Kyrgyz Republic

PRIMARY HEALTH CARE QUALITY IMPROVEMENT PROGRAM (P167598)

Environmental and Social Systems Assessment

April 2019

ABBREVIATIONS AND ACRONYMS

CFM	Centers of Family Medicine
ESSA	Environmental and Social System Assessment
FAP	Feldsher-midwife point [village based first-aid station]
GDP	Gross Domestic Product
GFD	Group of Family Doctors
HCC	Health Care Center
HCO	Health Care Organization
HCW	Health Care Waste
HCWM	Health Care Waste Management
IGFD	Independent Group of Family Doctors
MHIF	Mandatory Health Insurance Fund
MW	Medical Waste
MWM	Medical Waste Management
IDA	International Development Association
KR	Kyrgyz Republic
MHI	Mandatory Health Insurance
MOH	Ministry of Health
PHC	Primary health care
PHCI	Primary health care institutes
PforR	Program-for-Results
POP	Persistent organic pollutants
RFF	Results Based Financing
SIET	State Inspection on environmental and technical security under the Government of the Kyrgyz Republic
SIC	Sanitary and infection control
SAEPF	State Agency for Environmental Protection and Forestry under the Government of the Kyrgyz Republic
SDC	Swiss Agency for Development and Cooperation
SWAp	Sector-Wide Approach
UNDP	United Nations Development Programme
TB	Tuberculosis
WHO	World Health Organization

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EXECUTIVE SUMMARY

This Environmental and Social Systems Assessment (ESSA) has been prepared for the World Bank financed Kyrgyzstan Primary Health Care Quality Improvement Program (the Program) with an objective to the assess the environmental and social risks and effects of the Program. Thematic areas identified under the Program (sustainable quality improvement mechanisms in service delivery, health financing, and governance for quality improvement – Program boundary) focusing on Primary Healthcare will largely bring positive environmental effects to the health sector. The three priority areas identified under the Program and corresponding Disbursement Link Indicators (DLIs) do not recommend activities/actions that will cause significant harm to the environment and/or resulting in adverse environmental and social impacts that are sensitive, diverse or unprecedented or irreversible.

Among six core principles that guide the ESSA analysis (Bank Policy and Bank Directive Program-for-Results Financing), from environmental and social stand point, three are considered relevant for the KG Health PforR and include:

Core Principle 1: Environmental and Social Management procedures and processes aim to promote environmental sustainability in Program design; avoid, minimize, or mitigate adverse impacts, and promote informed decision-making relating to the Program's environmental impacts.

Core Principle 3: Public and Worker Safety, Environmental and social procedures and processes aim to protect public and worker safety against the potential risks associated with exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program.

Core Principle 5: Due consideration to be given to the needs or concerns of vulnerable groups. This gives attention to vulnerable and disadvantage groups, including, as relevant, the poor, the disabled, women and children, the elderly, or marginalized ethnic groups. If necessary, special measures are taken to promote equitable access to the Program benefits.

From the environmental standpoint, ESSA assesses Government's system, capacity and performance through review of the national and sectoral laws relevant to the Program, regulations, protocols on public health issues but specifically healthcare waste management services (handling, transportation and ultimate disposal) and occupational health and safety (OHS) aspects in the primary health care. The ESSA is a program document prepared by the Bank staff based on the data and information provided/collected from Ministry of Health, Mandatory Health Insurance Fund, and other stakeholders.

An analysis of HCWM cycle right from generation at PHCIs to waste collection points (such as hospitals and health care centers) and ultimate HCW disposal was carried out. Review of Program relevant policies, legal framework and program documents, interviews with potential stakeholders and visit of the primary health care and sanitary control organizations was also carried out. The analysis led to identify the following environmental risks in the primary healthcare waste management system:

- Risks of infection for medical and sanitary personnel when providing medical care to patients either at home or at healthcare facilities (primary health care facilities (FAPs (village based first-aid and obstetrician service station), Groups of Family Doctors, Health Care Centers, Health Care Organization, laboratories, emergency medical services, medical posts in educational institutions, etc.);
- Risks of patients' infection at healthcare facilities with poor/inadequate infectious and epidemiological control (infection transmitted through air, water and/or the use of poorly sterilized medical instruments;
- Risks of air, soil and water contamination due to inadequate management and handling of healthcare waste;

Disposal of radioactive waste was not considered for analysis, as it is largely generated at the only Oncology Center in Bishkek, a tertiary level healthcare facility, outside the Program boundary.

The regulatory framework in the health sector is still evolving and has multilevel (national, sub-national) legislation and regulations. In addition to national laws there is a system of sub-laws, sectoral decrees,

guidelines and regulations. The country has also developed and adopted National Plan for Public Health Emergency Preparedness. Many laws and regulations have also been developed to support international agreements. Majority of these laws are relevant to the Program, particularly those related with healthcare waste management and infection control. However, analysis carried out through review of relevant documents and interviews with the stakeholders suggest that compliance with the laws, guidelines and protocol remains low due mainly to: (i) a large number of laws, sub-laws, orders, guidelines to comply with, (ii) low budgetary support and human resource provided, (iii) decrees and orders issued by the MoH are applicable only to the public sector health system with little obligations for compliance to the private sector.

The country has well-defined institutional hierarchy to support healthcare system including healthcare waste management. The Public Health Service is headed by the Chief State Sanitary Doctor - the Deputy Minister of Health. A Department of State Sanitary and Epidemiological surveillance has offices at regional, city, and district level. The sanitary-epidemiological councils are established in all districts for coordination and resolve issues of development, management, and improvement of the sanitary-epidemiological service, acting in accordance with the regulation approved by the Chief State Sanitary doctor. There is however a critical shortage of specialists as well as skills at PHCIs of ensuring safety against infection and to deal with the healthcare waste management and infection control.

Despite significant progress achieved in recent years in multilateral epidemiological, environmental and infection control systems, the systemic gaps exist in the organization of public health. The analysis shows that (i) the system for infection control is reasonably adequate but limited to a few cities and hospitals, and (ii) the system for management/disposal of healthcare waste is generally poor at PHCIs, particularly in remote rural areas. Much of the medical waste from PHCIs is sent to hospitals overwhelming their waste handling capacity. The UNDP/GEF and Swiss Agency for Development and Cooperation projects initiated an alternative healthcare waste disposal generated at PHCIs but it has relatively limited coverage and operation at this point.

Gap analysis led to the identification of the following key issues:

Systemic: There are too many laws/ regulations on healthcare waste management. However, these are only applicable to public sector facilities. Private facilities do not follow state regulations in HCWM due to the gaps in the legislation. Further, sector specific standards and procedures are in infancy particularly for primary healthcare facilities. Existing HCWM model revolves around secondary healthcare level (mainly hospitals) and is overloaded. Hospitals can refuse taking waste from PHCIs. System for the management/disposal of medical waste and infection control is generally poor at PHCIs, particularly in remote rural areas.

There is also lack of information and little data is available on the environmental impacts of inadequate healthcare waste management. Interviews with the concerned primary healthcare staff did not provide any evidence on the mechanism for maintaining database on soil, air and water pollution resulting from inadequate healthcare waste management practices. Whether staff at the primary healthcare facilities had any waste care and handling related infection, OHS related issues, no data could be obtained. In terms of hardware, adequate HCW handling equipment (collection and transportation) and disposal infrastructures at primary level (waste containers, color plastic bags, transportation means adequately equipped, disposal facilities, etc.), is lacking. Equipment for processing and decontamination of medical plastic disposable devices (except syringes), inefficient handling and storage of medical devices and products is also inadequate. Expensive waste transportation system, the lack of proper HCW storage facilities, lack of availability of in-house equipment to properly dispose wastes also add to the HCWM issue.

Staff Training*:* There is no systematic approach to the training of medical and nursing personnel for the HCWM resulting in occupational health and safety risks for medical staff and to the public and environment. Existing capacity building and training program for the specialists working in the remote areas is poor. Independent experts also note lack of personnel, knowledge, experience, skills, and capability in all areas of infection control and HCWM.

From the social perspective, the overarching risk for the PHC Quality Improvement Program is that of ensuring that there is equitable access to the Program's benefits, particularly for vulnerable groups. Underlying reasons for this risk include: limited accessibility to health services for maternal care and diabetes, despite the establishment of protocols for these conditions; increased financial burden of co-payments or informal payments for low-income groups due to ambiguities in the State Guaranteed Benefit Package (SGBP) and Additional Drug Package (ADP) programs; implications for patient protection and the right of patients to receive high quality medical care due to limited treatment capacity at the PHC level; and lack of systemized feedback mechanisms at the PHC level. Finally, only minor refurbishment within existing facilities that will

not impact private assets or livelihoods will be supported under this Program. No impact on private assets or livelihoods is therefore expected.

The ESSA concludes that primary healthcare system in the country has the capacity to implement the PHC Quality Improvement Program, with the caveat that support is provided to address the issues of lack of clarity in the primary health care model, ambiguity regarding the SGBP's package of services, inconsistent implementation of clinical protocols and training of PHC providers.

Recommended Actions for Environmental Risks

Recommended actions to mitigate environmental risks associated with the program have been discussed and agreed with MoH. The estimated time frame for the implementation of recommended actions is the program implementation duration; 5-6 years.

- ***Review and updating sector standards and procedures.*** It is recommended to the Government to develop harmonized sector standards and procedures (equally applicable to both public and private sector) for integrated infection and pollution control at PHC level, and management of healthcare waste. The inter-ministerial committee including MoH, MHIF, SAEPF, SIET and other responsible agencies need to review and refine the system of mutual collaboration and responsibilities with adequate budgetary allocations.
- ***Development and strengthening of information base.*** The ESSA recommends to the MOH and MHIF to strengthen the information base for preventing infection diseases environmental pollution at PHC level. Database on occupational health and safety aspects in reference to HCWM, and soil, air and water quality indicators need to be setup and made accessible to the public.
- ***Developing and implementation of training***. The ESSA recommends that unified and integrated training system on ensuring occupational health and safety, infection control and HCW management both for the public and private sector facilities be developed and piloted.
- ***Piloting HCWM models.*** The ESSA also recommends to the Government to set up model HCWM program at the selected districts and PHCIs with adequate budget allocated. The pilot can then be extended to cover all PHCIs after the Program completion.

Recommended Actions for Social Risks

The following actions have been recommended to be taken into consideration for enhancing the Program's design, and to minimize the social risks that have been outlined in chapter 7. As a result, they are now embedded in the Program's technical design and have been incorporated into the Program's main focus of implementation support[1] and tentative implementation schedule.[2] Their implementation performance will be monitored by the Bank's team in its regular implementation support activities.

- ***Incentivizing PHC facilities to pilot a new mechanism to collect patient feedback on a regular and consistent basis.*** If implemented effectively, this will be useful to improve patients' perceptions regarding the professionalism and veracity of family care physicians and serve a means for PHC facilities to track their performance while identifying challenges and bottlenecks.

- ***Providing technical support for developing a methodology for revising the coverage of the SGBP package and instituting a mechanism for regulating prices of the medications that are included in the ADP.*** Technical assistance in both areas will be essential for patients, particularly from low-income and vulnerable groups to access PHC. In addition, awareness raising of patients' rights and entitlements should also be an integral aspect of these adjustments.

[1] Table A7.1. Main focus of implementation support. Program Appraisal Document for Kyrgyz Primary Healthcare Quality Improvement Program

[2] Table A7.3. Tentative implementation schedule (based on estimated effectiveness of December 2019-March 2020). Program Appraisal Document for Kyrgyz Primary Healthcare Quality Improvement Program

- ***Monitoring the implementation of clinical protocols for maternal health and diabetes.*** This will enable the Mandatory Health Insurance Fund (MHIF) to establish targets and benchmarks for managing these health conditions, and to incentivize PHC facilities to adhere to these protocols on a consistent basis.

- ***A consolidated framework for continuing training and capacity building of PHC staff would be essential for patient protection and the right of patients to receive high quality medical care.*** ICT-based solutions for training would be particularly helpful for staff based in remote areas, especially females who may have difficulties traveling long distances from their residence.

ESSA Disclosure and Public Consultations

The ESSA has been prepared in consultation with major stakeholders, review of reports on HCWM produced by bilateral organizations and donors, and data received from the relevant Government departments. The draft ESSA and its findings were consulted with key stakeholders at a workshop in Bishkek on February 15th. For this purpose, the hard copy of the ESSA in Russian and English was disseminated among key stakeholders on January 21, 2019, and on February 11, 2019 its soft copy was published on web-site of the Ministry of Health of the KR. In the public consultation organized in Bishkek major stakeholders including Government, civil society, private sector, international donor agencies, medical facilities and representatives of nongovernment organizations participated. Major feedback received from the public consultation was incorporated into the final ESSA. The participants suggested: (i) to have better coordination amongst various Government organization for HCWM particularly between health and environment departments, (ii) to recommend additional funds for HCWM, and the need for developing stand-alone HCWM system for primary healthcare system, and (iii) to develop an integrated HCWM rules and regulation for public and private healthcare. The final ESSA report is also posted at the websites of MOH and the World Bank.

1. BACKGROUND

1.1 Program for Results Financing and the Environmental and Social Systems Assessment

This Environmental and Social Systems Assessment (ESSA) Report has been prepared for the World Bank's Program for Results (PforR) financing for the ***Kyrgyz Primary Health Care Quality Improvement Program (the Program),*** with a specific focus on the primary healthcare (PHC) sector.

PforR financing is one of the World Bank's financing instruments. Its unique features include: 1) linking disbursement of funds to the achievement of specific program results, 2) supporting clients in enhancing the effectiveness and efficiency of their development programs to achieve tangible and sustainable results, 3) strengthening the institutional capacity and the processes and procedures needed for programs to achieve their desired results, and 4) assuring that World Bank financing is used appropriately and that the Program's environmental and social aspects are addressed.

The ESSA is a comprehensive assessment of the systems that the country has in place for managing environmental and social effects (defined as benefits, impacts and risks), and that are associated with the proposed set of Program related investments. It also includes an assessment of the government's institutional capacity to plan, monitor and report on environmental and social management measures. Its findings are intended to ensure that programs supported by PforR financing are implemented in a manner that maximizes potential environmental and social benefits and avoids, minimizes or mitigates adverse environmental and social impacts and risks. Essentially, the ESSA process seeks to improve institutional performance related to the program's development objectives. The findings of the ESSA inform preparation of the Program Action Plan (PAP) that the government is expected to use to bridge any significant gaps in existing environmental and social management systems in line with the sustainability principles of the PforR (see Box 1).

Box 1. Core Principles for ESSA

Core Principle 1: General Principle of Environmental and Social Management. This core principle aims to promote environmental and social sustainability in Program design; avoid, minimize, or mitigate adverse impacts, and promote informed decision-making relating to the Program's environmental and social impacts.

Core Principle 2: Natural Habitats and Physical Cultural Resources. This core principle aims to avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program.

Core Principle 3: Public and Worker Safety. This core principles aims to protect public and worker safety against the potential risks associated with: (i) construction and/or operation of facilities or other operational practices under the Program; (ii) exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program; and (iii) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.

Core Principle 4: Land Acquisition. This core principle aims to manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assist affected people in improving, or at the minimum restoring, their livelihoods and living standards.

Core Principle 5: Indigenous Peoples and Vulnerable Groups. This core principle aims to give due consideration to the cultural appropriateness of, and equitable access to, Program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups.

Core Principle 6: Social Conflict. This core principle aims to avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

Compared to the World Bank's investment lending operations, the PforR financing modality has a different approach to assess and address environmental and social effects related to the Program. For the World Bank's investment lending operations, the Borrower is required to comply with World Bank Safeguard Policies applicable to the project or program and to prepare the relevant safeguard instruments to avoid, mitigate and manage its environmental and social impacts. In contrast, for PforR operations, during project preparation the World Bank task team is responsible for conducting the ESSA, and for providing support as warranted for the implementation of the agreed Program Action Plan based on the ESSA findings.

Specifically, the ESSA exercise is designed to consider the consistency of the existing country systems with the proposed PforR operation in the PHC sector along two dimensions: (1) systems as defined in the legal and regulatory framework of the country, and (2) the capacity of institutions to effectively utilize the country's environmental and social management systems to manage any environmental and social effects, as well as the proposed set of actions in the PAP that are intended to address major gaps in the system as identified in the ESSA with respect to the core principles of Bank Policy Program-for-Results Financing.

1.2 Environmental and Social Systems Assessment for Primary Health Care Quality Improvement Program

For this PforR operation on the ***Kyrgyz Primary Health Care Quality Improvement Program***, this ESSA Report has been prepared by World Bank staff based on data and information compiled from the Ministry of Health and consultations with other stakeholders. It examines existing environmental and social management systems in the Kyrgyz Republic as applicable to the heath sector and to the set of activities that this operation will support. It describes the potential environmental and social effects associated with activities supported by this PforR, and assesses institutional roles and responsibilities as related to its implementation and describes current capacity and performance to carry out those roles and responsibilities. It also considers public participation, social inclusion and grievance redress mechanisms that can be applied to PforR activities.

Inputs analyzed for this ESSA include the following:

Desk Review of policies, legal framework and program documents: The review examined the set of national policy and legal requirements related to environment and social management in the health sector. The review also included supervision documents from a set of World Bank projects in the health sector, implemented from 1996, namely Health Project, Second Health Sector Reform Project, and ongoing Health and Social Protection project (SWAp1: 2010-2015 and SWAp2: 2014-2018), Health Results-Based Financing Pilot Project.

Institutional Analysis: An institutional analysis was carried out to identify the roles, responsibilities and structure of the relevant institutions responsible for implementing the PforR activities, including coordination between different entities at the national, regional and local levels. Sources included: laws and regulations, governmental programs and strategies, reports by key institutions focusing on environmental and social assessment and management processes, relevant mass-media reports and news. Available literature and documents were also consulted to assess the medical waste management system's capacity and performance, and access to health care services.

Interviews: Interviews were held with governmental ministries, agencies and municipal authorities, as well as health care institutes, NGOs and technical experts involved with environmental and social impact assessment and management in the health sector. Specifically, formal interviews were conducted with relevant personnel in the MoH, MHIF, SAEPF, SIET, experts from the UNDP-GEF, Swiss Red Cross, SDC, Green Cross Switzerland projects working in the sector of sanitary and infection control (SIC) and health care waste management (HCWM). In addition, interviews were held in NGOs working in the health and waste management sector, and in primary health care facilities with field visits to hospitals and Centers of Family Medicine (CFM), Public health care institutes (PHCI) to assess strengths and gaps in effectively managing environmental effects and in particular in the SIC and HCWM cycle in the PHC sub-sector at the regional and local level.

Finally, the preparation of this ESSA included stakeholder consultations, and disclosure of the ESSA Report based on the requirements of the World Bank's Access to Information Policy. The program team developed a consultation process to acquire inputs for this ESSA, which included a stakeholder workshop with participants from civil society, program implementers at different levels of government and development partners

supporting the PHC sub-sector. The ESSA Report was disclosed on the websites of the MOH and MHIF for the ongoing provision of the comments and suggestions from stakeholders.

This ESSA Report is structured as follows after this introduction: chapter 2 describes the sector and Program context; chapter 3 provides an overview of key stakeholders in the Kyrgyz Republic's health sector; chapter 4 focuses on environmental and healthcare risks and the legislation and systems that are in place to address these risks; chapter 5 elaborates on main trends in the development of infection and epidemiological control and issues of healthcare waste and existing management practices; chapter 6 discusses the potential social impacts of the program; chapter 7 outlines conclusions regarding infection control and healthcare waste management; chapter 8 provides an overview of recommendations for addressing environmental and social risks and outlines suggested actions for the PAP; and chapter 9 presents an overview of the consultation process and the feedback received.

2. SECTOR CONTEXT AND PROGRAM DESCRIPTION

2.1 Sector Context

Healthcare Reform in the Kyrgyz Republic. The Kyrgyz Republic (KR) is featured as a pioneer on health system reforms, particularly among the Central Asian Republics and former Soviet Union countries. It has adopted successive health reforms since the mid 1990s, from Manas (1996-2005), to Manas-Taalimi (2006-2011), and most recently Den Sooluk (2012-2018). Some aspects of healthcare reforms that have enabled KR to emerge as a pioneer in this area include:

- The establishment of a Single Purchaser of services, the Mandatory Health Insurance Fund (MHIF) as early as 20 years ago, which pools funds at the national level to purchase a standardized package of services across rich and poor regions;
- The establishment of a basic benefit package (the State Guaranteed Benefit Package - SGBP) that guarantees the whole population with a minimum package of health services, that is focused on primary health care (PHC) and health prevention, at no or minimal cost;
- Reform of the service delivery model to promote family medicine practices for PHC and to rationalize the excess hospital capacity inherited as part of its Soviet legacy;
- Financing priority for the public health sector, evidenced by a significant share of total government spending devoted to health; and
- Strong coordination among donors to support a government-led health reform agenda, underpinned by a Sector-Wide Approach (SWAp).

The Government of (KR) has prepared a new health sector program, "The Program of the Kyrgyz Republic Government on Public Health Protection and Health Care System Development for 2019-2030", which highlights key issues and outlines priorities for the health sector. Its motto of "Healthy Person - Prosperous Country" emphasizes the importance of health as an investment to achieve economic development. The Program has identified four priority areas that include improvement of primary health care and public health and rationalization of hospital and ambulance services, as well as six cross-cutting areas for strengthening the different building blocks of the health system, i.e. laboratory services, medicines and medical devices, modernization of health governance, human resources for the health system, and development of electronic health and the health financing system. This Program serves as a roadmap for the health sector as well as an instrument to mobilize and harmonize support from development partners and other stakeholders.

2.2 World Bank Support for the Primary Health Care Quality Improvement Program

To support KR's health reform and the new government health sector program for 2019-2030, the World Bank is preparing a PforR lending operation on the ***Primary Health Care Quality Improvement Program*** *(*Program*)*. The Program's financing includes US$20 million from IDA and US$17 from two other donors through a Multi-Donor Trust Fund (MDTF) Agreement with the World Bank.

Although family medicine was introduced as part of the earlier healthcare reforms to reduce the utilization of hospital services, the Kyrgyz health system remains heavily hospital-centric. Care coordination and

integration are almost non-existent. PHC remains largely unattractive to the population, which leads to a widespread practice of bypassing PHC facilities. PHC facilities are also rather ineffective in early detection and management of chronic diseases. Moreover, a system for monitoring, analyzing, and improving quality of care is largely absent, with unclear division of roles and responsibilities between the Ministry of Health (MOH) and MHIF. Finally, collaboration between the MOH and MHIF to improve the quality of care has been ineffective.

Given this context, the PforR operation will be focused on PHC from amongst the four care specific areas of the governmental program. This will be useful to direct the Program's attention and resources to the type of support where the potential for achieving the PDO is optimized. By contributing to improving the quality of PHC, the Program's interventions will also be useful to assure more effective utilization of public and private financing for the PHC sector.

The Development Objective of this Program is to contribute to improving the quality of primary health care services in the Kyrgyz Republic.

The cross-cutting areas of the governmental program are included in the PforR to the extent that they relate directly to PHC. For example, it will support the development of a system for collecting and analyzing PHC quality data, but it will not attempt to comprehensively address the e-Health agenda, which will require significantly more targeted efforts and investment. By the same logic, there could be some overlaps with public health and hospitals in areas that are directly related to quality of PHC.

The Program's interventions will focus on the three following areas that have been identified as key weaknesses in improving the quality of PHC:

Result area 1: Integrating sustainable quality improvement mechanisms into service delivery

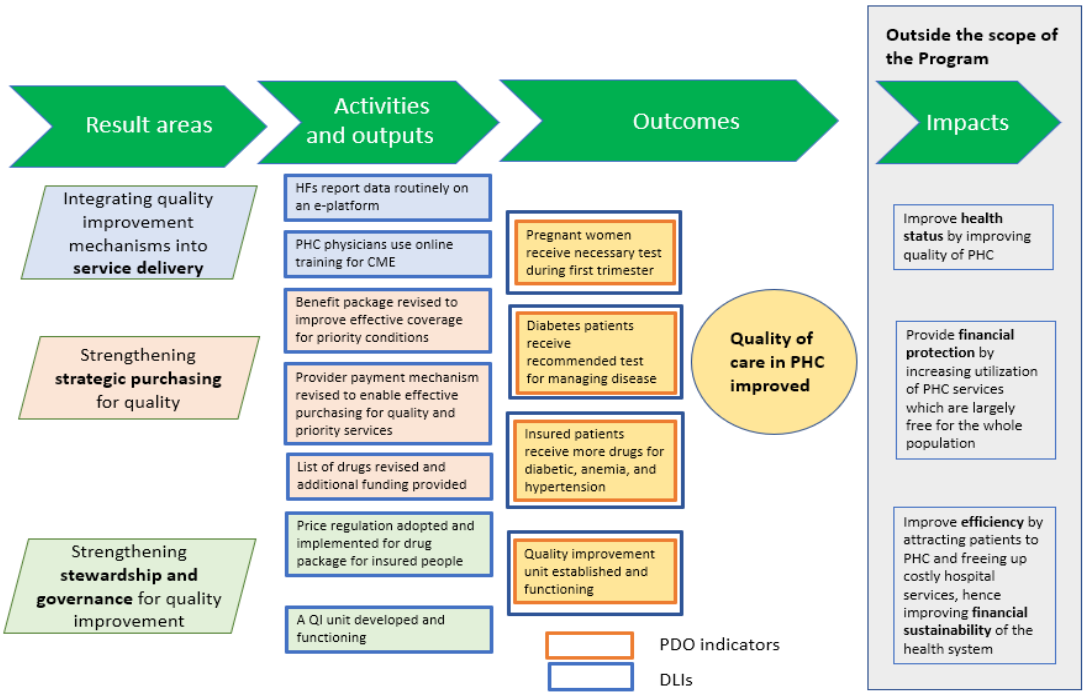
Result area 2: Strengthening strategic purchasing for quality of care

Result area 3: Strengthening health sector stewardship and governance for quality improvement

The **first result area** will support the establishment of: 1) a system for routine collection of quality care data and continuous feedback to providers on quality gaps; and 2) a system that improves access to quality continuing medical education (CME) materials for PHC providers, and that facilitates the delivery of targeted CMEs that are matched with quality gaps, and which also permit monitoring of the effectiveness of targeted CME efforts. The **second result area** will support changes to payment mechanisms and implementation of Balance Scorecards (BSCs) to facilitate strategic purchasing of quality. The list of medications included in the government's drug reimbursement plan and the SGBP will be revised to improve coverage for selected maternity and child health (MCH) conditions. The **third result area** aims to establish a national level structure and mechanism to ensure coordinated efforts to improve health care quality in the PHC system, as well as a drug price control mechanism under the ADP.

The theory of change for the Primary Health Care Quality Improvement Program is presented in figure 1 below, which elaborates how activities and outputs under each result area will lead to the achievement of the PDO, and eventually, the ultimate outcomes of the PHC system.

Figure 1. Theory of Change for the Primary Health Care Quality Improvement Program



3. STAKEHOLDER MAPPING

3.1. Key Stakeholders

Ministry of Health (MoH)

The MoH is the lead partner and the main coordinator of the PforR implementation**.** It is responsible for health policy and the development of legislation and regulations for the organization and provision of health services. Its mandate includes the development and implementation of state policy on (i) improving the quality and ensuring the population's access to health services; (ii) public health; (iii) development of public-private partnership in the field of health; (iv) improvement of budgetary and insurance medicine. Its functions include: sectoral policy development, regulation, coordination, monitoring and supervision, and rendering services as well as support functions, in particular:

- Development and implementation of national, state and targeted programs in the field of health care and disease prevention, promoting a program of state medical guarantees, and monitoring and evaluation of their implementation;
- Developing drafts of normative legal acts in the field of public health and submitting them to the Government of the Kyrgyz Republic;
- Determining the scope and conditions for provision of health care;
- Monitoring and evaluation of activities on medical and pharmaceutical services;
- Developing and implementing a strategy for the prevention of infectious and chronic non-infectious diseases;
- Developing and implementing state policy on pharmaceuticals, public health care services, organization of quality control, and efficiency and safety of health care services;
- Introducing and developing public-private partnerships in the healthcare system;
- Developing and implementing a unified system of primary medical records and statistics of healthcare organizations, regardless of the form of ownership;

- Developing and implementing a qualified management system, the safety of health care and pharmaceutical services;
- Organizing the registry of medical and pharmaceutical personnel;
- Carrying out the licensing of private medical practices, as well as production and trade of drugs, vaccines and serums, medicines and medical equipment;
- Implementing activities to strengthen public health by involving civil society, mass media and public organizations to encourage a healthy lifestyle;
- Undertaking measures to improve the infrastructure and technical base of health care organizations;
- Representing, within its competencies, the interests of the Kyrgyz Republic at the international level.

MOH's *Department of Disease Prevention and State Sanitary and Epidemiological Surveillance (DDPSSES)* has a special role in the healthcare system. The Department (and its 51 territorial subdivisions) is entrusted by the Government of the KR with oversight and control over the execution of regulatory documents that govern public healthcare. The Disease Prevention Centers of the DDPSSES at all levels are key organizations for establishment of HCWM. In particular, the DDPSSES is responsible for regulations for public healthcare, and submits drafts to the GoKR for approval; government control over environmental hygiene and epidemiologic situation, including chemical, biological and radioactive safety of the population; control and oversight over healthcare facilities (including PHCI) and drinking water supply facilities – irrespective of the form of ownership or departmental affiliation – to identify and forecast potential impact of biological, chemical, radioactive and other physical factors on public health; and assessment the condition of natural environments (drinking water, water in surface water bodies that are accessible for general public, soils) to determine their safety for public health.It is important to note that despite the breadth of functions, many sector standards, regulations, requirements and standards developed by MoH, except for specially stipulated cases, are not mandatory for private health care institutions, and to achieve this they require consideration and approval by the Government of the Kyrgyz Republic.

Mandatory Health Insurance Fund under the Government of the Kyrgyz Republic

The MHIF is the executive body of the Kyrgyz Republic which implements state policy in the field of mandatory health insurance (MHI) of citizens.

The MHIF guarantees the provision of quality medical and preventive care within the framework of the Program of State Guarantees for Providing Citizens of the Kyrgyz Republic with Health Care Assistance and MHI programs.

The objectives of the MHIF are: implementation of the state policy on basic state insurance and MHI; ensuring financial sustainability of the system of basic state insurance and MHI, and creating conditions for harmonizing the volume and quality of health care in order to achieve fair and equal access of citizens to preventive, medical and pharmaceutical services; accumulation of financial resources intended to ensure the financial stability of the Single Payer's system and the health insurance system; control over the rational and targeted use of the Single Payer's system; creation of equal conditions for the costs of medical services to health care organizations regardless of the form of ownership within the framework of the State Guarantees Programs; and improvement of quality control over providers of preventive, medical and pharmaceutical services. The MHIF funds are the state property; they are not included in other budgets or funds.

3.2. Other Government Stakeholders

The Government

The Government coordinates and approves regulations and regulates the activities of the MoH, the MHIF, the State Agency for Environmental Protection and Forestry (SAEPF), the State Inspection on Environmental and Technical Security (SIET) and other governmental structures responsible for environmental and health care control. The standards, regulations, requirements and protocols in the health care sector, approved by the Government of the KR, are mandatory for execution by all medical institutions, regardless of the form of ownership.

Other Ministries and Government Agencies

The ***Ministry of Finance*** has a strong influence on the process of developing the health system budget through departments that examine state budget proposals for health, which are identified, developed and submitted by the MOH and MHIF. The Ministry of Finance has a key role in ensuring the PforR funding to the Health Sector.

The ***State Inspection on Environmental and Technical Security (SIET)*** is an authorized state body exercising state supervision and control over the environmental and technical safety of the lives and health of people, flora and fauna, controls the environment and prevents negative consequences. It performs the following functions:

- Supervising compliance with: (i) the labor legislation of the KR and other regulations on labor protection issues; (ii) environmental protection and the use of natural resources; (iii) environmental legislation, rules, limits, quotas and environmental management norms, emission and discharge standards for pollutants and waste disposal in natural environment;
- Maintaining control over (i) the implementation of measures to clean up discharges and emissions of pollutants into the environment, (ii) disposal of waste;
- appointing representatives of the SIET to participate the commissions on issues affecting environmental and technical safety.

The ***State Agency for Environmental Protection and Forestry (SAEPF)*** is a state executive body for implementing policies and regulations in the sphere of environmental protection, ensuring environmental safety and nature management.

In particular, SAEPF performs the following functions: (i) implementation of state policy and regulation in the field of environmental protection and environmental safety (including chemical, biological and radiation); (ii) monitoring of environmental pollution; (iii) analysis of the state of environmental pollution and informing (for decision-making) state bodies, business entities; (iv) in conjunction with ministries, administrative departments, local authorities, economic entities take into account the use of natural resources, emissions, discharges of pollutants, wastes and other harmful effects on the environment and their sources, including radioactive ones; (v) in the manner prescribed by law, issues, suspends and revokes licenses and permits; (vi) provide state environmental expertise; (vii) organizes environmental control, including administration and imposition of fines, in its jurisdictions; (viii) ensure the participation of all stakeholders in the development, adoption and implementation of environmentally relevant solutions and the availability of environmental information.

The ***Ministry of Education and Science of the Kyrgyz Republic*** implements the unified state policy in the field of education, science and scientific and technical activities, and provides state control over the accessibility and quality of education. In particular, in the field of education in the health sector, the main tasks of the Ministry are: (i) the creation of an education system aimed at the professional development; (ii) improving the quality of education; (iii) creation of conditions and mechanisms for the development of scientific activity; (iv) development of the infrastructure of educational organizations and their material support; (v) development, in coordination with MoH and MHIF, and other government agencies, employers and other social partners, the list of professions and specialties for training personnel, as well as state education standards; (vi) coordination of the work of educational and methodological associations and councils for the preparation and publication of educational materials and information support for professional educational programs.

3.3. Health Authorities at the Municipal Level (regional and district)

The administrative-territorial division of Kyrgyzstan has 3 levels. At the first level there are 2 cities of national importance (Bishkek and Osh) and 7 regions (oblasts). Oblasts include 13 cities of regional significance and 40 districts. The city of Bishkek is divided into 4 inner-city districts.

Local state administrations and local self-government bodies of the cities of Bishkek and Osh coordinate the activities of health organizations at an appropriate level, monitor the implementation of national, state and targeted programs in the field of health protection through their coordination commissions on health.

Coordination commissions for public health under the local state administrations and local government bodies of Bishkek and Osh cities carry out their activities in accordance with the provisions approved by the relevant local state administrations and local self-government bodies of Bishkek and Osh.

3.4. Healthcare Organizations

There are three levels of health care system in Kyrgyzstan: primary, secondary and tertiary levels, which are integrated through the different types of health institutions. In total there are about 2000 health care organizations of primary level in Kyrgyz Republic. Among them there are: 64 Centers of Family Medicine (CFM), 28 Health Care Centers (HCC), 715 Groups of Family Doctors (GFD), 17 independent GFD (IGFD), 128 regional departments and 2 city-based stations of Emergency, and 1038 village based first-aid stations (feldsher-midwife points, FAP). FAPs provide health care for 26% of the national population living in rural areas. Statistics of visits to FAPs show about 4,700,000 visits per year with a total rural population of about 3,600,000. In general, the number of visits to primary care physicians in the country is about 20,000,000 per year with the total population of KR of just over 6,000,000.

In addition, there are HCOs which provide various types of medical services in the Ministry of Internal Affairs, the State Service for Execution and Punishment, the Ministry of Social Development, the Ministry of Education and Science, the Ministry of Defense, the State Committee for National Security, and approximately100 of such organizations.

PHC is also provided in about 2,500 schools, lyceums, boarding homes, sanatoria and health resorts, and specialized secondary and higher educational institutions.

The private health sector is represented by both legal entities and individuals. Private medical practitioners and non-governmental medical organizations provide medical services in 37 types of medical specialties, including dental, massage and manual therapy, gynecological, therapeutic, dermato-venereological, acupuncture, etc. Private health care organizations are not under the jurisdiction of the MoH, and this provides a number of confusions and difficulties in the overall control of their activities; the regulations for this need the special order adopted by the Government. Although there is no official statistics, private clinic providing PHC is almost non-existent in the rural area in the Kyrgyz Republic.

3.5. Educational Organizations

Health care organizations in the Kyrgyz Republic interact with higher and secondary special educational institutions on practical training of students, training and retraining of personnel on a contractual basis.

In general, Kyrgyzstan has a wide network of educational institutions that provide a package of fundamental medical knowledge of high quality. These include: the Medical Academy in Bishkek, the Medical Faculty of the State University in Osh, the Medical Faculty of the Russian-Slavic University, the Medical Faculty of the International University of Kyrgyzstan, the Medical Faculty of the Turkish university. These institutes provide graduate and post graduate and further continuous professional training to healthcare professionals.

3.6. Other Stakeholders

The KR has a wide network of organizations and facilities for public health services, including: the Republican Center of Quarantine and Especially Dangerous Infections, the Republican Center of Immuno-prophylaxis, the Republican AIDS Center, and subordinate divisions of these organizations.

The ***Research and Production Association "Preventive Medicine"*** (RPA) has a special role in public health that deals with issues of etiology and the epidemiology of infectious diseases and parasitology, including their specific and nonspecific prevention as well as challenges of environmental medicine, nutrition hygiene and occupational medicine.

RPA provides scientific and expert assistance to MoH in the development of public health programs and participates in the implementation of international projects in the field of public health. In addition, it actively participates in the improvement of educational programs; in particular, the required competencies and an educational program for general practitioner doctors has been developed in cooperation with the Medical Academy of Public Health, which is currently being approved by the Ministry of Education.

Nongovernment Organizations (NGOs)

There are no active NGOs in healthcare waste management. Some are working in waste management; like "Independent Ecological Expertise" (http://ghs.eco-expertise.org), but it works mainly on chemical and industrial pollution. Many other NGOs devote themselves to other environmental causes like protected areas, biodiversity, water and land management issues.

The most active NGO working in the PHC sub-sector is the Association of Family Physicians (but not in healthcare waste management). With the assistance of this association, over the last 20 years, the family medicine institute has significantly strengthened and unites 1,640 family doctors and 4,328 nurses who work in centers of family medicine (CFM), groups of family doctors (GFD) and FAPs. The Association promotes the development of a system of referrals to medical specialists, the adoption of measures to improve the equipment of the PHCIs, the improvement of the system of training and retraining of personnel in family health care. With the assistance of the Association, thematic meetings, seminars, conferences are held, clinical guidelines, standard operating procedures are developed.

Mass Media

The media has an increasing role in raising awareness about the reform process, which greatly influences public opinion on reforms, particularly in rural areas. There are frequent TV programs and interviews on various problems related to health reforms. There are several professional scientific and practical editions in health care: Scientific and Practical Journal "Medicine of Kyrgyzstan", Scientific and Practical Journal "Public Health of Kyrgyzstan", Public portal AIBOLIT.KG

3.7. Coordination Mechanisms among Stakeholders

To implement policy reforms based on inter-sectoral cooperation with other line ministries, the MOH co-operates with the Ministry of Agriculture, the Ministry of Emergency Situations, the Ministry of Education and Science, the Ministry of Health Labor and Social Development, the State Agency for Youth, Physical Culture and Sports, the MHIF, the State Inspectorate for Veterinary and Phytosanitary Security, the State Inspectorate for Environmental and Technical Safety and others, The results of MOH activity are often dependent on how well this cooperation works.

Coordination mechanisms between the main ministries and departments are basically well developed and, as a rule, are functioning in the form of interdepartmental commissions on targeted issues. For example, this refers to the development of the National Strategy on the management of medical waste. When discussing targeted issues, the civil society organizations participating in the respective coordination councils, such as, for example, the Public Council of the Ministry of Health, the Public Supervisory Board of the MHIF, and others.

However, on several issues, such as disease prevention, assessment and monitoring of risk factors, health care waste management, the system of coordination with such governmental structures as the Ministry of Emergencies, SIET, SAEPF, needs to be improved. It requires improvement and a system of coordinated

actions between specialists of Sanitary and Epidemic Surveillance (SES) and MHIF. When assessing the effectiveness of health organizations, MHIF could implement indicators of health and medical waste management, but it cannot invite sanitation specialists for this, having no own specialists in this area. On the other hand, Department of Sanitary and Epidemiological Surveillance of MoH does not yet know about these MHIF initiatives, therefore it is necessary to improve further coordinated actions. Strengthening of cross-sectoral co-operation and coordination mechanism is an imperative for the implementation of many activities in the field of health care. The coordination in between SIET and Sanitary and Epidemic Surveillance is lacking for proper control of the HCWM beyond the scope of HCOs, especially in the PHC sub-sector.

Coordination of actions with educational institutions and the Ministry of Education and Science plays an important role in strengthening the PHC sector, including in the field of infectious and epidemiological safety. It is necessary to strengthen the work on the organization of the system of professional development of the PHC staff, the training of family doctors and nurses, those clearly aware of the importance of measures to prevent infectious diseases and environmental pollution.

In terms of coordinating public sanitary and epidemiological security a huge problem is the responsibility of the private sector in the health sector, which is still very poorly controlled by both state authorities and public organizations.

3.8. International Development Partners and Key Projects in the Health Sector

Several international organizations are active in KR's health sector and their role was and still is essential in the promotion and support of health system reform.

The WHO, World Bank, EU, Swiss Development Cooperation Agency, KfW, UNDP, USAID, DFID, GIZ are the key development partners active in the health sectors. WHO is an important counterpart in the health reform process and has committed to assist the Government with selecting and applying best practices, sharing methods and guidelines, and capacity building.

Since the opening of its Country Office in KR in 1994, WHO has focused on addressing inequalities in health, reforming the health sector and increasing public access to quality health services. It provides support for the development of policies and strategies in the health sector, as well as managing impacts on health; the proper direction of technical advice; fostering the creation and development of partnerships; promotion of health issues; and exchange of information on health issues. KR implements WHO strategies to achieve Universal coverage of health care and strengthening of health systems; increase the capacity of the public health service, improve control over infectious and non-communicable diseases. Priorities for joint work are set out in the WHO-Kyrgyzstan Collaborative Agreement.

The ***World Bank*** has had a long and productive partnership with Kyrgyzstan in its support of national health sector reforms. The Health Sector Reform Project (Health I, 1996-2002) and the Second Health Sector Reform Project (Health II, 2001-2006) supported key elements of the Manas Program (1996-2005). Both projects had satisfactory outcomes and succeeded in strengthening elements of the health system and carrying out first-generation reforms to achieve improved services and better outcomes more efficiently.

Since 2010, Bank's health system support has been in the form of SWAp, pooling its financing with other donors and government in a common basket to support national health reform programs. The Bank has been the lead agency in two consecutive SWAps (SWAp1: 2010-2015 and SWAp2: 2014-2018). From 2014, the Bank has also supported MHIF and the MOH to pilot a Results Based Financing (RFF) scheme to improve quality of maternal and neonatal health services in district hospitals. Preliminary impact evaluation results showed significant and positive effects of the intervention on newborn's Apgar score and mother's blood loss, as well as blood supply, drug availability and quality, and provider's motivation.

Since 2002, several projects have been implemented with the support of the ***Swiss Agency for Development and Cooperation*** and the ***Swiss Red Cross*** to improve HCWM in hospitals, improve the quality of health care through the introduction of modern infection control measures in all hospitals and reassess the roles of stakeholders to support infection control activities in the health care system.

All activities of this cycle of projects were implemented in cooperation with the Republican Center for Infection Control of the research and production association "Preventive Medicine" (RPA) as a part of the two-phased target program "Medical Waste Management and Hospital-Acquired Infections Control in the Kyrgyz Republic".

In 2002 RPA made a suggestion to implement infection control and HCWM systems in healthcare facilities of the KR. The goal of this initiative was to promote infection safety of patients in hospitals of the Kyrgyz Republic, where hospital staff follows the infection control procedures in scrupulous and high-quality manner, realizing all their needs, as well as get trained and controlled by a qualified Infection Control Specialist, who in his/her turn receives support from the administration of respective hospital and territorial centers of state sanitary and epidemiological surveillance.

All the activities of this cycle of projects are aimed on the development of sustainable system of infection control and HCWM in hospitals in Kyrgyzstan, where hospital staff conscientiously and qualitatively perform infection control procedures, understanding all their needs, and is trained and supervised by qualified infectious control specialists, which, in turn, is supported by the director of hospitals and territorial centers of the state sanitary-epidemiological surveillance.

The implementation of these projects contributed to the creation of a system for sustainable development of the sector as a whole, in which: 1) all relevant health authorities that influence the area of infection control agree among themselves in order to create the effect of joint action, and thereby make infection control a priority for managers and hospital staff; 2) educational and methodological centers of infection control are organized on the basis of all regional hospitals, where conditions for quality education of workers for infection control programs are created. 3) specialists of regional hospitals and epidemiologists of the regional sanitary-epidemiological surveillance, as trainers of these centers, provide methodological assistance during training and monitoring visits to specialists of district institutions; 4) hospital directors clearly understand their role in the implementation of appropriate infection control in their institutions, realize the related economic benefits, and plan and allocate a sufficient budget for this; 5) hospitals have basic equipment for infection control. Although these projects were mainly targeted on the improvement of HCWM in hospitals, they provided a great input in amendment of the infection control at the level of PHCIs. The project activities helped primary HCOs to better organize segregation, disinfection and transportation of medical wastes to the HCW collecting centers. A few PHCI (with a number of beds more than 20) were also equipped with autoclaves and modern disinfection and utilization facilities.

As a matter of fact, in the framework of this activity, the technology of managing the infected wastes was first developed and then implemented consistently throughout the territory of the Kyrgyzstan using the example of pilots. The UNDP-GEF project implemented and adopted the best environmental practices and best available technologies in 11 health care institutions in the city of Bishkek to improve the management, treatment and disposal of HCW waste, and supported 100 FAPs in Chui and Issyk-Kul oblasts. Currently *Doctors Without Borders* (Switzerland) is implementing this HCWM model (jointly developed by UNDP and the RPA) in 23 FAPs in Osh and Batken Oblasts.

4. ENVIRONMENTAL AND HEALTH CARE RISK MANAGEMENT SYSTEM IN THE NATIONAL HEALTH SECTOR

4.1. Potential risks in the Program affected areas

4.1.1. Potential adverse environmental and health effects

Thematic areas identified under the Program (service delivery, health financing and governance), focusing on PHC, will largely bring positive environmental effects to the health sector. Several Government functionaries contribute to implement the environmental laws/procedures and monitoring of results on ground. As the Program will not support any new investments in construction or rehabilitation works and will not lead to the closing of any health care facilities, this assessment doesn't include other environmental issues as potential impacts of civil works, energy conservation, as well as environmental legacy in the case of closing any buildings.

Three priority areas identified under the Program also should not include any activities/actions that may have significant adverse impacts that are sensitive, diverse or unprecedented on the environment, and for health and occupational safety of medical personnel and patients of PHCI.

Potential adverse environmental and health effects of the Program might be indirectly generated by primary health care services cross-cutting areas connected with public health, hospital service and ambulance service, and are likely to be related to the system of overall infection control.

Risks in the health care system, especially at the primary level, are identified at all stages of health care. Among them are the main ones:

- Professional occupational risks of health personnel in the provision of health care to infected patients at home;

- Risks of medical and sanitary personnel when providing medical care to infected patients in outpatient care facilities (FAPs, CFMs, HCCs, laboratories, emergency medical services, medical posts in educational institutions, etc.);

- Risks of patients in case of violations in the system of infectious and epidemiological safety in health care institutions when transmitting infections through the air and water environment or medical instruments;

- Risks resulting from violations of the rules for HCWM.

4.1.2. Main causes of adverse environmental and health effects

In many respects, the risks of infectious and parasitic diseases in PHCIs are associated with inadequate provision with clean drinking water and disinfectants, especially in rural areas. In general, the number of drinking water pipelines that do not meet sanitary requirements of drinking water (bacteriological and chemical test for drinking water standard), according to statistics for 2017, is more than 30%, and for certain regions is up to 55% (Chui oblast). The prevalence of diseases of infectious and parasitic diseases has slightly decreased in recent years, but still high and amounts to more than 1,200 cases per 100,000 population, with a high proportion of acute intestinal infections and viral hepatitis.

Another dangerous source of risk, especially in the case of insufficient infection control in primary care organizations, is HCW, which is often not properly sorted, processed and disposed of. According to information received from non-governmental organizations and field observations, specialized services for the utilization of not only medical, but even non-hazardous domestic waste are absent in many places, which is especially characteristic of rural areas. HCW is not systematically recorded in the country, and no official provisions exist for this purpose. Each HCO has (or has not) its own regulation for HCW recording, and no data submitted to the sectoral or national statistics, and further analyzed.

In practice, especially in remote areas, experts evidence the following shortcomings in the infection and environmental pollution control: anatomical waste scattering by animals, the disposal of hazardous HCW on common disposal dumps, the burning of plastic tools, the washing of work clothes and bedding with common laundry in private washing machines and with the use of hand washing at home, the lack of clean water, dressings and disinfection materials, etc. Especially low control in the country is organized for HCW generated in the private health care sector, which provides about 40% (according to expert estimates) of the

overall services in the country-wide PHCI system. In state HCOs the HCWM is better organized as a result of due control by the MoH sanitary authorities, but the funds allocation for this specific purpose is inadequately defined being integrated in the so-called “consolidated budget” in each HCO.

Nevertheless, according to the information from the Scientific production association “Preventive Medicine, in practice there are very few emergency cases (poisonings, diseases, epidemics, dangerous pollution of water, air and soil) caused by violations in the system of infectious and epidemiological safety, as well as violations of the practice of handling medical waste. Experts say no more than 10 emergency cases in the last 5-7 years, although it is obvious that in the absence of a system for recording such cases, the official statistics in this matter may be unreliable.

Considering these major risks, the ESSA evaluates the existing and evolving national system of risk mitigation and management in the health sector from the environmental perspective of three Core Principles presented in the PforR financing guidelines: Core Principle 1: General Principle of Environmental and Social Management, Core Principle 3: Public and Worker Safety, and Core Principle 5: Indigenous Peoples and Vulnerable Groups.

4.2. Assessment of the management system and legislative basis in the public health sector.

The PHC institutes are an integral part of the national health care system. Hence, although there are many specific distinguishing features in their management system, the organization of environmental, epidemiological and infectious safety in the PHC sector is regulating directly or indirectly by several institutes of different levels and by a set of laws and regulations. These laws, orders and regulations are mandatory for use in all health care institutions, although some norms issued by the MoH are not obligatory to private HCO. For this purpose, they need to be adopted by the Government.

4.2.1. Public health care system and infection control

The system of infectious, epidemiological and environmental control in the Kyrgyz Republic is multifaceted, consistently developed and improved from the independence. So, since the start of health reform program "Manas Taalimi" in 2005, there have been significant changes in the work of public health services in the Kyrgyz Republic, including the improvement of the infection control system. Public health care is aimed at identifying the causes that affect the health of the population, such as nutrition, environmental factors and lifestyle.

The country has a branched network and institutional hierarchy to support healthcare system including healthcare waste management. The Public Health Service is headed by the Chief State Sanitary Doctor - the Deputy Minister of Health. A Department of State Sanitary and Epidemiological surveillance has offices at regional, city, and district level. The sanitary-epidemiological councils are established in all districts to collegiate consideration and resolve issues of development, management, and improvement of the sanitary-epidemiological service, acting in accordance with the regulation approved by the Chief State Sanitary doctor. The planned and developing system of public health care services includes: Public Health Department of the MoH; Republican Center for Health Care; Republican Center for Health Promotion; Republican Center for Disease Control; Scientific Institute of Public Health; Territorial centers of public health; PHC organizations providing preventive and anti-epidemic services.

The function of promoting public health rests with the Sanitary and Epidemiological Service, comprising the Republican Center for Health Promotion, Bishkek Municipal Center for Health Promotion, and the branch of the Republican Center in the city of Osh, s well as health promotion department in oblast-level and rayon-level centers of family medicine.

The purpose of health promotion offices is to support community action as part of the strategy and to play the role of a bridge between the health system and community-based organizations working on health issues.

4.2.2. Legislative basis for reducing the risks in the health care system of the KR

The environmental regulatory framework in the health sector is well developed and is represented by multilevel legislation and regulations:

Basic Codes and Laws include different aspects related to the general environmental requirements and some of clauses of them particularly concern health and safety:
• The Constitution,
• Water Code,
• Land Code,
• Law on Environmental Protection,
• Law "On Public Healthcare"
• Law on production and consumption wastes,
• Law on the Protection of Atmospheric Air,
• Law "On Chemicalization and Plant Protection",
• Law "Technical Regulation "On Drinking Water Safety"
• Law and general technical regulation on ensuring environmental safety in the Kyrgyz Republic,
• Law on Environmental Expertise,
• Law on Drinking Water,
• Law on Radiation Safety of the Population of the Kyrgyz Republic,
• Law and Technical Regulations "On Radiation Safety",
• Law "On protection of the health of citizens in the Kyrgyz Republic",
• Law "On health care organizations in the Kyrgyz Republic",
• Law "On health insurance of citizens in the Kyrgyz Republic",
• Law "Immuno-prophylaxis of infectious diseases",
• Law "On Oncological Aid to the Population",
• Law "On the donation of blood and its components",
• Law "On protection of the population against tuberculosis",
• Law "On HIV/AIDS in the Kyrgyz Republic",
• Law "On narcotic drugs, psychotropic substances and precursors".

A few new ***laws*** *are* ***under development***.
• Draft Law "Requirements for the safety of food products and their production processes in storage, transportation, sale and disposal",
• Draft Law "On the Status of the Medical and Pharmaceutical Worker",
• Draft Law "On Medicines".

In addition to the laws, there is a complex system of national sub-laws, decrees, guidelines and regulations (the full list is provided in Annex 4)

5. PROBLEM OF HEALTHCARE WASTE AND EXISTING MANAGEMENT PRACTICES

The public Health Care System is under gradual development and described in detail in Annex 6. It includes: (i) sanitary and epidemiological welfare of the population; (ii) registration and reporting on infectious diseases; (iii) sanitary norms and rules; (iv) control over the sanitary and epidemiological surveillance; (v) infection control in the healthcare organizations; (vi) public health emergency preparedness and response measures; and (vii) sanitary and epidemiological rate setting and codification; (viii)

One of the main tasks of the System is the prevention of diseases associated with the adverse effects of biophysical factors on the human body, including organization of the proper HCWM.

5.1. General overview of the problem

The HCW contain potentially dangerous pathogens that can infect health care personnel and patients of the PHCI. Additional risks in the Kyrgyz Republic can occur because of that not all rural PHCIs, such as FAPs, have introduced a safe system for HCWM, and this increases the risk of infection of health care personnel, patients and people. In the Kyrgyz Republic many HCW centers are formed, and as a negative side effect of this growth, some NGOs and local people consider the increasing risk of unintentional release of persistent organic pollutants (POPs, such as dioxins and other toxic substances) and mercury into the environment. Open burning of HCW is the main sources of dioxins and mercury pollution in the health sector. Other contamination products resulting from incineration and/or open burning are acid gases, heavy metals and solid carbon particulates. The risk of unintentional release of POPs into the environment is also increasing in rural area, as the plastic HCW is burned near the FAP in some cases.

According the information gathered by the UNDP-GEF project (Protect Human Health and the Environment from Unintentional Releases of POPs and Mercury from the Unsound Disposal of Healthcare Waste in Kyrgyzstan), due to the high concentration of health care institutions, 60% of all HCW is generated in Bishkek with a presumably high share of unintentional POP emissions at the national level. The total share of medical waste exported to solid domestic waste dumps is estimated as about 2-3%.

5.2. Types of HCW

The classification of hazardous HCW in Kyrgyzstan is aligned with WHO requirements and the approaches of the Eurasian Economic Community. It includes the following categories of HCW, almost all of them producing at the PHC level (except those marked with * below)[3]:

- Waste of medical and veterinary services and research organizations,
- Waste from patient care,
- Infected waste,
- Uninfected wastes containing chemicals,
- Uninfected wastes containing medicines,
- Anatomic waste of human origin,
- Laboratory waste,
- Defective and overdue chemicals,
- Medications,
- Used bacterial cultures,
- Amalgam residues from dental care,
- Old mercury-containing thermometers,
- Other old and broken equipment,
- *Anatomic waste of animals, corpses of experimental animals,
- *Manure and litter from the cultivation of experimental animals,
- Other waste groups not specified.

HCW in the KR is classified into five hazard classes:

class A (А) - epidemiologically safe HCW, approximate by composition to solid household waste;
class B (Б) - epidemiologically hazardous HCW;
class C (В) - extremely epidemiologically hazardous HCW;
class D (Г) - toxicologically dangerous HCW of I-IV hazard classes;
*class E (Д) - radioactive HCW.

Risks associated with hazardous HCW exist at all stages of the HCWM system. Health care and support personnel working with this type of waste are at greatest risk of infection when transporting and processing them.

There are the following main risks when handling medical waste:

- Infectious Danger,
- Traumatization with sharp shoot / cutting waste,

[*] Radioactive waste, anatomic waste, manure from experimental animals, are not produced in the PHCI, so this ESSA does not consider risks related to this classes of HCW.

- Toxic and carcinogenic effects,
- Environmental pollution,
- Penetration through the injection site, wounding of the skin (with injections, surgeries, etc.);
- Absorption through mucous membranes;
- Less often - penetration through the respiratory system and digestive system.

5.3. General assessment of HCW amount generated in the country

The complete statistics about the volume of medical waste generated in different health care institutions are not available in the KR. Records for medical waste is conducting on a regular basis only in inpatient medical institutions in big cities and in a few district hospitals.

The expert assessment carried out within the framework of the UNDP-GEF project showed that approximately 543 tons of waste from vaccination per year are generated in the republic only at the primary level (CFM, GFD, FAP) annually. At the secondary level, approximately 1500 tons of infected wastes are generated (class B). At the same time, at present there is no mandatory system for recording HCW in the country, and HCOs use their own regulations in each case. In total, there is a lack of awareness of the problems associated with chemicals and wastes in KR. Detailed regulations for the transport of medical waste to the sites of their disinfection, storage and disposal, although developed, but poorly observed in the field due to lack of awareness and experience of health care workers. In addition, the transportation and disposal of HCW diverts the medical personnel from their basic activities, and many experts consider it necessary to organize a state-commercial partnership to establish a network of specialized organizations for the HCWM that serve health care organizations.

Some experts disagree on the importance of the problem of HCW for the primary level of health care. They believe that, in general, the problem of HCW disposal is more relevant for inpatient medical institutions, and for PHCI it is not so significant. Other experts provide different information: to their assessment, 80% of PHCI send the existing waste to hospital, and the rest solve this problem independently, often using illegal methods. Such experts on the contrary, consider this problem especially acute precisely for the primary level because of the lower opportunities for infectious and epidemiological safety at primary level and potential dangers arising for the medical staff and patients.

5.4. HCWM Budgets

No special budget line exists either in the overall MoH or MHIF funds allocations, which gives no impression about the seriousness of the Government's attention to the HCWM at the state level. In individual PHCIs as well as in HCOs at secondary level there is no direct evidence about expenditures targeted particularly on the HCWM purposes. HCOs both at primary and secondary levels use so called "consolidated budget", from which they can use funds for particular HCWM needs, such as payment for relevant personnel, for energy and water consumption, for transportation and packing of waste, etc. From the other hand, these funds are not specially allocated and using for the particular HCWM purposes. In general, HCOs cannot separate such payments from other expenditures. To their expert opinion the share of these payments is about 3-5% approximately from their total budget, but this differs from year to year and by seasons.

It is important to note that MHIF by its own initiative is working at present time on sorting out the budgeting of HCWM and infection control activities from other medical services and hopes to draft the first proposal in early 2019 to pilot it in several HCOs.

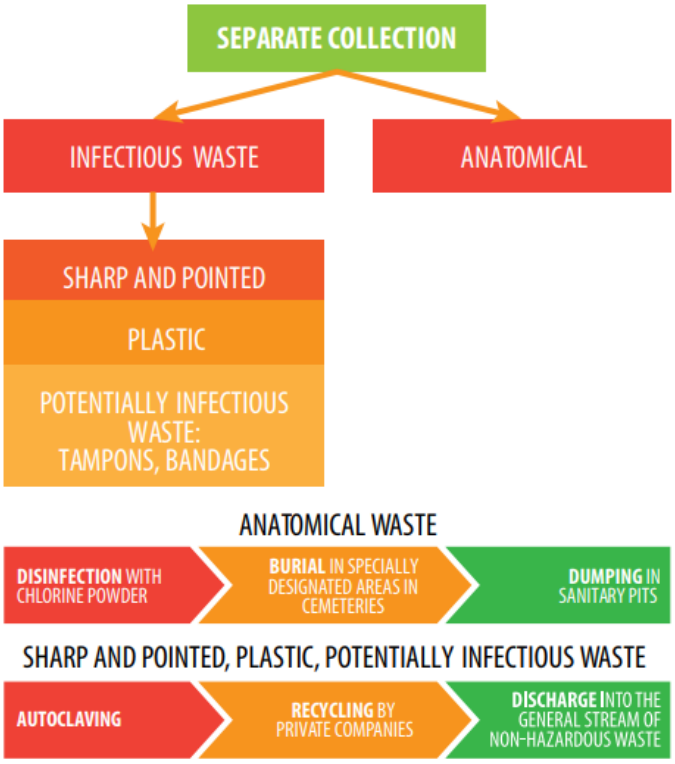
5.5. Infectious healthcare waste disposal cycle

The cycle of HCWM includes the following stages:

- Identification and separation of waste within health organizations;
- Collection, packaging and marking of waste within health organizations;
- Treatment of hazardous waste and reusable inventory;
- Transfer of waste from the internal units and temporary storage of waste on the territory of health organizations that generate waste;
- Accounting for HCW;

- Disinfection and / or neutralization of HCW;
- Transportation of HCW from the territory of health organizations that generate waste;
- Burial or destruction of HCW.

Figure 2. Healthcare infectious waste disposal scheme



Source: UNDP KG

According to the current regulations, HCW is placed on the following sites:

- Facilities for temporary storage of HCW on the territory of the health organization;
- Sites for final storage and burial of hazardous HCW, which are specially equipped facilities intended for stationary placement, storage and disposal of waste, dumps, and polygons for solid waste.

The Order of the MoH dated February 18, 2013 No. 59 "On the improvement of the safe management system for HCW in health organizations" and the Order No.214, issued on March 26, 2018 "On Approval of the Standard Operating Procedures (SOP) for Healthcare Waste Management (HCWM) in Healthcare Organizations (HO), and of the Manual on Monitoring and Evaluation of the HCWM System in HO in the Kyrgyz Republic" approved the following procedures:

- Standard operating procedures for the work with HCW in the clinical departments of health organizations;
- Standard operating procedures for the transportation of HCW outside the HCO;
- Standard operating procedures for autoclaving HCW;
- Standard operating procedures for emergency situations when handling HCW;
- Standard operating procedures for handling syringes at syringe exchange points;
- Manuals on Monitoring and Evaluation of the HCWM System in HO;
- Program for the introduction of the system of HCWM in HCO in Bishkek and Osh.

At present time it is the common practice in HCOs to separate the collected wastes from common non-hazardous wastes. Infected waste in turn is divided into the following streams: anatomical, acute-piercing, plastic (plastic part of the syringe) and other potentially contaminated waste (tampons, bandages, etc.). Anatomical wastes are collected separately, disinfected chemically and disposed in special areas, in Beckari pits, or in cemeteries.

Sharp, plastic (plastic part of the syringe) and other potentially contaminated wastes (tampons, bandages, etc.) are disinfected by autoclaving. The autoclaved plastic and metal wastes are then recycled to private companies. The remaining sterilized waste is discharged into a common stream of non-hazardous waste. This practice is in accordance with the requirements of the Stockholm and Basel Conventions, ratified by the country. The disinfection of infected HCW through non-burning technologies and the recycling of plastic waste reduce the formation of POPs within unintentional burning in landfills.

5.6. National HCW management system

The general structure of the national HCWM system is presented in figure 3.

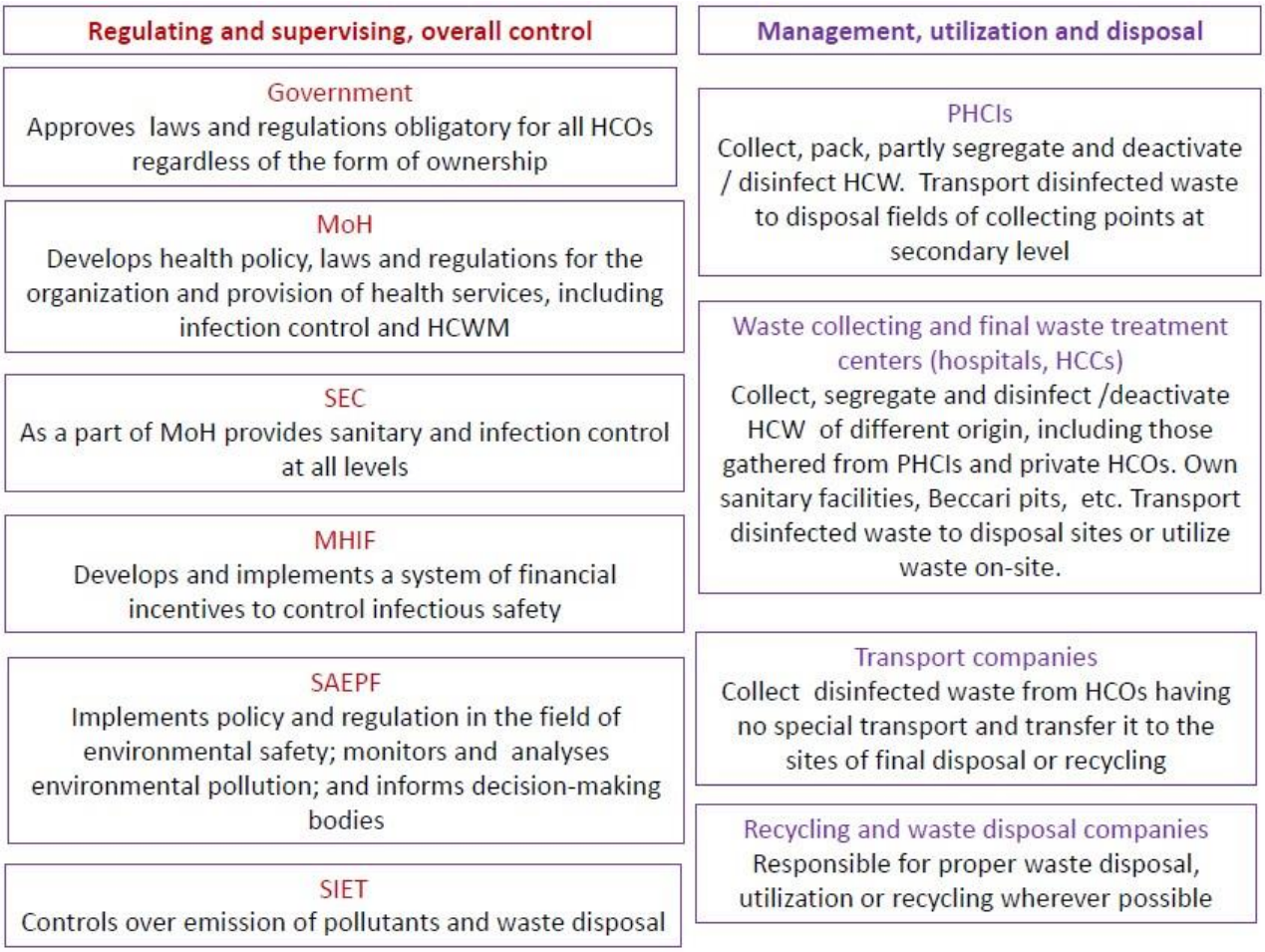
Resolution of the Government of the KR dated February 15, 2018 "On issues related to the management of HCW and work with mercury-containing products in healthcare organizations of the Kyrgyz Republic" approved: “Provisional Guidelines on the Management of HCW” and “Provisional Guidelines for Work with Mercury-Containing Products of medical purpose”. It is expected that these documents will come into full force from the beginning of 2019. This decree for the first time determined the concept of HCW for its use in the legal field of the KR, and also defined the requirements for the separation, collection, packaging, labeling, recording, storage, transportation, disinfection and/ or neutralization, burial of all types of HCW generated in health organizations, with the exception of radioactive waste. The most important aspect of this document is the obligation of its implementation by all health organizations, regardless of the form of ownership.

A draft standard for the management of vaccine wastes was developed and discussed in May 2017 with representatives from WHO and the Republican Immuno-prophylaxis Center, including a ban on the incineration of safe disposal boxes. Local experts consider as one of the main achievements the creation of temporary storage points for non-disinfected wastes, where they are now weighed, labeled and only then autoclaved. Disinfected plastic parts of the waste are recycled, and specialized firms collect and recycle plastic remains. It is this component that affects the reduction of emissions to the environment, improving the ecology.

With the focus on PHCI, on June 6, 2018, the MoH issued an order "On improving anti-epidemic measures for GFDs and FAPs that operate outside the HCCs and CFMs”. It contains requirements for injections, sterilization, autoclaving, standards for the management of HCW, cleaning of premises, and several other recommendations. Through these requirements the PHCI integrate in the full system of HCWM by collecting and further transporting HCW to the centers of its processing and final disinfection. Such centers are usually located in hospital and/or HCCs.

Each health organization should have a scheme for the movement of waste within the HCO, but not all of them are using effectively because of the lack of facilities and financing. Wherever the scheme was introduced its implementation is carefully monitored in the context of infection control conducted by specialists of sanitary and epidemiological surveillance. Such a system, first tested in Naryn and Talas regions, was introduced in 2013 for all inpatient HCO with more than 25 beds. There were established 136 points for autoclaving, sorting and disposal of medical waste. With the support from GFATM, RCIC SPA PM developed a cluster-based HCWM system for Bishkek and Osh cities, which was further improved under the scope of UNDP-GEF project.

Figure 3. Main stakeholders involved in the management of HCW produced at PHC level in the KR.



The new HCWM system has all the major components of a good system: waste minimization (including reusable containers, recycling, and composting), segregation, use of leak-proof and puncture-proof containers, labeling and signage, safe collection and transport, use of personal protection equipment, emergency kits for accidental exposure to infectious waste, proper storage of waste, safe management of sharps and anatomical wastes, clear hospital policies, written HCWM guidelines, a committee and advocates to promote HCWM, regular training, documentation, record-keeping, monitoring and continuous improvement, and the allocation of human and financial resources (fig.4).

At the PHCI level, especially in remote rural districts, this HCWM scheme is not so well developed, because of the lack of skilled personnel and relevant resources. Some risky issues and circumstances remain widespread, such as those connected with: still burning plastic and POPs emission, cleaning possibly infected working clothes at home, lack of skilled personnel, lack of necessary instruments and equipment, although basic requirements for segregation, disinfection and/or sterilization of HCW and their transfer to disposal points or to the centralized stations (such as hospitals of health care centers) are properly fulfilled.

Experts consider that in conditions of well-developed system for transporting and storing medical waste, and sufficient capacities for reprocessing HCW exported from PHCI, this HCWM system could become a model for replication throughout the country, but a number of problems prevent this:

- high cost of transportation from remote sites;

- shortage of qualified personnel both in hospitals and in waste disposal centers and in the remote PHCIs;

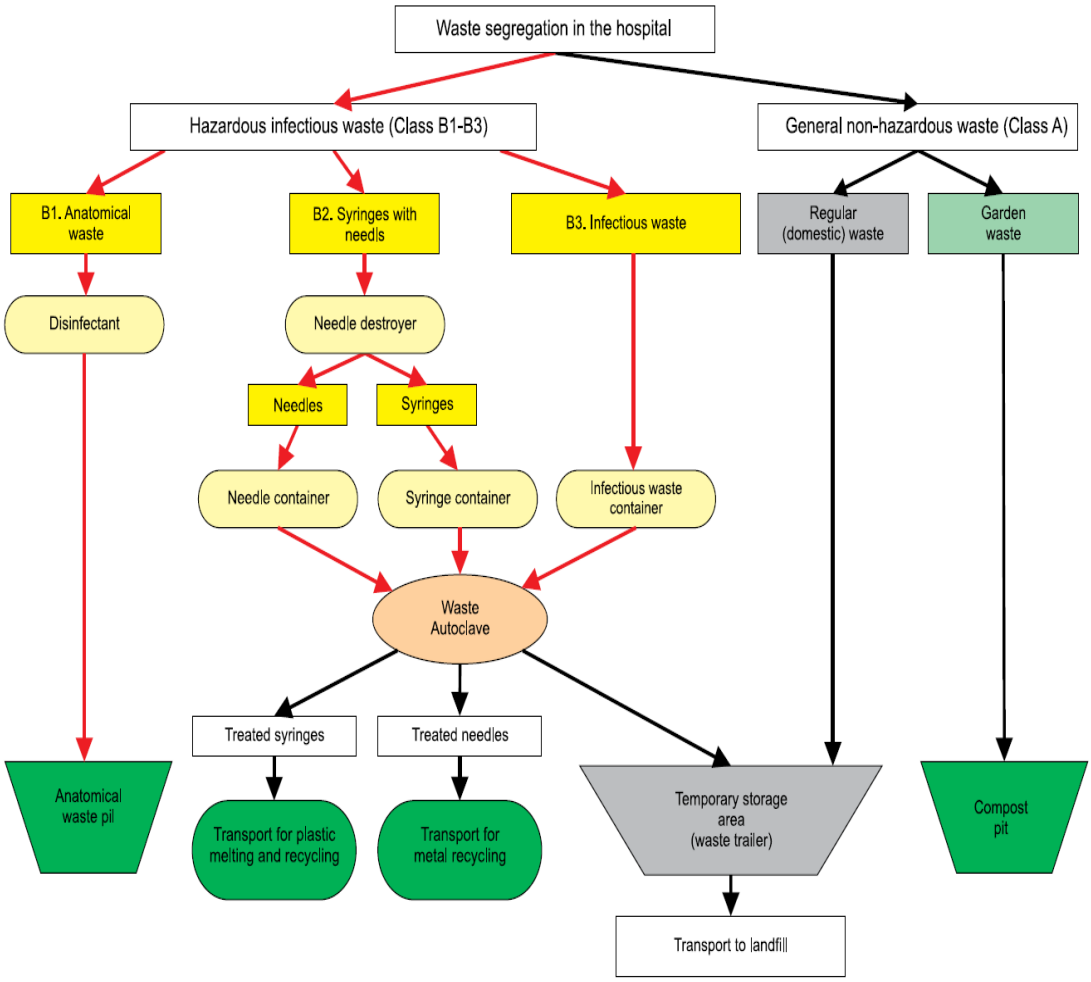
- insufficient capacity for processing large amount of infected and other hazardous HCW in collecting centers;

- lack of proper control over the HCW outside the HCO (during transportation, at storage and disposal sites). Formally, such monitoring should be carried out by the SIET, but in fact, as independent experts note, the

SIET staff do not have the necessary knowledge and skills in this area, and also does not have sufficient feedback capacities, and reacts only in case of emergency.

Evaluations of the effectiveness of HCWM system at the primary level differ even within professional community. From one hand, a strong professional opinion exists in the country that recycling and disposal of HCW at PHCI, especially in FAPs, is inefficient, primarily due to the lack of properly trained personnel, the lack of regular supply of energy and clean water. These specialists believe that in FAPs it is better to organize a systematic collection of HCW, and in extreme cases, to use individual protective equipment or low-capacity autoclaves. From the other hand, recent studies by the SPA "Preventive Medicine" have shown that this is not the best option, and that by savings on high transportation costs, recycling and disposal of HCW on site in FAPs pays off in a relatively short period for no more than 3-5 years, and in some cases of especially remote areas - for 1-2 years. These specialists suggest continuing support PHCIs for organizing the full set of HCWM, not only collecting, segregation and transportation to HCCs and hospitals. The ESSA recommends the piloting of different approaches with further selection dissemination most effective examples all over the country considering the specificity of districts.

Figure 4. Health care waste management system.



Source: Toktobaev et al., 2015

5.7. National Strategy for HCWM

A logical result of the efforts of several projects carried out for more than 10 years with the support of international donors was the Strategy for managing HCW developed with the advisory and technical support of the UNDP-GEF project aimed on Expanding the Capacity of the Municipal Waste Management System, the Swiss Institute of Ecological Enterprise, the Kyrgyz-Swiss-Swedish Health Project, and the WHO

Regional Office for Europe. It was noted that "Efforts of one ministry can not solve such issues as transportation, handling and disposal of HCW. In this regard, there was a need to develop and adopt a national strategy for the management of HCW".

The draft Strategy document was prepared by an inter-ministerial group and was approved as a sector strategic document in 2017. Experts note that despite some progress, these measures are not enough, since departmental strategies of the Ministry of Health are not mandatory for private medical institutions and private practitioners.

5.8. Mercury-containing and other chemical waste management

Mercury is one of the most toxic substances, capable to cause irreparable damage to the environment. Mercury can cause acute and chronic intoxication at low concentrations. The main organ affected by mercury vapor is the brain; peripheral nerves, kidneys, immune, endocrine and muscular system disorders, as well as skin lesions are possible.

No work has been carried out in Kyrgyzstan regarding the estimation of mercury emissions. On the other hand, the regulations for handling mercury-containing waste have been adopted at the national level. Handling of mercury-containing waste is carried out in accordance with the Law on "General Technical Regulations for Ensuring Ecological Safety". Since 2010 mercury-containing wastes have been included in the “Classifier of hazardous waste and principles for determining the hazard class of waste”. MoH in 2016 issued an order "On the removal of clinical mercury thermometers and their replacement by electronic thermometers in health organizations in Bishkek". In the national program for the management of chemicals for 2015-2017, the improvement in the management of mercury-containing products and wastes was a priority.

However, due to a lack of understanding of the seriousness of the problem, until recently no special instructions have been developed at the national level to ensure the storage and decontamination of mercury containing materials, as well as there were no clear procedures for working with mercury spills, cleaning, management and storage of such waste in HCOs. Only within the framework of the UNDP-GEF project the management plans were developed for gradual withdrawal of mercury-containing materials in 11 pilot HCOs. A new practice is being introduced - all these HCOs should cooperate with the Khaidarkan mercury plant. Since 2018, all HCOs are required to follow the Provisional Guidelines on the management of HCW, where the procedures for handling mercury-containing substances are detailed. However, since these Guidelines are just beginning to be implemented in practice, and because it is not necessary to implement this instruction for private HCOs, the danger of violations in this area remains significant and requires regular monitoring in the field. At PHCI level this risk remains even higher as a result of relatively low skills of the personnel and weak control from the relevant organizations. For example, not all doctors know that mercury is used in the production of so-called energy-saving lamps and their utilization requires special attention. According to some experts, many of mercury-containing waste is actually not recycled and exported to landfills in violation of existing standards. Hence it is urgently required to conduct trainings on the handling and sources of mercury-containing materials.

5.9. Chemicals

By the Governmental Decree "On Sanitary and Epidemiological Surveillance (Control) for Ensuring the Sanitary and Epidemiological Well-being of the Population by the Authorized Body in the Sphere of Sanitary and Epidemiological Well-Being of the Kyrgyz Republic" dated June 6, 2003 No. 329, the Procedure for State Registration of Potentially Toxic Chemicals was approved. It states that during the national registration of potentially toxic chemicals, it is necessary to provide a full description on chemicals. By the Governmental Order No. 335-p of July 12, 2012, a Coordination Commission for the Promotion of Safe Management of Chemicals has been established. Some medicines are also classified as potent hazardous chemicals.

Registration is also carried out in medical institutions with a view to registering and regulating potentially toxic chemicals, accumulating physico-chemical, toxicological-hygienic, environmental-toxicological and other information to prevent their harmful effects on human health and the environment. In 2015-2017, the Governmental Program for the Proper Management of Chemicals was being implemented. The Program noted that in the KR the management of chemicals is the responsibility of a significant number of government agencies, and full responsibility for all aspects of the circulation of chemicals is not ensured. Prior to the introduction of the program, none of the ministries and agencies had in their structure a special staff unit whose functions included the issues of ensuring the rational and safe use of chemicals. Currently, the

continuation of this program is being prepared. The draft of the State Program for the management of consumption wastes and chemical substances is in the process of agreement and with a high probability the program will start in 2019.

The majority of chemical wastes in HCOs are classified as Class D (Г) - toxicologically hazardous medical waste of 1 to 4 hazard classes, including overdue medicines, wastes of medicinal and diagnostic preparations; cytotoxic pharmaceutical waste; disinfectants that cannot be used, with expired shelf life; mercury-containing items, instruments and equipment; other hazardous waste, typical not only for the health sector, for example, solvents, chemicals, batteries, fixatives and other solutions used in the work of analytical and clinical laboratories, etc.

With the exception of mercury-containing substances, many of these chemical wastes are not taken into account in HCOs and are disposed of as non-hazardous waste: they are transported to solid waste landfills, burned or merged into a common sewage system. For example, in the country there are completely no official collection points for used batteries. It should be noted that in general, medical institutions understand the danger of accumulation and improper disposal of chemical wastes, but there are no regulations for handling them, that is why everyone solves these problems in his own way. One of the most common solutions is to reduce orders for hazardous chemicals supplied through centralized supply services.

5.10. Radioactive Waste

Radioactive waste is generated only in third-level healthcare organizations that treat cancer patients. The use of radioisotopes at PHCI level is strictly prohibited. In general, the management of radioactive waste is carried out in accordance with the Law of the Kyrgyz Republic "Technical Regulations On Radiation Safety" and is strictly controlled by the supervisory authorities with exportation to the country's only landfill for the disposal of radioactive wastes. In this PforR radioactive waste management is not provided or handled, therefore the ESSA does not discuss this issue.

5.11. Pharmaceutical Waste

According to the results of surveys conducted among experts and specialists of HCO, the amount of pharmaceutical waste in HCO is negligible. Hospitals, CFMs, HCCs and FAPs order the minimum required number of medicines. The control over the expenditure of these funds is carried out by the Office of the Organization of Medical Assistance and Drug Policy of the MoH, which provides methodological guidance and control over the activities of the supervised services, as well as inspects the activities of HCO on the quality of health care and medicines.

A more significant problem is the formation of pharmaceutical waste in households as a result of the excess of purchased medicines and the lack of specialized places for the delivery of such drugs. In practice, all medicines that have exhausted the expiration date are thrown out in the general flow of solid household waste and are exported to landfills or burned in boilers and domestic ovens. There are no garbage processing plants or incinerators for burning such waste in the country. According to the expert assessment, nothing hinders the establishment of such enterprises, except for the political lobby for the preservation of solid waste landfills.

5.12. Plastic and Glass Waste, not recyclable

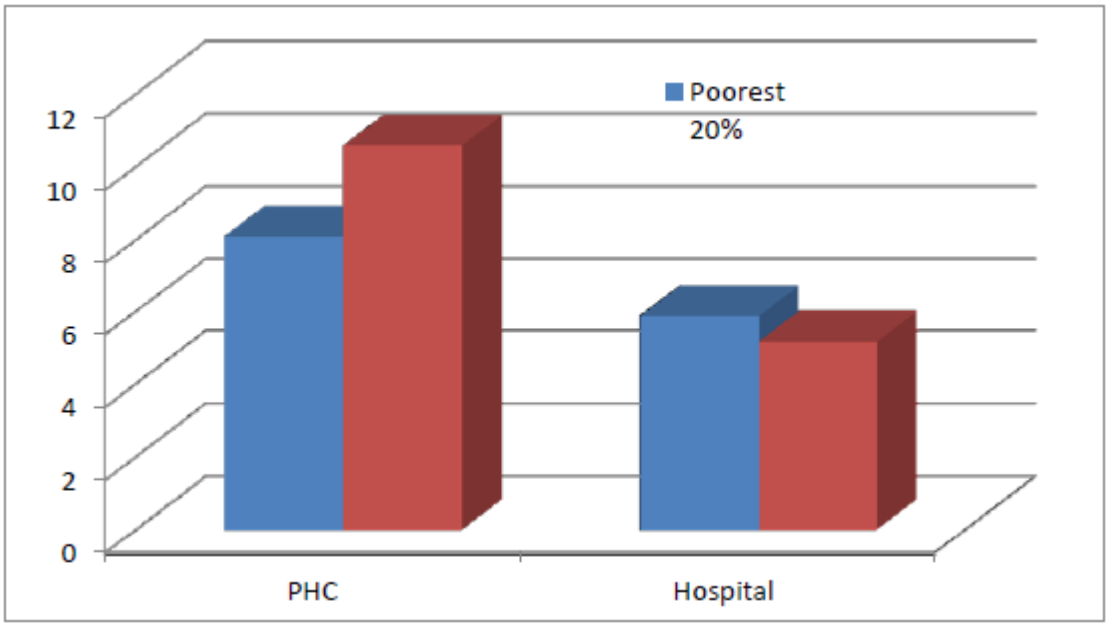
Some plastic and glass HCW cannot be recycled or reused due to lack of technical means and technologies. These include: disposable equipment for blood transfusion or installation of droppers, containers used for drugs or preparations, etc. After disinfection, such wastes also fall into the category of non-hazardous waste and are transported to landfills. At the same time, experts believe that their quantity can be significantly reduced through the delivery to the centralized collection points for medical waste and using more efficient technologies and appropriate equipment - shredders, melting units, etc.

6. SOCIAL CONTEXT AND LEGAL AND INSTITUTIONAL CONSIDERATIONS

6.1. Healthcare Outcomes

In KR's health sector, major progress in expanding access to services still coincides with mediocre outcomes. The government of KR has been successful in improving access to healthcare over the past ten years, and the Kyrgyz population enjoys higher coverage of a number of basic health services, such as immunization, prenatal services, contraceptive use, and skilled birth attendance compared to other low-income and low-middle-income countries. In addition, there is no significant utilization gap between the poor and the rich in either primary health care or hospital services (see figure 5)[4].

Figure 5. Utilization of Primary and Hospital Health Care Services



Source: Kyrgyz Integrated Household Survey, 2009.

On the other hand. life expectancy (at 70.4 years) is at the bottom of the regional curve, falling behind that of other countries in Europe and Central Asia including at similar levels of per capita GDP (Armenia, and Georgia). Even though nutrition outcomes are "good" by reginal standards, stunting still affects some 13 percent of children under 5 years.

While utilization of maternal and child health services is high, and prenatal and skilled birth attendance almost universal, maternal mortality remains high compared to other countries of the same income level and among the highest in the Europe and Central Asia region. For the past decade, the maternal mortality ratio has virtually never dropped below 50 per 100,000 live births, much higher than the MDG target of 15.7 by 2015.[5]

In addition, the increasing number of people with diabetes is a particularly pressing public health concern. According to WHO, in 2015 there were 47,000 registered diabetes patients (approximately 1.2% of the population), which is likely to be higher and closer to 6.2% based on WHO's surveillance methodology. The disparity between official figures and the true diabetes prevalence meant that a large number of diabetes cases were going undiagnosed and, consequently, untreated[6]. There are also nuances in KR's impressive progress on increasing access to healthcare. For instance, although only about 2 percent of the population did not have

[4] Antonio Giuffrida, Melitta Jakab, and Elina M. Dale. UNICO Studies Series 17 Toward Universal Coverage in Health: The Case of the State Guaranteed Benefit Package of the Kyrgyz Republic. January 2013. The World Bank. Washington DC.
[5] Kyrgyz Republic MDG5/MDG Acceleration Framework for the Kyrgyz Republic Progress Update and Policy Recommendations. May 2015 Europe and Central Asia. The World Bank.
[6] http://www.euro.who.int/en/health-topics/noncommunicable-diseases/diabetes/activities/country-level-diabetes-efforts/kyrgyzstan-implementing-the-pen-protocol-to-enhance-diabetes-diagnosis

access to health services in 2015, 80 percent of these were people from rural areas. In addition, the under-5 mortality rate is more than 50 percent higher among the bottom 40 than among the top 60, respectively, 37.4 and 24.0 deaths per 1,000 live births[7].

6.2 Legal Context

Health and Patient Rights. The Constitution of the Kyrgyz Republic stipulates that all citizens have a right to an environment favorable for humans' life and health, and compensation for damage caused to health or property by nature management activities. It also provides a legal framework that supports gender equality and promotes women's empowerment stating that: "All persons in the Kyrgyz Republic shall be equal before the law and the court" and that "No one may be subjected to any discrimination, [and the] rights and freedoms of persons shall not be abridged on account of origin, gender, race, nationality, language, creed, political and religious convictions, or on any other account of personal or public nature" (Article 15[3]). Finally, the Constitution ensures the right to social protection for everybody. Specifically, Article 47 states everyone has the right to health protection; and that the State creates conditions for medical services and health care, and takes measures for the development of the national, municipal and private health care sectors; and free medical services.

The current health care system foundation is based on legislation adopted between 1999 and 2005 (see box 2).

[7] Kyrgyz Republic Systematic Country Diagnostic (draft). 2017. The World Bank.

Box 2. Health Legislation of the Kyrgyz Republic

- Law No.112 “On health insurance of the citizens” (1999);
- Law No.159 “On the single-payer system for healthcare financing in the Kyrgyz Republic” (2003);
- Government Decree No.215 “Regulations on the Compulsory Health Insurance Fund under the Ministry of Healthcare” (2003); and
- Law No.6 “On health protection of the citizens” (2005).

In addition to the above, legislation has been enacted which addresses specific target areas including:

Nutrition and child health:

- Law No.112 “On medical insurance for citizens” (1999);
- Law No.6 “On health protection of the citizens” (2005);
- Statute No.7 “Cash nutrition standards in social institutions” (2008);
- Statute No.691 “On social standards with regard to the provision of social services to families and children, as well as to institutions providing social services to children with deprived backgrounds” (2012);
- Government Decree No.694 “On the adoption of a subsistence minimum structure for the main social and age groups in the Kyrgyz Republic” (2009); and
- Government Decree No.734 of the Prime Minister “On the policy for the national school meals program and school feeding strategy” (2014).

Maternity:

- Labor Code No.106 (2004);
- Law No.33 “On state guarantee and compensation for people living and working in high altitudes and remote inaccessible areas” (1996);
- Government Decree No.727 “On the procedure of granting, payment and amount of temporary disability benefit and maternity benefit” (2011); and
- Resolution of the Jogorku Kenesh No.1115-111 “On the approval of basic rate” (2006).

Disability:

- Law No.57 “On state pension social insurance” (1997);
- Law No.111 “On the basic principles of social service provision to population” (2001);
- Law No.318 “On state benefits” (2009);
- Statute No.822 “On the procedure of granting of state benefits” (2009);
- Government Decree No.691 “On social standards with regards to provision of social services to families and children, as well as to institutions, providing social services to children with deprived background” (2012); and
- Government Decree No.7 “Cash nutrition standards in social institutions” (2008).

Patient rights are regulated by Chapter 9 of the 2005 Health Protection Law, which entitles patients to:

- receive medical care of high quality by public and private health care providers;
- have a choice of physician at both outpatient and inpatient health facilities;
- receive medical, pharmaceutical, orthopaedic and other health services within the package of services defined by the government;
- receive respectful and humane treatment by health workers;
- receive health services (including examination, prevention, treatment and rehabilitation) in facilities that meet sanitary and hygienic standards;
- participate in scientific and medical experiments only with written consent;
- receive assistance from lawyers or other legislative representatives to protect their rights;

- be attended by religious leaders while in hospital and be granted conditions for religious ceremonies, including, where possible, provision of separate premises; and
- refuse the participation of medical students during diagnostics and treatments.

Access to Information. According to the Law "On Guarantees and Free Access to Information" (amended 28 December 2006), each state agency is obliged to provide relevant information (including information on health reforms and standards) to citizens and NGOs within a period of two weeks[8].

Land Acquisition. Under this Program, only minor refurbishment within existing facilities that will not impact private assets or livelihoods will be supported. No impact on private assets or livelihoods is therefore expected.

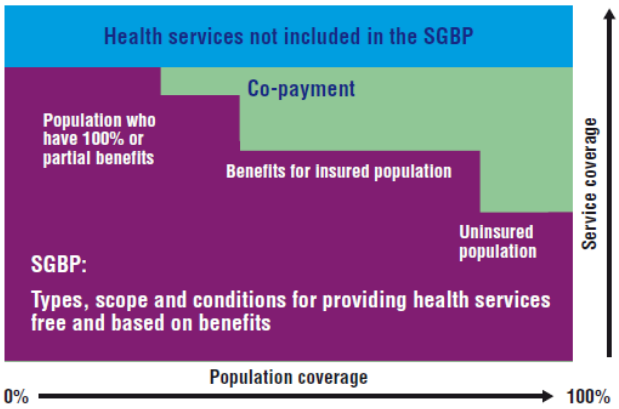
6.3 Institutional Context

State Guaranteed Benefit Package

The government of the Kyrgyz Republic has created systems for social protection, which are being modified to meet the current needs of its citizens. The social protection system consists of social insurance such as pension as well as health insurance, social benefits for vulnerable groups, employer liability, and social services. Social assistance programs target old age befits (65+ for men, 60+ for women), disability benefit, survivors benefit for children, mothers – heroines (mothers 55 and older with more than 7 children), and low-income families with children. The government also provides a monthly benefit for poor families with children (MBPF) which explicitly targets poor rural households, at the exclusion of urban poor families.

The SGBP provides free primary and emergency care services to the entire population. To receive primary care, patients must enroll with an FGP and seek care in their place of enrolment. However, they are allowed to change FGP freely, and, unlike under the Soviet system, the FGP need not be where the permanent residence permit is registered. Inpatient and specialized outpatient care are provided with appropriate referrals, but with copayments. Figure 6 illustrates population coverage under the SGBP.

Figure 6. Population Coverage Under SGBP



Source: World Bank. 2013

Copayments are defined as flat lump-sum payments made upon admission. The level of copayment varies across oblasts, by insurance status, by exemption status, and presentation of a referral slip from a primary care physician. The level of copayment for hospital care is the only difference between the insured and the uninsured, since they all receive services in the same facilities. Exemption categories were drawn up on the basis of social considerations and disease types, with the aim of protecting vulnerable groups of the population and those with the highest expected use of health services. Health care providers receive a higher payment for treating patients exempted from co-payments in order to prevent an adverse selection of patients.

The SGBP entitles vulnerable groups to two types of copayment exemptions

[8] Health Systems in Transition: Kyrgyzstan Health System Review. 2011. The European Observatory on Health Systems and Policies

- *Targeting based on social categories*, which is aimed at reaching economically vulnerable groups, defined largely in terms of social and demographic characteristics, such as World War II veterans, children under five years of age, pensioners 75 years or older, victims of the events of 2010 and their families, and the disabled regardless of their income.

- *Targeting based on medical condition and disease*, aimed at protecting those with expected high use of health care services (including pregnant women, terminal stage cancer patients, those with type I and type II diabetes, and those with hemophilia) and preventing the spread of and curing diseases with important public health consequences and externalities (including TB, AIDS, syphilis, anthrax, polio, and diphtheria)[9].

Access to Medication

In 2000, the MHIF introduced the Additional Drug Package (ADP) on a pilot basis. Drug benefits provided by the ADP are available to citizens enrolled in the MHI and in an FGP. Under the ADP program, the MHIF contracts pharmacies for the delivery of drugs included in the predetermined list. Pharmacies are reimbursed an agreed price that is based on the cost of the generic version of the drugs, and patients must pay the difference if the price charged by the pharmacy is higher[10]. Although public sector prices for medicines are not regulated, through the SGBP insured citizens can purchase required medicines on MHIF prescription. The reimbursement rate for medicines included in the ADP list is set at 50% of the calculated baseline price; thus, patients have to co-pay around 50% for co-funded ADP medicines According to the MHIF, in 2014 its reimbursement rate for medicines was 54.4% and its expenditure on medicines and medical devices constituted 33% of its general expenditure[11].

Insurance Options

Those who are not formally employed or self-employed can purchase insurance in the MHIF. Unemployed persons can purchase a 12-month insurance policy. In June 2018, the prices more than doubled from 500 som to 1200 som (less than US$1.50 per month). Uninsured pregnant women are issued a 12-month insurance policy once they register their pregnancy with the local medical personelle. This will then cover the pregnancy as well as the first few months after the birth of the child. Children are insured through state budget throughout their school years which can extend to those attending university. Those living in extreme poverty can register with local Village Administrations at which point their insurance is paid through the state budget. If a person requires care, but does not have insurance, the Care Facility Committee, which includes the Chief Doctor and Chief Nurse, meets to determine whether to provide service to the uninsured person.

Patient Safety

All health facilities are subject to infection control inspections every three months, MHIF inspections and hygiene inspections every six months and public health monitoring and evaluation and the Ministry of Health appraisal of managers every year. A joint decree of 2016 by the MOH and the MHIF stipulates the procedures for on-site validation of reimbursement claims. A total of 36 trained experts from territorial branches of the MHIF visit facilities twice a year to examine a 1% sample of primary health care records and 3% (or 100 cases) of hospital records. No disease-, procedureor theme-specific studies use criterion-based auditing to standardize and simplify the assessment of homogeneous case mixes but there are plans to focus attention on high-risk institutions, which are identified by analysing the MHIF database. This would encourage institutions to monitor their own performance more carefully and to demonstrate the effectiveness of their internal governance[12].

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[9] Antonio Giuffrida, Melitta Jakab, and Elina M. Dale. UNICO Studies Series 17 Toward Universal Coverage in Health: The Case of the State Guaranteed Benefit Package of the Kyrgyz Republic. January 2013. The World Bank. Washington DC.

[10] Antonio Giuffrida, Melitta Jakab, and Elina M. Dale. UNICO Studies Series 17 Toward Universal Coverage in Health: The Case of the State Guaranteed Benefit Package of the Kyrgyz Republic. January 2013. The World Bank. Washington DC.

[11] Medicine Prices, Availability, Affordability in Kyrgyz Republic. 23 November 2015. MeTA Project in Kyrgyzstan. Medicines Transparency Alliance. Bishkek

[12] Quality of care review in Kyrgyzstan. September 2018. World Health Organization.

Access to Information

According to the European Observatory on Health Systems and Policies, the law on access to information is used widely by NGOs and that they regularly submit enquiries to the Ministry of Health, the MHIF, the Department of State Sanitary-Epidemiological Surveillance and the Department of Drug Provision and Medical Equipment.
Information about patient rights in the health sector is accessible on the websites of the MOH and the MHIF. The MHIF has also carried out public awareness campaigns, including the dissemination of information leaflets, the publication of articles in newspapers and broadcasts on national television and radio.

Feedback Mechanisms

Avenues in the health sector through which patients and the public can provide feedback include:

- writing letters of complaint to the Ministry of Health and subordinated agencies;
- attending regularly available personal appointments with the Minister of Health or his/her deputies, the heads of departments of the Ministry of Health and the heads of subordinated agencies; and
- airing complaints in the mass media in special sections or at particular times (such as "questions and answers", hotlines, or "you ask – we answer").

In situations where patient rights are violated, patients can address their complaints to the manager or other staff of the health facility where they received health services, to the appropriate professional association or to a civil court. All complaints are registered and investigated further by a specially established commission. Following the work of the commission, the manager of the respective health facility is informed about the outcome of the investigation. Where infringements of patient rights have been established, the manager of the health facility imposes a legally defined penalty on the member of staff who has violated patient rights. Any informal payments received by staff have to be returned to the patient.

If the commission concludes that the treatment was of poor quality, the regional department of the MHIF imposes penalties on the respective health facility, according to the Law "On Health Insurance of the Citizens of the Kyrgyz Republic" (adopted 18 October 1999), which regulates the management and quality assurance of medical services. Where irregularities in the use of earmarked health care funds are found in the regular check-ups of health facilities by the regional departments of the MHIF, the case is handed over to the Ministry of Health.

The MHIF bears the primary responsibility for protecting patient rights to health care. It has a central unit as well as regional (*oblast*) units whose main function is to work directly with patients for the protection of their rights (Government of the Kyrgyz Republic, 2006).

Specifically, each regional unit has the following tasks:

- to operate a hotline;
- to investigate complaints and ensure corrective measures are taken;
- to conduct information and awareness campaigns on patient rights;
- to work with civil society organizations on issues related to patient rights, particularly in the area of HIV/AIDS;
- to liaise with the broader quality assurance system; and
- to carry out regular patient satisfaction surveys of patients' opinions on the quality of health and preventive care.

A telephone hotline number is prominently displayed in all health facilities, advertised regularly in local newspapers and sometimes distributed directly to the population as part of a calendar or other promotional items. The purpose of this hotline is to receive calls from patients concerning under-the-table payments, negligence, low quality of services and refusal of service on discriminatory grounds, such as having certain diseases or inability to pay. When a call is received, a unit specialist registers the call in a database for further action, such as a visit to the facility in question by the unit's staff. If the enquiry by the unit shows that the complaint is justified, the MHIF formally requests the facility to take specific corrective actions within a certain

time period. The case is open until the MHIF confirms that the required actions have been taken. Failure to follow MHIF's initial recommendations leads to further interventions by the MHIF.

During 2018, the number of calls per week to the MHIF averaged approximately 250 per week, and a total of 159 complaints were received and resolved. In comparison, 141 complaints were received in 2017. Over half of the complaints received during 2018 focused on rudeness and negligence of medical staff and red tape, 41 complaints were about poor quality of treatments and 10 about poor ambulance service, and the remainder of addressed violations of labor laws, denial of medical services or poor conditions in health care organizations.

Patient satisfaction surveys conducted by MHIF take a sample of at least 5% of inpatients and primary care users. The results of these surveys are analyzed, reported back to health providers and taken into account when concluding contracts with service providers[13].

In addition to responding to specific complaints, experts from each regional unit visit randomly selected facilities to check the quality of health services, review the volume and use of formal co-payments and observe the patient–health worker interaction to ensure that patients are treated with respect. Violations of approved clinical protocols and patient rights are recorded and followed by a formal letter to the facility manager, who is required to respond in a given time frame providing evidence of corrective measures that have been taken. These random checks are carried out on a quarterly basis.

Staffing

According to Ministerial Order No. 31 (2015) on the norms of staff units in health organizations, there should be one family medicine doctor for every 2000 population, two family nurses for each position of family medicine doctor and one feldsher per 1000 population[14].

To attract and retain health workers in rural areas, the MOH has implemented the following measures:

- According to Article No. 97 of the 2005 Health Protection Law, students who received state scholarships for medical studies must serve in assigned rural areas for a minimum of two years following graduation.

- Originally developed to attract young doctors to rural areas with particularly high shortages of health staff, the Deposit Program for Doctors was gradually turned into a program to retain existing staff, without particular regard for their age. It is a three-year program in which doctors willing to relocate to remote villages with acute shortage of medical personnel would receive 3,000 soms (US$83) per month into their bank account (subject to income tax), which can be withdrawn only every six months. Given the failure to recruit new doctors, the MOH decided to allow doctors to apply for their current positions so as to retain, at least, those physicians already working in these villages. The program has thus become a tool for retaining existing health workers more than attracting new ones. As of early 2009, there were 147 participants in the program. Of those, 20 were graduates of clinical residency and postgraduate study, and the remaining 127 were local doctors. By early 2010, the total amount paid to doctors working in this program was 6.3 million Kyrgyz soms.

- A one-year internship program was reestablished in 2007 requiring students to undertake practical training in the country's oblasts (oblast merged hospitals, oblast FMCs, territorial hospitals, and rayon FMCs), which are in mostly semi-urban and rural areas[15].

Information and Data Management

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[13] Antonio Giuffrida, Melitta Jakab, and Elina M. Dale. UNICO Studies Series 17 Toward Universal Coverage in Health: The Case of the State Guaranteed Benefit Package of the Kyrgyz Republic. January 2013. The World Bank. Washington DC.
[14] 'A scoping review on health services delivery in Kyrgyzstan: what does the evidence tell us?' 2018. WHO European Centre for Primary Health Care Health Services Delivery Programme, Division of Health Systems and Public Health.
[15] Antonio Giuffrida, Melitta Jakab, and Elina M. Dale. UNICO Studies Series 17 Toward Universal Coverage in Health: The Case of the State Guaranteed Benefit Package of the Kyrgyz Republic. January 2013. The World Bank. Washington DC.

Monitoring and evaluation is conducted through a health information system consisting of five databases: the MHIF database on the insured population, the enrolment database that enables primary care facilities to make capitation-based payments, the hospital admission database with case coding that enables case-based payments, the outpatient care utilization registry, and the ADP database.

The MHIF information system tracks utilization of health services and copayments made under the SGBP by type of condition, social category, and geographic area. These databases play an important role in monitoring SGBP. Based on its routine analysis of payment and utilization data, the MHIF does the following:

- *Examines the outliers*, that is, facilities that have unusually low or high volume of reported copayments against the reported cases and conducts inquiries in cases where there is incongruence between reported cases and copayments. For example, if a case in a certain diagnosis-related group should have a certain level of copayment but the reported copayment is much higher, there is an inquiry, and depending on the outcome, further actions are taken.
- *Identifies barriers to utilization.* For example, if the utilization of child health services has decreased in a certain geographic area or facility compared to other comparable facilities or to the previous period, the MHIF quality control unit will examine this facility more closely by sending its experts to that facility for random checks, to review documentation, and to interview patients (for example, utilization may be falling because of informal payments).
- *Forecasts income for the next year.* Since copayments are an important source of financing, the information on the previous year's volume of copayment is used in budget preparation.
- *Estimates expenditures for next year.* Since hospitals are paid for the number of cases and payments depend on the case mix, the data are also used in predicting the "needs" or the required budget.
- *Examines the impact of new policies*, such as the abolishment of copayments for deliveries, on the budget of health facilities and sustainability of the SGBP[16].

In addition, the MHIF introduced a set of process indicators as part of its contracts with health facilities under the SGBP that includes growth monitoring and routine prophylactic of children under five, timely vaccination of children in accordance with the immunization program, timely provision of prenatal care, and follow-up of patients with primary-care-sensitive conditions (such as asthma, hypertension, and chronic obstructive pulmonary disease).

7. SOCIAL CONSIDERATIONS AND POTENTIAL RISKS FOR THE PRIMARY HEALTHCARE QUALITY IMPROVEMENT PROGRAM

Based on the context presented in Chapter 6, the following two Core Principles, namely, Core Principle 1 "General Principle of Environmental and Social Management" and Core Principle 3 "Indigenous Peoples and Vulnerable Groups" are found to be relevant on social ground. Core Principle 4, Land Acquisition, is not relevant because the Program will only support minor refurbishment of existing facilities. No impact on private assets or livelihoods is therefore expected.

More detailed description of social issues relevant to the Program is provided below:

[16] 'A scoping review on health services delivery in Kyrgyzstan: what does the evidence tell us?' 2018. WHO European Centre for Primary Health Care Health Services Delivery Programme, Division of Health Systems and Public Health.

7.1 Social Considerations

Access to PHC

Overall. Under Ministerial Order No. 229 (2006), family medicine doctors and nurses at family medicine centers have a working day of seven hours over a five-day workweek. This schedule includes three hours of receiving patients, three hours of home visits and a weekend shift. Still, reports consistently cite opening hours in primary health care as being extremely restrictive. Informants describe most facilities as being open six hours on average, with two hours of home visits, resulting in four hours daily for patient consultations. An appointment system or formalized lines are not in place nor is an alternative to hospitals for after-hours care. Consequently, there is excessive reliance on hospital inpatient care and ambulance services[17].

In Rural Areas. PHC in rural areas is covered by feldsher-ambulatory units staffed by at least one feldsher or nurse and midwife in larger villages. In addition, family group practices are either included in the family medicine centres in cities or serve villages with more than 2,000 people, and general practice centres are established by merging primary health care facilities and territorial hospitals and provide services in remote and hard-to-reach areas. Despite the diversification of settings for primary health care to improve access, the availability of health practitioners in rural areas is consistently reported to be insufficient[18] which has an adverse impact on access and quality of PHC services.

According to the Mid-Term Review of the "Manas Taalimi" Program, while at the PHC level the norm is one FGP per 1,500 people, the share of FGPs with more than 2,000 enrolled people is increasing in rural areas. In 2006, at the start of "Manas Taalimi," 58 percent of rural FGPs had an enrolled population greater than 2,000, and the target was to reduce this to 33 percent. However, the value of this indicator has increased, reaching 81 percent in 2007. In many rural areas, the inability of the MOH to attract young graduates is leading to long-standing vacancies, an increased workload for existing staff, and aging of the health worker population[19]. Family medicine doctors have limited incentives to work in remote locations, and local authorities have had a limited role in mobilize incentives to attract and retain PHC practitioners[20].

Coverage and Targeting of the State Guaranteed Benefit Package

Despite the legislative basis for the coverage of services provided by the SGBP, some services that are included in this package still require co-payments or informal payments, as a result, of which out-of-pocket payments remain high. In addition, there is ambiguity regarding the package of services to be delivered in primary healthcare, which appears to be related to the unclear scope of practice of family medicine doctors. Reports also note that patients are unaware of the ADP that covers the price of drugs or subsidizes a portion of the price[21]. There is also lack of clarity regarding the option to change FGPs upon moving to a new location. This has created has created problems among the growing number of internal migrants, who believe that they are not entitled to seek primary care until they receive permanent residence in their new location, which often takes years[22].

Although patients from low-income groups have the right to copayment exemption, there are concerns that copayment exemptions are not being targeted effectively to such groups. For instance, a 2013 study carried out by Jamal and Jakab indicated that 50 percent of the poorest quintile and 39 percent of the richest are availing of copayment exemptions. Moreover, decisions regarding whether patients are exempt from co-payments are taken on a case-by-case basis by an individual facility committee, since mechanisms for

[17] A scoping review on health services delivery in Kyrgyzstan: what does the evidence tell us?. 2018. WHO European Framework for Action on Integrated Health Services Delivery
[18] A scoping review on health services delivery in Kyrgyzstan: what does the evidence tell us?. 2018. WHO European Framework for Action on Integrated Health Services Delivery
[19] Health Systems in Transition: Kyrgyztan Health System Review. 2011. The European Observatory on Health Systems and Policies
[20] Antonio Giuffrida, Melitta Jakab, and Elina M. Dale. UNICO Studies Series 17 Toward Universal Coverage in Health: The Case of the State Guaranteed Benefit Package of the Kyrgyz Republic. January 2013. The World Bank. Washington DC. c
[21] A scoping review on health services delivery in Kyrgyzstan: what does the evidence tell us?. 2018. WHO European Framework for Action on Integrated Health Services Delivery
[22] A scoping review on health services delivery in Kyrgyzstan: what does the evidence tell us?. 2018. WHO European Framework for Action on Integrated Health Services Delivery

exemptions are not well defined. If an exemption is granted, the costs are covered by the reserve fund of health organizations that are financed by setting aside 10 percent of all copayments. In addition, the process of obtaining documents to certify whether the income of patients is below the poverty threshold is unclear[23].

Access to Medication

Although in principle all insured people are entitled to medicines under the ADP, a 2016 WHO report indicates that in practice ADP medicines can only be prescribed and dispensed to patients who are enrolled at a FGP. This is linked to the prescribing budget granted to FGPs. For each registered patient the FGP has a maximum amount of KGS 50 (US$ 0.77) that can be prescribed within one year. If this ceiling is reached early, no more medicines can be reimbursed under the ADP for the rest of the year, and patients have to pay fully out of pocket for ADP medicines.

Moreover, even though patients have to co-pay around 50% for co-funded ADP medicines, it rarely ends up being exactly 50% because of the absence of price regulation at the retail level. The price is not fixed, however, but determined on an individual basis when calculating the baseline price. Legislation requires regular revisions of baseline prices, but in practice this happens on an occasional basis. The last revision took more than two years (from 2012 to April 2015). According to information from the MHIF, the process of recalculation is a matter of staff resources: it can take 4–6 months to revise the whole list[24].

Management of Medical Conditions

Maternal Health. Given the lack of sustained progress toward achieving MDG 5, the Government of KR and the UN system agreed to adopt the MDG Acceleration Framework (MAF) in 2013 and to implement high impact feasible solutions that were also incorporated in the "Den Sooluk" healthcare reform program[25]. These interventions have focused on: Sexual and Reproductive Health, Antenatal Care, Effective Perinatal Care and Emergency Obstetric Care, and have included several urgent measures such as increasing the awareness of women on warning signs of malnutrition during pregnancy, and development and introduction of clinical protocols on safe abortions in all provincial/oblast maternity hospitals and maternity hospitals and private clinics of Bishkek and Osh where high-risk pregnancies have been concentrated[26].

However, the level of compliance and implementation of the various clinical protocols for maternal care will need to be ensured to track the results of measures that have been put in place.

Diabetes. The Government of KR has taken several measures to stem the increase in diabetes, both in terms of policies, guidelines and monitoring as well as the availability of medicines, basic technologies and procedures in primary care facilities (see figure 7) for an overview of their initiatives[27].

[23] Antonio Giuffrida, Melitta Jakab, and Elina M. Dale. UNICO Studies Series 17 Toward Universal Coverage in Health: The Case of the State Guaranteed Benefit Package of the Kyrgyz Republic. January 2013. The World Bank. Washington DC.
[24] Pharmaceutical pricing and reimbursement reform in Kyrgyzstan. 2016. World Health Organization.
[25] https://kyrgyzstan.unfpa.org/en/news/visit-maternity-house-national-mother-and-child-health-center
[26] Kyrgyz Republic MDG5/MDG Acceleration Framework for the Kyrgyz Republic Progress Update and Policy Recommendations. 2015. World Bank.
[27] World Health Organization – Kyrgyzstan Diabetes Country Profiles, 2016.

Figure 7 KR National Response to Diabetes

Policies, guidelines and monitoring

Operational policy/strategy/action plan for diabetes	*Yes*
Operational policy/strategy/action plan to reduce overweight and obesity	*Yes*
Operational policy/strategy/action plan to reduce physical inactivity	*Yes*
Evidence-based national diabetes guidelines/protocols/standards	*Available and fully implemented*
Standard criteria for referral of patients from primary care to higher level of care	*Available and fully implemented*
Diabetes registry	*Yes*
Recent national risk factor survey in which blood glucose was measured	*Yes*

Availability of medicines, basic technologies and procedures in the public health sector

Medicines in primary care facilities	
Insulin	●
Metformin	●
Sulphonylurea	●
Procedures	
Retinal photocoagulation	●
Renal replacement therapy by dialysis	●
Renal replacement therapy by transplantation	○

Basic technologies in primary care facilities	
Blood glucose measurement	●
Oral glucose tolerance test	●
HbA1c test	●
Dilated fundus examination	●
Foot vibration perception by tuning fork	●
Foot vascular status by Doppler	●
Urine strips for glucose and ketone measurement	●

○ = not generally available ● = generally available

Source: World Health Organization. Diabetes Country Profile. 2016.

At the same time, at the PHC level diabetic patients are referred to private laboratories for testing, which charge some 500 Kyrgyz som (US$ 7.5) per test, significantly higher than the actual cost of the test (≈ US$1). This has serious adverse implications, such as deterring such patients from getting tested and monitoring their diabetes and imposing a high financial burden on those who do agree to use the private lab instead of being tested at the PHC facility.

Treatment Capacity at PHC Level

Despite its legislative basis, the scope of practice of family medicine doctors appears ambiguous, with a low perception among patients in terms of what services they provide. This perceived lack of capacity lack of capacity or additional training to confirm diagnosis, even at low risk levels, has resulted in frequent referrals to specialists without risk stratification. Consequently, treatment and secondary prevention in primary health care remains limited and there is limited follow-up on monitoring recommended treatments for patients.

Moreover, lifelong learning for nurses appears to be limited because of a lack of trainers of family medicine Nursing services are considered to be task-based rather than patient-centered. Their training is carried out by physicians, rather than nurses, and their education is predominantly disease and procedure-oriented rather than promoting critical thinking.

Feedback from Patients

Inspite of the provisions of the existing legislative framework on protecting patients' rights on funded care, privacy, information and dignity (2005), issues from patients' perspective and experience are not sufficiently addressed. The MHIF has an established call center which is toll-free to both land and mobile lines, whereas MoH system entails a fee for those without a land-line, which serves as a disincentive for the inhabitants of rural areas who often have only mobile phones. Finally, even though MOH, MHIF have systems in place to

collect, review and report on complaints from patients and quality councils[28], there is no evidence of such efforts by PHC facilities[29].

Public Awareness

The Government of KR has implemented numerous initiatives to increase awareness of public health issues and standards. For instance, interventions such as Health Walk Day and media campaigns such as Know Your Blood Pressure!, Week of Hypertension by village health committees and blood pressure assessments at the workplace are being conducted nationwide. The efforts of village health committees are also considered to be successful to raise public awareness of topics such as as infant care, brucellosis, healthy lifestyles, cardiovascular diseases, especially in remote areas. Still, there is persistent lack of awareness nationwide about healthy lifestyles, especially regarding healthy diet and physical activity According to the WHO STEP-wise approach to surveillance survey (2013), only 26% of respondents consume the recommended amount of fruit and vegetables, even though they are widely available and accessible, especially in rural areas. Awareness of family planning and use of contraception is still a point of concern partly because of religious and traditional influence[30].

7.2 Social Risks

The social considerations outlined above against the backdrop of the context described in Chapter 6 indicate that the overarching social risk for the PHC Quality Improvement Program is that of ensuring that there is equitable access to the Program's benefits, particularly for vulnerable groups.

One of the core aspects of assuring quality medical care is to take measures towards ensuring accessibility to health services for PHC patients, especially for those groups that are contending with diabetes or need maternal care, both of which are deemed to be high priority by the MoH's latest health reform program for 2019-2030. Although directives and clinical protocols for managing maternal care and diabetes by PHCs are in place, their implementation would need to be incentivized, implemented and monitored on a consistent basis to assure adequate care for these conditions at the PHC level.

Moreover, the fact that low-income groups have to contend with the financial burden of co-payments or informal payments is contrary to the principles of equitable access and quality of care. Ambiguity regarding services that are included in the SGBP as well as the absence of price regulation of ADP medicines have a high likelihood of either being a deterring factor for accessing to PHC services or compromising the management and treatment of health conditions that could be fatal.

Limited treatment capacity at the PHC level has serious implications for patient protection, and the right of patients to receive high quality medical care. In this regard, benchmarking and reporting on provider performance, as well as accessible and continuing opportunities for PHC staff to receive training (particularly those who are female and/or are based in rural areas) would be essential.

Given that only formal mechanisms for feedback from patients and the public are being implemented by the MOH and the MHIF attests to a gap at the PHC level in this regard. Attempts to reform or improve the quality of PHC facilities would be incomplete and ill-informed without receiving and addressing feedback from patients.

Finally, only minor refurbishment within existing facilities that will not impact private assets or livelihoods will be supported under this Program. No impact on private assets or livelihoods is therefore expected.

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[28] A scoping review on health services delivery in Kyrgyzstan: what does the evidence tell us?. 2018. WHO European Framework for Action on Integrated Health Services Delivery

[29] Health Systems in Transition: Kyrgyzstan Health System Review. 2011. The European Observatory on Health Systems and Policies

[30] A scoping review on health services delivery in Kyrgyzstan: what does the evidence tell us?. 2018. WHO European Framework for Action on Integrated Health Services Delivery

8. CONCLUSION REGARDING KR CAPACITY TO MANAGE SOCIAL RISKS AND RECOMMENDED ACTIONS

Key strengths and weaknesses of the KR health system to implement the PHC Quality Improvement Program are as follows.

8.1 Strengths

Successive health reforms in KR have already achieved improvements in several key aspects of health system performance. In this regard, the introduction of the SGBP and the ADP has helped in using the limited resources for health more effectively. In addition, establishing a specified budget for the SGBP, in conjunction with MHIF funds, has made it possible to improve access to health services for the most vulnerable groups, and to increase the efficiency and transparency of health care provision.

The Government of KR already has in place a series of legislation and strategic plans that have driven health reform and progress towards improving the quality of care. Chapter 6 provides an overview of the relevant legislation.

In addition, several initiatives, funded primarily by development partners have sought to translate the intentions of the strategic plans into action in pilot sites[31]. For example, the World Bank supported Results Based Financing resulted in increasing compliance with standard for pregnant women stood from 35- 40% which to 65% compliance. Based on the gaps that this Program identified gaps in the Maternal Child Health guidelines, a New Order on Hospital Quality Control was issued by the Government of KR.

Clinical protocols and guidelines exist for most of the Den Sooluk program's priority areas, including maternal and child health, tuberculosis and hypertension. Compliance with clinical protocols and guidelines, when available, is a key dimension of the validation process that is used by the MHIF[32].

The development of health and clinical information systems is a national priority, which would be useful for monitoring and benchmarking. The Government's joint annual review Resolution 134/2016 approved the eHealth strategy and action plan for 2016–2020 to centralize electronic patient records, patient administration, information and references – and to establish interaction with each health facility. Each facility will have to procure hardware and systems to interface with the national center. This should include defining who is responsible for data quality, analyzing and interpreting aggregated data and feeding back to the sources for verification and learning[33].

There are a number of initiatives for training PHC providers. The Kyrgyz State Medical Institute of Retraining and Continuous Medical Education has been leading in the development of primary health care and the introduction of family medicine. The Institute developed and implemented a comprehensive primary health care education and training strategy between 1995 and 2005, with support from a number of international donors, including the World Bank, the USAID ZdravPlus project, Kyrgyz–Finnish projects, and other development partners. The strategy initially included 11-month training courses in family medicine, the establishment of oblast level family medicine training centers and the retraining of all primary health care doctors and nurses in the country[34].Furthermore, the Kyrgyz State Medical Academy is developing a new curriculum, and the Hospital Association and the Association of Family Doctors and Nurses have been involved in certifying doctors and in setting and evaluating the consistancy of standards on medical care between specialties and across the country[35].

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[31] Quality of Care Review in Kyrgyzstan. September 2018. World Health Organization.
[32] Quality of Care Review in Kyrgyzstan. September 2018. World Health Organization.
[33] Quality of Care Review in Kyrgyzstan. September 2018. World Health Organization.
[34] Health Systems in Transition: Kyrgyzstan Health System Review. 2011. The European Observatory on Health Systems and Policies
[35] A scoping review on health services delivery in Kyrgyzstan: what does the evidence tell us?. 2018. WHO European Framework for Action on Integrated Health Services Delivery

The MOH and the MHIF have established feedback systems. These systems have a track record of collecting, reviewing and reporting on complaints from patients, and can be used to inform piloting and possible scaling up of such systems for PHC facilities[36].

There is an active NGO presence in the public health sector. The Kyrgyz Hospital Association and the Kyrgyz Association of Family Doctors and Nurses have been active in Ministry of Health councils and working groups such as on health policy, manager appointments and an evaluation of performance of health-care facilities undertaken in 2015. Many of the 80 medical specialty associations have now merged into the Kyrgyzstan Medical Association. Professional associations are already involved in certifying health-care professionals and in setting and evaluating health-care standards to be consistent between specialties and across the country; professional peer pressure should become a primary driver for improvement[37].

8.2 Weaknesses

The model of primary health care is still unclear. The role of primary health care appears unclear both to the public and health practitioners. Patients bypassing primary health care to directly access specialist care for diagnosis and treatment is a key symptom of this. The system of referral and counter-referral does not function optimally and is challenged by self-referral by patients and excessive reliance by family medicine doctors on specialists for services that could be delivered in primary care. Secondary prevention and acute services fall in the unclear boundaries of the model of primary care. Other symptoms of this challenge include high rates of unnecessary hospitalization and lack of follow-up after discharge from hospital because of unclear information flows.

There is ambiguity regarding the SGBP's package of services. This is essential for ensuring equitable access to PHC, and therefore the first step in improving the quality of medical care. At present there is there is ambiguity regarding the package of services to be delivered in primary healthcare, and there is no clear set of principles to guide the process of setting priorities for what is to be included in the package of services. Reports also note that patients are unaware of the ADP that covers the price of drugs or subsidizes a portion of the price[38].

Adherence to evidence-informed standards in implementing clinical protocols remains low. Reports consistently highlight that clinical protocols are not always in place and updated. Training programs are not aligned with the newly adopted guidelines. Other challenges include the degree to which the protocols facilitate the coordination of services: for example, in HIV services, protocols do not appear to consider differences in the vertical network of providers and decentralized network at family medicine centers.

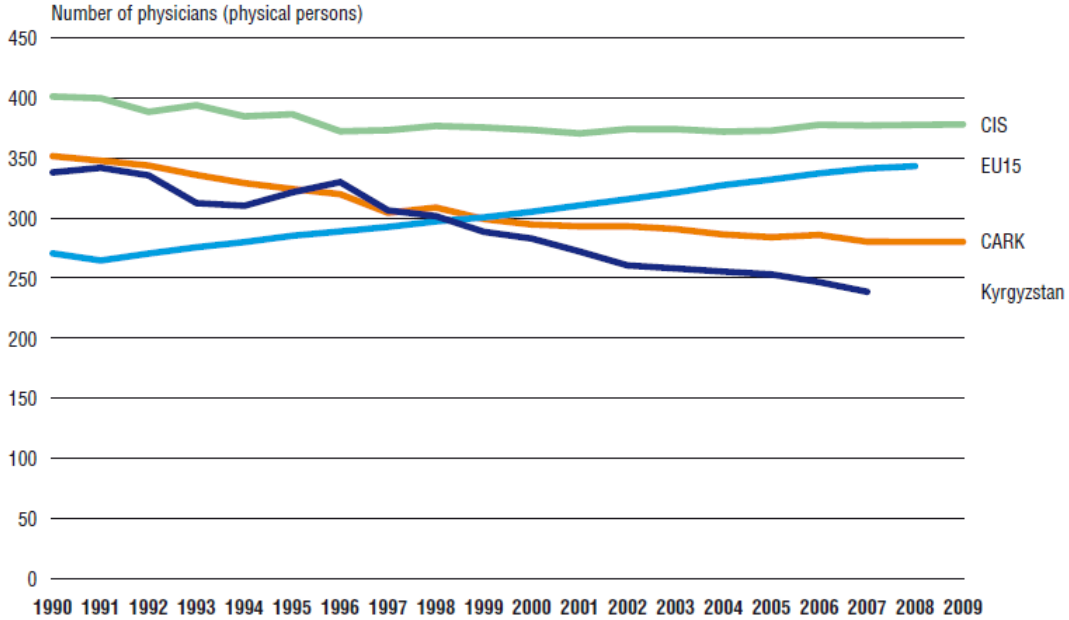
A systematic approach towards training of PHC providers is missing. Although evidence-based medicine was adopted early in the Manas Taalimi strategy, the concepts and implications of research-based clinical practice and relevant techniques of quality improvement are not systematically incorporated in the curriculum, teaching and examination of clinical undergraduates. Moreover, state educational standards approved by the Ministry of Education in 2015 provide general guidance for all training institutions but do not include a statement of knowledge and competencies required by health professionals or define the content of training curriculum. Finally, there is currently no dedicated resource center, archive or clearinghouse to collect and exchange information on the theory and practice of standards, measurements and improvement that is accessible to all health personnel[39].

The number of healthcare providers in KR has continued to decline. There is an increased rate of both internal and external migration among health workers in Kyrgyzstan. In 2009, 1099 doctors and 3080 nurses

[36] Health Systems in Transition: Kyrgyzstan Health System Review. 2011. The European Observatory on Health Systems and Policies
[37] A scoping review on health services delivery in Kyrgyzstan: what does the evidence tell us? 2018. WHO European Framework for Action on Integrated Health Services Delivery
[38] A scoping review on health services delivery in Kyrgyzstan: what does the evidence tell us? 2018. WHO European Framework for Action on Integrated Health Services Delivery
[39] Quality of Care Review in Kyrgyzstan. September 2018. World Health Organization.

left government health facilities; of those, 60 doctors and 180 nurses emigrated. Figure 8 compares the number of physicians and nurses in Kyrgyzstan with other countries in the WHO European Region[40].

Figure 8. Number of physicians per 100 000 population in Kyrgyzstan, CARK, CIS and EU15, 1990–2009



Source: WHO Regional Office for Europe, 2011.

The utility of health information systems would be limited without adequate data reporting. Specifically, in primary health care, data reporting challenges are aggravated by an inadequate material and technical base (such as infrastructure and laboratory and diagnostic equipment), excessive amount of low-information recording and handwritten reporting forms partly because of the inadequately automated system for recording medical and accounting documentation.

Based on a comparison of these strengths and weaknesses, overall the KR public health system is deemed to have adequate capacity to implement the PHC Quality Improvement Program.

8.3 ESSA Recommendations to Address Social Risks

The following actions have been recommended to be taken into consideration for enhancing the Program's design, and to minimize the social risks that have been outlined in chapter 7. As a result, they are now embedded in the Program's technical design and have been incorporated into the Program's tentative implementation schedule.[41] Their implementation performance will be monitored by the Bank's team in its regular implementation support activities.

- **Incentivizing PHC facilities to pilot a new mechanism to collect patient feedback on a regular and consistent basis.** If implemented effectively, this will be useful to improve patients' perceptions

[40] Health Systems in Transition: Kyrgyzstan Health System Review. 2011. The European Observatory on Health Systems and Policies
[41] Table A7.3. Tentative implementation schedule (based on estimated effectiveness of December 2019-March 2020). Program Appraisal Document for Kyrgyz Primary Healthcare Quality Improvement Program

regarding the professionalism and veracity of family care physicians and serve a means for PHC facilities to track their performance while identifying challenges and bottlenecks. The following intermediate results indicator is included in the results framework of the Program: *the number of PHC facilities that pilot a new mechanism to collect patient experience information regularly*. The MoH/MHIF will develop and pilot a patient experience questionnaire in a selected PHC facilities, which is reflected in actions for the Program's main focus of implementation support[42].

- **Providing technical support for developing a methodology for revising the coverage of the SGBP package and instituting a mechanism for regulating prices of the medications that are included in the ADP.** Technical assistance in both areas will be essential for patients, particularly from low-income and vulnerable groups to access PHC. In addition, awareness raising of patients' rights and entitlements should also be an integral aspect of these adjustments. This action is reflected in DLIs 7 and 8[43], and specific actions to implement these DLIs for years 1 through 5 of the Program are detailed in the Program's implementation schedule[44].

- **Monitoring the implementation of clinical protocols for maternal health and diabetes.** This will enable the MHIF to establish targets and benchmarks for managing these health conditions, and to incentivize PHC facilities to adhere to these protocols on a consistent basis. The Program will develop and roll out the Balance Score Card (BSC) to assess the performance of PHC facilities. The BSC rollout, which is reflected in the Program implementation schedule for DLI 6[45] will also cover monitoring of clinical protocols, including those for maternal health and diabetes.

- **A consolidated framework for continuing training and capacity building of PHC staff would be essential for patient protection and the right of patients to receive high quality medical care.** ICT-based solutions for training would be particularly helpful for staff based in remote areas, especially females who may have difficulties traveling long distances from their residences. This action is reflected in DLI 2 on establishing and functioning of a national in-service training e-platform for which specific measures are also elaborated in the Program implementation schedule.

9. CONCLUSION REGARDING INFECTION CONTROL AND HCWM AND RECOMMENDED ACTIONS

9.1. Strengths

A large experience has been accumulated in KR on successful development of the public health system, including multilateral epidemiological, environmental and infection control at all stages of the process of identifying and treating diseases. The priorities of public health support and the prevention of the spread of diseases have been officially announced in sectoral and state documents, including support and development of the infection control within health care system, control of processing and disposal of HCW, improvement of anti-epidemic measures for PHCI, etc. The system of stimulating anti-infectious measures with the use of MHIF mechanisms has been introduced.

The strengths of the holistic system of environmental, epidemiological and infectious safety in health care in Kyrgyzstan at present time include the following: there is a well-developed legislative base for collecting data

[42] Table A7.1. Main focus of implementation support. Program Appraisal Document for Kyrgyz Primary Healthcare Quality Improvement Program

[43] DLI 7. Additional Drug Package for insured population is revised and its budget is increased to improve effective coverage for priority conditions at the primary care level

DLI 8. Price regulation mechanisms for the Additional Drug Package for insured population are developed and implemented

[44] Table A7.3. Tentative implementation schedule (based on estimated effectiveness of December 2019-March 2020). Program Appraisal Document for Kyrgyz Primary Healthcare Quality Improvement Program

[45] The provider payment mechanism for PHC is revised to improve quality and effective coverage for priority services

on public health, and the state structure responsible for collecting and presenting information exists. Epidemiological surveillance of infectious diseases is carried out, possible microbiological and chemical contamination is monitored through the food chain, and long-term programs for combating major diseases have been developed. A system of informing the population about a healthy lifestyle and healthy nutrition through the mass media, the education system, non-governmental organizations and other structures has been created. A unified system of primary medical records and statistical reporting exists in all health organizations, which makes it possible to obtain the comparable information throughout the country. The control and registration of occupational diseases is conducted on semi-annual basis. The National Health Information Center has been established and is constantly supporting the National Healthcare Data Base. Special software "Medstat" is using for collection, compilation and analysis of information collected from national statistical reporting forms. Also, the software for computer tracking of the risk and state of infectious morbidity has been designed and is now actively used. Communication strategies are being introduced to prevent various diseases among the population, with the active participation of the population itself.

Much work has been done by the Government, NGOs and scientific organizations to develop legislative requirements for the management of all types of HCW in hospitals. A special regulation for the safe management of HCWs with standardized definitions is in place, as well as such basic procedures as segregation, handling, transportation, storage and disposal, along with the main responsibilities in the domain. Based on this regulation, the HCOs transposed its main requirements into institution rules that medical and paramedical staff attempt to respect and apply in the best way they can. So, for example, the problem with used disposable syringes is completely solved, almost all of them are sent for recycling. There are ready-made training modules in HCWM developed by the SPA "Preventive medicine" and by the Center for Advanced Training of Health Care Workers, and ready-made guidelines for primary level health care personnel also exist and can be used for improving skills of the personnel involved in HCWM.

9.2. Remaining problems and weaknesses

Despite significant progress in the development of the system of multilateral epidemiological, environmental and infection control, the *systemic gaps remain in the organization of public health*, which keep up environmental, sanitary, health and occupational risks at all stages of the process of identifying and treating diseases. Thus, the data on incidence registration remain incomplete, as the registration of diseases at primary level is mainly passive, based on the number of requests for medical assistance, and not on the basis of active epidemiological surveillance and identification of patients with infectious diseases, including outbreaks. In addition, the public health service is not always informed by the veterinary service about cases of registration of zoo-anthropic diseases among animals. Bacteriological laboratories are weakly equipped, and HCW is not recorded at primary level in rural areas and in many cities. Data about quality of water sources are confidential and inaccessible for population. The lack of a unified database on water quality hampers the analysis of information.

There is a critical lack of specialists in PHCIs of ensuring infectious safety. Existing and available professional staff, especially in rural areas, has insufficient skills in conducting analysis, assessment and prediction of the sanitary and epidemiological situation. The existing information is weakly analyzed and is little used to improve the system and assess risks at primary level. Training personnel in risk assessment methods does not consider modern international approaches and requirements. Accounting, collection and analysis of information is carried out mainly based on paper documents, modern information technologies are not widely used to maintain electronic formats for reporting and information exchange.

Many of strong tools to reduce the infectious and epidemiological hazards, especially in the primary health sector, are new and have started to be introduced relatively recently, and hence need to be tested and analyzed.

Despite the successes of recent years, representatives of many governmental and public healthcare organizations note the *emerging problems in the HCWM* in PHCIs as the most important for ensuring the infectious safety of personnel and patients.

Their generalization allows identifying the following shortcomings:

Systemic: There are too many laws/ regulations on healthcare waste management. However, these are only applicable to public sector facilities. Private facilities do not follow state regulations in HCWM due to the gaps in the legislation. Further, sector specific standards and procedures are in infancy particularly for primary healthcare facilities. Existing HCWM model revolves around secondary healthcare level (mainly hospitals)

and is overloaded. Hospitals can refuse taking waste from PHCIs. System for the management/disposal of medical waste and infection control is generally poor at PHCIs, particularly in remote rural areas.

There is also lack of information and little data is available on the environmental impacts of inadequate healthcare waste management. Interviews with the concerned primary healthcare staff did not provide any evidence on the mechanism for maintaining database on soil, air and water pollution resulting from inadequate healthcare waste management practices. Whether staff at the primary healthcare facilities had any waste care and handling related infection, OHS related issues, no data could be obtained. In terms of hardware, adequate HCW handling equipment (collection and transportation) and disposal infrastructures at primary level (waste containers, color plastic bags, transportation means adequately equipped, disposal facilities, etc.), is lacking. Equipment for processing and decontamination of medical plastic disposable devices (except syringes), inefficient handling and storage of medical devices and products is also inadequate. Expensive waste transportation system, the lack of proper HCW storage facilities, lack of availability of in-house equipment to properly dispose wastes also add to the HCWM issue.

***Staff Training**:* There is no systematic approach to the training of medical and nursing personnel for the HCWM, which leads to insufficient awareness about dangers and increases the health risks to health care personnel, also to the public and environment. Existing system of capacity building and training for the specialists from remote areas is poor. Independent experts note the lack of personnel, knowledge, experience and skills, and ability in all areas of infection control and HCWM.

The ecological ban on the disposal of HCW by burning within settlements exists since 2003 and complicates the problem of HCW disposal in FAPs. Because of this, many FAPs points cannot use the previously used special pits for burning non-hazardous HCW and accumulate them for further transportation to the appropriate centralized points.

Among the generally well-established system of utilization of contaminated wastes, the problem of utilization of chemical waste from laboratories, clinical material of biological origin (urine, feces, etc.) remains largely unresolved. As a rule, these wastes are merged into the local sewage system, sometimes without prior disinfection, despite the existing rules and regulations. Waste in the form of used disposable batteries used in some medical devices is becoming increasingly acute. There are no official reception points for such wastes in the country.

Despite the great work done in the country to develop legislative requirements for the HCWM, existing regulations and norms mostly answer the question "what should be done?". For many PHCIs the question "how this should be done?" remains open. This issue is especially acute in terms of transportation and selection of final disposal sites. These links of the HCWM cycle in fact are not under effective monitoring and control.

HCW statistics and control of is not conducted in the country (except for large cities, introduced recently), since the indicator system is not harmonized between the National Statistical Committee, the MoH and the MHIF. In addition, there is a lack of motivation and interest for the organization of HCW accounting.

The state and municipal authorities do not encourage private business (or public-private partnerships) in the field of HCW disposal and recycling, which could help to solve the problem radically, by passing the care of HCWM to professional organizations that have appropriate state license or accreditation.

9.3. Recommended actions for improvement and inputs to the Program Action Plan

Recommended actions to mitigate environmental risks associated with the program have been discussed and agreed with MoH. The estimated time frame for the implementation of recommended actions is the program implementation duration; 5-6 years.

1. ***Review and updating sector standards and procedures.*** It is recommended to the Government to develop harmonized sector standards and procedures (equally applicable to both public and private sector) for integrated infection and pollution control at PHC level, and management of healthcare waste. The inter-ministerial committee including MoH, MHIF, SAEPF, SIET and other responsible agencies need to review and refine the system of mutual collaboration and responsibilities with adequate budgetary allocations.
2. ***Development and strengthening of information base.*** The ESSA recommends to the MOH and MHIF to strengthen the information base for preventing infection diseases environmental pollution at

PHC level. Database on occupational health and safety aspects in reference to HCWM, and soil, air and water quality indicators need to be setup and made accessible to the public.

3. ***Developing and implementation of training***. The ESSA recommends that unified and integrated training system on ensuring occupational health and safety, infection control and HCW management both for the public and private sector facilities be developed and piloted.
4. ***Piloting HCWM models.*** The ESSA also recommends to the Government to set up model HCWM program at the selected districts and PHCIs with adequate budget allocated. The pilot can then be extended to cover all PHCIs after the Program completion

The following activities are proposed as Program Action Plan based on the four recommended actions regarding HCWM and Infection Control:

Table 1. Environmental safeguard input to the Program Action Plan

Action Description	Responsibility	Timing	Completion Measurement
Strengthen the information management framework for preventing infectious diseases and environmental pollution at PHC level, including indicators of infection prevention and control, health care waste management, and water quality.	MoH in coordination with MHIF	No later than 12 months after the Program effectiveness	Indicators of infectious safety and HCWM included and regularly collected in the system of state and/or sectoral statistics.
Develop systems for capacity building on infection prevention and control and health care waste management for PHC-level personnel.	MoH, MoE, SAP "Preventive Medicine"	No later than 6 months after Program effectiveness	Number of trained personnel from PHC-level facilities and relevant organizations (in line with capacity building plans for online CPD learning under DLI 2)
Pilot and implement health care waste management models in selected districts and PHC facilities, with adequate budget allocated, and a committee designated to provide adequate oversight of the full HCWM cycle.	MoH in coordination with other relevant	Pilot to start 6 months after Program effectiveness	MoH to report semi-annually as part of Program implementation progress reports and prior to World Bank implementation support visits indicating number of pilots that have started and their implementation status.

The ESSA recommends that at national level, focal point set up by MoH be responsible for the implementation of recommended actions in the ESSA. At Regional level, MHIF can help in the implementation of PAP. It is recommended also that in consultation with MoH and MHIF, a coordination committee on HCWM will be set up adopting members from SAEPF and SIET to implement the recommended actions. The Bank team will help setting up annual capacity development program by involving project partners like KfW, Swiss Agency and WHO (with previous experience to help GoK on HCWM) to train relevant staff at select PHCIs and FAPs in infection control, OHS and waste management. The coordination committee will monitor the progress on

the implementation of recommended action and acivities. The Bank team will continue providing implementation support on the ESSA recommended actions for PAP during the program implementation.

10. ESSA DISCLOSURE AND PUBLIC CONSULTATIONS

The ESSA has been prepared in consultation with major stakeholders, reports on HCWM produced by bilateral organizations and donors, and data received from the relevant Government departments. The draft ESSA and its findings (English and Russian versions) have been coordinated with key stakeholders. For this purpose, the hard copy of the ESSA (also English and Russian versions) was disseminated among key stakeholders on January 21, 2019, and on February 11, 2019 it was published on the web-site of the Ministry of Health of the KR. In the public consultation organized in Bishkek major stakeholders including Government, civil society, private sector, international donor agencies, medical facilities and representatives of nongovernment organizations participated. Major feedback received from the public consultation was incorporated into the final ESSA. Highlights of the public consultation are presented in Annex 1. The final ESSA report is also posted at the websites of MOH and the World Bank.

ANNEX 1. Minutes of the Public Consultations

Date: February 15, 2019

Venue: Bishkek, Ministry of Health of the KR, Conference-Hall

Goal: Present the content of ESSA and collect feedback (comments and suggestions) from the stakeholders, so as to help the Borrower (Kyrgyz Republic) develop proper approach to assessing and addressing environmental and social impacts of the Program.

Participants: Representatives of the World Bank, Ministry of Health, Mandatory Health Insurance Fund, State Inspectorate for Environmental and Technical Safety under the GoKR, State Agency for Environmental Protection and Forestry under the GoKR, international organizations, research institutions, nongovernment organizations, healthcare facilities (the list is enclosed).

Comments, presentations

Representative of the World Bank delivered a presentation at the consulting meeting. The document, presented for the discussion, was drafted in consultation with major stakeholders, and was informed by the reports on HCWM prepared by the projects' participants and donors, as well as by the data received from relevant Government departments.

The Bank representative shared information about the current environmental risks, as it pertains to the healthcare system – 1) professional occupational risks of medical staff, related to provision of medical services to patients at home; 2) risks, related to provision of medical services in outpatient facilities, inpatient facilities, emergency care hospitals, medical posts of educational institutions; 3) risks, related to violations of infectious and epidemiological safety procedures that can result in transmission of infections by air or with medical instruments; 4) risks, resulting from violations of the rules for HCWM.

The Bank representative also briefly described the findings of the Environmental and Social Systems Assessment, stating that – 1) while Kyrgyzstan has a well-developed legislative framework and exercise good government control in healthcare (namely in primarily health care), there are still some gaps in enforcement and administration of the legislation, especially the provisions that regulate private sector; as a result, the private sector escapes close government control; 2) while the country has high educational capacity and staff with good professional skills (including skills in HCWM), it still encounters certain HCWM-related shortcomings, which is especially the case in remote areas; 3) the country lacks funds to address the current problems; 4) the KR has several structures that are supposed to engage with each other in the sphere of infection control and HCWM, but their cooperation still has certain gaps; as a result, the work of these structures is poorly coordinated, especially at cross-sectoral level; 5) only few individual healthcare facilities have medical waste tracking systems in place, and respective statistics at the national level is not maintained.

The presentation also briefly discussed chemical, pharmaceutical, and hazardous domestic wastes (batteries and quicksilver-bearing materials), which also pose serious problems, related to disposal of such wastes, lack of necessary equipment and materials (especially for decontamination, and infection control), etc.

The presenter highlighted that while the country has some rather good clinical practice guidelines/clinical protocols, the government exercises poor control over implementation thereof.

In conclusion, the presenter shared main recommendations to address major environmental and social issues – 1) reviewing and updating legislation, sector standards and policies; 2) developing and strengthening the information management framework; 3) developing and piloting capacity building system; 4) piloting HCWM models.

The presenter thanked all stakeholders for their feedback on the World Bank's report, stating that the comments were appropriate and would be acted upon.

It is important to note a comment about incineration of wastes – while legislation of the Kyrgyz Republic prohibits this practice many FAPs continue to incinerate their wastes despite the prohibition. In this connection,

it is important to amend the legal framework, so the people, who work in this area, do not have to violate Kyrgyz legislation.

The presenter also noted that mass-media has been promoting the notion that doctors and medical staff should not be tasked with collection of medical wastes and said that this notion is correct. Meanwhile, the Program lacks capacity to address this issue and free medical staff from technical works, related to collection and transportation of MW. Anyway, this notion can be investigated under piloting of HCWM models.

Mr. Isakov, Director of the Department of Disease Prevention and State Sanitary and Epidemiological Surveillance (DDPSSES) thanked the presenter for the interesting presentation and confirmed the findings of the assessment – that is, that management and transportation of MW is really the pressing problem, which is even discussed by the Parliament (Jogorku Kenesh). Mr. Isakov noted that HCWM required additional funding, and shared his concerns about the lack of cooperation and coordination between medical and environmental organizations. He suggested that respective Interdepartmental Action Plan should be developed and approved to address the lack of cooperation. The presenter suggested that MHIF could also be engaged in the cooperation between the Ministry of Health and environmental organizations (potentially, HCWM-related activities could be included into MHIF's budget as a separate line).

Baktygul Ismailova, Senior Specialist, Department for Public Health, MOH KR, noted that the systems of management and disposal of chemical and hazardous wastes do not get the attention they deserve and remain underdeveloped, and in this connection should be taken into consideration under piloting of HCWM models.

Maksat Omurov, Head of the Environmental Safety Department (State Inspectorate for Environmental and Technical Safety), expressed his gratitude for the thoughtful and informative presentation, and shared his concerns about management, transportation and disposal of MW. According to Mr. Omurov, the KR currently has more than 320 dumps and landfills for medical waste, but they are not properly equipped and do not meet environmental and sanitary standards. He also raised concerns about separation of wastes at the primary level, which is currently done in a rather primitive way. And because the country lacks national infrastructure even for temporary decontamination and safekeeping of chemical wastes, it cannot protect its population from health risks. In this connection, Mr. Omurov asked to make sure the Program Action Plan is put together with due consideration of all these issues.

Nurjan Toktobaev, Project Coordinator, "Medical Wastes Management and Infection Control" Project, International Committee of the Red Cross, noted that the upcoming Program should cover recycling of plastics (IV tubes, probes, etc.). Today plastic-made medical goods are not recycled, but simply incinerated, emitting persistent organic pollutants. Mr. Toktobaev also talked about recycling of glass containers – there are several technologies and international best practices that could be replicated in the KR, and the country has private companies that are willing to recycle glass containers, but they need to master these technologies. The third issue, raised by Mr. Tokobaev, was related to pharmaceutical wastes – the Medicines Provision Department is drafting a law to regulate circulation of medicines, and it would be good to make sure this draft law covers management of pharmaceutical wastes.

The discussion also touched monitoring of health of the general population and medical staff (in the past this issue generally lacked proper attention). It would be good to elaborate this aspect under Core Principle 3 of the report ("Public and Worker Safety"). Resolution of the GoKR #225 establishes mandatory requirement to conduct medical monitoring of health of staff, employed in all sectors (list of sectors is available), but as evidenced by research, in reality this work is off the table. And even when medical tests are actually performed (for example to determine the content of mercury and lead in urine), their findings have to be sent to medical facilities of foreign countries to verify the diagnosis. In the light of the foregoing the Program should cover monitoring of health – at least lay the foundation to initiate discussion of proper treatment of chemical wastes. It is also important to enhance the capacity of medical staff, working with chemical and toxic substances at all levels (staff of biological labs, clinical diagnostic labs, and sanitary-epidemiological labs).

Mr. Kalbaev, Chair of the Association of Dentists of the KR, also talked about disposal of wastes. Bishkek alone has more than 200 private dental clinics. They generate tremendous volumes of wastes, but do not know what to do with them. Responding to this concern, Mr. Aleksei Kravtsov, representative of "Preventive Medicine" NGO, noted that the government institutions cannot accept wastes from private clinics, because respective tariffs have not been clearly determined and approved.

According to another participant, the problem should be solved only through final disposal/destruction of medical wastes. No wastes should be collected for recycling or burying, because such approach leads to increased number of landfills and dumps, ultimately causing lack of lands, where such wastes can be buried. In order to solve the problem the Program could procure special equipment that can ensure final disposal of wastes with minimum emission of hazardous substances.

Yet another participant talked about treatment of waste waters. While larger cities and oblast capitals in Kyrgyzstan have municipal sewage networks and treatment facilities, remote villages do not have even localized treatment facilities or systems for mechanical and biological treatment.

Mr. Kust explained that he (and all other participants of the event) realizes that the healthcare sector has many problems, but MW management does not directly fall under the Program's mandate, which covers very specific tasks that are related to support of motherhood (pregnant women, diabetes, cardiology, etc.).

Meder Ismailov, Head of the Department for Strategic Planning and Program Implementation, explained that the primary goal of the Program is to support development of PHC (quality of medical services, procurements of strategic goods and services, additional package, state guarantees, management and monitoring of quality of PHC). The issues, which were raised at the event, are related to the "Public Health" section, which still requires additional work. These issues may be potentially addressed as a part of the efforts on improvement the quality of PHC.

Conclusion

Wrapping up the consulting meeting with the stakeholders, Mr. Ismailov thanked the presenter for the interesting and informative presentation, and the participants for the active discussion. The discussion covered many aspects of the healthcare sector; cross-sectoral cooperation between various agencies, businesses, and private sector; public health; ecology and environment. Mr. Ismailov pointed out that these issues are given the highest priority in the *2030 Healthcare Development Strategy*. He also noted that if a donor organization intends to provide significant assistance to any sector in the form of a grant, the proposed project should undergo social and environment impact assessment, and that in the future the participants of this consulting meeting might participate in such assessments as members of respective working groups. It will create a leverage to make an impact on a wide scale. For example, the participants of the consulting meeting started the discussion with medical wastes, but gradually the topic of the discussion expanded, covering also domestic wastes.

The participants of the meeting ***recommended to accept the World Bank's draft Environmental and Social Systems Assessment,*** subject to revisions in accordance with the comments and suggestions that were made during the discussion and submitted to the World Bank in writing.

List of Participants

Ministry of Health of the Kyrgyz Republic		
1	M. A. Ismailov	Head of the Department for Strategic Planning and Program Implementation
2	A. B. Akmatova	Head of the Department for Public Heath
3	G. A. Ibraeva	Head of the General Division, Department for Human Resources and Organizational Work
4	F. S. Turusbekova	Head of the Community Liaison Office
5	B. A. Ismailova	Senior Specialist, Department for Public Health
6	Z. A. Dolonbaeva	Senior Specialist, Department for Strategic Planning and Program Implementation
7	K. M. Beishebaeva	Senior Specialist, Department for Strategic Planning and Program Implementation
8	J. A. Kojonazarova	Lead Specialist, Department for Strategic Planning and Program Implementation
9	T. B. Isakov	Director of the Department of Disease Prevention and State Sanitary and Epidemiological Surveillance

10	O. T. Kasymov	Director of the Research and Production Association "Preventive Medicine"
11	G. T. Aitmurzaeva	Director of the Republican Health Promotion Center
12	G. S. Ishenapysova	Director of the Republican Center of Immunoprophylaxis
13	U. J. Chokmorova	Director of the Republican AIDS Center
14	S. T. Abdikarimov	Director of the Republican Center of Quarantine and Especially Dangerous Infections
15	A. A. Kravtsov	Head of the Research and Production Association "Preventive Medicine"
16	N. A. Altymysheva	Department Head, Kyrgyz State Institute of Re-Training and Professional Development,
17	A. A. Joroev	Head of the Department of Infectious Disease Prevention
18	B.K. Arykbaeva	Head of the Department of Non-Infectious Disease Prevention
19	N. Soronbaeva	Research Fellow, Research and Production Association "Preventive Medicine"
20	J. A. Baiyzbekova	Deputy Director of the Research and Production Association "Preventive Medicine"
21	N. T. Usenbaev	Deputy Director of the Republican Center of Quarantine and Especially Dangerous Infections
22	J. E. Usupova	Deputy Director of the Republican Health Promotion Center
23	A. Beishenalieva	Department Head, Bishkek Office of the Department of Disease Prevention and State Sanitary and Epidemiological Surveillance
24	I. M. Isakova	Head of the Organizational Department of the Republican AIDS Center
25	S. B. Ibraeva	Laboratory Head, Republican Center of Quarantine and Especially Dangerous Infections
26	G. A. Syryeva	Sanitary Inspector, Republican Center of Quarantine and Especially Dangerous Infections
27	Sh. M. Suvanalieva	Lead Specialist, Department for Public Heath
28	V. A. Adylbaeva	Consultant
Primary Health Care Sector		
29	S.T. Mukeeva	Chair of the Association of the Family Doctors Group
30	A. Aitekova	Deputy Director of the Chui Center for Family Medicine
Nongovernment Organizations		
31	A. A. Kalbaev	Chair of the Association of Dentists of the KR
32	K. A. Djemuratov	Chair of the Association of Hospitals
MHIF		
33	N. E. Januzakova	Head of the Department for Strategy, Analysis and Quality of Medical Services
34	J. A. Azizbekova	Head of the Department for Implementation of Health Insurance Programs
35	G. Sh. Borchubaeva	Head of the Budget Planning Department
International Committee of the Red Cross		
36	Nurjan Toktobaev	Project Coordinator, "Medical Wastes Management and Infection Control" Project
State Inspectorate for Environmental and Technical Safety under the GoKR		
37	M. B. Omurov	Head of the Department for Environmental Safety
State Agency for Environmental Protection and Forestry under the GoKR		
38	B. M. Tolongutov	Director of the Center for Government Regulation in the Sphere of Environmental Protection and Safety
World Bank		
39	Asel Sargaldakova	Senior Health Specialist
40	German Kust	Environment Protection Specialist
41	Meerim Sagynbaeva	Project Assistant

ANNEX 2. People and organizations met and interviewed during preparing the ESSA report.

Ministry of Health (MoH):

Meder Ismailov, Head of Department for Reform Coordination & Implementation.

Gulnara Sarieva, Specialist responsible for pollution control, Department for State Sanitary and Epidemiological Supervision

Baktygul Toktalieva, Specialist responsible for infection control, Department for State Sanitary and Epidemiological Supervision

Mandatory Health Insurance Fund (MHIF):

Kaliman Mamatova, First Deputy Director

and her team from the department on strategy, analysis & quality of medical services (2 specialists).

State Agency for Environmental Protection and Forestry:

Batyrbek Sadybakasovich Sakiev, Head of Ecological Licensing department

Nasira Abduldasova, Head of Ecological Expertise department

State Inspection on environmental and technical security under the Government of the Kyrgyz Republic

Talantbek Aisorakunovich Borochorov, Head of the Department of Ecological Safety

Sadyr Zarykbenovich Aydashbaev, Chief specialist of the department of nuclear and radiation security

Bayish Sagynbekov, Specialist of the department of international cooperation

Swiss Healthcare Waste Management project under Swiss Red Cross:

Nurjan Toktobaev, Head.

Scientific production association “Preventive Medicine”

Alexey Kravtzov, Head of the department of Public health care

and his team (1 specialist)

Association of Doctors of the Kyrgyz Republic

Suyumzhan Toktorovna, Head

Association of obstetrician-gynecologists

Arsen Askerov, Head

World Bank:

Asel Sargaldakova, senior health specialist, KG country office

UNDP-GEF project "Protecting the health of people and the environment from unintentional releases of POPs and mercury due to inappropriate management of medical waste in Kyrgyzstan".]

Ms Jyldyz Uzakbayeva, Project coordinator

Mr Kylychev Kumar; Advisor Environment and Energy, Climate Change and Disaster Risk Management

Bishkek city children's hospital #3

Gulnara Askarbekovna, Acting Director

and her team responsible for medical waste management (2 specialists)

Sokuluk district hospital

Sovet Maratbekovich, Director;

and his team responsible for medical waste management (4 specialists)

*FAP in the village of Stavropolivka[46] in Zhayilsky district Kara-Suuy AA, Chui region

Jenenbaeva N. Head of Kara-Suuy AA

Shakirova Ch. Chief Physician of the FAP

*FAP in Akchiy AA in Kara-Buurinsky district, Talas Region

Anarbekov Belek. Starosta village

Orozumbetova Nurgul. Chief Physician of the FAP

Nazaraliev Nurbek. Deputy AK

*FAP in the village of Baigonochok. Uhut AO, Naryn region

Mankadyrov Nurlan - the village elder,

Japarkulova Nurzhamal - the paramedic of the FAP

*FAP in the village of Kuibyshev, Minbulak AO, Naryn region

Bektemirova Kenzhegul - member of the village group (+2 paramedic and nurses)

*FAP in the village of Kudurgu, Issyk-Kul region

Begalyeva Saule. Responsible secretary of JSC

Nurgazy to. Albina. Head of FAP

Kuseev B. Sanitary FAP

[46] Sites marked with * were visited in 2017 under Village Investments Project (VIP-3)

*FAP in the village of Karasayev, Issyk-Kul region

Chymyrov Turdubek. AA representative

Bolotova Anara - ADC member

Mamatkulova Lena -Nurse FAP

Tokoyeva Nadira - Nurse FAP

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ANNEX 4. National sub-laws, decrees, guidelines and regulations

A complex system of national sub-laws, decrees, guidelines and regulations regulate in particular:

Waste management:
• Regulations on the procedure for the destruction (processing) of products (goods) that are considered unfit for sale,
• Classification of hazardous waste,
• The procedure for handling hazardous wastes in the territory of the Kyrgyz Republic,
• Recommendations for the management of municipal waste,
General issues of environmental protection:
• Regulations on the procedure for conducting state ecological expertise,
• Sanitary-epidemiological rules and standards "Sanitary protection zones and sanitary classification of enterprises, structures and other objects",
• Sanitary rules and regulations "Noise at workplaces, in residential, public buildings and residential buildings",
• Regulations on the procedure for conducting an environmental impact assessment,
• Procedure for compilation of an environmental passport for economic and other activities,
• Regulation on state control over environmental protection, rational use of natural resources and environmental security,
• Rules of veterinary zoning of the territory of the Kyrgyz Republic for infectious animal diseases.
• Hygienic standards "Approximate Safe Levels of Effect of Pollutants in the Atmosphere of Populated Localities";
• Hygienic standards "Maximum Permissible Concentration of Pollutants in the Atmosphere of Populated Localities";
• Hygienic standards "Approximate Permissible Concentration of Chemical Substances in the Water of Waterbodies that are used for Drinking, Household and Cultural Purposes";
• Hygienic standards "Maximum Permissible Concentration of Chemical Substances in Soils"
Use of Chemicals:
• Regulations on the system of classification of hazards of chemicals / mixtures and requirements for elements of hazard communication: labeling and Safety Data Sheet,
• Instruction on the procedure for the acquisition, sale, storage, recording and transportation of potent poisonous substances,
• Approval of the Program of the Government of the Kyrgyz Republic for the Implementation of the International System for the Classification of Hazard and Labeling of Chemicals in the Kyrgyz Republic and the Action Plan for its Implementation for 2015-2017,
• List of chemicals and pesticides, the use of which is prohibited or severely restricted.

In addition, there are several ***regulations based on international agreements****:*

Eurasian Economic Union:
• On the safety of chemical products,
• On the safety of packaging,
• On the safety of perfumes and cosmetics,
• On the safety of personal protective equipment.

The Council for Cooperation in Health Sector of the Commonwealth of Independent States:

I. *General Hygiene*:

- Sanitary rules and norms "Hygienic requirements for the production, quality and safety of oral hygiene products" (SanPiN 1.2.676-97, Russia).

II. *Communal Hygiene*:

- Sanitary-Epidemiological Requirements for Centralized Drinking and Household Water Supply Systems and Drinking Water Supply Pipelines" (Resolution of the GoKR #68, issued on January 31, 2018),

- Sanitary-epidemiological rules and standards “Sanitary-Epidemiological Requirements for Zones of Sanitary Protection of Sources of Water Supply and Water Supply for Household and Drinking Purposes” (Resolution of the GoKR #68, issued on January 31, 2018)
- Hygienic standards "Approximate Permissible Concentration of Chemical Substances in the Water of Waterbodies that are used for Drinking, Household and Cultural Purposes" (Resolution of the GoKR #201, issued on April 11, 2018),
- Sanitary-epidemiological rules and standards “Sanitary-Epidemiological Requirements for Disinfection of Drinking Water with Ultraviolet Rays" (Resolution of the GoKR #25, issued on January 28, 2019)
- Methodical instructions "Sanitary and epidemiological supervision of sewage water disinfection by ultraviolet radiation" (MU 2.1.5.732-99, Russia),
- Methodical instructions "Determination of concentrations of chemicals in the water of centralized drinking water supply systems" (MU 4.1.737-99-4.1.754-99, collection, issue 2, Russia),
- Sanitary rules and norms "Rules for the collection, storage and disposal of waste of medical and preventive institutions" (SanPiN 2.1.7.728-99, Russia),
- On Approval of Rules for Protection of Surface Waters of the Kyrgyz Republic (Resolution of the GoKR #128, issued on March 14, 2016),
- On Approval of Rules for Protection of Underground Waters of the Kyrgyz Republic (Resolution of the GoKR #92, issued on March 2, 2015),
- Sanitary-epidemiological rules and standards “Sanitary-Epidemiological Requirements for Noncentralized Sources of Drinking Water for the Population” (Resolution of the GoKR #68, issued on January 31, 2018),
- Procedure for Treatment of Industrial and Household Wastes in the Kyrgyz Republic (Resolution of the GoKR #559, issued on August 5, 2015),
- Methodical instructions "Collection, transportation, burial of asbestos-containing waste" (MU 2.1.7.1183-03, Russia).

III. *Occupational health*:

- Hygienic standards "A list of substances, products, production processes, domestic and natural factors, carcinogenic to humans" (GN 1.1.029-95, Russia),
- Sanitary-epidemiological rules and standards “Sanitary-Epidemiological Requirements for Organization of Work with Personal Computers” (Resolution of the GoKR #201, issued on April 11, 2016),
- Sanitary rules and norms "Hygienic requirements for working conditions for women" (SanPiN 2.2.0.555-96, Russia),
- Guidelines "Hygienic criteria for assessing the classification of working conditions by indicators of harmfulness and hazard factors of the working environment, the severity and intensity of the labor process" (R 2.2.755-99, Russia) *,
- Sanitary rules and norms "Work with asbestos and asbestos-containing materials" (SanPiN 2.2.3.757-99, Russia),
- Methodical instructions "Measurement of concentrations of harmful substances in the air of the working area. MUK Collection 4.1.100-96-MUK 4.1.197-96, issue number 29 ", (Russia),
- Methodical instructions "Hygienic rationing of medicinal products in the air of the working area, atmospheric air of populated areas and water of water bodies" (MU 1.2.726-98, Russia),
- Hygienic standards "Maximum permissible concentration (MPC) of microorganisms-procudents, bacterial preparations and their components in the air of the working zone" (GN 2.2.6.709-98).

IV. *Hygiene of work and communal hygiene*:

- Sanitary-epidemiological rules and standards “Sanitary-Epidemiological Requirements for Health-Promoting Organizations” (Resolution of the GoKR #201, issued on April 11, 2016),
- Sanitary rules and standards “Permissible Noise Levels at Workplaces, in Residential Buildings and on the Territory of Residential Buildings”,
- Sanitary norms "Permissible noise levels at workplaces, in residential buildings and on the territory of residential buildings" (SN 2.2.4 / 2.1.8.562-96, Russia),
- Sanitary norms "Hygienic standards of infrasound in workplaces, in residential and public premises and on the territory of residential buildings" (SN 2.2.4 / 2.1.8.583-96, Russia),

- Sanitary norms "Permissible levels of vibration in workplaces, in residential and public buildings" (SN 2.2.4.2.1.8.566-96, Russia),
- Sanitary rules and norms "Sanitary rules and norms for enterprises producing medicines" (Republic of Belarus),
- Methodical instructions "Determination of chemical compounds in biological media" MUK Collection 4.1.763-4.1.779-99, Russia).

V. *Radiation hygiene:*

- Sanitary rules "Sanitary rules for radioactive waste management (SPORO-2001)" (SP 2.6.1.1016-01, Russia),
- Sanitary rules "Basic sanitary rules for ensuring radiation safety (OSPORB-99)" (SP 2.6.1.799-99, Russia),
- Sanitary rules and standards "Hygienic requirements for the design and operation of X-ray rooms, apparatus and X-ray studies" (SanPiN 2.6.1.1192-03, Russia),
- Methodical instructions "Control of Effective Doses of Irradiation of Patients in Medical X-Ray Studies" (MUK 2.6.1.760-99, Russia).

VI. *Food hygiene:*

- Methodical instructions "The application of the fingerprint method to" Bactotests "in sanitary and bacteriological control at public catering establishments, food trade, in preschool and medical institutions" (MU4.2.016-94, Russia),
- Methodical instructions "Hygienic assessment of shelf life of food products" (MU 4.2.727-99, Russia).

VII. *Hygiene of children and adolescents:*

- Sanitary rules "Hygienic requirements for the device, content and organization of the regime in health institutions with day-time stay of children during the holidays" (SP 2.4.4.969-00, Russia).

VIII. *Epidemiology:*

- Sanitary rules "Production and monitoring of medical immunobiological" drugs to ensure their quality "(SP 3.3.2.015-94", Russia),
- Sanitary rules "Prevention and control of contagious diseases common to humans and animals. General provisions "(SP 3.1.084-96, VP 13.3.4.1100-96, Russia),
- Sanitary rules for counteracting and preventing specific epidemiological diseases: "Brucellosis" (SP 3.1.085-96, VP 13.3.1302-96, Russia). "Salmonellosis" (SP 3.1.086-96, VP 13.4.1318-96, Russia). "Kampilbacteriosis" (SP 3.1.087-96, VP 13.4.1307-96, Russia). Listerioz "(SP 3.1.088-96, VP 13.4.1311-96, Russia)". Plague "(SP 3.1.090-96, Russia) *. "Leptospirosis" (SP 3.1.091-96, VP 13.3.1310-96, Russia). "Ornithosis" (SP 3.1.092-96, VP 13.4.1211-96, Russia). "Tuberculosis" (SP 3.1.093-96, Russia) *. "The Siberian ulcer" (SP 3.1.089-96, VP 13.3 .1320-96). "Yersiniosis" (-SP 3.1.094-96, VP 13.3.1318-96, Russia). "Koksielez (fever KU)" (SP 3.1.095-96, VP 13.3.1221-96, Russia). "Frenzy" (SP 3.1.096-96, VP 13.3.1103-96, Russia). "Tularemia" (SP 3.1.097-96, Russia);
- Sanitary rules "General requirements for the prevention of infectious and parasitic diseases" (SP 3.1/3.2.558-96, Russia),
- Sanitary rules "The order of accounting, storage, transfer of transportation of microorganisms 1-Y pathogenicity groups" (SP 1.2.036-95, Russia),
- Sanitary rules "Organization and conduct of deratization activities" (SP 3.5.3.554-96, Russia),
- Sanitary rules "Hygienic requirements for institutions, organizations and persons engaged in disinfection activities" (SP 3.5.675-96, Russia),
- Methodical instructions "Certification of medical immunobiological preparations" (MU 3.3.2.684-98, Russia),
- Sanitary rules "Safety of work with microorganisms III - IV groups of pathogenicity and helminths". (SP 1.2.731-99, Russia),
- Methodical instructions "Collection, recording and preparation for laboratory investigation of blood-sucking arthropods - carriers of pathogens of natural focal infections" (MU 3.1.1027-01, Russia),
- Methodological instructions "Organization and conduct of primary measures in cases of identification of a patient (corpse), suspicious for diseases with especially dangerous infections, contagious viral haemorrhagic fevers, malaria and infectious diseases of unknown etiology, which are dangerous for the population and international communication" (MU 3.4.1028-01, Russia);

- Methodical instructions "Microbiological monitoring of the working environment" (MUK 4.2.734-99, Russia),
- Methodical instructions "Technology of processing of linen in medical institutions" (MU 3.5.736-99, Russia),
- Sanitary rules "Conditions of transportation and storage of medical immunobiological preparations" (SP 3.3.2.1248-03),
- Sanitary rules "Prevention of measles, rubella and mumps" (SP 3.1.2.1176-02, Russia),
- Methodical instructions "Epidemic surveillance of measles, rubella and epidemic parotitis" (MU 3.1.2.1177-02, Russia).

List of rules and regulations, adopted under the EEU (technical regulations of EEU and SanPiN), is approved by the Resolution of the GoKR #201 (issued on April 16, 2016).

Also ***hygienic standards detailed at the national level*** indicating the norms of maximum permissible concentrations are developed and operate for different facilities with regard to the pollution of the main life support environments: air, water, and soils.

Many ***Public Service Delivery Standards*** developed by health authorities in the Kyrgyz Republic regulate the system of health care and infectious control, in particular:

- Conducting preventive vaccinations,
- Providing consultative and diagnostic care at the outpatient level,
- Carrying out of medical actions at an out-patient level,
- Provision of emergency medical care,
- Provision of health care in inpatient units,
- Treatment in hospitals,
- Medical care in specialized hospitals,
- Conducting disinsection, disinfection and deratization activities,
- Preservation of dead bodies in the morgue refrigerator of pathoanatomical bureaus or offices of public health organizations,
- Preservation of biological waste in the morgue fridge of pathoanatomical bureaus or offices of public health organizations.

ANNEX 5. Organization of Ecological, Epidemiological, and Infectious Safety

5.1. Public Health Care System and Policy

A key stimulus in the development of public health care system was the frame Law of the Kyrgyz Republic "On Public Health" adopted on July 24, 2009. The main directions and tasks of the public health care defined by the Law include: public health protection; formation of a healthy lifestyle of citizens in the KR; prevention of infectious and actual non-infectious diseases.

One of the tasks of the public health service is the prevention of diseases associated with the adverse effects of biophysical factors on the human body. Assessment of environmental risks is carried out by specialists of the SPA "Preventive Medicine", as well as by the SAEPF.

At the same time, the main principles of the state policy in the field of public health are:

- The preventive focus of health care and the formation of a commitment to a healthy lifestyle among the population;
- Creation of conditions for protection and strengthening the people's health on the basis of equality and accessibility of medical services;
- Strengthening mental and physical health as a factor that improves the quality of life and the level of psychosomatic well-being of the population;
- Development of public health in accordance with the needs of the population for health protection and promotion, providing citizens with reliable information on the prevention of diseases, protection and promotion of health;
- Coordination of public administration activities in the field of public health;
- Cooperation and interaction of public and other organizations with active participation of the communities in addressing issues of protection and promotion of public health;
- Responsibility of state bodies, local governments, legal entities and individuals for the state of public health and the quality of public health services provided;
- Responsibility of citizens for the preservation and strengthening of their health and that of other people;
- Economic interest of individuals and legal entities in the protection and strengthening of public health; scientific basis of preventive measures.

5.2. Sanitary and Preventive Care for the Population

Sanitary and epidemiological welfare of the population depends on the health of the population and the human environment. A key stimulus for the development of the system of sanitary and preventive care for the population was the Law "On the Protection of the Health of Citizens of the Kyrgyz Republic" of January 9, 2005. In accordance with Article 27 "Sanitary and preventive care" of this Law, sanitary preventive care in the Kyrgyz Republic includes: hygienic surveillance; epidemiological surveillance; formation of a healthy lifestyle. Sanitary and preventive care is provided by the State Sanitary and Epidemiological Surveillance, Health Promotion and Primary Health Care Organizations to protect and promote public health. Sanitary and epidemiological welfare and public health of the population are provided by a set of measures aimed at eliminating or reducing the harmful effects of environmental impacts on human beings, preventing the emergence and spread of infectious diseases and non-communicable diseases and their elimination, hygienic training and education of citizens, promoting healthy lifestyles and dissemination of hygienic knowledge among the population, carried out in accordance with the legislation of the KR.

5.3. Registration and Reporting on Infectious Diseases

Currently, a system of registration and reporting on infectious diseases is functioning in the KR based on the Public Health Law. The system allows the timely assessment of the epidemiological situation and planning mitigation measures. The list of infectious and parasitic diseases subject to registration and "Guidelines on

registration of infectious and parasitic diseases in the Kyrgyz Republic" was approved by the order of the Ministry of Health of the Kyrgyz Republic dated 26.11.2008.

The Guidelines describe the rules for all the health care personnel profiles, regardless of the form of ownership, for the notification of revealed (or suspected) infectious disease. Under this order, in case of suspected infectious disease, the health care worker who identified the case gives an emergency notification in the prescribed form within 24 hours. If a particularly dangerous and quarantine disease is suspected, then the medical worker immediately sends an emergency message to the territorial center of the State Sanitary Epidemiological surveillance in accordance with the notification scheme and with the operational plan. Having received an emergency notification, the epidemiologist must explore the epidemiological situation and organize preventive and anti-epidemic measures in this case.

Due to the well-developed scheme of notification of cases of infections, outbreaks of infectious diseases are detected in the country at an early stage, and anti-epidemic measures are set in time. Systems of epidemiological surveillance for more than 40 infections and two non-infectious diseases have been developed. In accordance with the international statistical classification of diseases a list of infectious diseases subjected to registration in the centers of the State Sanitary and Epidemiological Surveillance is prepared. Supervision of infectious diseases is carried out by the district centers of the State Sanitary Epidemiological Surveillance, who submit monthly summary information on infectious and parasitic diseases to the Department of the State Sanitary Epidemiological Surveillance of the MoH. Suspicions for quarantine and especially dangerous diseases are reported immediately. The Department of the State Sanitary and Epidemiological Surveillance of the MoH and the district State Sanitary and Epidemiological Services conducts the infectious diseases monitoring on the daily, weekly, and monthly basis. According to the data received, an analysis is conducted, and appropriate preventive and anti-epidemic measures are taken and organized. Recommendations are given to reduce the incidence of morbidity in the field.

Since 2004, the program for computer monitoring of the state of infectious diseases (KSIZ) has been introduced and is operating in the country, which provides monitoring of 38 infectious and 2 non-infectious diseases. The KSIZ program is implemented in all district centers of the State Sanitary and Epidemiological Service. Monthly reports are provided by districts to the regional level and then aggregated at the country level. This KSIZ program allows the evaluation by sex, by place of residence, by age, by disease dates, by diagnosis, and by the method of hospitalization.

In addition, the country has Sanitary Norms and Rules (SNIP) for air quality control, working and living premises, there are standards developed and approved for the quality of drinking water, technical regulations on food safety. The Sanitary and Epidemiological Surveillance has a network of laboratories throughout the country at the district level, including several laboratories accredited by the international standard.

5.4. Control over the Sanitary and Epidemiological Surveillance

The control over the sanitary and epidemiological surveillance is constantly being improved and regulated through MoH Orders. It suffices to list the series of MoH orders issued since 2002 to date on various aspects of sanitary and epidemiological safety:

- "On the epidemiological surveillance of brucellosis ";
- "On the prevention of HIV infection in the conditions of the second generation of epidemiological surveillance",
- "On measures to prevent the spread of sexually transmitted infections, infectious skin diseases and leprosy,"
- "Improving the response to HIV/AIDS";
- "On the Procedure for Conducting a Licensing Examination of Private Medical Practices and on Certification of Private Practitioners",
- "On Further Improvement of Laboratory Diagnosis of Tuberculosis";
- "On the approval of the "Concept for the Development of the Laboratory Service",
- "On the Approval of the Target Integrated Program for the Control of Parasitic Diseases",
- "On Measures to Improve the Activity and Improving the Accreditation of Health Organizations",
- "On Improving the Infection Control System and Measures for the Prevention of Nosocomial Infections in health care organizations";
- "On measures to prevent the incidence of viral hepatitis";
- "Instructions for the registration and registration of infectious, parasitic diseases".

Many experts note that the Sanitary and Epidemiological Surveillance has changed the style of work and from the supervising body they have begun paying more attention to partnerships aimed at the prevention of infectious diseases and violations of sanitary and epidemiological requirements.

5.5. Infection Control in Healthcare Organizations

Resolution of the KG Government dated January 12, 2012 No. 32 approved the Guidelines on infection control in the healthcare organizations of the Kyrgyz Republic, mandatory for use in all health care institutions, regardless of the form of ownership. The Guidelines establishes sanitary and epidemiological requirements for the safety of frequently used medical procedures, disinfection and sterilization of medical devices and medical equipment, and is aimed at the prevention of nosocomial infections associated with providing public health care services. In healthcare organizations, when disinfection and sterilization measures are taken, only those officially authorized in the Kyrgyz Republic are used: disinfecting chemicals (disinfectants, including dermatological antiseptics, means for pre-sterilization treatment and sterilization); disinfection and sterilization equipment (bactericidal irradiators and other equipment for air disinfection in premises, disinfection chambers, disinfection units and washing machines, including ultrasonic sterilizers); auxiliary equipment and materials (spraying devices, bacterial filters, UV cameras for storage of sterile instruments, processing containers, sterilization boxes and packaging materials, chemical and biological indicators, etc.). When choosing a remedy, it is necessary to consider the recommendations of the manufacturers of medical devices concerning the effects of specific disinfectants on the materials of these products.

In accordance with these guidelines, the following elements are described in detail: The safety of basic medical procedures: Hand hygiene; Safety of injection; Safety of procedures related to the use of intravascular devices; Prevention of nosocomial infections; Isolation-restrictive measures; Disinfection and sterilization in medical practice; Methods for controlling sterilizers; and much more.

On January 14, 2010 the MOH issued Order #10 "*On Approval of Provisions on Infection Control and Prevention of hospital-acquired infections in Healthcare Facilities in the Kyrgyz Republic*", thereby establishing RCIC SPA PM, introducing a new position of Infection Control Specialist in all health facilities of the second and third levels, and creating respective infrastructure in RCIC SPA PM. Infection control in state PHCI falls under the responsibility of Chief Nurse or GP doctor. In 2016, the "*Manual on Monitoring and Evaluation of Infection Control in HCOs (Inpatient and Outpatient)*" was issued and approved by the Order of the Ministry of Health.

In the field of infection control, the necessary methodologies and guidelines have been developed and exist. All outbreaks of infectious diseases are being studied by mandatory epidemiologists. A System of Surveillance for all zooanthroponotic diseases exist, and a joint plan for the prevention and antiepidemic measures for zooanthroponotic diseases has been developed for cooperation with the Department of State Veterinary of the Ministry of Agriculture. In all inpatient health care organizations, infection control commissions have been established from among medical personnel and are well functioning. 17 standards have been developed for the prevention and control of nosocomial infections, which are introduced into the activities of health organizations.

5.6. Public Health Emergency Preparedness

The National (Operational) Plan for Public Health Emergency Preparedness and response measures has been adopted. Sanitary-epidemiological groups have been established in each of the State Sanitary and Epidemiological Surveillance Service (district, regional, city), which go to the site in order to obtain reliable data on the sanitary and epidemiological situation, epidemiological situation, determine the border and the area of the source of infection when information is received about possible emergencies caused by dangerous biological agents.

Annually a few cases of outbreaks of infectious diseases are registered in the KR: typhoid fever, paratyphoid; salmonellosis; general intestinal infections; anthrax. The main causes of outbreaks are emergency discharges of sewage into open reservoirs, which are used by the population for household and drinking needs, failures in water supply network, pollution of open water sources associated with natural disasters (mudflows, earthquakes), contact with newly emerging viruses (influenza, ARVI).

For the prompt preventive measures in the event of emergencies for infectious diseases, immunobiological preparations (vaccines, immunoglobulins, serums) and disinfectants are purchased every year. In case of emergencies, the territorial services of the State Sanitary and Epidemiological Service provide assistance in the form of bacteriological, radiological, toxicological and sanitary-hygienic laboratory studies of the environment and people. In addition, for the assessment of the situation and for the organization of emergency measures and mitigating measures to eliminate the consequences of emergencies, the special teams of the State Sanitary-Epidemiological Service would be organized, as well as health care aid provided by the specialists of 3 emergency medical stations located in Bishkek, Osh and Naryn cities, 86 ambulance stations and 85 CFMs.

In accordance with normative documents and instructions, higher authorities are immediately informed of cases leading to emergencies and affecting human health. This allows the relevant services to take timely measures to localize, eliminate and prevent further spread. All cases of emergency situations are considered at the Government, at the ministries' collegia. The analysis and evaluation of the submitted reports are carried out with subsequent correction of action plans and preparation of recommendations. In case of suspicion of cholera, plague, hemorrhagic fevers, according to interstate agreements on the occurrence of the case, WHO and neighboring countries are notified. To regulate activities in the event of emergency situations caused by both natural impacts and biological agents, a comprehensive and operational plan for the localization and elimination of foci of dangerous infectious diseases has been developed and adopted for implementation in the country. This system allows quickly using both means of public health and the services of other ministries.

There is a national comprehensive (operative) plan for antiepidemic measures for especially dangerous and quarantine diseases, where the actions described of 9 ministries and agencies (Ministry of Transport, Internal Affairs, Agriculture, Emergencies, Health, Culture, Finance, Local State Administrations, and the Committee for Tourism) involved in the implementation of preventive, antiepidemic measures and elimination of the outbreak. For the timely response to emergencies, according to the directive documents of the MoH, a specialized mobile bacteriological laboratory has been organized in the KR. This laboratory is able to conduct research of materials, both from sick people and materials from the natural environment, and also to inform about the real situation in the danger zone. In public health institutions, regular training exercises are conducted to develop knowledge on the localization and elimination of the focus of a particularly dangerous disease. There is a system for reporting about all cases of outbreaks of infectious diseases. Each case of outbreak of infectious diseases is investigated by the State Sanitary Epidemiological Service and is considered at meetings of emergency epidemiological commissions.

Within the World Bank project "Health Results Based Financing" the MHIF has developed and for the last 6 months is implementing a new healthcare performance evaluation check-list (prepared on a quarterly basis), which for the first time included disinfectants and detergents supply indicators. *At the same time, indicators of infection control and management of medical waste have not been considered. There are only some elements of infection control related to the reception of TB patients and the quality of services provided to them, the hygiene of patients and medical personnel, and relevant indicators.*

5.7. Sanitary and epidemiological rate setting and codification

State sanitary and epidemiological rate setting, and codification is one of the main tasks of national sanitary and epidemiological surveillance aimed at establishing sanitary and epidemiological requirements that provide favorable and safe conditions for human life. The legal acts establishing sanitary and epidemiological requirements contain the state sanitary and epidemiological rules (sanitary rules, sanitary rules and norms, sanitary norms, hygienic standards), non-observance of which threatens life or health of a person, as well as the threat of occurrence and spread of diseases. They include: sanitary and hygienic and anti-epidemic requirements for ensuring the sanitary-epidemiological well-being, prevention human diseases, favorable conditions for residence work, life, rest, education and nutrition; criteria of safety and/or harmlessness of human habitats, hygienic or other standards. State sanitary and epidemiological rules and regulations are in effect on the territory of the Kyrgyz Republic.

State sanitary and epidemiological regulation is carried out by the bodies and institutions of the State Sanitary and Epidemiological surveillance of the KR and includes: the development of unified requirements for scientific justification of sanitary regulations; control over the scientific research work on state sanitary and epidemiological standards; development, revision, examination, approval, introduction and publication of sanitary regulations; control over the implementation of sanitary rules, study and generalization of the practice

of their application; registration and systematization of sanitary rules, formation and maintenance of a unified state database in the field of state sanitary and epidemiological regulation. The Department of State Sanitary and Epidemiological surveillance of the MoH publishes sanitary rules and methods for monitoring environmental factors.