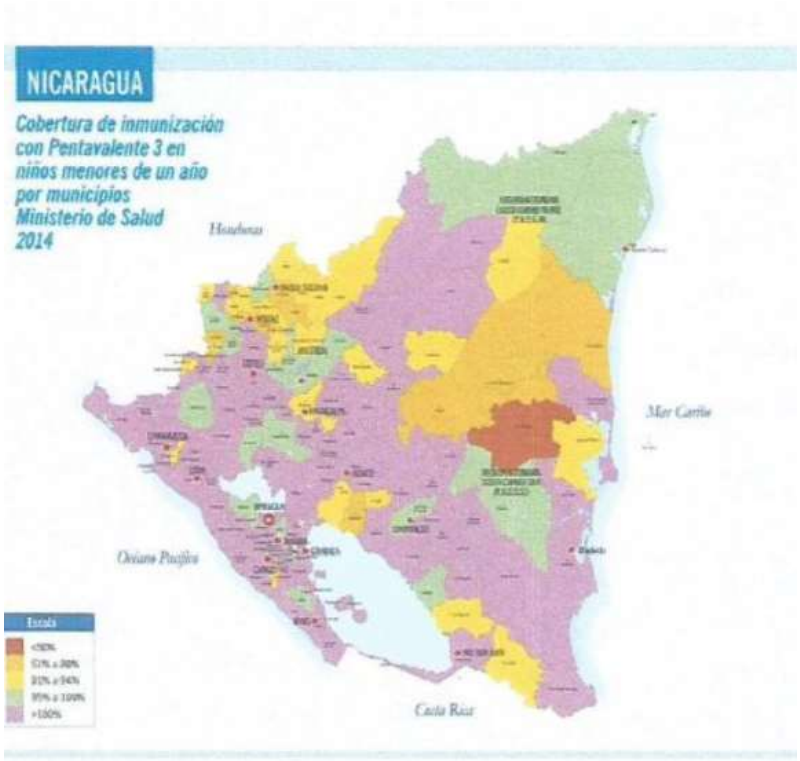
Upper left image:
NICARAGUA
Immunisation coverage with Pentavalent 3 in infants under 1 year of age by municipality.
Ministry of Health
2014

Honduras

Pacific Ocean Caribbean Sea

Scale

Costa Rica



Upper right image:
NICARAGUA
Immunisation coverage with Pentavalent 3 in infants under 1 year of age by municipality.
Ministry of Health
2015

Honduras

Pacific Ocean Caribbean Sea

Scale

Costa Rica

Lower left image:
NICARAGUA
Immunisation coverage with Pentavalent 3 in infants under 1 year of age by municipality.
Ministry of Health
2016

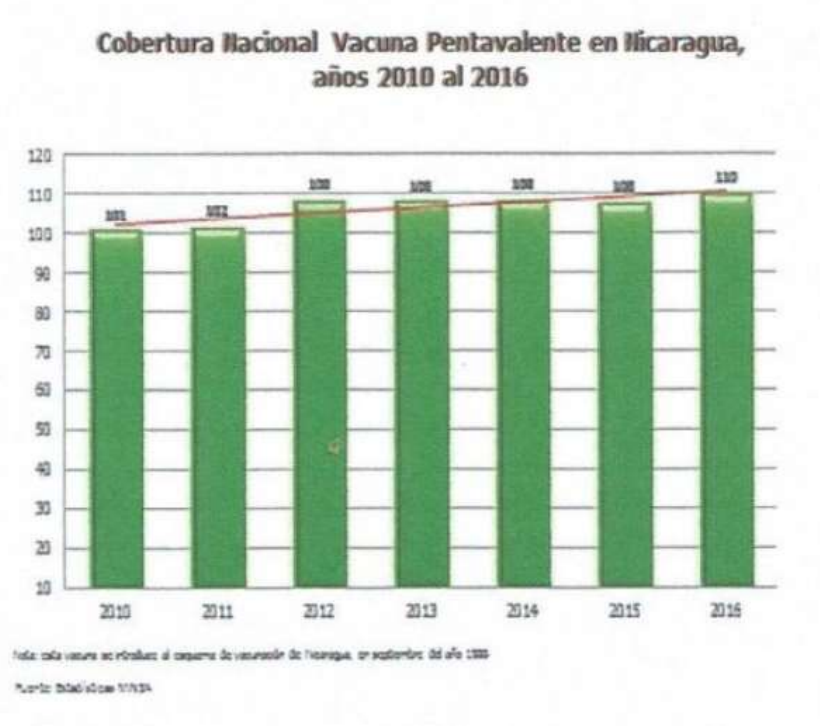
Honduras

Pacific Ocean Caribbean Sea

Scale

Costa Rica

Lower right image: National pentavalent vaccine coverage in Nicaragua
2010-2016



Note: [illegible]
Source: [illegible]

3.2. Key drivers of low coverage/equity

The municipalities with coverage below 95% in DPT3 are those affected by geographic access problems and cultural, economic and social determining factors. Moreover, mobilising the resources to immunise children in these territories involves high costs. These municipalities have the lowest number of human resources for health than any other areas of the country.

As a result of lower electrification in these areas, the cold chain equipment employed is photovoltaic, adding higher costs to its shorter operational life compared to electric equipment, and making replacement harder. In addition, for municipalities with coverage rates lower than 95%, RCM has revealed that attributed populations differ from their actual distribution since, despite low administrative coverage rates, evidence points to all children having been immunised.

However, the overall dropout rate between penta 1 and penta 3 from 2014 to 2016 is at -1%, 2% and -1%, respectively. There are also municipalities where the dropout rate is higher than the national standard of 10%.

Despite the goals achieved in the aftermath of the 2015 effective vaccine management (EVM) assessment (the EVM score was 93%) and the efforts of MINSA authorities, there are still municipalities with gaps in terms of cold chain equipment quantity and useful/operational life – mainly in remote areas.

3.3. Data

One of the EPI concerns regarding immunisation data quality is the high percentage of municipalities with coverage rates over 100%, taking DTP3 coverage as the trace indicator.

Years	Municipalities by DPT3 coverage range							
	Range < 50%	Percentage	Range 50 to 89%	Percentage	Range 90 to 100%	Percentage	Range 100%	Percentage
2014	1	0.7%	28	18.3%	30	19.6%	94	61.4%
2015	1	0.7%	31	20.3%	29	18.5%	93	60.5%
2016	1	0.7%	19	12.4%	27	17.6%	106	69.3%

Note: The country has a total of 153 municipalities.

As is already known, immunisation coverage data quality may be affected by the denominators and the numerators used. Denominators are provided by National Institute of Development Information and are based on 2005 census projections. Apart from RCM, in 2017 other activities such as data quality assessment and operational research aimed at highlighting data quality problems were undertaken.

While for several years the National Statistics Office has been checking data quality showing that EPI consistency was higher than 95%, this does not comply with the data quality assessment methodology followed by PAHO-WHO. This methodology was transmitted to the EPI teams and to the National Statistics Office in 2017. Although the country has not carried out any data quality assessment at the national level, one is hoped to take place in 2018.

In the area of human resources, one problem is high personnel rotation, which hampers the observance of instructions given and compliance with the proper handling of EPI information. Despite multiple efforts by the Government to address this, gaps persist in ensuring that family and community health teams (ESAFCs) are fully staffed in accordance with the sectoral divisions of the country.

The electronic/automated database for recording the immunisation data entered at local levels is numerical and adds the data in order to obtain coverage, disregarding children's names; this situation hampers the individualised monitoring of each child's immunisation when, for whatever reason, they move to another place.

Efforts, innovations and good practices

- The Reconciliation and National Unity Government Information System systematically monitors programme coverage indicators on a monthly basis, presenting reference information for decision-making to the national, regional and local authorities, in addition to representing the expanded programme on immunization (EPI) as a government priority included in its health and budget policies with regards to vaccine purchases.
- Flexible support from the Revolving Fund for the steady supply of vaccines for Nicaragua as a PAHO priority country.

- Monthly technical councils at all levels of the MINSA, where situations specific to the EPI are discussed, decisions are made and commitments to be met nationwide are decided.
- Six-monthly EPI evaluations with the participation of all Local Comprehensive Health Care Systems (SILAIS) managers, reviewing the progress achieved on EPI indicators as well as completion of activities in different EPI components.
- Although the monitoring log for immunised children to keep track of immunisation schedule observance has been implemented since 1999, its use has only been reinforced since 2012. Expansion of the MOSAFC has delegated its application to the sectors, and within them to the districts, making monitoring of children functionally easier and more detailed. Moreover, one advantage is that it serves as a means of checking on a child's immunisation status in the course of RCMs, holding the same value as the immunisation card for verification purposes.
- RCM: To ensure that no child has missed a vaccine, the EPI has promoted a systemic strategy of conducting RCMs at least twice a year in all municipalities following the method recommended by PAHO-WHO. These are conducted by staff from different national, departmental and municipal levels. Other verification modalities include external monitoring, conducted during monitoring campaigns, and cross-monitoring, conducted by health staff in municipalities other than those assigned.
- Since 2012, the cold chain has been expanded with support from different sources: the HSS project and PBS from Gavi, the Mesoamerica Health Project (IDB), the World Bank and the Luxembourg project.
- In efforts to reduce the gaps identified by MOSAFC analyses, the recruitment of community nurses residing in the locality has been proposed to the health teams of the areas concerned.

3.4. Role and engagement of different stakeholders in the immunisation system

- Social participation can be seen largely during the annual Citizen Power Vaccination Days (JVPCs), in which community leaders, health promoters, midwives and health brigades play a leading role along with the Family, Community and Life Councils, and where young women and men participate actively in managing the health of their own families and communities.
- National immunisation campaigns (JVPCs) enjoy widespread coordination with the education sector aimed at fulfilling immunisation targets for children at school.
- There is participation by the clinics providing services under the Nicaraguan Social Security Institute. The army, the police and private hospitals provide support to routine immunisation, with vaccines supplied by MINSA and provided to people free of charge.
- While the ICC is the inter-agency coordinating mechanism, the agencies continuing to support Ministry of Health activities are PAHO-WHO and UNICEF.

4. PERFORMANCE OF GAVI GRANTS IN THE REPORTING PERIOD

4.1. Programmatic performance

Objective of the HSS Project Grant

To improve immunisation coverage in prioritised municipalities for all biologicals by strengthening the organisation of community work, management and participation based on local planning, and support in the provision of basic maternal and child health services in remote areas.

Strategic lines:

1. Improve health service provision and quality, in particular immunisation services, through the implementation of the Family and Community Health Model, MOSAFC.
2. Strengthen the participation of organised citizenry in the implementation of community strategies.
3. Strengthen the cold chain.

Activities for each strategic line

Improving health service provision and quality, in particular immunisation services, through the implementation of the Family and Community Health Model, MOSAFC.

a. Integrated health brigades deployed to remote areas in the prioritised municipalities

This is an important strategy to increase coverage rates for health services and thus, immunisation in remote areas, which entails high operating costs. With the support of the project and other donors, this was partially achieved. Activities included providing medical care and supplies, monitoring growth and development, immunisation, counselling, delivering contraceptives and prenatal care, monitoring the managerial census, conducting the childbirth plan and taking PAP samples for the detection of cervical cancer. These also helped to reduce the economic burden on the population, caused by transport and other expenses required for accessing health services.

b. Programme for continuous quality improvement implemented in the public healthcare units of the prioritised municipalities

The General Health Act (Article 119) sets forth that MINSA shall develop a **Quality Assurance System** to be composed of all the regulations and measures aimed at promoting and guaranteeing conditions for quality in the management and rendering of health services in order to achieve maximum user benefit and satisfaction at the best cost and lowest possible risk. Hence, under this activity, new facilities have been prepared and certified, healthcare quality evaluations have been conducted, and the monitoring of data quality in the EPI information system has been assessed, along with standard upgrading, preparation of new standards, and health and community personnel training.

c. New technical and management capabilities imparted to health personnel

Improvement in personnel performance in the 19 SILAIS and 153 municipalities was achieved through the teaching and assimilation of methodologies based on a situation analysis, with emphasis on the social conditions affecting health, participative local planning and programming, support (monitoring) and evaluation, among other processes, which proved vital to the achievement of the objectives formulated in the EPI.

d. Municipal annual operating plans prepared based on health situation analyses

The 36 prioritised municipalities managed to conduct their health situation analyses and based on these, drew up and implemented improvement plans.

e. Surveillance of vaccine-preventable diseases (VPDs) and adverse effects following immunisation (AEFIs) strengthened

Some 200 health workers from the prioritised municipalities were trained in the key components of surveillance of VPDs, injection safety and the monitoring of AEFIs. There were difficulties at Bilwi SILAIS level, which is still not recording suspected cases in measles/rubella surveillance.

Strengthening the participation of organised citizenry in the implementation of community strategies

a. Key practices applied with the support of the community network

Midwives and health brigades were trained in healthy practices and environments in accordance with the activities of public institutions: promotion of breastfeeding, giving infants freshly-prepared food supplements with high nutritional and energy content, promoting the mental and social development of children, preventing diseases, handwashing, immunisation, home care, and prevention of mistreatment, among other things. There were some difficulties during the first year of the project, but objectives were met during the past year.

b. Community analyses completed in the 36 municipalities

Support from this proposal assisted the 36 municipalities in conducting their community analyses as described in the MOSAFC conceptual framework.

c. MINSA community strategies applied and supported (childbirth plan, the community strategy on contraceptive methods or ECMAC, and the managerial census of pregnant women)

The programming of the childbirth plan for pregnant women at high obstetric risk in remote areas facilitated the achievement of 100% compliance, strengthening measures to reduce maternal and neonatal mortality.

Managerial census: monitoring of pregnant women in the 36 municipalities was 100% achieved – also a strategy to reduce maternal and neonatal mortality.

ECMAC is being implemented in new municipalities and communities every day. Although problems have been decreasing, there are still women unable to access contraceptive methods due to restrictions from their partners.

The implementation of this strategy by the community network and the Community Health and Nutrition Programme has contributed to the timely detection of poor nutritional status in children. This has continued to expand steadily throughout the country.

d. Community leaders trained in the use of the immunisation card

Community leaders and health brigades have been urged to focus more on health promotion and health problem prevention rather than on curative aspects, without, however, neglecting care for those with health issues, the treatment of which contributes to preventing other problems**.**

Strengthening the cold chain

The cold chain equipment inventory was improved in the 36 municipalities with the delivery of 99 cold chain equipment units, achieving 75% of completion requirements, and guaranteeing proper storage capacity and strengthening vaccine conservation at the local level.

All 100% of the personnel (250 workers) were also trained as users, to guarantee the operational life of the equipment.

Selection of municipalities

The variables taken as criteria for the selection of the 36 municipalities included in HSS were as follows: immunisation coverage; poverty index; dropout rate; and population density. These variables were weighted on a scale and the towns with the highest score were selected.

Performance indicators

The performance framework takes 31 immunisation indicators and 20 HSS indicators into consideration. All indicator targets were met. The indicators referring to coverage were met in accordance with the goals set as regards the pentavalent, rotavirus and PCV-13 vaccines and IPV, which contributed to decreasing the number of municipalities with coverage rates under 80%. Of the 36 municipalities supported by HSS, 30 had coverage rates above 80%.

Comprehensive work by the municipal ESAFCs with the participation of the organised community was undertaken to meet the targets.

The indicator on pregnant women with childbirth plans was 100% achieved. MINSA determined that pregnant women living in remote areas who were classified as high obstetric risk should have a childbirth plan. Hence, the percentage reflected by this indicator solely corresponds to the group of high-risk pregnant women in the 36 municipalities prioritised by the HSS.

There is a proposal to modify the IR-T 1.9 indicator in the following terms: percentage of the population aware of the perception of risk in *not* completing the immunisation schedule.

The majority of funds for activities to improve immunisation coverage come from the National Treasury and these do not manage to cover all requirements. To bridge the existing gap, the

Government relies on funding support from the IDB, the World Bank, the Project of the Grand Duchy of Luxembourg and UNICEF as well as funding and technical support from PAHO-WHO.

Challenges in the implementation process

Performance was affected by the delay in the arrival of funds since implementation initially had been scheduled to begin in 2013. However, implementation started in 2014 and the duration was extended up to 2016.

The emergencies that affected the country, provoked by arbovirosis, dengue and chicunguyna (2015) and zika (2016), increased the normal staff workload at health facilities from the viewpoint of community healthcare and prevention. All these factors affected fulfilment of the work plans to implement this project in terms of time and form.

Administrative processes in the country have established time frames that cannot be changed, which sometimes delays implementation at the local level.

The external audits were delayed since the service providers did not comply with requirements, pushing back submission of the 2016 audit, which corresponds to the closing of the project, and placing the coming disbursement for 2018 (PBF) at risk.

4.2. Financial management performance (for all cash grants, such as HSS, vaccine introduction grants, campaign operational cost grants, transition grants, etc.)

Financial management was performed as set forth in the initial project plan; nevertheless, the start was pushed back by the delay in the arrival of the funds into the country.

The audit reports were done for 2014 and 2015 with no recommendations to implement and the audit report for 2016 is pending due to delays in the procurement process and failure to comply with supplier requirements. It is estimated that this will be finished and submitted together with the report corresponding to the close of 2017. The funds have all been used for HSS, whereby only US$ 123,174 remain for implementation, corresponding to PBF.

Health System Strengthening (implementation as of 05/05/17). Cash flow (US$)

	2013	2014	2015	2016*	2017	TOTAL
Original annual budgets (as per the originally approved HSS proposal)	553,250	620,566	632,294	632,284	-	2,438,384
Revised annual budgets (if revised by previous Annual Progress Reviews)					-	
Total funds received from GAVI during the calendar year (A)		1,173,796		632,284	-	1,806,080
Remaining funds (carry over) from the previous year (B)			558,776	-	-	558,776
Total funds available during the calendar year (C=A+B)		1,173,796	558,776	632,284	-	2,364,856
Total expenditure during the calendar year (D)		615,019	559,776	632,284	-	1,806,080
Balance carried forward to next calendar year (E=C-D)		558,776			-	558,776
Amount of funding requested for future calendar year(s)					-	

Gavi performance-based funding

Cash flow implementation (as of 10/11/2017, US$)

	2013	2014	2015	2016	*2017	TOTAL
Original annual budgets (as per the originally approved HSS proposal)	179.780					
Revised annual budgets (if revised by previous Annual Progress Reviews)						
Total funds received from Gavi during the calendar year (A)		179,780		**240,000**	**120,000**	539,780
Remaining funds (carry over) from the previous year (B)			82,580	24,724	240,000	347,304
Total funds available during the calendar year (C=A+B)		179,780	82,580	264,724	360,000	887,084
Total expenditure during the calendar year (D)		97,199	57,855	24,724	236,825	416,605
Balance carried forward to next calendar year (E=C-D)		82,580	24,724	240,000	123,174	470,479
Amount of funding requested for future calendar year(s)						

The Transition Plan that was administered by PAHO was implemented as per the work plan. For more details, see section 4.3.

4.3. Sustainability and (if applicable) transition planning

The country has relied on the EPI Action Plan for 2009-2015, which was updated for the 2016-2020 period, reflecting all the components of the EPI. The Transition Plan was designed taking components

from this last EPI Action Plan into consideration. The amount granted for the fulfilment of the Transition Plan was US$ 750,000 to fund activities for the 2016-2020 period.

PAHO is the receiver of the transition funds. Use of these funds is based on the Transition Plan prepared in 2015 and the EPI Annual Action Plan. These funds are implemented by the SILAIS through PAHO mechanisms, such as letters of agreement, and used centrally for purchases, contracts or events.

The funds were disbursed to PAHO Nicaragua in May 2017. A total of US$ 413,000 were received for the activities of 2016 and 2017. Some 85% of the funds disbursed were executed (US$ 351,134), leaving a balance of US$ 61,866.

Activities carried out in 2016/17 included the following (US$ 351,134):

- A national workshop was held on the preventive and corrective handling of cold chain equipment, and 61 computers were purchased for web-based VSSM (vaccine supplies stock management) at the national and SILAIS levels and in 42 municipalities.
- There was a replication of the workshop on indicator analysis in the 19 SILAIS and 153 municipalities.
- In terms of social mobilisation, 3,500 booklets ("ABC") for community workers were produced and 2,680 flip charts for healthcare unit personnel were delivered for information, education and communication activities with local level healthcare unit users.
- Support was provided to 153 municipalities and 19 SILAIS to conduct at least two annual supervisions of the pertinent levels, the active search for VPDs (with emphasis on measles-rubella), data quality monitoring activities, and the evaluation of immunisation programme indicators (immunisation coverage and VPD surveillance).
- Operational research was conducted in the 11 prioritised SILAIS (Managua, Nueva Segovia, Jinotega, Chontales, Boaco, Zelaya Central, RAACS, Bilwi, Minas, Matagalpa and Madriz).

The US$ 61,866 balance will be allocated to the following activities to be implemented between January and June 2018:

- Purchase of licenses for 61 computers to run web-based VSSM.
- Purchase of additional computers to run web-based VSSM in additional municipalities.
- Reproduction of social communication materials for use at the local level.
- Evaluation of the 2017 EPI Action Plan to determine the progress made on immunisation coverage indicators, dropout rates and advances in operational research.

The remaining Transition Plan funds in the amount of US$ 337,000 will be disbursed by PAHO Washington in 2018 to implement activities as per the approved Transition Plan.

4.4. Technical Assistance (TA)

On the basis of the country's immunisation priorities, PAHO supported the following activities in 2016:

- Study of temperature monitoring throughout the cold chain (2016).
- In 2016, an international workshop on indicator analysis skills was organised for 19 EPI managers from 19 municipalities. This training was extended to 153 municipalities in 2017.
- Pilot workshop on operational research into reasons for low immunisation coverage and abandonment (2016). In 2017, the pilot workshop was extended to the managers of all SILAIS and support was given to 10 SILAIS for implementing operational research to identify the reasons for low immunisation coverage, high dropout rates and failures to notify measles/rubella cases.
- In 2016, the EPI database software was upgraded.
- Skills upgrading was undertaken in the preventive and corrective handling of cold chain

equipment (2016).

- Surveillance of new vaccines (pneumococcal and rotavirus) in sentinel hospitals was strengthened in 2016. This activity continued in 2017 and is also projected for the coming years.
- EPI Standard Operating Procedures with regards to vaccines were upgraded in 2017. This included: updates to the immunisation system, the cold chain vaccines component, the recording and information system, and epidemiological surveillance.
- In 2017, georeferencing was implemented for the geographic display of immunisation coverage, thus enabling viewers to identify areas with insufficient coverage. This activity will continue in 2018, moving on to georeferencing of the indicators for epidemiological surveillance and cold chain equipment.

In 2016, PAHO Nicaragua executed US$ 99,399; ie 100% of the PEF-TCA (targeted country assistance available through the partner's engagement framework) funds for that year. In 2017, of a scheduled budget of US$ 139,800, PAHO allocated US$ 10,000 to PAHO Washington activities; US$ 97,350 were received and 95% executed by the PAHO office in Nicaragua, and the remaining amount of US$ 32,450 will be disbursed by PAHO-Washington to PAHO Nicaragua in 2018 to finalise the activities programmed.

With the support of its partners, the country has continued to boost immunisation coverage rates by 4 to 10 percentage points in 14 of the 36 municipalities with the lowest coverage rates.

In 2016 MINSA, supported by UNICEF, conducted an analysis of the factors determining low immunisation coverage and an action plan that would facilitate capacity building for 523 workers from 174 ESAFCs in data monitoring and analysis and timely decision-making.

Using Communication for Development, 300 community leaders were trained in the use of the immunisation card and its monitoring instrument. Counselling was conducted in their communities regarding the importance of vaccines and the immunisation schedule.

In 2017, the training was extended to 40 municipalities where 1,600 community leaders (97% of the proposed target) from 228 ESAFCs were able to receive training. Along with the upgrading of the Community Information System (SICO), these activities strengthen community participation and surveillance to achieve optimum immunisation coverage.

Growth and development monitoring promotion (GDMP) standards, which cover immunisation activities, were developed to strengthen child care and reduce missed opportunities. To finalise PEF-TCA 2017, plans include: continuation of training in the ABC vaccine booklet for ESAFC teams and all SILAIS in the country and support for training to implement GDMP/integrated healthcare standards.

The PEF-TCA 2016 amount approved for UNICEF was US$ 149,040, of which US$ 11,040 were allocated to the administrative management of the New York office. The remaining US$ 138,000 was implemented in accordance with the PEF-TCA work plan negotiated with MINSA (100% implementation).

The PEF-TCA 2017 amount approved for UNICEF was US$ 99,360, of which US$ 7,360 were allocated to the administrative management of the New York office. Of the remaining US$ 92,000, US$ 69,000 were implemented in 2017 and US$ 23,000 will be implemented by June 2018.

5. UPDATE OF FINDINGS FROM PREVIOUS JOINT APPRAISAL

Prioritised actions from previous Joint Appraisal	Current status
1. Maintaining integrated health brigades and RCM	• These activities were implemented following the recommendations of the beneficiary municipalities. The brigades were kept up with funds from PAHO and other partners.
2. Strengthening the processes of community participation in health	• Training sessions on the subject of IM were held for community leaders. • Educational materials facilitating the work of the leaders in their communities were prepared • Four Analysis and Reflection Seminars in each municipality, which serve as venues for accountability, were held per year, plus two at the national level. • Forums and conferences were held with the participation of community personnel.
3. Strengthening management processes at the intermediate and local levels (planning, VPD surveillance, AEFIs, monitoring, evaluation and information systems)	• Supervision, monitoring and evaluation activities were held in the SILAIS and municipalities as well as in health units, reviewing the principal EPI indicators and taking measures to overcome the problems encountered. These were funded by Transition and PEF 2016 and 2017 funds. The SILAIS had fulfilment indicators for each of the activities. With regards to surveillance activities, a Rapid Response workshop against possible cases of imported measles was held, additionally supported by the conduct of active searches for suspected measles and rubella cases, improving the notification rate of such surveillance. EPI standards were upgraded through a process of active participation from the managers of the 19 SILAIS, with support from PEF 2017 funds. The SILO manual and GDMP standards were upgraded with the support of PEF 2017 funds. .
4. Strengthening data quality processes for the immunisation programme, use of the log and use of information for decision-making.	• The EPI database was upgraded using PEF 2016 funds so as to generate more information and graphs in chronological order in support of EPI indicator analysis: immunisation coverage, dropout rates, data accuracy and other aspects. • The data quality workshop was conducted with the support of consultants from the PAHO Regional Office and the participation of the EPI and statistics managers from the 19 SILAIS. The experience was subsequently replicated in all departments and municipalities. Despite these efforts, gaps in the improvement of data quality remain. • The availability of monitoring logs has been secured for all the municipalities and health sectors of the country. Currently, 96% of the logs are up to date in the 36 prioritised municipalities.
5. Strengthening the skills of human resources offering direct healthcare	• The Ministry of Health is developing plans for ongoing education to upgrade health personnel in the application of Technical Standards and Protocols.

6. Strengthening the cold chain at the local level based on EVM recommendations; eg building cold rooms, upgrading equipment and modernising the temperature monitoring system.	• Funding has been received from different sources for the purchase of cold chain equipment, enabling us to cover 75% of the 36 prioritised municipalities with new equipment. • The country is currently in the process of purchasing electronic temperature monitoring devices, to be delivered to all distribution levels to improve temperature control in vaccine storage at the different levels (national, SILAIS and municipal levels). This was achieved with funds from other cooperation partners. • Temperature study was done in 3 SILAIS, to be extended nationwide. • Remote temperature monitoring: A Standardised Operating Plan is being developed to implement its use on the national scale. • There are no regional vaccine banks to enable the improvement of vaccine storage for the 19 SILAIS in the country. We intend to use PBF to build the bank in Managua, equipping it with a cold room. • The storage capacity of the national biologicals bank has been expanded from six cold rooms to eight. • Budget restrictions impede fulfilment of the recommendations in the EVM improvement plan.
Additional significant IRC / HLRP recommendations (if applicable)	**Current status**
To improve immunisation in the 17 districts where DTP3 coverage is lower than 80% (2015).	In 2016, 10 municipalities had coverage rates lower than 80%.

Strategic priority actions from previous Joint Appraisal	**Current status**
1. Implementing the new EPI database and its introduction into all SILAIS.	Finalised. Activity covered in PEF-TCA 2016. The automated EPI database was upgraded between 2016 and the start of 2017.
2. Extending the operative research on coverage and dropout rates to five prioritised municipalities.	Finalised. Operative research conducted in the 36 prioritised municipalities. Using PEF-TCA 2017 funds, PAHO will begin a data digitising process for subsequent analysis (this activity is projected for the first quarter of 2018).
3. Implementing the updated community immunisation log and community immunisation monitoring system in municipalities throughout the rest of the country, integrated into the SICO.	Finalised. SICO has been updated with support from UNICEF. In 2018, this activity will continue to be implemented, expanding the SICO to low-coverage municipalities.

	The immunisation booklet will be culturally adapted to the needs of the Caribbean Coast communities
4. Replicating workshops to develop immunisation indicator analysis and VPD epidemiological surveillance skills at local level	Finalised. In 2017, the national workshop was conducted, for subsequent replication in the 19 SILAIS, which, in turn, replicated the experience on EPI indicator analysis in all municipalities.
5. Training health personnel in monitoring growth and development, aimed at early child uptake and immunisation.	The manual has been completed and is in the process of approval by the MINSA Directorate for Regulation. Health personnel training is expected to be done in the course of 2018.
6. Implementing and orchestrating EPI georeferencing and training at all levels.	Finalised. The software licence was acquired in 2017 for the subsequent purchase of IT equipment, the onset of training and the implementation of the georeferencing programme for immunisation coverage.
7. Updating, reproducing and training in EPI standards.	EPI Standard Operating Procedures for vaccines were upgraded in 2017. This included: updates to the immunisation system, the cold vaccines component, the recording and information system and epidemiological surveillance. Pending approval of the standards and procedures and final printing.
8. Monitoring and managerial support across sectors for supervising comprehensive child care standards, including immunisation.	Design phase finalised. In 2018, MINSA, with the technical support of UNICEF, will begin its implementation in selected low-coverage municipalities.
9. KAP survey on perception of immunisation in indigenous communities and inter-cultural adaptation plan.	UNICEF/MINSA to initiate KAP study in 2018/19
10. Investigation of missed immunisation and GDMP opportunities.	PAHO/MINSA to initiate operational investigation in 2018/19.

6. ACTION PLAN: SUMMARY OF FINDINGS, ACTIONS AND TECHNICAL ASSISTANCE NEEDS IDENTIFIED AND AGREED DURING THE JOINT APPRAISAL

Overview of key activities planned for the next year:

- Virtual course on the EPI management modules.
- Updating of rapid response to VPD outbreaks, strengthening in the web-based use of VSSM.
- Supervision and monitoring of new vaccine sentinel surveillance.
- Printing of EPI standards and procedures.
- Regional level support for several HSS and immunisation activities.
- Continuing to strengthen RCM, active searches, supervision, evaluation and operational research activities.
- Preparation of training programme on key immunisation activities for community assistants.
- KAP survey in selected municipalities of the Caribbean Coast.
- Implementation of the SICO manual and its reference and reporting functions.
- Implementation of the ABC vaccine booklet in municipalities of the Caribbean Coast.

Key finding 1	Coverage rates above 100% and high positive and negative dropout rates suggest data quality inconsistencies.
Agreed country actions	The country must continue to monitor data quality for subsequent nationwide evaluation by international experts.
Associated timeline	January-December 2018 – M&E fourth quarter 2018
Technical assistance needs	PAHO (Transition Funds)
Key finding 2	Despite the various efforts exerted, remote low-coverage municipalities persist (22 municipalities with coverage rates under 90%).
Agreed country actions	Continuing the strategy of expanding coverage through integrated brigades, with emphasis on immunisation. RCM
Associated timeline	January-December 2018
Technical assistance needs	PAHO
Key finding 3	Gaps persist in the skills of community leaders and ESAFC personnel with regards to promoting the importance of immunisation.
Agreed country actions	Develop skills benefiting immunisation in community leaders Strengthen the implementation of the SICO Training of community nurses Cultural adaptation of the ABC booklet on vaccines and flipcharts on community immunisation KAP study in the communities
Associated timeline	March-December 2018
Technical assistance needs	UNICEF

Key finding 4	Develop a sustainability plan for the activities
Agreed country actions	Evaluation of achievements and lessons learned Resource mobilisation strategy to extend good practice
Associated timeline	2019
Technical assistance needs	To be explored
Key finding 5	The high degree of rotation among municipal personnel responsible for immunisation calls for a permanent process of continuing education.
Agreed country actions	Preparation of virtual EPI management capacity-building modules. Printing of the new EPI standards and procedures.
Associated timeline	2018-2019
Technical assistance needs	PAHO
Key finding 6	The country has made great efforts to comply with the EVM improvement plan; however, there are gaps in terms of cold chain equipment, and the strengthening of web-based VSSM in the municipalities must continue.
Agreed country actions	Seek funding sources Explore options for rehabilitating spaces to install cold rooms Purchase of cold chain equipment.
Associated timeline	2018
Technical assistance needs	PAHO
Key finding 7	Measles cases in other regions of the world means there is an ever-present risk of the virus entering Nicaragua.
Agreed country actions	Continue with the training of rapid response teams at all levels.
Associated timeline	2018-2019
Technical assistance needs	PAHO
Key finding 8	The pneumonia and diarrhoea disease burden has decreased thanks to the introduction of the new vaccines
Agreed country actions	Continue with pneumonia-bacterial meningitis and rotavirus sentinel surveillance in the sentinel hospitals forming part of the global surveillance network on new vaccines.
Associated timeline	2018
Technical assistance needs	PAHO

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

The Joint Appraisal for Nicaragua took place in Managua from 20 to 24 November 2017. MINSA (EPI, the Directorate for Health Services and the Financial and Administrative Directorate), PAHO, UNICEF and Gavi participated.

- Jazmina Urnaña, MINSA, Directorate General for Health Surveillance, Immunisation Programme Coordinator
- Gustavo Murillo, MINSA, EPI Technician, in charge of EPI biologicals scheduling
- Maria Auxiliadora Gadea, MINSA, Directorate for Health Services, in charge of child care component
- Johana Talavera, MINSA, External Funds Unit Coordinator
- Brenda Alarcón, MINSA, Nursing Technician
- Soledad Urrutia, PAHO Washington DC, Health System Strengthening
- Nancy Vasconez, PAHO Nicaragua, Immunisation Consultant
- Rifiger Montes, PAHO Nicaragua, Health Services
- Maria Delia Espinoza, UNICEF Nicaragua, Health Officer
- Kristine Brusletto, Gavi, Specialist in Health System Strengthening
- Ricard Lacort, Gavi, Project Manager for Nicaragua

At the end of the joint appraisal, the team shared its conclusions with the management of MINSA and the members of the ICC for discussion and approval.

Signatures of the National Authority, the Ministry of Health and the Alliance partners approving the Joint Appraisal		
Name of Minister or Representative	**Date**	**Signature and Seal**
Dr Sonia Castro Gonzalez Minister of Health Nicaragua		[illegible signature] illegible signature
Dr Socorro Gross PAHO/WHO Representative Nicaragua		[illegible signature]
Mr Ivan Yerovi UNICEF Representative Nicaragua		[illegible signature]

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8. ANNEX

Compliance with Gavi reporting requirements

Please confirm the status of reporting to Gavi, indicating whether the following reports have been uploaded onto the Country Portal.

It is important to note that delayed reporting may impact the decision by Gavi to renew its support.

	Yes	No	Not applicable
Grant Performance Framework (GPF) reporting against all due indicators	√		
Financial Reports		X	
Periodic financial reports		X	
Annual financial statement		X	
Annual financial audit report		X	
End of year stock level report	√		
Campaign reports			√
Immunisation financing and expenditure information		X	
Data quality and survey reporting		X	
Annual desk review		X	
Data quality improvement plan (DQIP)		X	
If yes to DQIP, reporting on progress against it		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			
Post Introduction Evaluation (PIE)		X	
Measles-rubella 5 year plan			√
Operational plan for the immunisation program	√		
HSS end of grant evaluation report		X	
HPV specific reports			√
Transition Plan	√		