HEALTH POLICY ANALYSIS CENTER

Determining the need for health professionals and staffing in health organizations of the Kyrgyz Republic

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List of abbreviations

ODD	Outpatient-Diagnostic Department
HFAP	Health Facility Autonomy Project
GP	General Practitioner
HEI	Higher Education Institution
FGP	Family Group Practice
CCH	City Clinical Hospital
CS	Clinical Site
ILD	Index of Labor Distribution
CDD	Clinical-Diagnostic Department
MoH of the KR	Ministry of Health of the Kyrgyz Republic
NLA	Normative Legal Acts
NSC	National Statistics Committee
NC	National Center
HO	Health Organization
OMH	Oblast Merged Hospital
PHC	Primary Health Care
ADD	Admission-Diagnostic Department
RHO	Republican Health Organizations
HRU	Hospital-Replacing Departments
TH	Territorial Hospital
TD MHIF	Territorial Department of the Mandatory Health Insurance Fund
SF	Salary Fund
FMC	Family Medicine Center
GPC	General Practice Center
EHC	E-health Center

1. Introduction

At present, planning health personnel of health organizations taking into account health system needs is an integral part of the health system reforming and an urgent issue to be solved.

A number of assessments aimed at evaluating the status of health human resources in Kyrgyzstan showed that key factors affecting the HR capacity are: shortage of physicians in regions, particularly family doctors and some narrow specialists, a high level of job sharing or job combination among doctors, “aging personnel”, as well as the outflow of health personnel from health facilities.

Planning the training of medical personnel at the postgraduate level is based on the available budget and claims from medical educational organizations. Meanwhile, the needs of health organizations and the capacity of clinical sites to ensure high-quality practical training are not adequately taken into account.

Growing number of graduates from medical universities does not contribute to addressing the problem of shortage of medical personnel, but it is a source of concern about the quality of training against a backdrop of competing access to clinical and practical sites.

To some extent, after independence planning the health personnel in health organizations retained the planning system considering needs of the population for health personnel based on capacity, infrastructure, incidence of disease among the population and other factors. This planning concept is partly used in the health care system at the present time.

The existing information system on health human resources does not enable accounting, monitoring and planning of human resources based on reliable data.

Therefore, it is required to explore how the needs for doctors are determined in health organizations, what basic criteria are used for this, to what extent the available number of health staff can ensure that the required standards of health care delivery are met.

2. Purpose and objectives of the assessment

Purpose:

Explore how the needs for health professionals (physicians) are determined in health organizations of the Kyrgyz Republic.

Key objectives and research questions:

1. How do health organizations determine the number and plan medical staff?

2. What are the key criteria used in calculating the need for medical personnel?

3. Study and analyze the normative-legal acts which regulate the number of health personnel in health organizations.

4. To what extent do the existing criteria to determine the need for specialists meet the existing needs of health organizations; are there any specific aspects of personnel planning at outpatient and inpatient levels of care?

5. Review the experience of forming the need for personnel in health organizations, including HOs in pilot raions of Issyk-Kul oblast.

3. Assessment Methodology

Methodologically, the study followed the model of rapid assessment:

- analysis of the existing legislation and normative documents regulating the demand determination, staffing standards, labor remuneration in HOs;

- interviews with directors of health organizations, specialists of finance and HR departments about staffing standards and workloads of specialists;

- visits to health organizations in Issyk-Kul oblast (including pilot HOs of HFA Project) to review the staffing standards of these organizations as an example;

Data collection tools

- normative-legal documents regulating the structure and performance of health organizations;

- normative-legal documents relating to staffing standards, staff workloads, job descriptions and the ToRs used in health organizations;

- statistics regarding staffing and workloads.

Semi-structured questionnaires were used during the interviews with maximum use of open questions aimed at obtaining qualitative data.

At this stage, the assessment involves only the issues of identifying and forming the need for health personnel in health organizations, however, the issues related to limited resources (for example, salary sizes, opportunities for training or funding of health human resources) or the needs related to the population health indicators and health system priorities etc. had not been considered.

Analysis of the number of human resources specialists in being studied HOs was identified only as a gap between the actual number of human resources in HOs and the required number of health personnel by some categories within the established staffing standards for health professionals.

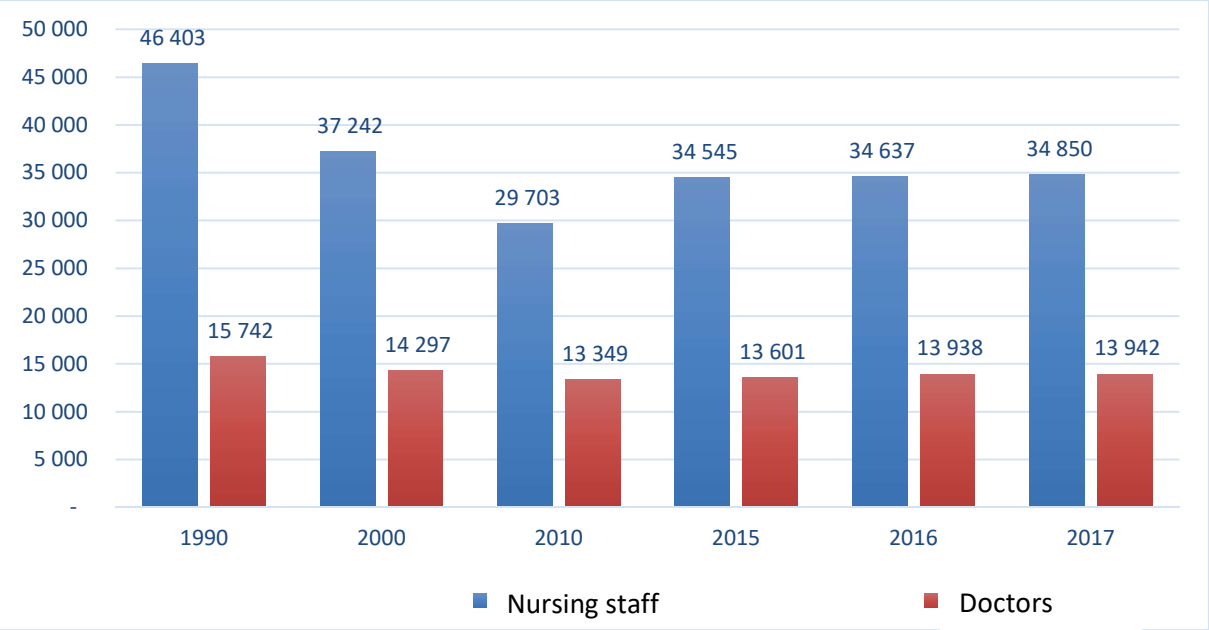
4. Assessment Findings

4.1. Review of major statistical indicators on the number of health personnel in the KR

Currently, the official statistics on the number of health personnel is available in the National Statistics Committee of the Kyrgyz Republic (NSC) and e-Health Center of the Ministry of Health of the Kyrgyz Republic (EHC).

According to the NSC, the number of health personnel was 13,942 people in 2017. These data are indicators of all health professionals including those who also work in organizations and institutions outside the health care system (social institutions, defense and law enforcement agencies etc.) irrespective of the form of ownership (public, municipal, private).

Figure 1. Number of health personnel in the KR, over the years



Source: NSC http://stat.kg/ru/statistics/zdravoohranenie/

According to e-Health Center, as of January 1, 2017, the total number of health personnel was 13,425 people, which is 21.5 per 10,000 population. Of them, the number of family doctors is 1586 people, or 2.5 per 10,000 population. Over the past few years these indicators remain relatively stable, but are among the lowest in the WHO European Region countries.

Currently, the demand and HR planning in health system are based on the indicator of authorized staff size, occupied positions and physical persons who work in HOs. Based on these indicators, the percentage of staffing with health personnel and the job combination ratio are formed countrywide and by region.

The staffing level of HOs with health personnel and the job combination ratio are estimated as the difference between the planned staffing standards and the number of occupied positions and the number of working physical persons.

At the statistical information level, there are no official data on the number of residents who receive training and work in HOs.

According to e-Health Center, the maximum level of staffing with doctors in FMCs is observed in Bishkek - 100%, but at the same time there is a very high level of job sharing - 1.4. This suggests that all available planned staff positions are occupied, and distributed among existing individuals.

High percentage of job combination is also observed Jalal-Abad oblast and makes 1,4.

Staffing figures of the republican health organizations show the lowest level - 81.9%, while physicians do not work part-time (over 1 position or job). The same situation is in Osh with a staffing level of 80.4% of doctors. This situation may indicate the presence of vacancies in these HOs.

Table 1. Staffing of the PHC health personnel positions, by oblast, 2017.

Regions	FMC/FGP				
	Positions		Physical persons	% of staffing	Job combination ratio
	Staff	Occupied			
Kyrgyz Republic	7469,25	6517,5	5150	87,3	1,2
Batken oblast	456,3	400,5	346	87,8	1,1
Jalal-Abad oblast	1100,75	932,50	676	84,7	1,4
Issyk-Kul oblast	468,75	392,50	340	83,7	1,2
Naryn oblast	335,5	292,0	209	87,0	1,3
Osh oblast	2746,75	2609,5	2423	95,0	1,1
Talas oblast	730,5	703,0	651	96,2	1,1
Chui oblast	1695,0	1603,0	1418	94,6	1,1
Republican organizations	139,25	114,0	109	81,9	1,0
Bishkek	1998,25	1998,25	1436	100,0	1,4
Osh	543,75	437,25	446	80,4	1,0

Source: e-Health Center, 2017

At the hospital level, the level of staffing with health personnel is higher in regions and ranges from 89.9% in Talas oblast to 99.8% in Bishkek. A very high percentage of job combination is observed in Issyk-Kul (1.7), Naryn and Talas oblasts (1.6), that points a big difference between the available occupied positions and the number of working individuals or physical persons.

Table 2. Staffing of hospital health personnel positions, by oblast, 2017.

Regions	Hospitals				
	Positions		Physical persons	% of staffing	Job combination ratio
	Staff	Occupied			
Kyrgyz Republic	7140,5	6846,75	5420	95,9	1,3
Batken oblast	420,3	411,5	316	97,9	1,3
Jalal-Abad oblast	985,0	948,75	687	96,3	1,4
Issyk-Kul oblast	443,5	426,5	247	96,2	1,7
Naryn oblast	249,5	242,0	151	97,0	1,6
Osh oblast	1288,25	1239,0	1100	96,2	1,1
Talas oblast	213,0	191,5	117	89,9	1,6
Chui oblast	641,0	612,5	509	95,6	1,2
Republican organizations	1831,5	1713,75	1442	93,6	1,2
Bishkek	786,0	784,25	608	99,8	1,3
Osh	282,5	277,0	243	98,1	1,1

Source: e-Health Center, 2017

4.1. Determination of the need for health professionals in HOs

Planning the needs for health professionals in the Kyrgyz Republic is based on the method of staff rationing and involves estimation of quantitative requirements for health personnel.

Besides, the Ministry of Health of the Kyrgyz Republic provides annual planning of training for health personnel by specialty at the postgraduate level based on the available budget and the requests from medical universities, while the requirements of practical health care and

the opportunities of health organizations that are clinical sites are not adequately taken into account to ensure the quality of practical training.

Other types of planning are not used, neither at the level of individual health organizations, nor at the level of health care system as a whole.

An example of the existing approach to planning the human resources based on staff rationing is the use of approved standards in formation of the staffing table by each position.

Staffing Table is a document which defines the list and the number of positions by each structural unit and for the health organization in general.

The staffing table is developed and approved by health organizations independently as of January 1 annually and is coordinated with the MHIF TD.

Based on the staffing table the Salary Fund (SF) is defined and formed in accordance with the list of normative-legal acts and Decrees of the KR MoH on remuneration of labor, workload standards and staffing standards for health personnel.

The staffing table in HOs is formed by health care delivery level in accordance with the approved nomenclature of positions for medical, pharmaceutical and other specialties in health organizations of the KR on the basis of the KR MoH's Decree #387 as of 30.05.2018 "On approval of the nomenclature of medical and pharmaceutical specialties, the nomenclature of positions and the list of compliance of medical and pharmaceutical specialties with positions in health organizations of the KR". In accordance with this Decree, 125 medical specialties and positions are defined.

At present, Ministry of Health of the Kyrgyz Republic has approved Decree #354 dated July 8, 2011 "On approval of the methodological guidelines on labor remuneration" (with amendments and additions as of June 24, 2015), Appendix 4 "Workload standards for health personnel of clinical departments"

The staffing table is formed based on these approved workload standards for health personnel of clinical departments in hospital-level HOs.

During interviews with directors of HOs it was noted that these workload standards are designed to determine the additional remuneration of specialists on the basis of Index of Labor Distribution (ILD). But, since other regulatory documents do not exist, HOs use these standards to determine the staffing standards in development of the staffing table.

At the same time, it was noted that current number of health professionals does not meet these standards. Most often, directors of HOs annually form the staffing table based on the previous year.

The Ministry of Health made attempts to develop the standards for determining the staffing table in HOs of the hospital level; therefore, in 2015 the KR MoH's Decree #31 "On workload standards of staffing positions in HOs" was developed and approved. However, this Decree was suspended, and cancelled in November 2018.

Recently, a joint Decree of the KR MoH and the MHIF "On approval of staff standards for medical and non-medical personnel in the primary health care system of the Kyrgyz Republic" was recently developed and approved for the PHC level. The KR MoH's Decree #774 as of 14.11.2018 and the MHIF's Decree #342 as of 14.11.2018 (amended on 14.11.2018 "On making changes and additions").

Table 3. List of normative documents regulating the staffing standards in HOs

Current Decrees of the MoH	Decrees that are not in force	Notes
The KR MoH Decree #354 as of 07.08.2011 «Workload norms for estimation of ILD" (Annex 4) for all levels (TH, OMH, RHOs, NC,FGP/FMC, CDD etc.)		Based on these workload standards, staff standards are determined and the staffing table is formed at the hospital level.
The joint Decree of the KR MoH and the MHIF "On approval of staff standards for medical and non-medical personnel in the primary health care system of the Kyrgyz Republic" as of 14.11.2018 (Decree#774 of the MoH) and (Decree#342 of the MHIF)	- the KR MoH' Decree #653 (2010) "On Family Medicine Center", - The KR MoH's Decree #31(2015) "On workload standards for staff positions in HOs". - The KR MoH's Decree #284 (1998), Section 1.2. «On model personnel establishment of administrative and service personnel in HOs"	Staff standards are defined and the staffing table is formed at the PHC level
The KR MoH's Decree #387 as of 30.05.2018 "On approval of the nomenclature of medical and pharmaceutical specialties, the nomenclature of positions and the list of compliance of medical and pharmaceutical specialties with positions in HOs of the KR"	The KR MoH's Decree #327 as of July 31, 2003 "The nomenclature of medical and pharmaceutical specialties in health facilities"	The list of positions is formed in HOs

4.1.1. Formation of staffing standards for primary health care

Determination of the need for health care personnel at the PHC level is ensured on the basis of temporary staff standards based on the joint Decree of the Ministry of Health of the Kyrgyz Republic and the Mandatory Health Insurance Fund "Temporary staff standards for medical and non-medical personnel in the primary health care system of the Kyrgyz Republic" (Joint Order of the Ministry of Health and the MHIF 747/342 as of 14.11.2018).

Until then, staff standards were determined on the basis of "Temporary staffing standards of medical and other personnel" approved by the KR MoH' Decree #653 as of 29.12.2010, which, in accordance with the abovementioned Decree became invalid.

According to the current Decree the determination of the demand for health personnel is provided:

- based on enrolled population;

- depending on medical positions;

- depending on the number of beds (for HRD);

- depending on the square area of a HO (for junior staff).

According to the approved Decree of the KR MoH, it is determined that the staffing standards for FMC are threshold, and may be revised depending on the amounts of money earned.

In the below Table 2 staffing standards for some FGP specialties are given, taking into account those changes that were adopted in the approved Joint Decree of the Ministry of Health and the MHIF (## 774/342 as of 14.10.2018).

It should be also noted that amendments were made to this Decree (joint Decree #782 of the KR MoH and #347 of the MHIF as of 20.11.2018), taking into account the lack of mixed reception of the population in FMCs of Bishkek to switch to the principle of family medicine and introduce an incentive payment system based on the results of FGP doctors in the transition period.

In addition, based on the amendments made, two additional positions and specialties with definition of codes have been introduced for Bishkek: family doctor-pediatrician and family doctor-therapist.

According to the current Decree on temporary staffing standards at the PHC level the norms of enrolled population for family physicians (general practitioners) and other FGP specialists have been revised. A standard of 1500 enrolled population has been established per 1 family doctor.

In addition, the workload standards for family doctors - pediatricians and therapists, introduced in Bishkek, have been revised. According to the newly approved Decree, an obstetrician-gynecologist specialty, which was previously assigned to FGP doctors, has been assigned to specialties of the FMC Consultative Department.

Also, the standards on the staff number of family nurses have changed. Formerly, the standard was determined depending on the position of a family doctor (1.5 positions per each family doctor).

According to the present Decree, the need for family nurses depends on the number of enrolled population: 1 position of a family nurse per 1000-1200 enrolled population (Table 4).

Table 4. Staff standards of FMC/FGP health personnel for some positions

Title of a position	Number of positions	Title of a position	Number of positions
2018 (Joint Decree of the MoH and the MHIF)		**2010 (Decree of the MoH, ceased to be in force)**	
Family doctor (General Practitioner)	1 position per 1500 enrolled population	Family doctor (General Practitioner)	1 position per 1000-1500 enrolled population
Family doctor – therapist (Bishkek)	1 position per 1000-1500 enrolled population	Врач-терапевт	1 position per 1700 enrolled population
Family doctor – pediatrician (Bishkek)	1 position per 900-1500 enrolled population	Doctor-pediatrician	1 position per 700 children

Obstetrician-gynecologist (consultative department)	1 position per 3500 enrolled female population	Obstetrician-gynecologist	1 position per 3500 women
Family nurse	1 position per 1000-1200 enrolled population	Family nurse	1,5 position per each family doctor
FGP Clinical director	Up to 9 medical positions - 0,5 position above 9 - 1,0 position	FGP Clinical director	Up to 9 medical positions - 0,5 position above 9 - vacated position
Medical personnel of a consultative department (24 specialties)	0,5 or 0,25 per each 10 000 population	Medical personnel of a consultative department (22 specialties)	0,5 or 0,2 per each 10 000 population

4.1.2. Formation of staffing standards at the hospital level

The staffing standards in inpatient HOs are formed on the basis of the "Workload norms for medical personnel of clinical departments" approved by the Decree#354 of the KR Ministry of Health as of July 8, 2011 "On approval of methodological guidelines for remuneration" (the KR MoH's Decree #354 as of 08.07.2011) considering:

- the number of patients supervised per day;

- the number of treated cases per position of a doctor per month;

- standard labor unit (SLU) (1 standard unit corresponds to 15 minutes of the time the service is performed);

- based on available sectoral programs for scientific activity (tertiary level).

In compliance to the abovementioned Decree, the workload norms of health personnel are approved for different levels of health care delivery:

- territorial hospitals;

- oblast merged hospitals;

- republican health organizations, national centers and Bishkek health organizations;

- PHC health organizations, FGP/FMC;

- consultative-diagnostic departments of the republican HOs, NCs and HOs of Bishkek.

In accordance with the abovementioned Decree of the KR MoH, workload norms of each employee should be approved by director of a HO taking into account the standards approved by the Ministry of Health of the Kyrgyz Republic.

Table 5 shows the examples of workload norms for health personnel of some clinical departments based on the KR MoH's Decree #354 as of 08.07.2011, which sets the number of patients supervised per day and the number of cases treated per occupied doctor's position at different levels of inpatient care delivery.

As shown in Table 5 below, the workload norms for the same clinical departments vary at different care levels. In some cases, the workload norms at the level of territorial hospitals are higher than at the level of oblast and republican hospitals.

During interviews with various key officials carried out as part of this assessment, it was noted that these standards were calculated based on the average number of patients per day and treated cases per month by indicators of all HOs of the relevant level.

Most of the interviewed directors of raion HOs mentioned that they are aware of these standards, however they do not use them when annually form the staffing table. Most often, the staffing table is formed based on the previous year, making necessary adjustments for operational reason and taking into account the funds allocated to the salary fund.

Table 5. Workload norms for health personnel of some clinical departments at the hospital level

Clinical department	Number of patients/per day	Number of treated cases/ per month	Number of patients/per day	Number of treated cases/per month	Number of patients/ per day	Number of treated cases/per month
	TH		OMH		RHO/NC/Bishkek HOs	
Gynecology	11	48	10	35	8	30
Surgery for adults	6	22	10	26	15	42
Pediatrics	11	36	10	26	10	26
Therapy	12	40	10	30	15	30
Infectious disease (adults)	10	33	8	27	25	60
Cardiology	12	36	9	28	12	20
Maternity	10	40	10	40	10	64

According to the KR MoH's Decree #354 as of 08.07.2011, the workload norms for health personnel are also approved for the PHC level and FGP/FMC.

During the interviews, when figuring out how primary health care providers use these standards, it was noted that these standards are designed for calculating the ILD for supplementary remuneration.

However, HOs of both primary and hospital levels stated that they do not use these standards for the ILD calculation. Other methods are used, most often, equitable or disciplinary indicator-based distribution of additional funds for payment on the basis of ILD.

It should be noted that this Decree has no workload standards for admission-diagnostic departments (ADD) of THs to calculate the staffing standards and the ILD (Table 6).

Table 6. Workload norms of health personnel at the PHC level per 1 position per month

Positions	Workload norm per 1 position for FGP/FMC	Workload norm per 1 position per month for ODD/CDD of the RHFs, NCs and Bishkek HOs	ADD of the TH
FGP doctor	205	-	No
Therapist	308	-	No
Pediatrician	308	275	No
Gynecologist	300	300	No
Surgeon	478	275	No
Cardiologist	208	208	No
Endocrinologist	426	345	No
Ophthalmologist	356	345	No
ENT specialist	418	345	No

4.2. Analysis of staffing schedules in some HOs

As part of this assessment, the staffing schedules of some health organizations in Bishkek and Issyk-Kul oblast were analyzed.

In particular, FMC#1 and CCH#1 of Bishkek, FMCs and THs of Balykchy and Ton raion of Issyk-Kul oblast were selected for the analysis.

The analysis of staffing schedules involved determination of the estimated number of personnel using the available indicators on the basis of which the staffing levels of medical personnel should be formed in HOs in accordance with the standards approved by the KR MoH's Decree.

4.2.1. Analysis of staffing schedules of Bishkek HOs

As of 01.01.2018, FMC#1 of Bishkek has 109,848 enrolled population. According to the staffing schedules as of 01.01.2018 the total number of medical personnel is 183,75 positions, of them the actual number of working individuals (physical persons) is 132 doctors.

The analysis of the staffing schedule according to the approved standards for FMC doctors of Bishkek shows that the number of therapists is much lower than the established staffing standards.

The available number of pediatricians according to the staffing schedule and the number of physical persons exceed the established norms; taking into account the established norms of enrolled child population, 23 pediatricians would be adequate.

There is a small difference between the actually working persons and the number of obstetrician-gynecologists who should work according to the established standards.

The number of surgeons in this FMC is optimal in accordance with the established staffing levels (0.5 positions per 10,000 population) (Table 7).

Table 7. FMC indicators and the number of medical personnel by some specialties, 2017

FMC#1, Bishkek, 2017			
Population served 112021	Enrolled population 109848	Total number of doctors according to the staffing schedule 183,75	Total number of doctors – physical persons 132
Profiles of outpatient level			
	Therapist	**Pediatrician**	**Obstetrician-gynecologist**	**Surgeon**
Number of doctors according to the staffing schedule	25	31	19	5
Number of doctors – physical persons	25	29	15	5
Enrolled number by groups	69959	35741	61716	-
Estimated number of doctors according to the staffing standards	**46**	**23**	**17**	**5**

The analysis of the staffing schedule in City Clinical Hospital #1 (CCH#1) of Bishkek shows that according to the approved standards of the need for medical personnel, there is a shortage of endocrinologists only.

There is a big number of surgeons in City Clinical Hospital #1 who occupy less than one position, since the number of physical persons is greater than it is scheduled in the staffing table.

Considering the number of treated cases of therapeutic and surgical profiles and taking into account the established monthly workload standards per doctor, the number of personnel in these departments should be approximately two times less (Table 8).

Table 8. Indicators of the CCH and the number of medical personal in some departments, 2017.

CCH#1. Bishkek, 2017				
Number of beds 294	Number of hospitalizations 12496	Total number of doctors according to the staffing schedule 779,75		Total number of doctors – physical persons 608
Department Profile				
	Therapy	**Surgery**	**Cardiology and cardio-rheumatology**	**Endocrinology**

Number of hospitalizations by department, per year	1534	5247	3046	1277
Number of doctors according to the staffing schedule	11,75	24,25	14,75	3
Physical persons	11	31	10	2
Estimated number of doctors according to workload standards	**6**	**14**	**12**	**5**

4.2.2. Analysis of staffing schedules of HOs in Balykchy

As of 01.01.2018, Balykchy TH has totally 170 beds. Total number of hospitalizations was 6099 in 2017.

In the analysis the number of specialists delivering health care was considered by four profiles: therapeutic, surgical, pediatric and obstetric-gynecological care.

Generally, total number of doctors according to the staffing schedule of the TH is 49,75 units, 32 doctors actually work – physical persons. Of them, according to the staffing schedule 6,5 units are set for a therapy department, 5,25 units – for a surgery department, 6,25 units - for a maternity and gynecology department and 1 unit – for a pediatrics department, while the number of physical persons - doctors is less two times, except for the pediatric profile.

Taking into account the existing approved workload standards for TH, according to which the need for medical specialists should be calculated, the estimated number of doctors is in compliance with the workload standards and close to the number of actually working individuals.

In practice, it turns out that the existing physical persons fulfill the required workload norm, based on the number of cases treated per month. And the planned number of doctors according to the staffing schedule for these profiles is overestimated 2-3 times.

For example, in the therapy department, with the existing level of hospitalizations, according to the established workload norms, it is enough to have 2 doctors (the estimated number is 1.8 units).

With the current staffing levels of 6.25 units for gynecology and maternity profiles, 2 doctors of this profile are enough to ensure the approved workload norm based the number of hospitalizations and deliveries per year (Table 9).

According to the staffing schedule, the need for 5,25 units of surgeons is planned for surgery profile, however, taking into account the established standards, only 2.75 positions of the surgical profile (2-3 individuals) are sufficient to fulfill the established workload based on the number of actually treated cases.

As for pediatric profile, the planned norm of the need per 1 doctor corresponds to the performed workload based on the number of cases treated.

Table 9. Indicators of the TH and the number of medical personnel in some departments, 2017.

TH, Balykchy, Issyk-Kul oblast, 2017					
Number of beds - 170	Number of hospitalizations - 6099	Total number of doctors according to the staffing schedule - 49,75	Total number of doctors, physical persons - 32		
Department Profile					
	Therapy	**Surgery**	**Pediatrics**	**Maternity**	**Gynecology**
Number of beds	52	30	10	24	10
Number of hospitalizations	1092	729	427	1663	517
Number of doctors according to the staffing schedule	6,5	5,25	1	6,25	
Physical persons	2	2	1	3	
Estimated number of doctors based on the workload standards	**1,8**	**2,75**	**0,9**	**2**	

As of 01.01.2018, Balykchy FMC has 48061 resident population, of which 43024 is the enrolled population.

To analyze the staffing schedule, the numbers of family doctors and physically available at the time of assessment narrow specialists – surgeon, endocrinologist, ophthalmologist, otolaryngologist, neurologist were reviewed.

Total number of medical personnel based on the staffing schedule is 59,5 units; and the actual number of working physical persons is 42 people.

Of these, according to the staffing schedule 21.75 units account for FGP doctors, of which physical persons are 17 doctors. According to the staffing table 1 unit of medical personnel falls on a surgeon and an endocrinologist each and 2 units on an ophthalmologist, an otolaryngologist and a neurologist each.

In pursuance of the approved by the MoH's Decree standard on the staff number of doctors, 1 family doctor should be for 1500 enrolled population, a surgeon, an ophthalmologist, an otolaryngologist and a neurologist should be each 0,5 position per 10000 population and an endocrinologist position should be 0,25 per 10000 population.

Considering the approved standards at the level of FMC, there is a significant shortage of FGP doctors in Balykchy. On average, one FGP doctor serves more than 2500 enrolled population. The estimated number of doctors of narrow specialties according to the

established standards based on the number of resident population also shows their shortage (Table 10).

Table 10. Indicators of the FMC and the number of medical personnel by some specialties, 2017

FMC, Balykchy, Issyk-Kul oblast, 2017						
Resident population - 48061	Enrolled population - 43024	Total number of doctors according to the staffing schedule - 59,50	Total number of doctors – physical persons - 42			
Outpatient Level Profiles						
	FGP Doctor	**Surgeon**	**Endocrinologist**	**Ophthalmologist**	**Otolaringologist**	**Neurologist**
Number of doctors according to the staffing schedule	21,75	1	1	2	2	2
Physical persons	17	1	1	1	1	2
Estimated number of doctors based on the staffing standards	**28,5**	**2,4**	**1**	**2,4**	**2,4**	**2,4**

4.3. An example of creating conditions for efficient management of health personnel in HOs of Issyk-Kul oblast pilots.

Since 2015, Kyrgyzstan has been implementing the Health Facility Autonomy Project, which focuses on management issues in health organizations in three pilot raions - Ton, Tyup, and Jeti-Oguz of Issyk-Kul oblast. As part of this activity the staff personnel management was optimized in these HOs.

Optimization of the needs for specialists in health organizations of Ton, Jeti-Oguz and Tyup raions was considered from the perspectives of creating optimal conditions for performance and empowerment of health organizations, as well as increasing their responsibility for their activity results.

The key objective of optimizing the need for specialists was to empower HOs to independently determine the number of personnel, depending on the actual raion needs, based on the actual performance indicators and financial capabilities.

This required a specific assessment and creation of appropriate conditions in this area.

4.3.1. Situation analysis, problem identification and proposed solutions

The first step was an assessment of the existing staffing tables which revealed a number of problems that impede the effective decision-making on personnel management at the level of health organization. These problems involve:

1. The lack of a unified structure in the same type health organizations of raion level.
2. Inconsistency of the actual job titles in health organizations with the titles in the nomenclature of positions, approved by Decree of the Ministry of Health of the Kyrgyz Republic (# 327 dated July 31, 2003[1]) and the lack of linking the position to a specific structural unit, in accordance with the functions performed.
3. The lack of effective regulation of the number of personnel, depending on actual needs.

1. The lack of a unified structure in health organizations of the same type and level

In all pilot health facilities, regardless of the structure and level: both in territorial hospitals (TH) and family medicine centers (FMC) as well as in a general practice center (GPC):

a) there was no clear separation between structural units according to the types of functions performed. For example, the structural units performing the functions of financial accounting in organizations of the same type were either merged into the administrative and management personnel, or separated into a stand-alone structure as a centralized accounting department; structural subdivisions performing diagnostic functions were either merged into diagnostic departments or existed as part of an emergency health care unit.

b) structural units performing the same functions had different titles. For example, structural units performing the functions of logistical and economic support in health organizations of the same type were either called the administrative-economic part or the economic court; a therapy department in some HOs is called somatic department; and a statistics unit in some HOs is named a health information unit etc. (Annex 1).

Efforts made to solve the problems

The Ministry of Health of the Kyrgyz Republic made a number of decisions for pilot health organizations that provide for structural changes at both primary and secondary levels. These transformations were aimed at testing epy mechanisms for improving health care system to improve the quality, availability and efficiency of health care, including regulation of the staff planning. The activities include:

- the transfer of emergency (ambulance) service from FMC to TH;
- the transfer of the outpatient counseling function performed by narrow specialists from FMC to the emergency and consultative-diagnostic department of the TH (by organizing the consultative services of specialists from profile hospital departments);
- centralization of laboratory service at the oblast level through efficient and high-quality organization of the work for the existing laboratories of pilot organizations in the structure of the centralized laboratory of Issyk-Kul oblast merged hospital.

Taking into account the proposed transformations and improvements, a unified structure was proposed and agreed with the Ministry of Health of the Kyrgyz Republic for health

[1] Presently, this Decree of the KR MoH is no longer in force due to the adoption of the KR MoH's Decree#387 as of 30.05. 2018 "On approval of the nomenclature of medical and pharmaceutical specialties, the nomenclature of positions and the list of compliance of medical and pharmaceutical specialties to positions in Health Organizations of the Kyrgyz Republic".

organizations in pilot raions. This allows systematizing data collection and analysis, including staff planning and personnel accounting. Unified services and structural units were defined for all types of health organizations in pilot raions (Appendix 2).

2. Inconsistency of the actual job titles in health organizations with the titles in the nomenclature of positions, approved by the KR MoH's Decree

In all types of health organizations, there was a difference in the actual job titles and the titles in the nomenclature of positions approved by the current Decree of the KR Ministry of Health and the lack of linking a position to a specific structural unit.

This situation caused the impossibility to create the unified methodological approaches to describing clear terms of reference for each position and a structural unit, determine the required number of specialists in respective structural units and plan their activity volumes and financial expenses to remunerate their labor.

It was necessary to take into account the specific aspects of health care delivery at raion level. There was a need to allow managers to carry out the optimization activities in the absence of the need to hire an employee (even if this is envisaged in the current staffing schedule), because not all current workload standards by each position can be achieved.

Efforts made to solve the problems

Based on the right to carry out the optimization by health care organizations themselves, at least two optimization formats were suggested:

- Functional optimization: structure of a health organization may not change, but labor organization, roles and functions of employees and work processes may change.

- Structural optimization: assumes small or big changes in the organizational structure of health organizations and is always accompanied by functional optimization.

Within the frames of new payment method implementation, directors of health organizations were empowered to change ToRs when concluding labor contracts with a corresponding change in salary sizes through additional payments from the additional salary fund.

The structural units performing similar\related functions were enlarged through structural optimization activities which reduced the administrative costs related to maintenance of structural units' heads.

For example, the departments of surgery, anesthesiology and resuscitation, and the operating unit were merged in one department of surgical profile with one head, a chief nurse and a housekeeping nurse; the children's department, the therapeutic department and the infectious disease department are combined into a therapeutic profile department (however, this activity does not involve merge of infectious beds with therapeutic beds in the same room, but only provides the opportunity to administer their activities by one head with observation of relevant sanitary and hygienic standards).

Given this situation, a list of positions within the approved organizational structure was recommended for pilot health organizations.

3. Lacking effective regulation of the number of personnel, depending on actual needs

Under the current system of determining the number of staff personnel, pilot health organizations did not have the opportunity to reduce the number of ineffective posts (employees) without adverse effect on the salary fund (SF) of the health organization, since the SF was formed in accordance with the staffing schedule.

Moreover, the existing remuneration system has encouraged health organizations to unnecessarily increase the staffing levels (not so much in terms of hiring individuals, but in terms of creating vacancies), because the system of additional payments for the ILD was based on the SF savings, in formation of which vacancies were one of the components for these savings.

Efforts made to solve the problems

One of the key conditions in pilot health care organizations was creation of the SF protection mechanism to effectively regulate the number of personnel depending on actual need.

This mechanism was used as one of the rules approved by the KR MoH's Decree#1214 as of December 30, 2017 and Decree #366 of the MHI Fund under the Kyrgyz Government as of December 30, 2017 "On approval of the methodological guidelines on remuneration of employees of pilot health organizations in Issyk-Kul oblast". It lies in the fact that from July 1, 2018 in pilot sites the SF is calculated by each health organization independently in the size of average percentage (%) of income over the past 3 years, and not according to the staffing table. Namely, the SF size in these HOs does not depend on the staffing schedule (Annex 3).

Another rule which provides an opportunity to effectively regulate the staffing levels is rejection of the "position" concept and introduction of a new "occupance rate" concept in pilot HOs.

For example, a family doctor was hired by a FMC in 2017 for 1.25 of the family doctor position, of which 0.25 were allocated to the employee owing to medical vacancies in this FMC. Under new conditions, a family doctor is hired by a FMC as a full-time employer, i.e. with occupance rate equal to 1.0. If the doctor continues to perform additional work or work extra time, these working conditions and appropriate remuneration are determined and paid through the additional salary fund, which provides additional payments for performance based on score cards in addition to remuneration for additional work or extra time.

Such an arrangement contributes to the refusal of an employee to combine jobs and receive additional remuneration for improving the quality of work in the main position.

4.3.2. Analysis of staffing schedules in HOs of pilot raions

In order to see how changes happened in HOs of pilot raions, the number of medical personnel was considered as an example according to the staffing table in the FMC and the TH of Ton raion before and after optimization.

Prior to optimization in HOs of pilot areas the reporting on the number of personnel was carried out by three indicators (positions according to the staffing schedule, occupied positions, physical persons). After optimization, HOs keep records on the actual availability of specialists.

The optimization resulted in the fact that only family doctors are engaged in health care delivery in FMCs, all narrow specialists have been transferred to the TH.

Table 11. Number of medical personnel by some specialties, Ton FMC

Position title	Staff	Occupied	Physical	Medical and nursing staff, November 2018
	Before optimization			After optimization
Family doctor	7,25	7,25	6	3
Family nurse	10,5	10,25	10	9
Ophthalmologist	1	1	1	0
Otolaryngologist	1	0,5	0	0
Endocrinologist	0,5	0,5	0	0
Oncologist	0,75	0,5	0	0

After the optimization, the number of actually working physical persons remained at the same level in Ton TH. The number of surgical profile doctors has decreased, because doctors of other profiles who were nominally listed in this department have been transferred to other relevant departments.

It should be noted that after the optimization the TH started to deliver outpatient consultations in the department of urgent and consultative-diagnostic care as referred by the FMC. Counseling services are carried out by specialists of specialized hospital departments according to the schedule.

It should be noted that this TH also has a greater number of doctors, especially doctors of obstetrician-gynecological profile, than it should be according to the established workload standards per 1 doctor based on the number of treated cases (Table 12).

Table 12. Number of medical personnel by some specialties, Ton TH

Position titles by profile	Staff	Occupied	Physical	Medical and nursing staff, November 2018	Estimated need
	Before optimization			After optimization	
Doctors of surgical profile	13	10,5	5	3	**2**
Doctors of therapeutical profile	6,5	6,5	5	5	**4,5**

Doctors of obstetrical profile	3,25	3,25	3	4	**1,5**
Nursing staff	38,75	38,75	39	38	**-**

4.3.3. Advantages of the optimization in pilot HOs in terms of the need for specialists determination

Creation of a unified and optimized organizational structure at raion level which allows:

a) in-depth comparative analysis of various health organizations including their structural units; b) systematization of data collection and analysis by various performance areas of health care facilities including health statistics, accounting and reporting, staff (HR) planning and personnel inventory; c) facilitating development of model normative-legal acts (NLA) for performance of health organizations including implementation of the new payment methods and d) developing a unified automated health information system.

Directors of health organizations are given the real and effective authority to independently define the organizational structure (through functional and structural optimization activities) and manage personnel which is supported by the opportunity to stimulate relevant changes with additional payments from the additional salary fund in accordance with the new payment methods. However, it should be noted that it is necessary to continue improving the proposed methods and tools on the basis of continuous monitoring of ongoing activities.

Health organizations of pilot raions obtained an effective tool to incentivise and attract employees through introduction of the new payment methods, which allows to motivate staff for performance and differentiate salary sizes based on the actual contribution of each employee. At the same time, a set of measures (including addressing the issues of determining the need for specialists) carried out in pilot organizations suggests better quality and effectiveness of the delivered health care services, better access to health care for the population.

5. Key findings and issues requiring consideration

Currently, the Kyrgyz health care system has no a methodology to plan human resources approved by regulatory acts, which would establish criteria and conditions for long-term HR planning, taking into account the health system demand for human resources, a forecast of morbidity rates for the population, demographic trends, geographical distribution of the population and other factors.

Determination of the health staff composition and number particularly medical staff of HOs is based on the staff rationing method. An example of this approach is the utilization of the approved standards on the basis of which the staffing schedules of health organizations are annually formed.

Besides, the Ministry of Health provides annual planning of training for medical personnel by various specialties at the postgraduate level based on the available budget and the number of graduates from medical educational institutions. At the same time, the practical health care needs and the capabilities of clinical sites are not sufficiently taken into account in order to ensure the adequate practical training. Therefore, in this area it is important to orient medical educational institutions at the practical health care needs for both the number of skilled specialists and the demanded specialties.

Currently, there is no a unified reliable database of medical specialists in the country. The available system of accounting human resources in health care using the routine reporting form tracks the general data on HR in HOs and medical educational organizations; however, it does not allow to account, monitor and plan human resources based on reliable data. It is necessary to implement an enhanced registration system for health personnel, regardless of the form of ownership and departmental affiliation of health organizations. This process should be integrated with the electronic health information system for analyzing and monitoring human resources. In addition, the information system should also track postgraduate training residents in order to plan the demand for specialists.

As part of the assessment, it was noted that health facilities do not always use the established standards to form the required number and the composition of medical personnel. Most often, HOs annually form the staffing levels based on the historical number over the past year. In addition, determination of the demand does not take into account the services of private health organizations that have been widely developed.

Staffing standards are strongly linked to the current principle of forming a salary fund; therefore the existing pay system encourages health organizations to unreasonably increase the staffing levels (not so much in terms of hiring physical persons, but in terms of creating vacancies). Free vacancies are one of the components for job combination and additional pay for staff.

In this regard, all health organizations have a significant difference between the planned staff units and the actual availability of physical persons. In addition, there is a disproportion between the staff number of the administrative and managerial personnel and the medical personnel in HOs.

The Issyk-Kul experience and examples of planning the need for specialists considering a comprehensive approach in HOs of pilot raions may be used in order to optimize the workforce management. This approach can be studied further and improved using the experience of the new result-based payment method being implemented in the country.

Financial and managerial autonomy is not used by HO directors in the staff number formation on a full scale. Therefore, it is critical to upgrade the qualification of health organization managers and skills of personnel management.

In general, reasonable and reliable information is the basis for decision-making for the development and implementation of the human resource management strategies, medical education and training of health professionals. Therefore, building the analytical capacity in health care system, evidence-based policy and the decision-making process in the area of human resource planning are the critical areas requiring attention.

Organizational Structures of HOs in pilot raions before optimization

ORGANIZATIONAL STRUCTURE OF THE FAMILY MEDICINE CENTER (FMC)
(IN ACCORDANCE WITH THE STAFFING SCHEDULE):

TYUP FMC

1. Administrative-managerial personnel
2. Administrative-economic personnel
3. Statistics unit
4. Emergency care department
5. Treatment-consultative department
6. Auxiliary personnel
7. Treatment-diagnostic department
8. Office of family planning and medical-social patronage
9. Family Group Practices
   - Enlarged FGP «Araket» (7 FAPs)
   - FGP «Ak-Bulak» (2 FAPs)
   - FGP «Taldy-Suu» (4 FAPs)
   - FGP «Kuturgu» (4 FAPs)
   - FGP «Aral» (3 FAPs)
   - FGP «Tasma» (2 FAPs)
   - FGP «Santash» (5 FAPs)
10. Legally independent FGP «Sary-Kol»

TON FMC

1. Administrative-managerial personnel
   - Accountant Office
   - HR Unit
2. Administrative-economic unit
3. Statistics unit
4. Treatment-consultative unit (narrow profile specialists)
5. Auxiliary personnel
6. Treatment-diagnostic department (laboratory, fluorography)
7. Family planning office
8. Family Group Practices
   - «Bokonbaevo» (3 FAPs)
   - «Tort-Kul» (2 FAPs)
   - «Burkut» (3 FAPs)
   - «Toguz-Bulak» (2 FAPs)
   - «Kara-Koo» (5 FAPs)
   - «Kadjy-Sai»
9. Legally independent FGP «Kara-Talaa»

ORGANIZATIONAL STRUCTURE OF THE TERRITORIAL HOSPITAL (TH)
(ACCORDING TO THE STAFFING SCHEDULE):

TYUP TH

1. Administrative-managerial personnel
2. Hospital-wide personnel
3. Clinical department
   - Maternity department
   - Surgery department
   - Children's department
   - Infectious diseases
   - Therapy department
   - Resuscitation department
4. AIDS laboratory
5. Ec. yard
6. EMCD
7. Transfusiology office
8. Emergency care unit in the admission department
9. ECG office
10. Laboratory
11. X-ray office
12. Infectious control office
13. autopsy room
14. SP #1 Taldy-Suu village
15. SP #2 Santash village

TON TH

1. Administrative-managerial personnel
2. Central accounting department
3. Administrative-economic unit
4. Central sterilization room
5. Emergency care unit in the admission department
6. Transfusiology office
7. Physiotherapy office
8. Clinical laboratory
9. AIDS laboratory
10. Anatomicopathological office
11. Clinical departments
    - Maternity department
    - Surgery department
    - Infectious diseases department
    - Somatic department
    - Department of anesthesiology and resuscitation
12. SP Kadjy-Sai village
13. SP Kara-Koo village

ORGANIZATIONAL STRUCTURE OF THE GENERAL PRACTICE CENTER (GPC)

(IN ACCORDANCE WITH THE STAFFING SCHEDULE):

JETY-OGUZ GPC

1. Family Group Practices
   - «Nur» (7 FAPs)
   - «Tilekmat» (3 FAPs)
   - «Saruu»
   - «Darkhan»
   - «Ak-Terek» (3 FAPs)
   - «Orgochor» (1 FAP)
   - «Lipenka» (2 FAPs)
   - «Barskoon»
2. Hospital
   - Maternity department
   - Surgery department
   - Infectious diseases department
   - Therapy department
   - Resuscitation department
   - Gynecology department
   - Children's department
   - SP «Jety-Oguz»
   - SP «Barskoon»
3. Ambulance
   - Emergency care department
   - Ambulance «Jety-Oguz»
   - Ambulance «Tamga»
4. Narrow profile specialists, diagnostics, other
   - Treatment-consultative unit
   - Diagnostics (ultrasound, X-ray, endoscopy, AIDS)
   - General hospital staff
   - Health information unit
   - Administrative managerial personnel
   - Technical support staff

Annex 2

Organizational structure of HOs in pilot raions after optimization

UNIFIED STRUCTURE OF A HEALTH ORGANIZATION AT RAION LEVEL

GENERAL PRACTICE CENTER	TERRITORIAL HOSPITAL	FAMILY MEDICINE CENTER
ADMINISTARTIVE SERVICES	ADMINISTARTIVE SERVICES	ADMINISTARTIVE SERVICES
SPECIALIZED AND AUXILIARY SERVICES	SPECIALIZED AND AUXILIARY SERVICES	SPECIALIZED AND AUXILIARY SERVICES
DEPARTMENT OF EMERGENCY AND CONSULTATIVE-DIAGNOSTIC CARE	DEPARTMENT OF EMERGENCY AND CONSULTATIVE-DIAGNOSTIC CARE	
CLINICAL DEPARTMENTS	CLINICAL DEPARTMENTS	
FAMILY GROUP PRACTICES		FAMILY GROUP PRACTICES

ADMINISTRATIVE SERVICE STRUCTURE
1. Administrative-managerial personnel 2. Accountants department 3. Health information unit 4. Economic unit
STRUCTURE OF SPECIALIZED AND AUXILLARY SERVICES
1. Specialized service 2. Auxiliary services
STRUCTURE OF EMERGENCY AND CONSULTATIVE-DIAGNOSTIC CARE DEPARTMENT FOR TH AND GPC
1. Emergency and consultative care service 2. Diagnostic service
CLINICAL DEPARTMENTS FOR TH AND GPC
1. Surgical profile department 2. Therapeutic profile department 3. Obstetric profile department 4. Structural units located outside the main territory
FAMILY GROUP PRACTICES of FMC
1. Family group practice 2. Feldsher-midwife station (FAP)

Annex 3

Formation of the Salary Fund based on autonomy principles in HOs of pilots (average % of income over the past 3 years for each HO)

Facility Title	Share of the SF
Jety-Oguz GPC	61,58%
Ton TH	64,84%
Tyup TH	58,37%
Ton FMC	67,16%
Tyup FMC	70,94%
FGP «Kara-Talaa»	66,30%
FGP «Tamga»	66,99%
FGP «Jety-Oguz»	59,74%
FGP «Baltabay»	66,37%
FGP«Sary-Kol»	64,69%