

Medium Term Strategic Plan for
the Development of the Health Sector
DPR KOREA
2016 – 2020



Ministry of Public Health
Juche106 (2017)

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Abbreviations:

AEFI	Adverse Effects Following Immunization
ANC	Ante-Natal Care
BEmONC	Basic Emergency Obstetric & Neonatal Care.
CBR	Community Based Rehabilitation
CBS	Central Bureau of Statistics
CDC	Communicable Diseases Control
CEDAW	Convention on the Elimination of all forms of Discrimination Against Women
CEmONC	Comprehensive Emergency Obstetric & Neonatal Care.
CPR	Contraceptive Prevalence Rate
CRC	Convention on the Rights of the Child
CQ	Chloroquine
DPRK	The Democratic People’s Republic of Korea
DPT	Diphtheria, Pertussis and Tetanus Vaccine
EmOC	Emergency Obstetric Care
ENC	Essential Neonatal Care
EPI	Extended Programme of Immunization
GAVI HSS	GAVI program for health system strengthening
GDP	Gross Domestic Product
GF	Global Fund
GMP	Good Manufacturing Practices
G6PD	Glucos-6-Phosphate Dehydrogenase Deficiency
HAES	Hygiene and Anti-Epidemic Station
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HMIS	Health Management Information System
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICPD	International Conference on Population and Development
IEC	Information, Education and Communication
IFRC	International Federation for Red Cross and Red Crescent
IMCI	Integrated Management of Childhood Illnesses
IMR	Infant Mortality Rate
IUD	Intra-Uterine contraceptive Device
IVM:	Integrated Vector Management
JRF	Joint Report Form
KAP	Knowledge, Attitude and Practice
KFDP	Korean Federation for Disabled People
KLMIS	Korean Logistical Management and Information System
LLINS	Long-lasting Insecticidal Nets
PHC	Primary Health Care
MoPH	Ministry of Public Health
MCV	Measles Vaccine
MDR TB	Multi-Drug Resistance Tuberculosis
M&E	Monitoring and Evaluation
MICS	Multi-Indicator Cluster Survey
MNT	Maternal and Neonatal Tetanus
MMR	Maternal Mortality Rate
MR	Measles Rubella Vaccine
MTSP	Medium Term Strategic Plan
MUAC	Mid-Upper Arm Circumference
NCDs	Non-Communicable Diseases
NCL	National Control Laboratory

NGOs	Non-Governmental Organizations
NIPHA	National Institute for Public Health Administration
NRA	National Regulatory Authority
PCV	Pneumococcal Conjugate Vaccine
PEN	Package of Essential NCD interventions
PQ	Primaquine
QDA	Quality Data Assessment
RTI	Reproductive Tract Infection
SDHS	Socio-Economic, Health and Demographic Survey
STH	Soil-Transmitted Helminths
TB	Tuberculosis
TM	Traditional Medicine
U5MR	Under Five Children Mortality rates
UN	United Nations
UNFPA	United Nations Fund for Population Activity
UNICEF	United Nations Children's Emergency Fund
VPDs	Vaccine-Preventable Diseases
WFP	World Food Programme
WHO	World Health Organization
WHOCC	World Health Organization Collaborating Centre
WHO/SEAR	World Health Organization Regional South East Asia Region

EXECUTIVE SUMMARY

DPR Korea commitment to Primary Health Care

The commitment of DPRK to the development and maintenance of the primary health care system has been substantial and the health system workforce has developed into 242 341 staff of all categories in 2014. Substantial resources are also invested into the pre-service and continuing education programs. The health sector is also tasked with financing the extensive network of 9 076 health facilities(2014) across the country, including equipping, logistical support, renovation, maintenance and operational support.

According to the 2014 MoPH health report, the state has increased the health share from 5.9% of the GDP in 2000 to 6.1% in 2010. It has been maintained at around 6.4% of the GDP in recent years (2014).

The Medium Term Plan for Development of the Health Sector in DPRK 2016 - 2020 was developed between May and June 2016. This plan is meant to describe a 5-year strategy for the sector, it serves as a framework to plan activities to achieve the specific objectives to address the health needs of the population of DPRK.

The plan was developed guided by the national health priorities and building on the achievements of the last cycle and the WHO/SEAR regional flagship initiative is incorporated in the plan. A thorough review of the literature and health systems development in DPRK together with interviews with MoPH program managers and development partners were undertaken. Two workshops were organized with the MoPH managers to assess the situation and to conclude a strategic framework that reflects the MoPH priorities for the coming 5 years.

A draft plan was finalized in July 2016 and submitted to the MoPH and the WHO for further reviews and inputs. The strategic framework developed for this plan describes 8 strategic areas.

Situation Analysis and Conclusions

- (1) Remarkable public health gains were achieved in recent years, from significant reductions in the MMR, IMR and the U5MR to the noticeable improvements in the malnutrition indicators among women and children, the high immunization coverage is being sustained, high success treatment rates of TB patients using the DOTS, substantial declines in the incidence of malaria, expansion of the IMCI strategy, scaling up of essential obstetric care at Ri and county levels, infrastructure development and improvement in blood safety;
- (2) This continuous success is attributed to the committed public health policy that incorporates preventive and curative approach with an intensive network of health facilities and staff at the very first levels, this is the solid health system base that ensured universal health coverage. “High Tech” on its own does not guarantee a universal health coverage, it should be balanced with the overall public health approach. Moreover, there was an improvement in the public health management and technical capacity of the health staff that was possible with the health system partnerships developed along the recent years. The multilateral MOPH and WHO program for improving women’s and children’s health has provided the first framework for a wider vision of health development, which was accelerated through the GAVI HSS and Global Fund initiatives and partnerships with UN agencies WHO, UNICEF, UNFPA and NGOs;
- (3) On the other hand, there are challenges that have their impact on the health system’s capacity to deliver the very basic care like the operational funds, infrastructure, referral systems and logistics. This calls for innovative managerial approach to rationalize the limited resources through considering a combination of coordination mainly at the central level an integration mainly at the sub-national level;
- (4) Areas of growing influence on the people’s health like non-communicable diseases and social determinants of health were identified by the DPRK government as priorities and multi-sectoral steps are being and continue to be taken by the MoPH with support from the development partners

to address this area. However, the programs' funding is "donors' driven" and there is a need to advocate with the donors and the UN agencies to find innovative means to ensure more flexibility in using the funds, especially in the area of health system that would reflect on all health services delivery;

- (5) In the last decade, the WHO have been regularly supporting fellowships mainly in the area of public health and the National Institute for Public Health Administration (NIPHA). Now, with more public health specialists and improving capacity of NIPHA, it is worthy to explore the development of local public health master degree in collaboration with the WHO and a reputable academic institute in the region. The fellowships focus could shift to other areas of growing need like Health economics and Geriatrics;
- (6) As mentioned above, there have been remarkable success in the area of CDC. However, two areas of concern are: MDR TB and Hepatitis, much have been and are being done especially in the MRD TB but more efforts are needed to accelerate the pace;
- (7) With the nationwide expansion of the telemedicine network, introduction of the WHO Emergency Essential Surgical Package at the first referral level could be considered;
- (8) Many activities have been and continue to be undertaken in the cross-cutting areas of training, health information system and supervision. The quality outcome remains a concern. More participation of the development's partners in training sessions, field visits with the supervisors to follow-up on the impact of interventions, to assist the hands-on training on data analysis and use for planning and to obtain feedback would improve the outcome and ensure the quality;
- (9) The considerable research agenda proposed, coupled with the call for technical update, exchange and twinning arrangements with regional scientific and research institutes emphasizes the commitment of the MoPH to pursuit a scientific evidence-based approach in order to deliver better quality health care
- (10) The foundation of the DPRK health system, universal coverage and the principles of primary health care are enshrined in the section doctor system. In order to benefit from the strengths of this system, this strategic plan proposes more efforts to strengthen the section doctors' capacities;
- (11) Finally, a longer-term vision, say for the 2030 is worthy of exploring through a think-tank from the MoPH and partners.

Strategic Framework MTSP 2016 -2020

Figure 1: Identified Strategic and Focus Areas

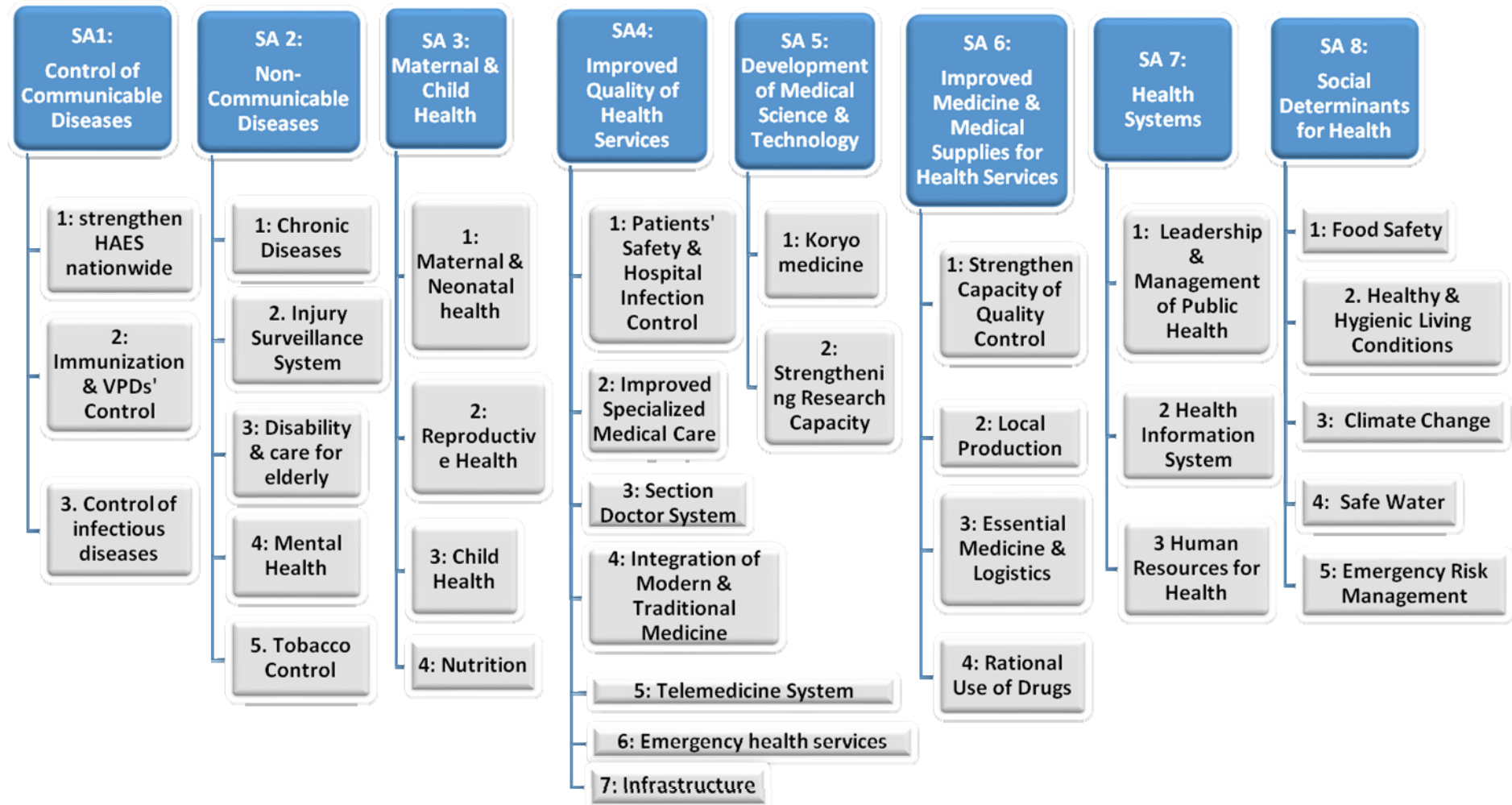


Figure 2 Highlights of MTSP 2016 – 2020

Strategic Area	Highlights
<i>1: Control of Communicable Diseases</i>	<ol style="list-style-type: none">1. To protect the population against communicable diseases & eliminate diseases on the verge of elimination through prevention, early detection & prompt treatment;2. Control of VPDs by increasing immunization coverage;3. Combating TB, reducing the prevalence of hepatitis, sustain HIV free status, eliminate malaria, control of STH & trematodes.
<i>2: Non-Communicable Diseases</i>	<ol style="list-style-type: none">1. To reduce the morbidity & mortality due to the main chronic NCDs by reducing common risk factors & ensuring early detection & treatment;2. Reducing injury incidence by strengthening of the national injury surveillance system;3. Improving the quality of mental health services;4. Improving the quality of health services for the elderly & disabled;5. Reducing the prevalence of smoking through strengthening of tobacco control measures.
<i>3: Maternal and Child Health</i>	<ol style="list-style-type: none">1. To decrease the maternal mortality by 3/4 of the current figure (62.7 per 100 000 births) & the neonatal mortality rate(8 per 1 000(2014)) by 3/4 of the current figure by 2020;2. To reduce mortality & morbidity through improving quality of sexual & reproductive health services;3. To decrease the under-five mortality by 3/4 of its current figure (20.0/1000) & to decrease infant mortality rate by 3/4 of its current figure (14.2/1000)(2014) by 2020;4. Reduced malnutrition prevalence of children and women<ul style="list-style-type: none">- Decrease the prevalence of stunting in children under 5 years of age from 28% to 25%- Maintain the prevalence of wasting in children under 5 years of age below 4%- Decrease the prevalence of underweight in children under 5 years of age from 15% to 12%- Decrease the prevalence of LBW from 5% to 4%- Decrease the prevalence of malnutrition in women of reproductive age from 23% to 20%
<i>4: Improved Quality of Health Services</i>	<ol style="list-style-type: none">1. Ensuring safe and quality health services for the patients through establishing patients' safety surveillance system & strengthening control measures against hospital infection;2. Improving the quality of medical care through introduction of advanced diagnostic & treatment methods;3. Strengthen the section doctor system;4. Improving treatment effectiveness through ensuring the right mix of Koryo & modern medicine;5. Upgrading, increasing the package of services & geographically expand the telemedicine system in order to improve the quality of health care6. Strengthening of the emergency health services system for better emergency health care.

5: Development of Medical Science and Technology

1. Establishing scientific basis for Koryo traditional medicine's diagnosis & treatment and develop effective Koryo medicine;
2. Strengthening the capacity of health research institutes through encouraging technical exchange, cooperation & twinning with other WHOCCs in order to advance the medical science and technology.

6: Improved Medicine and Medical Supplies for Health Services

1. Supporting the local vaccine, medicine and medical materials production;
2. Maintain and strengthen the KLMIS and improve the capacity of the medical warehouses;
3. Introduce strategies in order to ensure the rational use of drugs & reducing incidence of antimicrobial resistance.

7: Health System Strengthening

1. Improving the public health administration and the management through strengthening governance & management capacity;
2. Integrating the Health Information System and Improving the management, analysis & use of information;
3. Upgrading the capacity of the health managers & health professionals through strengthening pre & in-service training.

8: Social & Environmental Determinants of Health

1. To provide healthy and hygienic living conditions and environment;
2. Ensuring food safety through improving surveillance and control system;
3. Strengthening research and education about health impacts of climate change;
4. Improving the water safety surveillance system & capacity in order to ensure access to safe drinking water;
5. Scaling up and strengthen the capacity of Emergency Risk Management.

BACKGROUND

Country Context

The Democratic People's Republic of Korea (DPRK) is situated in northeast Asia, The northern half of Korea it has a total land area of more than 120 thousand square kilometres of which 80 percent are mountains. To the North, DPRK has land borders with China along the Amnok River and with Russia along the Tuman River. The climate is temperate with extremely cold weather during the winter and high rainfall in the summer months, particularly in August. The DPRK's population are ethnically homogeneous, they speak one national language.

Administratively, DPRK is divided into nine provinces and three municipalities;Pyongyang, Nampho and Rason city. Provinces are divided into 210 and more cities or counties. A county is further subdivided into smaller geographic areas called *ri*, (*gu*, *dong*) and the county town called *up*. Cities (districts) consist of administrative areas known as *dong*. In big cities, the *dongs* are grouped into administrative units called districts.

DPRK is committed to the philosophy of Juche Idea, and as such DPRK has largely relied on its own strengths and resources for its development.

Demography

According to the 2014 Socio-Economic, Health and Demographic Survey (SDHS), the estimated total population is 24 894 878, about 61.2% of them live in urban areas. Basic indicators from the census are outlined in Table 1.

Table 1 Main Indicators SDHS 2014

Basic Indicators	SHDS 2014
Average life expectancy at birth	72.1 years
Male life expectancy at birth	68.2 years
Female life expectancy at birth	75.6 years
Crude birth rate	14 per 1000
Crude death rate	8.4 per 1000
National population growth rate	0.61%
Total fertility rate	1.9 child born per woman
Population under 5 years	6.8%
Population under 15 years	21.3%
Population 60 years and over	14%
Urban population	61.2%

The expectancy of life at birth has increased to 72.1 years; 68.2 for males and 75.6 years for females. The birth rate decreased from 14.4 per 1000 population in 2008 to 14 in 2014. The crude death rate has declined from 9.0 in 2008 to 8.4 per 1000 in 2014, while total fertility rate decreased from 2.01 (2008 National Census) to 1.89 (VRS 2014).

There was a decrease in the proportion of the reproductive aged woman in total population from 29.7% in 1999 to 26.6% in 2014. The DPRK's under-five population is 6.8 per cent of the total population(VRS 2014).

By the end of Korean War, the reconstruction started at a very rapid pace in DPRK. DPRK developed an impressive set of policies and programmes in the social sector, providing free and universal access to health, childcare, education, maternity services and a host of other benefits.

The breakdown of the socialist bloc that started in the late 1980s, combined with a series of natural disasters, in the 1990s, had a severe and detrimental impact on the DPRK, not only a downturn in industrial production but also brought about widespread damage to mines and agriculture. Energy production declined further exacerbating these problems. Consequently, the State's capacity to operate its extensive social services was considerably impaired. This had severe impacts on health service quality and on the health of women and children in particular. The Infant Mortality Rate increased from 10.5 per 1000 livebirths in 1993 to 23.5 per 1000 livebirths in 1998 and the under-five mortality rate to 49.7 per 1000 live births in 1998¹.

From the early 2000s, the economic situation began to stabilize. However, with the introduction of economic sanctions, the economy continues to be challenged by international barriers to trade and commerce.

The overall development goal of the Government of DPRK:

Improving the quality of life of people, social development, sustainable development of the environment and to improve economic management, develop science and technology and promote foreign trade and investments. Priorities include ensuring sustainable food security, nutrition, safe water supply and sanitation systems, disease prevention and improvements to health care services and infrastructure.

As a State Party to the International Covenant on Economic, Social and Cultural Rights (ICESCR) since 1981 and Convention on the Rights of the Child in 1990, the adoption of the platform of action of the International Conference on Population and Development (ICPD) in 1994 together with the 2001 accession to the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW) affirm the government's recognition of the rights of everyone to the enjoyment of the highest attainable standard of physical and mental health and emphasizes its notable commitment to reproductive health rights, guaranteeing women's reproductive rights and recognizing women's equal social status.

The Ministry of Public Health (MoPH) in DPRK

The central MoPH reports to the cabinet and is directly in charge of implementation of the Public Health Policy and is responsible for treatment, prevention, central and specialist hospitals. Sub-nationally, there are Health Bureaus at Provincial People's Committee and the Health department at the County and Ri People's Committee.

The DPRK Commitment to Primary Health Care

Universal and free health care has been enforced since 1950s and it is legally guaranteed by the Socialist Constitution of DPR Korea² which was adopted in 1972 and the Public Health Law

¹ After that both indicators started to improve. In 2014: The IMR: 14.2 per 1000 livebirths and U5MR: 20.0 per 1000 livebirths.

² Article 72: Citizens are entitled to free medical care, and all persons who are no longer able to work because of old age, illness or physical disability, and seniors and minors who have no means of support are all entitled to material assistance. This right is ensured by free medical care, an expanding network of hospitals, sanatoria and other medical institutions, State social insurance and other social security systems.

amended in 1980. The Public Health Law emphasises commitment to a preventative and curative health care system³ and gives special priority to the needs of women and children⁴. Laws cover areas as care and education of children, prevention of infectious diseases, drug management and environmental protection.

The government's policy to provide free health services for the whole population were already implemented since 1950s. The main policy objective then shifted to reducing inequities in health care provision and services for farmers and remote rural areas. With the planned expansion of the health services completed, the 1980 law on public health marked a further evolution in policy towards developing the quality of the health care system with emphasis on prevention.

The commitment of the DPRK to the development and maintenance of the primary health care system has been substantial. The health system workforce has developed into 242 341 staff of all categories, one of the highest health workforce to population ratios in the Region.

Substantial resources are also invested to meet the operational costs and salaries of health staff, the pre-service education and continuing education programs of the health workforce. The health sector is also tasked with financing the extensive network of health institutes across the country⁵.

According to the 2014 Annual Health Report, health expenditures (as percentage of GDP) increased from 6.1% in 2012 to 6.4% in 2014. However, there are substantial financing gaps to meet the requirements of basic health service delivery for priority interventions. Despite the resources' limitations, important public health gains have been achieved.

Figure 3: Public Health Achievements DPRK 2011-2015

- Mortality rates: IMR, U5MR & MMR lowered and achieving the MDGs;
- Development of Medium-Term Health Sector Strategic Plan 2011-2015;
- Increased immunization coverage: DPT3 to 96.2% in 2014 & introduction of Pentavalent vaccination into the routine immunization program since in 2012;
- DOTS strategy to treat TB covering the whole country, detection rate > 90% (2015) & cure rate 92%;(2015)
- Expanding Basic & Comprehensive Emergency Obstetric Care capacity across DPR Korea;
- Operation theatres, delivery rooms and emergency rooms, 40 laboratories and 35 blood units were rehabilitated or updated in 140 county people's hospitals;
- 1 200 ri clinics/hospitals were renovated and upgraded;

The Process of Plan Development

1. Review of the relevant literature and documents;
2. Individual interviews with MoPH programme managers and the development partners to review the implementation in 2011-2015 and identify achievements and issues;

³ Article 18: Preventive medicine is the foundation for health policies. According to the Public Health Law "The State regards it as a main duty in its activity to take measures to prevent the people from being afflicted by disease and directs efforts first and foremost to prophylaxis in public health work."

⁴ Article 77: Women are accorded equal social status and rights with men. The State affords special protection to mothers and children by providing maternity leave, reduced working hours for mothers with several children, a wide network of maternity hospitals, nurseries and kindergartens, and other measures.

⁵ Equipping, material provision, other sustainment and activity support

3. Two National consultative workshops: with senior management and development partners to conclude the strategic areas and goals, focus areas and objectives for the 2016-2020 MTSP;
4. The MoPH programme managers provided their inputs to develop the priority activities and targets;
5. Development of a national M & E framework and research agenda for the MTSP 2016-2020;
6. Development of implementation plan;

I. VISION AND NATIONAL HEALTH PRIORITIES 2016-2020

Vision: Improved health of the population through enhanced access to higher quality health care services and healthier living environments

National Health Priority 2016-2020:

- To intensify the development of the Juche-oriented medical science and technology;
- To establish nation-wide telemedicine system and improve the operational quality;
- To upgrade the health sector to information oriented one;
- To strengthen systems for prevention and surveillance of diseases;
- To facilitate the modernization of medicine manufacture, production of Koryo traditional medicine and modernization of medical tools production;
- To provide safe and healthy environment;
- To strengthen section doctor system and improve the quality of health service;
- To improve the technical competency of health workers;
- To improve the maternal, child and aged health care;
- To strengthen professional development of midwives for providing quality SRH services
- To strengthen the capacity of leadership and management in public health;
- To develop the capacity for immediate response to emergencies and disasters.

II. MTSP 2016 – 2020:

STRATEGIC AREA 1: Communicable Disease Prevention and Control

FOCUS AREA 1: Strengthen HAES nationwide:

There is one central hygiene and anti-epidemic health station⁶ and one for each province and county. The HAES is the organization in charge of promoting hygiene, undertake surveillance and control of communicable diseases throughout the country. The Central HAEI has different sections: information section, epidemiology section, which investigates outbreaks, microbiology and virology laboratories (polio, measles, influenza and avian influenza), and sections that support surveillance of malaria and parasitic diseases, as well as food safety.

The prevalence of communicable diseases was remarkably decreased during the last cycle due to the improved surveillance and outbreak response.

Table 2: Incidence of major communicable Disease in DPRK⁷

Incidence of Communicable Diseases	Year	Incidence	Year	Incidence
Incidence of measles	2008	0	2015	0
Incidence of epidemic cerebra-spinal meningitis	2008	14	2012	2
Incidence of pertussis	2008	385	2015	-
Incidence of rubella	2008	76	2015	-
Incidence of Chicken pox	2010	344	2012	175

⁶ Their function is surveillance of communicable diseases, outbreak response and water quality monitoring.

⁷ JRF 2014-2015 & MoPH Health Report.

Incidence of parotitis	2008	67	2015	-
Incidence of dysentery	2008	10	2012	20
Incidence of haemorrhagic fever	2008	36	2012	6

Responding to global pandemic of human influenza, the disease surveillance system was raised into alert and strict quarantine measures were enforced. Moreover, the State has taken strict emergency anti-epidemic measures facing the outbreak of EVD and MersCoV affecting different parts of the world, no cases were imported.

Areas to be considered in the 2016-2020 MTSP are: a multi-sectoral approach to respond to pandemics, establishment of early warning system, the implementation of IHR (2005) including diseases inspection and quarantine activities at the country entry points, capacity building of epidemiologists, strict disease surveillance at the primary health care level, IEC materials for community education, to strengthen lab capacity of anti-epidemic institutions and collaboration and cooperation with external parties.

FOCUS AREA 2: Immunization and Control of Vaccine Preventable Disease (VPDs):

The national EPI Program continues its impressive gains: Sustained high immunization coverage in 2015: DPT3: 96.2%, 2 doses for MCV1 and MCV2: 99.1%, 4 doses of hepatitis B: > 99.5%.

Maintenance of polio, measles and MNT free status since 2006 and reductions in reported vaccine preventable diseases. Pentavalent vaccine was introduced in 2012.

The national program has been strengthened through the development of a costed multi-year plan for immunization (2011-2015), strengthened immunization service through updating of the cold chain, improving injection safety and vigilant surveillance system with continuous support from GAVI, UNICEF and WHO.

Areas to be considered for the 2016 – 2020 cycle include maintenance of high immunization coverage, capacity building, introduction of new vaccines (MR, PCV and rotavirus), cold chain strengthening, vigilant surveillance of VPDs in order to maintain polio free, MNTE status, measles elimination & hepatitis control, improving the quality of disease surveillance, AEFI, monitoring, report, to update IEC materials and ensure to ensure injection safety & waste management. Research agenda proposed includes QDA, community-based KAP survey to identify reasons for drop-out and a research on the types of AEFI and potential reasons.

FOCUS AREA 3: Control of Infectious Diseases:

Combating Tuberculosis⁸

The active detection activities were intensified during the last cycle and resulted an increase in prevalence rate from 430 per 100 000 population in 2008 to 490 per 100 000 in 2015.

Detection rates have been consistently above 90% since 2003, and treatment success rates reached 92% in 2015.

The Global Fund Grant support of round 8 (2010-2015) was completed successfully and currently, implementing GF New Funding Model 2015-2018, the amount of US\$ 28 796 977.

During the last cycle, standard DOTS treatment was provided to TB nationwide, diagnostic equipment like X-ray machines and microscopes are being replaced in a phased manner. The national TB reference laboratory capacity was upgraded to conduct culture and drug sensitivity tests and a GeneXpert machine is functional and is assisting in the studies and diagnosis of MDR-TB in the

⁸ MOPH Multi Year Strategic Plan TB Prevention and Control 2010 – 2015

country. MDR-TB Treatment centres started by one in Pyongyang and expanded to three more provinces. It is envisaged to cover all provinces by 2020. Promotion as well as M&E activities are ongoing. However, the ARTI survey was not conducted as well as a research on the effectiveness on the current DOTS medicine dose.

National Strategic TB Plan

- 1) Improving the quality of DOTS & extending services to all TB patients, to further improve case detection & treatment success rates;
- 2) Establishing partnerships with other sectors, departments and organizations;
- 3) Improving advocacy, communication & social mobilization;
- 4) Developing & implementing interventions for the management of MDR-TB; &
- 5) Contributing to health systems strengthening.

For the 2016-2020 MTSP, it is proposed to continue providing DOTS treatment nationwide, to update in phased manner the microscopes and X-ray machines in order improve the diagnostic capacity, to continue the expansion of MDR TB treatment centres to more provinces, to conduct a research on the effectiveness on the current DOTS medicine dose and a community-based KAP survey, to continue IEC/promotion activities to prevent TB and to keep on the M&E activities.

HIV/AIDs

There is no reported HIV case in DPRK. The 2014 MoPH Health Report stated that 67 250 nationals were tested for HIV in 2014, all were negative, and no HIV infections were identified in the local populations.

Series of surveys in 2004, 2006, 2009 and 2011 were conducted to measure the population's (aged 15 and above) awareness about HIV/AIDS. The table shows the percentage of people aged 15 and above with full awareness about HIV/AIDS. The results call for more intensified efforts to improve the awareness. Lack of safe blood transfusion services in some locations is an area that need to be addressed to avoid the risk of transmission.

Table 3: Proportion of People aged 15 years and over with Full Awareness about HIV/AIDS⁹

	2004	2006	2009	2011
Male	32.9	50.3	ND	38
Female	22.8	39.8	36.9	35

The objectives of the national strategic plan are to (1) strengthen inter-sectoral collaboration in strategic planning and implementation (2) improve strategic information systems for evidence-based actions (3) strengthen IEC to promote active participation of the public in disease prevention and control activities (4) strengthen national laboratory network to provide efficient diagnostic support to various clinical conditions with emphasis on early diagnosis of HIV and RTIs and (5) Reduce the transmission of HIV and other transfusion transmissible infections through blood and blood products by promoting blood safety and (6) improve health services in supporting HIV prevention.

HAES at the Central level, 9 Provinces and 13 border-counties are responsible for the HIV testing and surveillance activities. HIV testing was also introduced in central and provincial blood transfusion centres.

⁹ 2014 MoPH Health Report.

Future priorities include strengthening the HIV/AIDS and RTIs surveillance system. To continue measures to ensure blood safety. Moreover, raising awareness of the population regarding modes of transmission of HIV infection should also be a priority.

Hepatitis:

The only documented information about the prevalence of chronic hepatitis B infection in DPRK is 4.5% in 2003¹⁰.

Acknowledging that the infection is a public health threat, the MoPH took some measures towards the prevention and control of hepatitis B, like improving timeliness of the birth dose, reducing the risk of vaccine freezing, catch up campaigns, increasing diagnostic capacity and intensifying of IEC activities. A 99% coverage of HepB0 was sustained from 2009 till 2014. The HepB3 coverage was 99.5% in 2014.

Areas to be considered for the 2016 – 2020 MTSP: Updating of the national strategy as per the recommendations of the April 2016 SEAR Regional Workshop for the development of regional strategy for hepatitis control, capacity building, IEC activities to raise awareness of the population, vigilant surveillance system and to conduct a study on the prevalence of antigen carriers.

Malaria

DPRK was reported free from malaria since the 1970s, but the disease re-emerged in 1998¹¹, affecting about 50% of the country's population living in the southern and central provinces.

The Global Fund application

Cases peaked in 2001 to 296 540 but declined to 15 673 in 2013, due to public health efforts in the areas of community participation, inter-sectoral collaboration, surveillance and treatment. The MOPH managed to improve early detection, diagnosis and early treatment, distribution of insecticide treated mosquito nets to high risk areas and health education activities. In 2014, the incidence rate of malaria was 0.4 per 1000 population.

National Malaria Strategic Plan

1. Supply for preventative measures such as LLINs & Insecticides for IRS;
2. Effective & equitable curative measures using CQ/PQ with focus on PHC level;
3. Community outreach education programmes amongst the target populations covered;
4. Strengthening of technical capacity of the national malaria control programme.

According to the 2015 KAP (knowledge, attitude and practice) survey, awareness rate of malaria was considerably high 99.6%, especially the correct knowledge on transmission route of malaria was 97.3%. The proportion of children under-five sleeping under bed-nets was 98.3%, higher than that of 2011.

The Global Fund Grant of round 8 (2010-2015) was completed successfully and currently, implementing GF New Funding Model 2015-2018, the amount of US\$ 9.6 million.

All the activities planned in the MTSP1 were successfully implemented, including the IVM interventions, the IEC activities, training of county rapid response teams, M&E. Moreover, several

¹⁰ MoPH National Hepatitis B Prevention Institute Strategic Work plan for the Prevention and Control of Hepatitis B Disease in DPRK, 2009-2013, MoPH Pyongyang.

¹¹ Only *P. vivax* malaria is prevalent in DPRK.

studies were conducted like Primaquine and G6PD, PQ/CQ Drug resistance and Entomological studies in 6 sentinel sites.

Areas to be considered in the 2016-2020 MTSP are to continue and consolidate IEC activities to the community on malaria prevention, to keep a vigilant M&E system, to strengthen the capacity of malaria programme through procuring PCR to the central level, procuring mosquito survey kits for the county rapid response teams, mosquito nets, drugs and insecticidal and Entomology training for the county at the provincial level and to implement the operational research program for elimination of malaria.

A new area was identified: Soil-transmitted Helminths and Schistosomiasis prevention and control. Activities will include formulating a national strategy, conducting survey on prevalence, training of staff and procuring the necessary medicine.

Three focus areas have been identified by the MOPH in the strategic area of the communicable disease prevention and control:

1. Strengthening of Capacity of HAES nationwide including Pandemic Preparedness, health promotion and preventive health care system;
2. Immunization and VPDs' Control; and
3. Control of Infectious Diseases, including TB control, Malaria elimination, control of STH and Schistosomiasis, HIV Prevention, Viral Hepatitis Prevention and Treatment.

Strategic Plan Communicable Disease Control

STRATEGIC AREA 1 COMMUNICABLE DISEASE PREVENTION AND CONTROL					
Goal					
To protect the population against infectious diseases and eliminate diseases on the verge of elimination through prevention, early detection & prompt treatment of communicable disease					
Focus Area 1 Strengthening of Capacity of HAES nationwide	2016	2017	2018	2019	2020
Objective	To strengthen the capacity of HAES to improve the surveillance system, preventive measures and health education.				
Strategies	Strengthening surveillance & lab capacity, multi-sector approach, international collaboration & raising population's awareness				
Proposed Activities	1. To establish a multi-sectoral body to rapidly & timely respond to the pandemics & to establish early warning system				
	2. To consolidate & continue implementation of IHR (2005) including diseases inspection & quarantine activities at the country entry points				
	3. To keep strict disease surveillance at the primary health care level				
	4. Overseas training of Epidemiologists				
	5. Local training for Epidemiologists				
	6. Establishment of 2 regional biosafety level 3 in HAEI (South Hamgyong and North Pyongan Provinces)				

	7. Provision of 100 diagnostic kits (mumps, pertussis typhoid and paratyphoid)					
	8. to continue producing IEC materials for community education on control and prevention of communicable diseases					
	9. Development, printing & distribution of guidelines on laboratory based-active surveillance					
	10. Capacity building for the rapid response team					
	11. Development of operation guidelines for the rapid response team					
	12. Establishment of rapid notification e-system in 100 cities/counties					
	13. To intensify collaboration & cooperation with external parties					
Focus Area 2 Immunization and Control of VPDs		2016	2017	2018	2019	2020
Objective	To control VPDs by increasing immunization coverage					
Strategies	Support to local vaccine production and maintaining the high immunization coverage					
Proposed Activities	1. To plan & implement an equitable high immunization coverage					
	2. Update guidelines and capacity building on immunization, management & maintenance of cold chain					
	3. Ensure quality & efficient vaccines are delivered nationwide					
	4. Introduce new vaccines (MR, PCV & Rotavirus)					
	5. Continue vigilant surveillance of VPDs in order to maintain polio free, MNTE status, measles elimination & hepatitis control					
	6. Continue monitoring & reporting to investigate & deal with AEFI					
	7. Update IEC materials to reflect introduction of new vaccines					
	8. Continue supervision to ensure injection safety & waste management					
Focus Area 3 Control of Infectious Diseases		2016	2017	2018	2019	2020
Objective	To combat TB, reducing the prevalence of hepatitis, sustain HIV free status, eliminate malaria and control of STH and trematodes					
Strategy 1	DOTS and MDR TB treatment, improve diagnostic capacity, IEC and operational research					
Proposed Activities	1. To continue providing DOTS treatment nationwide					

	2. To update, in phased manner, X-ray machines & microscopes					
	3. To continue the expansion of MDR TB treatment centres to all provinces					
	4. To conduct community-based KAP survey					
	5. To continue IEC/promotion activities to prevent TB & significantly reduce the rate of defaulters					
	6. To conduct a research on: effectiveness on the current DOTS medicine dose					
	7. To continue the M&E activities.					
Strategy 2	Strengthening surveillance & population awareness for prevention of HIV					
Proposed Activities	1. To continue a vigilant HIV/AIDS & RTIs surveillance system					
	2. Study tour for program managers					
	3. Provision of HIV diagnostic kits to sentinel surveillance sites					
	4. Update/print and distribution of HIV/AIDS control guidelines					
	5. To develop IEC materials & conduct IEC activities for HIV/AIDS prevention					
Strategy 3	Update National Strategy for Hepatitis control, maintain high immunization coverage, surveillance, IEC, training, operation research & improve diagnosis and treatment					
Proposed Activities	1. TA to assist updating the National strategy for Hepatitis Control					
	2. To train specialists & lab technicians					
	3. To undertake IEC activities to raise awareness about prevention of Hepatitis					
	4. Study tour of specialists and managers of the Hepatitis program					
	5. Capacity building of health institutes on diagnosis & treatment of hepatitis					
	6. To keep vigilant surveillance system					
	7. Maintain Hepatitis B high vaccination coverage (EPI Programme)					
	8. Conduct a study on prevalence of hepatitis antigen carriers					
Strategy 4	Malaria IEC, capacity building, provision of equipment, medicine and materials and operational research					
Proposed Activities	1. To continue and consolidate IEC activities to the community on malaria prevention					

2. To strengthen the capacity of malaria program: procuring PCR to the central level; mosquito survey kits for the county rapid response teams; mosquito nets, drugs and insecticidal; Entomology training for the county at the provincial level.					
3. To keep a vigilant M&E system					
4. To implement the operational research program for elimination of malaria					
5. Develop national strategy for control of STH & Trematodes					
6. Provide treatment and update diagnostic & treatment capacity especially at the PHC level					
7. Conduct survey to assess the prevalence of schistosomiasis					

STRATEGIC AREA 2: NON COMMUNICABLE DISEASE PREVENTION AND CONTROL

FOCUS AREA 1: Chronic diseases (CVD, Cancer, metabolic diseases)

It was revealed that the percentage of population over 60 has increased from 8.9% in 1993 to 13.3% in 2014, this combined with the changes in diets and lifestyle lead to an increase in the prevalence of cardiovascular, hypertension, diabetes, cerebrovascular diseases, cancers and respiratory illnesses with its burden on morbidity and mortality. Risk factors include smoking, excessive alcohol consumption, lack of physical exercise, conditions at the work place and other ecological factors.

According to survey in 2009, prevalence rates of hypertension among 25-64 year-old population were 14.5%.

A 2009 nationwide survey on prevalence of smoking conducted showed a prevalence of 52.3% of male adult. Excessive alcohol consumption rate was 25.9%. According to 2013 nation-wide adult smoking prevalence survey, prevalence of smoking was 43.9% with 43.2% in urban areas and 44.5% in rural areas. This shows that the smoking prevalence has decreased by 8.4% compared with in 2009.

During the 2011-2015 MTSP, a national strategy was developed 2014-2020, the MoPH took a multi-sectoral education initiative in order to decrease the burden of NCDs through advice about the alcohol consumption, encourage healthy diet, physical exercise and control of stress, the WHO PEN (Package of Essential NCD interventions) was introduced in 2014 in selected PHC settings and the section doctors were trained on registration and treatment including home visits. Health promotion activities to raise awareness on risk factors were conducted, ongoing activities to improve the treatment for target NCDs, and database is being updated through the regular health information system.

For the 2016-2020 MTSP, it is proposed to expand the PEN to all PHC settings nationwide and train more section doctors, to continue and consolidate the health promotion activities, to print and distribute guidelines on prevention & treatment of chronic diseases to PHC level, capacity building, to standardize definitions so as to monitor the prevalence through the regular health information system and to update the national NCD strategy.

FOCUS AREA 2: Injury prevention

DPRK designated the months of May and November as the “Months of Accident Prevention” and conducts education and control activities to prevent injuries including those caused by traffic or fire.

Most of the activities proposed in the last cycle were not conducted. Areas to be considered in the 2016-2020 MTSP are to establish injury surveillance unit, to establish database on injuries and provide IT equipment, to conduct a survey to assess the main causes of injury, to consider the introduction of the road safety project with the support of the WHO and to continue IEC campaigns for injury prevention.

FOCUS AREA 3: Mental Health

There is a National Prevention Institute for Mental Health and in each province, there is one prevention institute for mental health. There is no information available on rates of mental health conditions in the community.

None of the activities planned in the last cycle was implemented. For the next MTSP, it is proposed to conduct an assessment of current mental health service needs in DPRK, to establish a national mental health strategy, to ensure requirements of diagnosis and treatment are provided and to explore the feasibility of community-based mental health care.

FOCUS AREA 4: Disability and elderly care

Disability which ranks the highest is vertebral/limbs disorders followed by auditory and visual disabilities.¹²

At the Ri level, there is a system of registration for the elderly and disabled persons. At the county level, a medical officer is designated as being responsible for elderly care. At the provincial level, there are specialized sections for care.

In 2003, a law was enacted for the protection of persons with disability. 54 articles of the Law covering principles of care, rehabilitation of people with disability, education, labour and protection.

DPRK established a system for education, measures on safety and protection of workers and specialized treatment units in the emergency and trauma sections in health institutions and orthopaedics specialized hospital, built centres in 6 provinces to provide the needed prosthesis.

Many activities were implemented during the last cycle thanks to the collaboration with KFDP: A survey was conducted to gain more insight, specialized services for the elderly started at the central level, health promotion activities on preventable causes of disability, the number of cataract surgeries has increased, expansion of rehabilitation and prosthesis workshops and a central care centre for children with Autism, Down’s syndrome and Cerebral Palsy. For the 2016-2020 MTSP, it is proposed to establish multi-sectoral national strategy on care of the elderly, consider fellowships in geriatrics and to establish geriatrics sections at the central level and 4 provinces, to continue the fruitful collaborate with KFDP in the areas of disability, elderly care and injury prevention, to introduce Community Based Rehabilitation (CBR) and to enhance capacity of provincial and county hospital to perform cataract surgeries.

¹² 2014 MoPH Health Report.

FOCUS AREA 5: Tobacco control

DPRK became a member state of FCTC in 2005 and adopted a decision to strictly limit smoking in whole nation. Education to the public on the harm of smoking is undertaken through various channels including work place and mass media.

Many activities were undertaken during the last cycle especially the legislation prohibiting smoking in government offices, health facilities, schools and public places and the IEC campaign against smoking. It is proposed for the 2016-2020 MTSP to strengthen the research to develop materials helpful for stop smoking, to continue effective IEC strategy and to advise the government on legislation matters.

For the next cycle, the same five Focus areas have been identified by the MOPH for NCD prevention and control:

1. Chronic Diseases;
2. Injury Prevention;
3. Mental Health;
4. Disability and Elderly care; and
5. Tobacco Control.

Strategic Area 2 NON COMMUNICABLE DISEASE PREVENTION AND CONTROL					
Goal	To mitigate the socio-economic burden of NCDs through reducing the prevalence of risk factors of major NCDs and strengthening the national NCD surveillance system				
Focus Area 1: Chronic diseases (Cancer, Diabetes, cerebral and cardiovascular)	2016	2017	2018	2019	2020
Objective	To reduce the morbidity & mortality due to the main chronic NCDs by reducing common risk factors and ensuring early detection and treatment				
Strategies	Establishing national NCD strategy, network and expand PEN to PHC nationwide				
Proposed Activities	1. Establish/update national NCD strategy				
	2. Capacity building of NCD managers of (study tour and/or TA and training)				
	3. Establish a network of NCD focal points at all levels & develop their ToR				
	4. Expansion of WHO PEN (Package of Essential NCD interventions in PHC settings and train more section doctors on registration, treatment and follow-up of NCD				
	5. Continue and consolidate the health promotion activities				
	6. Print and distribute guidelines on prevention & treatment of chronic diseases to PHC level				
	7. Provision of tools (detecting blood sugar & cholesterol) to improve the quality of the NCD diagnosis & treatment at PHC level.				
Focus Area 2 Injury prevention	2016	2017	2018	2019	2020
Objective	To significantly reduce injury incidence by strengthening the national injury surveillance system				
Strategies	Develop database, surveillance capacity, IEC & introduce Road Safety				
Proposed	1. Establish injury surveillance unit				

Activities	2. Establish database on injuries and provide IT equipment					
	3. Conduct survey to assess the main causes of injury					
	4. Continue IEC campaigns for injury prevention					
	5. Introduce road safety project					
Focus Area 3 Mental Health		2016	2017	2018	2019	2020
Objective	To improve the quality of mental health services					
Strategies	Assessment of needs, national mental health strategy, address requirements and introduce community-based mental health care					
Proposed Activities	Assessment of current mental health service needs in DPR Korea					
	Establish/update a national mental health strategy					
	Ensure requirements of diagnosis and treatment are provided					
Focus Area 4 Disability and elderly care		2016	2017	2018	2019	2020
Objective	To improve the quality of health services for the elderly & disabled					
Strategies	National strategy, strengthen the management capacity, improving access to care to the elderly & disabled priority to the PHC level					
Proposed Activities	1. Develop a multi-sectoral national strategy on care of the elderly					
	2. Fellowship on geriatrics					
	3. Develop guidelines & references for elderly health care					
	4. Establish a geriatrics sections at the central level and 4 provinces by 2020.					
	5. In collaboration with KFDP address some of the preventable causes of Disability: increase the number Cataract surgery and extend to the county level: training & surgical instruments					
	6. Introduce Community-Based Rehabilitation (CBR), involving the household doctors					
Focus Area 5 Tobacco control		2016	2017	2018	2019	2020
Objective	To significantly reduce the prevalence of smoking through strengthening of tobacco control measures					
Strategies	IEC, assist in stop smoking and legislation					
Proposed Activities	1. To strengthen the research to develop materials helpful for stop smoking					
	2. To develop effective IEC materials for stop smoking					
	3. Advise the government on legislation matters					

STRATEGIC AREA 3: WOMENS AND CHILDRENS HEALTH

FOCUS AREA 1: Maternal and Neonatal health:

There has been a noticeable decrease in the MMR in recent years. It was estimated that MMR is 62.7 per 100 000 live births in the whole country in 2014. Most common cause of maternal mortality is post-partum haemorrhage.

Factors limiting the capacity of the maternal health care include (1) lack of essential equipment, materials and medicines; (2) limited diagnostic skills for early risk detection; (3) logistical challenges to referral in the harsh winter months; and (4) limited skill and surgical capacity at the first referral level.

74.1% of births take place in county and ri hospitals/clinics, 17% in central/provincial hospitals and the remaining 8.9% at home and almost all attended by skilled health staff¹³. 93.9% of pregnant women had had 4 ante-natal care checks and 6.1% had had 1-3 ANC visits.

The 2012 MoPH Health Report noted that 31.2% of pregnant women are anaemic and the prevalence of low birth weight was 4.74%(2014). However, 23.6% of pregnant women did not take any iron, Folic acid or micronutrients supplementation during pregnancy. Although the intake trend shows increase from previous survey reports, more investigations are needed to learn more about the reasons for those who did not take and address them.

As per the recommendation of UNICEF and WHO to breastfeed a baby soon after birth¹⁴. The 2014 SDHS, observed that 30.7% breastfed within one hour (as recommended), 14.7% 1-11 hours, 24% 12-23 hours and 29.4% after 24 hours. Thus, 70.6 percent of women breastfed their children within 24 hours.

During the last Cycle all the planned activities were implemented, the referral system started to improve, the capacity of EMOC & ENC at hospital level to scale up, almost all deliveries are attended by skilled workers, the high ANC care coverage was maintained, delivery rooms as well as blood safety were upgraded in many county hospitals, equipment were provided. A neonatal center was established in Pyongyang Maternity Hospital and training of paediatricians is ongoing, training of provincial trainers on essential neonatal disease care & New-born referral care in 4 provinces & expanding to the country level and the necessary medicine, consumables are being provided and guidelines were developed, printed and distributed

It is proposed for the 2016-2020 MTSP to consolidate the referral system (transport and communication) for complicated pregnancies, expand and improve the quality of EMOC & ENC at hospital level nationwide, continue supervision to ensure quality ANC, delivery & post-natal care, ensure blood safety, laboratory services, equipment supply at the first referral level, continue the provision of necessary essential medicines, to provide technical support to the Neonatal Centre in Pyongyang Maternity Hospital, to continue capacity building until all staff involved in provinces and counties are covered by 2020, to continue provision of necessary materials and to continue supervision follow-up on training to ensure quality neonatal service.

¹³ CBS Pyongyang: SDHS 2014.

¹⁴ Within 30 to 60 minutes after birth.

FOCUS AREA 2: Sexual and Reproductive Health

According to the 2014 SDHS, around 10.5% of currently married women ever had an induced abortion, 7% of currently married women in the DPRK have an unmet need for family planning(2014). The unmet need is 5% for “limiting” while it is 2% for “spacing”. The unmet need is higher in rural areas than urban areas (7.5% and 6.7%, respectively). The knowledge of at least one family planning method is almost universal among women in the DPRK, though awareness of method-specific modern methods varies. On average, women are aware of six methods. Trends indicate that between 2010 and 2014, the CPR increased by 2% each year. Current use of any method was 78.2% in 2014 with 76.5% relying on modern methods. Modern method use is dominated by IUD (about 98% of all modern methods). Use of other methods is negligible.

During the last Cycle access to family planning services has improved, efforts are being made to ensure safe abortion practices are in place, standards for proper diagnosis & treatment of RTIs were developed, IEC activities were conducted, breast & cervical cancer screening was established at the central level.

National Reproductive Health Strategy

- Quality prenatal, natal & post-natal care and services;
- Management of obstetric complications through provision of emergency obstetrics services;
- Expansion of safe abortion services;
- Provision of control, prevention & management of RTI/STI;
- Provision of breast & cervical cancer screening services.

It is proposed for the 2016-2020 MTSP to ensure supply of wide choice of family planning methods, improve the quality of FP counselling as well as greater awareness among women/couples about the different methods, improve the quality of safe abortion and consider introduction of medical abortion, improve the quality of diagnosis and treatment of RTIs/STIs, continue the IEC activities for community on reproductive health issues, to expand breast & cervical cancer screening to all provinces and to update the technical capacity of 5 provincial hospitals to provide surgical treatment of cervical & breast cancer.

FOCUS AREA 3: Child Health

The 2014 SDHS identified a decrease in both infant mortality and U5 mortality: The IMR is 14.2 deaths per 1000 live births and under-5 mortality is 20.0 per 1000 live births. The main causes of death in children under five are diarrhoeal diseases and acute respiratory infections, combined with malnutrition. Both the 2002 and 2004 nutrition assessments showed the association between maternal malnutrition and increased prevalence in stunting¹⁵.

According to the 2014 SDHS, 14% of mothers breastfed their babies for more than 6 months, 55% for 5-6 months, 28% for 2-3 months, only 1.3% never breastfed.

Other achievements in child health in DPRK: 98% of children under five years old have received twice-yearly vitamin A supplementation, reaching the highest level of vitamin A coverage for children under age five in the East Asia and Pacific region¹⁶. The 2015 DPT3 coverage reached 96.2%.

¹⁵ UNICEF Situation of Women and Children in DPRK 2008.

¹⁶ Economic and Social Council United Nations Children’s Fund Executive Board Second regular session 2006 6-8 September 2006.

During the last Cycle the IMCI strategy has expanded nationwide. After piloting the integration of the IMCI in the paediatrics training curriculum in the capital's medical university is now expanded to cover all medical schools in the country and to nursing and midwifery schools. The introduction of the IMCI strategy showed an improvement in the quality of child care.

For the 2016-2020 MTSP, it is envisaged to ensure the quality of IMCI strategy through regular supervision and feedback, ensure regular equitable supply of essential drug, equipment & consumables and to continue community education & involvement.

FOCUS AREA 4: Nutrition

The frequent floods and droughts and the fact that only one fifth of the DPRK's land is suitable for high-yield agricultural production, resulted in food shortage since the mid-1990s. That reflected negatively on the nutritional status of the population especially women and children, the most vulnerable group.

Many gains in nutritional status were achieved since the crisis years of the mid-1990s. However, the stunting rate is still becoming a problem to be solved. Another concern, is that malnutrition rates are higher in rural areas than urban.

The situation is also improving for pregnant women. In 2004, 32 % of the women with a child less than 24 months were malnourished as indicated by a mid-upper arm circumference (MUAC) less than 210 mm, the figure decreased to 25.6% in the MICS survey of 2009, then to 10.% in 2012.

During the national child days, more than 98% of children under the age of 6 months receive Vitamin A. According to 2014 DSHS, 55% of women 15-49 years giving birth in the three years preceding the survey took Vitamin A tablets two months after birth.

The 2009 MICS survey found that the percentage of households consuming adequately iodized salt was 24.5% (15 ppm or more), 48% for less than 15 ppm and 52% had 0 ppm¹⁷.

For the 2016-2020 MTSP, it is recommended to continue the implementation of child survival & growth monitoring, to continue provision of micronutrients to mothers & children nationwide, to conduct research on nutritional status, to conduct survey to identify the prevalence of Goitre and to continue capacity building to update the technical capacity of nutrition program managers.

The Child Survival Strategy that comprises an Essential Package for Child Survival was identified:

- Skilled attendance during pregnancy, delivery and the immediate postpartum;
- Essential new-born care
- Promotion of optimal Infant and Young Child Feeding practices;
- Micronutrient supplementation to women of reproductive age(WRA), pregnant and lactating women(PLW) and U5 children;
- Immunization of children and mothers;
- Integrated management of sick new-born and children;
- Use of insecticide-treated bed-nets (in malaria-endemic areas).

Four focus areas were identified by the MoPH for the next cycle:

1. Maternal and Neonatal Health;

¹⁷ UNICEF MICS 2009.

2. Reproductive Health;
3. Child Health; and
4. Nutrition.

STRATEGIC AREA 3 WOMENS AND CHILDRENS HEALTH						
Goal	To improve maternal , new born and child health care					
Focus Area 1		2016	2017	2018	2019	2020
Maternal and Neonatal Health						
Objective	To decrease the maternal mortality by ¼ of the current figure (62.7/100 000 livebirths) and the neonatal mortality rate by 1/4 of the current figure (8/1000) by 2020					
Strategies	Improving access, skills and conditions for safe delivery and referral system and support to neonatal care units services at referral hospitals					
Proposed Activities	1. To consolidate the referral system (transport & communication) for complicated pregnancies					
	2. To expand and improve the capacity of EmOC & ENC at 70% of hospitals by 2020					
	3. Continue supervision to ensure quality ANC, delivery & post-natal care					
	4. Ensure blood safety, laboratory services, equipment supply at the first referral level					
	5. Technical support to the Neonatal Center in Pyongyang Maternity Hospital					
	6. To train provincial trainers on essential neo-natal disease care & New-born referral care in all provinces & all counties by 2020					
	7. To provide necessary neonatal materials (guidelines, essential medicines & consumables) in provincial hospitals & county hospitals					
	8. To ensure uninterrupted essential life-saving RH drugs, especially oxytocin and magnesium sulphate for all pregnant women					
	9. Supervision follow-up on training to ensure quality maternal and neonatal services in provinces and counties trained					
	10. Strengthen maternal and perinatal death surveillance and response system					
Focus Area 2 Sexual and Reproductive Health		2016	2017	2018	2019	2020
Objective	To reduce mortality & morbidity through improving quality of reproductive health services					
Strategies	Improving availability of & accessibility to quality reproductive health services, counselling & information					
Proposed Activities	1. Provision of modern contraceptive methods & ensure supply of wider choice of family planning methods through informed choices					
	2. Capacity building to improve the quality of safe abortion & post-abortion care including counselling on family planning					
	3. Introduction of medical abortion					

	4. Capacity building support to ensure the quality of RTIs' & STIs management (diagnosis, treatment, medicine, reagents & supplies)					
	5. Develop IEC strategy and implement IEC activities in community on reproductive health issues					
	6. To expand breast & cervical cancer early detection system through massive screening to all provinces by 2020					
	7. To update the technical capacity of 5 provincial hospitals to provide surgical treatment of cervical & breast cancer					
Focus Area 3 Child Health		2016	2017	2018	2019	2020
Objective	To reduce under-five mortality by 1/4 of its current figure (20/1000) and to decrease infant mortality rate by 1/4 of its current figure (14.2/1000) by 2020					
Strategies	Functioning IMCI Strategy nationwide including community involvement					
Proposed Activities	1. To ensure the quality of IMCI strategy through regular supervision and feedback					
	2. Ensure regular equitable supply of essential drug, equipment & consumables					
	3. Continue community education & involvement					
Focus Area 4 Nutrition		2016	2017	2018	2019	2020
Objective	To decrease rates of malnutrition and micro-nutrient deficiency disorders					
Strategies	Promotion of optimal nutritional status of adolescent girls, WRA, PLW and U5 children through implementation of full-set of nutrition specific-interventions at scale.					
Proposed Activities	1. Promotion of optimal IYCF as well as ECD practices at different levels.					
	2. Provision of micronutrients supplement to WRA, PLW & U5 children nationwide					
	3. Undertaking national nutrition survey and/or formative research to identify the immediate causes of undernutrition and the sectoral linkages.					
	4. Development of Universal Salt Iodization (USI) national strategy and plan of action.					
	5. Capacity building of health workers at central, provincial, counties' and grass root levels					
	6. Development of C4D strategy and action plan to promote optimum IYCF practices.					
	7. Development of national strategy and action plan to control Soil-Transmitted Helminths(STH).					
	8. Scaling-up and improve quality of CMAM services (screening, early referral of wasted children and treatment of SAM).					

STRATEGIC AREA 4: Improved Quality of Health Service

DPRK has an extensive infrastructure of hospitals at central, provincial, county and ri levels, in addition to 6 263 Ri clinics and polyclinics at the PHC level, in addition to the HAES. County hospitals are the first referral level. Ri clinics where 45 000 household doctor are based provide

preventive and curative services, 1 section doctor serves about 130 households. Ri hospitals (rural areas) and polyclinics (urban areas) have specialized departments¹⁸. There is a very high delivery rate of infants by trained medical staff (99.1%) (2012) and most births take place in health facilities (91.1%). The ratio of health workers to population is one of the highest in the region.

Table 4: Categories and Numbers of Health facilities in DPR Korea¹⁹

Health Facilities in DPRK	Number
Central and Provincial Hospitals (Tertiary care)	135
County and Ri Hospitals (Secondary care)	1 694
Polyclinics/Clinics (Primary care)	6 263
Hygienic and anti-epidemic station	235
Preventive Institutes	55
Sanatoriums	682
Blood center	12
TOTAL	9 076

Health facilities are affected by electricity, water and heating problems. In some areas, temperatures may drop to – 20 C in the winter months. Mobility of health staff and transportation of vaccines were constrained by limited access to transport. The majority of facilities were found to have medium or low capacity equipment, in particular at ri clinics, as was the laboratory and blood transfusion equipment at county hospitals²⁰.

As for the hospital infection control, support to the waste management system in hospitals and introduction of culture sensitivity tests were provided by WHO, the WHO guideline on infection control was adapted, printed and distributed training to staff was conducted on hospital infection control in 2009-2010

In DPRK, Koryo traditional medicine are widely practiced nationally. Treatment coverage by traditional medicine at different levels of the health system has been reported to be quiet common especially at the PHC level (more than 50%)²¹. The December 2009 national consultative meeting on health system analysis in Pyongyang highlighted the need for integration of traditional and modern medicine using evidence based approaches.

The 2011-2015 MTSP some targets were achieved: Telemedicine system is currently connecting Pyongyang and provincial hospitals in 12 provinces/municipality and 215 city/district/county hospitals. Training sessions were held for health workers, mainly at county & ri levels. Provision of some medical equipment, reagents and medicine to health facilities as much as the funding level allowed. Operating theatres, delivery rooms and emergency rooms were rehabilitated or updated in 120 county people’s hospitals and 1 200 ri clinics/hospitals were renovated and upgraded. Some improvement was noticed in the transport needed for the referral system. Finally, with the support of the WHO, safe blood supply to health facilities was regular.

For the 2016-2020 MTSP, it is proposed to establish a hospital infection control strategies, improve specialized medical care, more support to the section doctors’ system, upgrade the Telemedicine and

¹⁸ Obstetrics/gynaecology, traditional Koryo medicine, dentistry, surgery and medicine.

¹⁹ Human Resources for Health, Country Profile, DPR Korea, Ministry of Public Health, October 2012.

²⁰ National Institute of Public Health Administration/Nossal Institute Baseline Survey Report: Improving Women’s and Children’s Health in DPR Korea Project 2009

²¹ MoPH 2014 Health Report.

introduce WHO emergency basic surgical package at the first referral level, continue upgrading of health facilities, procure the transport needed for the referral system and inter-facilities communication with priority given to remote areas, organization of the emergency health services. Finally, training, provision of equipment, materials and reagents will be necessary to ensure the continuity of safe blood supply.

STRATEGIC AREA 4 Improved Quality of Health Service						
Goal	To ensure the provision of quality health services					
Focus Area 1 Patients' Safety and Hospital Infection Control						
Objective	To provide safe and quality health services for the patients through establishing patients' safety surveillance system and strengthening control measures against hospital infection	2016	2017	2018	2019	2020
Strategies	Surveillance system, capacity building, database, pilot sites and lab strengthening					
Proposed Activities	Establishment of patient's safety surveillance system					
	Building capacity of staff at central, provincial and regional levels					
	Establish database for hospital infection control					
	Establish model surveillance system in 10 sites					
	Provide equipment for waste management in the model sites					
	Provide Culture Sensitivity Kits for the 10 model sites					
Focus Area 2: Improving Specialized Medical Care						
Objective	To improve the quality of medical care through introduction of advanced diagnostic & treatment methods	2016	2017	2018	2019	2020
Strategies	Providing specialized medicine and equipment and ensuring blood safety					
Proposed Activities	1. Capacity building on blood safety & quality assurance of blood					
	2. Provision of blood bags & reagents to provincial & county hospitals					
	3. Provide specialized medicine for provincial hospitals and county hospitals					
	4. Upgrade the anaesthetic equipment in provincial and county hospitals;					
	5. Provision of 20 X-ray machines, 20 endoscopy, 20 ultra-sonogram & 20 electromyogram, 2 digital X-ray (light bulb) & 20 condensers					
Focus Area 3: Section Doctors' System						
Objective	To strengthen the Section Doctor System	2016	2017	2018	2019	2020
Strategies	Capacity building, section doctors' bags and					

Proposed Activities	strengthening of the referral system					
	Provision of 2 500 section doctors' bags every year for 5 years					
	Training on standard package for household doctors					
	Provide 2 500 section doctors with mobile phones and or Ipad for referral system communication					
Focus Area 4: Integration of Modern and Traditional Medicine		2016	2017	2018	2019	2020
Objective	To improve the treatment effectiveness through ensuring the right mix of Koryo and modern medicine					
Strategies	Improve knowledge, exposure & support clinical trials					
Proposed Activities	1. Conduct clinical trials on the effect of mixed treatment on certain diseases;					
	2. Provide latest publications on the mixed treatment approach					
	3. Encourage exposure and exchange through regional conferences					
Focus Area 5: Telemedicine System		2016	2017	2018	2019	2020
Objective	To upgrade, increase the package of services and geographically expand the existing telemedicine system in order to improve the quality of health care					
Strategies	Upgraded Telemedicine, expand the package, capacity building and geographical expansion					
Proposed Activities	1. Telemedicine system upgraded for diagnosis and treatment					
	2. Introduce WHO Emergency surgical procedures package					
	3. Upgrade the IT equipment in a phased manner					
	4. Capacity building of staff on the use of telemedicine					
Focus Area 6: Emergency Health Services		2016	2017	2018	2019	2020
Objective	To strengthen the emergency health services system for better emergency health care					
Strategies	Central control centre, ambulances and capacity building					
Proposed Activities	1. Establish a central control centre and IT equipment					
	2. Establishment of national emergency health communication system					
	3. Procurement of equipped ambulances					
	4. Training on pre-hospital first aid					
	5. Establish EHS centres on main highways.					
Focus Area 7: Infrastructure		2016	2017	2018	2019	2020

Objective	To upgrade the capacity of health institutions and facilities to improve the quality of health services					
Strategies	Physical rehabilitation of health institutes and procurement of equipment and reagents					
Proposed Activities	1. Physical upgrading of 500 Ri clinics/hospitals, 50 County hospitals					
	2. Physical upgrading of 2 blood centres					
	3. Equipment & reagents for blood safety in 50 county hospitals					
	4. Equipment & reagents for laboratory in 50 county hospitals					

Strategic Area 5 :Development of Medical science and Technology

The national policy stressing the development of science and technology as the principal strategy in building nations. Due to the economic difficulties, there were less investments. However, health facilities throughout the country have been/are being renovated to cope with the growing needs.

With the support of the UN agencies, there is a growing collaboration with scientific medical academic and research international and regional institutes. More researches were conducted to develop & introduce the up-to-date and high technologies essential for improving the quality of medical services not only in modern medicine but also in Koryo traditional medicine

During the 2011-2015 MTSP, collaboration and exchange of technical expertise started and ongoing with the support of the international organizations. However, researches that were proposed, including the traditional medicine could not be materialized for lack of funding.

It is proposed for the 2016-2020 MTSP to seek twining and collaboration with regional reputable scientific research institutes and encourage scientific research especially in the area of Koryo traditional medicine and to provide support to the technical research capacity.

Strategic Area 5: Development of Medical science and Technology						
Goal	To introduce the up-to-date medical science & technology & conduct research work to improve the scientific standards of traditional medicine					
Focus Area 1 Koryo Traditional Medicine		2016	2017	2018	2019	2020
Objective	To establish scientific basis for Koryo traditional medicine's diagnosis and treatment and develop effective Koryo medicine					
Strategies	Technical research to develop new medicine and upgrade the Telemedicine					
Proposed Activities	1. Support the technical research on meridian					
	2. Develop and introduce new types of traditional medicine					
	3. Improve the quality of telemedicine link					
	4. Printing of literature on traditional medicine					
Focus Area 2 Strengthening Research Capacity		2016	2017	2018	2019	2020
Objective	To strengthening the capacity of health research institutes through encouraging technical exchange, cooperation and					

Strategies	twinning with other WHOCCs in order to advance the medical science and technology					
	Upgrade the capacity of the WHOCC and encourage exchange and exposure experiences					
Proposed Activities	1. Upgrade the WHOCC					
	2. Upgrading of the research capacity of the NIPHA					
	3. Regular updating of the recent developments in medical science & technology					
	4. Translation & printing of technical literature and guidelines					
	5. Arrange twinning/network and exchange of the WHOCC with other TM academic, scientific & research institutes in the region including fellowships training & study tours for researchers					

STRATEGIC AREA 6: Improved Medicine and Medical Supplies for Health Services

Procurement of health services is undertaken centrally by the MoPH. The Central Medical Warehouse manage the logistic system, through a network of medical warehouses in all provincial capitals and counties that manage the distribution to all health facilities in the country.

“Adequate resourcing of the sector with essential medicines, supplies and mechanism for referral can have immediate effects on maternal and child survival”.

Evaluation of Improving Women’s and Children’s Project in DPRK, 2007

The essential drug list was last updated in 2014, currently it contains 270 items. The state places a high priority on the local production of essential medicines.

Insufficient essential drugs and medical materials have been reported in a series of evaluations and research studies. UNICEF reported that the quality of emergency obstetric care was limited by lack transfusion and surgical services at the country hospitals, where most of these emergencies should be managed.

UNFPA is supporting the central and provincial medical warehouses to strengthen logistic management through technical assistance, capacity building, establishing a computerized database for record keeping, reporting to improve regular monitoring of the system. Initially UNFPA started the KLMIS system in three provincial warehouses then it was scaled up national wide. The KLMIS is currently covering all medical warehouses nationwide and is being used for drug forecasting, distribution, management & monitoring and the number of items in the system has increased.

Efforts were made by the government to renovate and upgrade pharmaceutical factories, to strengthen the quality control capacity of the NRA and NCL and to improve the GMP standards in partnership with UN agencies & NGOs. Moreover, there is a lack of raw materials.

Logistics and Essential medicines Barriers and Gaps

- **Shortage in medical equipment & consumables, limited means of transport & fuel;**
- **Lack of raw material and inadequate quality control (NRA and NCL);**
- **More to be done on rational use of medicine;**

- **Lack of technical competency for evidence-based diagnostic and treatment practice in TM & limited technical exposure.**

It is suggested for the 2016-2020 MTSP, to maintain the KLMIS and obtain feedback from the users so as to improve the performance, capacity building of the users, to establish medical equipment registration system, to expand the system geographically, to strengthen the transport system and the storage capacity of the central medical warehouse, to develop a national strategy and action plan to address antimicrobial resistance, to update the national essential drug list and to encourage the rational use of medicine, to seek technical assistance to further upgrade the technical capacity of NRA and NCL for local vaccine, medicine and medical materials' production and to provide the necessary equipment and raw materials.

Strategic Area 6: Improved Medicine and Medical Supplies for Health Services						
Goal	To support the local vaccine, medicine and medical materials production, improve and maintain KLMIS and promote the rational use of essential drugs					
Focus Area 1: Strengthening the Capacity of Quality Control		2016	2017	2018	2019	2020
Objective	To improve the technical capacity of NRA & NCL					
Strategies	Technical support for NRA and NCL					
Proposed Activities	1. Technical Assistance to:					
	<ul style="list-style-type: none"> • Upgrade the technical capacity of NRA & NCL; • Training of staff in Quality Control agencies 					
	2. Provision of equipment, instruments & reagents for quality control					
3. Strengthening exchange & collaboration with other quality control institutes in the region						
Focus Area 2: Local Production		2016	2017	2018	2019	2020
Objective	To improve the local production capacity for vaccines, medicine and medical materials					
Strategies	Procurement of equipment and raw materials					
Proposed Activities	1. TA to assess Pyongyang Pharmaceutical Factory and Pyongyang Vaccine Production Factory for GMP certification					
	2. Support to the local vaccine, medicine & medical materials production:					
<ul style="list-style-type: none"> 5. Procurement of equipment; 6. Procurement of raw materials. 						
Focus Area 3: Essential Medicine and Logistics		2016	2017	2018	2019	2020
Objective	To maintain and strengthen the KLMIS and improve the capacity of the medical warehouses					
Strategies	Update & expand KLMIS & add equipment registration					
Proposed Activities	1. Continue the expansion of KLMIS & obtain feedback from users to update the system					
	2. Establish medical equipment registration system					

	3. Training of KLMIS users					
	4. Update the IT equipment in phased manner.					
	5. Procurement of 14 trucks (2 central & 12 provinces)					
	6. Procurement for spare parts & tools for CMW					
	7. Construction of annex warehouse central					
	8. Procurement of handling tools (central + 9 provinces)					
	9. Rehabilitation of old compartment central					
Focus Area 4: Rational Use of Drugs		2016	2017	2018	2019	2020
Objective	To introduce strategies in order to ensure the rational use of drugs, reduce incidence of antimicrobial resistance and side-effects					
Strategies	Capacity building, supervision and research					
Proposed Activities	1. Development of national strategy and action plan to address antimicrobial resistance					
	2. Adapt, print and distribute WHO guidelines on Essential medicine					
	3. Training of practitioners on rational use of drugs					
	4. Supervision to follow-up the practice					
	5. Establish a reference laboratory to ensure quality of drugs;					
	6. Establish national surveillance system for antimicrobial resistance					
	7. Conduct study on antimicrobial resistance					

STRATEGIC AREA 7 STRENGTHENING HEALTH SYSTEMS:

FOCUS AREA 1 Leadership and Management of Public Health

DPRK has an elaborate health policy, which is enshrined in the Public Health Law adopted in April 1980. It has formulated policy directions to reduce inequality in the health status of the population. The public health policy in DPRK is a mix of preventive approach together with a universal medical care system.

The development of a multi-year health sector plan 2011-2015 was a landmark. It elaborated the strategic directions and identified resource gaps. In collaboration with UN system agencies (UNFPA, UNICEF and WHO) and other partners (IFRC, Italian Development Cooperation, Finnish Development Cooperation, Swiss Development Cooperation and European Union), international partnerships with Global Health Initiatives (GAVI and the Global Fund) and the multilateral program: Improving Women's and Children's Health in DPRK, the MoPH managed to mobilize a considerable contributions from various donors so as to address the resources' gap. Major international cooperation partnerships include:

GAVI: The goal of the GAVI program of health system strengthening (GAVI HSS) is to promote sustainable gains in immunization coverage through targeted investments in health systems

strengthening. The strategic focus of this program is on strengthening health management and service delivery systems at the levels of county and ri.

- GAVI HSS1 (US\$4.3 million 2008 – 2011) funded: Development of a costed sector plan in 2011, extension of the IMCI initiative to 100% of counties nationally in collaboration with other development partners, introduction of middle level management programme for micro planning, integrated surveillance, AEFI and DQS and extension of the cold chain and vaccine management system to county level;
- GAVI-HSS 2 (US\$ 27.5 million from 2014 to 2018). The strategic goals are to contribute to strengthening the capacity of integrated health systems to deliver immunization.

GLOBAL FUND: The Malaria program grant, for US\$ 18 348 551 covering a total of five years from 2010 to 2015. Aims at (1) Reducing malaria morbidity by 50% of the level in 2007 by 2013 and (2) Reducing malaria morbidity in the higher transmission zone by 70% of the level in 2007 by 2013. For TB, amounting to US\$ 53 609 448 covering a total of five years from 2010. After finishing round 8, currently, the programmes are supported through the GF New Funding Model, for the period June 2015 till July 2018: the amount of US\$ 28 796 977 for TB and US\$ 9.6 million for malaria.

The Women's and Children's Health project 2006-2010. Main focus areas: (a) upgrade the technical and human resource elements of the health care delivery system; (b) To improve capacities of health facilities to deliver quality maternal, new-born and child health services; (c) To improve capacity of health managers for planning, implementation, supervision and management; (d) To strengthen involvement of individuals, families and communities in improving the health of women and children.

UNFPA is supporting reproductive health of men and women in four provinces through supply of essential drugs, contraceptives and equipment to ri clinics and county hospitals, development of protocols and standards, capacity building of services providers on EmOC, new born care, STI, CC, FP, professional development of midwives through midwifery education aligned with ICM standards and raising awareness of reproductive health among the population. Since 2008, UNFPA has supported the Government for a nation-wide provision of life-saving reproductive health drugs namely oxytocin and magnesium sulphate. UNFPA also provided emergency reproductive health kits to the health facilities in the areas hit by the natural disasters. Furthermore, UNFPA supports building capacity of the CBS in conducting national census and surveys.

UNICEF supports the immunization of infants and pregnant women nationwide in 10 focus counties. UNICEF also supports national child health days for vitamin A supplementation and de-worming of young children together with other measures to improve the nutritional status of children and women. Moreover, UNICEF supports the capacity building and expansion of IMCI strategy. All of this is underpinned by the continuing provision of essential medicines, especially for illnesses such as diarrhoea and respiratory tract infections in children.

The 2014-2019 **WHO Country Cooperation Strategy** with the Government of DPRK comprises 5 strategic areas of (1) Prevent and control of NCDs; (2) Address women's and children's health to reduce vulnerability and promote disaster risk reduction; (3) Prevent and control communicable diseases; (4) Strengthen health systems to improve service delivery; and (5) Ensure WHO country presence to support sustainable national health development.

During the last cycle, funds were mobilized but not enough to address the gaps to deliver basic health care, international cooperation with UN & international agencies is ongoing but more coordination through a health sector forum is needed. For the next MTSP, it is proposed to work on mobilizing

additional funds both international and national (increase in the national %GDP for health), capacity building of the health managers, to support to NIPHA to: develop national MPH degree in collaboration with the WHO and a reputable institute in the region and to develop an in-service course of PH management for the mid-level managers. It is also recommended to consider a fellowship in Health economics and to improve the international cooperation with UN and international agencies

FOCUS AREA 2 Health Management Information Systems

The MTSP1 identified some gaps including weak linkage between information and planning, sectoral (unintegrated) health information systems and vertical uncoordinated planning. The role of the PHC first levels was reduced to only data collection with no place for data analysis and use of information for local decision making. There was no age disaggregated infant mortality data. At the county and ri levels, there was little or no desegregations of data based on age, place or gender which limits the managers' analysis capacity. Delays in outbreak response were often due to the limited analysis of data at the sub-national levels. Quality of data is another concern and there is a need to strengthen health planning and management skills of health managers particularly at the county level.

Certain activities were proposed to address the situation, however, not all of them were achieved. A HMIS unit was established in the planning department to ensure the link between information and planning. The unit is working on a standardized health information format at different levels.

For the 2016-2020, it is proposed to seek technical assistance to assist in the integration and a strategy to improve the skills in management, analysis and use of information), capacity building of HIS managers and statisticians, to introduce a health statistics software and to update the IT software network in a phased manner.

FOCUS AREA 3 Human Resource Development

The health sector is adequately resourced with medically-trained professionals extending to the PHC level that is based on the section doctor system. The DPRK health system workforce comprising 242 341 staff of all categories(2014). They are distributed on a population basis, providing universal access to health care in both rural and urban areas.

Human Resource Management Barriers and Gaps

- **Lack of training aid tools in training institutions along with outdated pedagogic methodologies;**
- **High turnover after training;**
- **Inadequate number of midwives;**
- **Absence of tools to evaluate the knowledge & skills of health workers.**

Table 5: Categories and Numbers of Health Staff in DPR Korea²²

Category	Ratio	Numbers	% Workforce
Doctor	3.5	87 839	36.2

²² Human Resources for Health, Country Profile, DPRK, MoPH, October 2012 & MoPH 2014 Health Report' Human Resources for Health, Country Profile, DPRK, MoPH, October 2012 & MoPH 2014 Health Report.

Nurse	4.5	110 875	45.8
Pharmacist	0.4	9 404	3.9
Midwife	0.3	7 817	3.2
Other Health personnel (assistants, technicians)	1.1	26 406	10.9
TOTAL		242 341	100

The MOPH is committed to increase the midwife/population ratio and nursing/population ratio in order to establish a more balanced mix of health workforce skills at the primary level of care.

There are about 200 training institutions including 15 medical colleges at central and provincial levels, 66 nursing and midwifery schools, dental prosthesis, massage therapy and X-ray technicians, including pre and in-service training. However, the quality of training was outdated due to the lack of exposure to international standards and practices. The training institutions are under-resourced and there is a focus on knowledge acquisition rather than gaining skills and competency. Finally, there is a high turnover after training.

The Medium Term Human Resource Development Plan identifies three strategic areas for human resource improvement in DPRK: (1) Human Resource Planning (2) Human Resource Management and (3) Health Worker Training.

During the 2011-2015 MTSP, some activities were implemented to strengthen the capacity of the training centres, there were some initiatives to improve the teaching style but not on big scale and they remain confined to the central level. No mechanism to assess the staff competency. It is proposed for the 2016-2020 MTSP to update HR database, to develop a master training plan based on the technical departments' needs, to seek technical assistance to develop tools to assess the health workers' capacity and quality of service delivery at PHC level, to update the pedagogic skills of trainers and to organize and update the training centres nationwide.

For the next cycle, the MoPH identified three focus areas under the Strategic Area Health System:

1. Leadership and Management of Public Health;
2. Health Information System;
3. Human Resources for Health.

Strategic Area 7 HEALTH SYSTEMS									
Goal	To strengthen governance and management of public health and the health management Information System and management of Human Resources for Health								
Focus Area 1 Leadership and Management of Public Health				2016	2017	2018	2019	2020	
Objective	To improve the public health administration and the management through strengthening governance and management capacity								
Strategies	Capacity building in public health, strengthening the role of NIPHA & international collaborations								
Proposed Activities	1. Fellowships: master degree in Health Economics and Public Health								
	2. NIPHA develop MPH national degree in collaboration with regional reputable institutes & WHO								
	3. Study tour for health managers								

	4. Regular orientation to update the managerial capacity of managers					
	5. International cooperation agreements with UN & international agencies					
Focus Area 2 Health Information System		2016	2017	2018	2019	2020
Objective	To integrate the Health Information System and improve the management, analysis and use of information					
Strategies	Assessment & developing a masterplan, upgrade the management, analysis & use of information and update IT equipment					
Proposed Activities	1. TA: to assist management, analysis and use of information					
	2. Development masterplan towards integrated HIS					
	3. Development of plan for improving the analysis & use of data for the Provincial & county levels' managers					
	4. Study tour for HIS managers & Statisticians					
	5. Upgrading of the Health Information Institute					
	6. Introduction of health statistics software					
	7. Updating of the IT software network in a phased manner					
Focus Area 3 Human Resources for Health		2016	2017	2018	2019	2020
Objective	To upgrade the capacity of the health managers and health professionals through strengthening pre and in-service training					
Strategies	Assess quality, develop masterplan, update HRH database, strengthen training centres and trainers					
Proposed Activities	1. Update HR database & needs for training					
	2. Trained and skilled midwives on renewed three-year midwifery curriculum in line with ICM standards					
	3. Develop a master yearly training plan based on the technical departments' needs					
	4. TA: Develop tools to assess the health workers' capacity & quality of service delivery at PHC level					
	5. Update pedagogic skills of trainers					
	6. Organizing and updating training centres nationwide					

STRATEGIC AREA 8 Environmental Determinants of Health

Determinants of health are the factors and environmental circumstances that affect the health of individuals and communities. To a large extent, factors such as where we live, the state of our environment, genetics, our income and education level, and our relationships with friends and family all have considerable impacts on health, whereas the more commonly considered factors such as access and use of health care services often have less of an impact. The determinants of health include the social and economic environment; the physical environment; and the individual characteristics and behaviours.

Focus Area 1: Food Safety

During the last cycle, the 5-year strategic plan (2012 - 2016) was formulated and implemented, including support to strengthen the surveillance laboratory capacity, yearly training of staff on food safety surveillance, guidelines on standards for food safety were developed in 2013 with the WHO support, printed and distributed to HAES and a national surveillance guideline was developed

For the 2016-2020 MTSP, it is proposed to develop & implement 5 year strategic plan, to establish national standards for food safety (Codex Alimentarius), to upgrade the capacity of laboratory surveillance at the central & provincial levels, to build the capacity of the project managers, to update the guidelines on standards for food safety and to continue vigilant food-borne diseases surveillance system

Focus Area 2: Healthy and Hygienic living Conditions

During the last cycle training on environmental risk factors from different industries was conducted, the environmental risk factor surveillance system was put in place and is functioning, IEC activities were implemented, but no assessment of the lab capacity was undertaken and no surveillance guidelines were developed.

For the next cycle, it is proposed to assess the capacity of lab at central & provincial levels to detect different environmental risk factors from different industries, continue surveillance capacity building of specialists, to improve the environmental risk factor surveillance system, to develop the environmental risk factor surveillance guideline, to conduct a national survey on quality of air and to continue the IEC activities.

Focus Area 3: Climate Change

In addition to its impact on the availability of food, environmental factors were also a contributing factor to the resurgence of malaria through creating favourable environmental conditions to the spread of the vectors and causing a rise in malaria cases.

[Limited access to energy particularly in rural areas has forced households to cutting trees for fuel wood. Thus further increasing the threat of soil erosion & flood risk.](#)

The five key environmental issues that act as barriers to attain sustainable development are forest depletion, water quality degradation, air pollution, land degradation and biodiversity.

The 5th Assessment of the Intergovernmental Panel on Climate Change (IPCC Asia) 2014, indicated that hundreds of millions of people will be affected by coastal flooding. The majority of it will be in east, south-east and south Asia, predicting floods as well as drought and water scarcity. In addition, climate change will slow down economic growth, further erode food security and trigger new poverty traps. Climate change will lead to increases in ill-health, increased likelihood of under-nutrition resulting from diminished food production; and increased risks from food-borne, water-borne and vector-borne diseases. The epidemiological and environmental trends in DPRK point to the need for effective climate change adaptation planning particularly in relation to human health.

During the last cycle only one activity among the planned ones was implemented, the IEC activities to raise awareness among the population on the harmful effects of climate change.

For the next Cycle, it is proposed to build capacity of the programme managers, to conduct a vulnerability assessment to consider the impacts of climate change on human health in DPRK, to establish database on climate change, to provide necessary equipment, reagents, guidelines for climate monitoring to central and provincial AES, to continue implementing community-based IEC activities,

to intensify coordination with WHO and other international agencies on surveillance and response planning and to provide advise the MoPH and related bodies on the issues related to climate change.

Focus Area 4: Safe Water

In most areas of DPRK, water is provided through pumping systems with the water sourced from streams and rivers. Ground water supply systems are tapped in the form of open wells and bore wells. Due to the economic difficulties, many of these systems were not well-maintained, leading to increasing water-borne diseases. A water and sanitation assessment of health facilities has noted that in many Ri and County hospitals visited, water is available on an irregular basis. This has impact in particular on infection control in the health facilities. Drinking water could be the vehicle of water-borne diseases, it can also be affected by chemical, physical and radiological contaminants.

According to the 2009 MICS, 99.9% of the DPRK population is reported to have access to an improved water source, 83.2% of population are using improved sanitary facilities.

During the last cycle, standardization of drinking water quality was introduced throughout the whole country and water quality is regularly tested at different inspection points. Updated technologies like Nano techniques have been introduced to purify and disinfect drinking water in urban cities including Pyongyang and are being extended nationwide. The government is pursuing various measures to increase the improved sanitation facilities in rural areas. In addition, the sewage-purification field in Pyongyang was modernized for adequate disposal of various wastes and sewage. A Strategic plan 2016-2019 for hospital infection control was developed and the training of staff on hospital infection control is ongoing.

It is proposed for the 2016-2020 MTSP to continue the collaboration with Ministry of City Management to ensure the quality & quantity of drinking water, to continue testing water quality, to conduct a national survey on quality of water and to establish database on water quality.

Focus Area 5: Emergency Risk Management

Since the 1990s, several natural disasters like floods and storms have been frequently occurring. In 2012, the DPRK was affected by large-scaled flood and strong wind. It resulted in more than 298 054 displaced people, 30 deaths and 494 injured ones. In response, more than one million health workers were mobilized to assist in relief operations, monitor and guard against the spread of communicable diseases. Extreme drought, torrential rains and typhoons occurred in 2014 and 2015 causing damages in some parts of the country.

In response, the government set up the multi-sectoral emergency response coordinating body involving the relevant international organizations to strengthen the preparedness, response and recovery capacity. The Korean Red Cross Society has an extensive network of volunteers that covered every part of the country. The health cluster chaired by the WHO and comprises other agencies like UNICEF, UNFPA and IFRC is working closely with the MoPH.

During the last cycle vulnerability assessment was an ongoing process, guidelines for community mobilization for emergency public health measures was developed, support was provided to enhance the national institutional capacity to manage emergency situations in the areas of preparedness, response and mitigation, an early alert/warning system was developed, community education & capability building to deliver first aid is continuing, support to hospitals' emergency plan and to establish an emergency stock of medicine and supplies

It is proposed for the 2016 - 2020 MTSP to assess the capacity of provincial and county hospitals for emergency response, to update the hospital emergency plan, to conduct vulnerability assessment (all-hazards approach), to undertake regular drills to assess the health sector preparedness capacity, to continue communities' capability building on first aid, to intensify the coordination with the international agencies through the health, nutrition, water and sanitation clusters and to review/update the emergency stock.

Five focus areas have been identified by the MOPH in the strategic area of the social and environmental determinants of health:

1. Food Safety;
2. Healthy and Hygienic Living Conditions;
3. Climate Change;
4. Safe Water;
5. Emergency Risk Management

STRATEGIC AREA 8 SOCIAL AND ENVIRONMENTAL DETERMINANTS OF HEALTH						
Goal	To provide healthy and hygienic living conditions and environment and to strengthen the preparedness and response capacity to all-hazards disasters					
Focus Area 1 Food Safety		2016	2017	2018	2019	2020
Objective	To ensure food safety through improving surveillance and control system					
Strategies	National strategy, Codex Alimentarius, guidelines, capacity building, surveillance and detecting capacity					
Proposed Activities	1. To develop & implement 5 year strategic plan					
	2. Establish national standards for food safety (Codex Alimentarius)					
	3. To upgrade the capacity of laboratory surveillance at the central & provincial levels					
	4. Updating the guidelines & standards for food safety					
	5. Continue vigilant food-borne diseases surveillance system					
Focus Area 2 Healthy and Hygienic Living Conditions		2016	2017	2018	2019	2020
Objective	To strengthen surveillance and control of environmental pollution factors to ensure healthy living conditions					
Strategies	Capacity building, laboratory assessment, surveillance system, IEC activities and national air quality survey					
Proposed Activities	1. To conduct needs assessment of lab capacity at central & provincial levels to build capacity for assessment of different environmental risk factors from different industries					
	2. Training of specialists					
	3. To strengthen the environmental risk factor					

	surveillance system					
	4. To develop the guideline on environmental risk factor surveillance					
	5. To intensify IEC activities to promote healthy living environment & living style					
	6. Conduct national survey on quality of air					
Focus Area 3 Climate Change		2016	2017	2018	2019	2020
Objective	To strengthen research and education about health impacts of climate change					
Strategies	Capacity building, adaptation plans, database, IEC, monitoring equipment, legislation & international collaboration					
Proposed Activities	1. To conduct a vulnerability assessment of the impact of climate change on human health in DPR Korea					
	2. Establish database on climate change					
	3. To provide necessary equipment, reagents, guidelines to central & provincial HAES					
	4. To implement IEC activities to raise the knowledge of the population					
	5. Intensify coordination with WHO & other international agencies on surveillance & response planning					
	6. Advise the MoPH & related bodies on issues related to climate change					
Focus Area 4 Safe Water		2016	2017	2018	2019	2020
Objective	To improve the water safety surveillance system and capacity in order to ensure access to safe drinking water					
Strategies	Inter-ministerial collaboration, regular testing, national survey and database					
Proposed Activities	1. To intensify the collaboration with Ministry of City Management to ensure the quality & quantity of drinking water					
	2. Regular testing of water quality					
	3. To conduct national survey on quality of water					
	4. To establish database on quality of water					
Focus Area 5 Emergency Risk Management		2016	2017	2018	2019	2020
Objective	To Scale up and strengthen the capacity of Emergency Risk Management					
Strategies	Strengthening the health system capacity for emergency response					
Proposed Activities	1. To assess the capacity of provincial and county hospitals for emergency response by 2020					

	2. To update the hospital emergency plan					
	3. To continue conduct vulnerability assessment of all-hazards approach					
	4. To conduct yearly drills to assess the health sector capacity to manage emergency situations					
	5. To continue community education & capability building to deliver first aid					
	6. Strengthening coordination with the international agencies through the health, nutrition, water and sanitation clusters					
	7. To review/update the emergency stock					

III. MONITORING AND EVALUATION:

A. Indicators:

A list of indicators was adopted by the MoPH during the preparation of the last cycle, few more were proposed added to the list and some were deleted for non-specificity or non-relevance (Table 6):

Table 6 Identified Indicators for Monitoring and Evaluation

	INPUTS	Source/Year	Baseline	Target 2020
Health financing %	Govt. Expenditure on health as a % of GDP	MoPH 2014	6.4%	7%
	Doctors per 1000 population	MoPH 2014	3.5	4
	Nurses per 1000 population	MoPH 2014	4.5	4.5
	Midwives per 1000 population	MoPH 2014	0.3	0.6
Health workforce	% health workers trained with WHO standard guidelines of SoPs on emergency risk management		NA	90%
	% planner & health manager trained through routine system		NA	90%
	No of households per HH doctor	MOPH 2009	130 HH	120 HH
	OUTPUTS	Source/Year	Baseline	Target 2020
Service Access	% Ri clinic provide BEmONC & county hospitals CEmONC		NA	90%
	% county hospital with functional referral system with Ri level		NA	75%
	No of provinces with ENC service		NA	10 provinces
	No of provinces with EmOC Services		NA	10 provinces
	No of province with Neo natal Intensive care Unit		NA	10 Provinces
	No of counties implementing IMCI	MoPH 2014	210	210
	% counties with testing facility for HIV blood screening	MOPH 2015	100%	100%
	% HH doctor trained in national section doctor's training package		NA	90%
	TB treatment success rate (DOTS)	WHO 2015	92%	>95%
	% County Hospitals & Clinics with regular water supply & adequate sanitation	Survey 2009	N/A	30%
Supplies	% county facility with low levels of laboratory services		NA	30%
	% Ri clinics with Low stock of consumables (medicines & supplies)		NA	30%
	% County Facilities with low levels of blood services capacity		NA	0%
	% Province & County with effective use of component blood		NA	30%
	% Facilities with access to safe blood services		NA	95%

OUTCOMES		Source/Year	Baseline	Target 2020	
Coverage	Antenatal care coverage (4 visits)	MOPH 2012	93.9%	96%	
	% births attended by skilled health worker	MoPH 2014	100%	100%	
	% child under the age of 1 vaccinated with DPT- Hep B	MOPH 2014	96.2%	98%	
	% child under the age of 1 vaccinated with measles	MOPH 2014	99.1%	99%<	
	% women aged 18 - 45 using modern contraceptive method	UNFPA 2014	78.2%		
	TB detection rate	WHO 2015	92%	> 90%	
	% TB cases MDR TB successfully treated		NA	50%	
	Coverage of De-worming among children under the age of 5	MOPH 2014	98%	98%	
	Coverage of Household by either LLIN or IRS	MOPH 2015	> 80%	>85%	
	% households consuming iodized salt > 15 ppm	MoPH 2009	24.5%	75%	
	% women aged 25 - 45 screened for cervical cancer		NA	>50%	
	Risk factors	% male adults smoking	MOPH 2013	43.9%	35%
		Access to improved water sources (tap and non-tap)			
		% Low birth weight < 2.5 Kg	MoPH 2014	4.74%	3.5%
% mothers exclusively breast-feed their infants until 6 months of age		MoPH 2014	55.1%	97%	
Early Initiation of breastfeeding (within 24 hours)		MOPH 2014	70.6%	75%	
Rate of Stunting in Children		MoPH 2012	27.9%	25%	
% of mothers who is < 210mm		MoPH 2012	10.6%	10%	
% male adults consuming alcohol		MOPH 2009	25.9%	20%	
Hypertension in adults		MOPH 2009	14.5%	15	
IMPACT		Source/Year	Baseline	Target 2020	
Survival	Life Expectancy at Birth	MoPH 2014	72.1	74.5	
	Mortality	U5 Child Mortality Rate	MoPH 2014	20.0/1000	14/1000
		Infant mortality Rate	MoPH 2014	14.2/1000 live births	10/1000 live births
		Maternal mortality ratio	MoPH 2014	62.7/100 000 live births	45/100 000 live births
Morbidity	TB Prevalence	WHO 2014	460/100000		
	Incidence of malaria cases	MoPH 2014	0.4/1000	0/1000	
	HIV prevalence among adults 15-49	MOPH 2015	0	0	
	Prevalence Diabetes Mellitus	MOPH 2014	4.5%	3%	
	Prevalence CVD			150/100 000	
	Prevalence Cancer			10/100 000	
	Prevalence of Injury			15/10 000	
	Incidence of ARI in U5 children	MoPH 2013	20.6%	5%	
Incidence of Diarrhoea in U5 children	MoPH 2013	22.8%	6%		

B. Research:

Three key messages from the 2013 World Health Report: Research for Universal Health Coverage: Universal health coverage, with full access to high-quality services for health promotion, prevention, treatment, rehabilitation and financial risk protection, cannot be achieved without evidence from research. Research has the power to address a wide range of questions about how we can reach universal coverage, providing answers to improve human health, well-being and development; All nations should be producers of research as well as consumers. The creativity and skills of researchers should be used to strengthen investigations not only in academic centres but also in public health programmes;

Research for universal health coverage requires national and international backing. To make the best use of limited resources, systems are needed to develop national research agendas, to raise funds, to strengthen research capacity, and to make appropriate and effective use of research findings.

Identified research agenda in 2016 - 2020 MTSP:

1. Quality Data Assessment of immunization coverage;
2. TB:
Research on the effectiveness on the current DOTS medicine dose;
Community-based KAP survey.
3. Community-based KAP survey on reasons of immunizations drop-out;
4. Research to identify different types of AEFI and potential reasons;
5. Prevalence of Hepatitis antigen carriers;
6. Operational research for elimination of malaria;
7. Survey to assess the prevalence of schistosomiasis;
8. Technical research on meridian;
9. Research to develop and introduce new types of traditional medicine;
10. Research on nutritional status;
11. National survey on quality of air;
12. A vulnerability assessment to consider the impacts of climate change on human health in DPRK;
13. National survey on quality of water;
14. Assessment of the capacity of provincial and county hospitals for emergency response;
15. Risk assessment related to various kinds of hazards;
16. Assessment of mental health service needs

Annexes

Annex I. : Implementation plan 2016 - 2020

IMPLEMENTATION PLAN	2016	2017	2018	2019	2020	Cost	Funding Source	Partners
STRATEGIC AREA 1 COMMUNICABLE DISEASE PREVENTION AND CONTROL								
Focus Area 1 Strengthening of Capacity of HAES nationwide								
1. To establish a multi-sectoral body to rapidly & timely respond to the pandemics & to establish early warning system								WHO
2. To consolidate & continue implementation of IHR (2005) including diseases inspection & quarantine activities at the country entry points								WHO
3. To keep strict disease surveillance at the primary health care level								WHO
4. Overseas training of Epidemiologists								WHO
5. Local training for Epidemiologists								WHO
6. Establishment of 2 regional biosafety level 3 in HAEI (South Hamgyong and North Pyongan Provinces)								WHO
7. Provision of 100 diagnostic kits (mumps, pertussis typhoid and paratyphoid)								WHO
8. to continue producing IEC materials for community education on control and prevention of communicable diseases								WHO
9. Development, printing & distribution of guidelines on laboratory based-active surveillance								WHO
10. Capacity building for the rapid response team								WHO
11. Development of operation guidelines for the rapid response team								WHO
12. Establishment of rapid notification e-system in 100 cities/counties								WHO
13. To intensify collaboration & cooperation with external parties								WHO/UNICEF
Focus Area 2 Immunization and Control of VPDs								
1. To plan & implement an equitable high immunization coverage								WHO/UNICEF/GA VI
2. Update guidelines and capacity building on immunization, management & maintenance of cold chain								WHO/UNICEF/GA VI
3. Ensure quality & efficient vaccines are delivered nationwide								WHO/UNICEF/GA VI
4. Introduce new vaccines (MR, PCV & Rotavirus)								GAVI
5. Continue vigilant surveillance of VPDs in order to maintain polio free, MNTE status, measles elimination & hepatitis control								WHO/UNICEF/GA VI

- | | |
|---|---------------------|
| 6. Continue monitoring & reporting to investigate & deal with AEFI | WHO/UNICEF/GA
VI |
| 7. Update IEC materials to reflect introduction of new vaccines | WHO/UNICEF/GA
VI |
| 8. Continue supervision to ensure injection safety & waste management | WHO/UNICEF/GA
VI |

Focus Area 3 Control of Infectious Diseases

- | | |
|---|---------------------------|
| 1. To continue providing DOTS treatment nationwide | GF/WHO/UNICEF |
| 2. To update, in phased manner, X-ray machines & microscopes | GF/WHO/UNICEF |
| 3. To continue the expansion of MDR TB treatment centres to all provinces | GF/WHO/UNICEF |
| 4. To conduct community-based KAP survey | GF/WHO/UNICEF |
| 5. To continue IEC/promotion activities to prevent TB & significantly reduce the rate of defaulters | GF/WHO/UNICEF |
| 6. To conduct a research on: effectiveness on the current DOTS medicine dose | GF/WHO/UNICEF |
| 7. To continue the M&E activities. | GF/WHO/UNICEF |
| 1. To continue a vigilant HIV/AIDS & RTIs surveillance system | WHO/UNICEF/UN
FPA/UNDP |
| 2. Study tour for program managers | WHO/UNICEF/UN
FPA/UNDP |
| 3. Provision of HIV diagnostic kits to sentinel surveillance sites | WHO/UNICEF/UN
FPA |
| 4. Update/print and distribution of HIV/AIDS control guidelines | WHO/UNICEF/UN
FPA |
| 5. To develop IEC materials & conduct IEC activities for HIV/AIDS prevention | WHO/UNICEF/UN
FPA/UNDP |
| 1. TA to assist updating the National strategy for Hepatitis Control | WHO |
| 2. To train specialists & lab technicians | WHO |
| 3. To undertake IEC activities to raise awareness about prevention of Hepatitis | WHO |
| 4. Study tour of specialists and managers of the Hepatitis program | WHO |
| 5. Capacity building of health institutes on diagnosis & treatment of hepatitis | WHO |
| 6. To keep vigilant surveillance system | WHO |

7. Maintain Hepatitis B high vaccination coverage (EPI Programme)			GAVI/UNICEF/WHO
8. Conduct a study on prevalence of hepatitis antigen carriers			WHO
1. To continue and consolidate IEC activities to the community on malaria prevention			GF/UNICEF/WHO
2. To strengthen the capacity of malaria program: procuring PCR to the central level; mosquito survey kits for the county rapid response teams; mosquito nets, drugs and insecticidal; Entomology training for the county at the provincial level.			GF/UNICEF/WHO
3. To keep a vigilant M&E system			GF/UNICEF/WHO
4. To implement the operational research program for elimination of malaria			GF/UNICEF/WHO
5. Develop national strategy for control of STH & Trematodes			WHO/UNICEF
6. Provide treatment and update diagnostic & treatment capacity especially at the PHC level			WHO/UNICEF
7. Conduct survey to assess the prevalence of schistosomiasis			WHO
STRATEGIC AREA 2 NON COMMUNICABLE DISEASE PREVENTION AND CONTROL			
Focus Area 1 Chronic diseases (Cancer, Diabetes, cerebral and cardiovascular)			
Establish/update national NCD strategy	5000		WHO
Capacity building of NCD managers (study tour and/or TA & training)	30 000		WHO
Establish a network of NCD focal points at all levels & develop their ToR			WHO
Expansion of WHO PEN (Package of Essential NCD interventions in PHC settings & train more section doctors on registration, treatment and follow-up of NCD			WHO
Continue and consolidate the health promotion activities			WHO
Standardize definitions so as monitor the prevalence through the regular health information system			WHO
Print and distribute guidelines on prevention & treatment of chronic diseases to PHC level			WHO
Provision of tools (detecting blood sugar & cholesterol) to improve the quality of the NCD diagnosis & treatment at PHC level			WHO/UNICEF

Focus Area 2 Injury prevention	
Establish injury surveillance unit	WHO
Establish database on injuries and provide IT equipment	WHO
Conduct survey to assess the main causes of injury	WHO
Continue IEC campaigns for injury prevention	WHO
Introduce road safety project	WHO
Focus Area 3 Mental Health	
Assessment of current mental health service needs in DPR Korea	WHO
Establish/update a national mental health strategy	WHO
Ensure requirements of diagnosis and treatment are provided	WHO
Focus Area 4 Disability and elderly care	
Fellowship on geriatrics	WHO
Develop a multi-sectoral national strategy on care of the elderly	WHO
Develop guidelines & references for elderly health care	WHO
Establish a geriatrics sections at the central level and 4 provinces by 2020	WHO
In collaboration with KFDP address some of the preventable causes of Disability: increase the number Cataract surgery and extend to the county level: training, surgical instruments and IOL	WHO/KFDP
Introduce Community-Based Rehabilitation (CBR), involving the household doctors	WHO/KFDP
Focus Area 5 Tobacco control	
To strengthen the research to develop materials helpful for stop smoking	WHO/UNDP
To develop effective IEC materials for stop smoking	WHO/UNDP
Advise the government on legislation matters	
STRATEGIC AREA 3 STRATEGIC AREA 3 WOMENS AND CHILDRENS HEALTH	
Focus Area 1 Maternal and Neonatal Health	
To consolidate the referral system for complicated pregnancies (transport and communication)	UNFPA/UNICEF/ WHO
To expand and improve the capacity of EMOC & ENC at hospital level nationwide by 2020	UNFPA/UNICEF/ WHO
3. Regular supervision to ensure quality ANC, delivery & post-natal care	UNFPA/UNICEF/ WHO

4. Ensure blood safety, laboratory services, equipment supply at the first referral (county) level	UNFPA/UNICEF/ WHO
Technical support to the Neonatal Centre in Pyongyang Maternity Hospital	UNICEF/WHO
Training of provincial trainers on essential neonatal disease care & New-born referral care in all provinces & all counties by 2020	UNICEF/WHO
7. Provision of necessary medicine & consumables to obstetric & neonatal wards in provincial hospitals and county hospitals	UNFPA/UNICEF/ WHO
8. Supervision follow-up on training & feedback to ensure quality neonatal service in provinces and counties trained	UNICEF/WHO
Focus Area 2 Reproductive Health	
Provision of modern contraceptive methods & ensure equitable and regular supply of family planning methods	UNFPA
Capacity building to improve the quality of safe abortion & post-abortion care including counselling on family planning	UNFPA/WHO/UNI CEF
Introduction of medical abortion	UNFPA/WHO
Capacity building on the RTIs' management (diagnosis, treatment, medicine, reagents & supplies)	UNFPA/WHO/UNI CEF
Develop and implement IEC activities for community on reproductive health issues	UNFPA/WHO/UNI CEF
To expand breast & cervical cancer early detection system through massive screening to all provinces by 2020	UNFPA/WHO/UNI CEF
To update the technical capacity of 5 provincial hospitals to provide surgical treatment of cervical & breast cancer	UNFPA/WHO/UNI CEF
Focus Area 3 Child Health	
To ensure the quality of IMCI strategy through regular supervision and feedback	WHO/UNICEF
Ensure regular equitable supply of essential drug, equipment & consumables	WHO/UNICEF
Continue community education & involvement	WHO/UNICEF
Focus Area 4 Nutrition	
Promotion of optimal IYCF as well as ECD practices at different levels.	WHO/UNICEF
Provision of micronutrients supplements to WRA , PLW & U5 children nationwide	
Undertaking national nutrition survey and/ or formative research to identify	

the immediate causes of undernutrition and the sectoral linkages.
Development of Universal Salt Iodization (USI) national strategy and plan of action.

Capacity building of health workers at central, provincial, counties' and grass root levels.
Development of C4D strategy and action plan to promote optimum IYCF practices.
Development of national strategy and action plan to control Soil-Transmitted Helminths (STH).
Scaling-up and improve quality of CMAM services (screening, early referral of wasted children and treatment of SAM).

WHO/UNICEF
WHO/UNICEF/WFP
WHO/UNICEF/UNFPA

STRATEGIC AREA 4 Improved Quality of Health Service

Focus Area 1 Patients' Safety and Hospital Infection Control

1. Establishment of patient's safety surveillance system
2. Building capacity of staff at central, provincial and regional levels
3. Establish database for hospital infection control
4. Establish model surveillance system in 4 sites
5. Provide equipment for waste management in the model sites
6. Provide Culture Sensitivity Kits for the 4 model sites

WHO
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WHO

Focus Area 2: Improving Specialized Medical Care

1. Capacity building on blood safety & quality assurance of blood
2. Provision of blood bags & reagents to provincial & county hospitals
3. Provide specialized medicine for provincial hospitals and county hospitals
4. Upgrade the anaesthetic equipment in provincial and county hospitals
5. Provision of 20 X-ray machines, 20 endoscopy, 20 ultra-sonogram and 20 electromyogram, 2 digital X-ray (light bulb) & 20 condensers.

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Focus Area 3: Section Doctors' System

Provision of 2 500 section doctors' bags every year for 5 years
Training on standard package for 2 500 household doctors by 2020
Provide 2 500 section doctors with mobile phones and or Ipads for referral system communication

WHO/UNICEF
WHO/UNICEF
WHO/UNICEF

Focus Area 4: Integration of Modern and Traditional Medicine

1. Conduct clinical trials on the effect of mixed treatment on certain diseases

WHO

2. Provide latest publications on the mixed treatment approach	WHO
3. Encourage exposure and exchange through regional conferences	WHO
Focus Area 5: Telemedicine System	
1. Telemedicine system upgraded for diagnosis and treatment	WHO
2. Introduce WHO Emergency surgical procedures package	WHO
3. Upgrade the IT equipment in a phased manner	WHO
4. Capacity building of staff on the use of telemedicine	WHO
Focus Area 6: Emergency Health Services	
1. Establish a central control centre and IT equipment	WHO
2. Establishment of national emergency health communication system	WHO
3. Procurement of equipped ambulances	WHO
4. Training on pre-hospital first aid	WHO/IFRC
5. Establish EHS centres on main highways.	WHO
Focus Area 7: Infrastructure	
1. Physical upgrading of 500 Ri clinics/hospitals, 50 County hospitals	WHO
2. Physical upgrading of 2 blood centres	WHO
3. Equipment & reagents for blood safety in 50 county hospitals	WHO
4. Equipment & reagents for laboratory in 50 county hospitals	WHO
STRATEGIC AREA 5: Development of Medical science and Technology	
Focus Area 1 Koryo Traditional Medicine	
1. Support the technical research on meridian	WHO
2. Develop and introduce new types of traditional medicine	WHO
3. Improve the quality of telemedicine link	WHO
4. Printing of literature on traditional medicine	WHO
Focus Area 2 Strengthening Research Capacity	
1. Upgrade the WHOCC	WHO
2. Upgrading of the research capacity of the NIPHA	WHO
3. Regular updating of the recent developments in medical science & technology	WHO
4. Translation & printing of technical literature and guidelines;	WHO
5. Arrange twinning/network and exchange of the WHOCC with other TM academic, scientific & research institutes in the region including fellowships training & study tours for researchers	WHO
Strategic Area 6: Improved Medicine and Medical Supplies for Health Services	

Focus Area 1: Strengthening the Capacity of Quality Control

TA, to:

Upgrade the technical capacity of NRA and NCL;

Training of staff in Quality Control agencies.

WHO

Provision of equipment, instruments and reagents for quality control

WHO

Strengthening exchange & collaboration with other quality control institutes in the region

WHO

Focus Area 2: Local Production

1. TA to assess Pyongyang Pharmaceutical Factory and Pyongyang Vaccine Production Factory for GMP certification

WHO

2. Support to the local vaccine, medicine & medical materials production:

Procurement of equipment;

WHO

Procurement of raw materials.

Focus Area 3: Essential Medicine and Logistics

1. Continue the expansion of KLMIS & obtain feedback from users to update the system

UNFPA/WHO/UNI
CEF/IFRC

2. Establish medical equipment registration system

UNFPA/WHO/UNI
CEF/IFRC

3. Training of KLMIS users

UNFPA/WHO/UNI
CEF/IFRC

4. Update the IT equipment in phased manner.

5. Procurement of 14 trucks (2 central & 12 provinces)

UNFPA/WHO/UNI
CEF/IFRC

6. Procurement for spare parts & tools for CMW

UNFPA/WHO/UNI
CEF/IFRC

7. Construction of annex warehouse central

UNFPA/WHO/UNI
CEF/IFRC

8. Procurement of handling tools (central + 9 provinces);

UNFPA/WHO/UNI
CEF/IFRC

9. Rehabilitation of old compartment central

UNFPA/WHO/UNI
CEF/IFRC

Focus Area 4: Rational Use of Drugs

1. Development of national strategy and action plan to address antimicrobial resistance

WHO/UNICEF/IF
RC

2. Adapt, print and distribute WHO guidelines on Essential medicine

WHO/UNICEF/IF

3. Training of practitioners on rational use of drugs	RC WHO/UNICEF/IF
4. Supervision to follow-up the practice	RC WHO/UNICEF/IF
5. Establish a reference laboratory to ensure quality of drugs;	RC
6. Establish national surveillance system for antimicrobial resistance	WHO
7. Conduct study on antimicrobial resistance	WHO/UNICEF
Strategic Area 7 HEALTH SYSTEMS	
Focus Area 1 Leadership and Management of Public Health	
Overseas training: master degree in Health Economics and Public Health	WHO
NIPHA develop MPH national degree in collaboration with regional reputable institutes and WHO	WHO
Study tour for health managers	WHO
Regular orientation to update the managerial capacity of managers	WHO
International cooperation agreements with UN & international agencies	WHO/UNICEF/UN FPA
Focus Area 2 Health Information System	
TA: to assist management, analysis and use of information	WHO/UNICEF/UN FPA
Development masterplan towards integrated HIS	WHO/UNICEF
Development of plan for improving the analysis & use of data for the Provincial & county levels' managers	WHO/UNICEF/UN FPA
Study tour for HIS managers & Statisticians	WHO/UNFPA
Upgrading of the Health Information Institute;	WHO/UNFPA
Introduction of health statistics software	WHO/UNICEF/UN FPA
Updating of the IT software network in a phased manner	WHO/UNICEF/UN FPA
Focus Area 3 Human Resources for Health	
Update HR database & needs for training	WHO
Develop a master yearly training plan based on the technical departments' needs	WHO
TA: Develop guidelines & tools to assess the health workers' capacity &	WHO/UNICEF

quality of service delivery at PHC level	
Update pedagogic skills of trainers	WHO/UNICEF
Organizing and updating training centres nationwide	WHO/UNICEF
STRATEGIC AREA 8 SOCIAL AND ENVIRONMENTAL DETERMINANTS OF HEALTH	
Focus Area 1 Food Safety	
To develop & implement 5 year strategic plan	WHO
Establish national standards for food safety (Codex Alimentarius)	WHO
To upgrade the capacity of laboratory surveillance at the central & provincial levels	WHO
Updating the guidelines & standards for food safety	WHO
Continue vigilant food-borne diseases surveillance system	WHO
Focus Area 2 Healthy and Hygienic Living Conditions	
To conduct needs assessment of lab capacity at central & provincial levels to build capacity for assessment of different environmental risk factors from different industries	WHO/UNDP
Training of specialists	WHO/UNDP
To strengthen the environmental risk factor surveillance system	WHO/UNDP
To develop the guideline on environmental risk factor surveillance	WHO/UNDP
To intensify IEC activities to promote healthy living environment & living style	WHO
Conduct national survey on quality of air	WHO/UNDP
Focus Area 3 Climate Change	
To conduct a vulnerability assessment of the impact of climate change on human health in DPR Korea	WHO/UNDP
Establish database on climate change	WHO/UNDP
To provide necessary equipment, reagents, guidelines to central & provincial HAES	WHO/UNDP
To implement IEC activities to raise the knowledge of the population	WHO/UNDP
Intensify coordination with WHO & other international agencies on surveillance & response planning	WHO/UNDP
Advise the MoPH & related bodies on the issues related to climate change	WHO/UNDP
Focus Area 4 Safe Water	
To intensify the collaboration with Ministry of City Management to	WHO/UNICEF/UN

ensure the quality & quantity of drinking water		DP
Regular testing of water quality		WHO/UNICEF
To conduct national survey on quality of water		WHO/UNICEF
To establish database on quality of water		WHO/UNICEF
Focus Area 5 Emergency Risk Management		
To assess the capacity of provincial and county hospitals for emergency response by 2020		WHO/UNICEF/IFRC/UNFPA
To update the hospital emergency plan		WHO/IFRC
To continue conduct vulnerability assessment of all-hazards approach		WHO/UNICEF/IFRC
To conduct yearly drills to assess the health sector capacity to manage emergency situations		WHO/UNICEF/IFRC
To continue community education & capability building to deliver first aid		UNICEF/IFRC
Strengthening coordination with the international agencies through the health, nutrition, water and sanitation clusters	WHO	WHO/UNICEF/IFRC/UNDP/UNFPA
To review/update the emergency stock		WHO/UNICEF/IFRC/UNFPA

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