

Joint Appraisal report 2017

Country	Republic of Moldova
Full Joint Appraisal or Joint Appraisal update	Joint Appraisal Update
Date and location of Joint Appraisal meeting	6-9 June 2017, Copenhagen
Participants / affiliation ¹	The list of participants is attached
Reporting period	January – December 2016
Fiscal period ²	January – December
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	IPV	2020	2018	44,000	US\$0	US\$ TBD

2. CHANGES IN COUNTRY CONTEXT SINCE LAST JOINT APPRAISAL

The first National Immunization Program (NIP) in Moldova covered the years 1994-2000. Since then, Moldova has approved a NIP every five years. Immunizations included in the NIP are free of charge for all citizens of the Republic of Moldova. The Ministry of Health is responsible for overall coordination of NIP activities. The National Centre of Public Health is responsible for implementing the NIP, which includes tasks such as monitoring of vaccination coverage, maintenance and development of cold chain supplement as well as training of staff involved in the provision of vaccinations. The provision of vaccinations is usually done at primary care level (family doctor offices and health centres). This facilitates good access to immunization services and high coverage rates because of the gatekeeping function of primary care services. The National Immunization Program for 2016-2020 was approved in October 2016. With GAVI support, Moldova implemented with success pneumococcal, rotavirus and Hib-containing pentavalent vaccine, and from October 2017 will implement HPV demo programme.

The immunization program in the Republic of Moldova has been robust and well performing, as shown by the overall coverage for the routine vaccines ranging between 86% and 96% in 2016, but with a slight decline as of lately – below the 95% threshold for most vaccines now – and with wide variations across districts, especially in the Transnistria region (below 75%-80% for certain vaccines). There was no outbreak of vaccine-preventable infections reported in Moldova since 2015. However, there was an increase of mumps incidence (2,71 cases per 100.000 population). 74,3% of cases were registered in children >18 years old. Also there was a significant increase of pertussis incidence (7,03 cases per 100.000 population). 94,3% of cases were registered in children >18 years old. Vaccination services have been provided through the country's network of primary health care workers. There are private providers of immunization services in Moldova. The decline in vaccination rates has been mostly due to growing vaccination hesitancy among caregivers (on concerns of vaccine safety) and health providers (on concerns of false contraindications) leading to delays and/or refusals to timely vaccinate children, due to the false perception of the risk of disease contracting as a result of the elimination of some infectious diseases (polio, diphtheria, measles, rubella etc.), decrease in units of mumps cases, viral hepatitis B,

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. Version: September 2017

miss perception of quality and effectiveness of vaccines. Denials and omissions from vaccination cause the decrease in vaccination coverage and the increased risk of the occurrence of preventable diseases.

Key changes:

- National Immunization Program for 2016-2020 approved in October 2016;
- Transnistria has no subordination to Republic of Moldova (Low access and vaccine coverage);
- Due to financial instability of Transnistria impossible to implement HPV, PCV and Rota vaccines;
- Presence of false perception about vaccine importance among population;
- Increase of false contraindications (encephalopathy, hemangioma, anemia, etc.);
- Intense external and internal migration of population and lack of human resources (medical staff, more acute in rural areas or small districts);
- Full self-financing of rotavirus and Hib-containing pentavalent vaccines as of January 2016.

3. PERFORMANCE OF THE IMMUNISATION SYSTEM IN THE REPORTING PERIOD

3.1. Coverage and equity of immunization

The control of vaccine-preventable diseases as the objective of the National Immunization Program provides reduction/elimination of morbidity of vaccine preventable diseases by vaccination, with a high coverage target (over 95%). The immunization schedule in 2016 featured 12 antigens (BCG, HBV, Hib, measles, mumps, rubella, polio, RV, PCV, diphtheria, tetanus, pertussis). Moldova transitioned from GAVI Alliance support at the end of 2016 and is currently paying the full cost of the pentavalent vaccine and consumables starting in 2017. Although Moldova has been widely using international vaccine procurement channels over the years (e.g., UNICEF Supply Division), there was a National Center for Centralized Procurements in Health opened with UNDP support in early 2017 to purchase health commodities for the country.

The current Expanded Program on Immunization (EPI) is compliant with both the national strategic documents (National Health Policy 2007-2021, National Health System Development Strategy 2008-2017) and international/regional strategic frameworks (Health 2020: the European policy for health and well-being, European Vaccine Action Plan 2015-2020 or the 2030 agenda for sustainable development), making allowance for programmatic amendments following annual assessments (e.g. Joint Appraisal Report 2015 and 2016).

Vaccination is mandatory and a prerequisite for admission to childcare centres and schools. Immunization services are provided through the various health care facilities over 1,551 primary health care facilities and maternity wards by a variety of health staff: medical nurses, family doctors. Immunization services are provided mostly by family doctors in the western part and by paediatricians in the eastern part of the country. They are equally accessible for both urban and rural population. 97% of the population in the western part live within less than 5 km from the immunization provider as compared to 94% in the eastern part. 96% of children from the western part and 90% of children in the eastern part need less than 1 hour to reach their vaccine provider. Vaccine hesitancy is more concentrated in urban area that explains lower coverage in urban rather than rural areas. Immunization services are delivered mainly using fixed and outreach services. Children are immunized after mothers' consent, clinical check-up from the family doctors or paediatricians done prior to vaccination. Proportion of deliveries at maternity ward is over 98% and represents an important opportunity towards providing the birth hepatitis B dose and BCG vaccine.

During 2016 medical institutions were adequately insured with the necessary quantities of most vaccines and consumables for their administration. All vaccines were procured through the UNICEF Supply Division. Monthly monitoring of vaccinations through on-site visits, statistical reports on vaccinations, electronic data transfer, generalization and analysis were provided. The positive activity of most health care institutions in the country and sufficient insurance with vaccines and syringes were expected to

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maintain a relatively high share of vaccination coverage for children. Generally, high vaccine coverage (>90%) is reported in the majority of the districts. Since 2009, vaccination coverage has been slightly decreasing compared to coverage achieved in the first decade of the millennium, but is still around 90% for all the vaccines introduced before 2009. Vaccination coverage in Moldova from 2005 to 2016 is shown in figure 1.

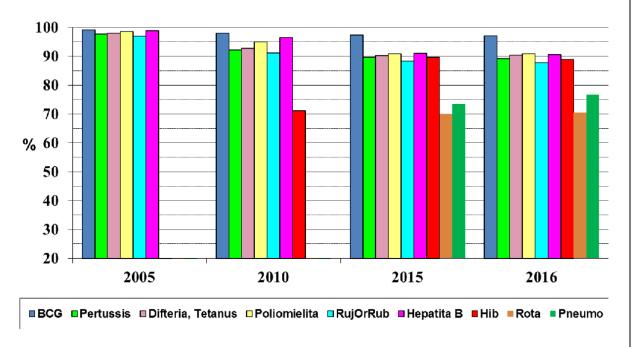


Figure 1. Immunization coverage in Republic of Moldova (including Transnistria), 2005-2016

Against diphtheria and tetanus, 194,671 adults were revaccinated, representing about 74.1% of those requiring revaccination. With vaccination against seasonal influenza in the 2016-2017 influenza season, 200,000 people were vaccinated from high-risk contingencies, and the vaccine was donated by the CDC US Task Force for Global Health, Center for Vaccine Equity.

The level of vaccination coverage continues to be below the targets set by the PNI with a gradual downward trend. The target for BCG was 42,516, for Penta was 42,153, but due to the fact that Transnistria didn't implement PCV & Rota vaccines, target was 37,272 children or 84%. The insufficient level of coverage with vaccinations at national level is determined by the territories in Transnistria, as well as the refusal to vaccinate some groups of the population under the influence of anti-vaccination propaganda, the low level of knowledge of medical workers on medical contraindications to vaccination and insufficient level of communication with parents.

Vaccination coverage in different districts in 2016 is represented in Figure 2-4 for OPV3, MMR-1 and DTP-3.

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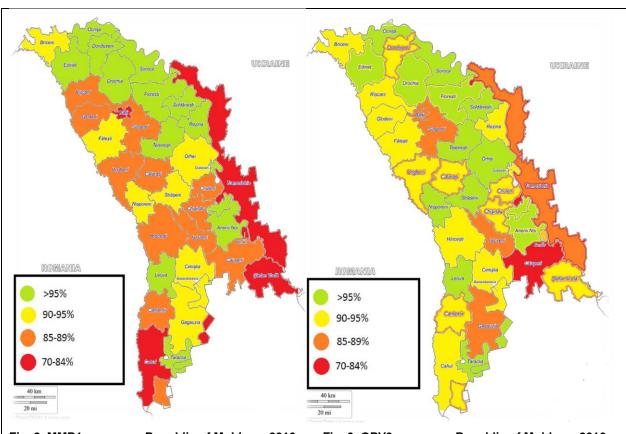
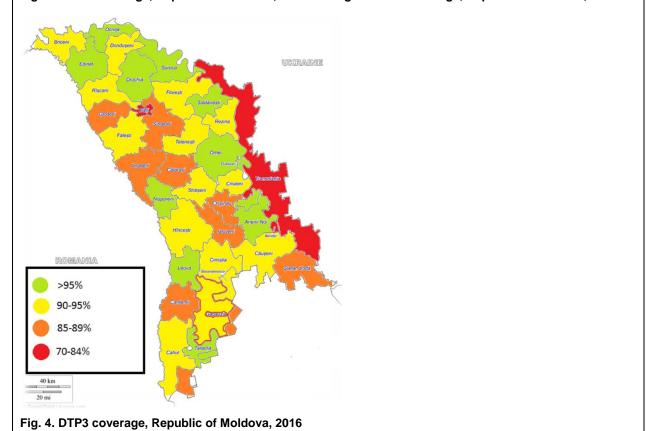


Fig. 2. MMR1 coverage, Republic of Moldova, 2016. Fig. 3. OPV3 coverage, Republic of Moldova, 2016



Coverage significantly below targets was noted for rotavirus vaccine (79.3%, an increase from 62.0% in 2015) and 3rd dose of PCV vaccine (86.2%, an increase from 80.0% in 2015). Rotavirus vaccination continues to lag behind that of other vaccines due to missed opportunities to vaccinate (caused by short-term contraindications, age restrictions, and lack of effective call and recall system). Coverage estimates for rotavirus and PCV vaccines were calculated without taking into account the Transnistria region, where these vaccines have not been introduced.

Table 1: Reported Vaccination Coverage, 2012-2016 (WHO/UNICEF estimates, incl. Transnistria)

Vaccine/coverage	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)
BCG	96	97	97	96	99
HepB (birth dose)	96	96	96	95	99
DTP1 (pentavalent 1)	90	88	94	96	97
DTP3 (pentavalent 3)	89	87	90	90	92
Polio3	90	88	92	92	92
MCV1 (MMR1)	86	87	90	91	94
MCV2 (MMR2)	96	93	95	94	92
RotaC	67 (79)*	62	69	65	21
PCV3	76 (86)*	71	28	1	-

Note: * Vaccination data for Rota and PCV3 excluding Transnistria!

Table 2: Transnistria Reported Vaccination Coverage, 2016

Vaccine/coverage	2016 (%)
BCG	95
HepB-0	97
DTP-HepB-Hib3	85
Polio3	88
MCV1 (MMR1)	79
MCV2 (MMR2)	93
RotaC	-
PCV3	-

Vaccine coverage is particularly low in the Transnistria region (penta3 – 85%, polio3 – 88%, HepB – 97%, MCV1 – 79% and MCV2 – 93%; rotavirus and PCV vaccines have not been introduced).

Dropout rate registered for 2016 for DTP3-DTP1 was 1.5%; for PCV3-PCV1 was 4.4%; DTP3-BCG was 7.3% and for MCV1-DTP1 was 4.0%. Dropout rates can be explained by increased immigration, false contraindications and decrease in demand. To reduce the dropout rate trainings for medical staff were conducted, MoH conducted advocacy to stop the immigration, and a strategy for increase in demand has been put in place.

During 2016, no outbreaks were detected, but the country continued to have cases of mumps and

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pertussis. Moldova did not have any confirmed measles cases since 2013, despite outbreaks in Romania and Ukraine and relatively low (below 90%) coverage in neighbouring countries.

Polio-free status has been sustained, but the risk of polio transmission is high, considering proximity with Romania and Ukraine – countries, which the Regional Commission for the Certification of Polio Eradication has qualified in the last several years. In Ukraine, 2 cases of vaccine-derived polio, caused by type 1 circulating vaccine-derived poliovirus (cVDPV1), were registered in 2015.

Table 3: Reported vaccine-preventable diseases

	2016	2015	2014	2013	2012
Diphtheria	0	0	0	0	0
Measles	0	0	2	27	11
Mumps	109	70	51	60	131
Pertussis	283	50	188	115	92
Polio	0	0	0	0	0
Rubella	0	0	0	0	3
Tetanus (neonatal)	0	0	0	0	0
Tetanus (total)	0	0	0	0	0

Immunizations carried out according to NIP, permanent monitoring of morbidity, prophylactic and antiepidemic measures, allowed the favourable epidemic situation to be maintained in 2016. No cases of poliomyelitis caused by the wild type or vaccine associated virus, tetanus and neonatal tetanus, diphtheria, measles, rubella and congenital rubella have been reported. There were 3 (0.39‱) cases of viral hepatitis B in children under the age of 2 years. Cases of invasive forms of *Streptococcus pneumoniae* have been reported 7 (0.17‱), invasive forms of *Haemophilus influenza* b (Hib) infection - 3 cases (0.07‱) including in both infections 3 cases in children under 6 years. Although no cases of measles occurred in the country between 2015 and 2016, measles worldwide remain one of the main causes of death among children, even if there is a safe and cost-effective vaccine. Due to the decrease of the vaccine coverage with MMR vaccine in 2012 and the presence of the measles epidemic in the neighbouring countries, the Republic of Moldova is forced to take the necessary measures and to raise the vaccine coverage with MMR to a minimum of 95% to avoid a possible outbreak.

In 2016, morbidity through pertussis increased, incidence was 7.03 cases per 100.000 population (283 cases), significantly higher than in previous years (2015 - 1.23%000, 2014 - 4.63%000, 2013 - 2.83%000, 2012 - 2.26%000). The incidence of mumps was 2.71%000 (109 cases) increased compared to 2015, 1.72%000 (70 cases), 2014 - 1.26%000 - (51 cases).

Vaccination against rotavirus infection has helped to reduce morbidity through this infection: from 19.21‰000 (782 cases) in 2012 to 5.89‰000 (239 cases) in 2015 with an insignificant increase in 2016 - 6.33‰000 (255 cases).

Rotavirus Surveillance

The Republic of Moldova added rotavirus vaccine to the national immunization program in July 2012. Ongoing sentinel surveillance for rotavirus gastroenteritis provided the opportunity to assess the impact vaccine introduction had on rotavirus disease burden and to estimate the effectiveness of the vaccine. Prior to vaccine introduction, the percentage of hospital admissions positive for rotavirus among children aged <5 years was 45% and fell to 25% and 14% in the first and second year after rotavirus vaccine introduction, respectively. Decreases were greatest among vaccinated cohorts; however, there were significant reductions among cohorts too old to be vaccinated which suggests indirect benefits of

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vaccination. Vaccine effectiveness for a full 2-dose course against moderate to severe rotavirus hospitalization was 84%. These results are documented in "Impact of rotavirus vaccine introduction and vaccine effectiveness in the Republic of Moldova" in *Clinical Infectious Diseases* journal published in 2016 (Source: http://www.ncbi.nlm.nih.gov/pubmed/27059348).

In 2016, 1,096 children were enrolled in rotavirus surveillance with 179 (16%) testing rotavirus positive, the two most common genotype strains were G3P[8] and G4P[8], and the rotavirus national laboratory passed the external quality assurance (EQA) program coordinated by the Global Reference Laboratory in Atlanta, GA, USA and the external quality control (EQC) program coordinated by the Regional Reference Laboratory in Minsk, Belarus. Rotavirus disease in the Republic of Moldova occurs in a seasonal cycle with peak occurrence in winter months (December – April).

In 2017, the Republic of Moldova began participation in the WHO-coordinated Global Paediatric Diarrhea Surveillance Network (GPDS). The country is leveraging the existing rotavirus surveillance platform to monitor more than twenty enteric pathogens.

3.2. Key drivers of low coverage/ equity

- 1) Health workforce. Health workforce in Moldova is declining due to migration of medical staff to other countries or refusal to work at public sector due to low salaries. This problem is more acute in rural areas or small districts, where a family doctor can have more than one village under his/her control. The same situation is for epidemiologists who are responsible for immunization program. For one district there is one or two epidemiologists who are responsible for different activities in all communicable diseases. There is an increased need for medical staff in order to increase quality control and achieve the main objectives of NIP.
- 2) Supply chain. At the local level household refrigerators are still being used and there is a need to replace those with the PQS pre-qualified refrigerators. Funds have been allocated to replace these refrigerators in the NIP budget 2016-2020. The central store is at the National Centre for Public Health. Current cold chain capacity at the central store is sufficient for vaccines used in the Immunization programme. It consists of three cold rooms and three ice lined freezers for OPV. There are also three ice-pack freezers used for packing OPV in the distribution and one refrigerator for cool-packs. The cold rooms are equipped with continuous temperature monitors and good shelving. There is a reserve cold room, which is unfurnished but functional, in the basement of another building in the compound (30 cube meters gross volume). Transportation to intermediate level is done by special autorefrigirator, which is equipped well to maintain the cold chain temperature. At the LD level (district PHCs), storage capacity at +2 to +8 as well as at -20°C is sufficient to meet the vaccine storage needs at maximum level. Dry store capacity is also in most cases sufficient. PHCs receive vaccines and consumables from the NCPH quarterly (every three months). At the central level, at the NCPH, there is an inventory of cold chain equipment available at the LD level, which is updated once per year (last updated in January 2017). However, every month when the health facility collects vaccine form the PHC, they also bring evidence that the cold chain equipment is functional (the second side of the requisition form (Form 3) has a chart which serves for manual temperature recording).
- 3) Demand for immunization. Due to declining demand from population, which is based on false perception about vaccine benefits (negative information on mass-media, internet, rumours about AEFI and quality of vaccine) the vaccination coverage is declining. There is a lack of communication between medical workers and population. In order to increase demand NCPH, with support of UNICEF and WHO, elaborated a communication strategy for four years, 2017-2020. MoH validated the "Communication for Behaviour Change Strategy to Increase Demand for Immunization Services" in February 2017, and the strategy will be approved by MoH order. The strategy will contribute towards achieving the national coverage target of 95% by 2020. The main objectives of the strategy are: 1) To create widest awareness on the importance of immunization against preventable diseases among parents/caregivers and the general public; 2) To improve parental and health practitioners' attitudes and trust in vaccines and NIP; 3) For parents/caregivers to complete immunization of eligible family members in accordance with schedules.

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To achieve these objectives and increase coverage, the country needs funding support and technical assistance for implementation of the strategy.

4) Management and coordination. New vaccines (HPV, IPV) will bring new funding requirements and NIP will be confronted with difficult decisions in dealing with competing health priorities. Support and formal endorsement of national policies and plans at the highest political and administrative levels, nationally and sub-nationally, is considered essential for ensuring commitment and sustainability. The increasing complexity of immunization programmes and ambitious new goals, mean that more trained health workers are needed to manage the increased burden of work, including epidemiologists at the national and subnational levels as well as front-line workers who deliver services and interact directly with communities. Epidemiologists need to be equipped with technical knowledge about vaccines and immunization, as well as with management skills. Front-line health workers, who deliver not only vaccinations but also primary health care interventions and health education, need coordinated, comprehensive and very practical preand in-service training, with updated, relevant curricula and post-training supervision. Immunization programme ensure that trainings (immunization in practice, procurement of vaccines, elaboration of SOP) are made for strengthen of NIP activities. Civil society organizations can help with training and coordinating such workers.

3.3. Data

Quality of data

Numerator – no issues observed. To calculate the numerator NIP uses administrative data on the number of doses administered, as well as the number of vaccines used. Persons who need to be vaccinated and and doses for specific antigens are included in special registers kept at each medical institution. These institutions report monthly to Public Health Centers using Form Nr. 5. At the district level data is verified, analyzed and aggregated, after which is sent to National level.

Denominator – issues observed. Official data for denominator is obtained from the National Management Center in Public Health and the Republican Center for Hygiene and Epidemiology of Transnistria. In general, data for the denominator are collected from different sources: records of maternity hospitals on the number of live births, reports of family medicine institutions, reports of institutions responsible for population registration. Unfortunately, all of the above data are different. NIP uses denominator for BCG and HepB-0 from the records of maternity hospitals on the number of live births. For the rest of vaccines NIP uses number of live births minus children who survived in the first year of life. Validity of data is assessed by local epidemiologists during supervision visits.

The accuracy of the denominator is influenced by the factor of external and internal intensive migration. In the age group up to one year, 9.3% of children are registered in institutions of primary medicine less than the estimated number of survivors. Different sources show different data; according to the reports of the maternity hospital in 2016, 44.754 children were born alive, according to the registrar's offices 42,153 children were registered alive, 40,262 children born in 2016 are registered on medical records in family medicine institutions. There are about 7,277 children in the system that migrated to main 4 cities; however, due to registration problems it is difficult to capture them into calculation. From the recent DHS-2005 and MICS-2012 no essential difference was registered from NIP data and studies data.

Unfortunately, Moldova still did not implement an electronic information immunization system due to the lack of financial resources. An MoH project for introducing such system is currently in place.

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

Apart from the Ministry of Health, the highest decision-making body for immunizations in the country is the Interagency Coordination Committee (ICC) consisting of 9 members, including WHO and UNICEF, and chaired by the MoH, while there is also a National Immunization Technical Advisory Group (NITAG) since 2013 to provide content and technical guidance, consisting of 13 members overall. Discussions at the ICC meeting were held on important activities for maintaining and increasing performance of NIP. One of the important topics which was discussed was the HPV introduction activities, technical and advocacy aspects. Sustainability of the programme was also discussed in terms of self-financing from the domestic budget.

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Active collaboration with Civil society and NGOs was going on in 2016. The communication strategy foresees their participation in immunizations activities. The specialists from immunization programme were invited also to events organized by CSOs and NGOs (Ask a Mom, Mama+, etc.) to advocate for immunization. A link between their official pages and forums were made with the NCPH immunization page to encourage online participation.

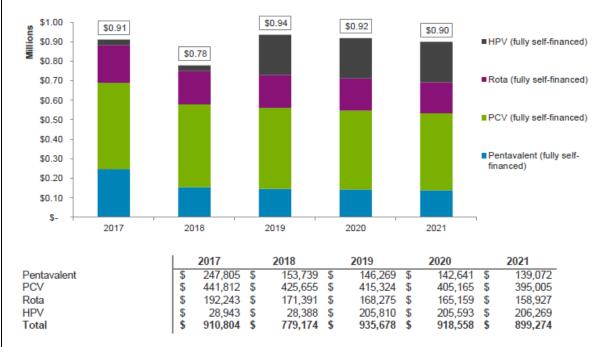
Several high level meetings took place with the Ministry of Education on immunization issues. Education authorities were invited to be involved more in advocacy of immunization, especially in view of coverage decline.

4. PERFORMANCE OF GAVI GRANTS IN THE REPORTING PERIOD

4.2. Sustainability and transition

Immunization financing and sustainability

Moldova has fully transitioned out of GAVI support at the end of 2016. It never defaulted and has shown political commitment to immunization spending. In order to ensure sustainability of vaccination programmes started with GAVI support, Moldovan government should continue to prioritise domestic investments in immunisation post-transition. The total average cost of GAVI-supported programs to Moldova in the next five years is \$890,000 per year (see projections in Figure 5).



- Projections are based on Gavi's operational forecast version 14.
- The country has been approved for exceptional catalytic support for HPV (2017-2018).

Fig 5: Projection of government expenditures on previously co-financed routine vaccines 2017-21

Some of the bottlenecks to sustainability of Moldova's immunization programme are mentioned under the section 3.2: health workforce training and retention; education of medical workers on immunization benefits and safety; vaccine hesitancy among public; challenging situation in the independent region of

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Transnistria. Also, social mobilisation and communication activities are currently not covered by the government budget as they are difficult to justify. Once the technical assistance for these areas ceases, Moldova will need to cover them from domestic resources.

In terms of health financing, Ministry of Finance allocates the budget in a top-down manner, often cutting the targets submitted by the Ministry of Health. However, there exists a policy dialogue process to reprioritize urgent needs in case increased vaccine investments are needed. Historically, there has never been a situation when immunization was under-funded. The Ministry of Health would benefit from increased evidence base, such as cost-effectiveness studies, as a tool for advocating for immunization budgets with the Ministry of Finance.

Moldova has switched to procurement of all eligible vaccines through UNICEF in 2016, which ensured the access to competitive GAVI process post transition. Country could create a more enabling environment for immunization by further improving mechanisms for vaccine procurement and working on legislation framework increasing efficiency of procurement (e.g. multi-year contracting, access to global purchasing). Increasing forecasting and vaccine markets' knowledge would also strengthen country's capacities over long term.

While commitment to immunization is strong, it has also been very reliant on political support. Political instability and fragile economic context will likely persist in the coming years. The country has been in financial and political crisis since 2014, with the economy slowly recovering in 2016 (4.1% growth). In the medium term, growth will slow to 3.7% in 2018 and 3.5% in 2019. Although Moldova is slowly rebuilding its macroeconomic buffers after the banking fraud episode, major challenges related to governance, particularly in the financial sector, and the efficiency of public spending remain. With parliamentary elections due in 2018, the fiscal deficit is projected to widen. There is an ongoing health system reform and it is unclear how it will impact current results. In this vulnerable environment, creating a strong supporter base for immunization financing is key to sustaining progress over long term. Parliament, civil society organizations, paediatrics associations, Ministry of Education, media/journalists could all be important actors in maintaining immunization commitment – their engagement and capacities should be strengthened.

Exchange of experiences with other GAVI transitioning countries would be beneficial to Moldova (e.g. experience of Bolivia with changing the law to ensure sustainable vaccine financing; value of Procurement Practitioners Network launched by UNICEF; participation in R4D network – LNCD – Learning Network for Countries in Transition).

Transition Grants - Progress Update

The Transition Assessment in Moldova was conducted in 2014, and the Transition Action Plan, covering the period of 2014-2017, was finalized by GAVI Alliance Partners and shared with the country for final validation and endorsement in early 2015. Transition Grants with WHO (US\$ 488,500) and UNICEF (US\$ 97,200) were signed respectively in May and August 2015, with disbursements of funds following shortly thereafter. The Transition Grants target the following strategic areas: vaccine procurement, immunization financing, vaccine regulations, strategic guidance and system performance.

Both Transition Grants were meant to support activities during two and a half years (mid-2014 to end of 2016), but because of the delays in signing of the grants, disbursing funding and allocating funds to WHO and UNICEF country offices, activities did not start until late 2015. Due to the delay in starting implementation, at the end of 2016 GAVI extended the Transition Grants for both partners on a no-cost basis for six months until June 2017.

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Since the Transition Action Plan development in 2014, the country context has significantly changed due to the economic crisis (with economy slowly recovering in 2016) and major political changes. In addition, the country switched to UNICEF procurement for all vaccines in early 2016 and became eligible for exceptional catalytic support for HPV vaccine. This altered the need for some of the technical assistance in the related areas.

UNICEF

UNICEF is responsible for the implementation of activities in the areas of procurement and system performance. The agency was on track with the implementation of planned activities and the results achieved include, but are not limited to the following:

- Development and implementation of the Action Plan on diversification of vaccine procurement mechanisms;
- Development of the Communication for Social Change Strategy and Action Plan 2016 2020 on raising the demand for immunization services;
- Development and dissemination of communication materials on vaccine promotion for different group of beneficiaries;
- Capacity building of relevant stakeholders (PH and PHC professionals) on communication with parents on promoting the immunization.

As of the end of June 2017, UNICEF utilised 100% of the funding and completed all remaining activities, such as:

- Finalization and implementation of the Action Plan on diversification of vaccine procurement mechanisms;
- Finalization with the local stakeholders of the Communication for Social Change Strategy on raising the demand for immunization services and 4 years Action Plan with budget;
- Development and dissemination of communication materials on vaccine promotion for different group of beneficiaries;
- Capacity building of relevant stakeholders (PH and PHC professionals) on communication with parents on promoting the immunization.

WHO

WHO is responsible for the implementation of activities in the areas of immunization financing, vaccine regulation and safety, strategic guidance and system performance. Due to delays in decision making in the country caused by recent political changes, the results achieved to date include, but are not limited to the following:

- Moldova participated in a WHO sub-regional training workshop on resource mobilization and advocating for increased investment in and sustainable funding of immunization programs;
- A WHO in-country mission on the development of the HPV cost-effectiveness study took place, with experts meeting relevant stakeholders and collecting relevant data on vaccination practices and cervical cancer screening, including costs;
- A mission to support the development of the National Regulatory Authority (NRA) strategic roadmap 2017-2019 was conducted in Moldova;
- A WHO workshop on market authorization was conducted for the staff of the National Agency for Drugs and Medical Devices;
- Representatives of the national immunization program from Chisinau and Tiraspol participated in the WHO sub-regional integrated training workshop on adverse events following immunization (AEFI) surveillance, causality assessment and communication;

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- A WHO Meeting for National Immunization Technical Advisory Groups (NITAG) was held, with NITAG chair and secretary from Moldova participating in the meeting;
- Two rounds of mid-level management (MLM) training for district-level immunization managers from the Republic of Moldova, including Transnistria region, were organized.

In view of the low progress in grant implementation, WHO, supported by the country, submitted a request for a final no-cost extension for six months, i.e. until 31 December 2017. The request is under review. The below critical activities are planned for implementation in 2017, including the no-cost extension period.

Immunization Financing

- Presentation of the HPV cost-effectiveness study conducted in Moldova during an HPV introduction workshop scheduled for summer 2017, while continuing the development of HPV introduction communication plan (through focus group discussions, in-depth interviews and key informant interviews) and advocacy materials during an in-country mission in Q2 of 2017; and
- Work to capitalize on existing resource mobilization plans and activities, with special focus on lowperforming territories.

Vaccines Regulation and Safety

- Review and revise of AEFI regulations and guidelines, with a thorough AEFI system assessment in Moldova by an in-country mission of international experts, provisionally scheduled for Q2 2017, with specific recommendations to improve the various system links;
- Consider the opportunity of national NRA visit to a well-functioning NRA in another country to learn from the best practices there.

Strategic Guidance

- Continuously train NITAG members by attending sub-regional NITAG and/or ETAGE meetings on immunization policies and strategies;
- Consider the opportunity of Moldovan NITAG visit a well-functioning NITAG in another country in the European region to learn from the best practices there.

System Performance

- Nine rounds of Immunization in Practice (IIP) training sessions are planned to be conducted nationwide by a team of EPI trainers (following the training of trainers) for primary health care physicians and nurses, as coordinated with health authorities;
- Three rounds of Immunization in Practice (IIP) training sessions are planned for the Transnistria region during Q2 2017 to be delivered by the WHO Collaborating Center on Immunization Training (International Children's Center) from Ankara, Turkey, covering about 75 vaccinators and public health experts from different levels and 5 districts and two municipalities;
- Supportive supervision visits to all districts are planned with EPI team. Two different specific
 checklists shall be jointly developed by a team of international consultants and EPI for districtand municipal-level public health centers, and for healthcare facility level, to be used by peer
 evaluators, with special focus on low-performing districts and healthcare facilities;
- National Center for Health Management and EPI team from the National Center for Public Health shall be updating the current vaccine coverage monitoring tool by analyzing different options (updating existing spreadsheet and ACCESS databases vs integration in existing PHC modules vs using a cloud-based standalone platform) to allow real-time evidence-based decision-making;
- Jointly with CDC, WHO/Europe is planning to conduct a nationwide seroprevalence study in the Republic of Moldova. Among other, the study shall help assess the role of PHC pay-forperformance schemes currently used by the National Health Insurance Company as an incentive for higher vaccination coverage rates and its impact on public immunity against selected antigens.

Challenges

Overall, the reported period may be characterized as one of relative political instability and scanty of financial opportunities. The economic environment did not recover much from the banking fraud and

political standoff, marked by presidential elections in Chisinau (November 2016) and local elections of a new leader in the Region (December 2016) and health authorities in Tiraspol, which featured long periods of relative inactivity due to preparations for the election campaigns. This situation was conducive to delays in critical decision-making, thus impacting upon the overall development agenda and Project implementation.

A number of challenges are described but not limited to the below:

- Overall socio-economic situation (severe budget deficit, including for health in general and for national programs (including vaccination) as per the Mid-Term Expenditure Framework 2014-2016, high staff turnover and health worker migration etc.) and Moldova's graduation from GAVI support for most vaccines in 2016 (except the newest vaccines and HPV as of lately) – along with graduation from other donor support (e.g., GFATM for HIV and TB) thus putting a bigger financial burden on public funds and overall prioritization;
- Global shortage of IPV (due to low manufacturing capacities worldwide) deferring the implementation of IPV in Moldova for end of 2017 (instead of late 2015);
- Growing anti-vaccination movements in the country (including through social media) and in some WHO European region member-states;
- Plethora of (unfounded) social media articles from pseudoscientists and non-evidence-based data, given the accessibility of those through (mobile) Internet in Moldova, resulting in growing parent hesitation, late vaccinations and/or deferred immunizations (e.g., lost opportunity for rotavirus vaccine);
- Unfinished public health reform agenda (regionalization) weakening the public health oversight of primary healthcare providers at district level;
- High health service provider hesitancy, especially among certain specialists (surgeons, neurologists, pediatricians etc.) and false contraindications; and
- Issues (political, financial, administrative) related to immunization in the Transnistria region, including discrepancy in the vaccination schedules.

Next Steps

WHO has been planning with national counterparts and international partners the work to be carried out in the area of immunizations during the next reporting period (2017), as outlined below:

- Continuously provide technical support to the area of VPI, in particular continue the rotavirus surveillance, post-introduction evaluations for new vaccines, introduction of new vaccines (IPV, HPV) etc.);
- Capacity building for the country's immunization policy-makers, including through WHO regional and sub-regional events (e.g., Regional Working Group, SAGE, Joint Appraisal Updates etc.);
- Strengthen the immunization program in the Transnistria region under the Confidence Building Measures (CBM) umbrella, including capitalizing on existing and future opportunities in the country (jointly with UNICEF and UNDP);
- Provide support to further maintain Moldova's polio-free status;
- Provide further support to keep Moldova's measles and rubella elimination status;
- Beef up European Immunization Week (EIW) related efforts to improve EPI program visibility and people's trust in vaccine safety, and encourage evidence-based informed decision-making;
- Use innovations (e.g., smartphone applications) to tackle parent and provider hesitancy (e.g., VaccinApp software updates, vaccine information statements, vaccine safety and vaccine contraindication workshops);
- Reflect VPI activities in the new UN Development Partnership Framework for Sustainable Development 2018-2022 in Moldova;
- Implementation of the Communication Strategy for Immunization to increase demand.

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4.3. Financial management performance (Transition Grants and IPV VIG)

UNICEF

As of December 2016, UNICEF expended 87% of the total funding allocated to UNICEF (US\$ 97,200). As of the end of June 2017, 100% of the funding was utilised.

WHO

As of December 2016, WHO expended 43% of the total funding allocated to WHO (US\$ 488,500).

Reporting on utilization of transition grants by partners was provided the GAVI Secretariat in compliance with financial reporting and audit requirements.

EPI Programme

In 2015, Moldova received from GAVI US\$ 100,000 IPV vaccine introduction grant. In addition, the country had US\$ 44,255 of remaining cash balance from the PCV VIG disbursed in 2013. As per the financial statement of 2015, the EPI Program spent a total of US\$ 92,520 thus leaving US\$ 51,734.

According to the 2016 financial statement, these funds were spent as follows:

Table 6: 2016 expenditure of GAVI funds remaining in country

·	Budget in MDL	Budget in US\$	Actual in MDL	Actual in US\$
Salaries	50,000	2,688.15	50,000	2,688.15
Contributions to social insurance	11,500	618.26	11,500	618.26
Contributions to medical insurance	2,300	123.66	2,300	123.66
Administrative expenditures (including stationary and office supplies)	50,000	2,688.15	50,000	2,688.15
Postal and communication expenses	10,000	537.63	2,500	134.41
Fuel	50,000	2,688.15	30,000	1,612.89
Maintenance of equipment and office space	20,000	1,075.58	7,972	428.59
Publishing expenditures	200,000	10,752.58	190,747	9,252.61
Customs expenditures	8,500	456.98	8,500	456.98
Per diems	10,000	537.63	10,000	537.63
Procurement of equipment (refrigerated truck, cold chain, office equipment)	550,000	29,569.60	550,000	29,569.60
Total for 2015	962,300	51,736.05	962,269	51,734.40

No FMA has been conducted in Moldova during the previous years of GAVI support. There were also no audits of previously disbursed cash grants due to their amounts being below the established threshold.

4.4. Technical Assistance (TA)

WHO

During the reporting period (January – December 2016), WHO implemented the following activities as per the planning under PEF TCA 2016:

- ✓ NIP Manager and the Chair of NITAG from MDA attended WHO regional meeting on HPV vaccine introduction was held on 16-17 March 2016. The meeting provided an opportunity to present and discuss data necessary for making NITAG recommendations on introduction of HPV vaccine as well as discuss the country plans to apply for GAVI support.
- ✓ WHO EURO sent a letter to the Minister of Health of MDA to advocate for making informed decision on introduction of HPV vaccine in the context of an opportunity to receive GAVI support.

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- ✓ WHO EURO in collaboration with CO conducted national conference for health workers and round table for immunization programme stakeholders and partners to discuss introduction of HPV vaccine in MDA. The meetings were conducted on 5-7 September 2016.
- ✓ WHO EURO provided consultancy support in conducting HPV vaccine cost-effectiveness study
 to collect local economic evidence to support decision making on introduction of HPV vaccine.
 The consultancy mission was carried out on 6-11 June 2016. The results were shared with the
 MoH and immunization programme.
- ✓ WHO EURO provided technical support in development of proposal to GAVI for the support in implementation of HPV vaccine demonstration project. The application was approved by GAVI independent review committee.
- ✓ NIP representatives participated in Regional Meeting on Preparedness for introduction of HPV vaccine was held on 14-16 March 2017 in Minsk, Belarus.
- ✓ The Chair and the Secretary of NITAG participated in ETAGE meeting was held on 12-13 October 2016.
- ✓ In collaboration with SIVAC the NITAG evaluation was conducted and the plan for improvement of NITAG performance was developed.
- ✓ NITAG members participated in WHO Regional NITAG Meeting was held on 14 October 2016.
- ✓ Preparedness of HPV introduction including supporting the National Immunization programme in: conducting qualitative field work incl. focus group discussion (FGD) and in-depth interviews (IDI); analyzing the qualitative data collected; drafting a communication plan based on the findings.

Rotavirus Surveillance

- ✓ WHO EURO continued to provide overall technical assistance for rotavirus surveillance. WHO EURO continued to procure the WHO recommended enzyme immunoassay (EIA) kits to detect the rotavirus antigen and logistics assistance for the external quality assurance (EQA) and external quality control (EQC) programs.
- ✓ WHO EURO provided technical assistance to leverage the existing rotavirus surveillance platform to monitor over 20 enteric pathogens. The Republic of Moldova began participating in the Global Pediatric Diarrhea Surveillance Network (GPDS) in January 2017.
- ✓ WHO EURO created practicums on analysis and presentation of rotavirus surveillance data. Standard rotavirus surveillance outputs, general data analysis tips, and data cleaning and validation rules were presented at the regional rotavirus surveillance meeting. Specific analysis topics included filtering data, creating analysis variables, and generating summaries using pivot tables. Participants practiced producing the standard outputs using case-based rotavirus surveillance data.
- ✓ WHO EURO coordinated the regional rotavirus surveillance meeting in June 2017. Country-level, regional, and global updates on Global Rotavirus Surveillance Network (GRSN) activities and updates on epidemiology and laboratory topics were presented. Countries engaged in discussions about sustainability of rotavirus surveillance and countries with relevant partners engaged in discussions about the next steps in the implementation of the Global Pediatric Diarrhea Surveillance (GPDS) Network. Participants from each country participated in the workshop on rotavirus surveillance data analysis and presentation techniques.

UNICEF

During the reporting period (January – December 2016), UNICEF implemented the following activities as per the planned PEF TCA 2016 activities:

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Procurement capacity strengthening

- ✓ UNICEF provided continuously technical support to the Ministry of Health and National Center of Public Health in development of vaccine procurement capacities of national stakeholders. Starting from January 2016 all eligible vaccines have been procured through UNICEF SD and UNICEF actively supported the process, including review of the forecast and facilitating coordination among relevant stakeholders involved in vaccine procurement and transportation.
- ✓ In order to support Moldova to access affordable and safe vaccines, UNICEF conducted a review of legal framework, trends and Government commitments and conducted a series of consultations with the main stakeholders. Based on the key findings and recommendations, UNICEF developed materials /modules for capacity building workshop for representatives of MoH, MoF, NCPH, Agency on Medicines and Procurement Agency on vaccine procurement organizing, planning, forecasting and vaccine market knowledge. As a result of the workshop, the final Action Plan was developed and submitted to the MoH for approval.

System Performance

- ✓ In order to increase demand for immunization services UNICEF in partnership with WHO provided support to the Ministry of Health in organizing European Immunization Week and spread information and messages through press-conference, media and social media to general public. Communication activities at this stage are focused on awareness raising through: press-clubs on immunizations, promotion of vaccination through social media and traditional media (radio, TV, writing).
- ✓ In order to promote vaccination among parents with young children, a web site on parenting was developed with the support from UNICEF.
- ✓ UNICEF developed a draft Communication for Social Change Strategy on increasing demand to immunization services. The Strategy covers the period of four years, 2017 2020. It has been estimated that four years will be required to bring the coverage up to 95% or higher in Moldova. The activities will target caregivers to empower them to regain confidence in immunization and advocate for it. It is critical that the strategy is now implemented and all support (financial or technical assistance) be provided to Moldova in this respect.

5. UPDATE OF FINDINGS FROM PREVIOUS JOINT APPRAISAL

Prioritized actions from previous Joint Appraisal	Current status
Support for introduction of HPV vaccine (communication, advocacy, cost-effectiveness, KAPB study, building preparedness for vaccine safety events, demand generation, medical staff training, etc.)	In progress - HPV formative research study, HPV communication strategy, medical staff training for HPV including preparedness and response to AEFI. Completed - cost-effectiveness study.
Maintaining immunization as a priority and securing sufficient government funding for immunization program	Completed - NIP for 2016-2020 was approved in October 2016. Completed - Midterm budgetary planning 2017 -2019. Completed - With support of SABIN and WHO a meeting on financial sustainability with main stakeholders was held (parliament, government, MoH, specialists). Completed - identified a tool for advanced payment on international market vaccine procurement (UNICEF).
Continuing to address vaccine hesitancy and knowledge gaps among medical personnel, notably through continued health worker trainings to properly	Completed - 3 trainings were provided for medical staff `` Immunization in practice``, 2

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identify contraindications and reduce false contraindications	trainings on SOP, regular meetings with primary health workers. In progress - planning to conduct annual trainings for family doctors on Immunization in practice (done 9 trainings in 2017).
Promoting vaccine demand through behaviour change communication strategies	Completed - Communication strategy for behaviour change and increase of vaccination demand was approved by MoH for 2017-2020 order nr. 651 from 11 August 2017. Completed - European immunization week was conducted with active involvement of all stakeholders. In progress - support in implementation of communication strategy for behaviour change and increase of vaccination demand as well as maintaining the planned activities is needed.
Pursuing sentinel surveillance for rotavirus disease, including continuation of the case-control study for vaccine effectiveness to assess the durability of protection in older children	Completed - The impact of rotavirus vaccine introduction and the results of the rotavirus vaccine effectiveness evaluation were published in "Impact of rotavirus vaccine introduction and vaccine effectiveness in the Republic of Moldova" in Clinical Infectious Diseases journal in 2016 (Source: http://www.ncbi.nlm.nih.gov/pubmed/27059348) In progress - surveillance for rotavirus disease is in place and is ongoing. Financial assistance is needed for the procurement of enzyme immunoassay (EIA) kits to detect the rotavirus antigen, laboratory supplies, transportation of stool specimens to the national laboratory, and shipment of samples to the Regional Reference Laboratory for external quality control program and for genotyping.
Ensuring availability of functioning cold chain across the country (notably freezers, LogTags, thermocontainers)	Completed - Freezers and thermocontainers were procured and distributed. In progress - assuring with LogTags and PQS refrigerators.
7. Social media monitoring to understand behaviour attitudes of population, and provide rapid response to parents' needs	Completed - official page on immunization in place.
Adaptation of electronic immunization registries tested in other EURO countries to Moldova's context and their acceptance and use by health practitioners across the country	In progress - In several primary health facilities an IIS electronic system is incorporated in primary health register. This is being tested. In progress - update of the electronic form #5 for monthly and annual immunization reports (planned in 2017).
Capacity strengthening of National Immunization Technical Advisory Group and strengthening of the ICC	Completed - the evaluation of NITAG was conducted and the improvement plan was developed. In progress - plan to strength the ICC.

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10. Increased resource mobilization capacity of the EPI, especially in view of the end of GAVI support	In progress
11. Monitoring the situation in Transnistria, where the coverage is much lower than in Moldova proper.	In progress - officially cannot be done; the situation is being monitored.
Additional significant IRC / HLRP recommendations (if applicable)	Current status
Not applicable for Moldova	

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

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Key prioritized need 1	Implementation and evaluation of the HPV vaccine demonstration project; preparedness for nation-wide introduction
Agreed country actions	 Monitoring of Demo project implementation and HPV vaccine coverage and ensuring high vaccine uptake; HPV vaccine post-introduction evaluation; Advocacy for nation-wide introduction; ensuring sustainability of the HPV vaccination program after GAVI support is finished; Continuing capacity building in responding to HPV vaccine safety events; Continuing implementation of communication activities according to the developed communication strategy;
Associated timeline	2018-2019
Technical assistance needs	 Support in advocacy for nation-wide introduction of HPV vaccine after GAVI support for demonstration project is finished Continuing support in building NIP capacity to respond to HPV vaccine safety events Technical support in responding to crisis situations related to HPV vaccine safety events
Key prioritized need 2	Implementation of IPV
Agreed country actions	 To redefine the contingents (number of children) Training of medical staff on IPV Communication activities
Associated timeline	2018
Technical assistance needs	Support in trainings for the medical staff needed
Key prioritized need 3	Communication strategy for increasing demand 2017-2020
Agreed country actions	 Implementing tailoring immunization programme activities: Ensure the introduction of the module on interpersonal communication and crises communication into curricula of family doctors, paediatricians, public health specialists and nurses Development and dissemination of messages through PHS and social and traditional media Train PHC staff and media on interpersonal communication skills Maintain the immunization as a priority for the health system
Associated timeline	2018-2020

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Technical assistance needs	Financial support for implementation of the activities needed
Key prioritized need 4	Cold chain equipment
Agreed country actions	To ensure equipment procurement Implement activities according the plan from evaluation of the cold chain
Associated timeline	2018-2019
Technical assistance needs	Support in conducting procurement of equipment needed
Key prioritized need 5	Evaluation of the data quality
Agreed country actions	To revise the existing electronic system To adjust to the needs of NIP To improve immunization recording and reporting forms
Associated timeline	2018-2019
Technical assistance needs	Need of MICS or DHS, EVM
Key prioritized need 6	Implementation of Electronic Information Immunization System in the Primary Health Care
Agreed country actions	To revise the existing electronic system To adjust to the needs of NIP To improve immunization recording and reporting forms
Associated timeline	2018-2020
Technical assistance needs	Technical support in development of the system
Key prioritized need 7	Sustain the sentinel rotavirus surveillance system
Agreed country actions	Ensure continuous and sustainable rotavirus surveillance
Associated timeline	2018
Technical assistance needs	Need for technical assistance and financial support for diagnostic kits, laboratory supplies, transportation of stool specimens to the national laboratory, shipment of samples to RRL for the external quality control program and for genotyping.

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

Joint appraisal report was developed and consulted with relevant stakeholders (WHO, UNICEF and Ministry of Health).

The ICC meeting on JA report endorsement was held on 14 August 2017. Key points discussed:

- Revised JA report was discussed based on the inputs from the main stakeholders and taking into consideration comments and recommendations provided by GAVI.
- The importance of implementation of all recommendations from the communication strategy for behaviour change and increase of vaccination demand for 2017-2020 was also discussed. The strategy was approved recently by MoH order nr. 651 dated 11 August 2017.
- NIP preparedness to implement the HPV demo programme was discussed.

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The following decisions were made:

- To approve the JA report for submission to GAVI.
- To support and provide political commitment for implementation of the communication strategy for behaviour change and increase of vaccination demand for 2017-2020.
- To sustain procurement of vaccines for Republic of Moldova through UNICEF SD and to present forecast for 2018.
- To approve action plan for HPV implementation and to increase commitment for sustainability of HPV vaccine in NIP after Demo programme.

8. ANNEX
Compliance with GAVI reporting requirements

	Yes	No	Not applicable
Grant Performance Framework (GPF) reporting against all due indicators	+		
Financial Reports	+		
Periodic financial reports	+		
Annual financial statement	+		
Annual financial audit report			
End of year stock level report	+		
Campaign reports			+
Immunization financing and expenditure information	+		
Data quality and survey reporting	+		
Annual desk review		+	
Data quality improvement plan (DQIP)		+	
If yes to DQIP, reporting on progress against it			
In-depth data assessment (conducted in the last five years)		-	
Nationally representative coverage survey (conducted in the last five years)	+		
Annual progress update on the Effective Vaccine Management (EVM) improvement plan	+		
Post Introduction Evaluation (PIE)	+		
Measles-rubella 5 year plan		+	
Operational plan for the immunization program	+		
HSS end of grant evaluation report			+
HPV specific reports			+
Transition Plan	+		

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