Joint Appraisal report 2017

Country	Democratic People's Republic of Korea
Full Joint Appraisal or Joint Appraisal update	Joint Appraisal update
Date and location of Joint Appraisal meeting	
Participants / affiliation[1]	
Reporting period	June 2016 - June 2017
Fiscal period[2]	June 2016 – June 2017
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	Inactivated polio vaccine	2020	2018	325,045	US$0	US$754,000
Routine	Pentavalent vaccine	2020	2018	355,670	US$223,000	US$1,122,000

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

Type of Support	Vaccine	Starting year	Ending year
Routine	*Pentavalent*	2018	2020

1.3. Health System Strengthening (HSS) renewal request

*Below table summarises key information concerning the amount requested for the next year. Please note that funds previously requested and approved may be pending disbursement and do **not** require further approval.*

Total amount of HSS grant	US$ 26,039,480
Duration of HSS grant (from…to…)	2015 - 2019
Year / period for which the HSS renewal (next tranche) is requested	2018
Amount of HSS renewal request (next tranche)	US$ 4,960,264

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

Indicative interest to introduce new vaccines or request HSS support from Gavi	Programme	Expected application year	Expected introduction year
	MR-Routine EPI	2018	2019

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

2. CHANGES IN COUNTRY CONTEXT SINCE LAST JOINT APPRAISAL

Democratic People's Republic of Korea (DPRK) has not been formally identified as a country of immunization fragility. However, since the last joint appraisal, the country has been exposed to stricter sanctions imposed by the United Nations (UN) due to the existing geo-political situation. In addition to that there was a situation of continuous political instability and tension in most part of the 2017.

In 2016, following the typhoon "Lion Rock", massive floods occurred in the North Hamgyong Province displacing around 67,000 people and destroying or damaging health facilities in the affected areas. Despite this, MOPH with WHO/UNICEF support ensured that routine immunization continued among the target population in the displaced communities using the activity "catch-up immunization campaigns in relatively low performing districts" under the current Gavi HSS2 grant. In addition to addressing flood affected areas, the grant was also used to establish an active early warning, alert and response system to promote the timely detection and response to possible outbreaks of vaccine preventable diseases. This activity was supported by central emergency relief funds from the UN and other WHO/UNICEF funds. Throughout the rapid and then medium term response to the flood and its health effects, both agencies prioritised routine immunization, VPD surveillance and outbreak response as key elements.

In a different context, DPRK's position in terms of Measles-Rubella (MR) vaccine introduction has changed in the region since the last joint appraisal. All countries in the WHO's South-East Asia Region (SEAR) except DPRK have now introduced the MR vaccine in the national immunization schedule. Given the DPRK's significant achievements towards measles elimination and the possibility of further strengthening rubella control with the introduction of MR vaccine, South East Asia regional immunization technical advisory group (SEAR-ITAG) has recommended DPRK consider MR vaccine introduction no later than 2018.

3. PERFORMANCE OF THE IMMUNISATION SYSTEM IN THE REPORTING PERIOD

3.1. Coverage and equity of immunisation

Immunization coverage :

According to the WHO and UNICEF joint reporting format (JRF), in 2016 the 3rd dose coverage of the Diphtheria-Tetanus, Pertussis (DTP3) vaccine in DPRK was 95.7% while coverage for the 1st dose of the measles containing vaccine (MCV1) was 98.7%. DPRK maintained a high immunization coverage for other vaccines provided in the national immunization schedule and it is as follows:

Table 1: Administrative coverage for key antigens given in the national EPI schedule in DPRK (2016)

Antigen	Immunization coverage
Hepatitis B birth dose	98.3%
DTP1(Pentavalent1)	97.2%
DTP3 (Pentavalent 3)	95.7%
IPV1	24.7%
OPV3	98.7%
MCV1	98.7%
MCV2	98.2%
Women protected by TT +2 (for prevention of maternal and neonatal tetanus)	98.5%

There is a difference of 3% between coverage of OPV3 and Pentavalent (DTP)-3. This is reportedly due to the reluctance of parents/caregivers to accept pentavalent third dose as a result of high grade fever (AEFI) to previous doses of the pentavalent vaccine. The MCV 1 coverage was higher than the coverage of Hepatitis B and DTP1. This is attributable to the high uptake of MCV 1 as a result of increased awareness and importance of vaccination among care givers following the measles outbreak in 2014.

Figure 1: Administrative immunization coverage of DTP3 in DPRK from 2000-2017

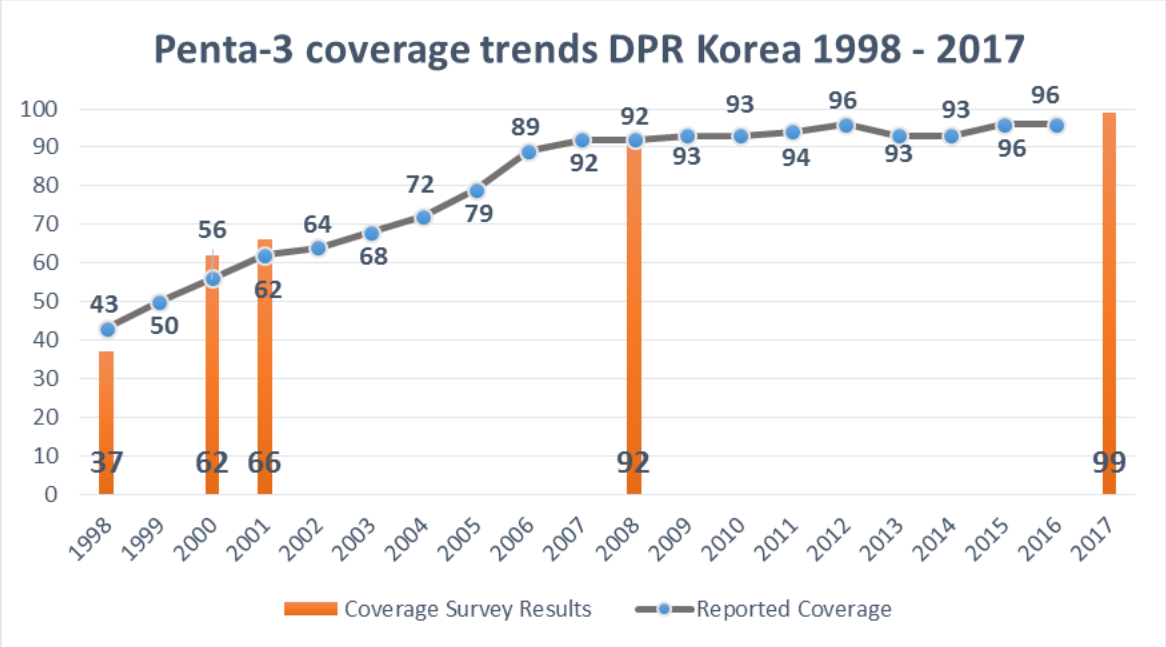
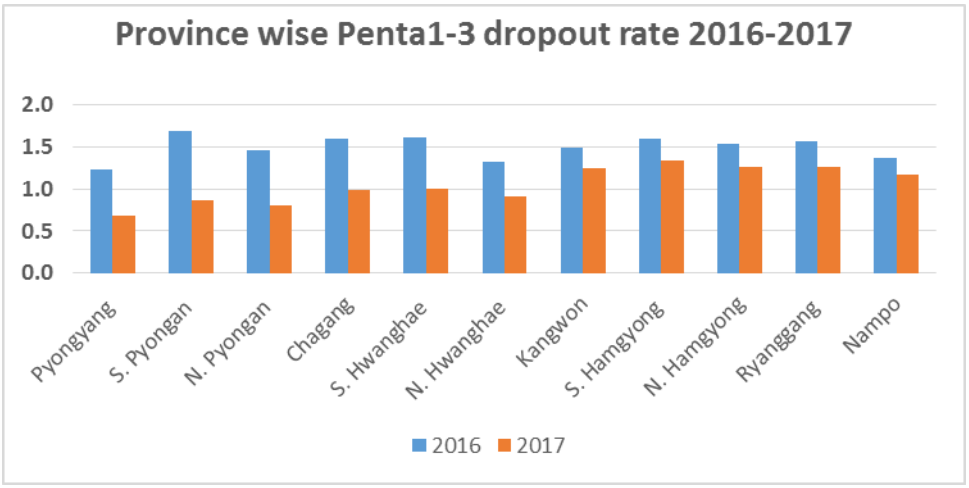


Figure 1 describes the trend of DTP/Pentavalent 3 administrative coverage in DPRK till 2016. It also provides the point estimates of the coverage evaluation surveys conducted in previous years in the country till 2017**.** The country has demonstrated a rapid improvement in DTP3 coverage from the low level of around 60% in 2001-02 to attaining a consistently high coverage of above 90% from 2006 onwards. The trend is similar for all other antigens used in the national programme of immunization.

The reported administrative coverage of inactivated polio vaccine (IPV) (24.7%) was low due to the current global supply issues. There were stock-outs of IPV since December 2015 at the central level. The last child was vaccinated with IPV in April 2016.

The total number of unimmunized children for DTP3 estimated nationally using the WHO/UNICEF joint reporting format (2016) in 2016 was 9,633 infants. The proportion dropped out from DTP-1 to DTP-3 was 1.5%. In absolute terms, this amounted to 5,067 infants.

Figure 2: Province –wise DTP1 to DTP3 dropout in DPRK from 2016 to 2017

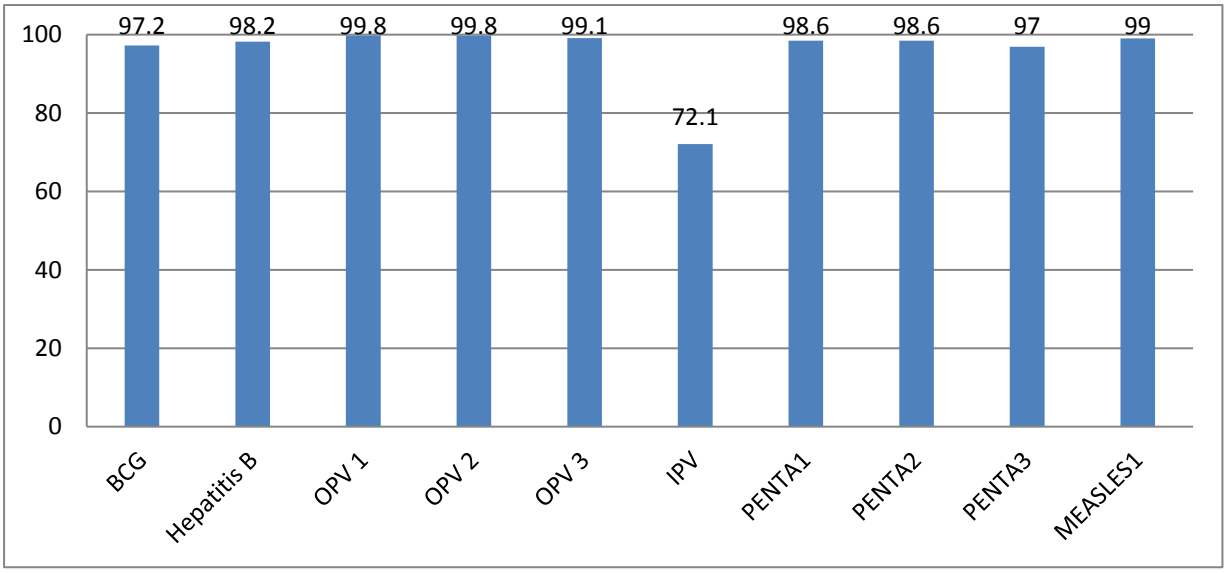


In 2017, DPRK with partners conducted a nationally representative coverage evaluation survey (CES) using the WHO revised methodology (2015). It was a significant achievement given that this was the first coverage evaluation survey since 2008. The survey was designed to provide coverage estimates with an absolute precision of plus or minus 10% and 95% confidence limits at the provincial level assuming a 90% coverage. The precision of the coverage estimate at the national level was expected to be less than plus

or minus 5%. The sampling design consisted of 264 clusters with a cluster size of 85 households. In the data collection process, 21,763 households were visited in 256 clusters chosen randomly and vaccination data were collected from mothers/care-givers and health facilities for 1,195 children aged 12-23 months. The key findings related to immunization coverage (Figure 3) were as follows :

- Coverage, except for IPV - for which there is a global stock-out - was well over 90%.
- Ninety-four percent of children 12-23 months were fully vaccinated with valid, documented doses before 12 months of age.
- There was no significant difference in coverage between boys and girls.
- Coverage for all vaccine/doses, with the exception of IPV, is above 95% indicating both high levels of access to vaccination as well as high levels of utilization of vaccination services.
- Coverage of 74% for IPV is attributable to the current global shortage of IPV The study population of the coverage evaluation survey consisted of children 12-23 months at the time of survey in 2017 while the coverage (24.7%) reported in JRF in Table 1 was for children <12 months in 2016. The last shipment of IPV to DPRK was in March 2016 and the last child was vaccinated in April, 2016).

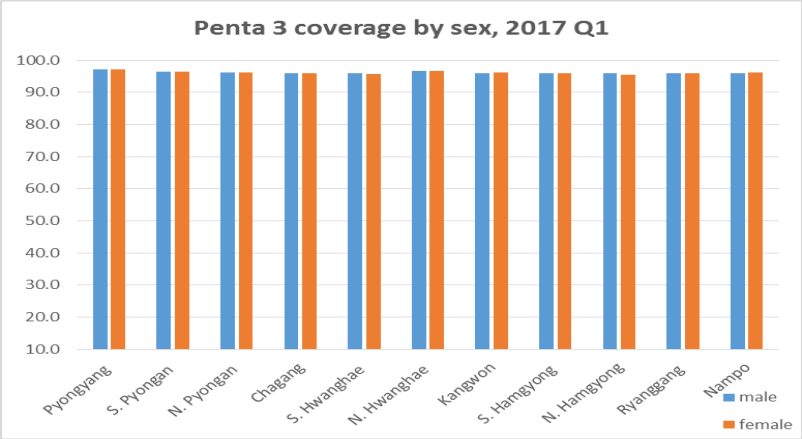
Figure 3: National estimates of coverage of valid doses of antigens used in the national EPI schedule in the study sample (12-23 months0 of the coverage evaluation survey , by 12 months of age, determined using health facility records.(Coverage Evaluation Survey 2017)



Equity :

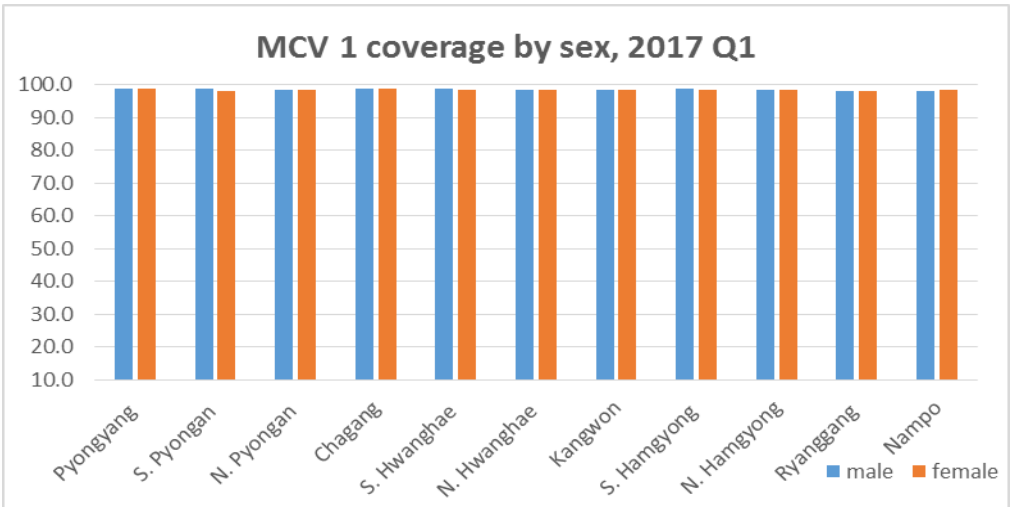
Geographical equity: The immunization programme has demonstrated geographic equity in the target populations across the country. In 2016, all 210 counties reported an administrative coverage of at least 80% for DTP3 as per the monitoring and evaluation framework of the Global Vaccine Action Plan. All these counties, in fact, reported a coverage of DTP3 over 95%. In terms of the measles elimination goal, all counties reported an administrative coverage of at least 90% for the MCV1 (in fact all counties had a MCV-1 coverage over 98%). Catch-up immunization campaigns supported by current Gavi HSS 2 grant in five low –performing northern provinces contributed to target missed out children, missed sessions due to floods and achieve geographic equity.

Figure 4: DTP coverage by sex



Following recommendations from the immunization technical advisory group (ITAG) of the South-East Asia Region (SEAR) and Gavi, the vaccine alliance the national immunization programme has initiated recording and reporting sex disaggregated data from January 2017. Sex specific coverage of pentavalent 3 (DTP3) in DPRK by provinces in 2017 is given in **figure 4** while figure 5 depicts the sex specific immunization coverage of MCV 1.

Figure 5: MCV1 coverage by sex



Immunization data pertinent to household income and mother's education are not available. However, given high coverage estimates, it is justifiable to assume that inequity in immunization coverage by household income or education level of mothers is likely to be very negligible if any exists. The multi-indicator cluster survey which is in progress currently will shed light on equity related to these characteristics.

Table 2: DTP3 coverage by county in 2016 and 1st quarter of 2017

Name of Vaccine	No. of counties with coverage is <90~95%		Percent of counties with coverage is > 95% (%)	
	2016	2017 Q1	2016	2017 Q1
Penta 1	0	0	210	210
Penta 3	20	6	190	204

Table 2 indicates that in the 1st quarter of 2017 all counties had a DTP3 coverage more than 95% except six counties which have a coverage >90%. This in contrast to 20 counties that had a DTP3 coverage < 90% in 2016. The population of the DPRK is 100% homogenous in terms of ethnicity and differences in immunization coverage across populations is not pertinent in the country context. As indicated by the similar immunization coverage data across provinces and counties, an urban-rural inequity in immunization coverage is unlikely to exist .

VPD / adverse events following immunization (AEFI) surveillance:

DPRK conducts VPD surveillance and reports regularly to the WHO as per the global requirements through the JRF and SEARO annual EPI/VPD reporting format. As per the data reported in 2016, there were no suspected VPDs other than suspected measles and rubella cases. There were 73 suspected cases of measles or rubella. The age distribution of these suspected cases were 1-4 years (19%), 5-9 years (40%), 10-14 years (29%) and over 14 years (12%). All of these cases were discarded as non-measles and non-rubella cases in laboratory investigations. The non-measles-non- rubella discard rate was 0.32 cases per 100,000 population. This was less than the elimination level target of at least 2 cases per 100,000 population. However, measles and rubella laboratory performance indicators were compatible with the expected global elimination targets.

Despite administration of a large number of vaccine doses, DPRK reported zero cases of AEFI. This was very much below the target of 10 per 100,000 surviving infants annually recommended by the global advisory committee on vaccine safety (GACVS). As per the above threshold, the expected number of AEFI cases to be reported through the JRF for 2016 by DPRK was 34 cases. The AEFI monitoring system is in place in DPRK. Gavi HSS 2 grant has supported some activities to strengthen AEFI monitoring in the country. Despite these activities, there are some administrative sensitivities in reporting AEFI data to the global level. DPRK has established AEFIs committees at the national and provincial levels. These committees require further support to enhance capacity in causality assessment of AEFI according to the new WHO guidelines.

3.2. Key drivers of low coverage/ equity

DPRK has very high immunization coverage. This has been validated by estimates from the recently concluded coverage evaluation survey (2017). Geographical variation is not significant. However, in the DPRK context, the gold standard is reaching every child. As such, appropriate to the context, the low performing counties/districts have been identified based on the need for reaching 100% of target children. On the other hand, though the drop out is small, there is a dropout of 1.5% from DTP1 to DTP3. Therefore, context specific drivers for the small proportion of non-immunized and dropped out children are important. The bottom-line is that the national immunization programme has already achieved a homogenously high immunization coverage across the country and is sustaining it. This calls for shifting the main focus of the programme towards high quality of service delivery. To guide the programme towards quality assurance, the recently concluded post-introduction evaluation (PIE) of pentavalent and IPV introduction has shed light on certain areas of concern. Theses findings could form the basis for further strengthening the programme and assuring quality of services in the short-term. They are as follows.

Leadership/ management and coordination:

In the long run, dependence on the donor/partners (Gavi/WHO and UNICEF) for vaccines supplies, logistics and system strengthening could be a key barrier to sustain the achievements of the Gavi HSS support and longer-term financial sustainability of the EPI. The national immunization technical advisory group (NITAG) is pivotal in guiding the government in informed decision-making related to new vaccine introductions and program oversight as per the recommendations of the strategic advisory group of experts in immunization (SAGE). However, further strengthening of NITAG with exposure to evolving new knowledge, methods and technology in immunization and programme oversighting will benefit the EPI in further improving immunization coverage, quality of service delivery and appropriate new vaccine introduction. Enhancing the management capacity of senior and middle level managers is vital for better management and coordination of the EPI to achieve its objectives, Currently a lack of regular inter-departmental joint programme reviews, supportive supervision visits and monitoring visits is also an obstacle to reaching every child and enhancing the quality of immunization services.

Regular monthly meetings between MoPH, WHO and UNICEF provide a platform to oversee implementation of Gavi support (Pentavalent vaccine support and HSS) and immunization programme

performance. The ICC/HSCC serves as an effective medium for open and transparent technical and strategic discussions between the MoPH and partners on the emerging opportunities and challenges in implementation.

Health workforce and availability :

The wide-spread, adequate health workforce has been highlighted as the biggest asset of the MOPH to sustain near universal immunization coverage. A network of around 50,000 household doctors (HHDs) is engaged in providing primary health care, including immunization services in the country. However the PIE also indicated the need for improving the knowledge of this vast network of front-line health workers to provide quality immunization services and to increase the uptake of vaccines by parents, noting that some deviations from safe injection practices and knowledge/practice gaps exist.

Supply chain:

Gavi HSS 1 and 2 grants have contributed to cold chain capacity expansion following the effective vaccine management (EVM) assessment in 2008 and 2015 and the cold chain replacement plan. The next EVM assessment has been planned for 2019, the last year of the current Gavi HSS2 grant. The central (national) and provincial cold rooms are equipped with Multilog-2 and fridge tag (FT-2) devices for continuous routine temperature monitoring. Recently, through the Gavi HSS2 support, all the county medical warehouses were provided with solar direct drive (SDD) refrigerators matching their volume requirements and addressing issues of the reliability of electricity through the national grid. The subsequent need is to equip all Ri hospitals throughout the country with SDD refrigerators to ensure safe storage and delivery of potent vaccines at service delivery points throughout the country, and further enhance the access. Another area that needs attention for improving access to vaccines is the replacement of the paper based stock reporting system from Ri/Dong level up to provinces for real time assessment of vaccines and ancillary item stocks. Provision of the sufficient number of vehicles for vaccine transportation given that transport resources can be overwhelmed due to immunization clinics being held simultaneously on a fixed day across the whole country is a challenge to increase access to vaccines. Among other potential barriers that could affect access to vaccines is the non-availability of a system for wastage tracking. This system should enable collection and analysis of data leading to vaccine wastage calculation, interpretation of parameters and taking necessary action.

Demand generation / demand for vaccination;

Literacy rates in DPRK are high and thus communities are well informed on the benefits of vaccination. Vaccines are well accepted, resulting in high demand for vaccination. However, for reaching every child, one barrier is the sub-optimal skills of health care workers in communications. The communication gap may result in the potential for improper communication of AEFIs to parents along with recommended remedial measures. There is also a lack of specific communication materials to provide information on immunization to mothers and families. The programme needs to consider risk communication for addressing DTP1 to 3 dropout rates, even though the dropout rate is not significant (<3%)

Other critical barriers :

In order to sustain demand and mitigate for the effect of possible serious AEFI on vaccine acceptance, the national regulatory authority (NRA) needs further strengthening in capacity to investigate AEFI with the national AEFI investigation committee. The current capacity of the national control laboratory (NCL) is also insufficient to ensure appropriate documentation of the potency of vaccines after receipt in the country.

As the implementation of Gavi HSS1 grant has been completed and HSS2 support has entered the mid-term without conducting an evaluation of the grant, it is difficult to conclude the contribution of these grants to improved immunization coverage, equity and quality of immunization services. In spite of the above, to identify key lessons learned from implementation of the Gavi HSS1 and make recommendations to effectively implement year 4 and 5 of the Gavi HSS 2 grant, a review of the implementation of Gavi HSS is an essential step. Compensating the delay in conducting the review, a comprehensive evaluation of the decennial implementation of the Gavi HSS (2007-17) combining both HSS1 and 2 grants is currently underway in DPRK. The field activities for the evaluation of the HSS have been completed. The final report will be available by October

Despite progress in equity in coverage, new vaccine introduction is a challenge in DPRK. The cMYP 2016-2020 and MTSP 2016-2020 are clear reflections of the intent of the government and partners in introduction of MR, PCV and Rota vaccines. However, due to the special context of the country, financial resources remain the main barrier towards introduction of these new and underutilized vaccines in DPRK

3.3. Data

The MOPH collects data on immunization coverage, VPD surveillance and AEFI. For reporting and monitoring of immunization supplies and logistics including vaccines, an electronic reporting system (e-LMIS) is used from provinces to the national level, while a paper based reporting system operates from the facility level to counties and from counties to provinces. The data collected from the facility level are consolidated at the county, provincial and national levels respectively. County Public Health Departments and Provincial Public Health Bureaus provide immunization data to the MOPH for national consolidation. County, provincial and national hygienic and anti-epidemic stations are responsible for providing VPD surveillance data to the MOPH. County, provincial and central medical warehouses consolidate immunization supply and logistics data including those related to cold chain and provide to the MOPH. MOPH coordinates global reporting of EPI/VPD information through the WHO/UNICEF joint reporting format and also the WHO's annual EPI/VPD reporting format. Additionally the country reports acute flaccid paralysis (AFP), neo-natal tetanus (NNT) and measles data including case based surveillance data. WHO and UNICEF country offices review the global reporting formats for quality before forwarding to the regional/global levels and also help the national counterparts to revise reported data based on the global/regional feedback on data quality.

Though Gavi HSS has supported the establishment of an internal data quality assessment process, a comprehensive external data quality assessment exercise (except PIE and CES) has not been conducted and it remains a need. The country needs a strategic data quality improvement plan in the context of sustained high and equitable coverage. Subject to government approval partners propose an independent external in-depth data quality assessment .

The recently concluded desk review by an international consultant prior to the PIE and the joint national/international in-country mission of the PIE highlighted data quality related strengths and areas for further improvement in their report. They are as follows ;

Strengths:

- System for surveillance of VPD with global commitment, such as acute flaccid paralysis, measles and rubella are in place. Furthermore, sentinel surveillance such as congenital rubella syndrome was established in three sentinel hospitals in 2015.
- Sufficient numbers of staff were available for VPD surveillance in every facility and administrative level visited.
- Population registries (for example, of mothers and children) with information on VPDs and other diseases maintained by household doctors (HHD) is a strength of the country's health system to improve data quality.
- To ensure the quality of data, a national data quality self-assessment guideline has been drafted. It is expected to be implemented in 2018

Areas for strengthening :

- Using different targets and denominators for different vaccines.
- A copy of data records is not maintained at the point where data is generated once they are submitted to the next level.
- The sensitivity and specificity of the VPD surveillance system needs to be improved to match global standards.
- Lack of a home based immunization record for children and retaining only the clinic immunization card at the clinic level. The PIE also highlighted that non-completion of the clinic immunization cards during the session may lead to erroneous recording and reporting.
- Lack of a system to collect data to generate evidence for new vaccines targeted in the cMYP (2016-2020).
- Outdated AEFI case definitions and the need to update guidelines.

Recommendations :

- Clarify denominator issues and establish uniform targets for all vaccines.

- Finalize the data quality self-assessment guideline, conduct training and annual review meetings on data quality and prepare data quality improvement plans.
- Keep records of data at points where data is generated (at all administrative levels)
- Perform operational research for disease burden assessments of diseases targeted by proposed new vaccines in the cMYP (Pentavalent, Pneumococcal conjugated vaccine, rotavirus vaccines)
- Consider conducting a nationwide EPI/VPD surveillance review and refresher training of the concerned staff to improve recording and reporting.
- Update and conduct training on AEFI surveillance guidelines and tools and improve AEFI reporting.
- Establish joint review mechanisms at all levels (vaccination doctor, cold chain technician, surveillance focal point).

Main efforts / innovations / good practices focused on improving data system strengthening and addressing key issues

The following have been conducted or ongoing under Gavi HSS support

- Providing training focused on data quality assessment, sentinel surveillance and AEFI reporting.
- Including data quality improvement in the mid-level management training conducted for provincial and county health managers responsible for EPI.
- Focus on data quality during exposure visits for the EPI management staff.
- Regular monitoring and supportive supervision visits by county and provincial level officers of vaccination sessions at primary health care level.
- Printing and distributing of vaccination cards, recording and reporting forms, case reporting forms and revising/updating AEFI/VPD surveillance guidelines/standard operating procedures.
- Developing and printing data quality assessment guidelines, training manuals and tools.
- Data quality assessment (DQA) capacity building (trainings, workshops, study tours) and conducting periodic data quality assessment (internal audit)
- Using Gavi performance based funding (PBF) to strengthen health management information system integrated with EPI/VPD surveillance reporting and the vaccine logistic management system.
- Ongoing plans to use the National Institute of Public Health Administration (NIPHA), a WHO collaborating centre, for independent data quality assessment subject to government approval.
- Biannual updating of the cold chain inventory and inclusion of new cold chain equipment in the data base.

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

In relation to immunization, Gavi remains the major donor. As per the donor requirement, the Inter-agency Coordination Committee (ICC) on Immunization, the Health System Coordination Committee (HSCC) for GAVI are the formal platforms for specific donor fund coordination. Other than endorsing the submission of the current JA (2017) report, in January ICC was convened to approve the activity plan and the budget for the Performance based funding 2017, Further, in May 2017 ICC reviewed and endorsed the Comprehensive Multiyear Plan 2016-2020 (cMYP 2016-2020) and the request to Gavi for extension of the pentavalent co-financing for the period 2018-2020.

Regular meetings between the Ministry of Public Health (MoPH), WHO and UNICEF happens to discuss planning for new vaccine support, health system strengthening , performance based funding, oversee implementation of Gavi support (Pentavalent vaccine support and HSS) and also opportunities and challenges. As a result of these discussions, planning and implementation has become more open and transparent. In addition to these, on ad hoc basis, MOPH and partners get together as a technical working group under the ICC/HSCC to discuss technical matters. Once such topic discussed during the reporting period was Measles elimination and Rubella control: the way forward in DPRK.

There are no civil society organizations and private sector agencies in DPRK. Though MoPH has the ownership of national health, at all levels, health programmes are implemented under the guidance of the people's committees, at the respective level, in nine provinces and two cities of special status. The

collaboration between the MOPH and public health bureaus and people's committees at different administrative levels are cross –sectoral collaborations.

4. PERFORMANCE OF GAVI GRANTS IN THE REPORTING PERIOD

4.1. Programmatic performance

*Provide a succinct analysis of the performance of Gavi grants for the reporting period. Describe **how Gavi support is contributing to advancing the performance of the overall immunisation programme** and health sector strategies (with a particular focus on those districts/communities with lower coverage), and how the barriers identified in section 3 above are being addressed, stating -as relevant- **good practices and innovations.***

HSS2 programme:

The HSS2 grant (2014-18) primarily addresses bottlenecks in the immunization system by strengthening micro-planning, outreach and catch-up session planning in geographically hard to reach areas and expanding cold chain up to Ri hospital levels. The implementation of the grant began in 2015 and the grant is administered by WHO and UNICEF country offices in DPRK). Both UNICEF and WHO received the third tranche in July 2017. Though this reports needs to cover from July 2016 to June 31 2017, due to the disbursement delay of tranche 3, implementation of year 3 activities planned for 2018 were started in the latter part of the year. They are currently on going. Therefore, this report focuses on the extent to which planned activities implemented in year 2 (2016) and the full spectrum of year 3 activities will be reported in the JA -2018.

Objective 1: Service Delivery

Activities: Out of the planned four key activities in 2016, three (75%) were fully implemented. These activities contributed to (1) completing the immunization focused service availability readiness assessment (SARA), (2) training 1,992 on and development of micro-plans in 5 north-eastern provinces for provincial EPI managers, staff of the Provincial Hygienic and Anti-Epidemic Stations (PHAES) and immunization staff and (3) conducting catch-up campaigns to reach the unreached/partially immunized children in 560 Ris in five north-eastern provinces including the Lion Rock typhoon affected North Hamgyong province. The fourth activity of conducting outreach immunization sessions for the remote Ris at least in 5 north-eastern provinces was planned for the third quarter of 2016, but due to the floods in the same area, the activity was replaced by strengthening the catch-up campaign.

Intermediate results :

- *Number of counties in target provinces with micro plans with M&E targets according to micro planning guidelines – **83 counties in 5 provinces (2016)***
- *Percentage target counties with system readiness for vaccination – **100%***
- *Number of catch-up campaigns conducted to reach the unreached/partially immunized children in 5 north-eastern provinces – 8 **campaigns covering 560 Ris.***

Objective 2: Cold Chain and vaccine

All five scheduled activities (100%) were completed. The activities led to (1) establishment of cold chain at 500 Ri hospitals, (2) provision of tools for cold chain equipment maintenance, (3) scheduled replacement of 36 sets of cold chain accessories, (4) procurement of transport (11 vehicles for the provincial medical warehouses and 210 motor tricycles for county medical warehouses) for vaccine delivery as per the improvement plan, and (5) transportation of new cold chain equipment to 500 Ris and 210 county medical warehouses.

Intermediate results :

- *Number of Ri hospitals with refrigerated solar cold chain systems according to international standards - **500***
- *Number of counties in target provinces with upgraded immunization rooms –**This activity was not completed in 2016**. However currently this activity has been initiated with the designing of the immunization rooms (phase-I). **Designing phase is in progress now and will be followed by upgrading of EPI rooms according to the finalized designs through both HSS and PBF. This activity is expected to be completed by June 2017 and the completion will be reported in the JA 2018.***

Objective 3: Increasing demand for immunization service

Under this objective, both activities planned (100%) were completed. This entailed (1) development and distribution of IEC materials and conducting IEC/Behavioral Change Communication (BCC) on immunization in 12 provinces and (2) establishment of community IMNCI initiative in 10 provinces.

Intermediate results :

- *Percent of target counties that benefitted from community IMCI introduction – **100%***
- *Number of immunization specific communication materials developed and disseminated - **1 CD on AEFI developed and distributed to all provinces, 1 IEC booklet on AEFI developed and distributed to all the provinces***

Objective 4: Improved Management

Improved management included 11 Gavi supported activities and the implementation was 100%. Activities led to (1) completion of the clinical IMNCI training focused on 1,890 paediatricians and doctors in paediatric hospitals selected from 53 counties in five provinces, (2) updated curricula/modules on immunization for pre/in-service training (printing is still pending) (3) international training for senior level management on health/vaccine management, (4) 240 staff trained on micro-planning and immunization practices from 95 counties in nine provinces, (5) development of data quality assessment guidelines, training of 326 staff selected from 79 counties in four provinces and two cities on data quality self-assessment and conducting data quality assessments in four provinces, (6) training of 36 provincial and 646 country health managers on mid-level management of EPI, (7) regularly monitored outreach sessions at primary health care level, (8) training of 25 staff at the established three sentinel surveillance sites for acute encephalitis syndrome and congenital rubella syndrome, (9) support for strengthening national regulatory authority/national control laboratory by supplying 44 required items, (10) availability of adequate supply of vaccination cards, EPI reporting forms and surveillance case reporting formats nation-wide and (11) procurement of eight items of data management hardware for routine immunization and VPD surveillance.

Intermediate results :

- *Number of provinces /counties with introduced AEFI system -**all provinces have AEFI systems***
- *Number of counties with introduced DQA/DQS system -*
- *Number of AES sentinel sites established according to WHO standards - **3 sites***
- *Number of ILI/SARI surveillance system – **not supported by Gavi, supported by PIP initiative of WHO***
- *Number of diarrhoea sentinel surveillance system – **Not initiated yet , partners will suggest 2018 for initiation with focus on Rota surveillance***
- *National Waste Management Plan/Policy established **– In Progress with HSS2 year 3 support***

Objective 5: Project Management

Of the ten planned activities, five (50%) activities were completed and one was partially completed. The four incomplete activities were related to human resources in both UNICEF and WHO. The completion of activities led to: (1) establishment of the process of annual review, (2) sustaining the operational cost of the Gavi HSS unit at the MOPH (including training of 40 Gavi PMU staff including the 8 PMU staff supported by Gavi HSS 2 who are involved in the immunization program management on monitoring and evaluation and conducting quarterly Gavi review workshops), (3) development of the cMYP (2016-2020), (4) completion of the Mid Term Strategic Plan (MTSP) and (5) completion of internal audits. The research and evaluation activity was partially implemented and will continue in the coming years.

Intermediate results :

- *National health accounts system installed: **not initiated yet***
- *MTSP (2016-2020) developed: **completed***
- *cMYP (2016-2020) developed: **completed***
- *EPI coverage surveys conducted: **completed***
- *SOPs for NRA and NCL developed: **yet to be initiated***

Summary: The period of reporting for this JA is July 2016 to June 2017. However, due to disbursement delays, implementation activities for 2017 were delayed and are currently on-going. Therefore the present report deals with activities completed by 31 December 2016 and 2017 activites will be reported in the JA (2018) The overall implementation of planned activities in 2016 was on track. Of the 37 activities (HR and activities) planned for 2016, 32 were completed (one partially completed). One activity related to service delivery and four activities related to HR under program management were not completed. Despite

issues of HR related activities in the plan, WHO and UNICEF effectively supported MOPH to implement the planned activities. Activities contributed to improved services delivery, access to safe and efficacious vaccines, sustained vaccine demand, data quality improvement, improving VPD/AEFI surveillance and response, improved management of the EPI and effective project management from the MOPH and partners.

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

- The cash utilization to date is as follows

Grant	Disbursed			Expenditures			Cash balance in country			Undisbursed
	WHO	UNICEF	Total	WHO	UNICEF	Total	WHO	UNICEF	Total	
HSS 2	7,589,442	8,490,776	16,080,218	5,698,571	7,898,882	13,597,453	18,90,871	591,894	2,482,765	9, 959,258
VIG-IPV	110,210	182,552	292,767	110,209	182,557	292,766	01	00	01	01

Note!! Both WHO and UNICEF received PBF grant in July and implementation is on-going now. Hence PBF year 1 will be reported in the joint appraisal report 2018.

Proposed re-programming (2018-19) with adjustment of year 4 and 5 budget with addition of savings from year 1-3

WHO

Agency	Total budget disbursed	Cumulative expenditure as of 14/10/2017	Re-budget year 4	Re-budget year 5
WHO	7,589,442	5,698, 571	4,067,026 (1,184,586 + 2,882,444)* + year 4 expected tranche	3,835, 305 (706,285 + 3.129,020 +) + year 5 expected tranche

Justification:

Proposed expenditure of savings from the WHO in year 2018 and 2019 is as foll0ws:

Total savings (cash balance as of 14/10/2017	Activity	Expenditure for 2018	Expenditure for 2019	Total
18,90,871	Implementation of PIE and ITAG recommendations	224,586	176,285	400,871
	HR deficit for two internationals and the regulatory consultant for NRA strengthening	280,000	280,000	560,000
	Activities to strengthen NRA and NCL	250,000	250,000	500,000
	Data quality improvement activities	250,000	-	250,000
	Measles	180,000	-	180,000
	Total	1,184,586	706,285	1,890,871

UNICEF

Agency	Total budget (year 3 – 2017-18)	Cumulative expenditure as of 14/10/2017	Re-budget year 4	Re-budget year 5
UNICEF	2,356,733	1,320,133	TBD	

4.3. Sustainability and (if applicable) transition planning

In terms of financing of the immunization programme, the PIE team concluded that currently, there is a high dependency of the national immunization programme on donors. This dependency has been underscored as a stumbling block not only to introduce future new vaccines appropriate to the country, but also to sustain delivery of current vaccines in the EPI schedule. These include non-Gavi supported vaccines and immunization supplies and logistics. The current scenario calls for the country to develop a comprehensive sustainable immunization plan with a realistic resource mobilization plan with special focus on domestic resources based on the new cMYP, to drive the country towards the full ownership of the programme in the long run.

All Gavi funds are channelled through UNICEF and WHO, which follow their respective financial management procedures as per the individual Grant Agreements. External audits, Cash Programme Audits and Programme Capacity Assessments are not applicable.

As in previous years, a system to transfer funds through intermediary banks to WHO and UNICEF DPRK has been established. However, this has caused additional transaction costs due to intermediary bank transaction fees and bank foreign exchange rates from Euro to local currency which is different from the commercial rates. This additional cost has been raised with the Gavi secretariat. However, the current unstable political environment with tougher sanctions being considered by the UN security council presents an unpredictable future in terms of cash disbursement and procurement of supplies and logistics

In DPRK, traditional vaccines are funded by UNICEF. Pentavalent and IPV vaccines are supported by Gavi through the co-financing mechanism. Regarding the co-financing for Pentavalent vaccine, the government of DPRK has met its co-financing obligations for 2016. In 2016, the government also settled the 2015 co-financing for which it had been in default. In 2017, DPRK has already made a partial payment of co-financing (US$123,592 out of US$155K).In a recent letter addressed to the Gavi by the government, it has been communicated to Gavi that Gavi requirement of co-financing of MR vaccine through domestic funding is a stumbling block for DPRK applying for the Gavi's MR support despite the government commitment to MR introduction in DPRK in alignment with global priorities. .

4.4. Technical Assistance (TA)

Not applicable.

5. UPDATE OF FINDINGS FROM PREVIOUS JOINT APPRAISAL

Prioritised actions from previous Joint Appraisal	Current status
1. Resolve the problems of transfer of cash to the country	This issue has been completed. WHO and UNICEF have been able to transfer cash to the country. However, the transaction cost is high due to the fees incurred through intermediate banks. This issue has been raised with the Gavi secretariat. With the current unstable political

	environment, this has the potential to change at any given point in time.
2. Resolve the problem of recruitment of international staff to support the programme	**WHO :** An additional international staff has not been recruited by WHO. However, in addition to the EPI focal point who is supported by Gavi HSS 2, WHO now has a health system strengthening focal point who will be supported from the Gavi HSS 2. This international professional will look into the health systems strengthening aspects of the Gavi HSS 2 activity plan. The savings from the HR funds , with Gavi's permission is requested for hiring a consultant who will work with the MOPH to strengthen the National Regulatory Authority (NRA) in 2018 -19 **UNICEF:** Two positions have been filled. UNICEF has hired an international Health Specialist for IMNCI in addition to the existing international. The current funds allocated for the two positions are insufficient to cover both positions and Gavi is requested to increase funding in this head.
3. Capacity building of Gavi PMU	WHO and UNICEF have used several opportunities to build the capacity of the Gavi PMU through the Gavi HSS 2 grant.

If findings have not been addressed and/or related actions have not taken place, provide a brief explanation and clarify whether this is being priorities in the new action plan (section 6 below).

1. The continuity of the availability of in-country cash for local activities (capacity building, installation and transportation) is not guaranteed under the current scenario.
2. Although both the agencies are currently able to transfer funds to country, both UNICEF and WHO face the challenge of high transaction costs incurred through the use of intermediary banks. This is being addressed between Gavi and UN partners and the action plan is further detailed in Section 6 below.
3. UNICEF has recruited two international staff members. The current allocation is not sufficient to meet the needs and thus, Gavi's support is sought for increasing funding (re-programing) under this head.

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

Overview of key activities planned to be supported by Gavi HSS 2 for the next year (2018):

WHO supported activities:

Planning, management and practices:

- Development of national immunization waste management plan, waste management SOPs/guidelines and distribution to all levels of health facilities for practice
- Development of immunization micro plans and conducting refresher trainings on micro-planning and immunization practice for counties/Ri level
- Build-up of the lab-quality assurance system through development and implementation of SOPs/Guidelines

Training:

- Middle level management (MLM) training for provincial and county health managers, DQS, sentinel surveillance AEFI
- International training for senior level managers (and some middle level managers on health management, research, vaccine management, cold chain, supervision, surveillance and planning
- Study tour of national and provincial-level AEFI Committees for capacity building
- Completion of the next round of clinical IMCI training

Infrastructure development:

- Upgrading EPI Rooms in selected Ris in 5 North Eastern provinces

- Upgrade Laboratories at provincial and county level for improved quality of diagnosis of communicable diseases including VPDs
- Procurement of data management hardware/software for routine immunization and surveillance of priority communicable diseases including VPDs
- Conducting an assessment of the NRA and national control laboratory(NCL), developing a road map to strengthen these institutes and implementation

Service delivery

- Conducting catch-up campaigns to reach the unreached/partially immunised children
- Continue to support surveillance of AES and congenital Rubella syndrome at established three Sentinel Sites for VPD Surveillance

Monitoring and evaluation:

- Monitoring and supervision of implementation of guidelines on safe injection and immunization waste disposal
- Conducting periodic Data Quality Assessment (internal Audit), joint annual review
- Support county and provincial level officers to conduct regular monitoring of outreach sessions at PHC level
- Printing and distribution of vaccination cards, EPI recording and reporting formats, surveillance case reporting forms and surveillance (VPD/AEFI) guidelines
- Gavi health system strengthening evaluation

Advocacy, communication and social mobilization

- Strengthening of the Provincial Institute of Health Education for immunization communication Production and distribution of IEC materials on immunization including AEFI

Additionally WHO savings will be used for implementation of recommendations of the SEAR Immunization Technical Advisory Group (ITAG) the post introduction evaluation (PIE) of Pentavalent and inactivated Polio vaccines, measles elimination, MR introduction support, data quality improvement planning, external data quality assessment and NRA/NCL strengthening.

UNICEF supported activities :

Infrastructure development:

- Setting up cold chain at Ri hospital level
- Scheduled replacement of Cold Chain Accessories
- Providing incinerators for provinces and counties

Logistics and operations:

- Transportation of New Cold Chain Equipment to Ri

Service delivery:

- Conducting outreach immunisation sessions for the remote Ris at least in five North-Eastern provinces

Demand creation and Evidence Generation:

- Establish Community IMCI Initiative in 25% of provinces by 2018
- Mid Term Evaluation of Community IMCI

UNICEF savings will be used for provision of solar driven drive (SDD) refrigerators to the county medical warehouses.

HSS review: Gavi HSS1 review has been completed. The review included both HSS 1 and HSS 2 spanning a period of a decade (2007-2017). Key informant interviews and the in-country mission were completed. Contracted agency is compiling the final report at the moment. It will be available at the end of October 2017. Review findings will highlight how effectiveness and efficiency of the project implementation could be further improved, what could be the future direction of the focus of Gavi HSS support as well as how lessons learned from HSS1 and HSS2 could be applied to a possible Gavi HSS 3.

PBF: Year 1 tranche of the PBF is being implemented at the moment by MOPH via the support of both WHO and UNICEF

Key finding 1	**Need for conducting an external data Quality assessment, preparation of a data quality improvement plan and implementation:** EPI has initiated a data quality self-assessment process. However, the lack of an independent, external data quality assessment could undermine the credibility of the high performance of the national immunization programme. Such an effort by an external agency will ensure coverage of data quality assessment. Undertaking of data quality assessment in of all provinces that will be over whelming for the national EPI programme with the responsibility of multiple service provision. Therefore, plans are underway to conduct external data quality assessment through NIPA (national institute of public health administration).
Agreed country actions	In 2018 with the support of partners, a strategic data quality improvement plan will be developed with agreed milestones. MOPH will be requested to implement activites in the data quality improvement plan. As a part of data quality improvement in the country, partners (WHO/UNICEF) will discuss with MOPH the need for independent evaluations as a part of the grant requirements and suggest a discussion with NIPHA as a WHO collaborating centre for the task. An international consultant experienced in data quality assessments in other countries will develop a methodology that could be adapted by the NIPHA for the DPRK context. Then partners will train NIPHA to conduct the assessment. Based on the recommendations of the assessment, an operational plan will be developed for improving data quality
Associated timeline	The planned period is from November 2017 to December 2018
Technical assistance needs	Technical assistance will be provided by the international staff (Gavi focal points) of the WHO and UNICEF country offices. If the need arises, support from the WHO and UNICEF regional offices will be sought.
Key finding 2	**DPRK is yet to introduce MR vaccine to the national schedule:** DPRK remains the only country in the South East Asia region yet to introduce MR vaccine in alignment with the GVAP/SEA RVAP. The requirements for DPRK to co-finance the MC1 component of the MR vaccine cost through domestic resources may be an obstacle for government.
Agreed country actions	MOPH to make a decision after considering Gavi's policy and based on the country's ability to co-finance with domestic resources.
Associated timeline	The earliest timeline available is Gavi's March 2018 window.
Technical assistance needs	If government makes the decision to submit an application for MR introduction, technical assistance would be needed to develop the Gavi application and the five year measles elimination rubella control plan with detailed costed activities for the first year and development of the wide age range supplementary immunization activity (SIA) prior to routine introduction.
Key finding 3	**Problems related to funds Transfers to DPRK:** The remaining challenge in transferring funds from Gavi to UN partners in DPRK is the high transaction cost.
Agreed country actions	Gavi and UN partners are working on an agreement for these costs, including the possibility to review the HSS2 budget for savings to cover additional costs.
Associated timeline	Q3-Q4 2017
Technical assistance needs	Not applicable.
Key finding 4	**Non–availability of a home based vaccine/health records :** There is no provision of vaccination and other health records with the parents/caregivers
Agreed country actions	Agreement on development and introduction of home based integrated child health record.

Associated timeline	2018
Technical assistance needs	Yes
Key finding 5	**Dry storage capacity building :** Inappropriate storage of injection devices (syringes & safety boxes) and other immunization related supplies (One of the JA 2016 and PIE 2016 recommendations)
Agreed country actions	Support building a permanent structure for the dry storage
Associated timeline	2018-19
Technical assistance needs	NA
Key finding 6	**NRA/NCL Strengthening:** Despite Gavi HSS2 support, National Regulatory Authority (NRA) and National Control Laboratory (NCL) needs to be strengthened to reach the basic essential functionality levels of a vaccine self-procuring country. This has been highlighted in the Post-Introductory Evaluation of pentavalent and IPV vaccines and the recently concluded in-country mission of the Gavi HSS review.
Agreed country action	It is anticipated to conduct an in-country mission of regulatory experts from the regulatory department of the WHO headquarters and the Regional office. Based on the recommendations of the in country mission, a road map will be developed to strengthen the NRA and NCL in 2018 and 2019.
Associated timeline	2018-19
Technical assistance needs	A consultant or a short term staff member with expertise in regulations of pharmaceuticals including vaccines based in WHO country office to work with the NRA and NCL of the government of DPR Korea
Key finding 7	**EVM assessment:** Last EVM was conducted in 2015 and keeping in view the requirement of EVM every three (03) years, another EVM assessment is required in 2018.
Agreed country action	Support conducting EVM assessment in 2018
Associated timeline	2018-19
Technical assistance needs	EVM consultant
Key finding 8	**Cold room temperature mapping**: There is a need for conducting cold room temperature mapping in the country
Agreed country actions	Support conducting cold room temperature mapping in the country.
Associated timeline	2018-19
Technical assistance needs	Consultant to support cold room temperature mapping
Key finding 9	**Impact of Hepatitis B vaccination (birth dose and Penta 1,2 3) :** Although Hepatitis B birth dose and Pentavalent vaccination is in place , Hepatitis B prevalence has not been assessed in children under five years.. It is highly likely that the hepatitis B prevalence is below the regional target . However, it needs verification through a sero-prevalence survey. WHO HQ and RO have agreed for technical support subject to government concurrence

Agreed country actions	Support conducting a national Hepatitis B sero- prevalence survey
Associated timeline	2018-19
Technical assistance needs	Consultant support to the country for development of methodology, data analysis, writing report and provision of test kits , laboratory and other supplies

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

Briefly describe how the Joint Appraisal was reviewed, discussed and endorsed by the relevant national Coordination Forum (ICC, HSCC or equivalent), including key discussion points, attendees, key recommendations and decisions, and whether the quorum was met. Alternatively, share the meeting minutes outlining these points.

If applicable, provide any additional comments from the Ministry of Health, Gavi Alliance partners, or other stakeholders.

The MoPH, WHO and UNICEF jointly prepared the joint appraisal with the remote assistance of Gavi Senior Country Manager. The report was shared with the ICC members for review and feedback. The ICC meeting was held on 16/10/2017 and the members shared their feedback. The comments shared by the ICC members were incorporated into the report. The quorum was full and the report was unanimously agreed for submission to Gavi.

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	Yes		
Financial Reports			
Periodic financial reports	Yes		
Annual financial statement	Yes		
Annual financial audit report			NA
End of year stock level report	Yes		
Campaign reports			NA
Immunisation financing and expenditure information	Yes		
Data quality and survey reporting			
Annual desk review		No (English version is pending from the MOPH)	
Data quality improvement plan (DQIP)		No (MOPH is in the process of preparing the DQIP for 2018)	
If yes to DQIP, reporting on progress against it		No	
In-depth data assessment (conducted in the last five years)	Report of Immunization Data Quality Audit (Jan 2017)		
Nationally representative coverage survey (conducted in the last five years)	Yes		
Annual progress update on the Effective Vaccine Management (EVM) improvement plan	Yes		
Post Introduction Evaluation (PIE)	Yes		
Measles-rubella 5 year plan			NA
Operational plan for the immunisation program		No (MOPH is in the process of preparing for 2018)	
HSS end of grant evaluation report		Draft report is already available	
HPV specific reports			NA
Transition Plan			NA

In case any of the required reporting documents is not available at the time of the Joint Appraisal, provide information when the missing document/information will be provided.