

## Evaluation of the postgraduate medical education program for "Family Medicine/ General Practitioner" in the Kyrgyz Republic





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#### List of abbreviations

GP	General Practitioner
FGP	Family Group Practitioner
KSMA	Kyrgyz State Medical Academy
KSMITR	Kyrgyz State Medical Institute for Training and Re-training
DOPS	Directly observed procedural skills
FM/GP	Family Medicine/General Practice
FMC	Family Medicine Centre
GPC	General Practice Centre
PGME	Postgraduate medical education

### **Executive Summary**

This study following the Terms of Reference lasting from September 15 to November 5, 2020. This aimed to assess the operational issues of decentralization of postgraduate medical education (PGME) in the Kyrgyz Republic, with a focus on medical residency on "Family Medicine\General practice" and implications for the healthcare workforce. In addition, this study aims to assess to which extent the recommendations of the previous study in 2019 have been discussed and implemented.

As a result of the PGME decentralization within the framework of the National Strategy for PGME Development for 2014-2020, the access of medical residents has improved to the education process on "Family Medicine/GP" such that they receive the opportunity to learn practical aspects of identifying, diagnosing and managing patients. However, improved quality of the educational process in clinical training sites should remain a priority for upcoming periods.

The initial years of PGME decentralization have enabled considerable positive experiences in organizing the educational processes in the clinical training sites. In the cities of Bishkek and Osh, as well as in the regions, including in rural areas, there are individual hospitals and FMCs / FGPs that have managed to establish high-standard educational processes, serious attitude of the mentors to the process, and compliance with standard procedures of assessing the skills that residents are expected to acquire. Unfortunately, there are few such clinical training sites and it is still necessary to roll out the positive experiences throughout the country.

The capacities of most clinical training sites need further improvements in terms of teaching competencies of mentors, equipping with medical equipment, adherence to educational process procedures (in particular, procedures for assessing knowledge and skills of medical residents). In the Calendar Thematic Plan (CTP) of the Kyrgyz State Medical Institute for Training and Re-training (KSMITR) there is a course for training of doctors to become mentors; however, there is little awareness amongst the facility managers of this course and interest amongst mentors to take this course. The absence of certain types of medical equipment in the clinical training sites for teaching certain clinical procedures and the specific case-mix in each clinical hospital raise questions as to how well medical residents can learn all the skills included in the List of Competences.

The administration of medical residency by the education institutions is becoming more complex and the volume of work is growing. The number of residents in the specialty of "Family Medicine/GP" that are distributed every year has been growing, while the variety of capacities of clinical training sites remains the same. Universities manage the distribution of residents to regions, rotation of residents by cycles and by training sites of classes "A", "B", "C", every year they negotiate with the health facilities and contract the changing clinical mentors on part-time job. Therefore, the universities will need to revise the human and financial resources allocated for the administration of medical residency. This is especially important once the support of international programs of the monitoring and other activities ends.

In clinical training sites, the current model of remuneration of clinical mentors is not always working well. The universities remunerate the mentors by payment of 25% or 50% of the normal rates and this model looks limited since there is no room to increase the payment due to legal constraints. As a result, payments to mentors, who are often deputy directors of healthcare facilities, do not always motivate doctors who work directly with the medical residents. The recommendation of the previous assessment to consider contractual relations between universities and training sites remains unfulfilled.

The early response to COVID-19 pandemic in mid-2020 and participation of medical residents has generated several lessons for the PGME. The curriculum and educational process should embrace skills in infection control, distant counseling skills, counseling of stressed patients, communicating bad news to relatives, as well as the ability to receive a second opinion (telemedicine), critical appraisal of medical information (in order to follow the principles of evidence-based medicine), interpersonal communication skills.

The content and timing of lectures for Distance Learning needs modifications and improvements. Specifically, the lectures need to be enriched with data from clinical pharmacology, long-term ambulatory management of chronic diseases, selected clinical procedures (in particular, ECG interpretation) and increased time for interactive discussion of lectures. The time of day when online lectures are delivered is not suitable for most residents, as they are busy working with patients during this time.

The schedule for mastering the clinical procedures included in the List of Competencies does not take into account whether the procedure is performed in hospitals or FMCs / FGPs. For example, spirometry is often performed in FMCs / FGPs, and not in hospitals, while the spirometry is included in the List of Competencies as a required skill of the 1st year of study (when the resident of the SM is in the hospital).

### **Methodological constraints**

Due to pandemic, the medical residents were interviewed only in the form of online interviews. Face-toface interviews would have several advantages in terms of communication between respondents and interviewers.

Interviews with medical residents were conducted only with residents of the 2nd year of study in the specialty of Family Medicine (i.e. those who started studying in 2019). Scheduled interviews with year 2 residents who enrolled in 2018 did not take place because many of them were busy in the early months of COVID-19 response and graduated by the time of the interview series.

Visits to the regions with direct observation of the progress of educational work did not take place, which was due to the restrictions of movement and quarantine. In this regard, no data was collected from parties such as local administrations.

### 1. Background

Under the program of reforming the medical education in the Kyrgyz Republic, a number of measures have been taken over the past 7 years, namely the revision of state educational standards with the main emphasis on training of family doctors / general practitioners (GPs). The principles of building curricula and teaching methods were revised, both at the undergraduate and postgraduate medical education.

In June 2018, the first generation of students who had been trained according to the new undergraduate program, which emphasis to stronger Family Medicine, graduated the Kyrgyz State Medical Academy named after I. I.K. Akhunbaev.

To strengthen the postgraduate education, a number of measures have also been taken. Namely, during 2019, the postgraduate education monitoring measures were developed, the Guideline for Monitoring of Postgraduate Medical Education was drafted and implemented, the Coordinating Council for PGME was established, the training of general practitioners (GPs) was revised, continuous assessment tools (resident's Diary, Catalog of Competencies) were introduced, an electronic platform for residents was set up, and distance learning was implemented.

In addition, in 2017, an assessment was made of the capacity of healthcare facilities entitled to deliver training in the specialty of "General Practitioner", with their categorization guided by their capabilities to organize the educational process, infrastructure, etc.

Since September 2018, 115 residents who chose the specialty of "Family doctor / GP" have begun a twoyear training program in healthcare facilities that are considered as clinical training sites, in accordance with the new postgraduate training program.

The reforms undertaken, including fully public budget-covered training in the specialty of Family Medicine/GPs, contributed to several residents (graduates of 2018) opting out to this specialty when moving to the 2nd year of study. To illustrate, in 2019 residents of several narrow specialties, after the 1st year of study, shifted their specialty to FD/GP. If at the beginning of the year 1 in 2018, their number was 115, then by the beginning of the year 2 there were 144 of residents of FM/GP.

In September 2019, another 138 residents with specialization in FM/GP began their first year of residency training, of which 62% went to clinical training sites located in regions.

Tracking the learning process, especially in the regions, is very important, since the model and training programs for general practice are still novice, and in order to quickly respond and modify the training program.

In 2019, the baseline evaluation of the implementation of the postgraduate program was carried out and recommendations were made. In this regard, it is necessary to conduct a follow-up assessment, in order to track and further implement the postgraduate education in "Family Medicine / GP", to analyze the decentralization of PGME. It is essential to receive answers to such questions as "To what extent were the recommendations of the baseline assessment taken into account?", "What elements of the PGME organization have been improved?", as well as to identify the remaining barriers to the appropriate implementation of PGME based on the developed tools.

### 2. Objectives of the evaluation and study questions

Assess the early stages of implementation of the postgraduate program in Family Medicine / General Practice, including the opportunities for improved access to hands-on practice at clinical training sites and the effectiveness of decentralization.

#### **Study questions**

1. Assess the satisfaction and learning outcomes of residency in the regions as compared to residency in Bishkek and Osh, including Family Medicine/General Practice and narrow specialties.

2. Compare the learning outcomes of year-1 and year-2 medical residents in Family Medicine / General Practice, with more emphasis to results of year-2 residents.

3. Compare the results of the online survey of "Family medicine / General Practice" residents of year-2 enrolled 2018-2019 and year-2 enrolled 2019-2020.

4. Assess the satisfaction of medical residents with the training program for "Family Medicine / "Family medicine / General Practice".

5. Assess the introduction and implementation of the General Practice training program.

6. Analyze the use of tools for ongoing / regular assessment of PGME.

7. Analyze the decentralization of PGME to see how effective the decentralization was, what improvements are required.

a. Access to patients and acquisition of practical skills in regions and cities of Bishkek Osh, differences in access and opportunities;

- b. Accommodation for residents;
- c. Residents receiving salaries;
- d. Communication with supervisors in the educational organizations;
- e. Compliance with the workload of 1/10 in the hospital and 1/12 in the FMC;
- f. Compliance with the rotation across clinical training sites of classes A, B, C.
- 8. Assess the implementation of Distance Learning.

9. Compare with findings of assessment in 2019 and evaluate the implementation of its recommendations.

### 3. Methodology

The assessment was based on interviews with three groups of key informants: medical residents, specialists from clinical training sites and educational organizations.

**3.1** Assessment of satisfaction medical residents was carried out using a questionnaire on resident's electronic platform. In total, 1,636 medical residents of different specialties participated in the survey. However, this analysis included only residents in the specialty of "Family Medicine/General Practice" and narrow specialties of year- 1 and year- 2.

In total, the analysis used the responses of 327 medical residents of year-1 and 165 medical residents of year-2 in the specialty "Family Medicine/General Practice". For narrow specialties, the analysis used the survey of 394 residents of year-1 and 531 residents of year-2.

It is worth noting the actual number of residents of year- 1 and year-2 is less than the survey registered. We assume that residents in narrow specialties who have completed year-1 of General Practice program mistakenly marked their specialty as "Family Medicine/General Practice", which led to an increase in the number of respondents.

**3.2 Focus group discussions** with year-2 Family Medicine / General Practice residents were held online using Zoom meetings. Those discussions were based on the questions and topics identified through the "Assessment of satisfaction of medical residents".

**3.3 Interviews with managers and specialists of clinical trainings sites and universities** used semistructured interview questions. For this, questionnaires were developed that took into account the research questions. Technically, these questionnaires were mostly open-ended questions designed to stimulate discussion and expression of respondents' views.

3.4 The main blocks of questions for different respondents were as follows:

1-year and 2-year medical residents in Family Medicine / General Practice and year-1 residents in narrow specialties: were expectations met, access to patients, compliance of on-site training process with the approved training programs, adequacy of practice, main barriers to meeting the expectations, proposed improvements.

**Managers, specialists and clinical supervisors of clinical training sites**: awareness of training programs (organization, coordination, content, interaction and support from universities), quality of knowledge and level of theoretical education of medical residents, main barriers to meeting expectations, proposed improvements.

**Managers and specialists of PGME in universities** (KSMA, KSMITR, South Branch of KSMITR, Osh State University): organization, coordination, communication with medical residents, differences between programs, opportunities and limitations for Distance Learning in regions, cooperation with clinical training sites, opportunities for regular monitoring of the learning process.

For visits, the clinical training sites were selected in the cities of Bishkek and Osh and in 3 regions where at the time of the study there is the largest number of residents with a specialization in General Practice.

### 4. Study findings

### 4.1 General findings from questionnaires

In April-May 2020, an online survey of medical residents was carried out with focus on the question of their satisfaction with postgraduate training. In total, 1,636 medical residents of different specialties participated in the survey. This analysis included only year-1 and year-2 medical residents in the specialty of "Family Medicine/General Practice" and narrow medical specialties.

In total, the analysis used the survey of 327 year-1 residents and 165 year-2 residents in specialty of "Family Medicine / General Practice". For narrow specialties, the analysis used the survey of 394 year-1 residents and 531 year-2 residents (Table 1).

Specialty groups	Year- 1	Year- 2
Family Medicine / General Practice	327	165
Narrow specialties	394	531

Table 1. Number of medical residents who participated in the online survey by years of study

Residents are assigned to different healthcare levels. According to the training program for "Family Medicine / GP", the year-1 of residency should be held in hospitals, the year-2 in primary healthcare facilities. It is alarming that a quarter of Family Medicine / GP residents (23%) completed their first year of study at FMC / FGP, while the training program requires year-1 to be spent in hospitals (Fig. 1). In 2019, the share of year-1 residents who were assigned to primary healthcare facilities was 49%. This distribution is at odds with the first year GP curriculum, although there has been some improvement in the distribution of year-1 residents.

# Figure 1. Distribution of year-1 and year-2 medical residents of "Family Medicine/General Practice" by healthcare facilities, %



There are no particular issues with distribution of the year-2 FM/GP residents. 90% of year-2 residents completed their study at the primary level (FMC / FGP and GPCs), as required by the training program. About 10% remained at hospitals – territorial (rayon) hospitals, oblast and republican hospitals and private hospitals.

The distribution to cities and regions of year-1 and year-2 medical residents of "Family Medicine / GP" was equal, as 49% of residents study in the regions and 51% of residents study in Bishkek and Osh.

According to assessment in 2019, the number of "Family Medicine / GP" residents who left for the regions was 52%.

The number of year-1 and year-2 residents of narrow specialties who are studying in Bishkek and Osh doubles the number in the regions (Fig. 2), with 70% of residents in narrow specialties trained in Bishkek and Osh and 30% referred to the regions, to the rayon healthcare facilities (territorial hospitals, FMCs, GP Centres).



# Figure 2. Distribution of medical residents of "Family Medicine/GP" and narrow specialties across clinical training sites located in Bishkek/Osh and regions, %

### 4.2 Progress in decentralization of PGME in "Family Medicine/General Practice"

The implementation period of the Strategy for Development of Medical Education for 2014-2020 is ending in 2020. One of its focuses is on shifting the curricula to obtaining practical skills, using online lectures for a balanced acquiring of theoretical knowledge, the possibility of changing the initially chosen specialty after the first year of training in basic general clinical disciplines.

The share of time for theoretical training continues to reduce. To illustrate, in 2020 in KSMA and KSMITR the previously two-month introductory courses were reduced to two-weeks training. The need in such significantly reduced time for introductory courses is controversial and might require further discussion. However, the very fact that clinical training sites need quickest arrival of medical residents after their holidays prompts positive expectations from the chosen strategy for transforming the PGME.

Indeed, in the context of decentralized PGME, the medical residents in Family Medicine/GP are able to improve knowledge and skills through access to admission, examination, diagnosis and differentiation, and treatment of patients. The relevance and appropriateness of the decision to decentralize the PGME in "Family Medicine/GP" are confirmed by the responses of the majority of interviewed medical residents.

Nevertheless, there are still issues of ensuring quality of education in clinical training sites. The list of clinical training sites, compiled on the basis of assessment of healthcare facilities, needs to be regularly updated. Rayon level healthcare facilities, according to one interviewed head of a healthcare facility, do not meet the requirements for clinical training sites. These assessments refer to two factors: 1) lack of pedagogical competencies among line doctors and department heads (who most often become mentors of medical residents), and 2) lack of certain types of medical equipment. The first reason is supported by

the fact that most of the mentors did not receive mentoring training, although the MER project has conducted trainings of mentors, including those in regions. The second reason could not be objectively verified in this study in a pandemic.

In the previous assessment, one of the approaches proposed was the accreditation of clinical training sites for compliance with requirements. This study found no evidence that this recommendation is being seriously considered by PGME stakeholders.

Ensuring quality of the educational process should also be led by universities. Rotation of residents by training blocks and clinical training sites of cl categories "A", "B" and "C" are the tools that universities can and should use to take into account all the diversity of training sites in terms of staffing, equipment, as well the cases served (case-mix) and performed medical interventions.

### 4.3 Implementation of the training program for 'General Practitioner'

The curriculum of the year-1 medical residency, both in narrow specialties and in "Family Medicine/General Practice" includes compulsory basic training in 5 blocks (aka cycles) of general clinical disciplines: "Surgery", "Obstetrics-Gynecology", "Therapy", "Pediatrics", "Intensive care and resuscitation". The medical resident should receive hands-on training in relevant departments of the hospital, guided by an individualized rotation plan and schedule.

Most of the surveyed residents of "Family Medicine" and narrow specialties, who were in the year-1 of GP training in 2019-2020, reported that they had been rotated according to the curriculum (Fig. 3). In addition, the managers from universities noted that rotations in the year-1 do not experience considerable drawbacks and explained this with the fact that almost all rayon (district) hospitals are category "A" training sites and, provided there is skillful management of rotation, even the residents who start in category "B" and "C" training sites can access all types of cycles.



# Figure 3. Responses of year-1 medical residents to the question of "Have you been rotated by departments of the hospitals?", %

When considering the rotation of "Family Medicine / GP" residents by 5 training blocks in hospitals (Fig. 4), over 40% of residents completed 4 cycles: most often those are "Therapy", "Surgery", "Pediatrics" and Obstetrics-gynecology" cycles. Residents are least trained in intensive care and resuscitation. 26% of

residents reported they were trained in only one specialty. Only 15% of residents were rotated according to the training program by all 5 basic subjects. A similar situation is found in relation to narrow specialty residents: in year-1 of general practice most of them completed 3 or 4 subjects, and only 9% were able to complete all 5 cycles.



Figure 4. Rotation of year-1 medical residents across 5 training blocks under the "General Practitioner" program in hospitals

Most residents were unable to go through all the training blocks due to the COVID-19 pandemic, as most hospitals closed their specialized departments and suspended admissions. Another common reason for not going through all the blocks was that female medical residents often have pregnancy, childbirth and childcare.

Universities administer the educational process in hospitals through mentors, who are hired by universities for part-time jobs and paid 0.25 or 0.5 salary rates of university employees. Most often, mentors are deputy directors of the healthcare facilities (training sites). Depending on the size of the healthcare facility and the number of medical residents, mentors either conduct the educational process themselves or delegate part of the mentoring functions to department heads or linear practitioners.

The interviewed mentors expressed varying opinions regarding the educational process in GP program in hospitals. Some argued that most medical residents receive good training opportunities, provide assistance to healthcare facilities, and mentors themselves are increasingly familiar with skills assessment procedures and receiving some benefits in the form of repeating the theoretical and practical materials. However, there were also mentors who insisted they had little time for high-quality administration of the educational process, and line doctors and heads of departments did not have mentoring skills, in particular, they could not always explain well the clinical procedures, conduct formal assessments, and provide feedback.

The implementation of the GP program in the regions and cities of Bishkek and Osh strongly depends on the characteristics of hospitals: to what extent the leadership is committed to the educational process, how well the departments of hospitals are equipped with doctors, how well discipline is established, and whether there is environment conducive to learning. These certainly suggest that **facility managers must demonstrate leadership and understand the importance of a decentralized model of PGME for staffing their own facilities**. It is worth highlighting the territorial hospitals in Nookat, At-Bashi, Kara-Suu city, Railway Hospital in Bishkek and clinic "Eldik" in Bishkek.

The focus group discussions also documented a few cases of not respecting the requirements of the year-1 training program. One example concerns a female medical resident who spent the entire year-1 in a FAP (paramedic unit) in one of the villages in the outskirts of Bishkek. Due to pregnancy and family circumstances, she was assigned to study in that FAP. She did not have an assigned clinical mentor and had to work as a doctor in that FAP from the first year of study (autumn 2019) after the FAP doctor had been injured and stood at home. When asked how she is now going to cover the missed cycles (in surgery, obstetrics-gynecology, resuscitation and intensive care, pediatrics), it was not possible to receive a clear answer from the resident and the university.

Along with that, a number of positive experiences have been identified, with facility managers and mentors managing to achieve a complete compliance with requirements of the year-1 training program. Some training sites in rayons, for example in Nookat and Kara-Suu territorial hospitals, provide wide opportunities to residents to acquire practical skills in all 5 subjects. Residents share and recommend each other these health facilities, including medical residents who live outside these regions.

As missing training blocks due to pregnancy among female residents is a frequent scenario, the universities are encouraged to develop specific measures to track the rotation and ensure that this group of residents complete the training blocks they have missed.

### 4.4 Utilization of tools for recurrent and regular assessment for monitoring of PGME

Whether medical residents had skills assessment tools was not found as a significant issue. The survey showed that majority of residents - 93% of Family Medicine/GP residents and 80% of narrow specialties - had Resident Diaries available. 73% of Family Medicine/GP residents had a Catalog of competencies, and only about half, 51% residents of narrow specialties had it. This may be due to the fact that Catalogs of competencies have not been developed for all narrow specialties. The majority of Family Medicine/GP residents also had training programs, 85%, and 82% of narrow specialty residents had them available.



#### Figure 5. Medical residents that have Diary, Catalog of Competences and Training program in hand, %

Assessment of knowledge and skills using the mini-CAF and DOPS forms in healthcare facilities takes place in different forms and with varying compliance with required steps. There were cases reported, in particular in Nookat Territorial Hospital, Railway Hospital in Bishkek and Eldik private clinic in Bishkek, when the assessment process is carried out in compliance with all required steps, in an environment of high discipline and organization. In these clinics, it is worth noting that the mentors treat medical residents as peers. However, the prevailing practice is that the assessment is based on the mentor's general idea of the resident's academic performance and skills, the relationship between them, often without setting the date and time of the assessment procedure and other organizational issues. This is especially noticeable in those training sites where the relationship between mentors treat residents as the "doctor's assistant".

The PGME assessment 2019 demonstrated that often mentors in healthcare facilities are not aware of the assessment procedures and are unable to complete the assessment forms. In this study, several managers of clinical training sites stated that many mentors have already learned how to use the assessment forms. However, managers from universities admitted that the assessment procedure remains one of the weak chains of the educational process due to a lack of understanding of the importance of procedures, insufficient ability to use the assessment forms on the part of many mentors. Almost 100% of residents of years 1 and 2 in all specialties noted that they have a supervisor, and more than 91% noted a rather high satisfaction with the work of a supervisor from the university.

# Figure 6. Satisfaction of year-1 medical residents of all specialties with supervisors from universities / departments, %



# Figure 7. Satisfaction of year-2 medical residents of all specialties with supervisors from universities / departments, %



76% -78% of year-1 and year-2 medical residents in all specialties have mentors in healthcare organizations. The MoH's Order # 138 dated 15.03.2019 approved the "Instruction for managers of healthcare facilities which are training sites for medical residency" that provides for healthcare facilities to appoint clinical mentors.

# Figure 8. Responses of medical residents of all specialties to the question of "Do you have a clinical mentor in the healthcare facility?"



The online survey found that the satisfaction of medical residents with clinical mentors in the clinical training sites ranged from 20 to 78%. Some of the residents did not answer how satisfied they were with the mentor's work.

# Figure 9. Satisfaction of year-1 medical residents of all specialties with clinical mentors at training sites, %



# Figure 10. Satisfaction of year-2 medical residents of all specialties with clinical mentors at training sites, %



This situation is thought to be because the residents have several mentors, for example, the healthcare facility's deputy director can be a mentor and each clinical department also has mentors, so it was difficult for the residents to assess their work. This may require adjustments to the online survey so that the resident can rate satisfaction with each mentor, depending on the training block (cycle).

4.5 Assessment of decentralization in specialty of "Family Medicine/General Practice"

### 4.5.1 Access of medical residents to patients and acquiring practical skills

There is a significant access of medical residents to patients and this access in the year-2 significantly increases. Among year-1 FM / GP residents, 45% reported they manage patients independently and in full, 52% of residents reported they are managing patients under the guidance of clinical mentors, and remaining 3% noted that they do not manage patients.



Figure 11. Answers of medical residents of year-1 to the question "Do you manage patieints independently?"

In the year-2 of the training, the access to patients is much better: 85% of FM/GP residents and 53% in narrow specialties reported they manage patients independently. About 2% of residents in both specialties reported they do not manage patients.



# Figure 12. Responses of year-2 medical residents to the question "Do you manage patients independently?"

The survey did not find a significant difference between cities and regions, although in focus group discussions with residents and interviews with facility managers and mentors they noted in Bishkek and Osh the clinical training sites traditionally have a high number of residents who stay here along with undergraduate students.

The interviewed residents in Bishkek did not point to access to patients as a significant challenge. But they did not express an enthusiasm either, as it was heard from many residents in regional training sites. Indeed, although the number of residents is also growing in the regions, especially in oblast centers and large district hospitals, there is no considerable overload here. Many residents interviewed clearly stated that access to patients and practice is better in regions. Moreover, they would recommended their peers to pass the year-1 in the regional training sites.

Some mentors noted that healthcare providers themselves also benefit from medical residents. Medical residents across all specialties have played an important role in the response to COVID-19 pandemic. All residents were given a choice between self-isolation or helping the healthcare facilities. Many of the interviewed residents worked at the Hotline 118, and there were those who worked on frontline with patients. For several residents, working in hospitals during the first months of the pandemic became an opportunity to gain extensive practice in resuscitation and intensive care, and even in surgery and obstetrics-gynecology.

In addition, the rotations of individual residents depended on the current priorities in the respective healthcare facilities. For example, in one of the hospitals, after completing the Pediatrics block of training in the Pediatric Department and being transferred to the Surgery Department in the fall of 2019, several residents soon had to return to the Pediatric Department because of a large inflow of children with viral infections.

It is worth noting the value of continuous updating of the residents' knowledge, with use of the principles of evidence-based medicine. At the Eldik clinic in Bishkek, residents along with doctors prepare and deliver presentations and lectures on specific topics, using the UpToDate resource and other sources of evidence. Having extended this kind of practice of in other clinical training sites could bring several benefits. In particular, the residents' would understand the need for continuous updating of knowledge, acquire skills of searching and critically assessing the medical information, as well as skills of presentations, leading professional discussions with reference to specific cases of diseases encountered during their stay in clinical training sites.

The "List of Practical Skills for Medical Residents" document needs revision for several reasons. Some clinical procedures for the GP training program (year-1 at hospitals), for example Spirometry, are most often performed in primary care settings, rather than in hospitals. Therefore, it is advisable to revise the list of competencies and their distribution by years of study.

"I am currently working in a FGP in a village in the Chui oblast. I really want residents to have the opportunity to practice emergency procedures throughout the academic year, and not just in early September in the first year of study."

(year-2 medical resident)

Selected competencies, such as cricothyrotomy and procedures in chest injuries can hardly be mastered in the conditions of most clinical training sites. In the context of a reduction of the introductory sessions at the beginning of the year-1 from 2 months (in the early years of the PGME reform) to 3 weeks (in 2020), practicing these procedures requires access to simulation centers and these procedures should be practiced during designated time during the academic year.

In the self-assessment of the practical skills of year-1 residents, no significant differences were found between the cities of Bishkek and Osh and the regions, although in some medical subjects residents in the regions rate their skills higher in relation to selected competences. For example, a significantly larger number of residents in Bishkek and Osh reported they do not know how to perform certain procedures: for neurological examination, ECG interpretation, Spirometry, external obstetric examination, labor management.

Clinical procedures	I know how	I can perform	I can perform	I do not know
	to perform	supervision	macpendentry	it
Neurological assessment	12	55	19	14
BP measuring and result interpretation	16	6	75	3
ECG interpretation	14	53	7	26
Spirometry	22	13	40	25
Initial surgical treatment of wounds	25	26	43	6
Suturing	20	36	21	23
Plaster cast	23	34	12	31
Gastric lavage	26	32	27	15
Cardiopulmonary resuscitation	25	31	31	13
Obstetric examination	26	29	21	24
Management of physiological labour	28	37	4	31
Newborn assessment	32	34	14	20

# Table 2. Self-assessment of practical skills by Family Medicine/General practice" medical residents ofyear-1 in Bishkek and Osh, %

Table 3. Self-assessment of practical skills by Family Medicine/General practice" medical residents of
year-1 in regions, %

Clinical procedures	l know how to perform	l can perform under mentor's supervision	l can perform independently	do not know how to perform it
Neurological assessment	14	58	22	6
BP measuring and result interpretation	20	4	76	0
ECG interpretation	14	59	13	14
Spirometry	25	14	52	9
Initial surgical treatment of wounds	29	31	36	4
Suturing	22	42	17	19
Plaster cast	25	34	20	21
Gastric lavage	27	38	24	11
Cardiopulmonary resuscitation	23	36	26	15
Obstetric examination	25	28	34	13
Management of physiological labour	25	49	9	17
Newborn assessment	26	39	24	11

The self-assessment of practical skills in year-2 residents of "Family Medicine / General Practice" demonstrated that in the 2nd year of study the residents rate their skills much higher, both in Bishkek and Osh and regions, as compared to the first year of study. It is worth noting that majority of these residents, both in the regions and cities, reported lack of skills in performing of two procedures - suturing and plaster cast. Almost a quarter of the residents admitted they do not know how to perform these procedures.

In the second year, they find their skills in using Spirometry as much better, since residents can master this procedure only in the second year of training, at the PHC level.

Acquiring skills in most cases also depends on the number of relevant cases while the medical resident is in a particular department. For example, during a 2-week training block, there might be no a single patient who needed cardiopulmonary resuscitation or gastric lavage. Residents suggested and asked to organize simulation centres and special points where they can learn and repeat these procedures.

I know how I can perform I can perform I do not know **Clinical procedures** to perform under mentor's independently now to perform supervision it Neurological assessment BP measuring and result interpretation ECG interpretation Spirometry Initial surgical treatment of wounds Suturing Plaster cast Gastric lavage Cardiopulmonary resuscitation Obstetric examination Management of physiological labour Newborn assessment 

Table 4. Self-assessment of practical skills by Family Medicine/General practice" medical residents ofyear-2 in Bishkek and Osh, %

# Table 5. Self-assessment of practical skills by Family Medicine/General practice" medical residents ofyear-2 in regions, %

Clinical procedures	I know how to perform	I can perform under mentor's supervision	I can perform independently	I do not know 10w to perform it
Neurological assessment	11	49	32	8
BP measuring and result interpretation	20	5	75	0
ECG interpretation	7	55	25	13
Spirometry	29	15	53	3
Initial surgical treatment of wounds	32	27	37	4
Suturing	28	32	18	22
Plaster cast	23	38	14	25
Gastric lavage	35	20	38	7
Cardiopulmonary resuscitation	29	25	40	6
Obstetric examination	26	28	45	1
Management of physiological labour	28	39	20	13
Newborn assessment	30	23	45	2

In the regions, 2.4 % residents reported they do not know how to perform Spirometry, while in Bishkek and Osh around 5% of residents reportedly were not able to do this procedure. For other procedures, namely surgical wound care, plaster cards, physiological delivery management and newborn assessment, the number of residents incapable to these procedures was fewer in regions than in cities.



#### Figure 13. Comparison of selected skills that medical residents reported as not mastered

### 4.5.2 Implementation of distant education

According to the curriculum, after 2 months of full-time introductory theoretical training, during the academic year the lectures on the most important topics and subjects are presented as distance lectures that last 2 academic hours once or twice a week. The recorded lectures ar placed in the electronic library for free access.

In 2019-2020, KSMITR revised the curriculum and, as a result, the introductory sessions held in September-October were reduced to 3 weeks. Universities manage to deliver lectures only on the most basic subjects during this time.

This reduction of the introductory course, as conceived by university managers, can be successfully set off by distance learning (DL). However, the results of the online survey of medical residents showed that 29% of narrow specialty residents and 25% of family medicine residents do not attend DL lectures.



Figure 14. Attendance of Distant Learning lectures by medical residents, %

Medical residents gave the following explanations for this poor attendance of DL lectures:

• The timing of lectures at 14.00 is inconvenient. This is the time when medical residents are busy in the hospital with patients. Many residents do not have time to take the lectures, as there is a lot of work; the lectures are better attended in the evening, but not always even then. Occasionally these residents miss DL lectures for several weeks in a row. One resident was able to view the online lectures only once per year, and the rest of the lectures were watched in the evening in the recording.

- **DL lectures have had technical issues,** especially in the initial stages of DL implementation. The platform was rebuilt several times and underwent changes, which resulted to several residents losing access password and, along with it, their attendance data were reset. Sometimes the website just did not work, and residents had to contact the administrators.
- The lecturer is not interested in leaving time for questions, often not interested in giving answers to the questions asked. There is no dialogue and debate, i.e. there is a completely one-way communication (no dialogue or interactivity).
- Often topics in online lectures are insignificant from practical perspective. They often represent a pile of theoretical data on the etiology and pathogenesis. Although several managers reported that the content of the lectures on pediatrics was good, the general decline in interest in DL seems to have dropped the value of these good lectures, as interviewed residents did not confirm the good quality of lectures on pediatrics.
- Several residents reported they had challenges with Internet connection, which works better at night. One resident reported she watched recordings at night and she has never watched lectures online. As an incentive to wait for the night and watch the recording, the administrative resource worked, i.e. points awarded for attending lectures and added to the assessment when passing the transfer exam, rather than the attractive content of the lectures.

On the other hand, one university supervisor explained the poor attendance of DL lectures by the following reasons:

- Residents sometimes have little time, Internet connection is poor;
- Many residents have not yet developed a culture of using DL;
- Many residents have low performance scores since undergraduate education;
- Often female residents get married or become pregnant;
- There is no competition among residents for good academic performance, which leads to poor motivation;
- Mentors are not always committed to ensuring that residents take time to DL lectures;
- The quality of DL lectures needs improvement.

FM/GP medical residents stated the following requests and suggestions to improve the DL lectures:

- 1. Logistics:
  - Shorten the duration of DL lectures;
  - Change the time of lectures to a more appropriate time.
  - Have Q&A sessions at the end of DL lectures, preferably with points awarded for correct answers.
- 2. Content:
  - More emphasis is needed on the work of the primary care doctor, especially the long-term outpatient management of patients with chronic disorders.
  - More lectures are needed that cover the diseases and conditions that residents face most often.
    - Emergencies in pediatrics;

- Clinical pharmacology, e.g. drug interactions, drugs of choice versus second-line drugs, etc.
- Intensive care and resuscitation.
- More data on differential diagnosis.

"The topic of "Antimicrobial resistance" should be part of the content of the lectures, since in practice I see that Ceftriaxone, Carbapenems, etc. are prescribed in our hospital immendiately, while at KSMA we were taught to start with "simpler" antibiotics. I would like to know the principles of AMR, so that I can apply them in discussions with doctors."

(Medical resident of KSMA, year 2)

More extreme wishes were also voiced. One year-1 resident in a rural FGP requested to consider an online platform for second opinion (telemedicine) from a clinical supervisor, expert or specialist, or mentor. Although such a platform is unlikely to be needed by all year-1 residents, it could be a good tool for year-2 residents in remote areas where PHC facilities often lack doctors of certain specialties.

Each university develops and delivers the DL lectures on its own way, individually. This is due to the motivation of the university employees to fulfill their academic hours in the Curriculum and, accordingly, receive funds for the staffing posts allocated to these universities from public budget. This situation for many respondents does not seem to be a problem, because universities are separate and autonomous institutions, they can have their own specific human resources, their own strategies for institutional development. However, it is also advisable in future to unite the efforts of universities in the field of DL.

One of the options could be the development of common contents of specific DL lectures, at least for year-1 (GP). Selected lectures, i.e. not all DL lectures, could be developed by specialized institutions or even professional associations. For example, lectures on surgery could be developed by the National Surgical Centre or the Association of Surgeons, and lectures on cardiology could be developed by the Department of Cardiology at the National Centre for Cardiology and Therapy or the Association of Cardiologists. Another option, or even an additional step, could be posting recorded lectures on websites, for which the sites of the Ministry of Health of the Kyrgyz Republic and professional associations are suitable. This option reduces the need to rely on administrative leverage to ensure attendance, but if interesting lecture content is achieved the benefits from the resident's improved academic performance would be more valuable than the currently practiced lecture attendance reports.

#### 4.5.3 Accommodation of medical residents

Decentralization of postgraduate medical education involves the departure of residents to the regions, but provision of such residents with access to accommodation in the regions is considered a challenging task. Most residents travel to the regions where they live. Universities always encourage the departure of residents who choose to go to the regions. Previously in the KSMA, the distribution of FM/GP residents to the regions was optional, now there is a Commission that deals with distribution and one of its tasks is to convince residents to go to the regions, according to an interviewed manager.

For those residents who have not independently chosen a training site, the PGME managers at universities offer a choice of such training sites where the residents can go and where they can be provided with accommodation or salaries. However, a few residents reported a discouraging story when, upon a referral

by the university, several of their fellow residents (who we could not interview in this study) left for the region where the local administration had promised to support accommodation; those conditions ultimately were not met and the residents had to return to Bishkek.

However and in general, during the focus group discussions, residents did not mark the problem of accommodation as something very important, explaining that the majority in the regions lived in their own houses. Some residents from training sites in Bishkek and Osh reported that they were renting apartments and had been ready for it.

72% of all interviewed residents with a specialization in FM/GP and narrow specialties noted that they lived in their own house or with their parents / relatives and did not spend money for accommodation rent. 26% of the interviewed residents noted that they rented housing and payed the rent from their own pockets. Of these, 84% were residents who undergo residency in Bishkek and Osh. About 1% of residents live in hostels located at healthcare facilities or provided by local administrations, thus they did not spend money for housing rent.



Figure 15. Accommodation of medical residents

### 4.5.4 Salaries of medical residents

Medical residents receiving training in healthcare facilities that are clinical training sites can be employed by the healthcare organization and receive salaries. According to the Government's Resolution # 246 dated May 26, 2011 of "Regulations on remuneration of healthcare workers in the Kyrgyz Republic", for medical residents the basic salary is set 10% lower than the basic salary of the doctor at the concerned position.

There is a slight difference found in salaries received by residents by the specialties: 21% of residents in the specialty of "Family Medicine / GP" received salaries, while residents in narrow specialties received salaries in 15% of cases. There is a significant difference in receiving salaries by the years of study in the specialty "Family Medicine / GP", and about 70% of residents of year 2 reported they were receiving wages.

#### Figure 16. Whether or not salaries received by medical residents of year 1 and 2, %



A survey of residents in the specialty "Family Medicine / GP" showed a significant difference in the numbers of residents receiving salaries depending on where they are doing their residency, in the city or regions. In the 1st year of study, 35% of residents from the regions reported they were receiving salaries, in cities - 12%. In the 2nd year of training, 78% of residents (in PHCs) in the cities of Bishkek and Osh reported they were receiving salaries, in the regions - 58% of residents.



#### Figure 17. Receiving salaries by medical residents of year 1 and 2 in specialty of "Family Medicine/ General Practice"

Receiving salaries by residents of year 2 at the PHC facilities is clearly due to the fact that PHC facilities have a large shortage of doctors and unoccupied posts. The largest number of residents who receive salaries are working at the PHC level (FMC, GPC). Moreover, 13% of residents in FM/ GP and 24% of residents in narrow specialties reported they were receiving salaries in healthcare facilities of the oblast and republican levels.



#### Figure 18. Number of medical residents who are receiving salaries, by levels of healthcare facilities, %

#### 4.5.5 Challenges as identified by the assessment in 2019 and progress in addressing them

During the survey, medical residents were stating challenges that are urgent and need to be addressed. Seven major issues were identified and they were most frequently reported. Those are the issues with wages, accommodation of residents studying in the regions, access to practice for obtaining skills, availability of distance learning, and content of theoretical training.

The identified challenges of Family Medicine/GP residents in the regions and Bishkek do not differ significantly. There are some differences in the perceived value of wages and access to patients depending on where the residency is located. In the regions, 14% of residents identified the wages as a significant issue, in the cities 25% of residents reported it as an issue. Limited access to patients was reported as an issue in 10% of cases in urban healthcare facilities and only 2% of residents undergoing training in regional healthcare facilities noted that access to patients was limited.

If compared the identified challenges with findings of the assessment in 2019, the last year study found 32% of residents reported the access to practice as the most significant issue. In this evaluation, this was reported as an issue by a slightly smaller number of respondents, 22% in the regions and 27% in cities.

This year, a larger number of medical residents reported the lack of theoretical training as an issue (23% in cities and 27% in regions), although last year only in 15% of respondents pointed this issue. Specific challenges related to theoretical / distance learning were discussed in great detail with the residents during focus group discussions and were covered in this report above.

There is a change in the perceived experience of clinical mentors in healthcare facilities: last year, over 16% of cases reported this as an issue. This year's survey of residents showed that only 2% of residents, both in the city and in the region, reported the lack of experience of mentors as a challenge.



The assessment in 2019 pointed as one of the important achievements that the PGME decentralization already was on a positive trend, since every year an increasing number of medical residents chose to study in the regions. The current assessment found this dynamic continues to persist and is facilitated by both educational organizations and the residents themselves.

In 2019, it was noted that the distribution of residents by training sites was not well planned. Despite the fact that a number of regulations have been developed to enable assessing the capacities of training sites by categories A, B, C and enable planned distribution, this still remains at the same level, as the referral to clinical training sites is mostly based on the preference of residents and is the place of residence.

At clinical training sites, equipment and clinical cases do not always allow mastering all the clinical procedures set forth in the resident's diary, with educational organizations not able to fully control the compliance of residents with the training blocks as provided for by the program, especially in healthcare facilities in the regions.

There are significant changes in the distribution of medical residents to the respective levels of healthcare, depending on the year of study. In the current assessment, most residents in their first year completed residency at the inpatient level and the second year at the primary level.

In institutions where there are no doctors, the medical residents work and independently manage patients, that is, they work without supervision by mentors. This problem was also highlighted in the last

year's assessment, and there were similar cases in the current assessment. This causes concern on the part of educational organizations and healthcare managers, since medical residents must necessarily have clinical mentors and cannot be fully responsible for possible complications or other emergencies.

In last year's assessment, the most relevant challenge was attestation (testing) of knowledge and skills of residents; in this year's assessment the educational organizations again reported this challenge, as well as the lack of common approaches and financial resources to conduct regular testing and monitoring directly in the field.

Finding a solution to the issues of remuneration of clinical mentors and medical residents remains pertinent. There is a need for appropriate approaches and mechanism on the part of healthcare facilities for payments to physicians who are mentors and constant payment of salaries for medical residents, in a way that it does not limit the implementation of the training program in full.

Similarly to the last year's assessment, the issues remain with distance learning content, as it should be more focused on clinical cases, as well as with creating opportunities to receive answers to questions asked by medical residents.

The issues with training of clinical mentors have been partially addressed. This work was largely supported by the Swiss-supported Medical Education Reform Project. This work requires further strengthening by the educational organizations themselves.

The recommendations to improve the contractual relations between healthcare facilities and educational organizations, so that they provide for the responsibility of the healthcare facility for results of residency and the obligations of the educational institution to use the healthcare facility as a clinical base, were not implemented either.

### 1. Discussion

In 2020, the implementation timeline of the Strategy for Development of medical education in the Kyrgyz Republic for 2014-2020 ends. The progress of decentralization, a key vector of the Strategy, is obvious and it is particularly noticeable in the development of medical residency in "Family Medicine / General Practice". The documented increase in the number of graduates from medical universities entering to study in this specialty, as well as the cases of residents shifting from narrow specialties to this specialty in the 2-nd year of study, are the proof that the conditions and organization of decentralized PGME in Kyrgyzstan are generally working. In practice, there are already examples of clinical training sites that have successfully organized the training process for FM / GP residents and, therefore, creating the grounds for solving their staff shortages in the near future.

The ongoing debate around the curriculum, in particular the duration of PGME must take into account the achievements documented in this assessment. Taking into account the negative opinion of several respondents for this study about generally poor quality of knowledge in graduates from medical universities, the PGME program with such a duration that would allow first to be exposed to basic subjects (General Practice program in year 1) and only then study in the chosen specialty looks the most appropriate and adequate. It is worth noting the example of the Nookat district where, after the first year of study at the territorial hospital, the residents of FM / GP are distributed to FGPs located in the periphery of this large territory and continue to be subjected to pedagogical influence from clinical mentors and

leaders. The discipline and organization of the study process here is certainly achieved thank to leadership of the healthcare managers in the district, and the conditions for this have been created by the decentralized system of PGME.

Solving gaps in staffing in healthcare facilities and effective training of residents seem to be well balanced. The study documented examples when residents spent several months in pediatric departments during seasonal flu, thus exceeding their timeframes for staying in the pediatric department, thereby helping the hospitals to solve the problem of staff shortages in such seasons. The early months of pandemic response, when many residents were on duty replacing the older doctors, also showed the positive effects of decentralization.

Given the cultural context and the fact that majority of FM / GP residents are females, the proximity of the place of study and work to the place of residence seem to provide convenience for female residents who have chosen this specialty. Many residents interviewed openly admitted that the proximity of the place of study and work to the place of residence gives them the opportunity to study, work, and lead a family life. At the same time, universities and training sites have yet to find ways to ensure the passage of all training blocks (cycles) of the year 1 (General Practice) for female residents who go on maternity leave during their studies.

The evaluation found a number of structural barriers to achieve the goals of PGME decentralization. In particular, existing approaches to rewarding clinical mentors who are physicians and department heads do not always work in a way that they are motivated to lead the training and assess residents and adhere to required procedures. In addition, accommodation challenges prevent some FM/ GP residents from travelling going to preferred clinical training sites with a good reputation of delivering the desired level of exposure to practice and quality of study.

Almost all of the interviewed medical residents stated that PHC doctors are heavily loaded with patients and administrative burdens (reports, inspections), have rather low salaries, and do not have time to study and improve competences. While the attitude of mentors towards medical residents is good, the skills of clinical mentors in healthcare organizations need to be improved.

The existing classification of clinical training sites into three categories - A, B, and C – enables efficient rotations of FM / GP residents. However, it is important that each clinical training site had an appropriate capacity and could fulfill its role as a training site. This expectation is not always fulfilled in practice, as evidenced by the facts when residents in some FGPs and FAPs have been working without supervision by mentors and cannot practice some selected clinical manipulations and procedures.

Leadership and monitoring of the educational process on the part of universities, which are important elements of PGME in the current situation, are generally at a high level. However, there is a need to improve the administration of the growing number of FM / GP residents, improve the organization of monitoring, and engage in closer relations with local administrations that represent a resource for solving accommodation issues and are responsible for the future of healthcare workforce in their administrative territories.

### 2. Recommendations

Recommendations of the evaluation are presented for four key stakeholders of the training of medical residents in the Family Medicine/GP. The recommendations are supplemented by discussions of possible solutions for implementation of the recommendations.

- I. For managers of clinical training sites (directors and deputy directors of healthcare facilities):
  - Consider changing the existing model agreements (contracts) between clinical training sites and universities towards provision of real financial incentives for clinical mentors. Changes should be based on a careful assessment of existing mechanisms and novel options for remuneration of mentors. The contracts should take into account the responsibility of the training sites for quality of knowledge and skills of medical residents
  - Create non-financial incentives to clinical mentors for training of medical residents. Such motivators can be in the form of awards, preferences in the selection of applicants for participation in conferences or seminars, and other ways of expressing recognition and reward for work. In addition, it is essential to consider accruing CME credits for mentors as a reward for supervising the medical residents, with clear mechanisms that will reward both the quality of training of the residents and the performance in pedagogical work of mentors in healthcare facilities.
  - Provide regular training for clinical mentors who are medical doctors and heads of clinical departments, jointly with universities.
  - Improve the organization of the processes of assessment of skills of medical residents who are training/ working in hospital departments and FMCs / FGPs / GP Centers.
  - Continue to improve the learning environment for medical residents, via encouraging their participation in medical conferences and night shifts, access to wards, and allowing participation in difficult case discussions, including discussions of death cases.
  - Continue to improve the equipment of lecture premises, ensure stable Internet connection for online lectures.
  - Interact with local authorities to provide accommodation and travel for medical residents from other regions. This requires regular and active information work, and leadership on the part of facility managers.
- II. For clinical mentors (deputy directors of healthcare facilities, practicing doctors, heads of clinical departments):
  - Encourage medical residents to prepare independently for clinical manipulations and procedures, including through delivery of presentations and even lectures.

- Ensure the observance of the procedures and formal steps for assessing and feedback to medical residents. This includes steps such as assigning a date, time, and location for the appraisal, order of appraisal, and giving feedback. At the moment, many mentors evaluate residents in more informal conditions, relying on their memory of the quality of the procedures performed by the residents and their relationship with the residents.
- III. For heads of educational organizations (KSMITR, South Branch of KSMITR, KSMA, KRSU, Osh State University) and Heads of the Department of Family Medicine in these organizations:
  - Evaluate the effectiveness of the existing model of remuneration of performance of mentors in clinical training sites. Part-time work of facility managers does not always translate into high motivation of practitioners and department heads to work with medical residents.
  - Consider amending the existing standard agreements (contracts) between universities and clinical training sites, so that these agreements provide real financial incentives for clinical mentors. The amendments should be based on a thorough assessment of the mentors' remuneration model and an additional legal assessment of the content of state educational services provided on a paid basis and included in the "Unified Register of Paid Services". Educational organizations of postgraduate education are currently receiving additional funding through paid services (according to the price list, including with contract-based training of medical residents). They provide only the theoretical part of the training of medical residents, which is 10% of the training program (according to the required minimum content of the residency programs). The practical part of the training of medical residents comprises 90% of the training program, provided by the clinical training sites, and is not funded through paid services. Educational organizations could make agreements with the clinical training sites for joint implementation of the educational process and determine the distribution of republican budgetary funds for educational services.
  - Strengthen the administration of the postgraduate medical education. This strengthening should cover the processes of budgeting, planning, distribution of residents by regions, rotation by training cycles and by clinical training sites, negotiations with training sites and local administrations, and monitoring.
  - Together with the Ministry of Health, strengthen the awareness building activities with local administrations in regions on processes of decentralization, value of admitting residents to study and work in training sites, provision of accommodation for the duration of their studies.
  - Mentors should receive training on assessment and feedback procedures for medical residents. These trainings should be focused not only on the heads of training sites, but also on frontline practitioners and heads of clinical departments, and should be carried out on a regular basis.
  - Consider demonstrating the experience of advanced clinical training sites to mentors from other clinical training sites. There are already examples of clinical training sites in Kyrgyzstan where the work of mentors and residents has been set at high standard level. Here, the medical residents are trained in a highly disciplined environment, undergo assessments and receive feedback, guided by the required procedures, and prepare and deliver lectures based on self-selected medical information.

- Monitoring in the long term should transform into a real supervision of the clinical training sites, mentors, and medical residents. Monitoring is already using tools and templates that employ indicators and targets. However, it should also include observing the resident's performance of clinical manipulations and procedures, as well as the way mentors instruct, evaluate and provide feedback. In the meantime, there are facts that short monitoring visits to the regions include monitoring activities and academic exams, collecting Diaries, presenting diplomas and other administrative works.
- As a lesson after the initial stages of the COVID-19 pandemic, the curricula should include three essential skills:
  - conducting telephone consultations,
  - o communication with citizens with acute stress reaction,
  - critical appraisal and understanding of evidence-based medicine.
- In the early months of the pandemic response, the medical residents in Kyrgyzstan became an important resource in the light of the staffing crisis in many healthcare facilities with many doctors being aged and having medical restrictions to work with infected patients. Many citizens were contacting health facilities by phone and were stressed.
- With an abundance of information and misinformation on social media about treatment regimens and communication gaps and rapidly changing patient management algorithms over the course of early stages of pandemic, it is relevant for medical residents to be able to critically assess the evidence of safety and efficacy of medicines and treatments for any disease and condition. The medical residents need to understand that Family Doctors have to learn throughout their careers, and the critical appraisal skills and evidence assessment skills will facilitate the learning.
- Distance learning needs the following improvements:
  - *The content of online lectures* should focus on clinical pharmacology, outpatient management of patients with chronic diseases, pediatrics, intensive care;
  - Revise the timing of online lectures;
  - **Include elements of interactivity**, in particular allocate more time for questions and answers and improve the skills of lecturers in this regard.
- Provide year-round access for medical residents to simulation centers. At the moment, the
  medical residents have access to simulation exercises only during introductory courses in the 1st
  year of study. At the same time, developing some of the important skills (CPR, cricothyrotomy,
  etc.) is hardly possible even in intensive care units of hospitals, especially in the regions. Such
  training rooms and facilities are available, but they are located in Bishkek and Osh and their work
  schedules do not provide access to simulations for residents.
- Promote the adoption of telemedicine and second opinion platforms. Currently, the medical residents have access to intensive care physicians to receive their opinions on intensive care issues, according to the heads of universities. However, this option employs telephone consultations and can hardly be a full-fledged alternative to telemedicine and other platforms for obtaining a second opinion. In an environment where residents are employed by FMCs / FGPs during their residency, such technologies could help to better educate residents with respecting the patients' safety.

- Consider trainings on so-called soft skills presentation skills, interpersonal communication skills.
- Find ways to teach relevant subjects to residents who have missed individual training blocks (cycles) due to maternity leave or other reasons. Options available could be arranging the training during the summer vacation or other similar ways of catching up.
- IV. For the Ministry of Health:
  - Consider including indicators measuring the promotion of the learning process in healthcare facilities into the existing lists of indicators of healthcare facilities and results-based financing (RBF).
  - Revise the financing of postgraduate education from public budget in a way that funds are distributed with account to the provision of educational services, with 10% received by an educational organization and 90% received by a concerned clinical training site. It is necessary to clearly define the amount of public budget funding for each medical resident and the mechanisms for financing the clinical training sites.
  - Jointly with universities, strengthen the awareness building for local administrations of regions about decentralization, the importance of admitting medical residents to study and work in the clinical training sites, providing accommodation for the period of study.
  - Promote the incorporation of postgraduate education issues into development plans of administrative districts. This can be implemented through interaction with district / territorial Coordination Councils in local administrations.
  - Continue efforts to increase salaries and other forms of encouraging the family doctors and the prestige of this specialty. Encouraging the work of doctors in the regions through was such as the **Doctor's Deposit** should receive new opportunities in connection with the momentum that PGME decentralization has created.
  - Improve the planning of the number of residents at clinical training sites: a number of assessments of clinical training sites in Bishkek and Osh cities and in regions demonstrated that in cities the number of residents much exceeds the capacities, and there are few opportunities to master relevant skills. In this regard, it is necessary to plan the number of residents at each clinical training site. This work should be carried out by the MoH in conjunction with educational organizations. It is essential to introduce the ceiling criteria for recruitment of residents, especially in the cities of Bishkek and Osh.
  - It is advisable to carry out an accreditation of clinical training sites for each specialty, on the basis
    of which the list of training sites and their capacities should be determined (specialties for
    residency and the capacities in terms of the number of residents). The distribution of residents by
    specialty and numbers should be carried out only to the accredited training sites. At the same
    time, public budget should finance only the accredited training sites.
  - Promote the simulation rooms at clinical training sites, with year-round access for medical residents and even for doctors. The financing and organization of such rooms can be supported

by international assistance programs, public-private partnerships, donations from individuals, local administrations, private clinics.

• Promote the development of telemedicine and platforms for second opinion from experts. In the first months of the COVID-19 pandemic, experts in the field of infectious diseases, pulmonology and resuscitation had to carry out this work with the available resources, in particular such social network resources as Whatsup, Zoom, TrueConf. However, the availability of official Telemedicine resources would greatly facilitate the process and are likely to improve case outcomes. The same systems are already in demand by medical residents.